An international map of gender gaps

By Ines Buono (Banca d'Italia) and Annalivia Polselli (University of Essex)

This paper revisits stylized facts on female labour force participation, employment and unemployment, using a unified and up-to-date dataset with comparable information for high-income (HI) and middle-low income (MLI) countries. We find that: (i) global trends in labour supply in the last 30 years are mainly shaped by the increasing trend in female participation in HI countries that almost offset the contemporaneous decrease in male participation; (ii) gaps in unemployment between men and women widen during economic crises, with men usually affected more than women (with the notable exception of the Covid-19 crisis); (iii) the increase in female employment over the last 30 years has mostly been driven by the expansion of the service sector; and (iv) finally, the adoption of reforms to foster equal access to economic opportunities helps to increase female labour supply when countries enter the last stage of economic development.

Research question and motivation

This work revisits the main stylized facts on female labour force participation (LFP), employment and unemployment over the last thirty years. Using a unified and up-to-date dataset from official international sources (the World Bank Group, the International Labour Organization), we contrast the ongoing trends and dynamics in High-Income (HI) economies *vis-à-vis* Middle-Low income (MLI) countries.

The background picture is that gender gaps in the labour market do exists and are, as expected, much higher in MLI countries than HI countries. These disparities adversely affect women's contribution to measured economic activity, ultimately compressing country's growth and economic development (Duflo, 2012; Jayachandran, 2015; Kochhar et al., 2017). Female labour force hence constitutes an untapped reserve of resources in an era of sluggish productivity and low potential output.

Descriptive Analysis

We start by observing that the labour force participation (LFP) is always higher for men with respect to women in the two groups of countries for each year. While female LFP (FLFP) in HI countries increased by more than 10 percentage points (p.p.) against a moderate drop of male LFP by around 4 p.p., male and female LFP in MLI countries decreased overall with the former by 5 p.p. and the latter more mildly.

From Figure 1, we observe greater heterogeneity and dispersion in FLFP in MLI countries, where differences among countries (both in levels and dynamics) are even more remarkable. Conversely, FLFP in HI countries is not as dispersed as in MLI countries but with different trends and dynamics within each group. These figures motivate the descriptive exercises below.

Figure 1: Female Labour Force Participation Rate: Selected Countries
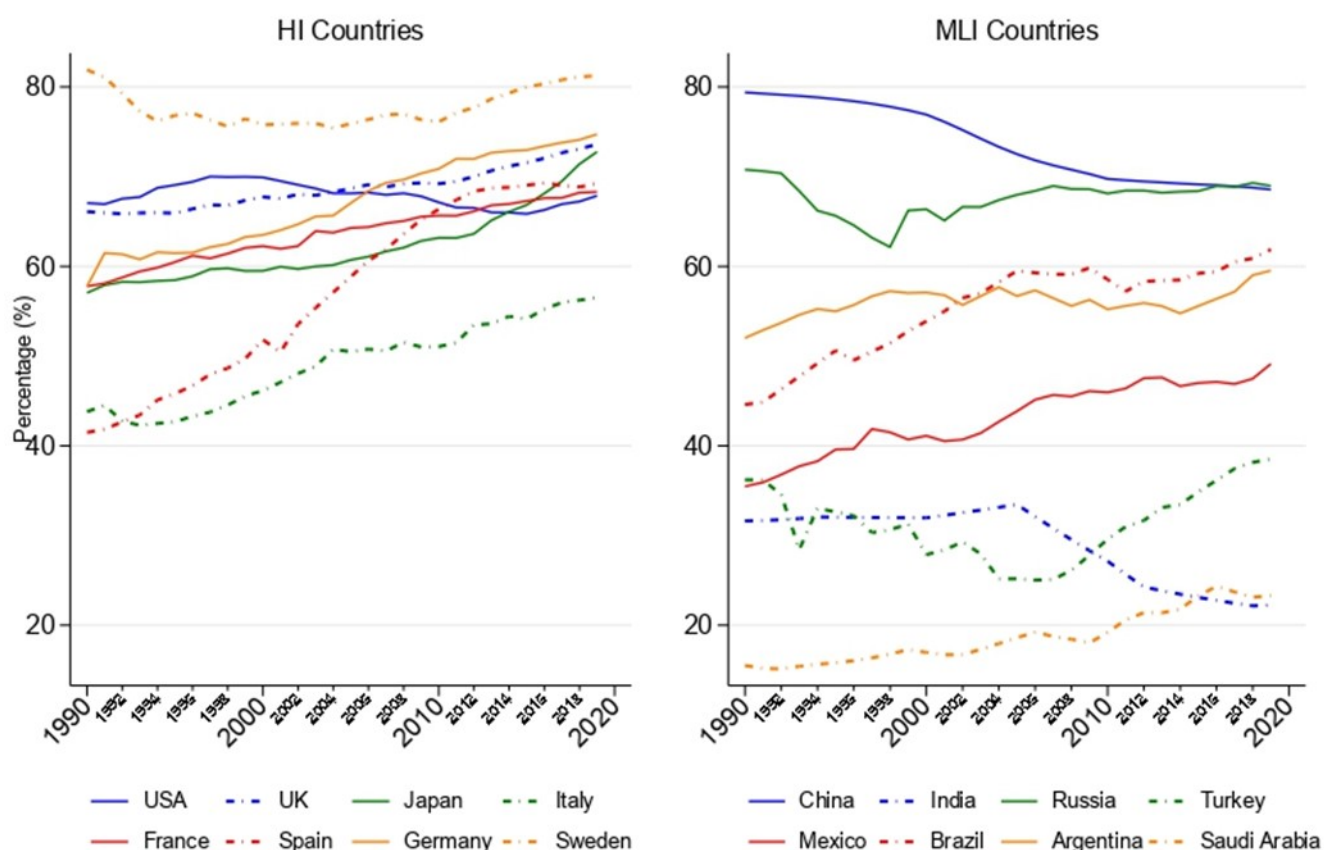
1. Counterfactual Exercise

We want to quantify the impact of income-group specific dynamics of FLFP on total labour supply. For this purpose, we conduct three counterfactual exercises. In the first exercise, the FLFP is fixed to the 1990 level for both HI and MLI countries; in the second, only MLI countries FLFP is kept constant at its 1990 level; in the third, we allow MLI countries FLFP to vary at the same rate at which FLFP changed for HI countries between 1990 and 2019. From these exercises, we observe that: i) The dynamics of FLFP is quantitatively important to understand global trends in labour supply; ii) the increasing trend in FLFP in HI countries had a major contribution in modelling the dynamics of global labour supply, considering that the trend in MLI was either constant or slightly increasing in our restricted sample; iii) the global reduction in labour supply could have been reverted had FLFP in MLI income countries grown by the same magnitude as in HI countries.

When the most populated and economically influential countries (i,.e, India and China) are removed from the sample, the aforementioned patterns are even more striking (Figure 2b).

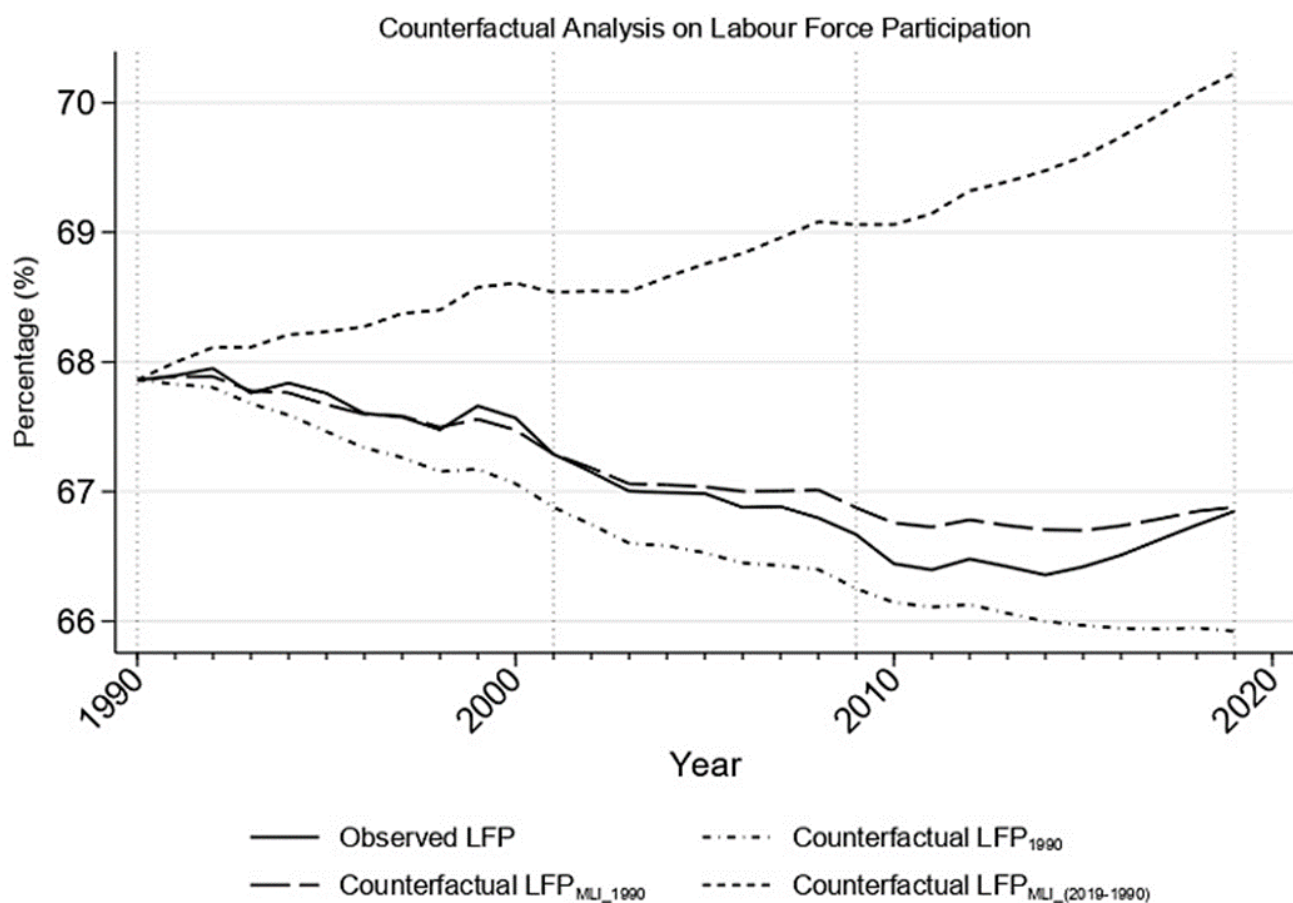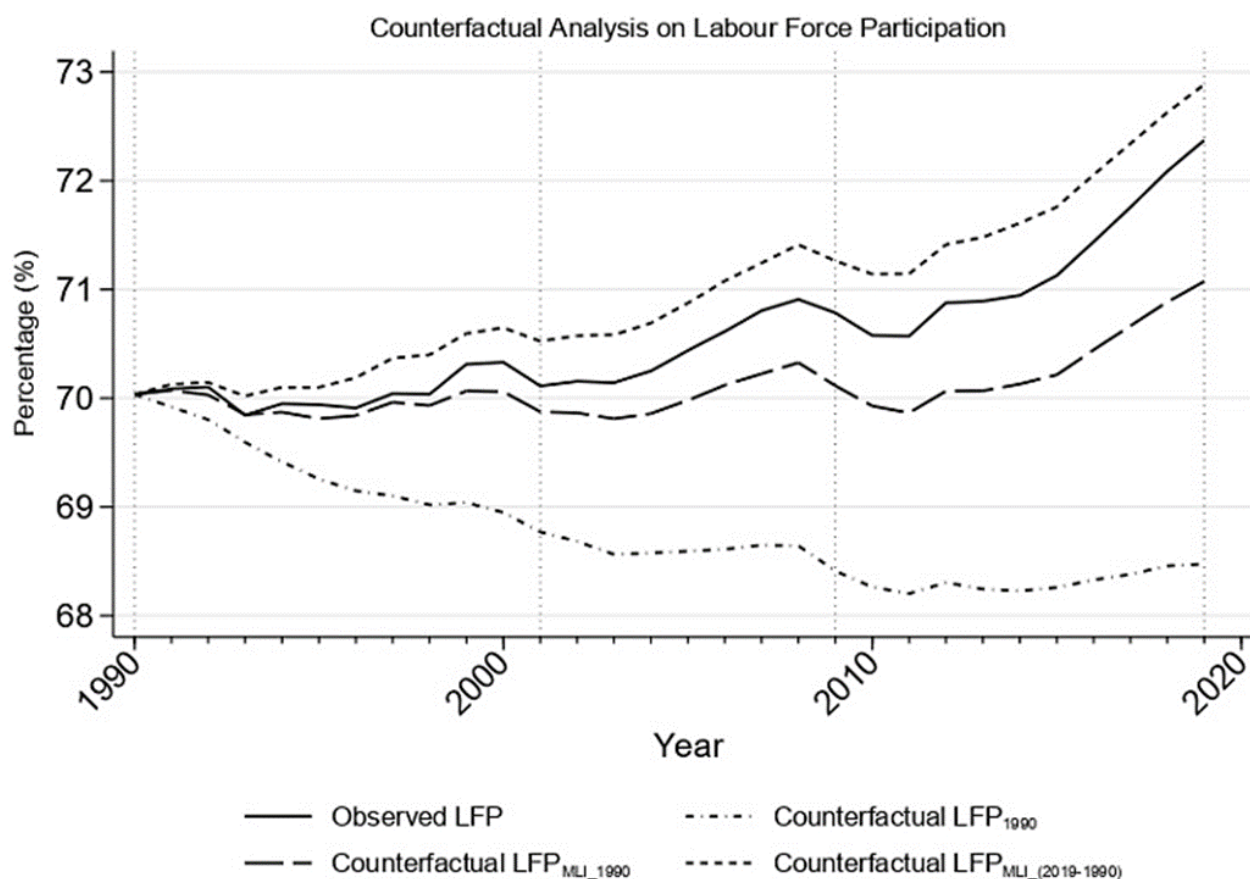**Figure 2.a: Shift-share decomposition, all countries**

Counterfactual Analysis on Labour Force Participation

Figure 2.b: Shift-share decomposition, without India and China

Counterfactual Analysis on Labour Force Participation

2. Cyclicality and Trend

While labor supply differs enormously between men and women, the unemployment rate between the two groups is fairly similar. Albanesi and Sahin (2018) show that in the US the gender unemployment gap was positive until the first years of 80's but disappeared afterwards. Employment fluctuations differ over the business cycle for male and female workers because male-dominated sectors – e.g., construction or manufacturing – tend to be mainly hit during regular economic downturns, unlike female-dominated sectors (Albanesi, 2019; Ellieroth et al., 2019).

Using the the Hodrick-Prescott filter, we found that male unemployment is more cyclical than female but only in HI countries, because men tend to be employed in pro-cyclical sectors. Conversely, in MLI countries the trend is more relevant than the cycle while male and female unemployment are almost completely aligned. Understanding the behaviour of male/female unemployment is essential to target policies to contrast adverse effects of crises based on their nature.

3. Within or Between Sectors? Shift-share Decomposition

Did female employment grow due to the expansion of sectors where women tend to be employed -- i.e., services -- (*between-industry component*), or due to an increased number of women hired in each sector (*within-industry component*)? Available studies attributed the increase in female participation to the expansion of the service sector after the Second World (Olivetti and Petrongolo, 2014, 2016; Ngai and Petrongolo, 2017).

Our shift-share analysis in Figure 3 highlighted some interesting patterns. For instance, the *between* components are larger in magnitudes with respect to the *within* components, especially in MLI countries. When looking at the decomposition by sectors, we observe that the increase in the change of female employment is mainly driven by the expansion of the service sector (especially in MLI countries), where women are mostly employed. During the Great Financial Crisis (GFC), female employment shares in HI countries continued to increase with respect to the reference year due to the change in the service sector against a progressive contraction of the other two sectors as well as the female composition in all sectors. In stark contrast, the GFC had no impact in MLI countries on the female employment and composition in the service sector, unlike the other two sectors that experienced a sharp decline.

Figure 3: Shift-share decomposition, by income group

Shift-share Decomposition, Full Sample
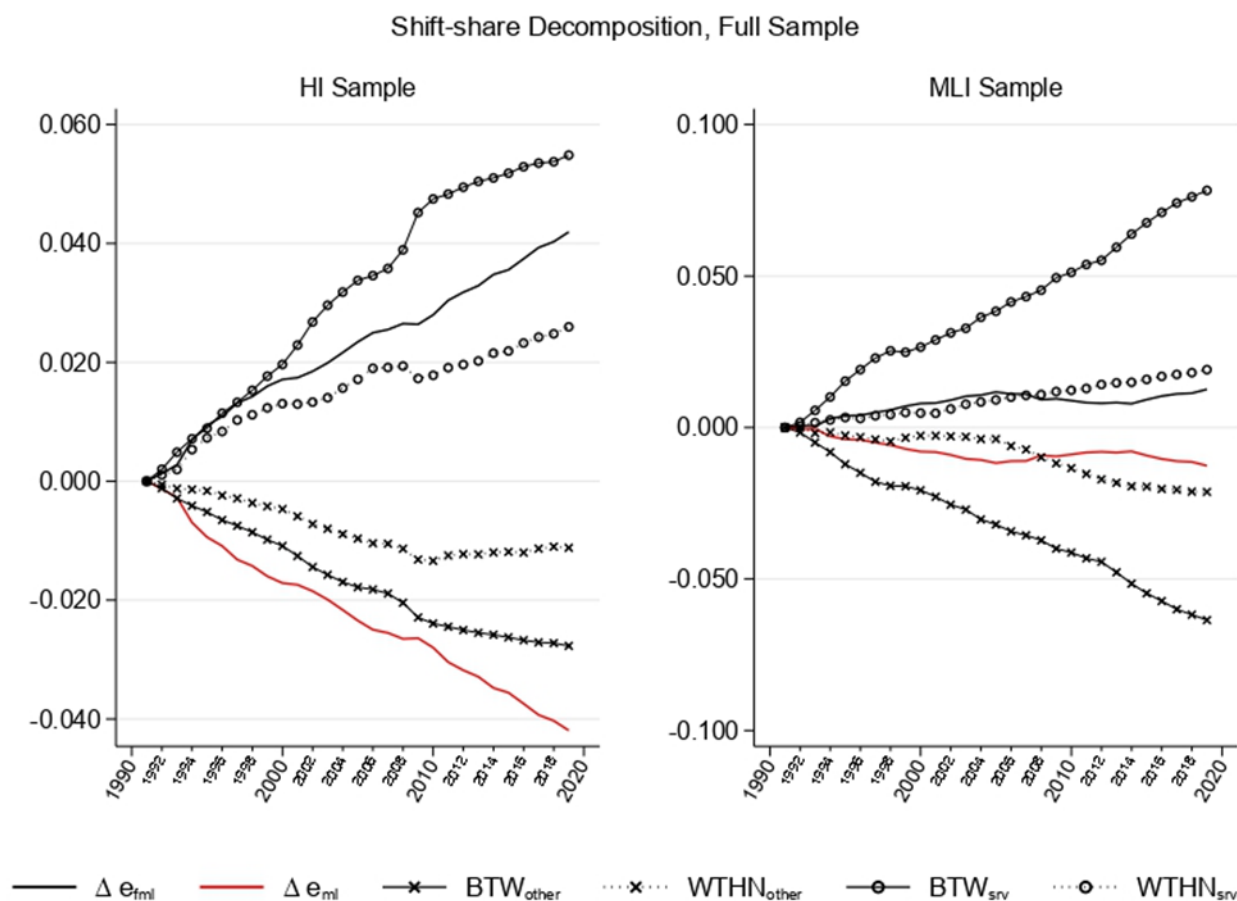
4. Long-run determinants of FLFP

Looking into long-term determinants of FLFP, we take into account four key dimensions as all possible determinants of female LFP in a panel framework: (i) level of economic development; (ii) sectoral structure of the economy; (iii) socio-demographic factors; and (iv) institutional setting and policies.

We find strong evidence in support of the U-shape hypothesis for female labour force participation in MLI countries, where the stage of development (measured by the GDP per capita) is a fundamental factor in explaining FLFP. The institutional setting and policies (proxied by the World Bank's "Women, Business and Law" index, a measure of equality of economic opportunities for men and women) contribute to boost women's participation in HI countries whereas the economic structure and the stage of development (sectoral value added & socio-demographic characteristics) are crucial in MLI economies.

5. Trends during Covid-19 outbreak

Unlike standard recessions (e.g., GFC), the Covid-19 pandemic has heavily hit female-dominated in-person services. We compare the different impact of the GFC (from second quarter 2007 until fourth quarter 2009) and Covid-19 pandemic (from first quarter 2020 until fourth quarter 2021) on female and male unemployment and LFP.

In Figure 4, we document the different dynamics in the evolution of male and female unemployment rates and LFP in the two crises. At the aggregate level the labour market reacted faster (in terms of unemployment and LFP) during the Covid-19 crisis with unemployment increasing but the effects were re-absorbed in the short-term. Unemployment and participation rates did not immediately react to the GFC but show long-lasting effects.

Focusing on the LFP, it is interesting to observe that the GFC had no negative impact on female LFP that continued to increase after the crisis, following its long-run trend, while male labour supply instead decreased in HI incomes after some quarters.

Figure 4.a: Unemployment dynamics, all countries
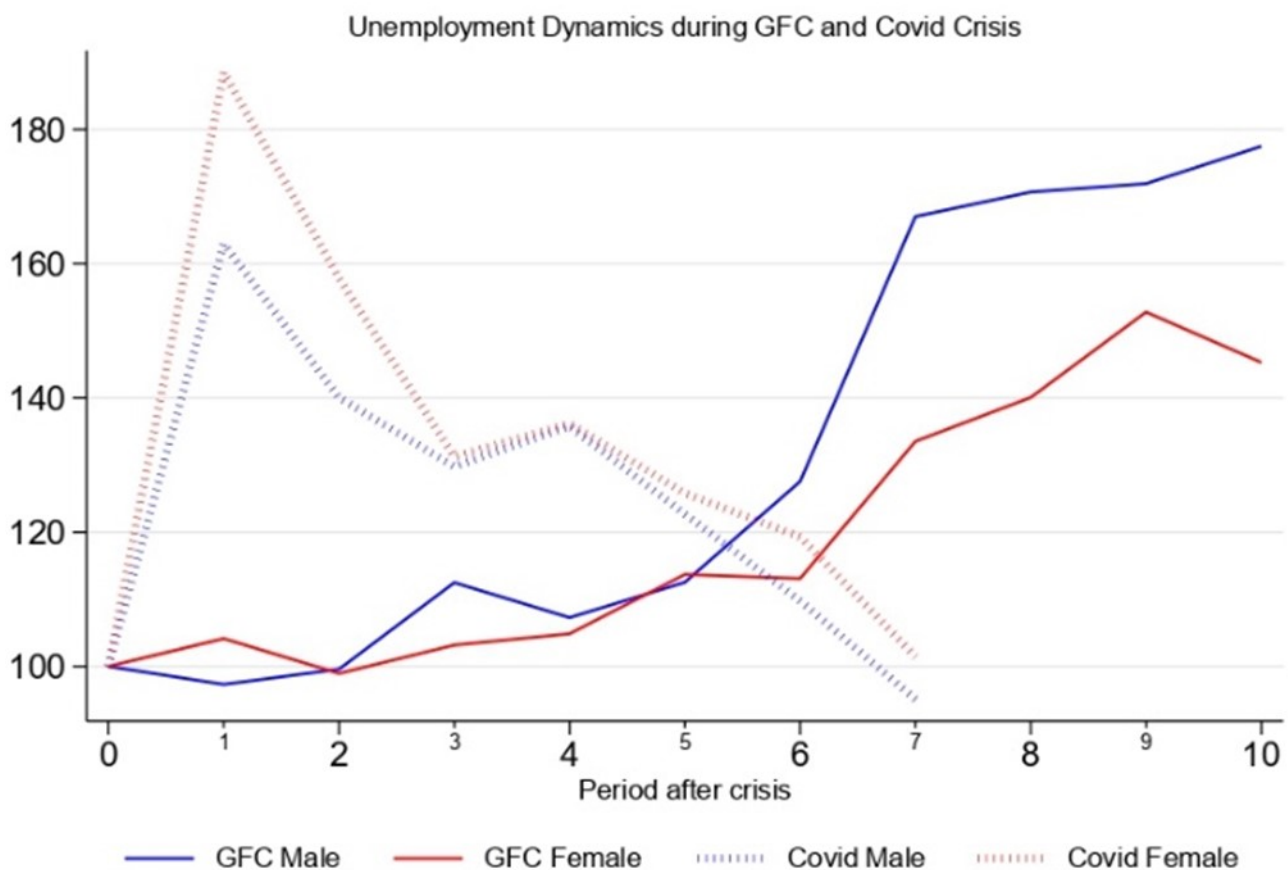
Note: GFC (2007q2-2009q4) vs Covid (2020q1-2021q4)

Figure 4.b: LFP dynamics, all countries

LFP Dynamics during GFC and Covid Crisis

Note: GFC (2007q2-2009q4) vs Covid (2020q1-2021q4)
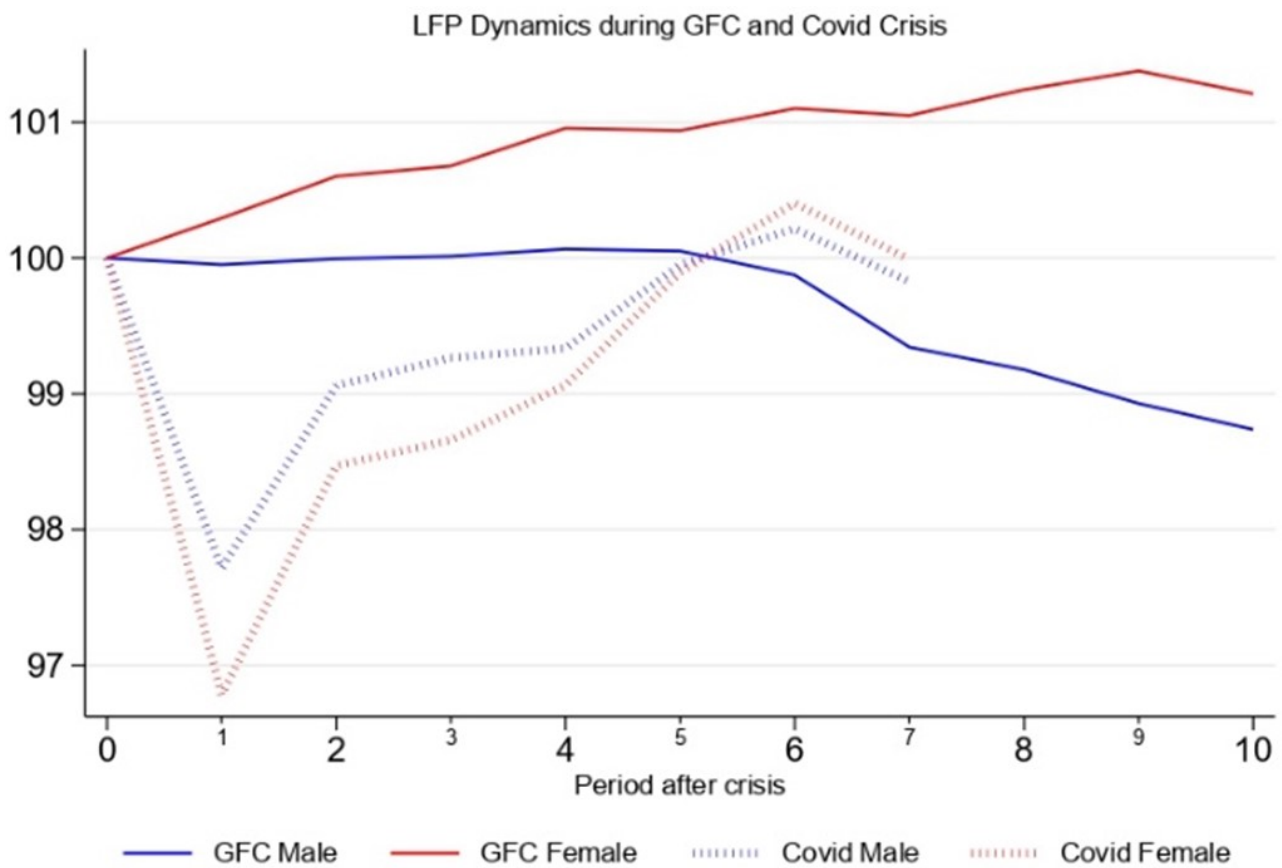
Conclusion

This work revisited stylized facts on labour force participation, employment and unemployment over the last thirty years to better understand dynamics and trends in the economies. The analyses have important policy implications.

From the counterfactual exercise, we observe that it is important to study female and male labour participation separately to understand the contribution of the FLFP to the global LFP trend. Understanding the determinants of FLFP in HI and MLI countries is crucial to unfold the source of labour supply that can almost entirely offset the effects of the decreasing trend in male labour supply.

Results from long-term determinants ultimately suggest that gender-oriented policies become effective especially once a country enters a mature stage of its development, by contrast in its first stage GDP-oriented policies could be more appropriate.

Because crises impact male and female labour markets differently (like observed in the exercises for the GFC and Covid-19), policy makers should target policies to contrast short-run adverse effects of Covid-19 crisis and recovery policies designed to sustain long-run economic growth. ▪

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Ines Buono is a senior economist at Banca d'Italia's International Relations and Economics Directorate. She holds a PhD in Economics at Universitat Pompeu Fabra in Barcelona. While her primary research interests include international trade and finance, she conducted empirical research in various topics such as the role of uncertainty and of monetary policy in explaining macro investment, the evolution over time of the de-anchoring of inflation expectations, the role of policies in promoting female participation in labour supply. Her research has been published in Journal of International Economics, European Economic Review and J-Macro. She represents the Bank of Italy in the G20 Framework Working Group; she is Deputy Head in the coordination of the Bank's G7-G20 Finance Track Team. In 2016-2017, she has been Deputy Editor and then Editor of the Bank of Italy's Working Paper series. She has been senior member of Bank of Italy's Recruiting Committees for Research Fellowships for Economists. Her publications are available at https://ideas.repec.org/e/pbu166.html.

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