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# **Fiscal Policy and Labor Market Outcomes in Europe: Are the Balkans Different?**

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**Fiscal Policy and Labor Market Outcomes in Europe: Are the Balkans Different?**

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**Abstract**

The macroeconomic effects of fiscal policy are central to both research and policymaking, yet relatively little is known about how fiscal shocks impact men and women differently across diverse labor market and institutional contexts. This paper provides the first comparative analysis of gender-specific responses to exogenous fiscal shocks in the Balkans relative to the rest of Europe. Using a cross-country panel dataset and the local projection method, we trace the dynamic effects of fiscal expansions and contractions on labor force participation, employment, and wage outcomes. The results reveal substantial regional variation and pronounced gender asymmetries. Expansionary fiscal shocks lead to modest and delayed improvements in female labor market outcomes in the Balkans, whereas effects in other European countries are stronger and more immediate. Conversely, contractionary shocks disproportionately reduce female employment, especially during downturns, with greater volatility observed in Balkan economies. These patterns reflect differences in sectoral employment composition, care infrastructure, and public service provision. Overall, the findings suggest that fiscal policy operates within structurally gendered labor markets, highlighting important implications for macroeconomic stabilization and labor market resilience in transitional economies.

JEL Classification Numbers: C32; E62; H20; H50; F63; J16; J21; O15

Keywords: Fiscal policy; gender; labor-market outcomes; Balkans; Europe

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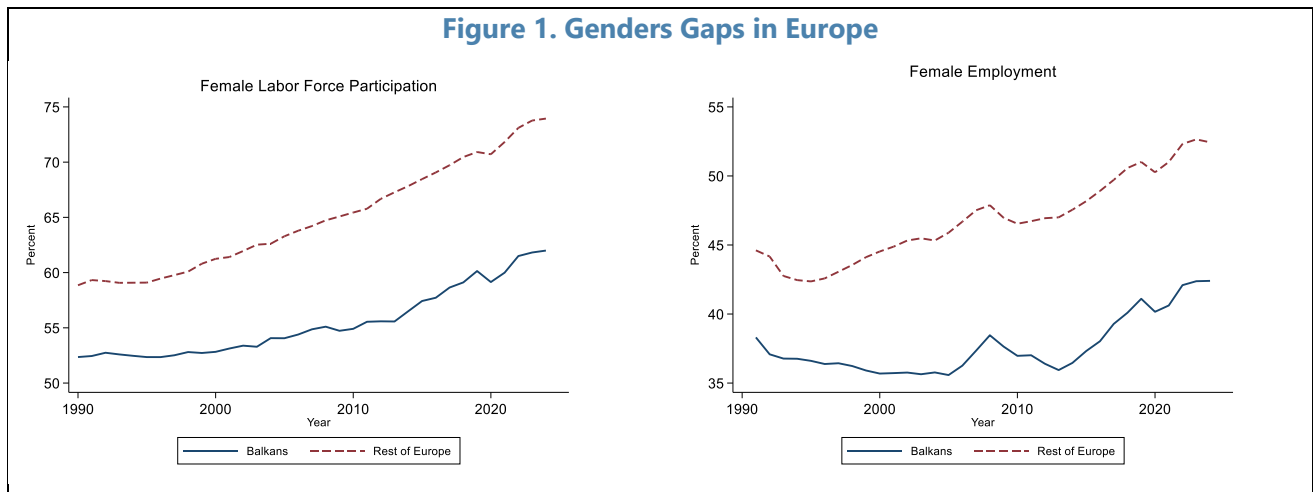
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## I. INTRODUCTION

The macroeconomic effects of fiscal policy remain central to both research and policymaking, particularly in Europe, where repeated cycles of stimulus and consolidation have profoundly reshaped public finances and labor markets over the past two decades. While a substantial literature examines the aggregate consequences of government spending and taxation, far less attention has been paid to the distributional dimension of fiscal policy—specifically, how fiscal shocks affect men and women differently across diverse institutional environments. Understanding these gender-differentiated responses is important not only for equity considerations but also for assessing the broader effectiveness of macroeconomic stabilization policies.

This gap is increasingly consequential. A growing body of work shows that macroeconomic policies interact with gendered labor market structures, household responsibilities, sectoral employment patterns, and welfare institutions in ways that can amplify—or mitigate—existing inequalities. Importantly, fiscal policy does not operate in isolation: its effects unfold within pre-existing structural and institutional settings that shape how men and women adjust to macroeconomic shocks. As a result, even when fiscal interventions have similar aggregate effects, their transmission across genders may differ systematically across countries. These differences are particularly salient when comparing the Balkans with the rest of Europe. The two regions diverge sharply in economic development, labor market informality, social norms, employment composition, labor market flexibility, and the scope and effectiveness of social protection systems. Such heterogeneity suggests that the same fiscal shock may produce different outcomes for men and women, making a comparative approach both useful and necessary.

Emerging evidence points to several channels through which fiscal policy can generate gender-differentiated effects. In many Balkan economies, high informality, weaker social insurance systems, limited childcare provision, and narrow active labor market programs heighten women’s exposure to macroeconomic shocks. Women in these contexts are disproportionately



concentrated in low-wage and informal employment, experience more discontinuous labor force attachment due to unpaid care responsibilities, and rely heavily on public services. In contrast, much of the rest of Europe benefits from broader childcare coverage, stronger social safety nets, and more formalized labor markets, which may cushion gender-specific responses to fiscal interventions. These institutional contrasts imply that even identical fiscal impulses can yield markedly different outcomes across regions.

Against this backdrop, this paper provides the first systematic cross-country analysis of the gender-specific effects of exogenous fiscal shocks in the Balkans relative to the rest of Europe. We construct a comprehensive panel of European economies and examine the dynamic responses of labor force participation, total employment, and wage employment to fiscal shocks. Fiscal shocks are identified using two complementary approaches based on large discretionary changes in the cyclically adjusted primary balance (CAPB), isolating policy interventions unlikely to reflect routine cyclical fluctuations: (i) episodes in which the CAPB deteriorates (or improves) by more than one standard deviation from the country-specific mean, and (ii) episodes exceeding a fixed threshold of  $\pm 1.5$  percent of GDP in the CAPB. To trace dynamic adjustments, we employ the local projection (LP) method, which flexibly estimates impulse responses in a panel setting while accommodating heterogeneous transmission dynamics across countries.

Beyond average effects, we explore nonlinearities along two key dimensions: the state of the economy at the time of the shock and the level of public debt as a proxy for fiscal space. This framework enables us to assess whether gender-differentiated responses vary systematically between recessions and expansions, and across high- and low-debt environments. Incorporating these contingencies provides a richer understanding of how macroeconomic conditions and fiscal constraints shape gendered labor market outcomes, particularly in transitional Balkan economies.

Our empirical findings reveal substantial regional heterogeneity and pronounced gender asymmetries. Expansionary fiscal shocks do not uniformly translate into improved female labor market outcomes. In the Balkans, stimulus episodes yield stronger and earlier gains for men, particularly in employment and wage employment, while women's responses are slower and more muted. Female labor force participation adjusts gradually, and formal employment improvements emerge with a lag, reflecting structural rigidities and care-related constraints that limit short-term responsiveness. By contrast, in the rest of Europe, gender responses are more synchronized, and in some cases, women benefit proportionally more from expansionary shocks.

Contractionary shocks display notable state dependence. Negative effects on female employment are most pronounced when consolidations occur during downturns, with larger and more persistent responses in Balkan economies. Outside the Balkans, consolidation also reduces female employment, though with smaller magnitude and persistence. Across regions, adjustment operates primarily through employment rather than labor force withdrawal, suggesting that fiscal

tightening mainly limits job opportunities rather than causing sustained exits from the labor market.

Nonlinear estimates reinforce these patterns. Contractionary shocks during recessions generate substantially stronger and more persistent declines in female employment than consolidations implemented in expansions. Differences across debt regimes are more modest but indicate that fiscal space conditions the intensity of labor market adjustment. These state-dependent effects appear largely through employment margins rather than participation. Extensive robustness checks confirm that the results are not sensitive to alternative definitions of fiscal shocks. Employing stricter thresholds lowers estimated magnitudes—reflecting the reduced frequency of large discretionary interventions—but preserves the qualitative patterns of regional heterogeneity, gender asymmetry, and state dependence.

We trace these gender disparities to structural factors and mechanisms. Women's concentration in public-facing and service-oriented sectors in the Balkans increases exposure to expenditure-based consolidations. Limited childcare and eldercare infrastructure constrains responsiveness to expansionary demand. Weak active labor market policies, high informality, and narrow social protection coverage amplify the transmission of fiscal shocks. As a result, identical policy interventions can generate systematically different outcomes depending on institutional capacity, welfare state depth, and labor market structure.

These findings carry important implications for macroeconomic stabilization and labor market resilience. Fiscal policy does not operate in a gender-neutral environment, and even relatively short-lived and moderate effects can generate meaningful differences in labor market outcomes across genders. From a welfare perspective, gender-differentiated responses are not necessarily undesirable per se—for example, increases in female employment following fiscal expansions may reflect welfare-improving adjustments. However, persistent asymmetries may signal underlying constraints that limit equal access to economic opportunities. More broadly, the results underscore that structural and institutional conditions shape how fiscal policy transmits across the labor market. By systematically comparing the Balkans with the rest of Europe, this study contributes to the literature on fiscal multipliers while extending it to a gender-disaggregated framework, highlighting the macroeconomic relevance of labor market composition in shaping policy transmission.

The remainder of the paper is organized as follows. Section II outlines the conceptual framework linking fiscal shocks to gendered labor market outcomes. Section III reviews the relevant literature. Section IV describes the data and presents stylized facts on gender differences in labor market outcomes. Section V details the econometric strategy and presents the empirical results. Section VI concludes with policy implications.

## II. CONCEPTUAL FRAMEWORK

Fiscal policy shapes gender outcomes through multiple, interconnected channels operating at sectoral, individual, and household levels. These mechanisms jointly determine how expansionary and contractionary shocks propagate through labor markets and can generate systematically different responses for men and women across institutional settings.

On the demand side, the sectoral composition of employment plays a central role. Women are disproportionately concentrated in public-facing and care-intensive sectors—such as education, health, and public administration—where government spending constitutes a significant share of aggregate demand. Increases in public expenditure in these sectors can therefore produce relatively larger employment and wage gains for women, whereas expenditure-based consolidations may trigger asymmetric contractionary effects. In economies where women constitute a substantial portion of the public sector workforce, these sectoral linkages can magnify gender-differentiated transmission of fiscal shocks.

At the microeconomic level, fiscal policy influences labor supply decisions and household income allocation. Differences in earnings potential, career continuity, and caregiving responsibilities mean that women's labor supply is often more responsive to changes in net household income than men's. Adjustments to marginal income taxes, social contributions, or employment-contingent transfers may therefore induce disproportionately large participation responses among women. Reductions in effective tax burdens or expansions of in-work benefits can strengthen female labor market attachment, while tax increases or cuts to family-related transfers may discourage participation—particularly in contexts where childcare costs are high and formal employment opportunities are limited.

Household dynamics further condition these effects. The incidence of fiscal transfers depends on intra-household bargaining power, shaped by relative earnings, social norms, and control over resources. Policies that enhance women's direct access to income—such as individualized taxation or targeted transfers—can reinforce labor supply incentives and increase economic autonomy. Conversely, reductions in publicly provided services, particularly childcare, health, and long-term care, can raise unpaid care burdens and constrain women's market participation.

Public investment in social infrastructure—including childcare, early childhood education, long-term care, and health services—tends to generate disproportionately large employment and welfare gains for women by alleviating time constraints associated with unpaid work. Fiscal consolidations, however, often involve cuts to precisely these programs, potentially widening gender gaps both directly, through reductions in public sector employment, and indirectly, through increased unpaid care responsibilities. The magnitude of these effects is often state dependent, intensifying during downturns when labor demand is weak and household buffers are limited. These dynamics may be particularly pronounced in institutional settings where private care alternatives are scarce or unaffordable.

Taken together, this framework implies that fiscal policy is unlikely to be gender neutral. The magnitude and direction of gender-differentiated responses depend on sectoral employment patterns, heterogeneous labor supply elasticities, intra-household bargaining arrangements, and the availability of social infrastructure. Because these structural characteristics vary considerably across European regions, they provide a natural setting to examine how institutional context shapes the gendered transmission of fiscal shocks. The empirical analysis that follows tests these mechanisms by estimating the dynamic responses of gender-disaggregated labor market outcomes to exogenous fiscal interventions across heterogeneous European economies.

### III. RELEVANT LITERATURE

Recent empirical research demonstrates that fiscal policy does not operate in a gender-neutral environment. Rather, its macroeconomic effects are mediated by gender-segmented labor markets, intra-household allocation mechanisms, and institutional settings that generate asymmetric employment and welfare outcomes for men and women. Fiscal shocks—whether arising from changes in government spending or taxation—therefore propagate through economies in ways that reflect and often amplify pre-existing structural inequalities.

A growing body of evidence shows that aggregate fiscal policy shocks produce gender-differentiated labor market responses that vary over the business cycle. Using data for G7 economies, Akitoby et al. (2019) find that fiscal expansions implemented during recessions tend to narrow gender employment gaps by boosting female employment more than male employment, whereas fiscal contractions during downturns widen these gaps. Evidence from Europe points in a similar direction: post-crisis fiscal consolidations disproportionately reduced women’s employment, reflecting their greater exposure to labor market segments sensitive to public spending adjustments (Kushi and McManus, 2018; Cirillo, 2024). In a broad cross-country setting, Jalles et al. (2026) document systematic gender asymmetries in labor-market responses to exogenous fiscal shocks, showing that consolidations tend to depress women’s employment and earnings more strongly, while expansionary episodes often generate uneven gender gains—particularly in economies characterized by weaker institutions and higher informality.

Beyond cyclical conditions, structural and institutional features play a central role in shaping the gendered transmission of fiscal policy. A substantial empirical literature highlights the importance of childcare availability, parental-leave provisions, and tax-benefit design in determining women’s labor-market responses to macroeconomic shocks (Jaumotte, 2003; Kleven et al., 2019; OECD, 2017). Fiscal frameworks that lower effective marginal tax rates on secondary earners and expand access to social protection tend to strengthen female labor supply and employment resilience. Conversely, systems that impose high tax burdens on secondary earners or provide limited family support can discourage female participation and widen gender gaps during periods of fiscal tightening (Fabrizio et al., 2020; Coelho et al., 2022). Sectoral and labor-market structures further amplify these asymmetries: women’s concentration in public-linked and

service sectors increases their exposure to expenditure adjustments, while higher informality and occupational segregation restrict adjustment margins during downturns (Rubery and Rafferty, 2013; Klasen, 2019; ILO, 2020). More broadly, gender-differentiated labor market responses have been documented across a range of macroeconomic shocks; for example, the COVID-19 pandemic generated disproportionately adverse effects on female employment and participation (Bluedorn et al., 2023), underscoring the role of similar structural and institutional factors in shaping these outcomes.

Household dynamics constitute an additional transmission channel. Reductions in social programs and publicly provided services tend to increase unpaid care responsibilities, which disproportionately fall on women (Elson, 2010). Evidence from collective household models shows that the intra-household allocation of resources depends critically on bargaining power, itself shaped by relative earnings, asset ownership, and prevailing gender norms (Lundberg and Pollak, 1993; Browning et al., 2014). Consequently, fiscal transfers may yield unequal welfare gains across gender when women have weaker fallback positions. Micro-level evidence reinforces this mechanism: transfers directed to mothers are more likely to be spent on children’s health and education than those directed to fathers (Duflo, 2003). Lifecycle dynamics further magnify these disparities, as childbirth is associated with persistent penalties in women’s earnings and labor supply, while men’s trajectories remain largely unaffected (Kleven et al., 2019).

Despite extensive documentation of these structural channels, systematic cross-country evidence remains limited for the Balkans relative to the rest of Europe. Existing regional studies document persistent gender gaps in labor market outcomes in Balkan economies (Atoyán and Rahman, 2017; World Bank, 2024), but it remains unclear whether fiscal expansions in the region generate weaker employment gains for women, whether consolidation episodes disproportionately erode their labor market attachment, and through which mechanisms these asymmetries operate. This paper addresses this gap by providing the first comparative analysis of gender-specific responses to exogenous fiscal shocks in the Balkans versus the broader European context. In doing so, it contributes to a more nuanced understanding of how institutional capacity, sectoral composition, and social norms condition the gendered transmission of fiscal policy.

#### **IV. DATA OVERVIEW AND STYLIZED FACTS**

We construct an annual panel dataset covering 33 European countries over the period 1990–2024 to facilitate a systematic comparison between the Balkans and the broader European context. In the absence of a universally accepted geographic definition of the Balkans, we adopt a widely used classification of the Balkan Peninsula, including Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Greece, Kosovo, Montenegro, North Macedonia, Romania, Serbia, and Slovenia.<sup>2</sup> This delineation captures economies that share important historical legacies, transition

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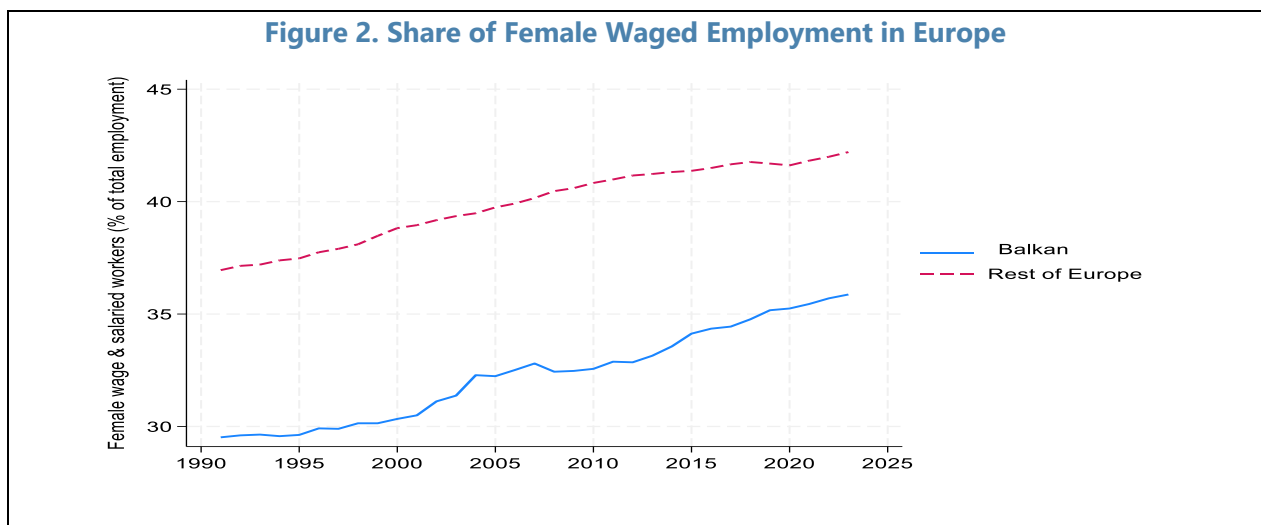
<sup>2</sup> The estimated effects remain qualitatively similar when the Balkan group is redefined to exclude relatively advanced economies such as Greece.

experiences, and institutional features, while still encompassing substantial heterogeneity in income levels and fiscal capacity.

Our dependent variables capture three key dimensions of women’s economic participation: (i) the female labor force participation rate, (ii) the female employment rate, and (iii) the share of female waged employment. Following Jalles et al. (2026), the latter serves as a proxy for job quality and formalization, particularly in settings where consistent cross-country wage data are unavailable. These gender-disaggregated labor market indicators are harmonized across countries and over time using standardized international sources, primarily the International Labor Organization and the World Bank. Focusing on gender-specific outcomes allows for a granular assessment of how macro-fiscal shocks propagate through labor markets characterized by sectoral segregation, unequal caregiving burdens, varying degrees of informality, and differences in social protection coverage.

Descriptive patterns in the dataset highlight structural features of women’s employment that are likely to shape fiscal transmission. Beyond lower overall participation, women in the Balkans are less likely to hold paid wage and salaried positions. The share of female waged employment—our proxy for job quality and formalization—is systematically below that observed in the rest of Europe, indicating greater concentration in informal, self-employed, or otherwise less protected forms of work. As a result, women in the region may be more exposed to fiscal consolidations affecting public employment and social spending, and less likely to benefit from expansions targeting formal labor demand (Figure 2).

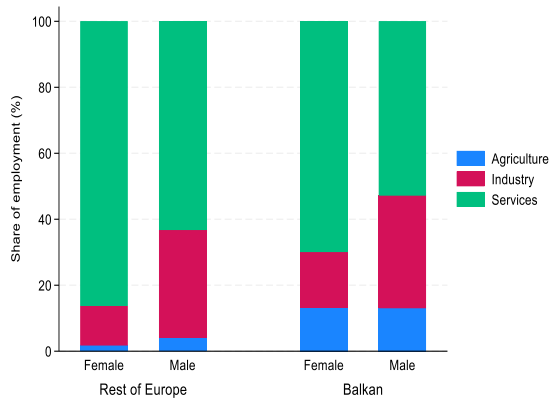
Sectoral composition further reinforces these vulnerabilities. Female employment in the Balkans is heavily concentrated in services, while participation in industry remains comparatively limited relative to both men and women in non-Balkan Europe. This pattern is particularly relevant for fiscal transmission because government spending and consolidation disproportionately affect service activities—such as education, health, and public administration—where women are



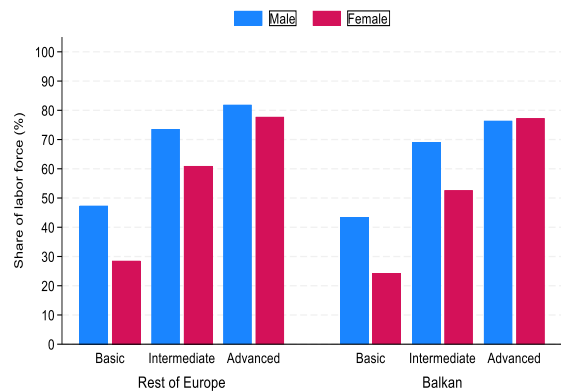
overrepresented (Figure 3). Importantly, these gaps are only partly explained by human capital differences: while women in the Balkans have educational attainment broadly comparable to men and to women elsewhere in Europe, labor-force participation disparities persist—particularly at basic and intermediate education levels. At advanced education levels, women in the Balkans participate in the labor force at rates broadly comparable to women elsewhere in Europe, suggesting that educational attainment alone does not account for the observed disparities and that institutional and structural constraints remain the primary binding factors (Figure 4). Additional gender disparities are evident in the prevalence of part-time employment (Figure 5) and self-employment (Figure 6), further distinguishing Balkan countries from the rest of Europe.

Together, these patterns suggest that women’s capacity to adjust to fiscal shocks through changes in hours worked, contract type, or employment form is more constrained in the Balkans. Overall, the stylized facts point to gender disparities in the region being driven primarily by differences in job quality, sectoral exposure, and institutional constraints rather than by gaps in educational attainment. These features provide a strong motivation for the empirical analysis of gender-specific responses to exogenous fiscal policy shocks presented in the following sections.

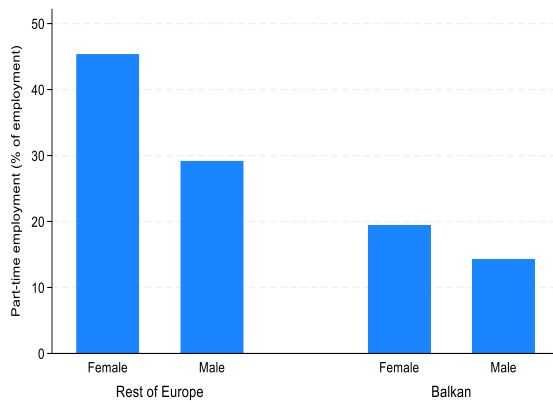
**Figure 3. Sectoral Employment by Gender**



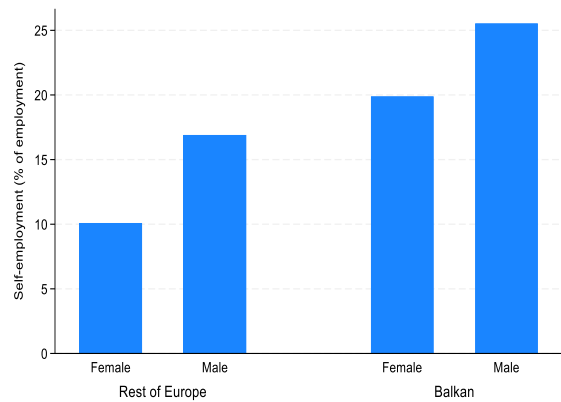
**Figure 4. Educational Attainment by Gender**



**Figure 5. Part-Time Work by Gender**



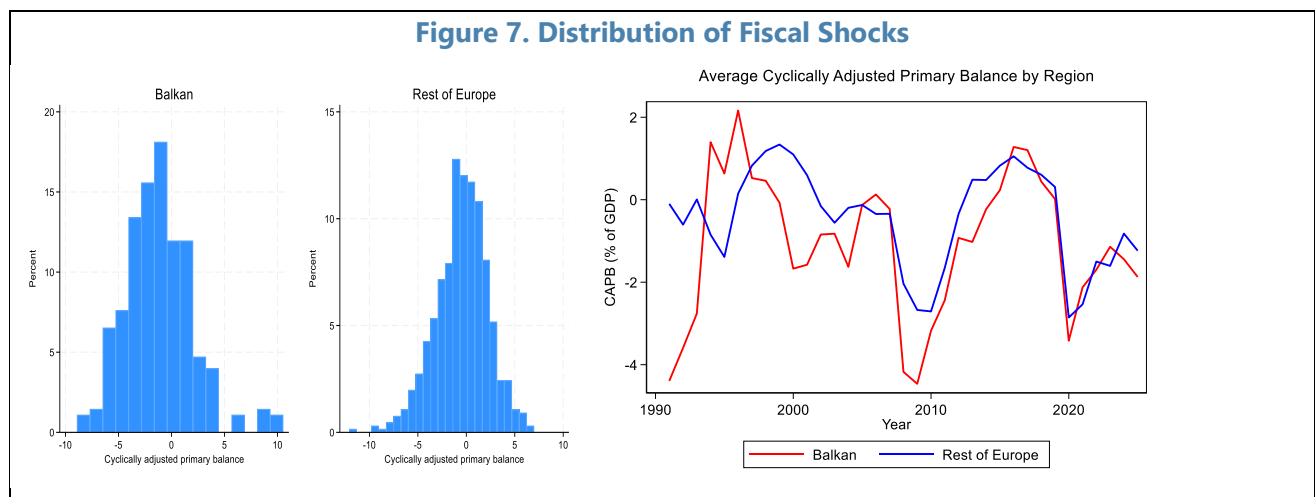
**Figure 6. Self-Employment by Gender**



The panel structure enables us to exploit both cross-country and time-series variation, facilitating the estimation of short- and medium-term dynamic responses to fiscal shocks. It also allows for a systematic examination of heterogeneity across institutional environments, labor market rigidities, fiscal policy frameworks, and demographic structures, thereby providing a comprehensive foundation for assessing the gendered transmission of macroeconomic policy across Europe and the Balkans.

Our primary explanatory variable is the fiscal policy stance, proxied by the CAPB as a share of GDP. This measure captures discretionary fiscal effort while abstracting from interest payments, which largely reflect past borrowing decisions. The CAPB exhibits substantial cross-country and intertemporal variation (Figure 7), reflecting episodes of fiscal expansion, consolidation, crisis response, and institutional reform, thereby providing a natural basis for identifying exogenous shifts in fiscal policy.

Ideally, fiscal shocks would be identified using the narrative approach pioneered by Romer and Romer (2010), which relies on contemporaneous policy documentation to isolate exogenous fiscal actions. However, archival limitations, inconsistent reporting, and incomplete records preclude construction of a comparable narrative shock series across Balkan countries. In the absence of comprehensive narrative data, we therefore adopt a widely used quantitative identification strategy following Alesina and Ardagna (2010), Jordà and Taylor (2016), Alesina et al. (2017), and Cevik and Miryugin (2025). Fiscal expansions (consolidations) are defined as episodes in which the CAPB deteriorates (improves) by more than one standard deviation from the country-specific mean, or as sustained two-year episodes in which the cumulative change exceeds 1.5 standard deviations and each annual change exceeds 0.5 standard deviations. As a robustness check, we also define expansions and consolidations using a fixed threshold of  $\pm 1.5$  percent of GDP in the CAPB. These approaches are designed to capture economically meaningful and plausibly discretionary interventions while filtering out minor fluctuations driven by automatic stabilizers.



Beyond baseline identification, we explore state-dependent nonlinearities in the transmission of fiscal shocks. First, we allow the effects of fiscal interventions to vary over the business cycle, distinguishing between expansionary and recessionary regimes. Second, we interact fiscal shocks with the level of public debt as a proxy for fiscal space, recognizing that financing constraints may attenuate or amplify policy transmission. These extensions enable us to assess whether women's labor force participation, employment, and job quality respond differently to fiscal expansions and consolidations depending on prevailing macroeconomic conditions.

To mitigate omitted-variable bias, the empirical specification incorporates a comprehensive set of controls capturing economic, demographic, social, and institutional characteristics. These include real GDP per capita, trade openness, total population, urbanization, educational attainment, and an index of government stability drawn from the International Country Risk Guide (ICRG). Collectively, these covariates account for structural features, cyclical conditions, and institutional quality that may influence labor market dynamics and the gender-specific effects of fiscal policy.

Table 1 reports summary statistics for all variables. The descriptive evidence indicates substantial cross-country and temporal heterogeneity across both macroeconomic and labor market indicators. For instance, the primary fiscal balance ranges from deficits exceeding 12 percent of GDP to surpluses above 10 percent, while female labor force participation varies from below 31 percent in some Balkan economies during early transition to above 82 percent in advanced European countries. These differences reflect structural disparities, institutional variation, and gradual convergence over time, underscoring the importance of accounting for heterogeneity in the empirical analysis.

**Table 1. Descriptive Statistics**

	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>	<b>Obs</b>
Female labor force participation (percent)	61.931	9.909	31.430	82.235	1120
Female employment (percent)	43.961	8.341	23.427	60.580	1088
Share of waged female workers (percent)	37.517	6.668	13.021	47.550	1056
CAPB (percent of GDP)	-0.675	2.870	-12.084	10.535	933
Real GDP growth	2.410	4.920	-32.119	54.199	1111
GDP per capita (constant 2015 US\$)	23834.846	20530.334	705.207	112417.877	1125
Public Debt (percent of GDP)	4.715	2.497	-1.394	11.066	1033
Population	15.592	1.343	12.778	18.241	1155
Trade openness (percent of GDP)	107.214	54.396	12.574	412.177	1094
Share of urban population (percent)	67.354	13.387	35.897	95.655	1155
Years of schooling	10.682	2.047	2.620	14.710	1114
Government stability index	7.463	1.624	2.000	11.000	982

The combination of a long time dimension, gender-disaggregated labor market indicators, and a rich set of control variables permits a rigorous evaluation of heterogeneous transmission mechanisms. In particular, the panel structure facilitates a comparative analysis between Balkan economies—where labor market rigidities, higher informality, and unequal care responsibilities may magnify gender disparities—and the broader European context. Exploiting both cross-sectional and temporal variation strengthens identification and allows us to disentangle structural differences from cyclical dynamics.

By leveraging this variation, the dataset provides novel evidence on how fiscal policy shapes gender-differentiated labor market outcomes across diverse institutional settings. The analysis contributes to a deeper understanding of the interaction between macro-fiscal policy and labor market structure, with implications for the design of stabilization strategies that account for distributional and gender-specific transmission channels.

## **V. EMPIRICAL STRATEGY**

The complex and potentially asymmetric dynamic effects of fiscal policy shocks on gender-differentiated labor market outcomes are unlikely to be fully captured by conventional static or linear estimation techniques. Fiscal interventions typically exhibit persistence, propagating gradually through multiple channels, including labor market adjustments, household bargaining shifts, sectoral reallocations, and changes in public service provision. These dynamics unfold over several periods and may differ systematically across men and women, as well as across regions with distinct labor market institutions and social structures. Capturing such effects therefore requires an empirical approach that traces both short- and medium-term responses without imposing restrictive assumptions on the data-generating process.

To address these challenges, we employ the LP method to estimate impulse response functions (IRFs) of gender-disaggregated labor market outcomes to fiscal shocks in a panel framework. Introduced by Jordà (2005) and extended by Auerbach and Gorodnichenko (2013) and Jordà and Taylor (2016), LPs estimate a sequence of horizon-specific regressions for the dependent variable, avoiding the recursive structure imposed by conventional vector autoregressions (VARs).

The LP approach offers several advantages. It avoids predetermined functional forms on the dynamic adjustment path, reducing susceptibility to model misspecification—a critical consideration given substantial heterogeneity in labor market structures, institutional quality, and gender constraints across Europe and the Balkans. LPs also accommodate nonlinearities and state-dependent effects, allowing response magnitude and timing to vary systematically with structural features such as labor market rigidity, social protection coverage, macroeconomic conditions, and public debt levels. Finally, the method is transparent and computationally tractable, enabling straightforward interpretation of IRFs and flexible extensions with fixed effects, rich control sets, and interaction terms. These properties have made LPs central to

modern empirical macroeconomics, particularly in studies of monetary policy transmission (Jeenas, 2018) and fiscal shock identification (Ramey and Zubairy, 2018; Romer and Romer, 2019).

Consistent with this literature, our application of LPs provides a flexible framework to estimate the dynamic responses of labor-market indicators to exogenous fiscal shocks across European and Balkan economies. The baseline specification is expressed as follows:

$$y_{t+k,i} - y_{t-1,i} = \alpha_i + \tau_t + \beta_k fS_{i,t} + \theta X_{i,t} + \varepsilon_{i,t}$$

where  $y$  denotes gender-disaggregated labor market indicators—including (i) labor force participation rate; (ii) employment rate; and (iii) share of waged employment—in country  $i$  and time  $t$ , which are winsorized at 5<sup>th</sup> and 95<sup>th</sup> percentiles to mitigate the effects of extreme outliers; the coefficients  $\alpha_i$  and  $\tau_t$  are country and time fixed effects, respectively, accounting for cross-country heterogeneity and global shocks; and  $fS_{i,t}$  denotes fiscal policy shocks.  $X_{i,t}$  is the set of control variables, which includes lags of fiscal shocks, lags of the dependent variable, and the additional controls described in the previous section. Standard errors are obtained using the robust covariance matrix estimator of Driscoll and Kraay (1998).

By estimating  $\beta_k$  at multiple horizons  $k = 0, 1, \dots, 5$ , we trace the dynamic evolution of fiscal policy shock effects on gender-specific labor market outcomes over a five-year period. The 90 percent confidence bands are constructed using the standard errors associated with the estimated coefficients, providing a measure of statistical uncertainty around the IRF estimates. Accordingly, the results should be interpreted as the impact of a one-time fiscal shock on the gender-disaggregated labor market indicator  $k$  years after the shock, relative to its level prior to the shock. This framework allows us to capture both the immediate and the medium-term propagation of fiscal shocks across labor market outcomes, highlighting potential asymmetries and delayed effects that may not be observable in static or cross-sectional analyses.

The panel LP framework also allows us to examine heterogeneity along two key dimensions. First, we investigate state-dependent effects by interacting fiscal shocks with business cycle indicators, capturing whether responses differ between expansions and recessions. Second, we explore the role of fiscal space by interacting shocks with the public debt-to-GDP ratio, assessing whether constrained fiscal environments amplify or dampen gender-specific responses. Together, these extensions provide a comprehensive picture of how fiscal interventions propagate asymmetrically across genders and regions, highlighting the interplay between macroeconomic policy, institutional capacity, and social structure by allowing the dynamic responses to vary as follows:

$$y_{i,t+k} - y_{i,t+k-1} = \alpha_i + \tau_t + \beta_k^K F(z_{i,t}) fS_{i,t} + \beta_k^L [1 - F(z_{i,t})] fS_{i,t} + \theta' X_{i,t} + \varepsilon_{i,t}$$

$$\text{with } F(z_{i,t}) = \frac{\exp(-\gamma z_{i,t})}{1 + \exp(-\gamma z_{i,t})}, \gamma > 0$$

in which  $z_{i,t}$  denotes the state of the economy as measured by the deviation from the average country real GDP growth rate and fiscal space as measured by the public debt-to-GDP ratio that is normalized to have zero mean and unit variance.<sup>3</sup> The coefficients  $\beta_k^K$  and  $\beta_k^L$  capture the impact of fiscal policy shocks on gender-disaggregated labor market indicators at each horizon  $k$  in case of recessions ( $F(z_{i,t}) \approx 1$  when  $z$  goes to minus infinity) and expansions ( $[1 - F(z_{i,t})] \approx 1$  when  $z$  goes to plus infinity), respectively.

The parameter  $\gamma$  determines the propensity for the regime change (in economic conditions or fiscal space). We follow the approach proposed by Auerbach and Gorodnichenko (2012) and used in Tenreyro and Thwaites (2016) and R uth (2017) and calibrate  $\gamma$  to be 3, corresponding to an intermediate degree of intensity to the regime switching. This allows us to capture state-dependent effects of fiscal policy on gender-disaggregated labor market indicators according to the cyclical position of the economy and available fiscal space to cushion against the impact of fiscal shocks on gender-differentiated outcomes, as the effects of fiscal policy are likely to depend on labor market informality, the depth and coverage of social protection systems, the composition and accessibility of public services, and prevailing economic conditions.

The nonlinear LP framework thus enables an assessment of whether the gendered effects of fiscal expansions and consolidations are amplified or mitigated by the strength of institutional and fiscal buffers. Economies with extensive childcare provision, flexible labor markets, and comprehensive social safety nets may exhibit more balanced gender outcomes, whereas countries with limited public services, high informality, and rigid labor market structures are likely to experience stronger adverse effects on women. By allowing impulse responses to vary continuously across these regimes, the method provides a nuanced and realistic depiction of how fiscal shocks propagate through gendered labor markets over time, capturing the interaction between policy, institutional capacity, and social structure.

## VI. EMPIRICAL RESULTS

To capture the potentially asymmetric effects of fiscal policy on labor market outcomes, we disaggregate our analysis into expansionary and contractionary fiscal shocks. This approach allows us to examine how discretionary increases in public spending or tax reductions affect labor force participation, employment, and wages, separately from the effects of austerity or fiscal tightening. By analyzing these two types of shocks independently, we can assess whether women and men respond differently to expansions versus consolidations, and whether structural or institutional factors amplify or dampen these responses. The empirical results that follow

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<sup>3</sup> The weights assigned to each regime vary between 0 and 1 according to the weighting function  $F(\cdot)$ , so that  $F(z_{i,t})$  can be interpreted as the probability of being in a given economic state—expansion or recession—or the availability of fiscal space. Recent research utilizes a wide variety of indicators of fiscal space, including those associated with the debt service capacity of sovereigns (Panizza, 2008; Jaimovich and Panizza, 2010). In this paper, we use the public debt-to-GDP ratio, which is the most widely available fiscal-space variable for a broad range of countries.

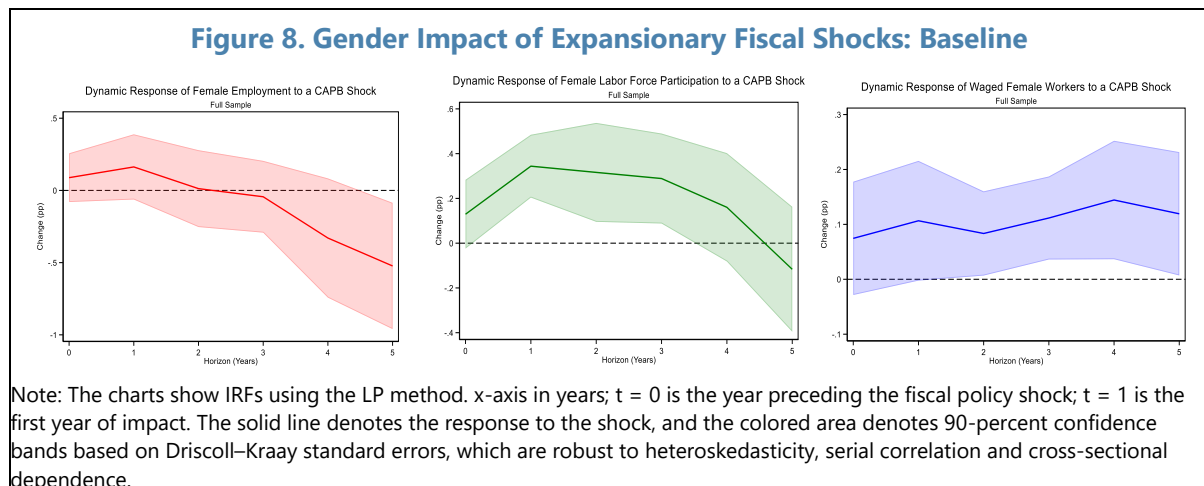
highlight the magnitude and persistence of labor market adjustments, as well as heterogeneity between the Balkans and the broader European context.

### A. Expansionary Fiscal Shocks

We begin by examining the effects of expansionary fiscal shocks, focusing on how such measures influence labor market outcomes for women and men over both the short and medium term. Particular attention is given to differences between the Balkans and the rest of Europe, reflecting variation in labor market flexibility, social protection coverage, and institutional capacity. By isolating expansionary episodes, we assess the channels through which fiscal stimulus affects female labor force participation, employment, and the share of waged employment, and whether these effects are amplified or constrained by regional structural conditions.

Figure 8 presents the IRFs tracing the dynamic effects of expansionary fiscal shocks on gender-disaggregated labor market outcomes over a five-year horizon for the full sample. The left-hand panel shows that female employment responds only weakly to fiscal expansion, with effects generally not statistically significant at conventional levels. While the initial response is mildly positive, it dissipates quickly and turns slightly negative over the medium term, suggesting that short-lived fiscal stimulus does not generate sustained improvements in female employment. These patterns indicate limited transmission from aggregate fiscal expansion to gender-specific labor market outcomes in the average European economy.

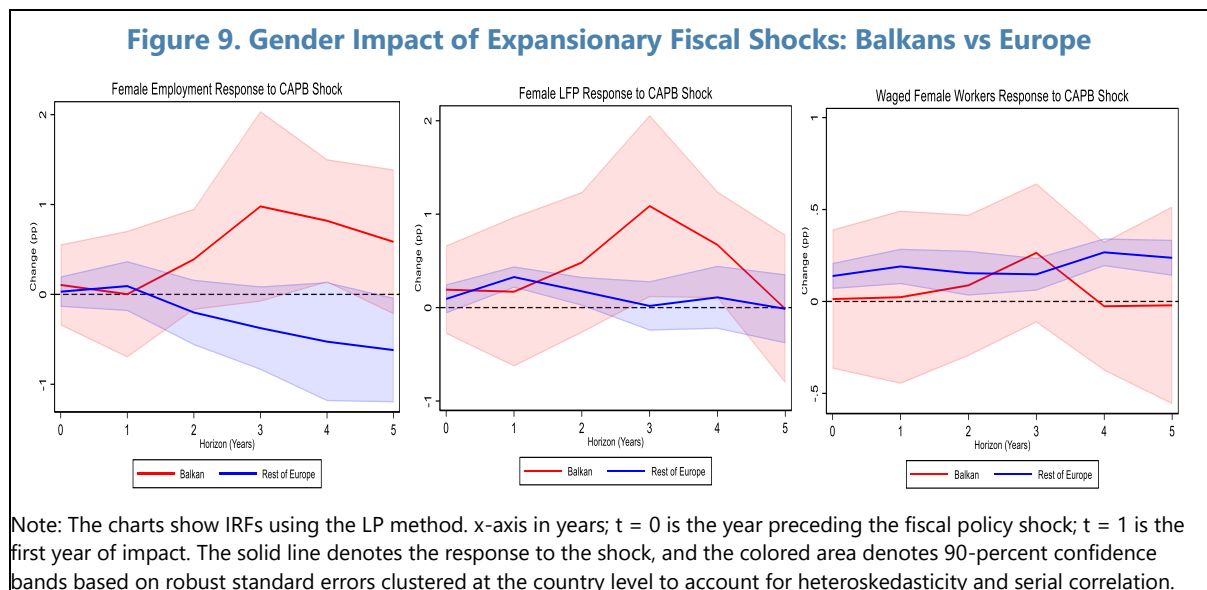
Comparisons across subsamples in Figure 9 reveal substantial heterogeneity in the labor market effects of expansionary fiscal shocks. In the Balkans (left-hand panel), the initially neutral short-run response evolves into a modestly positive medium-term effect, with borderline statistical significance. This dynamic likely reflects structural characteristics of transition economies, including greater labor market slack, institutional rigidities, and a comparatively larger role of public sector employment. By contrast, in the rest of Europe (right-hand panel), expansionary fiscal shocks are associated with a medium-term decline in female employment. Short-run effects remain small and statistically insignificant, but coefficients become increasingly negative at



longer horizons, achieving significance after approximately two to five years. This pattern is consistent with potential crowding-out effects or compositional shifts in labor demand under expansionary policy conditions.

Taken together, these results suggest that female employment dynamics are primarily shaped by underlying structural labor market features rather than by discretionary fiscal interventions. Across horizons, higher educational attainment, trade openness, and institutional stability consistently support female employment, while higher GDP per capita tends to boost employment mainly in the short run. Structural characteristics such as education, urbanization, and government stability exert a particularly strong influence in the Balkans, highlighting the region-specific mechanisms through which labor market outcomes respond to macroeconomic policy. Nonetheless, expansionary fiscal policy retains the potential to generate gender-differentiated improvements in the Balkans, illustrating how local structural conditions condition fiscal transmission and underscoring the importance of integrating gender considerations into the design of fiscal interventions.

Next, we examine the response of female labor force participation to expansionary fiscal shocks, as shown in the middle panel of Figure 8 for the full sample and the middle panel of Figure 9 for the Balkan and rest-of-Europe subsamples. While employment reflects realized labor market outcomes, participation captures underlying labor supply decisions, providing a complementary perspective on gender-specific adjustment dynamics. For the full sample, expansionary fiscal shocks induce a modest and short-lived increase in female labor force participation, concentrated in the year of the shock and at the one-year horizon. These effects dissipate rapidly and do not persist over the medium term, indicating that fiscal stimulus alone has limited capacity to generate sustained changes in women's labor supply.



Regional heterogeneity is pronounced. In the Balkans, expansionary fiscal shocks have no statistically significant impact on female participation at any horizon, highlighting the strength of structural and institutional constraints on labor supply. In contrast, participation in the rest of Europe responds positively in the short run, with effects remaining positive through the medium term, although the coefficients weaken over time and lose statistical significance at longer horizons. Overall, these findings underscore that structural labor market conditions, institutional limitations, and persistent barriers to female participation are key determinants of gender gaps in labor supply, particularly in transition economies. At the same time, in advanced European economies, female labor supply appears more responsive to cyclical demand fluctuations, suggesting that fiscal policy can exert a meaningful—but context-dependent—effect on labor force participation.

We next examine the response of waged female employment to expansionary fiscal shocks, reported in the right-hand panel of Figure 8 for the full sample and the right-hand panel of Figure 9 for the Balkan and rest-of-Europe subsamples. While labor force participation captures labor supply decisions, waged employment reflects changes in job quality and formalization, providing a complementary perspective on women’s labor market adjustment. For the full sample, expansionary fiscal shocks generate a positive and persistent increase in waged female employment. The effect strengthens over the medium term and remains statistically significant at longer horizons, indicating that fiscal expansions enhance women’s access to formal, paid employment rather than merely inducing temporary or marginal entry into the labor market.

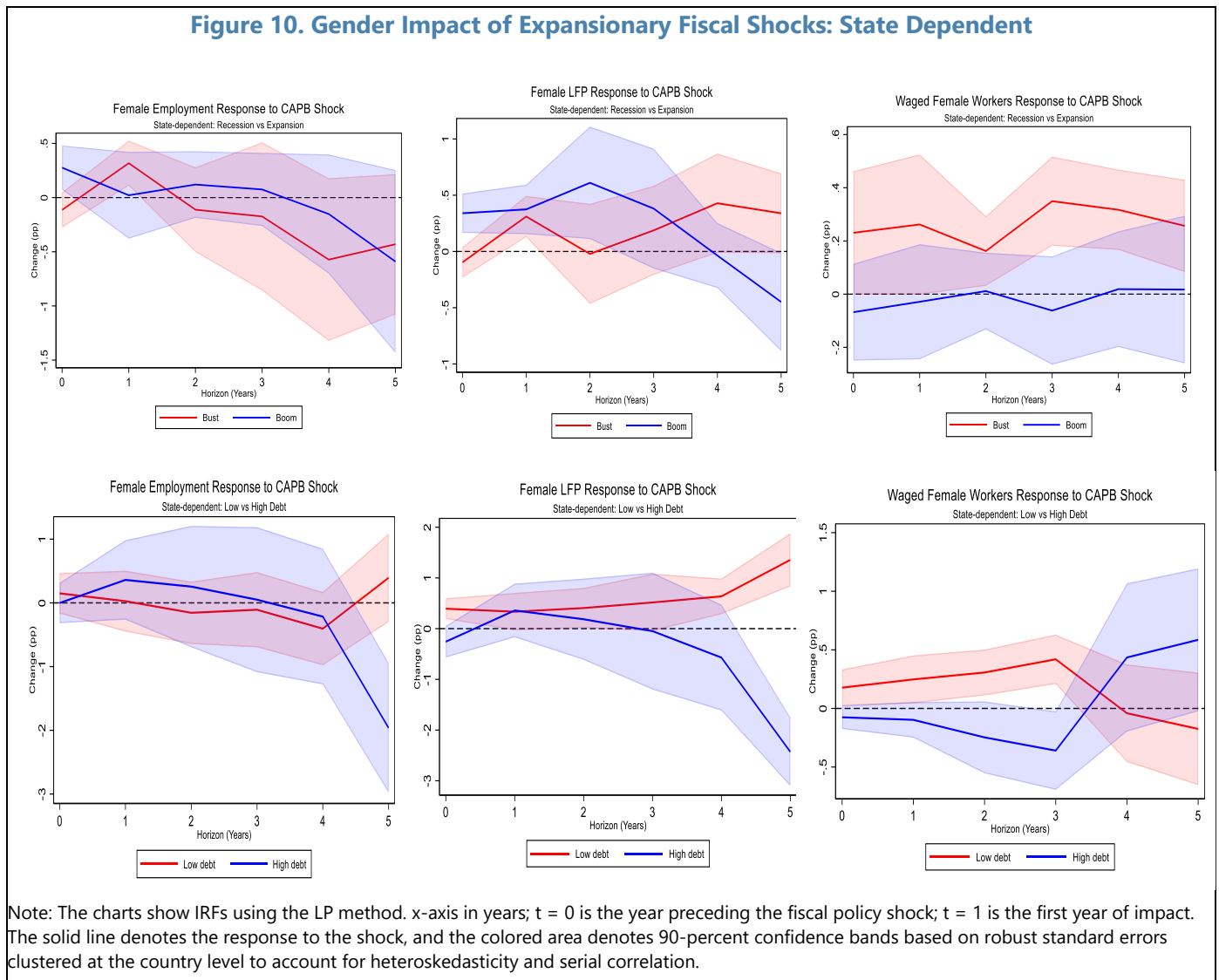
Subsample results again reveal pronounced regional heterogeneity in the response of the share of female waged employment. In the Balkans, expansionary fiscal policy has no significant effect on female waged employment at any horizon; coefficients fluctuate around zero and exhibit no persistence. This pattern suggests that fiscal stimulus does not effectively translate into expanded formal employment opportunities for women in these economies. By contrast, in the rest of Europe, expansionary fiscal shocks generate a strong, positive, and durable increase in waged female employment. The estimated effects are statistically significant across most horizons and grow in magnitude over time. In this subsample, structural variables such as income and education play a more limited role, implying that cyclical demand conditions—rather than long-run structural characteristics—primarily drive changes in the share of waged female employment.

We next investigate potential nonlinearities in the impact of expansionary fiscal shocks along two state-dependent dimensions: the position of the economy in the business cycle and the level of public debt as a proxy for fiscal space. The results, presented in Figure 10, indicate that the effects of fiscal expansions are highly contingent on macroeconomic conditions. Overall, female employment responses are modest and short-lived, with small positive effects during economic upswings and weak or largely insignificant responses during downturns.

Important differences, however, emerge across labor market margins. For female labor force participation, expansionary fiscal shocks implemented during upswings generate an immediate and statistically significant increase at impact and at the one-year horizon, before dissipating thereafter. During recessions, participation responses are weaker and less systematic, largely confined to a short-run increase at the one-year horizon. By contrast, fiscal expansions undertaken during downturns produce economically meaningful and more persistent gains in waged female employment. This pattern suggests that stimulus during periods of economic slack operates primarily through improvements in the quality and formalization of women's employment, rather than through sustained increases in aggregate female employment levels.

Fiscal space also plays a key conditioning role. Female employment effects remain modest and largely transitory in low-debt environments and are generally muted or even adverse in high-debt economies, indicating limited and non-persistent employment gains irrespective of fiscal space. Female labor force participation, however, responds strongly to debt conditions. In low-

**Figure 10. Gender Impact of Expansionary Fiscal Shocks: State Dependent**

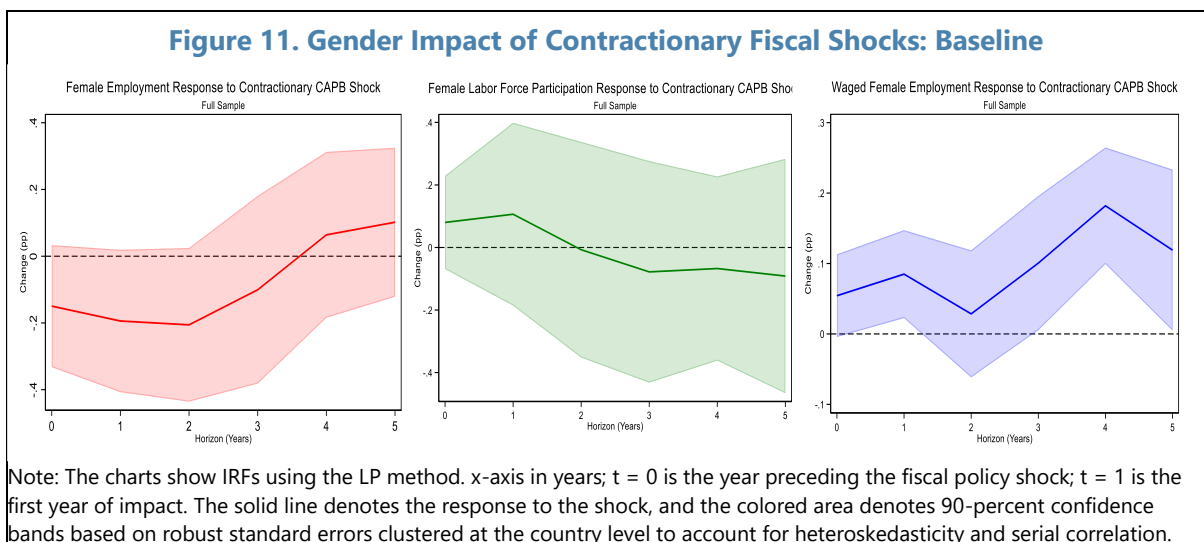


debt countries, fiscal expansions generate positive and increasingly significant participation effects that strengthen over the medium and longer horizons. In high-debt economies, participation responses are weak in the short run and turn sharply negative and statistically significant at longer horizons. Elevated public debt thus appears to constrain—and potentially reverse—the labor-supply effects of fiscal stimulus, even as aggregate employment gains remain limited. Waged female employment responds positively to expansionary fiscal shocks only in low-debt environments, with statistically significant gains at medium horizons that fade over time. In high-debt economies, effects are weak and statistically insignificant throughout. Overall, these findings underscore that both macroeconomic conditions and fiscal capacity critically shape the gendered transmission of fiscal policy, highlighting the importance of tailoring interventions to the state of the economy and available fiscal resources.

### B. Contractionary Fiscal Shocks

The second subsection turns to contractionary fiscal shocks, highlighting the potential gendered vulnerabilities associated with fiscal tightening. This analysis examines whether women experience disproportionately larger declines in employment, labor force participation, or waged employment during periods of fiscal consolidation. Regional comparisons remain central, as differences in fiscal space and labor market structures may shape both the magnitude and persistence of these effects. By distinguishing contractionary from expansionary episodes, we aim to uncover asymmetries in fiscal transmission and identify the factors that mitigate or amplify gender disparities during adjustment periods.

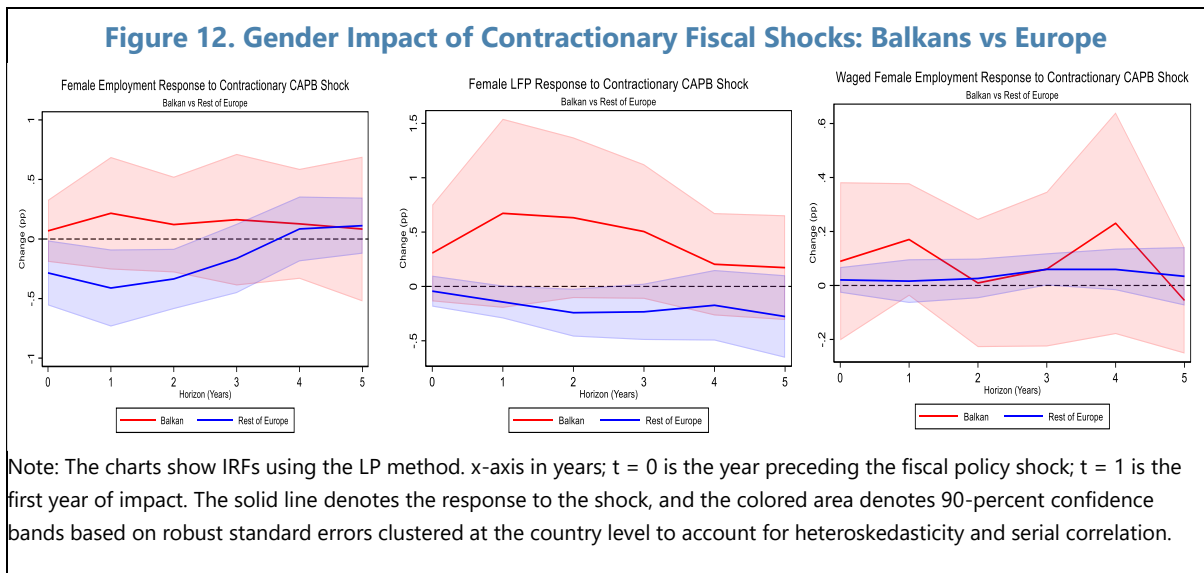
Figure 11 presents the IRFs tracing the dynamic effects of contractionary fiscal shocks on gender-disaggregated labor market outcomes over a five-year horizon for the full sample. The left-hand panel indicates that contemporaneous and short-run coefficients for female employment are negative but modest in magnitude and only borderline statistically significant. At longer horizons, point estimates turn mildly positive but remain statistically indistinguishable from zero.



Female employment exhibits strong persistence, as reflected in the large and highly significant coefficients on lagged employment, suggesting that employment dynamics are driven primarily by inertia rather than by the direct effects of fiscal tightening. Subsample evidence further refines this conclusion. In the Balkans, contractionary shocks do not generate statistically significant responses in female employment at any horizon. By contrast, in the rest of Europe, fiscal tightening produces statistically significant short-run reductions in female employment that dissipate over time, pointing to more cyclical—but ultimately transitory—labor market adjustment outside the Balkan region.

The middle panel of Figure 11 reports the effects on female labor force participation. For the full sample, contractionary fiscal shocks do not generate significant responses at any horizon. Short-run effects are small and imprecisely estimated, while medium- to longer-term effects remain insignificant, indicating limited adjustment along the labor supply margin. Subsample evidence reinforces this pattern. In the rest of Europe, participation responses are insignificant throughout, pointing to minimal extensive-margin adjustment. In the Balkans, female participation shows no immediate response to fiscal tightening but displays modest, positive, and statistically significant effects at selected medium horizons, suggesting some delayed adjustment.

The right-hand panel of Figure 11 presents the effects on female waged employment. For the full sample, contractionary shocks are associated with modest and largely short-lived increases in waged female employment, with statistically significant effects appearing at selected short and medium horizons before dissipating. In the Balkans, contractionary shocks do not produce statistically significant responses in waged employment. In the rest of Europe, waged female employment also exhibits small and statistically insignificant responses throughout. Taken together, these findings suggest that contractionary fiscal shocks primarily affect overall female employment in the short run—particularly in the rest of Europe—while effects on labor force participation and job quality remain limited and transitory.



The evidence provides only partial support for the view that fiscal tightening disproportionately harms women. While short-run employment losses emerge in parts of the sample—notably in the rest of Europe—the average effects are modest and short-lived, and the Balkans do not display statistically significant adverse responses. These patterns suggest that the gendered consequences of fiscal consolidation are highly context dependent and mediated by underlying labor market conditions rather than driven by fiscal shocks alone. At the same time, the presence of short-term employment sensitivity in some economies underscores the importance of incorporating gender considerations into fiscal adjustment strategies.

Across all outcomes, structural factors exert a more consistent influence than contractionary fiscal shocks. Higher trade openness, educational attainment, and government stability are systematically associated with stronger female employment outcomes, while population size and urbanization lose significance once other controls are included. Female labor force participation and employment display strong persistence, with higher GDP per capita supporting gradual increases at medium and longer horizons and education and urbanization contributing mainly over longer horizons. The share of waged female employment is likewise highly persistent, with structural characteristics—particularly education, urbanization, and income levels—emerging as the principal drivers of medium-term dynamics.

Regional patterns reinforce these conclusions. In Balkan economies, education and urbanization are consistently linked to higher female employment, and government stability supports both employment and waged employment at medium horizons. In the rest of Europe, labor market dynamics are similarly characterized by persistence, with education, trade openness, and institutional stability shaping female employment trajectories over time. Overall, these results highlight the central role of structural labor market features in mediating the gendered effects of fiscal consolidation: contractionary shocks generate limited effects on average, while deeper economic and institutional characteristics dominate female labor market outcomes across countries in our sample.

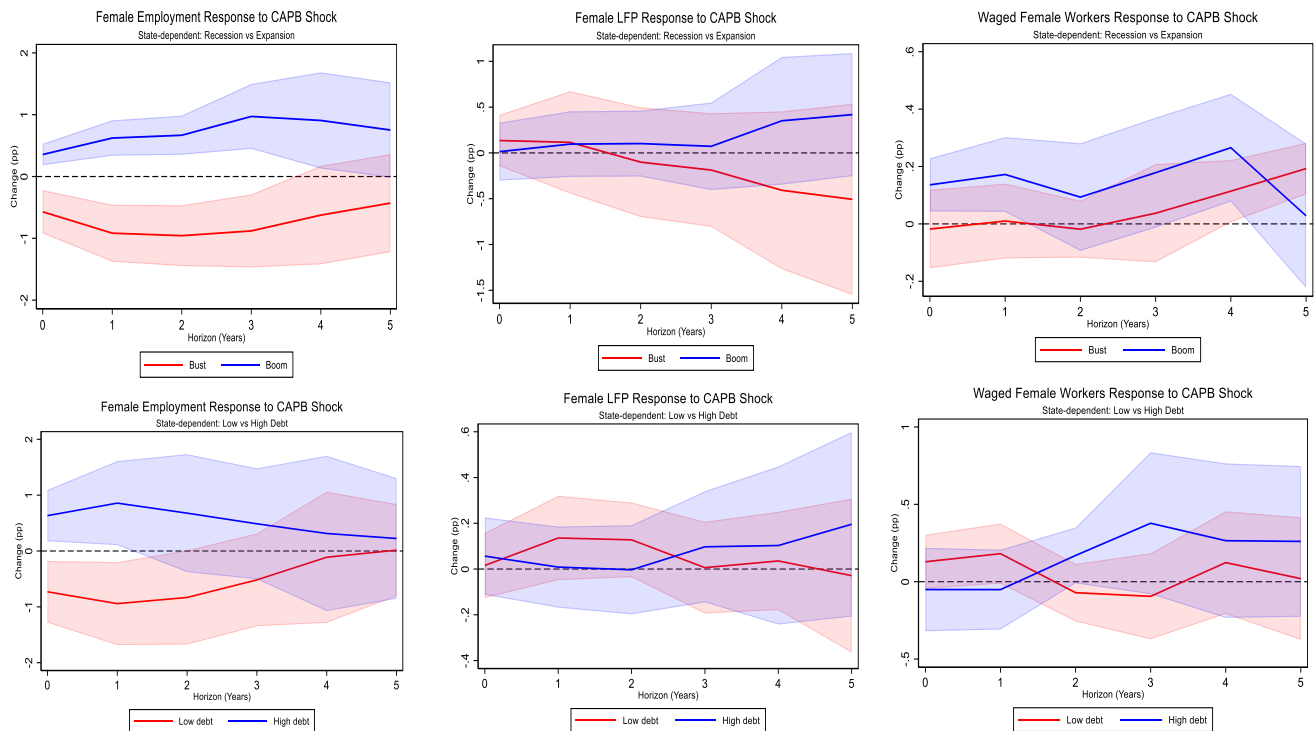
Finally, we repeat the nonlinear analysis for contractionary fiscal shocks by examining two state-dependent dimensions: (i) the position of the economy in the business cycle at the time the shock occurs and (ii) the level of public debt as a proxy for fiscal space. The results, presented in Figure 13, indicate that the impact of fiscal consolidations depends importantly on macroeconomic conditions and available fiscal space, although the strength of this dependence differs across labor market margins.

With respect to the business cycle, clear state dependence emerges for female employment. During recessions, contractionary fiscal shocks generate negative and persistent effects on female employment. By contrast, during expansions, responses are muted, with at most modest and short-lived positive effects. Female labor force participation shows little cyclical sensitivity: although point estimates vary across states of the cycle, responses remain statistically

insignificant at all horizons. Female waged employment likewise exhibits weak state dependence, with largely insignificant responses during downturns and only small, short-run positive effects during expansions that dissipate quickly.

Across debt regimes, the pattern is more limited. For female employment, contractionary shocks produce short-run negative effects in low-debt environments, whereas in high-debt economies the effects are positive on impact but not persistent. In contrast, female labor force participation and waged female employment display minimal state dependence across debt conditions, with small and statistically insignificant effects at all horizons. These results indicate that state dependence in fiscal consolidations operates primarily through overall female employment—especially across phases of the business cycle—while participation and job composition remain comparatively insulated from fiscal tightening across debt regimes.

**Figure 13. Gender Impact of Contractionary Fiscal Shocks: State Dependent**



Note: The charts show IRFs using the LP method. x-axis in years;  $t = 0$  is the year preceding the fiscal policy shock;  $t = 1$  is the first year of impact. The solid line denotes the response to the shock, and the colored area denotes 90-percent confidence bands based on robust standard errors clustered at the country level to account for heteroskedasticity and serial correlation.

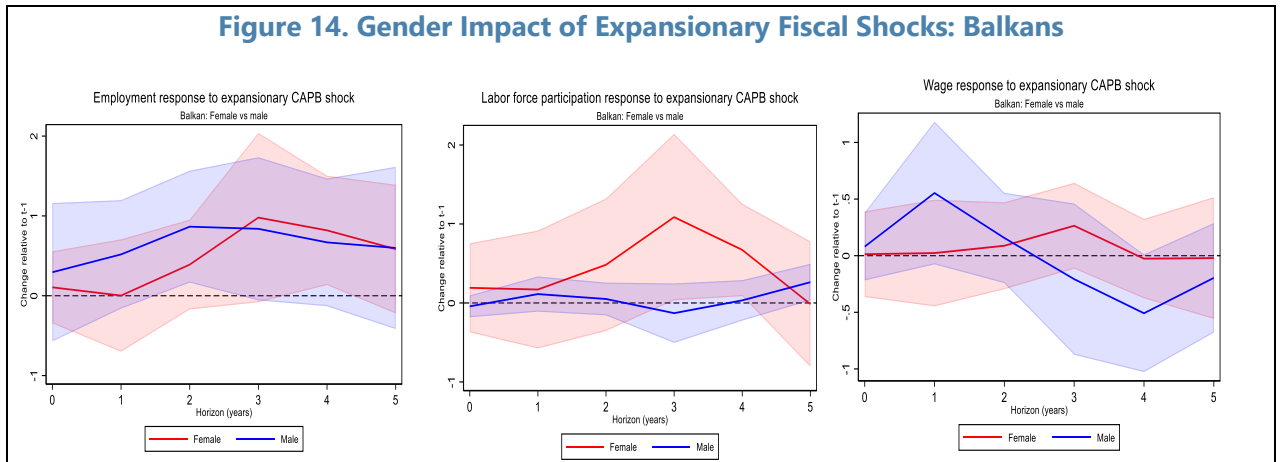
### C. Gender-Differentiated Responses to Fiscal Shocks

This subsection examines the differential effects of expansionary fiscal shocks on labor market outcomes for women and men, highlighting both the magnitude and timing of adjustments across regions. Figures 14 and 15 present gender-specific IRFs for the Balkans and the rest of

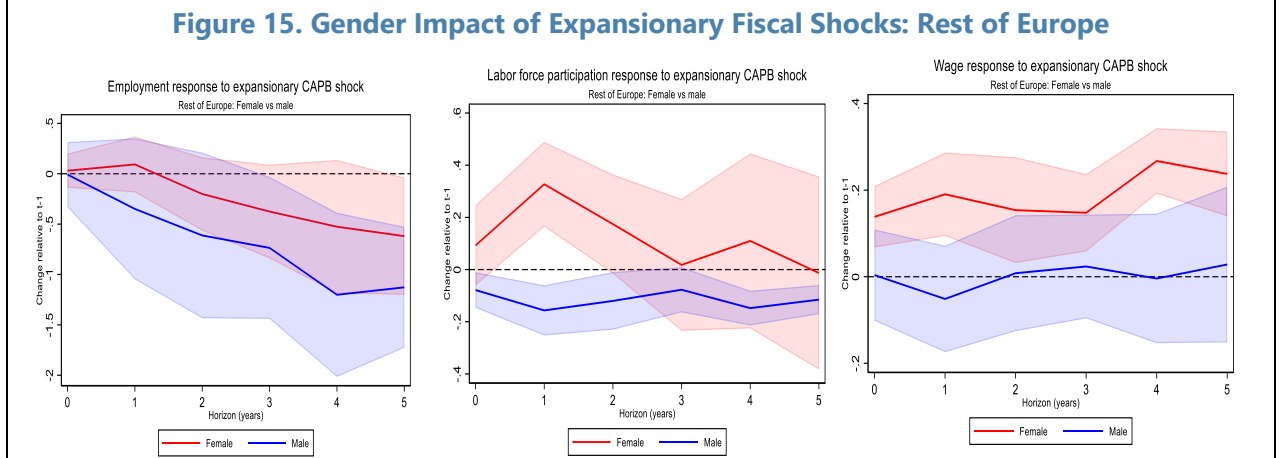
Europe, respectively, illustrating how fiscal stimulus propagates through labor markets characterized by structural and institutional heterogeneity. Because fiscal transmission is not gender neutral—reflecting differences in sectoral employment patterns, labor market attachment, and access to formal work—focusing on expansionary episodes clarifies who benefits from fiscal interventions and under which conditions.

In the Balkans, male labor market outcomes respond more promptly to fiscal expansions. Male employment increases by roughly 0.5 percentage points in the first year following the shock, whereas female employment responds with a lag, rising only in subsequent years. Labor force participation exhibits a similar pattern: male participation rises by approximately 0.5 percentage points immediately, while female participation adjusts more gradually, with only modest initial gains. Waged employment responses reinforce this asymmetry. Male waged employment grows by about 0.6 percentage points in the first year, whereas female waged employment improves only with delay. These dynamics suggest that fiscal expansions initially reinforce preexisting labor

**Figure 14. Gender Impact of Expansionary Fiscal Shocks: Balkans**



**Figure 15. Gender Impact of Expansionary Fiscal Shocks: Rest of Europe**



Note: The charts show IRFs using the LP method. x-axis in years;  $t = 0$  is the year preceding the fiscal policy shock;  $t = 1$  is the first year of impact. The solid line denotes the response to the shock, and the colored area denotes 90-percent confidence bands based on robust standard errors clustered at the country level to account for heteroskedasticity and serial correlation.

market segmentation, with men—concentrated in cyclically sensitive and formal sectors—benefiting first, while women’s integration into formal paid employment unfolds more slowly due to higher baseline informality, sectoral concentration, and structural rigidities.

By contrast, in the rest of Europe, gender responses are more synchronized. Employment for men and women evolves broadly in tandem, with no persistent divergence. Female labor force participation increases promptly—by around 0.3 percentage points in the first year—while male participation declines slightly. Waged employment adjusts similarly for both genders, reflecting higher baseline formality, broader social protection coverage, and more flexible labor market institutions. The timing and magnitude of these effects suggest that fiscal stimulus in advanced European economies can facilitate female labor supply more evenly, in part due to stronger institutional support for work–family balance and more integrated labor markets.

Overall, these results highlight clear regional contrasts. In the Balkans, expansionary fiscal shocks initially favor men, with women’s gains emerging gradually over the medium term. By comparison, in the rest of Europe, responses are more balanced and, in some cases, even tilt toward earlier female participation gains. The evidence underscores how structural labor market features, institutional capacity, and social protection coverage shape the gendered transmission of fiscal policy, emphasizing that stimulus benefits are neither uniform nor immediate across genders.

#### **D. Robustness Checks**

To assess the robustness of our baseline results, we re-estimate the main specifications using an alternative definition of fiscal shocks. Specifically, expansionary (contractionary) episodes are now defined as changes in the CAPB exceeding  $\pm 1.5$  percent of GDP, rather than the baseline threshold. The resulting IRFs, shown in Figures 16–17, remain broadly consistent with the core analysis, providing confidence in the stability of our findings.

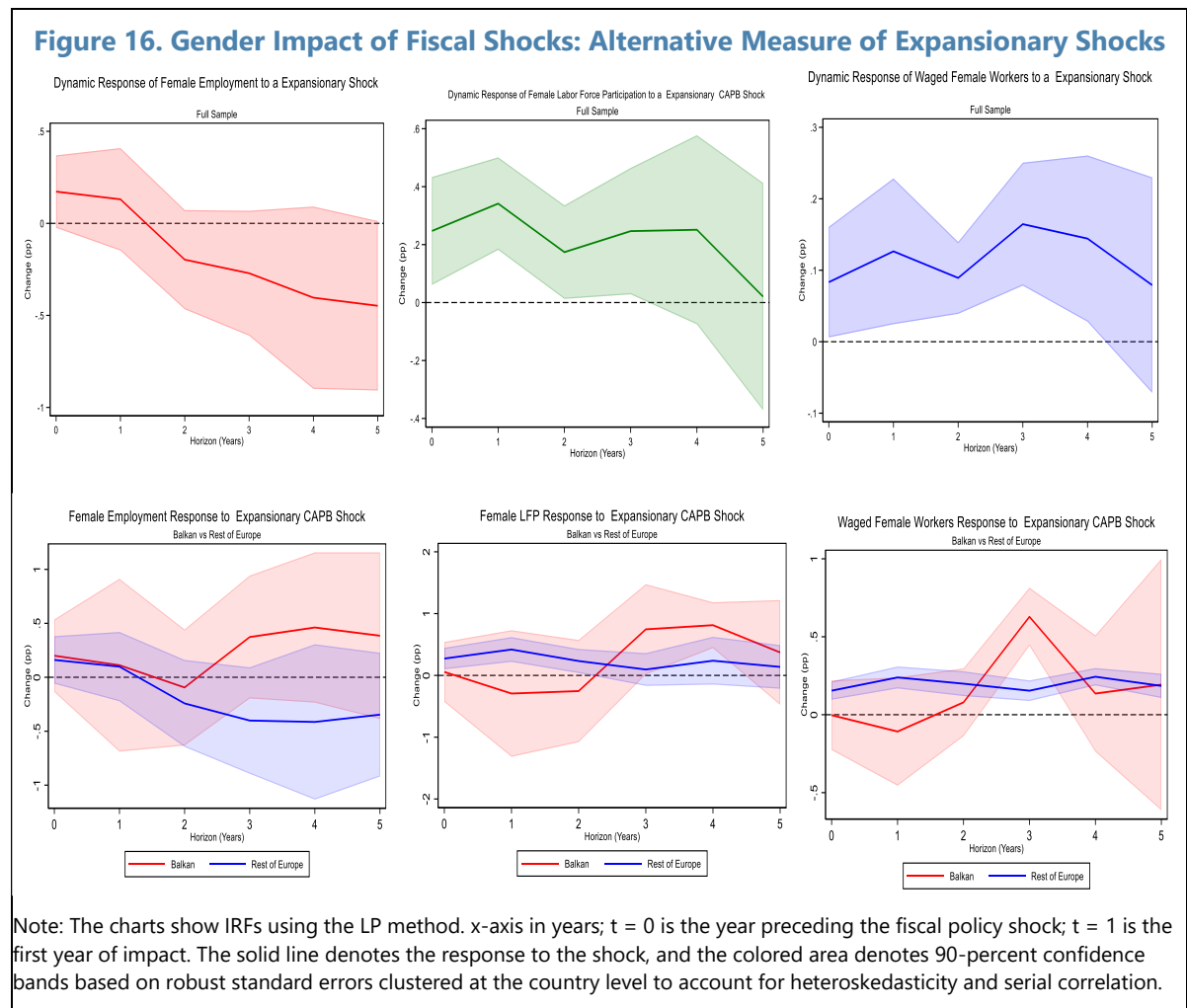
Under this alternative definition, expansionary fiscal shocks continue to generate positive effects for several female labor market outcomes, though the magnitudes are generally smaller. Short-run responses of overall female employment remain weak and statistically insignificant, followed by modest medium- and long-term declines—particularly outside the Balkans—indicating that fiscal stimulus does not translate into sustained aggregate employment gains for women. Female labor force participation exhibits positive short-term gains, but these dissipate over time, suggesting that fiscal expansions primarily induce temporary labor market entry rather than durable participation gains.

By contrast, female waged employment and wages respond more favorably and persistently, especially in non-Balkan European economies. This pattern reinforces the interpretation that fiscal expansions mainly improve job quality and formal employment opportunities rather than total employment levels. In the Balkans, responses across participation, employment, and wage

margins remain muted, imprecisely estimated, and less stable, highlighting the constraining role of institutional and structural factors in shaping the gendered transmission of fiscal policy.

Using the more stringent definition of contractionary fiscal shocks—episodes in which the CAPB improves by at least 1.5 percent of GDP—we obtain results closely mirroring the baseline findings. Contractionary shocks continue to exert negative effects on women’s labor market outcomes, with economically significant declines in employment and mostly weak, statistically insignificant responses in labor force participation. As in the baseline analysis, these adverse effects are more pronounced in the Balkans, where responses are larger, more volatile, and persist over time, highlighting women’s heightened vulnerability to fiscal tightening in structurally constrained labor markets.

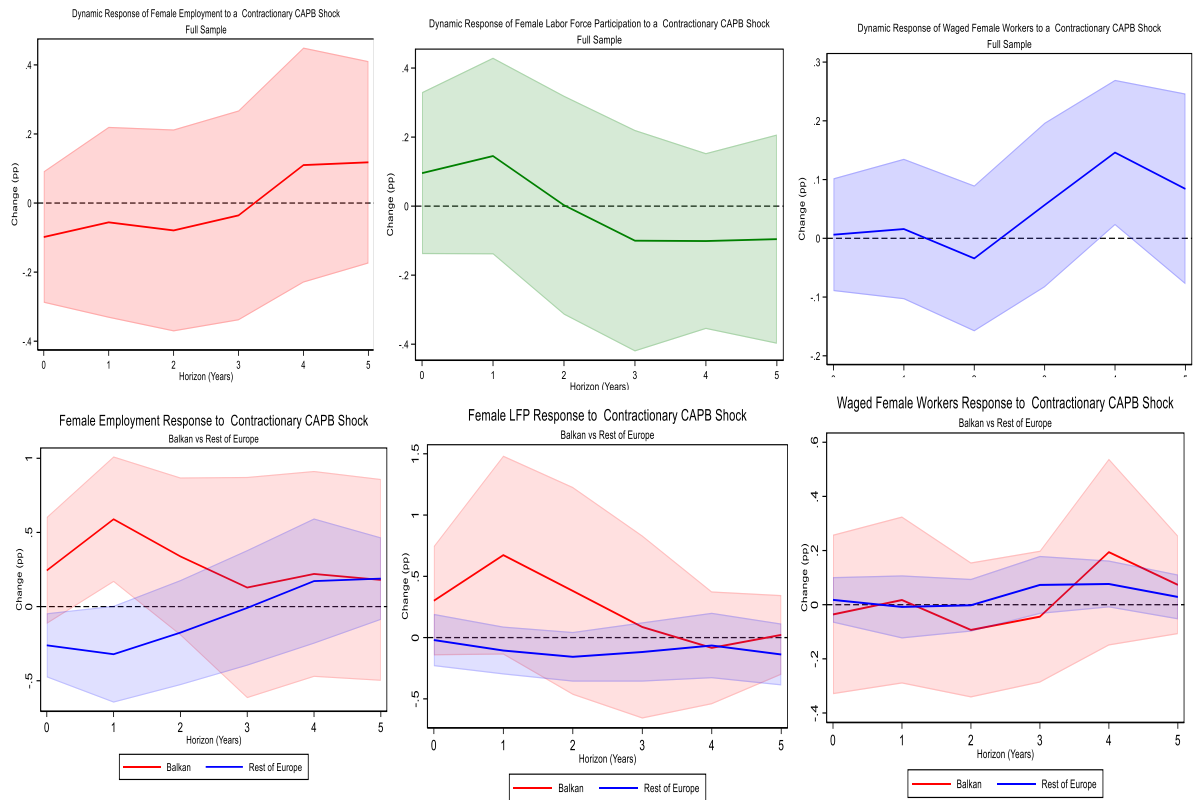
Outside the Balkans, contractionary shocks also negatively affect women, but the magnitude and persistence of these effects are smaller and less volatile, reflecting more resilient labor markets, stronger social protection, and broader formal employment coverage. Although the estimated impacts are somewhat attenuated relative to the baseline—consistent with the lower frequency



of large fiscal interventions under the higher threshold—the qualitative patterns remain intact. Regional heterogeneity persists, gender asymmetries across labor market margins remain evident, and the relative stability of responses outside the Balkans continues to underscore the role of structural and institutional factors in shaping the transmission of fiscal consolidations.

Taken together, these robustness checks confirm that the gendered transmission of fiscal policy documented in the baseline analysis is robust to alternative thresholds for identifying fiscal shocks. Expansionary episodes consistently improve women’s labor market outcomes, particularly in terms of labor force participation and job quality, though aggregate employment gains remain limited and often short-lived. Conversely, fiscal consolidations continue to impose disproportionate short-run costs on women—especially in the Balkans—underscoring the critical role of regional structural and institutional conditions in shaping the gendered effects of macroeconomic policy.

**Figure 17. Gender Impact of Fiscal Shocks: Alternative Measure of Contractionary Shocks**



Note: The charts show IRFs using the LP method. x-axis in years; t = 0 is the year preceding the fiscal policy shock; t = 1 is the first year of impact. The solid line denotes the response to the shock, and the colored area denotes 90-percent confidence bands based on robust standard errors clustered at the country level to account for heteroskedasticity and serial correlation.

## VII. CONCLUDING REMARKS

Despite substantial progress in women's legal rights, education, and economic opportunities, persistent gender gaps in employment, participation, and earnings remain across both advanced and emerging European economies. Beyond equity concerns, these disparities carry tangible macroeconomic costs, constraining aggregate labor supply, limiting the effective utilization of human capital, and dampening long-term growth potential. Fiscal policy—and, where relevant, structural features of the economy—can influence these outcomes, but its effects are rarely gender neutral.

This paper offers a comparative analysis of the gender-specific labor market effects of fiscal shocks in the Balkans relative to the rest of Europe, revealing pronounced asymmetries. Expansionary fiscal shocks do not automatically translate into improved outcomes for women. In the Balkans, stimulus episodes tend to benefit men more immediately and strongly, particularly in total and waged employment, while women experience delayed and comparatively muted gains. Female labor force participation rises gradually, and improvements in formal employment occur with a lag, reflecting structural rigidities, informality, and care-related constraints. By contrast, in other European economies, gender responses are more synchronized, and in some cases, expansionary shocks yield relatively larger benefits for women, especially in participation and wage employment.

Contractionary shocks exhibit similarly important asymmetries and strong state dependence. Fiscal consolidations—particularly those implemented during economic downturns—lead to substantial declines in female employment. These effects are amplified in the Balkans, where informality, sectoral concentration, and weaker social protection magnify vulnerability. In other European countries, negative effects are present but generally smaller and less persistent. Across all regions, adjustment occurs primarily through reductions in employment rather than labor force withdrawal, suggesting that fiscal tightening predominantly diminishes job opportunities rather than inducing widespread exits from the labor market.

Nonlinear patterns further underscore the contextual sensitivity of gendered effects. Contractionary shocks during recessions generate more persistent declines in female employment, while participation and wage responses are muted. Fiscal space, proxied by debt levels, influences the short-term intensity of these effects, though it does not fully mitigate them. Robustness checks confirm that these patterns hold across alternative shock definitions, reinforcing the conclusion that the gendered transmission of fiscal policy is both systematic and highly context-dependent.

The analysis highlights the role of gender in shaping the macroeconomic effects of fiscal interventions. Labor market outcomes differ significantly by gender, particularly in structurally constrained contexts. Expansion of care infrastructure, education, and formal employment opportunities is associated with higher female labor force participation, while maintaining employment stability in female-dominated sectors appears to reduce disproportionate losses

during consolidations. Similarly, labor market characteristics—such as informality, occupational segregation, and rigidity—interact with fiscal shocks to influence gender-specific outcomes.

Taken together, these patterns indicate that the effects of fiscal interventions on aggregate demand, productivity, and labor market resilience are mediated by gendered labor market structures. In particular, the stability and inclusiveness of women's participation in formal employment affect the magnitude and persistence of macroeconomic responses. The comparative evidence from the Balkans and other European economies demonstrates that structural and institutional contexts critically shape the gendered transmission of fiscal shocks, highlighting the interplay between macroeconomic dynamics and labor market conditions in determining employment outcomes across groups.

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