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# Reviewing feminist macroeconomics for the twenty-first century

Izaskun Zuazu<sup>1</sup> 

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## Abstract

Feminist macroeconomics draws on the notion that the gender system is both cause and consequence of macroeconomic structures, outcomes, and policies. In contrast, mainstream and heterodox macroeconomics have done little to integrate gender as an analytical tool in macro-modelling. This paper defines the subfield of feminist macroeconomics, explores its origins, and provides a systematic review of its literature. Drawing on Seguino (2013), the paper divides the subfield in three main strands: (i) *feminist growth theory and gender dimensions of macro-level policies*, (ii) *macro-modelling and theoretical foundations of the care economy*, and (iii) *social infrastructure and intra-household allocation*. The paper discusses potential ways to expand the foci of feminist macroeconomic research and considers challenges to the subfield such as methodological issues regarding male-biased metrics and limited data availability and the tensions with mainstream approaches to gender and the macroeconomy.

**Keywords** Feminist macroeconomics · Feminist growth theory · Care economy · Economic methodology

**JEL Classification** E0 · E12 · B54

## 1 Introduction

Feminist macroeconomics draws on the notion that the gender system is both cause and consequence of macroeconomic processes, outcomes, and policies (Braunstein 2021). The gender system is widely defined as the system of economic, social, cultural, and political structures that sustain and reproduce distinctive gender roles and the attributes of women and men (Council of Europe 1998). Gender relations are embedded in

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gender systems, where systemic asymmetries of social power emerge between men and women, to the benefit of men (Akram-Lodhi and Hanmer 2008). The research agenda of feminist macroeconomists brings gender systems and gender relations to the centre of the study of macroeconomic analysis. To the contrary, both mainstream and heterodox macroeconomics, despite their major differences in methods and foci, have shown a common resistance to adopt gender as an analytical tool by wrongly assuming that most economic aggregates and macroeconomic policies are gender neutral. In most of the extant macroeconomics analyses, gender is not recognized as part and parcel of economic processes and policies, recognizing it solely as a marginal, exogenous variable which is outside the economic system (Van Staveren 2013; Braunstein 2022).

Akram-Lodhi and Hanmer (2008) state that there are at least two reasons why macroeconomics cannot be understood as gender neutral. The first one is that gender-neutral views in macroeconomics assume that the distribution of aggregate output is given and therefore analytically exogenous, which reflects an orthodox neoclassical conceptualization of the domain of macroeconomic analysis. While structuralist and post-Keynesian macroeconomists disagree on this exogeneity, the feminist critique fundamentally challenges the views of gender-neutral macroeconomics. Aggregate output and its distribution are viewed by feminist macroeconomics as a function of an outcome of explicit and implicit social choices, where gender relations play an extremely crucial role (Evers 2003; Çağatay and Ertürk 2004).<sup>1</sup> Gendered power structures—by which women and men have access to different levels of economic, social, and political power—determine the gendered division of labour (both paid and unpaid sides), thus resulting in vertically and horizontally segmented labour markets and gender imbalances in the distribution of household production and permeating other economics processes. The second, interrelated reason is that individuals reflect their social identity when making economic decisions (Akerlof and Kranton 2000; Çağatay and Ertürk 2004; Akram-Lodhi and Hanmer 2008), having macro-level implications for monetary policies (Couto and Brenck 2024), financial markets (Van Staveren 2014b), and savings and investments (Ertürk and Çağatay 1995; Seguíno and Floro 2003).

The COVID-19 pandemic uncovered profound gender imbalances in the macroeconomic policies and phenomena (Alon et al. 2021; Bahn et al. 2020) and made obvious the importance of the care economy for the functioning of the macroeconomy (Kabeer et al. 2021; Heintz et al. 2021). As other crises before, such as the Great Recession and subsequent fiscal retrenchment, the COVID-19 pandemic has demonstrated once again what feminist macroeconomists have long argued: the two-way relationship between the macroeconomy and the care economy where social reproduction emerges as the core element recreating future generations of the workforce.

This paper reviews the foundations of feminist macroeconomics, placing special attention to the contributions of feminist economists to macroeconomics (Elson 1991; Ertürk and Çağatay 1995; Braunstein et al. 2011). While feminist economics has a vast microeconomic research tradition (Onaran and Oyvat 2023), macroeconomic modelling and the incorporation of gender into macroeconomic analysis have been

<sup>1</sup> For more insights in the feminist economics and post-Keynesian economics, see Staveren (2010), Spotton Visano (2017), and Onaran and Oyvat (2023).

relatively ignored. In this paper, I make the case that the burgeoning scholarly agenda in feminist macroeconomics not only can result in a balance between the micro and macro-level foci of feminist economics, but also can improve macroeconomic modelling and macro-level analysis at large.

Throughout this paper, I use the term “gender-aware macroeconomics” to refer to gender approaches to macroeconomic, both from mainstream and feminist currents. Therefore, I use gender-aware macroeconomics to distinguish from those mainstream and heterodox macroeconomic strands that ignore the role of gender in the economy. Gender-aware macroeconomics, with its different ramifications into mainstream/orthodox and feminist currents, acknowledges the gender disparities as both cause and consequence of macroeconomic aggregates (international trade, investment, consumption, prices), macroeconomic processes (economic growth, distribution, economic crises), and macroeconomic policies (monetary policy, industrial policy, fiscal policy). However, there are key methodological differences between gender/orthodox and feminist perspectives into macroeconomics: the former is focused almost exclusively in supply-side factors, while the latter opens up macro-modelling towards structuralist, demand-driven models. Supply-side and demand-side factors are often referred to in macroeconomics as one of the major divides between mainstream/orthodox and heterodox currents (see Onaran and Oyvat 2023; Hein 2023a).<sup>2</sup> In sharp contrast to gender-neutral perspectives and gender mainstream macroeconomic analyses, feminist macroeconomics openly portrays gender as an analytical tool within the study of macroeconomics and, at the same time, acknowledges demand-side factors and power relations as key determinants of macro-level structures, outcomes, and policies.

Yet neoclassical economics approaches to gender and the macroeconomy have been reviewed extensively (Cuberes and Teignier 2014; Doepke and Tertilt 2016; Silva and Klasen 2021), and feminist macroeconomics literature has received relatively less attention. We welcome some exceptions, both in the form of book chapters (Seguino 2021; Hein 2023a) and research papers (Seguino 2013; Dow 2020; Sawyer 2020; Seguino 2020; Onaran and Oyvat 2023; Setterfield 2024). Dow (2020) introduces gender in macroeconomics from an evolutionary approach; however, her paper is rather epistemological than descriptive. Likewise, recent reviews of the state of the art of heterodox macroeconomics have noted the introduction of new streams, such as ecological economics and gender (Sawyer 2020), but without systemically reviewing and considering its main contributions. It should be noted that gender-aware macroeconomics literature is usually neglected from both mainstream and heterodox sides. One case in point, from the literature of heterodox macroeconomics, is Arestis and Sawyer (2019), where gender is only anecdotally cited in a book summarizing the frontiers of heterodox macroeconomics, with no reference to feminist macroeconomics. Hein (2023b) dedicates a subchapter to analyze the macroeconomic

<sup>2</sup> Demand-side factors refer to the aggregate demand in an economy, that is, the total quantity of goods and services which are acquired by consumers, business, government, and foreign consumption. These factors relate to macroeconomic aggregates such as consumer spending, investment, government expenditure, and net exports. In contrast, supply-side factors refer to the total quantity of goods and services provided by producers, and its key factors are technology, labour force participation, human capital, or labour productivity, among others.

consequences of gender pay gaps, while noting the relevance and contributions of post-Keynesian/Kaleckian macroeconomic models, which are explained in further detail in this paper. Finally, Onaran and Oyvat (2023) propose a synthesis of feminist economics and post-Keynesian/Kaleckian economics to enrich heterodox macroeconomics. They point to a symbiotic link between post-Keynesian economics and feminist economics by mentioning the benefits of integrating both research agendas. Concretely, the current paper goes along the lines of Onaran and Oyvat (2023) to argue that feminist economics would benefit greatly from macroeconomic modelling.

The contribution of this paper is to provide, to the best of my knowledge, the first systematic review of the literature in feminist macroeconomics. This systematic review of the literature considers three criteria to include papers in the analysis: (i) use gender as an analytical tool within a macroeconomic framework, (ii) papers should be published in peer-reviewed outlets, and (iii) papers should contribute theoretically to the subfield of feminist macroeconomics by formalizing a macroeconomic model. Thus, excluded from this systematic review are papers from an *add gender and stir* approach, contributions published in book chapters, working papers or non-peer-reviewed outlets, and finally purely econometric papers.<sup>3</sup>

The paper first defines and explores the origins of feminist macroeconomics (Section 2). A distinction between mainstream and feminist approaches to gender in the macroeconomy is provided, as well as a discussion on one of the major contributions of the subfield: the so-called feminization U hypothesis. I follow Seguino (2013) to divide the subfield into three strands (Section 3). By doing so, I assign different theoretical contributions to each strand and consider potential new avenues for expanding the research agenda of the subfield. The paper highlights the challenges ahead for the subfield (Section 4). Section 5 summarizes the main arguments of the paper.

## 2 Feminist macroeconomics: origins, concepts, and stylized facts

Although not necessarily the same, both feminist macroeconomics and gender mainstream/orthodox macroeconomics introduce gender as an analytical tool within the study of the macroeconomy. International organizations such as the International Monetary Fund (IMF), the World Bank (WB), and the United Nations (UN), as discussed by Braunstein (2021), have provided a gender perspective in the study of macroeconomy, and correspondingly, in their policy agendas, for the last decades. One example of this from the IMF is Stotsky (2006). The perspectives adopted in the macroeconomic analysis of these different institutions (IMF, WB, UN) differ greatly within the context of Millennium Development Goals (MDGs), as suggested by Akram-Lodhi (2016), which can be divided into orthodox and heterodox approaches. However, gender macroeconomic analysis from orthodox traditions shows a tendency towards supply-side factors, without questioning demand-side factors, as the major factors in understanding gender in macroeconomics. To the contrary, feminist macroeconomics acknowledges demand-side factors and embraces a more heterodox perspective. In

<sup>3</sup> There is only one exception to the exclusion of purely econometrics papers, that is Çağatay and Özler (1995), for its uttermost relevance in the development of gender-aware macroeconomics.

what follows, I provide a more detailed definition of the subfield of feminist macroeconomics and review its origins. Next, I comment on the interconnection between heterodox macroeconomics, especially post-Keynesian macroeconomics, and feminist macroeconomics, to later establish the differences between mainstream and feminist macroeconomics. This section finalizes with one of the major and well-known, stylized facts of both mainstream and feminist currents: the so-called feminization U hypothesis.

## 2.1 Origins and definition

The methods and foci within the field of macroeconomics have historically experienced major changes in the aftermath of disruptive economics shocks, such as the Great Depression and the Great Recession (Seguino 2019; Heintz et al. 2021). This was also highlighted by Dow (2021), who states that real experiences in economics can mould the philosophical and methodological discourses in macroeconomics. In this way, the gender perspective and on-going updates of feminist economics contribute to macroeconomics, and economic science at large, by providing researchers, policymakers, and pundits alike with models that incorporate the care economy and, thus, do a better job in abstracting real-world economics. The care economy—a term often attributed to Diane Elson—refers to the paid and unpaid sides of reproductive labour, which are at the core of the functioning and performance of the macroeconomy in feminist economics (Elson 1995; Braunstein 2021).

The birth of feminist macroeconomics can also be considered in the context of disruptive events or, more precisely, in the backfire of international macroeconomic programs in specific geographic areas. For Akram-Lodhi and Hanmer (2008), the macroeconomic analysis of the household and gender relations remained in its infancy, relative to neoclassical economic perspectives of gender from a Beckerian tradition (Becker 1960), at the time of the Great Recession, despite the pioneering works of Nilufer Çagatay, among others. Nonetheless, early works in feminist macroeconomics can be traced back to the 1980s, such as for instance the works of Jane Humphries and Jill Rubery. Humphries and Rubery (1984) noted the relative autonomy of social reproduction from the macroeconomy, as macroeconomic aggregates both influence and get influenced by the distribution of paid and unpaid work within the household. Social reproduction, defined as the contributions of time, commodities, and money required to produce, maintain, and invest in the labour force (Seguino 2020), has short-run and long-run dimensions, respectively, representing the replenishment of the workforce and human development.<sup>4</sup> Humphries and Rubery (1984) question the causal connections between the macroeconomy and social reproduction and consider that uneven distributions of paid and unpaid labour are borne out from macroeconomic

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<sup>4</sup> See Power (2004) for an explanation of feminist methodologies and the definition of social reproduction as a scientific method.

policies, and this uneven distribution, at the same time, affects macroeconomic policies and macro-modelling.<sup>5</sup>

Despite the above early postulates in feminist macroeconomics, it was not until the aftermath of the Structural Adjustment Programs (SAP) of the IMF in the late 1980s when the field gain momentum. SAPs produced unforeseen disparate gender effects, worsening the livelihoods of women in Global South countries, which occurred arguably due to gender-unaware macroeconomic theory and policies. In a series of works published in *World Development* in 1995 and 2000, feminist scholars such as Diane Elson and Nilufer Çagatay, among many others, produced a body of scholarship which elucidated the critical role of the gender division of unpaid and paid labour for understanding the functioning of the macroeconomy. The critics of feminist macroeconomists were that the economic models underlying SAPs' macroeconomic policy prescriptions, such as social-welfare spending cuts, wrongly presumed virtually unlimited supplies of unpaid labour from women and girls. This unleashed profound negative consequences not only for well-being, but for the economic goals of the programs themselves (Elson 1991, 1995; Beneria and Feldman 1992; Braunstein 2021).

## 2.2 Orthodox, heterodox, and feminist macroeconomics

While both neoclassical and heterodox economic theories include gender gaps into macroeconomic models, heterodox economists usually emphasize the demand and supply side in the short and long run, while neoclassical economists tend to focus on long-run supply-side effects (Seguino 2020). This can be seen as a limitation of the scope of neoclassical perspectives for gender analysis in macroeconomics, relative to feminist macroeconomics perspectives. Demand-side factors, rooted in gendered institutions, are included in the feminist macroeconomics research agenda often drawing on heterodox schools such as Marxist, Keynesian, and/or Kaleckian traditions (Seguino 2020; Kalecki 1971), to focus on the distributional effects in output, employment, and growth, to incorporate gender differences in income and employment.

There is a mutual benefit in combining feminist economics and post-Keynesian economics in a unified research agenda (Staveren 2010; Seguino 2021; Onaran and Oyvat 2023).<sup>6</sup> Integrating feminist macroeconomics into post-Keynesian macroeconomics allows a better understanding of the interrelation between demand-side and supply-side factors and a more accurate macro-level analysis of their effects on well-being, productivity, labour supply, and fertility (Onaran and Oyvat 2023). As similarly stated by Akram-Lodhi and Hanmer (2008) and Staveren (2010), Onaran and Oyvat (2023) also consider the relevance of gender relations and intra-household bargaining dictating the distribution of paid and unpaid work and the different economic behaviours of women and men. The resulting gender-segregated labour markets and

<sup>5</sup> It is interesting to note that the paper of Humphries and Rubery (1984) coincides in time with the publication of Marilyn Waring's book *If Women Counted: A New Feminist Economics*. What was once an effect, they said, can become a cause and vice versa.

<sup>6</sup> For a more advanced discussion on the links between feminist economics and post-Keynesian economics, see Lavoie (2003) and Lawson (2006), among others.



household production's distribution perpetuate the over-representation of women and racial minorities in lower-paying jobs and, hence, maintain or can even enlarge, gender, race, and class inequalities. These tenets from feminist macroeconomics framework complement post-Keynesian macroeconomic analysis of the dynamics of inequality and distribution (Onaran and Oyvatt 2023).

Staveren (2010) and Onaran and Oyvatt (2023) also delve into the other side of the coin, that is, how post-Keynesian macroeconomics benefits feminist macroeconomics. To summarize the arguments in Onaran and Oyvatt (2023), one can consider that the presence of excess capacity and involuntary unemployment in the economy in post-Keynesian macroeconomics benefits feminist analysis of the demand-side reasons behind women's economic inactivity, underemployment, or unemployment. Kaleckian models can improve integrating gender and class inequality dimensions in demand-side and supply-side factors in wage and employment level inequality. Other analyses within heterodox macroeconomics, such as demand-led growth models, can be implemented to understand how different types of government expending can be effective to have better gender and sustainable outcomes in the distribution of income and employment as well as in productivity. Finally, structural features can also improve feminist macroeconomic modelling: as Onaran and Oyvatt (2023) highlight the sectoral composition, oligopolistic price settings, import dependency, balance-of-payments constraints, international currency hierarchies, and unequal bargaining power between labour and capital,<sup>7</sup>

After reviewing the heterodox underpinnings of feminist macroeconomics, I turn next to consider the main tenets in gender mainstream macroeconomics. The literature in gender and macroeconomics within neoclassical economics has focused extensively on the relationship between gender inequality and economic growth. Silva and Klasen (2021) survey micro-founded macroeconomic theories explaining how gender inequality affects economic development, but this survey purposely leaves behind feminist macroeconomics works. As noted by Silva and Klasen (2021), there is very little dialogue between the neoclassical and feminist heterodox literature, while at the same time, the results of both currents reach to similar stylized facts and policy implications. The distinct intellectual routes of gender neoclassical macroeconomics and feminist macroeconomics can be seen as an impediment to the development of a more broad scientific agenda: neoclassical authors tend to cite exclusively other neoclassical authors (Seguino 2021), a point to which the paper comes back in Section 4.<sup>8</sup>

A prominent stream in gender-aware mainstream macroeconomics is related to economic growth theory and focuses on the role of gender inequality in deterring eco-

<sup>7</sup> Along similar lines to these arguments, Staveren (2010) notes what she calls *Money matters* and points to uncertainty, market power, and endogenous dynamics as the main post-Keynesian economics principles to integrate ore systematically into feminist economics. Relatedly, Akram-Lodhi and Hanmer (2008) provide a model of macro dynamics that incorporates gender relations and household production in a post-Keynesian fashion.

<sup>8</sup> An exception to the lack of interaction between mainstream and heterodox currents in gender macroeconomics was the Margaret Reid Seminar, organized by the Economics Department at the University of Manitoba and the Canadian Women Economists Committee (CWEC), where Professor Nancy Folbre and Professor Shoshana Grossbard discussed the works of Reid and her legacy in household and feminist economics in March 2021.



economic growth, while to a lesser extent acknowledges a two-way causation by which economic growth can affect gender inequality. These neoclassical approaches to the gender inequality-economic growth link come from two main traditions: first, from a Beckerian tradition (Becker 1960, 1991), and thus applies the analytical toolbox of rational choice theory to decisions being made within the boundaries of the family.<sup>9</sup> Second is from a structuralist tradition pioneered by Esther Boserup. This second tradition behind gender-aware neoclassical macroeconomics is mostly based on empirical work at the micro-level in developing countries and described clear patterns of gender-specific behaviour within households that differed across regions of the developing world (Boserup et al. 2013).

As pointed by Silva and Klasen (2021), the field of gender-aware mainstream macroeconomics is divided into (i) gender discrimination and misallocation of talent; (ii) unitary households, parents and children; (iii) intra-household bargaining: husbands and wives; and (iv) marriage markets and household formation. As it can be noticed by the topic of these different strands, gender-aware neoclassical macroeconomics is strongly influenced by new home economics, with a strong focus on rational choices within the household (Grossbard 1984, 2001), and having the heteronormative family as the primary unit of observation. Gender-aware neoclassical macroeconomics main conclusions suggest that changes in family structure have important repercussions for the determination of aggregate labour supply and savings (Doepke and Tertilt 2016), while targeting transfers to different agents within the household might have impacts for growth (Doepke and Tertilt 2019).<sup>10</sup> Cuberes and Teignier (2014) review the existing theories behind the gender inequality-economic growth link and highlight the wide range of mechanisms through which these two variables may affect each other, while at the same time lament on the lack of connection between most studies and the existing theories.<sup>11</sup> More recent developments in gender-aware macroeconomics follow Boserup's tradition and focus on the women's allocation of time in home production and paid work along the structural transformation process (Gaddis and Klasen 2014; Dinkelman and Ngai 2022), which come closer to the perspectives developed in feminist macroeconomics.

Contrasting the above-mentioned growth theories of gender, Kabeer (2016) provides a feminist institutional framework to the study of economic growth. While the evidence that gender equality contributes positively to economic growth is robust, the reverse relationship is less consistent and generally confined to high-income countries. The framework proposed by Kabeer (2016) uses the notion of "geography of gender" to distinguish the dominant models of masculinity and femininity in different geographies, dictating men and women, and boys and girls' specific roles based on socially constructed aptitudes and dispositions. In this sense, Kabeer (2016) invokes the structuralist view of Boserup, and thus, connecting in some ways gender-aware neoclassical growth models with feminist growth models. But the critique of the neo-

<sup>9</sup> See Becchio (2020) for a distinction and origins of *home economics* and *household economics*.

<sup>10</sup> This type of conclusion is also achieved by feminist macroeconomists, by focusing on gender differentials in savings propensities, as in Seguino and Floro (2003). However, the approach and methods of neoclassical and feminist scholars widely differ.

<sup>11</sup> See Galor and Weil (1993) and Grimm (2003) for early works on gender-aware neoclassical economics.

classical economic growth theory from feminist economist is a strong one, which refers to the gender asymmetry in mainstream conceptualizations of growth (Waring and Steinem 1988), as will be developed further in this paper.

It should be highlighted that the scientific background and schools of thought of Boserup and Kabeer contrast in sharp ways, as the former comes from the Women in Development (WID) tradition, while the latter draws on the Gender and Development (GAD) tradition, following the nomenclature from the Women in Development Office at the Agency for International Development, established in 1976. As explained by Kanji (2003), WID is rooted in liberal feminism, as its aims are to apply the liberal political values of equality, liberty, and justice to women and men, with little or no focus on gendered power relations and imbalances. Further, WID did not challenge the dominant model of development. Feminist approaches to development and gender emerged as critiques of WID in the form of the Gender and Development (GAD) movement from feminist voices of the South in the mid-1980s. In contrast to WID, GAD argued for women's empowerment: they opposed to the integration of women into development processes which, as they advocated, were premised on inequalities between industrialized economies in the North and poor countries in the South.<sup>12</sup> GAD was a term coined by Rathgeber (1990), to refer to approaches to women/gender and development that adopted a focus away from *women* and towards the power relations between women and men, development processes and structures which place the attention towards the sources of women's disadvantage and gender imbalances.

Together with Boserup and Kabeer's contributions to the current state of the art of feminist macroeconomics, we should highlight the works of Marilyn Waring, often considered the foundational work of feminist economics.<sup>13</sup> Waring's critic of economic well-being measures was the steppingstone for the current ramifications of the field go beyond the flaws of gross domestic product (GDP) towards an entire scientific method to the macro-modelling social reproduction.

Feminist macroeconomics argue two easily identifiable features regarding the gendered implications of macroeconomic policies (Elson 2019): the lack of recognition of unpaid work and the unequal impact of cuts in public expenditure. Thus, a common attribute transversal to the strands of feminist macroeconomics is the acknowledgment of gender biases in macroeconomic policies.

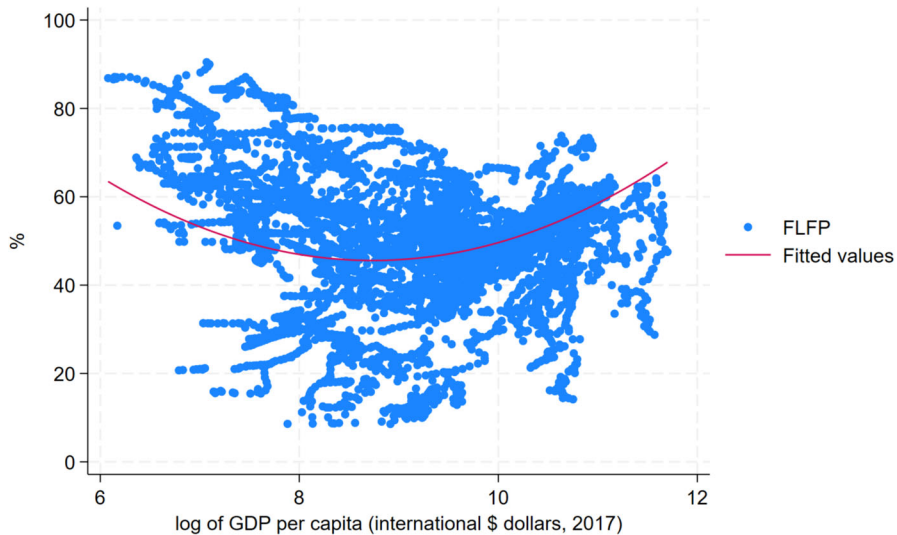
### 2.3 The feminization U-shaped hypothesis

A noteworthy stylized fact in both gender mainstream macroeconomics and feminist macroeconomics is the U-shaped link between female labour force participation (FLFP) and economic development, as exemplified in Fig. 1.<sup>14</sup> While the U-shape link between women's participation in the paid labour force and economic development was first considered in Goldin (1994) using US historical data and published as an

<sup>12</sup> See Calas and Smircich (1997) for an explanation for a summary of schools of thought of feminist approaches to women and development.

<sup>13</sup> For a review of her work, see Hyman (2014).

<sup>14</sup> Countries in the sample with mean values of GDP per capita and female labour force participation in Appendix, database, and codes available in Supplementary materials.



**Fig. 1** Feminization U hypothesis. *Notes: Own elaboration. Panel of 168 countries during 1990–2022. Data source: World Bank*

NBER working paper, feminist macroeconomists used panel of countries to publish this stylized fact in peer-reviewed journals (Ertürk and Çağatay 1995; Çağatay and Özler 1995). Nonetheless, the evidence has been contested, as many countries such as India and Brazil do not follow the expected level of FLFP by its level of economic development, where India has a remarkably low FLFP and Brazil has a surprisingly high FLFP. Globalization, trade liberalization, and structural change are factors behind the feminization of employment, as discussed by Seguino and Grown (2006), with crucial implications for African countries, with less competitive manufacturing sectors. Development economics has contributed to clarify the role of culture and geography in dictating the link between economic development and FLFP (see Douarin and Uberti (2023) for a recent revision of the literature on the feminization U hypothesis).

### 3 Current and new strands of feminist macroeconomics

#### 3.1 Current strands

Feminist macroeconomics has evolved greatly since the 1980s, as discussed in a series of works by Stephanie Seguino (Seguino 2013, 2020, 2021) and also by other authors (Beneria et al. 2015; Connelly and Kongar 2017; Braunstein 2021). Seguino (2013) identifies three strands of the feminist macroeconomics research agenda: (i) feminist growth theory and gender dimensions of macro-level policies, (ii) macro-modelling and theoretical foundations of the care economy, and (iii) social infrastructure and intra-household allocation of resources.

**Table 1** Review of feminist macroeconomics literature (I)

Authors	Journal	Method	Geography	Contribution
i) Feminist growth theory and gender dimensions of macro-level policies				
Ertürk and Çagatay (1995)	World Dev	Kaldorian model	Global	Feminization of LF (housework) increases investments (savings)
Çagatay and Özler (1995)	World Dev	Panel regression	165 countries 1985-1990	Feminization U-shape
Elson (1995)	World Dev	Macro models	Global	Social matrix into macro-modelling
Elson and Çagatay (2000)	World Dev	Gender budget analysis	Canada	Deflationary, male breadwinner and commodification biases
Seguino (2000)	World Dev	Growth model Cross-section regression	20 Global South countries	GDP positively associated with gender pay inequality
Braunstein (2000)	World Dev	Macro model	Global	FDI effects on women's wages and employment
Blecker and Seguino (2002)	Rev. Dev. Econ	Two-sector macro model	SIEs	Identification of conditions for gender equitable depreciation policies
Seguino (2010)	Rev. Political Econ	Macro model	SIEs & LIAEs	Opposing directions of gender wage and capabilities across areas, and relevant role of government to improve equality growth
Heintz and Folbre (2022)	Fem. Econ	Macro model	Global	Below-replacement fertility can have serious l/r economic consequences
Elveren (2023)	J. Post Keynes. Econ	Macro model	Global	Higher military spending associated with higher gender inequality and lower economic growth

Tables 1 and 2 offer a schematic overview of respectively the first strand and two subsequent strands' main references. The conditions for including papers in this systematic review are three. (i) First and foremost is the condition of using gender as an analytical tool within a macroeconomic framework. (ii) Papers should be published in peer-reviewed journals. I left behind book chapters, unpublished working papers, or reports from non-peer-reviewed outlets. (iii) The third is the condition of contributing mainly theoretically to the development of the subfield, that is, the inclusion of using a macroeconomic model. There is one exception to these macro-modelling criteria, that compensates with the relevance of the empirical question and findings are of uttermost importance for the development of the field, such as the prominent work of

**Table 2** Review of feminist macroeconomics literature (II)

Authors	Journal	Method	Geography	Contribution
ii) Macro-modelling and theoretical foundations of the care economy				
Braunstein et al. (2011)	Fem. Econ	Macro model	Global	Macroeconomic conditions behind “selfish” vs “altruistic” economies
Braunstein et al. (2020)	Camb. J. Econ	Macro model and panel regression	156 countries 1991–2015	Macroeconomic profiles of social reproduction and economic growth
Onaran et al. (2022a)	Fem. Econ	Macro model	41 emerging economies	Social spending benefit for gender equality in LM and productivity
Onaran et al. (2022b)	Fem. Econ	Macro model and panel regression	UK	Interaction between gender and functional income inequality
Vasudevan and Raghavendra (2022)	Fem. Econ	Macro model	Global	Women’s self-employment perpetuates care asymmetries and gendered burdens within the household
González et al. (2022)	Fem. Econ	Macro model	Global	Social norms govern market price effects in the distribution of care work, perpetuating women’s unpaid care
Onaran and Oyvat (2023)	EJEEP	Macro model	Global	Feminist post-Keynesian synthesis model
iii) Social infrastructure and intra-household allocation				
Ilkcaracan et al. (2021)	World Dev	Macro-micro policy modelling Simulations	Turkey	Childcare provisioning increases employment and reduces time and income poverty rates
Oyvat and Onaran (2022)	World Dev	Macro model and regression analysis	South Korea	Sustainable equitable development and employment requires both labour market and fiscal policies
Miller and Bairoliya (2022)	Fem. Econ	Micro model Simulations	14 EU countries	Decreasing adult daughter’s bargaining power increases welfare burden and unmet care needs of her parent
Onaran et al. (2023)	Camb. J. Econ	Macro model and IV regression analysis	UK	Feminist post-Kaleckian model showing tax wealth reduces wealth concentration and public social infrastructure investment

Çağatay and Özler (1995) on the feminization U hypothesis (see above). With this sole exception, the papers included in the tables incorporate macroeconomic models, even if simple ones. In this sense, empirical works using econometric techniques which do not include a gender-aware macroeconomic model are excluded from this systematic review. To improve readability, the articles are listed in chronological order, with five aspects: authors and year, journal, method, area of geography, and contribution.

### 3.1.1 Feminist growth theory and gender dimensions of macro-level policies

This first strand builds upon the observation of the gender disparate implications of the SAPs and the consequent public spending cuts and public sector retrenchments, implemented in developing countries in the 1980s. This line also has a focus on understanding the two-way link between economic growth and gender inequality and thus has growth theory foci. This strand incorporates works that highlight the role of economic development in driving women into the paid economy, pioneered by Çağatay and Özler (1995) with the finding of the so-called feminization U hypothesis, as explained before. In another early work in feminist macroeconomics by Nilufer Çağatay, this time co-authored with Korkut Erturk (Ertürk and Çağatay 1995), macroeconomic aggregates are analyzed from a gender perspective. Concretely, they focus on the interplay between female labour force and investment and, simultaneously, look into how women in unpaid work might be connected to savings. Using a Keynesian growth cycle model in a structurally adjusting economy context, their findings show countervailing effects between increasing investments with female labour force participation and the increasing savings with female household labour. They suggest that feminization processes would benefit to a greater extent in high and high middle-income countries. Above these stylized facts, Elson (1995) and Elson and Çağatay (2000) reflect and theorize on the creation of macroeconomic aggregates (consumption, savings, investment, and gross national product) and the necessity of national accounts to represent real processes of aggregation. A common theme of these works is the requirement of economic models to incorporate the standpoint of women's lives and thus the acknowledgement of their role in unpaid work in social reproduction as well as to paid work in production and to recognize unequal gender relations at macro, meso, and micro levels.

Other contributors to this research line within feminist macroeconomics further draw on neoclassical and heterodox growth models to reflect more nuances in which gender relations affect macroeconomic aggregates. Seguino (2000) is often considered a classic paper within the field, where she critically studies the potential gender inequality effects of economic growth applying econometric regressions to a neoclassical growth model and data from 20 developing countries, in a moment where neoclassical macroeconomists were suggesting an unequivocal pro-egalitarian effect of growth.<sup>15</sup> Finally, using macroeconomic models, Blecker and Seguino (2002) and Seguino (2010) focus on SIEs and/or low-income agricultural economies (LIAEs) to consider the role of monetary policies and government spending policies to foster the conditions for gender equitable growth. More recent growth models from feminist macroeconomists include endogenous population dynamics, rising awareness of market failures, and the role of social institutions and intragenerational, non-market relationships and migration (Heintz and Folbre 2022). Elveren (2023) provides a novel

<sup>15</sup> A related paper in the literature of feminist macroeconomics is Seguino and Floro (2003), where the authors identify that increasing women's relative income and bargaining power is associated with rising saving, ultimately affecting gross domestic savings and GDP, in semi-industrialized economies (SIEs). However, due to the purely empirical nature of this paper, I decided to not include it in Table 1.

macro model focused on military spending, to find that this type of public spending can have detrimental effects for gender equality and economic growth.

### 3.1.2 Macro-modelling and theoretical foundations of the care economy

The second strand focuses on the macroeconomic theoretical foundations of the care economy and the role of care sector from a structural perspective, with the subsequent critique of adapting the systems of national accounts (SNA) for more gender-inclusive metrics. Following the spirits of Waring and Steinem (1988) and Boserup (1970), this second strand places special attention to how labour gets accounted in macro-modelling: the care work essential to reproduce the labour force should be connected to macro-modelling to ensure its social provisioning.

Braunstein et al. (2011) is probably the first work in providing a static structural macroeconomic model that puts the care economy in the centre, stressing demand-side factors, such as care. The authors conceptually transform Keynes's "animal spirits" into "caring spirits", which is used by the authors to describe the exogenous effect of whether care is enthusiastically provided, for whatever reason. While animal spirits refer to herd-like sentiments that tend to characterize financial markets, as Braunstein et al. (2011) argue, caring spirits are long-term, institutional features of society and, thus, fundamental for the workings of the macroeconomy. The early work of Braunstein et al. (2011) was expanded in Braunstein et al. (2020), with both a Kaleckian macroeconomic model and econometric regressions, linking macroeconomic structures and economic growth with social reproduction and gender inequality. The paper ultimately identifies under what circumstances economic growth and social reproduction reinforce or contradict one another.

Onaran et al. (2022a) also develop a feminist post-Keynesian/post-Kaleckian model to focus on fiscal and labour market policies in growth and employment, which suits perfectly to further analyze the impacts of an upward convergence in wages, other types of fiscal spending, and taxes. Along similar lines, Onaran et al. (2022b) develop a model to analyze the macroeconomic effects of two dimensions of inequality—gender inequality and functional income distribution—and public spending, in particular on social infrastructure, on output, productivity, and hours of employment of men and women. They complement this macro model with a dynamic panel data model using data on 18 European Union countries and find that the UK is both gender equality-led and wage-led, and hence generally equality-led. The effects of public social infrastructure investment on both output and employment are positive, and that both female and male employment increases in the medium run.

Among the last works included in this strand are Vasudevan and Raghavendra (2022) and González et al. (2022). These two papers provide macroeconomic models which shed new life into the consequences of the promotion of self-employment through financial inclusion initiatives, for the former case, and the market prices effects in the women's provisioning of unpaid care work. The conclusions of Vasudevan and Raghavendra (2022) suggest that neoliberal developmental policy framework designed to foster the capabilities of women through self-employment are not viable strategies without the implementation of directly boosting simultaneously aggregate demand and equal gender distribution of care responsibilities through social infrastructures.



González et al. (2022), by their part, also place care at the spotlight, emphasizing the substitutability between women's and men's care work and the countervailing effects between reducing gender wage gap and persisting gender norms. The paper finds that market power dynamics together with resilient gender norms perpetuate reliance on women's provision of unpaid care.

Finally, Onaran and Oyvat (2023) propose a theoretical synthesis of feminist economics and post-Keynesian economics for a *purple-green-red* transition. The novelty of this model is that it explicitly incorporates both demand and supply-side components, as well as gender and class inequality in income, employment, and wealth, together with care and green economy fiscal policies. Their findings suggest the necessity of a fiscal policy paradigm shift to tackle inequalities and social, economic, and ecological crises.

### 3.1.3 Social infrastructure and intra-household allocation

The third strand within feminist macroeconomics opens the “black box” of intra-household resource allocation and draws on the idea that households are cooperative enterprises where conflict and competition are driving forces behind the bargaining power of household members.<sup>16</sup> The macro-level dimensions of this third line recognize the gender-biased impact of macroeconomic policies in intra-household bargaining power, subsequently affecting the gender equality in the performance of labour and in access to resources, ultimately affecting long-run productivity growth mediated by investments in health and education of children. In this third line, the focus is placed on the social provisioning of care (education, health, social work), and it is often accompanied by simulations of policies. Ilkkaracan et al. (2021) use the Early Childhood Education and Care (ECEC) in Turkey to evaluate its effects on employment and income, time allocation in paid and unpaid work, and poverty. Increasing public spending in childcare is found to generate employment particularly for previously non-employed women and, at the same time, to reduce poverty rates. Nonetheless, employment effects come at the cost of time-poverty increases. Childcare provisioning services alleviate this side effect, and simultaneous employment creation and childcare can alleviate time and income poverty and improve gender equality. Other examples in this strand are Oyvat and Onaran (2022), who study the short-run and medium-run impact of spending in social infrastructure and gender gap on output and gender employment in South Korea. To do so, they develop a post-Kaleckian feminist macroeconomic theoretical model and combine it with regression analysis. The findings show that an increase in the public social infrastructure significantly increases the total non-agricultural output and employment and a positive relative effect in female employment. Oyvat and Onaran (2022) highlight the need of both labour market regulation and fiscal packages to achieve sustainable growth paths to gender equality. González et al. (2022) use a micro-level model of intra-household bargaining to analyze care. The authors endogeneize the role of labour market to find that the welfare cost of caregiving is shouldered disproportionately by women part-

<sup>16</sup> This third line touches upon new developments in neoclassical gender economics, such as the non-unitary models of household behaviour. See Chiappori and Donni (2009) for a review.

ners. They use data on 14 EU countries and focus on France to demonstrate how a decrease in an adult daughter's bargaining power relative to her partner can increase her share of the care burden and the unmet care needs of her parent. Finally, the work of Onaran et al. (2023) offers a feminist post-Kaleckian model of taxation to study wealth concentration and estimate econometrically the model to obtain that increasing wealth tax rates depresses wealth concentration and affects positive impact on output, employment, and the government's budget. At the same time, they compare the effects of public social infrastructure and public physical infrastructure, to find that the former strongly benefits output and productivity and gender equality in wages and employment, while the latter creates relatively fewer jobs for women and has modest effects in productivity.

These three strands complement each other by introducing gender power imbalances as cause and consequence of macroeconomic phenomena and providing a theoretical framework to incorporate critical gender perspectives in macro-modelling. One of the requirements for including papers in this categorization of feminist macroeconomics was that they had, at least in a reduced form, a theoretical macro model. However, with the exception of Blecker and Seguino (2002) and some policy implications in Onaran and Oyvat (2023), none of them explicitly accounts for monetary policies in a theoretical fashion. Nonetheless, there is a series of contributions from feminist macroeconomics to the analysis of monetary policy from empirical approaches, which are already summarized by Braunstein (2022) and Couto and Brenck (2024).<sup>17</sup> Some of the insights from this literature within feminist macroeconomics point to specific mechanism through which monetary and central bank policies can affect women and men in different ways: one case in point is employment. As pointed by Braunstein (2022), anti-inflationary policies result in increasing real interest rates and reducing real money supply, which both lead to employment contractions for both women and men, but with stronger effects for female employment. Apart from the employment side, the differential impacts of monetary policies for women and men also work by altering asset prices and the uneven gender and racial distribution of wealth and income. Indeed, Young (2018) finds empirically that rising asset prices in stock markets by unconventional monetary policies have disproportionately benefited men.

### 3.2 New avenues

There are multiple ways in which feminist macroeconomics can be expanded, as previous macro-modelling, both from mainstream and heterodox currents, has largely ignored gender as a macroeconomic variable within macroeconomic aggregates, such as employment, incomes, consumption or investments, or within macroeconomics policies or phenomena, such as monetary and fiscal policy, central banking, inflation, structural change, and economic growth. For simplicity, I will elaborate on three potential avenues in what follows, mainly in relation to the ability of macroeconomists

<sup>17</sup> The UK-based think-tank Women's Budget Group (WBG) has extensively researched on feminist monetary policies. See Powell (2023)'s WBG report on a feminist approach to monetary policies.

to measure unpaid work and develop macroeconomic models that would allow to discern unpaid and paid sides of gendered macro structures.

**Developments in time use data** One important tool for the future development of feminist macroeconomics is time-use surveys (TUS). One methodological aspect of feminist macroeconomics is the quantification of unpaid work, which is feasible through the use of TUS data. TUS provide information on the time devoted by each agent within a household in different activities, from leisure time to unpaid and paid labour, although the coverage of different household agents and detail of the information of the activities depend on the design and scope of the survey. International comparisons are available for a certain number of countries, although experts in the field claim for greater coverage and harmonization of the different data sources. In this sense, the ability of identifying and measuring unpaid work and care work in the macroeconomy has allowed feminist macroeconomists to provide better policy assessments and policy simulations (Ílkkaracan 2017). Nonetheless, there are methodological problems, especially when considering Global South countries, regarding the design of the TUS different components of and the collection of data (Hirway 2021), and this is precisely one potential new avenue for feminist macroeconomics research. Connelly and Kongar (2017a) discuss the macroeconomic side of the use of time and how the data can be used in order to represent differently the work (paid and unpaid) based on gender, age, sexuality, race and ethnicity, migration status, and income class. Time poverty can be conceptualized, similarly to income poverty, using TUS and be integrated in macroeconomic analysis in such a way that was not considered before in orthodox or heterodox accounts (Elson 1994; Ílkkaracan 2017). Greater efforts in advancing the computational methods in estimating the amount of the care economy by means of TUS can conform potential adhesions to the subfield.

**Social accounting matrices** Another computational contribution of the literature in feminist macroeconomics is the use of social accounting matrices to perform macro-micro modelling and simulations (Cicowiez and Lofgren 2017). Feminist macroeconomics is interested in studying the factors determining the women's allocation of time in household production. Thus, there are clear interlinks between the TUS and social accounting matrices (SAM), as both methods provide a computational basis for simulating, for instance, public spending on physical and social infrastructure. As early noted by Elson (1991), the male biases in public expenditures, as part of macroeconomic policies, are often translated into a higher burden of care responsibilities of women. SAM target precisely the effects of macroeconomic policies, often related to investments in certain sectors or infrastructures. One application of SAM can be found in Zacharias (2019), where also a macro-micro modelling is implemented to study how physical and social infrastructure investments impact on the time spent on care work and paid and unpaid distribution of work.

**Intersectionality** Finally, feminist macroeconomics framework also takes intersectional approaches, as discussed by Fukuda-Parr et al. (2013), to emphasize the role of multiple trajectories transversal to gender, such as race and class, in unleashing distributional effects and affecting the macroeconomy. Power (2004) identifies five components in the task of incorporating social provisioning in economics: recognition of care work as a fundamental economic activity, use of well-being as a measure

of economic success analysis of economic, political, and social processes and power relations, and the inclusion of ethical goals in economic analyses; and interrogation of differences by class, race-ethnicity, and other factors. The first three tasks have been already taken into account in feminist macroeconomics. The latter two, though, can be new avenues in which the subfield can be expanded. A few works have already paved the way in integrating intersectional views based on sexual orientation. The incorporation of lesbian, gay, bisexual, and transgender (LGBT) people into macro-level analysis, as it is done in Badgett et al. (2019) with the use of Global Index on Legal Recognition of Homosexual Orientation, can be seen as future paths of the development of the subfield. As of intersectional views on Global North and Global South perspectives, Gammage (2021) sets the basis, although not from a strict macro-level viewpoint, for the analysis of migration on gender roles in care chains and care workers and its heterogeneity in terms of race, caste, and class.

#### 4 Challenges ahead

The field of feminist macroeconomics faces certain challenges. Here, I highlight two main sources of potential challenges for the subfield: (i) the methodological aspects and data-related limitations and (ii) the ability of changing the standard macro-modelling and macroeconomic paradigm. First, as of methodological and data availability issues, one important challenge is the use of GDP as a macroeconomic metric. Some feminist macroeconomics' work focuses on economic growth and gender imbalances, using GDP growth and market production as main metrics. As SNAs leave out non-market economic activities (Hanmer and Akram-Lodhi 1998), such as unpaid work or informal work, the calculations of GDP are at the very least biased and under-report female-dominated economics activities, such as the care economy.<sup>18</sup> Nonetheless, as pointed by Braunstein (2021), these strands of the subfield allow us to better understand systems for social provisioning and the aggregate economic structures. At the same time, the extent of their engagement with standard macro concepts allows to enter the discussion of macro theory and policymaking beyond feminist circles.

Similarly to the drawbacks of GDP as a measure of economic well-being and its limitations to account for unpaid work, structuralist approaches also suffer from the lack of gender-awareness in quantitative methods. One crucial methodological aspect in the structuralist approaches of feminist macroeconomics is that cross-sectoral productivity is measured in the same way, that is, by means of value added per number of employees or worked hours. Structural change is analyzed by means of changes in employment shares from low-productivity to high-productivity sectors. Nonetheless, measurement and comparability of productivity in alternative sectors are cumbersome

<sup>18</sup> Relatedly, DeRock (2021) explores the political economy of statistical agencies in generating economic metrics and the discretion of the staff at the United Nations, International Monetary Fund, and World Bank, in defining what an economic activity is and where to classify it. DeRock (2021) find a rather reluctant position of statistics staff to actually incorporate a more gender-aware definition of GDP aggregates, which goes in line with the early claims of Elson (1995).

as not all sectors contain activities of the same nature (e.g. tradable or non-tradable services, routine and non-routine, manual or technical, among other characteristics). This is crucial when measuring productivity in the care economy, where labour productivity might not be obtained by reducing the amount of labour and where technological adoption might not always result in the same type of goods and services. This concern dates back, although not necessarily with a gender perspective, to the work of Baumol (1967), who considers that services suffer from a *cost disease*: as due to their nature, productivity enhancements in services are less likely than in manufacturing. Analyzing the *cost disease* from a gender perspective, one can easily observe that goods and services produced in the care sector are less likely to be subject to labour-reducing technological change. Reducing the number of caregivers in child-watching activities, such as signing nursing songs, or in elderly care, might result in a reduction of the quality of the services provided to caretakers. For a greater discussion along these lines, please see Donath (2000) and Madörin (2014).

Data limitations are crucially linked to the definitions of sectors, as the care economy is a relatively new concept in the general field of macroeconomics. Defining care and what should be included in the care economy has long worried feminist economists and is another methodological challenge for the subfield. There is still a lack of consensus in accounting for the care economy, which makes the measurement of the sector difficult. As pointed by Folbre (2006), there is some agreement that the care economy refers to unpaid care work and non-market economic activities that circumscribe social reproduction. It follows that after this general understanding of social reproduction and the care economy, it is difficult to think of any activities that do not relate, at least indirectly, with social reproduction, as even a single male paid worker, as Folbre (2006) explains, can earn a wage that helps him reproduce his own labour power.

The second challenge regards the male-domination of macroeconomics as a field and the engagement between mainstream and heterodox sides of gender and the macroeconomy. Gender mainstream macroeconomics and feminist macroeconomics are similarly challenged by gender-neutral analysis of mainstream economics and orthodox views that barely recognize monetary and fiscal policies to be developed within gendered institutions. The field of macroeconomics at large faces a male domination in the scientific side (Lundberg and Stearns 2019), and so a male bias in macroeconomic policymaking (Elson 1991). These male biases impede feminist macroeconomics to make a difference in women's and men's livelihoods through the policymaking process.

Feminist macroeconomics is also challenged by gender mainstream macroeconomics and the willingness to acknowledge findings from both mainstream and heterodox, feminist sides. It has been already highlighted by feminist scholars the rivalry between gender neoclassical economists and feminist economist, usually materialized by a non-citation rule from the former to the latter, and less so the other way around (Seguino 2021; Onaran and Oyvat 2023). Seguino (2021) considers the little effort to engage and reconcile findings that emerge from both heterodox feminist theory and neoclassical models, as an impediment for a cross-fertilization of scientific knowledge of gender relations and the macroeconomy. Similarly, Onaran and Oyvat (2023) point to the lack of citations to the main field journal *Feminist Economics*

by mainstream neoclassical macroeconomists. A recent example of this little cross-fertilization can be seen in Heggeness (2023), where the author makes the case of care work being an economic activity. While two papers by Nancy Folbre are cited in Heggeness (2023), she does not cite the contributions of Diane Elson to the concept of the care economy and care work (Elson 1998, 1995), nor acknowledge the field of feminist economics.

The recent recognition of gender economics in the mainstream arena, as the awardee of the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel Professor Doctor Claudia Goldin as of October 2023, could be seen as a grass root of a change and an openness of mainstream economists towards the inclusion of gender in economics and the inclusion of women in economic research. It remains unclear though whether this recognition to gender in economics will alleviate the impediments fertilization and hence systematic citation of similar findings from alternative approaches.

It derives from the last challenge the role of the incorporation of feminist perspectives into the macroeconomics curricula, as a catalyst for a change in the hegemonic paradigm in economics. There is still little inclusion of feminist economics in economics curricula in general (Long 2023) and in macroeconomics curricula in particular. Nonetheless, we welcome the book of Irene van Staveren *Economics after the crisis: An introduction to economics from a pluralist and global perspective* of 2014 and more broad approaches to teaching heterodox and feminist economics without an explicit focus on macroeconomics (Miller 2019; Saave 2021; Corsi et al. 2021). Similarly, van Staveren (2017) proposes a pluralist macroeconomic curricula composed by five pillars, namely social economics, institutional economics, feminist economics, post-Keynesian economics, and neoclassical economics. In this sense, the review here provided of feminist macroeconomics could partially fill this void by providing new comers, undergraduates, and graduate students with a more comprehensive guide to the subfield.

## 5 Conclusion

Gender relations have been largely ignored in macroeconomics, as often gender variables are deemed too remote from macroeconomic aggregates (Akram-Lodhi and Hanmer 2008; Van Staveren 2013), especially in the case of monetary policy research (Braunstein 2022). This paper has focused on how feminist macroeconomics takes gender as an analytical tool within macroeconomics and provided a systematic review of the exiting works in the subfield. We defined and explored the origins of the subfield and contextualized it with respect to mainstream macroeconomics and gender-aware macroeconomics from a neoclassical side.

This paper reviewed the contributions of feminist macroeconomics and followed Seguino (2013) to divide the existing works into three different strands, namely feminist growth theory, macro-modelling of the care economy, and social infrastructure

and intra-household allocation. The paper summarized for each strand the key theoretical contributions of the relevant literature, while explored separately empirical work in feminist macroeconomics, such as the feminization U hypothesis (Goldin 1995; Çağatay and Özler 1995) and recent empirical findings in monetary policy (Braunstein 2022; Couto and Brenck 2024).

Mainstream macroeconomics does not provide a gender perspective as macroeconomic policies are generally considered gender neutral. Feminist macroeconomics, to the contrary, shows that macroeconomic policies have indeed gender disparate effects and that, at the same time, gendered institutional settings, both in market and non-market activities and at the aggregate and disaggregated levels, also affect macroeconomics. Thus, feminist macroeconomics provides a framework able to address the causal direction of gender and macroeconomics and brings an extraordinary opportunity to better abstract and model the complexity of real-world economics.

The three existing strands of the subfield account contribute to the modelling of real-world economics insofar as they acknowledge the gender biases of macroeconomic policies, incorporate the care sector in the modelling of macroeconomics, and analyze the distribution of paid and unpaid labour within the household. There are some potential new avenues in which these initial strands can be expanded: first, with the availability of new data on the use of time; second with computational developments such as social accounting matrices; and finally, the incorporation of intersectional perspective that allow for not only consider gender macroeconomic implications, but also in terms of race, ethnicity, ability, or sexual identities.

The paper discusses two main sources of challenges for the subfield of feminist macroeconomics: first, methodological issues, such as the use of GDP per capita as the main metric for economic well-being and the data availability for structural analysis, and second, the tensions between mainstream macroeconomic currents which consider macroeconomic policies and phenomena as gender neutral. There might be also tensions regarding gender mainstream macroeconomics and the limited cross-fertilization of the research in gender and the macroeconomy, materialized in limited citations and scientific exchange between orthodox and heterodox currents.

Beyond the challenges to the subfield, we are witnessing the historical moment of the aftermath of the pandemic for the state of the art of feminist macroeconomics. Similar to previous updates of the field of macroeconomics was in the aftermath of economic shocks, such as the Great Depression to set the scene for Keynesian economics to evolve, or the Great Recession and the fiscal contractionary responses for the revision of the role of austerity and its gendered implications, the COVID-19 pandemic should bring about a change in the macroeconomic paradigm to enable the macro-modelling of the care economy (Heintz et al. 2021). Taking stock of the consequences of the COVID-19 pandemic and its implications for the care economy and the macroeconomy is crucial for the development of future research in gender-aware and feminist macroeconomics.



## Appendix

**Table 3** Countries in the sample (Fig. 1)

Country	GDPpc	FLFP (%)	Country	GDPpc	FLFP (%)	Country	GDPpc	FLFP (%)	Country	GDPpc	FLFP (%)
Afghanistan	1790.7	16.6	Djibouti	4435.0	16.6	Lebanon	14,392.4	22.6	Rwanda	1323.0	53.0
Albania	8674.4	49.7	Dominican Republic	11,580.8	41.9	Lesotho	2025.2	62.2	Samoa	4976.7	41.6
Algeria	10,058.1	13.7	Ecuador	9806.6	50.1	Liberia	1466.1	71.8	Sao Tome and Principe	3409.3	37.4
Angola	6122.1	75.3	Egypt, Arab Rep	9014.7	20.8	Libya	25,481.4	32.3	Saudi Arabia	43,895.5	18.9
Argentina	20,193.4	48.7	El Salvador	7184.0	44.6	Lithuania	24,397.1	54.7	Senegal	2801.7	34.2
Armenia	7896.3	56.2	Equatorial Guinea	17,315.0	50.5	Luxembourg	102,421.0	46.6	Serbia	13,535.8	46.0
Australia	41,592.9	56.7	Estonia	26,486.7	55.0	Madagascar	1541.8	83.7	Sierra Leone	1355.3	60.5
Austria	48,405.6	51.7	Ethiopia	1196.3	72.1	Malawi	1214.6	72.8	Singapore	69,701.1	55.2
Azerbaijan	9381.8	65.0	Fiji	10,100.7	39.2	Malaysia	19,138.8	46.0	Slovak Republic	22,301.3	52.6
Bahamas, The	34,214.5	67.2	Finland	41,734.5	56.1	Maldives	15,827.0	35.3	Slovenia	31,825.1	52.4
Bahrain	46,157.7	38.3	France	40,506.6	50.0	Mali	1823.7	59.4	Solomon Islands	2386.6	82.1
Bangladesh	3246.9	30.4	Gabon	15,528.4	39.0	Malta	30,499.8	35.4	Somalia	1063.6	21.0
Barbados	15,145.2	61.4	Gambia, The	2020.9	49.5	Mauritania	4762.8	27.0	South Africa	12,080.8	50.9
Belarus	13,135.5	55.4	Georgia	8894.0	56.8	Mauritius	15,363.2	41.3	Spain	35,159.6	45.3
Belgium	44,968.3	44.8	Germany	45,700.6	51.6	Mexico	17,870.8	40.7	Sri Lanka	8407.7	35.8



Table 3 continued

Country	GDPpc	FLFP (%)	Country	GDPpc	FLFP (%)	Country	GDPpc	FLFP (%)	Country	GDPpc	FLFP (%)
Congo, Dem. Rep	964.8	67.6	Kazakhstan	17,410.9	65.7	Philippines	5707.5	47.1	Uruguay	17,448.7	51.5
Congo, Rep	4466.5	66.6	Kenya	3754.8	70.9	Poland	21,088.8	49.6	Uzbekistan	4590.7	45.0
Costa Rica	15,276.9	42.9	Korea, Rep	29,389.2	50.2	Portugal	30,035.4	53.1	Vanuatu	2869.5	60.5
Cote d'Ivoire	4127.1	51.6	Kuwait	58,399.5	45.8	Puerto Rico	30,867.3	33.7	Vietnam	5710.8	71.1
Croatia	23,716.3	45.1	Kyrgyz Republic	3987.3	52.2	Qatar	94,072.3	50.5	West Bank and Gaza	5110.4	14.3
Cyprus	34,557.6	52.3	Lao PDR	4384.7	58.7	Romania	18,887.6	51.3	Zambia	2674.8	52.0
Denmark	49,701.2	59.2	Latvia	21,549.7	52.7	Russian Federation	20,899.7	55.2	Zimbabwe	2301.8	60.6

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**Data Availability** This paper provides in Supplementary materials the command and database for replicating Figure 1.

## Declarations

**Competing interests** The author declares no competing interests.

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