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Simulating the closure of the gender employment gap in selected EU countries

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European Labour Markets Under Pressure –
New knowledge on pathways to include persons
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Title: Simulating the closure of the gender employment gap in selected EU countries

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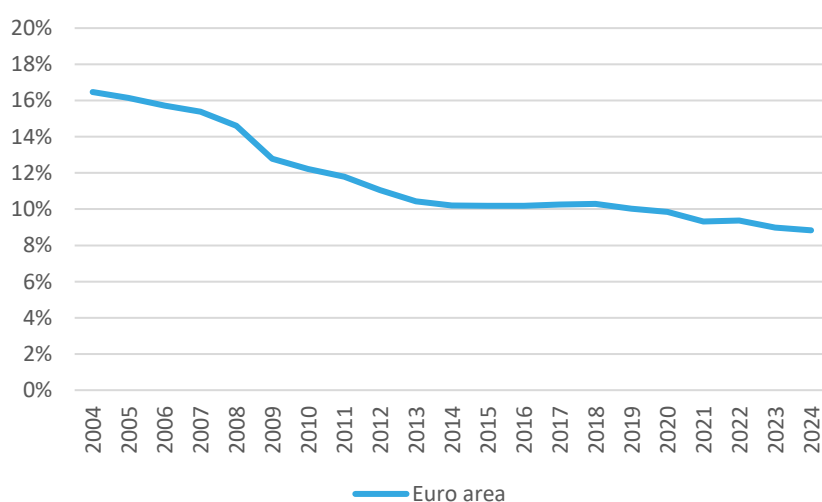
Introduction

Closing gender gaps in employment has been recognized as a critical driver of inclusive growth and fiscal and social sustainability in advanced and emerging economies (OECD, 2023; World Bank, 2024).

Despite progress at the European Union (EU) level, the issue remains salient. On March 7th, 2025, the European Commission set out its Roadmap for Women's Rights, which drives the gender equality agenda forward and brings a long-term political vision to advance on women's rights. Eradicating the gender employment gap is one of the key targets identified in the Roadmap, as disparities remain significant among and within Member States, shaped by variations in welfare regimes, labour market institutions, and cultural norms (EIGE, 2024; Eurostat, 2024). Moreover, the gender employment gap (GEG) is an indicator included in the Social Scoreboard (i.e. the indicators dashboard jointly and officially adopted by the EU Commission, Parliament and Council to monitor social progress in the EU), while its closure is an explicit target in the European Pillar of Social Right Action Plan where it is clearly stated that “[By 2030], Europe must strive to at least halve the gender employment gap compared to 2019. This will be paramount to progress on gender equality and achieve the employment target for the entire working age population”.

Empirical evidence confirms that the challenge remains pressing. While it is true that the GEG, defined by EUROSTAT as the difference between the employment rates of men and women aged 20-64, has halved over the past 20 years in the Euro area, it still stood at 8.83% in 2024 (Figure 1).

Figure 1: Gender employment gap in the EU27

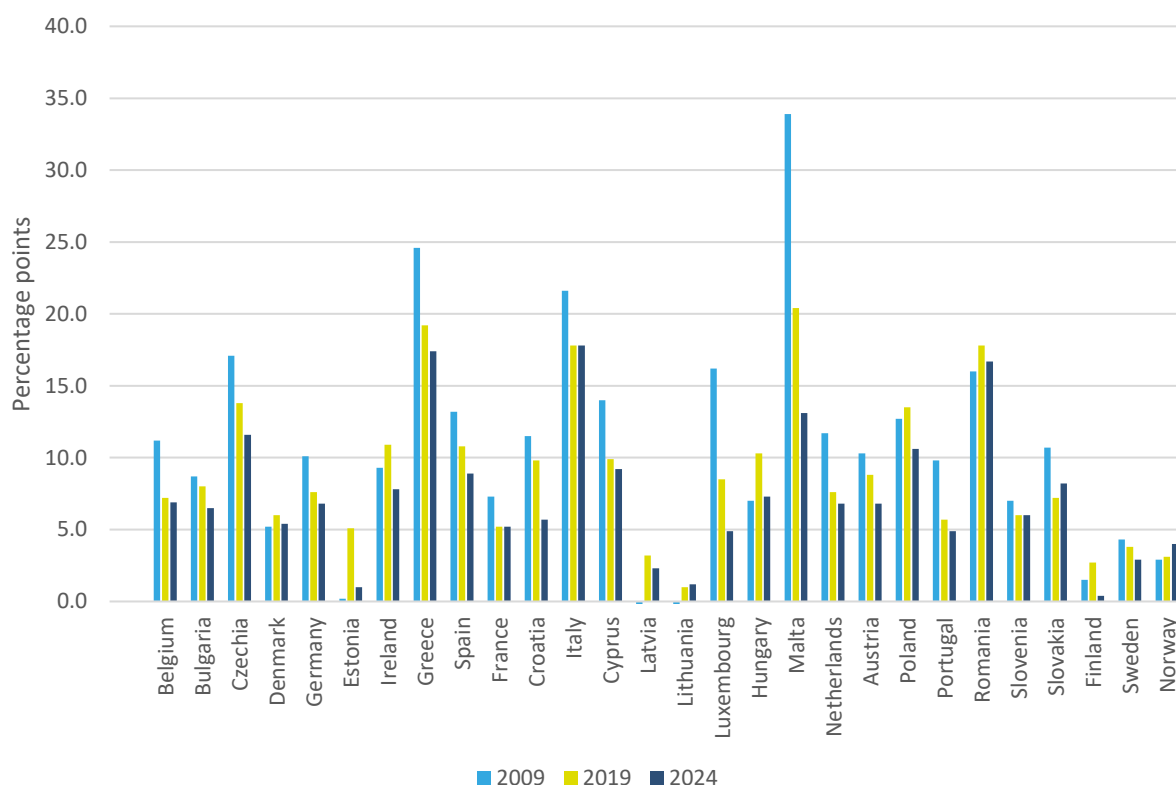


Source: Authors' elaboration on EUROSTAT data

Furthermore, although the GEG has been narrowing at the Euro area level, substantial cross-country differences persist (Figure 2). The lowest gaps are observed in Northern European

countries, including both Scandinavian and Baltic states, whereas the highest gaps are found in Mediterranean countries (Italy, Malta, and Greece) as well as in some Eastern European countries such as Romania. From a temporal perspective, the overall trend across countries has been one of decline: GEG decreased markedly between the 2008 financial crisis and the pre-pandemic period (2019) and continued to narrow in almost all countries, albeit at a more moderate pace, between the pre- and post-pandemic years.

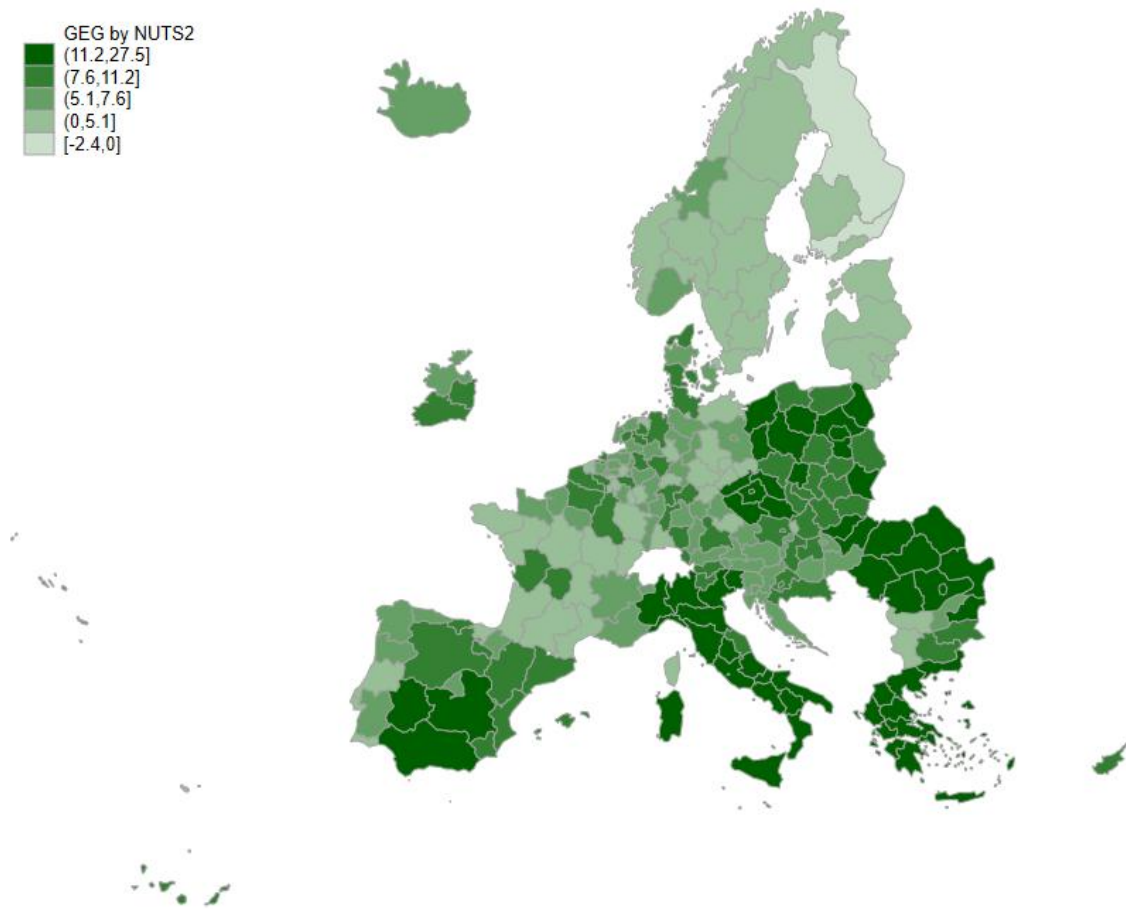
Figure 2: Percentage point gap in employment rates between men and women, EU Member States, 2009, 2019 and 2024



Source: Authors' elaboration on EUROSTAT data

Regional disparities in the gender employment gap are also stark. In 2024, data from EUROSTAT Regional database show that there were 20 NUTS2 regions where the GEG was at least 20.0 pp, mostly concentrated in Greece, Italy and Romania, whereas the 21 NUTS regions with a GEG equal or below 3% are mainly located in northern Europe and in the Eastern European large cities (Zagreb, Bratislav, Budapest) (Figure 3).

Figure 3: Gender employment gap in 2024 by NUTS2 region



Source: Authors' elaboration on EUROSTAT data

Note: Darker colours reflect higher levels of GEG

The rationale of this study lies in the need to assess the potential societal-level gains of reducing or closing the gender employment gap. While much of the public debate on gender equality policies tends to emphasise the costs of intervention, and therefore the reasons for not intervening or for proceeding slowly (e.g., budget constraints, competing priorities, or political resistance) it often overlooks the costs of inaction. Discussions typically frame policy change against a hypothetical zero-cost baseline, as if doing nothing was costless. This, however, is a logical fallacy: inaction itself entails significant and measurable losses. Europe has been relatively slow in adapting labour market and care policies to effectively promote gender equality. Quantifying what is lost each year as a result of this inaction can therefore serve as a powerful tool for policy advocacy. In the case of female labour force participation, the “cost of inaction” translates into forgone productivity, fiscal revenues, and higher expenditure on social benefits. By estimating the effects of higher female employment, this study seeks precisely to quantify these losses, thereby clarifying the economic and social stakes of maintaining the status quo instead of progressing toward the creation of more inclusive and gender-balanced labour markets.

The paper is structured as follows. The next section presents an overview of the relevance of gender employment gap and thus clarifies which kind of debate the paper is supposed to engage. The third section provides information on the data used, the methodology adopted for imputations and simulations. The following section reports the results on the effects of achieving the two simulated policy scenarios – one showing the impact of narrowing the GEG to the EPSR target and one of full GEG-closure. This is followed by the sensitivity checks and two extensions of the analysis: one in which we simulate an existing Italian policy that favours female employment, and another that accounts for the projected changes in the demographic structure over the coming years. The final section of the paper presents the concluding findings.

2. The Economic and Structural Relevance of the Gender Employment Gap

A first and most intuitive reason for pursuing a reduction in the gender employment gap lies in the full realization of social rights within the European Union. Indeed, the prominence of gender equality in the European Pillar of Social Rights (EPSR) underscores that European institutions recognize the closure of this gap as a necessary precondition for the effective enjoyment of social citizenship (European Commission 2017; Vesan & Corti 2019). In many European countries, moreover, work is conceived not merely as a source of income, but as an essential form of participation in community life and in the broader social development of one's environment. In this sense, access to fair employment functions as a catalyst for the realization of a range of social rights, reinforcing both individual agency and collective welfare (Gonçalves da Silva & Leitão, 2023).

A second strong argument in favour of closing the gender employment gap lies in the inefficiencies generated by systematic barriers to women's participation in the labour market. When women face structural obstacles—whether through discrimination, unequal access to childcare, or inflexible work arrangements—the overall allocation of human resources within society is compromised (Hsieh et al., 2019; Erosa et al., 2022).

A third compelling rationale for closing the gender employment gap relates to the middle and long-term sustainability of welfare systems. Several factors can threaten this delicate balance. Among them, demographic dynamics stand out for their magnitude and difficult reversibility. The European Environment Agency identifies population ageing as one of the defining megatrends shaping Europe's future, with profound implications for welfare sustainability, labour supply, and intergenerational equity (EEA, 2015). Declining fertility and ageing are expected to lead to a relative shrinking of the labour force compared to the so-called dependent population. This will have a direct impact both on social needs (expected to grow) and on tax revenues and social contributions (potentially declining because of the reduced size of the workforce). Myles (2022), adapted by Hemerijck, Ronchi and Plavgo (2023) describes the carrying capacity of our welfare systems through a simple but meaningful equation:

$$\frac{N^{\circ} \text{ welfare recipients}}{N^{\circ} \text{ paid workers}} \times \frac{\text{Avg consumption of welfare recipients}}{\text{Avg productivity of paid workers}} = \frac{\text{Welfare Spending}}{\text{Tax Base}}$$

Policies aimed at cutting welfare expenditure or restricting access to social services primarily affect the numerator of the previous equation. However, such policies present several weaknesses. The first concerns the political feasibility of reducing welfare spending by lowering the average consumption of recipients: this approach is likely to encounter strong public resistance, as shown by the recent protests that led France to “freeze” its pension reform. The second concerns the risks associated with reducing the number of beneficiaries at a time when demographic trends are moving in the opposite direction. This, in turn, may pave the way for the emergence of so-called *welfare chauvinism*, that is, the tendency to reserve access to welfare benefits for the native population (Careja & Harris, 2022). By contrast, promoting female employment and closing the gender employment gap positively affects the denominator of the equation, by increasing both the number and productivity of contributors. In this sense, closing the gender employment gap appears to be a more viable, socially sustainable and politically feasible strategy to enhance the carrying capacity of European welfare systems.

Strengthening women’s participation in the labour market is also desirable in light of several ongoing structural trends that could generate new vulnerabilities in employment. Among these, automation and robotisation may disproportionately displace women from routine jobs (Aksoy et al., 2021), while the COVID-19 crisis has deepened existing inequalities due to women’s overrepresentation in affected sectors (Sevilla & Smith, 2020; Brodeur et al., 2021). Importantly, the social costs of these potentially transitory labour market disruptions become more manageable where households are organised around a double-earner model (Van Havere et al., 2024): in a family with two earners, the loss of one job can be absorbed more effectively, minimizing material impacts while allowing time to implement strategies that develop skills and long-term aspirations (e.g., upskilling or reskilling). In this sense, greater female participation in the labour market is a key factor to enhance social resilience and the society’s adaptive and transformative capacity. All in all, the empirical literature seems to largely confirm the positive impacts linked to the reduction of the gender employment gap. Existing evidence suggests that a decrease in gender inequality in the labour market can lead to substantial macroeconomic gains. Lofstrom (2009) shows that full gender balance in the labour market in the EU could potentially increase GDP by 27%-29%, with a gain of €6,800 per capita. Along the same lines, Aguirre and colleagues (2012) find that the net impact on GDP resulting from an increase in female employment rates ranges from 2% in Sweden to 11% in Ital. A study by EUROFOUND (2016) estimates the economic losses due to the existence of a gender employment gap in EU Member States. The report found that the total resource cost (forgone earnings and missed welfare contributions) and public finance cost (individual welfare transfers and social benefits) arising from women’s lower employment rate compared with men in 2013 amounted to more than €370 billion, which corresponds to 2.8% of GDP. The resource cost is also much higher than the public finance cost in every country, amounting to around €324 billion in total.

Our analysis builds on this line of research but advances it by performing microsimulation with the EUROMOD platform, something that, to the best of our knowledge, has not yet been done. The only similar work is that of De Poli & Mayer (2024), who use EUROMOD but focus on the

effect of closing the gender pay gap. Specifically, using the EUROMOD tax-benefit microsimulation model and its Labour Market Adjustment (LMA) Add-On together with EU-SILC microdata, we aim to construct country-specific scenarios that simulate the full and partial closure of the GEG and explore the resulting fiscal and distributional consequences. Particularly, we aim at simulating the narrowing and closure of the gender employment gap in four selected EU countries (France, Italy, Romania and Sweden) and see the effects on:

- **Fiscal space** via changes in government revenues, direct taxes on income and wealth, social insurance contributions, government expenditures (unemployment benefits etc.), and other types of targeted benefits (such as social assistance, housing and pensions). means-tested transfers)
- **Poverty rates** (measured with the AROP rate, which shows the share of individuals whose equivalised disposable income is below the poverty line, computed as 60% of the country-specific median equivalised disposable income).
- **Income inequality** across households, with the GINI Index and the S80/20 ratio (the income quintile share ratio).

3. Data, Methodology and Scenarios

3.1. Data

Our analysis relies on a microsimulation approach to assessing the consequences of narrowing or closing the gender employment gap, using the most recent tax and benefit systems available for the selected countries (2025).

We conduct the microsimulation exercise on four selected countries: France, Italy, Romania, and Sweden¹. The selection of these cases follows a set of criteria designed to ensure both policy relevance and geographical balance. The first criterion was the level of GEG in 2024. Countries with high GEG provide the most immediate ground for assessing the potential social and fiscal gains from narrowing this gap. In this regard, Italy stands out with the highest GEG among EU countries (17.8%). We also include Romania, which combines a similarly high GEG (16.7%) with its location in the Eastern part of the EU, thereby contributing to the geographical diversity of our analysis.

The second criterion concerns the economic size of the country. Including larger economies is crucial for illustrating not only relative improvements but also the absolute magnitude of potential gains in fiscal space that would result from higher female employment. For this reason, France (with a GEG of 5.2%) was selected as an additional case. Finally, we also aimed to capture the dynamics in contexts where the gap is already relatively narrow. This allows us to test the extent to which further reductions in GEG can still generate meaningful effects in terms of

¹ In the Appendix we provide a short overview of the main labour market characteristics and the most recent labour market policy reforms in the 4 selected EU countries.

poverty reduction and fiscal capacity. For this purpose, we included Sweden, where the GEG is 2.9%. Together, these four countries represent a mix of different welfare regimes, labour market structures, and levels of gender inequality, enabling us to highlight both common trends and context-specific dynamics in the relationship between gender employment gaps, poverty, and fiscal outcomes.

Country	Economic size	Geographical position	Gender Employment Gap (GEG)	Welfare regime type	Notes
Italy	High	Southern Europe	High (17.8%, among the highest in EU)	Southern/Mediterranean (familistic, low defamiliarization, fragmented social protection)	Persistent gender gap linked to care burdens and limited childcare coverage. Extensive presence of informal economy.
Romania	Medium–Low	Eastern Europe	High (16.7%)	Post-socialist / transition regime (hybrid, limited services, low benefits)	Employment relatively high for women with low education, but strong rural-urban divide.
France	High	Central/Western Europe	Medium (5.2%)	Continental / conservative-corporatist (strong family and social insurance, generous childcare)	Active family and employment policies have reduced GEG over time.
Sweden	Medium–High	Northern Europe	Low (2.9%)	Nordic / social-democratic (universalistic, dual-earner/dual-career model)	High female employment due to extensive childcare and gender-equality norms.

For our analysis, we use the latest input data for EUROMOD from the 2022 European Statistics on Income and Living Conditions (EU-SILC) for the selected EU countries, which constitute an ad hoc modified version of the EU-SILC data. In addition, we enriched the EUROMOD input data by merging it with further information from the original EU-SILC dataset, such as details on disability and household type. Finally, for the construction of the selection model identifying women transitioning into employment, we further expanded the EU-SILC database by integrating data from the Regional EUROSTAT Database, in order to include information on the regional context in which individuals reside.

3.2. Methodology

From a methodological point of view, we use the static microsimulation model EUROMOD (version J1.86+). EUROMOD is a tax-benefit microsimulation model developed by the Joint Research Centre (JRC) of the European Commission, in collaboration with Eurostat and national teams from across the EU. It simulates country-specific direct tax liabilities and cash benefit entitlements for representative household samples (Sutherland and Figari, 2013), allowing us to consistently compare the impact of tax and benefit policies on household incomes across countries.

Since our focus is on simulating the labour market transition of women from unemployment into employment, we also draw on the LMA Add-on. This EUROMOD add-on, combined with the modelled policy rules in the model, enables us to simulate current income distributions and poverty risks while accounting for both policy and labour market transitions. Our methodology consists of simulating an increase in women's labour market participation, while holding the male employment distribution constant. This is implemented through a transition mechanism in which a subpopulation of currently not employed women is identified and their entry into employment is simulated.

Our microsimulation exercise with the LMA add-on is a static simulation exercise, in the sense that we do not model behavioural responses (e.g., changes in wages, fertility, or household formation) but we do take into account the effect of increasing employment on wage distribution, following the theoretical intuition of the wage curve (Blanchflower & Oswald, 1989). Our results should thus be interpreted as overnight effects, in other words impacts that would occur immediately, without accounting for longer term behavioural adjustments.

In operational terms, the simulation proceeds as follows:

1. **A transition dummy is introduced in the input dataset to flag women moving from unemployment or inactivity to employment.** Once the target share of women to be simulated as transitioning into employment is defined, we follow a probabilistic approach to select transitioning women. Specifically, the probability of transitioning to employment is estimated through a two-level multilevel model with random intercept. The determinants of labour market status are drawn from the individual socio-demographic characteristics available in the EU-SILC data, which were also found to significantly affect labour market transitions in our earlier work ("Assessing the determinants of labour market inclusion for vulnerable European citizens: an eco-systemic and multi-level approach")². These include age, gender, educational attainment, health-related limitations (as a proxy for disability), marital status, citizenship, wealth (proxied by quintiles on wealth taxes), previous working experience and milieu, in addition to NUTS2-level information on regional GDP per capita, presence of physical infrastructure, economic diversification of

² The working paper can be found at: <https://paths2include.eu/publications/assessing-the-determinants-of-labour-market-inclusion-for-vulnerable-european-citizens-an-eco-systemic-and-multi-level-approach/>

the region, human capital stock and public spending on active labour market policies. Once the coefficients are estimated, we predicted the probability of each non-employed woman entering employment based on the estimated selection model. Using these predicted probabilities (\hat{y}), we ranked all potential female entrants according to their likelihood of transitioning into employment. We then assigned the variable $lma=1$ (which is the variable that the LMA Add-on needs for transitioning women) to women sequentially, based on the rank of predicted probabilities, until the sum of their sample weights equalled our target for each country. Based predicted probabilities, we constructed two alternative selection scenarios:

- i. The **“Pure competition” scenario** includes women with the highest predicted probabilities of transitioning into employment, representing a situation in which, coherently with a “pure competition” setting, those most likely to find a job do so first.
 - ii. The **“Rawlsian” scenario** prioritizes instead women with the lowest predicted probabilities reflecting a distributive logic inspired by John Rawls’ theory of justice (Rawls, 1971): it embodies the idea of policy design *“behind the veil of ignorance”* — that is, the notion that fair institutions should be conceived as if decision-makers did not know their own position in society, thus favouring arrangements that improve the situation of the most disadvantaged. This second scenario serves as a benchmark to understand which might be the returns of a policy strategy that targets the more vulnerable.
2. **Two key variables, wages and working hours, are imputed for these new entrants.** Naturally, individuals whose entry into the labour market is simulated do not have observed wages or working hours, and these need to be imputed. The imputation is performed using Predictive Mean Matching (PMM) (Rubin 1986; Little 1988). PMM is a semi-parametric imputation method that combines elements of standard linear regression and nearest-neighbour imputation. First, a normal linear regression model is estimated to obtain predicted values for the variable with missing observations³. These predicted values are then used as a distance metric to identify a set of nearest neighbours (potential donors) among the complete cases (10 in our case, as recommended by Schenker & Taylor (1996)). From this donor set, one observed value is randomly drawn and used to impute the missing case. We performed 20 imputations in total. PMM has the advantage of preserving the empirical distribution of the observed data in the imputed portion, making it more robust than a fully parametric linear regression approach. Overall, and consistent with expectations, our imputation strategy predicts lower average values for wages and working hours for individuals entering the labour market through the simulation compared to those already employed, which is reasonable since newly employed women are

³ In our weighted linear regression model for wages and working hours we include as explanatory variables: age, age squared, gender, marital status, citizenship, health-related limitations, educational level, household type, financial capital and NUTS2 level fixed effects.

expected to work fewer hours and earn slightly less on average. Our imputation strategy also preserves the direction of differences in wages and working hours across socio-demographic categories, as shown in Table 1 in the Appendix, where we report descriptive statistics for imputed and observed wages and working hours by sex, age group and educational attainment. For example, in all countries, the imputed wages for women are on average lower than those for men, consistent with the observed data. In Italy, average imputed wages amount to €1,597.25 for women and €2,017.05 for men; in France, €2,003.63 and €2,400.75 respectively; in Romania, 682€,15€ and 745,80€⁴; and in Sweden 2198,82€ and 2674,49€⁵. The same pattern applies to imputed working hours: 34.58 vs. 37.78 in France, 33.21 vs. 37.97 in Italy, 40.60 vs. 40.78 in Romania, and 37.70 vs. 40.29 in Sweden. On the other hand, our model tends to slightly compress the distribution of imputed values, with fewer extreme values and greater symmetry than the observed distribution, as shown by Figure A1 in the Appendix.

Moreover, since our simulation involves an increase in employment, it is necessary to account for the expected effect on the wage distribution, as predicted by the literature on the wage curve, originally developed by Blanchflower and Oswald (1990, 1994). This body of work suggests a negative relationship between wages and unemployment rates, implying that as employment rises, wage levels tend to adjust upward. To incorporate this mechanism, we rescale both the imputed and the observed wage distributions by applying the empirical wage elasticities estimated for the Euro area and selected European countries by de Galdeano and Turunen (2005)⁶. This adjustment ensures that our simulated outcomes reflect not only changes in employment levels but also the corresponding shifts in wage dynamics that would be expected under real labour market conditions.

3. **The microsimulation is executed using the 2025 tax-benefit system of the country and with the LMA Add-on activated**, that for each scenario simulates the selected women transit to employment. It is worth noting that, for many countries, our target could not be reached by selecting only women who were *unemployed*, as their number was too small to achieve our targets. For this reason, we also simulated the transition to employment of women who were *inactive* or reported *other* self-defined employment statuses. This approach remains consistent with the objectives of the European Pillar of Social Rights, which explicitly emphasizes the goal of activating not only unemployed women but also those who are currently inactive in the labour market.

⁴ 3,468.80 RON and 3,792.45 RON with 02/11/25 official exchange rate

⁵ 24,008.92 SEK and 29,202.63 SEK with 02/11/25 official exchange rate

⁶ The authors estimate a general wage-unemployment elasticity of -0.141, and a country-specific elasticity of -0.179 for Italy and -0.307 for France, that we use in our analysis. Specifically, we apply this elasticity to the change in (un)employment rate in our scenarios, taking into account that, as we are moving to employment not only unemployed women but also the inactive ones, also countries' labour force participation rates change.

4. **The resulting impacts are assessed in terms of fiscal space, poverty, and inequality,** thanks to the Statistic Presenter feature of the EUROMOD software.

3.3. Policy scenarios

We simulate two policy scenarios:

1. **Full closure of the GEG:** a benchmark scenario where women’s employment rates are raised to match those of men within each country.
2. **Narrowing the GEG:** One of the most policy relevant approaches is to simulate a partial reduction of the gender employment gap by a few percentage points. This scenario reflects a plausible policy objective. Specifically, we want to simulate the target set in the European Pillar of Social Rights Plan, which aims to at least halve the gender employment gap by 2030 compared to its 2019 level in each country.

In Table 1 we have reported the gender employment gap for our four selected countries in 2009, 2019 and 2024. Therefore, this means that, in the Full closure scenario, we are simulating the transitioning of the 5.2%, 17.8%, 16.7% and 2.9% of working aged women into employment for France, Italy, Romania and Sweden respectively. While in the EPSR 2030 scenario, we are simulating the transition of 2.6%, 8.9%, 7.8% and 1.0% for each country respectively. The last two columns in the table provide instead absolute numbers of women transitioning to employment for both scenarios.

Table 1: Percentages and absolute numbers of women transitioning, by year and by country

YEAR	Gender employment gap			Percentages		Absolute numbers	
	2009	2019	2024	Target Full closure	Target EPSR 2030	Target Full closure	Target EPSR 2030
France	7.3%	5.2%	5.2%	5.2%	2.6%	1163136	581568
Italy	21.6%	17.8%	17.8%	17.8%	8.9%	3169720	1584860
Romania	16.0%	17.8%	16.7%	16.7%	7.8%	506562	238383
Sweden	4.3%	3.8%	2.9%	2.9%	1.0%	89393	29798

Source: Authors’ elaboration on EUROSTAT

4. Results

Below we report the results in terms of fiscal space, poverty, and inequality for both selection scenarios and for both policy scenarios (the one where countries reach the ESPR target and the one with full closure of the GEG), for the four countries included in the analysis. Only the changes with respect to the baseline are presented here, while the full tables are provided in the Appendix.

4.1. Narrowing GEG: reaching the ESPR target

Table 2: Results for GEG narrowing to reach the ESPR target. Government revenues and expenditure, Pure competition and Rawlsian scenarios.

	Diff to baseline (%)		Diff to baseline (%)		Diff to baseline (%)		Diff to baseline (%)	
	Italy		France		Romania		Sweden	
	Pure competition scenario	Rawlsian scenario	Pure competition scenario	Rawlsian scenario	Pure competition scenario	Rawlsian scenario	Pure competition scenario	Rawlsian scenario
Government revenues	3.84%	1.74%	1.03%	0.49%	2.12%	1.14%	1.04%	0.96%
Direct taxes	1.92%	1.38%	0.69%	0.42%	1.40%	0.78%	1.04%	0.95%
... income taxes	2.09%	1.50%	0.74%	0.46%	1.56%	0.87%	1.09%	0.99%
... wealth taxes	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Social insurance contributions (SIC)	5.66%	2.08%	1.25%	0.53%	2.29%	1.23%	1.04%	0.96%
... employee social insurance contributions	5.19%	2.14%	1.72%	1.16%	2.35%	1.25%	0.89%	0.85%
... self-employed social insurance contributions	-2.15%	0.00%	-0.35%	0.00%	-0.89%	0.00%	-0.93%	0.00%
... employer social insurance contributions (not part of disposable income)	6.70%	2.29%	1.25%	0.39%	2.09%	1.14%	1.11%	1.01%
Credited social insurance contributions (not part of disposable income)	0.00%	0.00%	0.00%	0.00%	-12.39%	0.00%	0.00%	0.00%
Government expenditures	-0.63%	-0.10%	-0.55%	-0.32%	-0.94%	-0.11%	-0.10%	-0.12%
Benefits	-0.63%	-0.10%	-0.55%	-0.32%	-0.94%	-0.11%	-0.10%	-0.12%
by target group								
... work-related benefits	-3.24%	0.00%	-5.38%	-0.12%	-15.10%	0.00%	1.01%	2.30%
... family and education benefits	-0.46%	-0.18%	-0.69%	-0.16%	-7.88%	0.00%	0.00%	0.00%
... social assistance and housing benefits	-3.38%	-4.61%	-1.32%	-2.75%	-4.37%	-2.27%	-1.60%	-2.36%
... pensions, health and disability benefits	-0.01%	-0.02%	-0.01%	-0.05%	0.00%	0.00%	0.00%	0.00%

Source: Authors' elaboration on EU-SILC data with EUROMOD. Note: Annual values, percentage expressed with respect to the baseline scenario.

Across all countries, the simulated narrowing of the GEG to reach the target set in the ESPR leads to an increase in government revenues and a slight reduction in social benefit expenditures. Not surprisingly, the variations are more pronounced in Italy and Romania, where the employment gap to be closed is larger, while the differences are less pronounced in France and Sweden.

Although, for each country, the number of women entering the labour market is the same in both scenarios, the "pure competition" scenario (in which women with higher employability are now employed) systematically shows stronger effects, particularly in terms of government revenues, whereas the "Rawlsian" produces more modest changes. The difference between the

two selection scenarios largely reflects that women with higher employability are not only more likely to access employment opportunities but also tend to secure better paid and more stable jobs involving longer working hours.

In Italy, under the Pure competition scenario (PCS), total government revenues increase by 3.84%, the largest rise among the countries considered, while in France, Romania and Sweden the revenues increase by 1.03%, 2.12% and 1.04% respectively. In absolute terms, this means that government revenues increase by around €19,099 million in Italy, €7,605 in France, €1,225 million in Romania (6,231 million LEU) and €1,518 million (16,613 million SEK) in Sweden. The big increase in Italy is of course because the country has a relatively large economy and the widest simulated employment gap, while for all countries the variation is mainly driven by changes in direct taxes, in turn mostly explained by the increase in income taxes (in PCS with a +2.1% in Italy, +0.74% in France, 1.56% in Romania and 1.09% in Sweden), given that now we have more people working and more people paying income taxes. As expected, wealth taxes do not change in any scenario, as wealth levels are not affected by our overnight microsimulations.

Social insurance contributions (SIC) also grow substantially, and this is true both for employee and employer SIC, contributing to higher government revenues across all countries: in PCS we have a +5.7% in Italy, +1.25% in France, +2.29% in Romania and +1.04% in Sweden. Here too, the increase is more pronounced in the PCS, because, as before, individuals entering employment with higher wages also generate greater revenues for the state through employee and employer SIC. A somewhat counterintuitive result, common to all countries, emerges for self-employed SIC, which decreases in the Pure competition scenario. Upon inspection, this is due to a subset of individuals in the input data classified as unemployed or inactive (based on self-reported status) but still reporting some self-employment income. This inconsistency likely reflects both the self-reported nature of employment status and the temporal misalignment in EU-SILC data: employment status refers to year t , whereas income variables refer to year $t-1$. Hence, these may be individuals who were self-employed in the previous year but are currently not employed.

On the expenditure side, total social spending decreases more in the Pure competition scenario in all countries except Sweden. Notably, the largest reduction occurs in Romania (-0.94% in the Pure competition scenario), even though the simulated employment gap is smaller than in Italy, reflecting probably a system of benefits particularly focused on the unemployed. In Italy, France, and Romania, the reduction in social spending is mainly driven by a decline in work-related benefits (which include unemployment-related transfers), particularly pronounced in the Pure competition scenario (-3.24%, -5.38% and -15.10% respectively) and almost negligible in the Rawlsian scenario (RS). This happens because in the Pure competition scenario, the model predicts higher employment probabilities for women who are currently unemployed, which are the ones that were receiving work-related benefits, whereas in the RS, transitions occur mainly among the inactive or long term unemployed who anymore entitled to receive benefits.

The case of Sweden is particularly interesting. In the Rawlsian scenario, we observe the highest percentage of women who were unemployed and whose transitions we simulate, whereas in the Pure competition scenario there is a larger share of inactive women whose transitions are

simulated. Since we use the same determinants as in the other countries, this suggests that in Sweden, women with higher employability (based on their individual and contextual characteristics) tend to be, on average, more inactive than unemployed compared to women in other countries. This is also consistent with the findings from Deliverable D7.1 mentioned above, where we observed that in wealthier EU regions, women may be more likely to remain inactive by choice, given less pressing economic needs. This, for instance, helps explain why we observe a positive change in work-related benefits in the Rawlsian scenario (and also why the increase in income taxes is quite similar between the Pure competition and the Rawlsian compared to other countries). Overall, Sweden shows almost identical increases in both scenarios, indicating lower heterogeneity between more and less “employable” women.

Family and education benefits decrease more in the Pure competition than Rawlsian scenario. In contrast, social assistance and housing benefits decline more sharply in the Rawlsian scenario in Italy, France, and Sweden. This is because this scenario affects more intensely vulnerable households who are more likely to be poor (or at-risk of poverty) and thus more likely to be recipients of social assistance and housing benefits. In Romania, however, social assistance and housing benefits fall more in the Pure competition scenario. This somewhat counterintuitive finding may reflect the fact that such benefits are also accessed by groups that do not belong to the most deprived strata of the population.

The following set of tables shows the effects of GEG narrowing on poverty and inequality levels, in terms of changes on the Gini index, S80/20 and AROP rate.

Table 3: Results for GEG narrowing to reach the EPSR target. Gini Index, Pure competition and Rawlsian scenarios.

Gini								
	Italy		France		Romania		Sweden	
	Diff to baseline		Diff to baseline		Diff to baseline		Diff to baseline	
	Pure competition scenario	Rawlsian scenario	Pure competition scenario	Rawlsian scenario	Pure competition scenario	Rawlsian scenario	Pure competition scenario	Rawlsian scenario
Original Income	-0.01175	-0.00569	-0.00471	-0.00622	-0.00868	-0.00606	-0.00163	-0.00188
Disposable Income	-0.00794	-0.00255	-0.00209	-0.00325	-0.00464	-0.00333	-0.00049	-0.00077

Source: Authors’ elaboration on EU-SILC data with EUROMOD. Note: Annual values, percentage expressed with respect to the baseline scenario.

Table 4: Results for GEG narrowing to reach the EPSR target. S80/S20 income quintile ration, Pure competition and Rawlsian scenarios.

S80/S20								
	Italy		France		Romania		Sweden	
	Diff to baseline		Diff to baseline		Diff to baseline		Diff to baseline	
	Pure competition scenario	Rawlsian scenario	Pure competition scenario	Rawlsian scenario	Pure competition scenario	Rawlsian scenario	Pure competition scenario	Rawlsian scenario
Original Income	-0.29479	-0.36637	-0.31349	-0.83060	-0.13938	-0.95546	-0.00968	-0.12790

Disposable Income	-0.20500	-0.09735	-0.04385	-0.09289	-0.05585	-0.09590	-0.01203	-0.02072
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Source: Authors' elaboration on EU-SILC data with EUROMOD. Note: Annual values, percentage expressed with respect to the baseline scenario.

Table 5: Results for GEG narrowing to reach the EPSR target. AROP by sex, Pure competition and Rawlsian scenarios.

AROP by sex								
	Italy		France		Romania		Sweden	
	Diff to baseline (%)		Diff to baseline (%)		Diff to baseline (%)		Diff to baseline (%)	
	Pure competition scenario	Rawlsian scenario	Pure competition scenario	Rawlsian scenario	Pure competition scenario	Rawlsian scenario	Pure competition scenario	Rawlsian scenario
Female	-1.99	-0.87	-0.54	-0.81	-0.99	-0.62	-0.33	-0.48
Male	-1.70	-0.99	-0.60	-0.70	-0.85	-0.52	-0.30	-0.31
All	-1.85	-0.93	-0.57	-0.76	-0.92	-0.57	-0.32	-0.39

Source: Authors' elaboration on EU-SILC data with EUROMOD. Note: Annual values, percentage expressed with respect to the baseline scenario.

In all the analysed countries, a reduction in the Gini index compared to the baseline can be observed, indicating a slight improvement in income distribution equity following the simulation in both scenarios. In Italy and Romania, the reduction in the Gini index for both original and disposable income is stronger in the Pure competition than in the Rawlsian. In Sweden and France, however, this trend is reversed. This pattern can be explained by the fact that the Gini index is more sensitive to changes occurring in the middle part of the income distribution; therefore, in countries where the improvement is more concentrated among middle-low-income groups, the resulting change in the Gini index is more pronounced. Nevertheless, the magnitude of this reduction varies significantly across countries: among PCSs, Italy shows the largest decrease, both for original and disposable income, indicating a relatively strong redistributive effect. France and Romania display smaller but still clearly negative changes in PCS but bigger changes in RS (the latter being for original income respectively -0.00622 and -0.00606), while Sweden shows very limited effects, consistent with a system already characterized by low initial inequality and limited room for improvement.

The picture changes when we look at the Income quintile share Ratio (S80/S20), which focuses on the polarization between the richest 20% and the poorest 20% of households. Here too, the variations are negative in all countries, but this time the decline is greater in the Rawlsian scenario. This is consistent with the idea that activating women who are further from the labour market primarily benefits households in the lower part of the income distribution, thus narrowing the gap between the poorest and the richest. The only exception here is Italy, which moves from an S80/S20 value for disposable income of -0.20500 in the PCS to a value for disposable income of -0.09735 in RS, maybe connected to the fact that in the latter scenario more people are exiting from the no-tax area.

Lastly, across all countries, our poverty index, the At-Risk-of-Poverty (AROP) rate, decreases compared to the baseline, indicating that the simulated transitions contribute to a reduction in poverty risk. Here, what we would expect is a larger decrease in the index under the RS, since this is where we simulate the transitions of the most vulnerable women. This is indeed what we

observe in France and Sweden. In Italy and Romania, however, the results are somewhat counterintuitive, as the AROP decreases more in the PCS than in the RS.

Looking more closely at the data, we can see this pattern clearly in Italy, which shows a decline of -1.85 p.p. in the PCS and -0.93 p.p. in the RS. This might be because, in the PCS, we observe a sharp reduction in poverty among female-headed households with one child (-3.35% in PCS vs. -1.74% in RS) and among two-adult households with one child (-3.77% vs. -1.37%), the latter being particularly a common type of household in the country. Women living in these types of households may have individual characteristics that make them highly employable but are often constrained by care responsibilities that prevent them from working. In our simulation, under the PCS, these women are among those most likely to transition into employment, lifting their households out of poverty as a result. It is also interesting to observe that, following a general increase in overall wealth, households with members outside the labour market (such as female-headed single households) show rising poverty rates (+1.43 pp in the RS).

Another interesting aspect is that in Sweden and Romania, gender differences in the AROP rate show larger reductions among women than among men, which is consistent with the fact that we simulated women's transitions into the labour market. This, however, is not the case in Italy under the RS scenario and in France under the PCS, where the AROP rate for men shows a stronger decrease instead. Once again, household composition plays an important role, as in many cases it is the simulated transition of women into the labour market that enables the household as a whole to move out of poverty.

4.2. Full closure

Below we report the results in terms of fiscal space, poverty and inequality for both selection scenarios, if the countries were to fully close their GEG. Simulating the full closure of the GEG generates changes that are very similar to those observed in the narrowing of the GEG discussed earlier, though naturally larger in magnitude. Indeed, we observe an overall increase in public finance across all countries, albeit with varying intensity. The largest fiscal gains occur in Italy, where total government revenues rise by about +5.8% in the PCS and +3.9% in the RS. In Romania, the increase is also sizeable (+4.2% / +3.5%), while in France and Sweden the effects are more moderate (+1.8% and +1.1%). The gap between the Pure competition and Rawlsian scenarios indicates that the impact is still stronger when the women transitioning into employment are those with higher employability probabilities, consistent with higher expected direct taxes and SIC. The latter are the main drivers of the revenue increase, both in percentage terms and in absolute values. In absolute terms, it means that in Italy we pass from baseline government revenues of around 497,617.90 € million to 526,627.90 € in PCS, in France from 737,668.93 € million to 750,596.68 €, in Romania from 294,043.75 LEU to 306,455.18 LEU and in Sweden from 1,594,991.99 SEK to 1,615,538.62 SEK.

Table 6: Results for GEG full closure. Government revenues and expenditure, Pure competition and Rawlsian scenarios.

	Diff to baseline (%)		Diff to baseline (%)		Diff to baseline (%)		Diff to baseline (%)	
	Italy		France		Romania		Sweden	
	Pure competition scenario	Rawlsian scenario	Pure competition scenario	Rawlsian scenario	Pure competition scenario	Rawlsian scenario	Pure competition scenario	Rawlsian scenario
Government revenues	5.83%	3.88%	1.75%	1.14%	4.22%	3.48%	1.29%	1.09%
Direct taxes	2.46%	1.60%	1.22%	0.98%	2.66%	2.30%	1.08%	0.89%
... income taxes	2.68%	1.75%	1.33%	1.06%	2.96%	2.56%	1.13%	0.93%
... wealth taxes	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Social insurance contributions (SIC)	9.03%	6.04%	2.09%	1.23%	4.59%	3.75%	1.46%	1.25%
... employee social insurance contributions	8.48%	5.77%	3.14%	2.56%	4.70%	3.83%	1.30%	1.11%
... self-employed social insurance contributions	-3.64%	0.00%	-0.42%	-	-1.09%	0.00%	-0.93%	0.00%
... employer social insurance contributions (not part of disposable income)	10.64%	6.81%	1.99%	0.95%	4.20%	3.46%	1.53%	1.30%
Credited social insurance contributions (not part of disposable income)	0.00%	0.00%	0.00%	0.00%	-12.39%	0.00%	0.00%	0.00%
Government expenditures	-0.99%	-	-1.12%	0.76%	-1.00%	0.40%	-0.50%	-
Benefits	-0.99%	0.36%	-1.12%	0.76%	-1.00%	0.40%	-0.50%	0.51%
... work-related benefits	-4.74%	0.00%	-10.53%	1.62%	-15.10%	0.00%	-4.50%	4.11%
... family and education benefits	-0.57%	0.62%	-0.99%	0.58%	-5.90%	0.18%	0.00%	0.00%
... social assistance and housing benefits	-7.08%	20.27%	-3.24%	5.71%	-9.35%	8.62%	-3.21%	3.48%
... pensions, health and disability benefits	-0.05%	0.04%	-0.04%	0.08%	0.00%	0.00%	0.00%	0.00%

Source: Authors' elaboration on EU-SILC data with EUROMOD. Note: Annual values, percentage expressed with respect to the baseline scenario.

Expenditures decline across the board, mainly due to reductions in work-related benefits and social assistance and housing benefits. Changes in family, education, and health-related benefits are modest, and in some cases even positive (e.g. Italy +0.62% and Romania +0.18%), likely reflecting the fact that in this scenario more individuals are now employed and thus eligible for benefits to which they previously had no access.

The following set of tables shows the effects of GEG closure on poverty and inequality levels, in terms of changes on the Gini index, S80/20 and AROP rate.

Table 7: Results for GEG full closure. Gini Index, Pure competition and Rawlsian scenarios.

	Gini							
	Italy		France		Romania		Sweden	
	Diff to baseline (%)		Diff to baseline (%)		Diff to baseline (%)		Diff to baseline (%)	
	Pure competition scenario	Rawlsian scenario	Pure competition scenario	Rawlsian scenario	Pure competition scenario	Rawlsian scenario	Pure competition scenario	Rawlsian scenario
Original Income	-0.02218	-0.02395	-0.00968	-0.01288	-0.01831	-0.01941	-0.00443	-0.00433

Disposable Income	-0.01363	-0.01601	-0.00410	-0.00635	-0.01048	-0.01130	-0.00169	-0.00176
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Source: Authors' elaboration on EU-SILC data with EUROMOD. Note: Annual values, percentage expressed with respect to the baseline scenario.

Table 8: Results for GEG full closure. S80/S20, Pure competition and Rawlsian scenarios.

S80/S20								
	Italy		France		Romania		Sweden	
	Diff to baseline (%)		Diff to baseline (%)		Diff to baseline (%)		Diff to baseline (%)	
	Pure competition scenario	Rawlsian scenario	Pure competition scenario	Rawlsian scenario	Pure competition scenario	Rawlsian scenario	Pure competition scenario	Rawlsian scenario
Original Income	-0.65630	-1.34965	-0.80184	-1.58244	-1.29433	-3.15282	-0.06998	-0.23119
Disposable Income	-0.35089	-0.47200	-0.10513	-0.18595	-0.25234	-0.44088	-0.03912	-0.04135

Source: Authors' elaboration on EU-SILC data with EUROMOD. Note: Annual values, percentage expressed with respect to the baseline scenario.

Table 9: Results for GEG full closure. AROP by sex, Pure competition and Rawlsian scenarios.

AROP by sex								
	Italy		France		Romania		Sweden	
	Diff to baseline (pp)		Diff to baseline (pp)		Diff to baseline (pp)		Diff to baseline (pp)	
	Pure competition scenario	Rawlsian scenario	Pure competition scenario	Rawlsian scenario	Pure competition scenario	Rawlsian scenario	Pure competition scenario	Rawlsian scenario
Female	-3.70	-3.89	-1.34	-1.76	-2.20	-3.23	-0.65	-0.83
Male	-2.97	-3.31	-1.23	-1.43	-1.71	-2.78	-0.55	-0.41
All	-3.35	-3.61	-1.29	-1.60	-1.96	-3.01	-0.60	-0.62

Source: Authors' elaboration on EU-SILC data with EUROMOD. Note: Annual values, percentage expressed with respect to the baseline scenario.

The direction of change of inequality indicators mirrors what we observed in the partial-gap simulation, with the full closure of the gender employment gap leading to a further reduction in income inequality (as measured by the Gini in Table 7 and by the S80/S20 ratio in Table 8) across all countries compared to the baseline. Once again, the reduction in the Gini index tends to be stronger in the PCS or in the RS depending on the country, while the S80/S20 ratio decreases more in the RS across all countries, as this scenario primarily affects the most vulnerable segments of the population. By contrast, when looking at AROP rate by sex (Table 9), the broader share of women transitioning into employment leads to a stronger reduction in poverty under the RS scenario in all countries. Here, unlike in the EPSR simulation, in every scenario and in every country, the AROP for women decreases more than that for men.

4.3. Targeted simulation

In this section, we present the results of a simulation that replicates the objectives and costs of an actual policy. In the Italian case, successive governments have introduced measures to promote female employment, such as social security contribution reliefs for the hiring of women

in disadvantaged conditions. Specifically, Law 92/2012⁷ provides for a 50 % reduction in employer social security contributions for the recruitment of disadvantaged women, defined, for example, as women aged 50 or over who have been unemployed for more than 12 months. Similarly, full exemption from SIC is provided to employers under the Decreto Coesione (Article 23 of Decree Law 60/2024) for permanent hires made between 1 September 2024 and 31 December 2025 of women of any age who have not held a regular paid job for at least six months and who reside in the regions included in the Special Economic Zone for Southern Italy, namely, Abruzzo, Basilicata, Calabria, Campania, Molise, Puglia, Sicily, and Sardinia.

Building on the Rawlsian scenario described above, that is, the one in which we simulate the transition of the more vulnerable women (the ones with the lowest predicted probabilities of entering employment), in this section we also simulate a 50% reduction in employer SIC for the first target group of women (those aged 50 or over and unemployed for more than 12 months) and a 100% reduction of employer SIC for the second target group (women of any age, without a regularly paid job for at least six months, residing in the Special Economic Zone regions). In absolute numbers, women transitioning to employment are the same as in the ESPR target, i.e., 1,584,860 (that correspond to an 8.9% increase in the female employment rate), to make results comparable.

The aim is to show that there are also potential returns to promoting the transition of more vulnerable groups, even when accounting for employer tax exemptions provided by existing policies. Moreover, in both cases, since from EU-SILC data we only have information on unemployment duration over the past 12 months, we are again estimating a lower-bound effect, as we do not include in the analysis women who, at the time of data collection, might have been entering a longer spell of unemployment.

Table 10: Results for GEG narrowing for Italy. Government revenues and expenditure, baseline, RS and RS simulated policy on employer SIC.

	Amounts			Diff. to base		Diff. to base (%)	
	Baseline	Rawlsian	Rawlsian + targeted SIC policy	Rawlsian	Rawlsian + targeted SIC policy	Rawlsian	Rawlsian+ targeted SIC policy
Government revenues	497,612.90	506,249.68	505,829.94	8,636.78	8,217.05	1.74%	1.65%
Direct taxes	242,199.62	245,532.21	245,532.47	3,332.59	3,332.85	1.38%	1.38%
... income taxes	222,086.73	225,419.31	225,419.58	3,332.59	3,332.85	1.50%	1.50%
... wealth taxes	20,112.90	20,112.90	20,112.90	0.00	0.00	0.0%	0.0%
Social insurance contributions (SIC)	255,413.27	260,717.47	260,297.47	5,304.19	4,884.20	2.08%	1.91%
... employee social insurance contributions	57,384.43	58,612.45	58,611.55	1,228.02	1,227.12	2.14%	2.14%
... self-employed social insurance contributions	20,233.08	20,233.08	20,233.08	0.00	0.00	0.0%	0.0%
... employer social insurance contributions (not part of disposable income)	177,795.77	181,871.94	181,452.84	4,076.17	3,657.07	2.29%	2.06%
Government expenditures	447,543.67	447,074.90	447,074.90	-468.78	-468.78	-0.10%	-0.10%

⁷ Article 4, paragraphs 8–11

Benefits	447,543.67	447,074.90	447,074.90	-468.78	-468.78	-0.10%	-0.10%
by target group							
... work-related benefits	74,407.04	74,407.04	74,407.04	0.00	0.00	0.0%	0.0%
... family and education benefits	25,742.87	25,697.82	25,697.82	-45.05	-45.05	-0.18%	-0.18%
... social assistance and housing benefits	8,067.68	7,695.45	7,695.45	-372.24	-372.24	-4.61%	-4.61%
... pensions, health and disability benefits	339,326.08	339,274.59	339,274.59	-51.49	-51.49	-0.02%	-0.02%

Source: Authors' elaboration on EU-SILC data with EUROMOD. Note: Annual values, percentage expressed with respect to the baseline scenario.

Table 10 above compares the baseline, RS, and the RS with the additional simulated employer SIC policy. Overall, the results show that government revenues increase quite considerably also under the third scenario compared to the baseline, confirming the positive fiscal effects associated with the transition of women into employment and naturally the difference between the two different scenarios reflects the cost of the tax relief measures granted to employers, that go from +2.29% to 2.06%, which in absolute terms is a difference of -419.10 million. We only report this table, as this policy exclusively affects employer SIC, and therefore no component of household disposable income is directly impacted. In summary, the introduction of targeted employer SIC reductions still results in a net fiscal improvement, although somewhat smaller than in the standard RS. This suggests that policies supporting the employment of disadvantaged women can generate positive budgetary effects, even when accounting for the fiscal cost of contribution exemptions.

4.4. Reweighting

As a robustness check to the microsimulations carried out with the LMA add-on, we conducted an additional set of simulations for Italy, using a different methodological approach. The target that we aim to reach with this new set of simulations remains the same as in the ESPR policy scenario, that is, to simulate the transition of 1,584,860 women into employment, corresponding to an 8.9% increase in the female employment rate.

However, instead of using the LMA add-on, which involves selecting inactive/unemployed women through an arbitrary model to transit into employment and imputing their corresponding wages and working hours, in this case we reweight survey weights of every household in the sample. This approach relies on the survey reweighting procedure first proposed by Deville and Särndal (1992) and implemented in Stata by Pacifico (2014). The reweighting procedure calibrates survey data to external totals, which, in our case, are the new female employment targets. In a nutshell, the procedure increases the weights of households including employed women and decreases those of households with inactive or unemployed women, iteratively adjusting the survey weights until the target is reached.

We apply this reweighting approach in two different exercises. First, we use it as a sensitivity test for the estimates obtained for Italy through the LMA add-on, allowing us to assess the robustness of the simulated results. Second, we use it to account for expected demographic changes up to 2030, in line with the ESPR target of halving the GEG relative to 2019 levels by

that year in Italy. That is because a more refined simulation must incorporate the demographic changes expected to shape the Italian general and labour market populations by 2030.

For the first exercise, we reweight the baseline household weights so that the new survey weights match the desired female employment rate of 66.6% (57.7%+8.9%), while at the same time keeping the male employment rate constant and preserving the relative weight of each sex-age category-education group within the total population.

Table 11: Comparison of results of GEG narrowing between Darwinian results and reweighting results.

	Baseline	Darwinian with LMA	Reweighting	Darwinian with LMA	Reweighting
				Difference from baseline (%)	Difference from baseline (%)
Government revenues	497,612.90	516,712.88	514,948.59	3.84%	3.48%
Direct taxes	242,199.62	246,846.31	246,971.40	1.92%	1.97%
... income taxes	222,086.73	226,733.42	226,800.97	2.09%	2.12%
... wealth taxes	20,112.90	20,112.90	20,170.43	0.00%	0.29%
Social insurance contributions (SIC)	255,413.27	269,866.57	267,977.19	5.66%	4.92%
... employee social insurance contributions	57,384.43	60,362.42	60,182.76	5.19%	4.88%
... self-employed social insurance contributions	20,233.08	19,797.54	20,680.92	-2.15%	2.21%
... employer social insurance contributions (not part of disposable income)	177,795.77	189,706.60	187,113.51	6.70%	5.24%
Government expenditures	447,543.67	444,707.37	445,333.30	-0.63%	-0.49%
Benefits	447,543.67	444,707.37	445,333.30	-0.63%	-0.49%
... work-related benefits	74,407.04	71,997.85	75,929.09	-3.24%	2.05%
... family and education benefits	25,742.87	25,625.37	25,328.45	-0.46%	-1.61%
... social assistance and housing benefits	8,067.68	7,795.27	7,402.65	-3.38%	-8.24%
... pensions, health and disability benefits	339,326.08	339,288.88	336,673.10	-0.01%	-0.78%

Source: Authors' elaboration on EU-SILC data with EUROMOD. Note: Annual values, percentage expressed with respect to the baseline scenario.

Table 11 compares the results obtained using the LMA add-on and the survey reweighting procedure under the PCS for Italy. Overall, the estimates derived from the two methods are remarkably consistent, confirming the robustness of the simulated results for the Italian case.

In both cases, government revenues increase significantly compared to the baseline, by +3.84% with LMA and +3.48% with reweighting. The slightly smaller increase observed with the LMA approach is likely due to the more granular representation of labour market entries and earnings in the microsimulation model. It is interesting to note the difference between the two simulations with respect to wealth taxes. In the LMA add-on, these remain unchanged, since the

simulation only models the entry into employment of a subsample of individuals and the resulting increase in their wages, while other components of individual wealth are not affected. In the reweighting exercise, however, the situation differs. By increasing the survey weights of households that include employed women, we also increase their relative contribution to wealth taxes (+0.29%). This occurs because, plausibly, households with working women tend to have higher average levels of wealth, which translates into a greater aggregate tax contribution when their survey weights are scaled up.

On the expenditure side, total government spending decreases modestly in both simulations (-0.63% and -0.49%), driven mainly by a reduction in social assistance and housing benefits (-3.4% under LMA and -8.2% under reweighting) and, to a lesser extent, in pensions, health, and disability benefits. Overall, the results indicate that both methods produce consistent fiscal outcomes, with minor quantitative differences but a common qualitative direction: higher revenues, lower expenditures, and an overall improvement in the public budget balance following the simulated increase in female employment.

For the second exercise, we reweight baseline household weights so that, again, the new survey weights match the desired female employment rate of 66.8% (57.7% + 8.9%). However, in this version of the exercise we assume the observed employment/non-employment distribution by age and gender observed in the baseline for the projected Italian population structure for 2030⁸. It is worth reminding that the model relies on static assumptions, and that the results should still be interpreted as overnight effects, though this time taking into account also demographic changes that are forecast for Italy by 2030.

Table 12: Comparison of results of GEG narrowing between reweighting results and reweighting plus population forecasts.

	Baseline	Reweighting	Reweighting + 2030 population forecast	Reweighting	Reweighting + 2030 population forecast
				Diff to baseline (%)	Diff to baseline (%)
Government revenues	497,612.90	514,948.59	522,180.01	3.48%	4.94%
Direct taxes	242,199.62	246,971.40	255,976.65	1.97%	5.69%
... income taxes	222,086.73	226,800.97	234,673.92	2.12%	5.67%
... wealth taxes	20,112.90	20,170.43	21,302.73	0.29%	5.92%
Social insurance contributions (SIC)	255,413.27	267,977.19	266,203.36	4.92%	4.22%
... employee social insurance contributions	57,384.43	60,182.76	59,921.67	4.88%	4.42%
... self-employed social insurance contributions	20,233.08	20,680.92	20,898.75	2.21%	3.29%
... employer social insurance contributions (not part of disposable income)	177,795.77	187,113.51	185,382.94	5.24%	4.27%
Government expenditures	447,543.67	445,333.30	478,904.30	-0.49%	7.01%
Benefits	447,543.67	445,333.30	478,904.30	-0.49%	7.01%
... work-related benefits	74,407.04	75,929.09	75,193.29	2.05%	1.06%

⁸ For this we use EUROPOP2023, which the latest long-term population projections produced by Eurostat at national level. Specifically, we use the baseline projections on 1 January by age and sex.

... family and education benefits	25,742.87	25,328.45	21,749.15	-1.61%	-15.51%
... social assistance and housing benefits	8,067.68	7,402.65	7,040.51	-8.24%	-12.73%
... pensions, health and disability benefits	339,326.08	336,673.10	374,921.35	-0.78%	10.49%

Source: Authors' elaboration on Eurostat and EU-SILC data with EUROMOD. Note: Annual values, percentage expressed with respect to the baseline scenario.

Overall, government revenues increase in both cases, but the rise is more substantial under the 2030 population structure (+4.9% vs. +3.5% relative to the baseline). The difference is mainly driven by direct taxes, which grow by +5.7% under the 2030 scenario, compared to +2.0% in the 2025 reweighting. This stronger increase reflects the ageing of the labour force and the higher concentration of employed individuals in older, higher-income brackets, which translates into larger income and wealth tax revenues.

In contrast, SIC rises less under the 2030 population structure than under the 2025 one. This likely results from the reduced share of younger workers and a higher prevalence of older, less contributive employment profiles in the simulated 2030 economy. The pattern is consistent across employee and employer contributions (4.88% vs. 4.42% and 5.24% vs. 4.27%), but not for self-employed SIC.

On the expenditure side, the differences are more pronounced. While total government spending slightly decreases (-0.5%) in the 2024 reweighting, it rises sharply by about 7% under the 2030 scenario. This increase is entirely driven by pensions, health, and disability benefits, which expand by over 10%, consistent with the demographic ageing embedded in the 2030 population structure. Meanwhile, family and education benefits (-15.5%) and social assistance and housing benefits (-12.7%).

Overall, these results highlight how demographic change profoundly affects fiscal balances, even when employment growth targets remain constant. Under the 2030 population projection, the larger tax base from higher female employment is partly offset by the rising fiscal burden of an older population, especially in pensions and health expenditures. The comparison therefore illustrates the importance of considering demographic dynamics in long-term assessments of employment and fiscal sustainability.

5. Conclusions

This paper analysed the fiscal and distributive implications of closing and narrowing the Gender Employment Gap (GEG), the latter in line with the target set by the European Pillar of Social Rights, using the EUROMOD microsimulation model and its Labour Market Attachment (LMA) Add-on for Italy, France, Romania, and Sweden. We did so by examining two dimensions, one related to public finance and the other to redistribution, and by simulating two different selection scenarios: a Pure competition scenario, in which the most employable women are simulated to enter employment, and a Rawlsian scenario, which instead focuses on the most vulnerable women. Our analysis shows results of a static microsimulation exercise; this means that we are capturing overnight effects rather than long-term behavioural or general equilibrium responses. For individuals transitioning into employment, both wages and working hours are imputed using predictive mean matching based on the characteristics of similar individuals already employed in the baseline data. Under these assumptions, the simulations identify the immediate fiscal, poverty, and inequality effects of closing and of narrowing the gender employment gap.

Overall, across all countries, the simulated narrowing of the GEG results in a clear increase in government revenues and a reduction in social benefit expenditures, confirming the potential economic and fiscal returns of higher female employment. As for the two scenarios, the Pure competition scenario shows stronger impacts in terms of public finance outcomes. The redistributive dimension, however, presents a more complex picture. We observed that better redistributive outcomes do not necessarily emerge from stronger targeting towards disadvantaged groups. This depends on many factors, namely: the pre-transition income distribution, the design of the tax-benefit system, and the specific characteristics of the simulated transitions in terms of wages and working hours. Again, as our microsimulation is static, we may be overlooking adjustments that could moderate these effects in the long term.

More specifically, as expected, the Pure competition scenario produces stronger fiscal effects, while the Rawlsian scenario leads to smaller but still positive impacts. These results are particularly pronounced in Italy and Romania, where the employment gaps to be closed are the largest. In Italy, for instance, total government revenues rise by almost 4% in the PCS, corresponding to around €19 billion, while social benefit expenditures fall fairly, mainly through lower unemployment-related transfers.

In all countries, the increase in direct taxes and social insurance contributions accounts for the bulk of the rise in government revenues, reflecting both higher employment levels and higher average wages among the simulated entrants. At the same time, work-related benefits decline, particularly in the PCS, since the women most likely to transition into employment are those previously receiving unemployment benefits. Redistributive indicators generally improve across countries, suggesting modest but consistent gains in income equality and a reduction in poverty risk. However, cross-country differences remain: Italy and Romania display the strongest improvements, while France and Sweden show more limited effects, consistent with their already narrower GEG.

A policy-inspired simulation for Italy further explored the fiscal implications of existing measures supporting female employment, specifically, employer social insurance contribution (SIC) exemptions for hiring women in disadvantaged conditions. Even when accounting for the fiscal cost of these tax reliefs, results show a net improvement in government revenues, highlighting that policies targeting more vulnerable women can be both socially beneficial and fiscally sustainable. Sensitivity checks with reweighting confirm the validity of the main results. At the same time, when we take into account the 2030 population structure, results reveal that demographic ageing substantially modifies fiscal dynamics: although revenues continue to rise, largely through higher direct taxes, the increase in pension and health expenditures offsets part of the fiscal gains.

In summary, by illustrating the substantial cost of inaction, that is, the foregone fiscal and social benefits associated with maintaining current gender gaps in employment, our results confirm that increasing female employment not only contributes to greater gender equality and social inclusion, but can also generate positive fiscal returns, even when policies target more vulnerable women or involve employer-side incentives. Indeed, our analysis shows that, regardless of whether policies focus on women closest to or furthest from the labour market, expanding female employment consistently leads to net fiscal improvements. It also highlights that inaction carries a significant economic and social cost, reinforcing the case for proactive, gender-inclusive labour market policies. At the same time, our analysis does not identify which policy approach would be better for our selected countries: this is partly because we do not compare fiscal gains with distributive outcomes, and partly due to the limitations of our static framework, which captures overnight effects only and therefore cannot assess which type of policy (more competition-based or more redistributive) would perform better in the longer run. Lastly, our analysis highlights that demographic ageing and household composition critically shape the fiscal and distributive impacts of gender-focused employment policies.

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Appendix

Table A 1: Descriptive statistics of imputed and observed wages and working hours by country

Variable	Country	Category	Origin	Obs	Weight	Mean	Std. dev.	Min	Max
Wage	France	Female	Imputed	1,712	3229808	2003.632	818.2045	596.5417	9752.292
		Male	Imputed	1,077	2187711	2400.756	966.7116	702.8333	8432.042
		Female	Observed	6,896	11252666	2406.246	1442.699	0	9730
		Male	Observed	6,414	10930763	2942.638	1696.968	0	9867.5
		18-24	Imputed	379	711234.6	1688.016	419.9148	596.5417	3448.833
		25-49	Imputed	1,458	2950277	2056.433	782.9766	684.125	9752.292
		50-65	Imputed	952	1756008	2537.509	1077.322	885.6667	9269.458
		18-24	Observed	893	1620845	1203.957	906.4442	0	7229.167
		25-49	Observed	7,803	13795790	2709.196	1493.291	0	9781.667
		50-65	Observed	4,614	6766793	2943.054	1735.833	0	9867.5
		Primary	Imputed	206	434659	1782.92	495.484	823.3333	3457.917
		Lower secondary	Imputed	569	1126872	1782.228	512.8873	684.125	5663.375
		Upper secondary	Imputed	1,195	2239152	2065.681	671.2328	596.5417	8597.583
		Post secondary	Imputed	5	11364.38	2791.481	674.1992	1714.875	3718.708
		Tertiary	Imputed	644	1235891	3004.248	1170.868	909.7083	9752.292
		Primary	Observed	263	484533.8	1702.972	863.961	0	5856.667
		Lower secondary	Observed	1,288	2105140	1965.656	1079.767	0	7669.167
		Upper secondary	Observed	5,624	8889587	2196.337	1182.199	0	9734.167
		Post secondary	Observed	10	15466.86	1921.055	618.0313	500	2771.667
		Tertiary	Observed	5,797	10019869	3322.87	1792.512	0	9867.5
Working hours	France	Female	Imputed	1,716	3243521	34.58817	3.347943	19.95	46.65
		Male	Imputed	1,078	2191985	37.7875	3.137172	23.25	51.8
		Female	Observed	6,753	11042378	36.26434	7.302544	11	60
		Male	Observed	6,395	10920079	39.38109	6.765645	11	60
		18-24	Imputed	379	711234.6	36.0695	3.381031	24.6	45.75
		25-49	Imputed	1,461	2962318	35.7634	3.698104	19.95	48.55
		50-65	Imputed	954	1761953	35.99451	3.580293	22.55	51.8
		18-24	Observed	855	1552777	35.81554	6.15086	11	60
		25-49	Observed	7,722	13677035	38.09481	6.990507	11	60
		50-65	Observed	4,571	6732644	37.70458	7.78064	12	60
		Primary	Imputed	206	434659	33.8286	3.367475	23.55	42.1
		Lower secondary	Imputed	569	1126872	35.01729	3.541681	23.8	47.7
		Upper secondary	Imputed	1,196	2243426	35.78074	3.311551	24.7	45.8
		Post secondary	Imputed	5	11364.38	35.28401	2.073218	32.45	39.2
		Tertiary	Imputed	648	1249605	38.12078	3.177499	29.45	51.8
		Primary	Observed	249	459711.5	35.59296	6.629218	13	55
		Lower secondary	Observed	1,241	2025102	36.06839	6.955803	12	60

Upper secondary	Observed	5,510	8701818	36.78151	6.817603	11	60
Post secondary	Observed	9	14103.48	34.68991	6.495448	21	45
Tertiary	Observed	5,816	10095487	39.24303	7.306838	11	60

Variable	Country	Category	Origin	Obs	Weight	Mean	Std. dev.	Min	Max
Wage	Italy	Female	Imputed	3,640	5457271	1597.256	649.5567	242.2264	7421.394
		Male	Imputed	1,214	1820546	2017.058	757.1712	442.5139	7064.349
		Female	Observed	6,182	8281284	1848.281	1194.44	0	7598.724
		Male	Observed	6,763	10217470	2262.048	1348.142	0	7597.273
		18-24	Imputed	396	665275.3	1317.338	513.7009	413.8656	3427.517
		25-49	Imputed	2,188	3663639	1612.017	656.99	300.348	7421.394
		50-65	Imputed	2,270	2948903	1901.237	733.0886	242.2264	7162.507
		18-24	Observed	535	852751.2	1071.799	763.2847	0	5812.07
		25-49	Observed	7,122	10958274	1962.707	1224.685	0	7597.273
		50-65	Observed	5,288	6687728	2391.945	1370.821	0	7598.724
		Primary	Imputed	271	422078.9	1306.083	544.5286	242.2264	3630.867
		Lower secondary	Imputed	1,910	2981234	1535.735	597.4815	407.8978	5950.421
		Upper secondary	Imputed	1,972	2807522	1774.433	672.3236	300.348	6677.081
		Post secondary	Imputed	53	77383.02	1935.488	484.1858	729.2276	3494.091
		Tertiary	Imputed	568	820554.7	2380.265	750.1272	846.5659	7421.394
		Primary	Observed	174	249957.1	1610.509	927.3715	0	4592.436
		Lower secondary	Observed	2,875	4798151	1692.898	1034.343	0	7337.549
		Upper secondary	Observed	6,114	8116374	2035.26	1202.154	0	7565.936
Post secondary	Observed	239	442671.6	2377.893	1147.692	0	6607.121		
Tertiary	Observed	3,440	4688955	2575.747	1546.107	0	7598.724		

Variable	Country	Category	Origin	Obs	Weight	Mean	Std. dev.	Min	Max
Working hours	Italy	Female	Imputed	3,642	5458582	33.21164	2.523558	24.2	43.55
		Male	Imputed	1,215	1825054	37.97733	2.134706	28.95	46.6
		Female	Observed	6,108	8167462	33.18211	7.693026	18	50
		Male	Observed	6,754	10215029	38.27916	5.599565	18	50
		18-24	Imputed	396	665275.3	35.08556	3.660314	24.2	42.85
		25-49	Imputed	2,188	3663639	34.27509	3.160655	24.45	43.2
		50-65	Imputed	2,273	2954721	34.41476	3.09266	24.8	46.6
		18-24	Observed	523	846502.8	35.24487	7.293379	18	50
		25-49	Observed	7,061	10897525	36.12795	7.01246	18	50
		50-65	Observed	5,278	6638463	35.92643	7.156324	18	50
		Primary	Imputed	272	422821.1	33.79519	3.122527	24.2	42.7
		Lower secondary	Imputed	1,910	2981234	34.35057	3.25286	24.45	42.95
		Upper secondary	Imputed	1,973	2808090	34.45856	3.051582	24.8	44.75
		Post secondary	Imputed	53	77383.02	34.64347	2.836869	28.65	39.9
		Tertiary	Imputed	569	825062.6	34.51504	3.488649	24.55	46.6
		Primary	Observed	167	231866.6	38.3958	6.487327	18	50
		Lower secondary	Observed	2,812	4737729	36.64851	6.832501	18	50
		Upper secondary	Observed	6,052	8016678	36.13218	6.771002	18	50
Post secondary	Observed	238	450653.4	36.36647	6.694526	18	50		

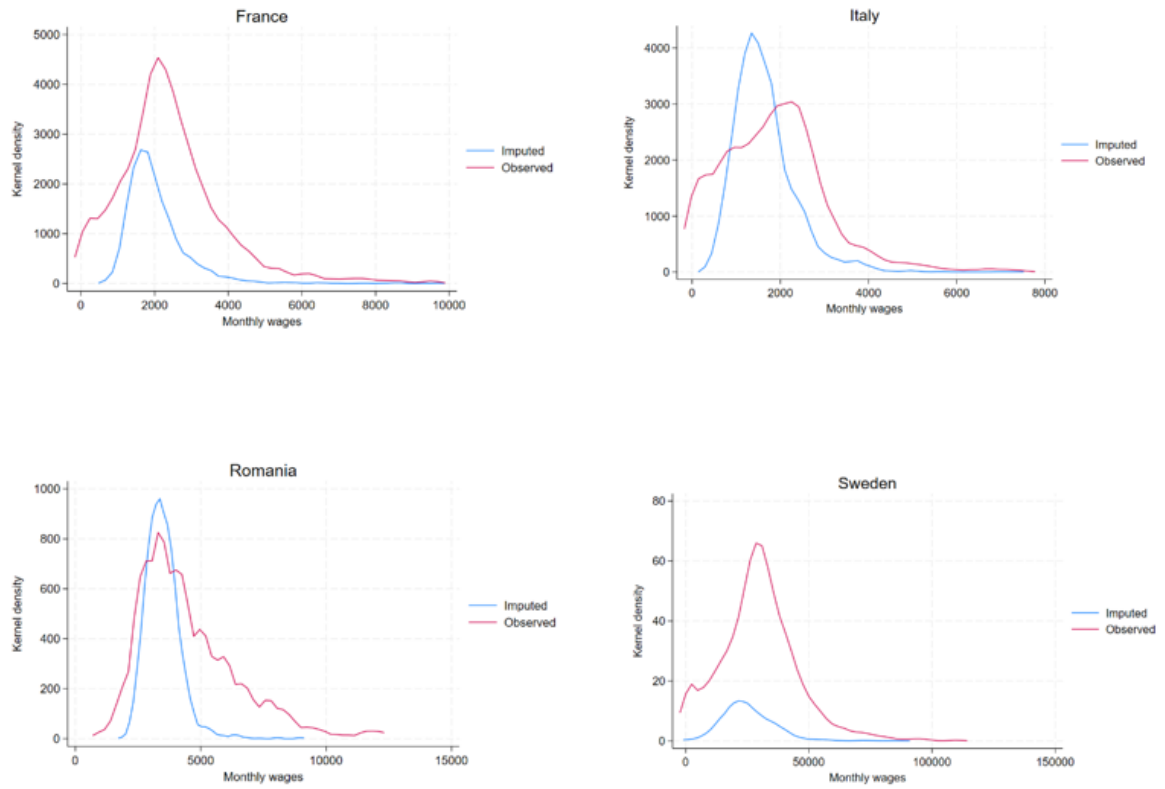
Variable	Country	Category	Origin	Obs	Weight	Mean	Std. dev.	Min	Max
		Tertiary	Observed	3,490	4742919	34.97517	7.772574	18	50
Wage	Romania	Female	Imputed	1,076	1336219	3468.801	681.787	1835.996	8984.903
		Male	Imputed	204	257839.4	3792.455	897.509	2227.381	8069.54
		Female	Observed	2,522	2861268	4511.525	1986.422	1043.833	11965.83
		Male	Observed	3,090	3579644	5058.267	2032.886	1063.333	11965.83
		18-24	Imputed	121	175571.5	3422.135	695.6192	2010.529	5633.406
		25-49	Imputed	692	982098.5	3502.224	715.3082	2038.546	8069.54
		50-65	Imputed	467	436388.8	3603.588	770.3262	1835.996	8984.903
		18-24	Observed	210	280397.9	3810.355	1834.853	1051.25	10906
		25-49	Observed	3,509	4441665	4925.538	2053.245	1043.833	11965.83
		50-65	Observed	1,893	1718849	4694.695	1948.742	1088.583	11965.83
		Primary	Imputed	67	97895.38	2935.232	348.2761	2303.879	3762.846
		Lower secondary	Imputed	430	552833.2	3151.583	472.3964	1835.996	4737.918
		Upper secondary	Imputed	671	801138.5	3698.571	537.4233	2010.529	6074.621
		Post secondary	Imputed	34	46829.12	4401.146	633.1856	3191.722	5661.941
		Tertiary	Imputed	35	44323.19	5784.989	1036.026	4303.914	8984.903
		Primary	Observed	24	25176.65	3186.71	791.9128	2077.75	5555.583
		Lower secondary	Observed	293	394682.4	3453.976	1341.982	1068.376	11965.83
		Upper secondary	Observed	3,543	3793337	4190.091	1508.043	1043.833	11965.81
Post secondary	Observed	376	460400.6	4918.585	1876.862	1385.167	11965.83		
Tertiary	Observed	1,374	1759735	6450.772	2198.952	1221.833	11965.83		
Working hours	Romania	Female	Imputed	1,045	1302140	40.6053	0.789954	39.4	45.4
		Male	Imputed	197	245192	40.78557	0.859512	39.45	44.4
		Female	Observed	2,551	2919841	40.3204	1.60386	40	52
		Male	Observed	3,087	3618419	40.69162	2.36743	40	52
		18-24	Imputed	116	166527.4	40.50019	0.767101	39.45	44.6
		25-49	Imputed	673	956627	40.57224	0.751059	39.4	45.4
		50-65	Imputed	453	424177.8	40.82532	0.896141	39.4	45.25
		18-24	Observed	229	317843.8	40.29689	1.57181	40	50
		25-49	Observed	3,521	4491810	40.55895	2.135166	40	52
		50-65	Observed	1,888	1728606	40.48192	1.972528	40	52
		Primary	Imputed	66	95735.23	40.69938	0.863159	39.8	43.8
		Lower secondary	Imputed	420	535855	40.62483	0.793581	39.4	45.4
		Upper secondary	Imputed	650	778233.5	40.60943	0.776226	39.4	45.25
		Post secondary	Imputed	31	43988.11	40.643	0.7781	39.9	42.3
		Tertiary	Imputed	32	42480.85	40.28498	0.405504	39.5	41.9
		Primary	Observed	24	25176.65	40.39499	1.947832	40	50
		Lower secondary	Observed	294	397219.9	40.74917	2.511441	40	52
		Upper secondary	Observed	3,525	3799180	40.66914	2.322821	40	52
Post secondary	Observed	384	470112.2	40.64893	2.24428	40	50		
Tertiary	Observed	1,409	1838991	40.15407	1.090011	40	50		

Variable	Country	Category	Origin	Obs	Weight	Mean	Std. dev.	Min	Max
Wage	Sweden	Female	Imputed	389	257663.6	24008.92	9606.605	1636.817	73238.81
		Male	Imputed	324	217508.1	29202.63	11831.58	4084.667	89711.56
		Female	Observed	4,131	1996748	29702.94	16017.58	0	111899.4
		Male	Observed	3,978	2155211	34964.85	18362.38	0	112416.5
		18-24	Imputed	139	61515.71	18913.89	7456.865	1636.817	37652.29
		25-49	Imputed	374	291587.6	25010.86	9408.96	1691.25	89711.56
		50-65	Imputed	200	122068.3	33437.61	12183.13	7903.35	88217.63
		18-24	Observed	618	330127.4	17278.42	11957.01	0	54633.75
		25-49	Observed	4,561	2489736	32060.14	16680.18	0	112416.5
		50-65	Observed	2,930	1332096	36889.64	17864.86	0	111899.4
		Primary	Imputed	66	52398.1	18672.55	5786.265	1636.817	32947.3
		Lower secondary	Imputed	130	97392.83	20055.14	7411.469	1691.25	39337.7
		Upper secondary	Imputed	235	142487.1	26964.91	8933.268	1636.817	89711.56
		Post secondary	Imputed	50	32475.22	30122.8	11164.71	8986.121	88217.63
		Tertiary	Imputed	200	130028.5	34400.86	10973.46	12288.15	82311.65
		Primary	Observed	106	82857.45	20710.46	12528	0	55222.08
		Lower secondary	Observed	549	393597.8	24990.87	14448.73	0	93871.75
		Upper secondary	Observed	2,997	1660407	30278.71	14621.09	0	104698.3
		Post secondary	Observed	589	271574.1	33351.64	18297.27	0	111690.4
Tertiary	Observed	3,767	1652723	37393.75	18995.08	0	112416.5		

Variable	Country	Category	Origin	Obs	Weight	Mean	Std. dev.	Min	Max
Working hours	Sweden	Female	Imputed	389	257663.6	37.77737	2.881734	28.75	49
		Male	Imputed	325	217839.6	40.2946	2.330822	32.55	52.25
		Female	Observed	4,071	1950627	38.37427	6.777586	10	65
		Male	Observed	3,957	2123696	40.69227	6.323988	10	65
		18-24	Imputed	139	61515.71	39.06114	2.994643	32.4	49
		25-49	Imputed	374	291587.6	38.95626	2.723577	29.65	52.25
		50-65	Imputed	201	122399.8	38.80376	3.325173	28.75	48.95
		18-24	Observed	597	316404.5	37.67686	8.087042	10	65
		25-49	Observed	4,502	2441148	39.95452	6.524832	10	65
		50-65	Observed	2,929	1316770	39.35071	6.393208	10	65
		Primary	Imputed	66	52398.1	37.71282	3.434432	29.6	45.05
		Lower secondary	Imputed	130	97392.83	37.96837	2.837164	31.05	48.95
		Upper secondary	Imputed	235	142487.1	39.43038	2.951448	28.75	52.25
		Post secondary	Imputed	50	32475.22	39.29181	2.827168	32.15	45.95
		Tertiary	Imputed	201	130360	39.798	2.13985	34.2	46.05
		Primary	Observed	102	78303.4	39.13188	6.760975	10	60
		Lower secondary	Observed	530	376566.7	38.76428	7.092143	10	65
		Upper secondary	Observed	2,929	1616343	39.03015	6.95152	10	65
		Post secondary	Observed	581	267251.3	39.75564	6.449226	10	61
Tertiary	Observed	3,794	1650971	40.28814	6.18184	10	65		

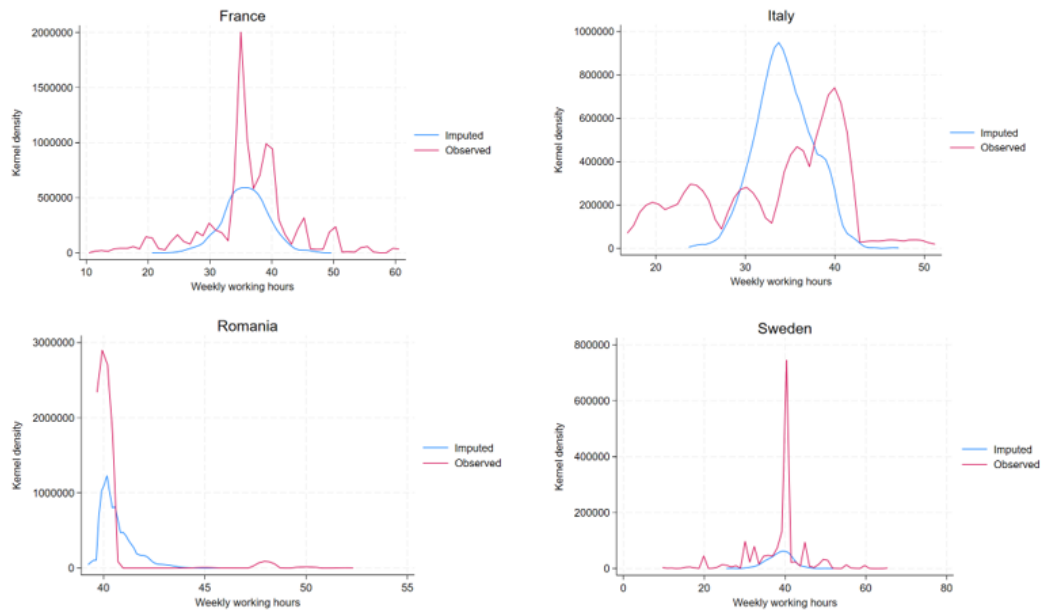
Source: Authors' elaboration on EU-SILC and Regional Eurostat Database.

Figure A 1: Kernel density distributions of imputed wages by country



Source: Authors' elaboration on EU-SILC data and Regional Eurostat Database.

Figure A 2: Kernel density distributions of imputed wages by country



Source: Authors' elaboration on EU-SILC data and Regional Eurostat Database.

Table A 1: Results for GEG narrowing to reach the EPSR target. Government revenues and expenditure, Pure competition and Rawlsian scenarios. Full table.

	Scenarios			Diff to baseline (%)		Scenarios			Diff to baseline (%)		Scenarios			Diff to baseline (%)		Scenarios			Diff to baseline (%)	
	Italy			Italy		France			France		Romania			Romania		Sweden			Sweden	
	Baseline	Pure competition	Rawlsian	Pure competition	Rawlsian	Baseline	Pure competition	Rawlsian	Pure competition	Rawlsian	Baseline	Pure competition	Rawlsian	Pure competition	Rawlsian	Baseline	Pure competition	Rawlsian	Pure competition	Rawlsian
Government revenues	497,612.90	516,712.88	506,249.68	3.84%	1.74%	737,668.93	745,274.16	741,290.87	1.03%	0.49%	294,043.75	300,275.11	297,408.64	2.12%	1.14%	1,594,991.99	#####	#####	1.04%	0.96%
Direct taxes	242,199.62	246,846.31	245,532.21	1.92%	1.38%	286,462.25	288,430.57	287,677.06	0.69%	0.42%	56,412.75	57,202.02	56,854.34	1.40%	0.78%	725,180.07	#####	#####	1.04%	0.95%
... income taxes	222,086.73	226,733.42	225,419.31	2.09%	1.50%	264,579.77	266,548.10	265,794.59	0.74%	0.46%	50,705.36	51,494.62	51,146.95	1.56%	0.87%	695,162.02	#####	#####	1.09%	0.99%
... wealth taxes	20,112.90	20,112.90	20,112.90	0.00%	0.00%	21,753.41	21,753.41	21,753.41	0.00%	0.00%	5,707.39	5,707.39	5,707.39	0.00%	0.00%	30,018.05	30,018.05	30,018.05	0.00%	0.00%
Social insurance contributions (SIC)	255,413.27	269,866.57	260,717.47	5.66%	2.08%	451,206.68	456,843.60	453,613.80	1.25%	0.53%	237,631.00	243,073.09	240,554.30	2.29%	1.23%	869,811.92	#####	#####	1.04%	0.96%
... employee social insurance	57,384.43	60,362.42	58,612.45	5.19%	2.14%	97,027.08	98,695.33	98,155.94	1.72%	1.16%	218,938.09	224,080.97	221,683.25	2.35%	1.25%	152,549.97	#####	#####	0.89%	0.85%

contributions																					
... self-employed social insurance contributions	20,233.08	19,797.54	20,233.08	-2.15%	0.00%	27,834.64	27,736.75	27,834.64	-0.35%	0.00%	3,087.95	3,060.43	3,087.95	-0.89%	0.00%	11,169.48	11,066.10	11,169.48	-0.93%	0.00%	
... employer social insurance contributions (not part of disposable income)	177,795.77	189,706.60	181,871.94	6.70%	2.29%	326,344.95	330,411.51	327,623.22	1.25%	0.39%	15,604.96	15,931.69	15,783.10	2.09%	1.14%	706,092.47	#####	##### ##	1.11%	1.01%	
Credited social insurance contributions (not part of disposable income)	0.00	0.00	0.00	0.00%	0.00%	0.00	0.00	0.00	0.00%	0.00%	17.87	15.65	17.87	-12.39%	0.00%	0.00	0.00	0.00	0.00%	0.00%	
Government	447,543.67	444,707.37	447,074.90	-0.63%	-0.10%	526,564.11	523,683.70	524,871.65	-0.55%	-0.32%	197,628.15	195,762.75	197,410.61	-0.94%	-0.11%	896,126.07	#####	##### ##	-0.10%	-0.12%	

expenditures																				
Benefits	447,543.67	444,707.37	447,074.90	-0.63%	-0.10%	526,564.11	523,683.70	524,871.65	-0.55%	-0.32%	197,628.15	195,762.75	197,410.61	-0.94%	-0.11%	896,126.07	#####	##### ##	-0.10%	-0.12%
... work-related benefits	74,407.04	71,997.85	74,407.04	-3.24%	0.00%	74,407.04	33,884.94	35,768.72	-5.38%	-0.12%	58.67	49.81	58.67	-15.10%	0.00%	39,944.54	40,346.89	40,863.90	1.01%	2.30%
... family and education benefits	25,742.87	25,625.37	25,697.82	-0.46%	-0.18%	25,697.82	35,119.90	35,306.50	-0.69%	-0.16%	18,233.81	16,796.88	18,233.81	-7.88%	0.00%	109,002.96	#####	##### ##	0.00%	0.00%
... social assistance and housing benefits	8,067.68	7,795.27	7,695.45	-3.38%	-4.61%	7,695.45	49,239.15	48,528.78	-1.32%	-2.75%	9,591.03	9,171.43	9,373.49	-4.37%	-2.27%	83,365.05	82,032.86	81,401.69	-1.60%	-2.36%
... pensions, health and disability benefits	339,326.08	339,288.88	339,274.59	-0.01%	-0.02%	339,274.59	405,439.72	405,267.66	-0.01%	-0.05%	169,744.64	169,744.64	169,744.64	0.00%	0.00%	663,813.51	#####	##### ##	0.00%	0.00%

Source: Authors' elaboration on EU-SILC data with EUROMOD.

Table A 2: Results for GEG narrowing to reach the EPSR target. Gini Index and S80/20, Pure competition and Rawlsian scenarios. Full table

	Gini					Gini					Gini					Gini				
	Italy		Italy			France		France			Romania		Romania			Sweden		Sweden		
	Scenarios		Diff to baseline (%)			Scenarios		Diff to baseline (%)			Scenarios		Diff to baseline (%)			Scenarios		Diff to baseline (%)		
	Baseline	Pure competition	Rawlsian	Pure competition	Rawlsian	Baseline	Pure competition	Rawlsian	Pure competition	Rawlsian	Baseline	Pure competition	Rawlsian	Pure competition	Rawlsian	Baseline	Pure competition	Rawlsian	Pure competition	Rawlsian
Original Income	0.5236	0.5119	0.5179	-0.01175	-0.00569	0.5454	0.5407	0.5392	-0.00471	-0.00622	0.5137	0.5050	0.5076	-0.00868	-0.00606	0.4739	0.4723	0.4720	-0.00163	-0.00188
Disposable Income	0.3102	0.3023	0.3077	-0.00794	-0.00255	0.2879	0.2858	0.2846	-0.00209	-0.00325	0.3198	0.3151	0.3164	-0.00464	-0.00333	0.2527	0.2522	0.2519	-0.00049	-0.00077
	S80/S20					S80/S20					S80/S20					S80/S20				
	Italy		Italy			France		France			Romania		Romania			Sweden		Sweden		
	Scenarios		Diff to baseline (%)			Scenarios		Diff to baseline (%)			Scenarios		Diff to baseline (%)			Scenarios		Diff to baseline (%)		
	Baseline	Pure competition	Rawlsian	Pure competition	Rawlsian	Baseline	Pure competition	Rawlsian	Pure competition	Rawlsian	Baseline	Pure competition	Rawlsian	Pure competition	Rawlsian	Baseline	Pure competition	Rawlsian	Pure competition	Rawlsian
Original Income	9.7768	9.4820	9.4104	-0.29479	-0.36637	12.2131	11.8996	11.3825	-0.31349	-0.83060	14.6383	14.4989	13.6828	-0.13938	-0.95546	9.1395	9.1298	9.0116	-0.00968	-0.12790
Disposable Income	5.1222	4.9172	5.0249	-0.20500	-0.09735	4.2127	4.1689	4.1199	-0.04385	-0.09289	5.6727	5.6168	5.5768	-0.05585	-0.09590	3.6348	3.6228	3.6141	-0.01203	-0.02072

Source: Authors' elaboration on EU-SILC data with EUROMOD.

Table A 3: Results for GEG narrowing to reach the EPSR target. AROP by sex, Pure competition and Rawlsian scenarios.

	AROP by sex					AROP by sex					AROP by sex					AROP by sex				
	Italy		Italy			France		France			Romania		Romania			Sweden		Sweden		
	Scenarios		Diff to baseline pp			Scenarios		Diff to baseline (pp)			Scenarios		Diff to baseline (pp)			Scenarios		Diff to baseline (pp)		
	Baseline	Pure competition	Rawlsian	Pure competition	Rawlsian	Baseline	Pure competition	Rawlsian	Pure competition	Rawlsian	Baseline	Pure competition	Rawlsian	Pure competition	Rawlsian	Baseline	Pure competition	Rawlsian	Pure competition	Rawlsian
Female	20.89 %	18.90%	20.03%	-1.99	-0.87	13.86 %	13.32%	13.05%	-0.54	-0.81	22.44 %	21.46%	21.82%	-0.99	-0.62	12.98%	12.64%	12.50%	-0.33	-0.48
Male	18.36 %	16.66%	17.36%	-1.70	-0.99	12.81 %	12.21%	12.11%	-0.60	-0.70	21.48 %	20.63%	20.96%	-0.85	-0.52	13.26%	12.96%	12.95%	-0.30	-0.31
All	19.66 %	17.81%	18.73%	-1.85	-0.93	13.36 %	12.79%	12.60%	-0.57	-0.76	21.97 %	21.05%	21.40%	-0.92	-0.57	13.12%	12.80%	12.73%	-0.32	-0.39

Source: Authors' elaboration on EU-SILC data with EUROMOD.

Table A 4: Results for GEG full closure. Government revenues and expenditure, Pure competition and Rawlsian scenarios. Full table.

	Scenarios					Scenarios					Scenarios					Scenarios				
	Diff to baseline (%)					Diff to baseline (%)					Diff to baseline (%)					Diff to baseline (%)				
	Italy		Italy			France		France			Romania		Romania			Sweden		Sweden		
	Baseline	Pure competition	Rawlsian	Pure competition	Rawlsian	Baseline	Pure competition	Rawlsian	Pure competition	Rawlsian	Baseline	Pure competition	Rawlsian	Pure competition	Rawlsian	Baseline	Pure competition	Rawlsian	Pure competition	Rawlsian
Government revenues	497,61 2.90	526,62 7.90	516,915.1 3	5.83 %	3.88%	737,6 68.93	750,59 6.68	746,043.2 9	1.75 %	1.14 %	294,04 3.75	306,45 5.18	304,262.9 1	4.22 %	3.48 %	1,594,99 1.99	##### ###	##### #	1.29 %	1.09 %
Direct taxes	242,19 9.62	248,16 2.07	246,076.4 7	2.46 %	1.60%	286,4 62.25	289,96 8.61	289,266.7 6	1.22 %	0.98 %	56,412. 75	57,915. 63	57,711.87	2.66 %	2.30 %	725,180. 07	##### ###	##### #	1.08 %	0.89 %
... income taxes	222,08 6.73	228,04 9.17	225,963.5 7	2.68 %	1.75%	264,5 79.77	268,08 6.14	267,384.2 9	1.33 %	1.06 %	50,705. 36	52,208. 24	52,004.48	2.96 %	2.56 %	695,162. 02	##### ###	##### #	1.13 %	0.93 %
... wealth taxes	20,112. 90	20,112. 90	20,112.90	0.00 %	0.00%	21,75 3.41	21,753. 41	21,753.41	0.00 %	0.00 %	5,707.3 9	5,707.3 9	5,707.39	0.00 %	0.00 %	30,018.0 5	30,018 .05	30,018.0 5	0.00 %	0.00 %
Social insurance contributions (SIC)	255,41 3.27	278,46 5.83	270,838.6 6	9.03 %	6.04%	451,2 06.68	460,62 8.07	456,776.5 3	2.09 %	1.23 %	237,63 1.00	248,53 9.54	246,551.0 4	4.59 %	3.75 %	869,811. 92	##### ###	##### #	1.46 %	1.25 %
... employee social insurance contributions	57,384. 43	62,248. 32	60,695.55	8.48 %	5.77%	97,02 7.08	100,07 4.10	99,506.18	3.14 %	2.56 %	218,93 8.09	229,22 4.20	227,317.8 9	4.70 %	3.83 %	152,549. 97	##### ###	##### #	1.30 %	1.11 %
... self-employed social insurance contributions	20,233. 08	19,496. 44	20,233.08	3.64 %	0.00%	27,83 4.64	27,717. 93	27,830.80	0.42 %	0.01 %	3,087.9 5	3,054.3 8	3,087.95	1.09 %	0.00 %	11,169.4 8	11,066 .10	11,169.4 8	0.93 %	0.00 %
... employer social insurance contributions (not part of disposable income)	177,79 5.77	196,72 1.07	189,910.0 3	10.6 %	6.81%	326,3 44.95	332,83 6.04	329,439.5 5	1.99 %	0.95 %	15,604. 96	16,260. 96	16,145.20	4.20 %	3.46 %	706,092. 47	##### ###	##### #	1.53 %	1.30 %
Credited social insurance contributions (not part of disposable income)	0.00	0.00	0.00	0.00 %	0.00%	0.00	0.00	0.00	0.00 %	0.00 %	17.87	15.65	17.87	12.3 9%	0.00 %	0.00	0.00	0.00	0.00 %	0.00 %
Government expenditures	447,54 3.67	443,12 9.68	445,925.5 1	- 0.99 %	-0.36%	526,5 64.11	520,66 8.07	522,583.1 7	- 1.12 %	- 0.76 %	197,62 8.15	195,64 6.28	196,834.8 8	- 1.00 %	- 0.40 %	896,126. 07	##### ###	##### #	- 0.50 %	- 0.51 %
Benefits	447,54 3.67	443,12 9.68	445,925.5 1	- 0.99 %	-0.36%	526,5 64.11	520,66 8.07	522,583.1 7	- 1.12 %	- 0.76 %	197,62 8.15	195,64 6.28	196,834.8 8	- 1.00 %	- 0.40 %	896,126. 07	##### ###	##### #	- 0.50 %	- 0.51 %
by target group																				
... work-related benefits	74,407. 04	70,878. 14	74,406.82	4.74 %	0.00%	35,81 1.42	32,040. 92	35,230.91	10.5 3%	1.62 %	58.67	49.81	58.67	15.1 0%	0.00 %	39,944.5 4	38,148 .78	38,303.8 8	4.50 %	4.11 %
... family and education benefits	25,742. 87	25,596. 98	25,902.29	0.57 %	0.62%	35,36 3.38	35,013. 70	35,159.12	0.99 %	0.58 %	18,233. 81	17,157. 36	18,266.90	5.90 %	0.18 %	109,002. 96	##### ###	##### #	0.00 %	0.00 %
... social assistance and housing benefits	8,067.6 8	7,496.7 8	6,432.14	7.08 %	-20.27%	49,89 9.01	48,283. 30	47,047.36	3.24 %	5.71 %	9,591.0 3	8,694.4 7	8,764.68	9.35 %	8.62 %	83,365.0 5	80,686 .50	80,464.8 4	3.21 %	3.48 %
... pensions, health and disability benefits	339,32 6.08	339,15 7.77	339,184.2 6	0.05 %	-0.04%	405,4 90.31	405,33 0.15	405,145.7 8	- 0.04 %	- 0.08 %	169,74 4.64	169,74 4.64	169,744.6 4	0.00 %	0.00 %	663,813. 51	##### ###	##### #	0.00 %	0.00 %

Source: Authors' elaboration on EU-SILC data with EUROMOD.

Table A 5: Results for GEG full closure. Gini Index and S80/20, Pure competition and Rawlsian scenarios. Full table.

	Gini					Gini					Gini					Gini				
	Italy		Italy			France		France			Romania		Romania			Sweden		Sweden		
	Scenarios		Diff to baseline (%)			Scenarios		Diff to baseline (%)			Scenarios		Diff to baseline (%)			Scenarios		Diff to baseline (%)		
	Baseline	Pure competition	Rawlsian	Pure competition	Rawlsian	Baseline	Pure competition	Rawlsian	Pure competition	Rawlsian	Baseline	Pure competition	Rawlsian	Pure competition	Rawlsian	Baseline	Pure competition	Rawlsian	Pure competition	Rawlsian
Original Income	0.5236	0.5014	0.4997	-0.02218	-0.02395	0.5454	0.5358	0.5326	-0.00968	-0.01288	0.5137	0.4954	0.4943	-0.01831	-0.01941	0.4739	0.4695	0.4696	-0.00443	-0.00433
Disposable Income	0.3102	0.2966	0.2942	-0.01363	-0.01601	0.2879	0.2838	0.2815	-0.00410	-0.00635	0.3198	0.3093	0.3085	-0.01048	-0.01130	0.2527	0.2510	0.2509	-0.00169	-0.00176
	S80/S20					S80/S20					S80/S20					S80/S20				
	Italy		Italy			France		France			Romania		Romania			Sweden		Sweden		
	Scenarios		Diff to baseline (%)			Scenarios		Diff to baseline (%)			Scenarios		Diff to baseline (%)			Scenarios		Diff to baseline (%)		
	Baseline	Pure competition	Rawlsian	Pure competition	Rawlsian	Baseline	Pure competition	Rawlsian	Pure competition	Rawlsian	Baseline	Pure competition	Rawlsian	Pure competition	Rawlsian	Baseline	Pure competition	Rawlsian	Pure competition	Rawlsian
Original Income	9.7768	9.1205	8.4272	-0.65630	-1.34965	12.2131	11.4113	10.6307	-0.80184	-1.58244	14.6383	13.3439	11.4854	-1.29433	-3.15282	9.1395	9.0695	8.9083	-0.06998	-0.23119
Disposable Income	5.1222	4.7714	4.6502	-0.35089	-0.47200	4.2127	4.1076	4.0268	-0.10513	-0.18595	5.6727	5.4204	5.2318	-0.25234	-0.44088	3.6348	3.5957	3.5935	-0.03912	-0.04135

Source: Authors' elaboration on EU-SILC data with EUROMOD.

Table A 6: Results for GEG full closure. AROP by sex, Pure competition and Rawlsian scenarios.

	AROP by sex					AROP by sex					AROP by sex					AROP by sex				
	Italy					France					Romania					Sweden				
	Scenarios					Scenarios					Scenarios					Scenarios				
	Diff to baseline (%)					Diff to baseline (pp)					Diff to baseline (pp)					Diff to baseline (pp)				
	Baseli ne	Pure competiti on	Rawlsi an	Pure competiti on	Rawlsi an	Baseli ne	Pure competition	Rawlsi an	Pure competiti on	Rawlsi an	Baseli ne	Pure competition	Rawlsi an	Pure competiti on	Rawlsi an	Baseli ne	Pure competition	Rawlsi an	Pure competiti on	Rawlsi an
Femal e	20.89%	17.19%	17.0%	-3.70	-3.89	13.86 %	12.52%	12.10%	-1.34	-1.76	22.44 %	20.24%	19.21%	-2.20	-3.23	12.98 %	12.33%	12.15%	-0.65	-0.83
Male	18.36%	15.38%	15.04%	-2.97	-3.31	12.81 %	11.58%	11.38%	-1.23	-1.43	21.48 %	19.78%	18.70%	-1.71	-2.78	13.26 %	12.71%	12.85%	-0.55	-0.41
All	19.66%	16.31%	16.05%	-3.35	-3.61	13.36 %	12.07%	11.75%	-1.29	-1.60	21.97 %	20.01%	18.96%	-1.96	-3.01	13.12 %	12.52%	12.50%	-0.60	-0.62

Source: Authors' elaboration on EU-SILC data with EUROMOD.



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