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Macroeconomics  
for the XXI Century***

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# Reviewing Feminist Macroeconomics for the XXI Century

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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, while 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. Finally, the paper contextualizes the subfield in a post-pandemic era.

**Keywords:** *feminist macroeconomics, feminist growth theory, care economy, COVID-19 pandemic, economic methodology*

**JEL Codes:** *E0, E12, B54*

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# 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). 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 (European Commission, 1998). Gender relations are embedded in gender systems, where systemic asymmetries of social power emerge between men and women, to the benefit of men (Akram-Lodhi & 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, albeit its 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 analysis, 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 & Hanmer (2008) states 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 neo-classical 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 is 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 & Erturk, 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 sexual division of labour (both paid and unpaid sides), thus resulting in 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 & Kranton, 2000; Çağatay & Erturk, 2004; Akram-Lodhi & Hanmer, 2008), having this macro-level implications for monetary policies (Couto & Brenck, 2024), financial markets (Van Staveren, 2014b), savings and

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

investments (Ertürk & Çağatay, 1995; Seguino & Floro, 2003).

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

Research in gender and 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).<sup>2</sup> 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 in macroeconomics as one of the major divides between mainstream/orthodox and heterodox currents (see Onaran & Oyvat (2023); Hein (2023a)).<sup>3</sup> In sharp contrast to gender-neutral perspectives and gender mainstream macroeconomic analyses, feminist macroeconomics openly portrays gender as 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 & Teignier, 2014; Doepke & Tertilt, 2016; Silva & Klasen, 2021), feminist macroeconomics literature has received relatively less attention. We welcome some exceptions, both in the form of book chapters (Hein, 2023a) and research papers (Dow, 2020; Sawyer, 2020; Onaran & Oyvat,

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<sup>2</sup>Throughout this paper, I will use the term gender-aware macroeconomics to refer to gender approaches to macroeconomic, both from mainstream and feminist currents.

<sup>3</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.

2023). 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.<sup>4</sup> Hein (2023b) dedicates a subchapter to analyse the macroeconomic 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 & Oyvat (2023) proposes 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 & 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. 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 contextualizes feminist macroeconomics in the real-world economic experiences of a post-pandemic era and highlights the challenges ahead and some pedagogic considerations (Section 4). Section 5 summarizes the main arguments of the paper.

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<sup>4</sup>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 & Sawyer (2019), where gender is only anecdotally cited in a book summarizing the frontiers of heterodox macroeconomics, with no reference to feminist macroeconomics.

## 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 in Braunstein (2021), have provided a gender perspective in the study of macroeconomy, and correspondingly, in their policy agendas, for the last decades.<sup>5</sup> However, gender macroeconomic analysis from orthodox traditions show 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 embrace a more heterodox perspective. In 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, specially 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.

### 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 researches, 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

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<sup>5</sup>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

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 & 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 80's, such as for instance the works of Jane Humphries and Jill Rubery. Humphries & 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.<sup>6</sup> Humphries & 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 policies, and this uneven distribution, at the same time, affects macroeconomic policies and macro-modelling<sup>7</sup>. What was once an effect, they said, can become a cause and *vice versa*.

Despite the above early postulates in feminist macroeconomics, it was not until the aftermath of the Structural Adjustment Programs (SAP) of the IMF in 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; Benería & Feldman, 1992; Braunstein, 2021).

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<sup>6</sup>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. See Power (2004) for an explanation of feminist methodologies and the definition of social reproduction as a scientific method.

<sup>7</sup>It should come as no surprise that the paper of Humphries & Rubery (1984) coincide in time with the book of Marilyn Waring *If Women Counted: A New Feminist Economics*.

## 2.2 Orthodox, heterodox and feminist macroeconomics

While both neoclassical and heterodox economic theories influenced the way gender gaps are incorporated into 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 Marxist and Keynesian traditions. Indeed, some strands of feminist macroeconomics follow heterodox traditions, such as Kaleckian models (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 an unified research agenda (Staveren, 2010; Seguino, 2021; Onaran & Oyvat, 2023).<sup>8</sup> Integrating feminist macroeconomics into post-Keynesian macroeconomics will allow 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 & Oyvat, 2023). As similarly stated by Akram-Lodhi & Hanmer (2008) and Staveren (2010), Onaran & 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 behaviour between women and men. The resulting gender-segregated labour markets and 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 will complement Post-Keynesian macroeconomic analysis of the dynamics of inequality and distribution (Onaran & Oyvat, 2023).

Staveren (2010) and Onaran & Oyvat (2023) also delve into the other side of the coin, that is, how post-Keynesian macroeconomics would benefit feminist macroeconomics. To summarize the arguments in Onaran & Oyvat (2023), one can consider that the presence of excess capacity and involuntary unemployment in the economy in post-Keynesian macroeconomics will benefit feminist analysis of the demand-side reasons behind females' economic inactivity, underemployment or unemployment. Kaleckian models can improve integrating gender and class inequality dimensions in

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<sup>8</sup>For a more advanced discussion on the links between feminist economics and post-Keynesian economics, see Lavoie (2003) and Lawson (2006), among others.

demand-side and supply-side factors in wage and employment levels inequality. Other analysis 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 distribution of income and employment as well as in productivity. Finally, structural features can also improve feminist macroeconomic modelling, and Onaran & Oyvat (2023) highlight in this context the sectoral composition, oligopolistic price setting, import dependency, balance-of-payments constraints, international currency hierarchies and unequal bargaining power between labour and capital.<sup>9</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 & Klasen (2021) survey micro-founded macroeconomic theories explaining how gender inequality affect economic development, but this survey purposely leaves behind feminist macroeconomics works. As noted in Silva & Klasen (2021), there are very little dialogue between the neoclassical and feminist heterodox literatures, while at the same time, the results of both currents reach to similar stylized facts and policy implications.<sup>10</sup> 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>11</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 economic growth, while to less 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 tradi-

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<sup>9</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 & Hanmer (2008) provide a model of macro dynamics that incorporates gender relations and household production in a post-Keynesian fashion.

<sup>10</sup>One case in point of similarities in the results from both neoclassical and feminist macroeconomics is the so called feminization U, which speaks to the link between female labour force participation and economic development, which was pioneered by Claudia Goldin (Goldin, 1994) and (Çağatay & Özler, 1995)

<sup>11</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.

tions: 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. Second, 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, described clear patterns of gender-specific behaviour within households that differed across regions of the developing world Boserup et al. (2013).

As pointed in Silva & Klasen (2021), the field of gender 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 notice 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 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 & Tertilt, 2016), while targeting transfers to different agents within the household might have impacts for growth (Doepke & Tertilt, 2019).<sup>12</sup> Cuberes & 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>13</sup> More recent development in gender-aware macroeconomics follow a Boserup's tradition and focus on the women's allocation of time in home production and paid work along the structural transformation process (Gaddis & Klasen, 2014; Dinkelman & 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 on 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-

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<sup>12</sup>This type of conclusions are also achieved by feminist macroeconomists, by focusing on gender differentials in savings propensities, as in Seguino & Floro (2003). However, the approach and methods of neoclassical and feminist scholars widely differ.

<sup>13</sup>See Galor & Weil (1993) and Grimm (2003) for early works on gender-aware neoclassical economics.

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 neoclassical economic growth theory from feminist economist is a strong one, which refers to the gender asymmetry in mainstream conceptualizations of growth (Waring & Steinem, 1988), as will be developed further in this paper. The works of Marilyn Waring, often considered the foundational work of feminist economics<sup>14</sup>, had extensively contributed to the development of feminist macroeconomics, but 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 acknowledgement 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 Figure 1.<sup>15</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 NBER working paper, feminist macroeconomists used panel of countries to publish this stylized fact in peer-reviewed journals (Ertürk & Çağatay, 1995; Çağatay & 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. Development economics has contributed to clarify the role of culture and geography in dictating the link between economic development and FLFP (see Douarin & Uberti (2023) for a recent revision of the literature on the feminization U).

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<sup>14</sup>For a review of her work, see Hyman (2014).

<sup>15</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.

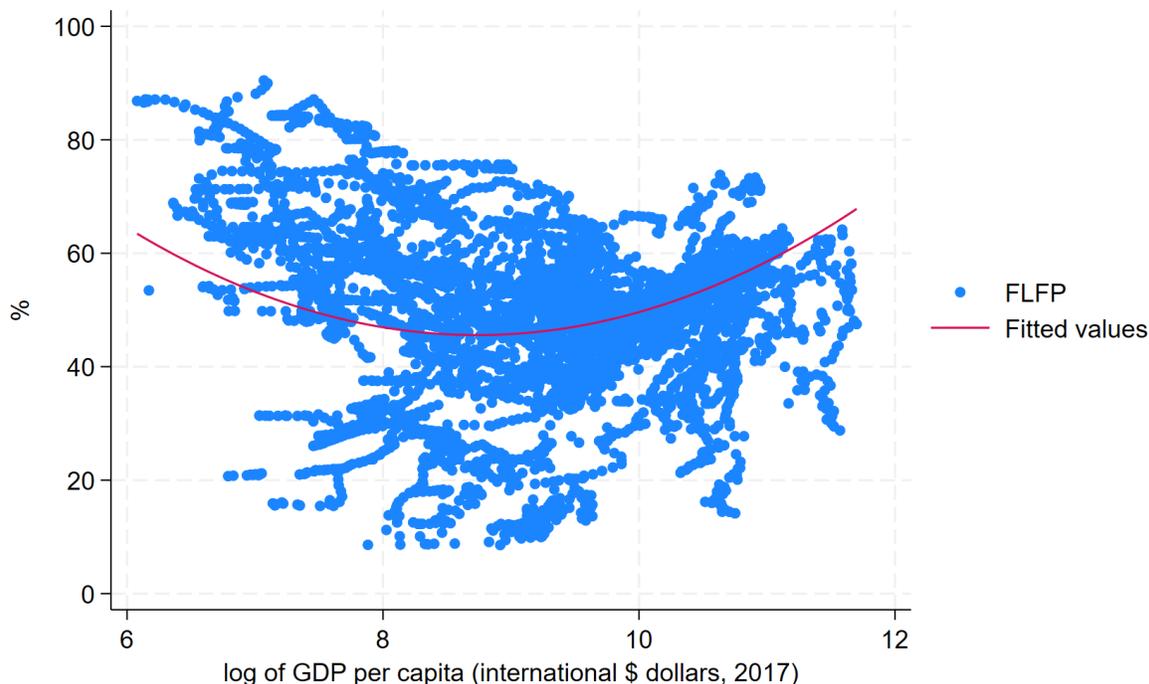


Figure 1: Feminization U

*Notes Figure 1: Own elaboration. Panel of 168 countries during 1990-2022. Data source: World Bank*

### 3 Current and new strands of feminist macroeconomics

#### 3.1 Current strands

Feminist macroeconomics has evolved greatly since the 1980's, as discussed in a series of works by Stephanie Seguino (Seguino, 2013, 2020, 2021), and also by other authors (Beneria et al., 2015; Connelly & Kongar, 2017b; 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.

Tables 1 and 2 offer a schematic overview of respectively the first strand and two subsequent strands' main references. One condition for papers to appear in the review is the publication in peer-reviewed journals. I left behind book chapters, unpublished working papers or reports from non-peer reviewed outlets. The articles incorporated in the Tables contribute mainly theoretically to the development

of the field, with few exceptions that although do not develop a macro model, the relevance of the empirical question and findings are of uttermost importance for the development of the field, such as the prominent work of Çağatay & Özler (1995) on the feminization U (see above). 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 1980's. This line has also 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 & Özler (1995) with the finding of the so-called feminization U, as explained before. Another early work in feminist macroeconomics by Nilufer Çağatay, this time co-authored with Korkut Erturk (Ertürk & Çağatay, 1995), macroeconomic aggregates are analysed with 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 shows 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 in a greater extent high and high middle-income countries. Above these stylized facts, Elson (1995) and Elson & 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 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 consider 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>16</sup>

Finally, using macroeconomic models, Blecker & 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 & Folbre, 2022). Elveren (2023) provides a novel macro model focused on military spending, to find that this type of public spending can have detrimental effects for gender equality and economic growth.

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<sup>16</sup>A related paper in the literature of feminist macroeconomics is Seguino & Floro (2003), where authors identify that increasing women's relative income and bargaining power are associated with rising saving, ultimately affecting gross domestic savings and GDP, in semi-industrialized economics (SIEs). However, due to the purely empirical nature of this paper, I decided to not include it in the Table 1.

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 & Çağatay (1995)	World Dev.	Kaldorian model	Global	Feminization of LF (housework) increases investments (savings)
Çağatay & 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 & Çağatay (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 & 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 improve equality growth	Opposing directions of gender wage and capabilities across areas, and relevant role of government to
Heintz & 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

### 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 a more gender-inclusive metrics. Following the spirits of Waring & 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 human life 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 in the centre the care economy, stressing demand-side factors, such as care. The authors conceptually transform the 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 to focus on fiscal and labour market policies in growth and employment, which suits perfectly to further analyse 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 analyse 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 an 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 & 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 & 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 & 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 explicitly incorporates both demand and supply-side’s 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>17</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 are often accompanied by simulations of policies. Ilkcaracan 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, em-

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<sup>17</sup>This third line touches upon new developments in neoclassical gender economics, such as the non-unitary models of household behaviour. See Chiappori & Donni (2009) for a review.

ployment 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 Oyvatt & Onaran (2022), who study the short-run and medium-run impact of spending in social infrastructure and gender gap 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. Oyvatt & 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 analyse care. The authors endogeneize the role of labour market to find that the welfare cost of caregiving is shouldered disproportionately by women partners. 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 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 & Seguíno (2002) and some policy implications in Onaran & Oyvatt (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 in Braunstein (2022) and Couto & Brenck (2024).<sup>18</sup> Some of the insights from this literature within feminist macroe-

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<sup>18</sup>The UK-based think-tank Women's Budget Group (WBG) have extensively researched on feminist monetary policies. See Powell (2023)'s WBG report on a feminist approach to monetary policies.

economics 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 in 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.

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 & 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 & Oyvatt (2023)	EJEEP	Macro model	Global	Feminist post-Keynesian synthesis model
iii) Social infrastructure and intra-household allocation				
Ilkkaracan et al. (2021)	World Dev.	Macro-micro policy modelling Simulations	Turkey	Childcare provisioning increases employment and reduces time and income poverty rates
Oyvatt & Onaran (2022)	World Dev.	Macro model and regression analysis	South Korea	Sustainable equitable development and employment requires both labour market and fiscal policies
R. Miller & 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

## 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, have 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 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 are 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. Nonetheless, there are methodological problems, specially when considering Global South countries, regarding the design of the TUS different components of and the collection of data (Hirway, 2021). Connelly & 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; İlkaracan, 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 & 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 in 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 on care work and paid and unpaid distribution of work.

**Intersectionality:** Finally, feminist macroeconomics framework also takes intersectional approaches, as discussed in 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 path 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.

## 4 A post-pandemic era and challenges

### 4.1 The pandemic and feminist macroeconomics

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.

Likewise the Great Depression was the stepping stone for Keynesian economics (Seguino, 2019), the Great Recession instigated many feminist economists to consider the microeconomic foundations of the financial crisis and austerity programs and their macroeconomic consequences (Berik, 2016; İlkkaracan, 2016; Bargawi et al., 2016). Other macroeconomic shocks and policy choices derived in a reconfiguration of gender in macroeconomics. The gendered consequences of SAP were the cornerstone for feminist macroeconomists to argue that macroeconomic policies are gender biased (Beneria et al., 2000). In this sense, the sweeping economic consequences of the COVID-19 pandemic coupled with pre-existing gender inequalities to endanger the livelihoods of women at a higher rate than those of men. As pointed in Kabeer et al. (2021), women were more severely hit by the pandemic, as they are over-represented in the provisioning of paid and unpaid care. Migrant and lower-income women were disproportionately more affected by both death rates and the consequences of the social-distancing policies.

The new facets of the pandemic with respect to previous crises raise concerns on the conditions of existence, health inequality and social reproduction. The COVID-19 pandemic revealed the critical dependency of market-oriented economies on non-market economic activities, with gendered institutions and gender uneven distribution of paid and unpaid labour, within a trio of interlocking structural crises: care, environment and the macroeconomy (Heintz et al., 2021). Thus, there are clear pathways to reconsider the design of macroeconomics as a scientific field and as a policy-making process: care work –which is in many instances done in non-market environments– and environmental degradation.

The deep structural and ecological roots of the pandemic made it an organic crisis, with potentially more profound reconfigurations for the state of the art of the field of macroeconomics than the previous economic crisis. In this sense, the value of care in macroeconomics during the COVID-19 pandemic has been highlighted. Bahn et al. (2020) state that in the context of the COVID-19 pandemic, the vast majority of society believes human well-being should be at the centre of policy, rather than economic growth. Similarly, the value of care, specifically in times of rising death rates and vulnerability of human life, had enjoyed a reconsideration (Thomason & Macias-Alonso, 2020), and thus there is the opportunity of change the macroeconomic paradigm to integrate the care economy, and the distribution of it. This is what feminist macroeconomics long argued, and the COVID-19 pandemic might have the ability of making it possible.

## 4.2 Challenges ahead

The field of feminist macroeconomics faces certain challenges. Here, I highlight three sources of potential challenges for the subfield: i) methodological aspects and data-related limitations, ii) ability of changing the standard macro-modelling and macroeconomic paradigm, and iii) the integration of feminist perspectives into the pedagogy of macroeconomics. 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 & 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 the care economy.<sup>19</sup> Nonetheless, as pointed in Braunstein (2021), these strands of the subfield allow a 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 hour. Structural change is analysed by means of changes in employment shares from low-productivity to high-productivity sectors. Nonetheless, measurement and comparability of productivity in alternative sectors is cumbersome 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 reducing the amount of labour, and were 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 suffers from a "*cost disease*": as due to their nature, productivity enhance-

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<sup>19</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).

ments in services are less likely than in manufacturing. Analysing the "cost disease" 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.

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, is another methodological challenge for the subfield. There is still a lack of consensus in accounting for the care economy, which difficult the measurement of the sector. As pointed by Folbre (2006), there is some agreement of 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 & Stearns, 2019), and so a male bias in macroeconomic policy making (Elson, 1991). These male biases impede feminist macroeconomics to make a difference in women's and men's livelihoods through the policy-making 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 & Oyvatt, 2023). Seguino (2021) considers the little effort to engage and reconcile findings that emerge from both heterodox feminist theory and neo-classical models, as an impediment for a cross-fertilisation of scientific knowledge of gender relations and the macroeconomy. Similarly, Onaran & Oyvatt (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-fertilisation 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 Nobel Prize Awardee 2023 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 fertilisation and hence, systematic citation of similar findings from alternative approaches.

The third, last challenge here proposed refers to the incorporation of feminist perspectives into the macroeconomics curricula. Pedagogically speaking, there is still little inclusion of feminist macroeconomics in economics curricula, although 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 (G. R. 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 filling 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 & Hanmer, 2008; Van Staveren, 2013), specially 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 in 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 (Goldin, 1995; Çağatay & Özler, 1995) and recent empirical findings in monetary policy (Braunstein, 2022; Couto & 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 they acknowledge the gender biases of macroeconomic policies, incorporate the care sector in the modelling of macroeconomics, and analyse 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 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 three 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. Second, the tensions between mainstream macroeconomic currents which consider macroeconomic policies and phenomena as gender-neutral. Nonetheless, there might be also tensions regarding gender mainstream macroeconomics and the limited cross-fertilization of the research in gender and the macroeconomy and limited citation between orthodox and heterodox currents. Finally, a challenge here exposed is the incorporation of feminist perspectives in the teaching of macroeconomics.

Beyond the challenges to the subfield, the paper also considered the historical moment of the aftermath of the pandemic for the state of the art of feminist macroeconomics. The field of macroeconomics was updated in the aftermath of economic shocks: the Great Depression set the scene for

Keynesian economics to evolved, the Great Recession and the fiscal contractionary responses derived in a revision of the role of austerity and its gendered implications. This paper goes along the lines of Heintz et al. (2021) to suggest that the COVID-19 pandemic should bring about a change in the macroeconomic paradigm to enable the macro-modelling of the care economy. All in all, taking stock of the consequences of the COVID-19 pandemic for the care economy and the macroeconomics at large, the paper highlights the gaining momentum of gender-aware and feminist macroeconomics.

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# Appendix

Table 3: Countries in the Sample (Figure 1)

Country	GDPpc	FLFP (%)	Country	GDPpc	FLFP (%)	Country	GDPpc	FLFP (%)	Country	GDPpc	FLFP (%)
Afghanistan	1790.7	16.6	Djibouti	4435.0	16.6	Lebanon	14392.4	22.6	Rwanda	1323.0	53.0
Albania	8674.4	49.7	Dominican Republic	11580.8	41.9	Lesotho	2025.2	62.2	Samoa	4976.7	41.6
Algeria	10058.1	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	25481.4	32.3	Saudi Arabia	43895.5	18.9
Argentina	20193.4	48.7	El Salvador	7184.0	44.6	Lithuania	24397.1	54.7	Senegal	2801.7	34.2
Armenia	7896.3	56.2	Equatorial Guinea	17315.0	50.5	Luxembourg	102421.0	46.6	Serbia	13535.8	46.0
Australia	41592.9	56.7	Estonia	26486.7	55.0	Madagascar	1541.8	83.7	Sierra Leone	1355.3	60.5
Austria	48405.6	51.7	Ethiopia	1196.3	72.1	Malawi	1214.6	72.8	Singapore	69701.1	55.2
Azerbaijan	9381.8	65.0	Fiji	10100.7	39.2	Malaysia	19138.8	46.0	Slovak Republic	22301.3	52.6
Bahamas, The	34214.5	67.2	Finland	41734.5	56.1	Maldives	15827.0	35.3	Slovenia	31825.1	52.4
Bahrain	46157.7	38.3	France	40506.6	50.0	Mali	1823.7	59.4	Solomon Islands	2386.6	82.1
Bangladesh	3246.9	30.4	Gabon	15528.4	39.0	Malta	30499.8	35.4	Somalia	1063.6	21.0
Barbados	15145.2	61.4	Gambia, The	2020.9	49.5	Mauritania	4762.8	27.0	South Africa	12080.8	50.9
Belarus	13135.5	55.4	Georgia	8894.0	56.8	Mauritius	15363.2	41.3	Spain	35159.6	45.3
Belgium	44968.3	44.8	Germany	45700.6	51.6	Mexico	17870.8	40.7	Sri Lanka	8407.7	35.8
Belize	8642.2	42.3	Ghana	3580.3	70.0	Moldova	8413.0	46.2	St. Lucia	13410.8	57.4
Benin	2607.5	62.2	Greece	29555.3	41.3	Mongolia	7296.4	55.1	St. Vincent and the Grenadines	10601.6	50.8
Bhutan	6484.7	59.3	Guatemala	7106.6	40.2	Montenegro	16427.4	44.3	Sudan	4136.8	28.1
Bolivia	6235.2	59.4	Guinea	1904.1	55.4	Morocco	6061.6	24.3	Suriname	15623.5	38.4
Bosnia and Herzegovina	9681.9	32.7	Guinea-Bissau	1806.7	48.3	Mozambique	882.2	82.7	Sweden	44065.4	59.8
Botswana	12393.3	52.1	Guyana	10205.2	38.0	Myanmar	2259.7	57.5	Switzerland	62089.1	59.7
Brazil	12977.5	51.2	Haiti	3050.5	59.2	Namibia	8219.6	51.2	Tajikistan	2396.4	31.0
Brunei Darussalam	67079.3	54.1	Honduras	4588.4	43.8	Nepal	2531.5	23.8	Tanzania	1815.6	83.1
Bulgaria	16073.0	48.5	Hungary	23703.2	44.3	Netherlands	48564.9	55.1	Thailand	12729.0	63.8
Burkina Faso	1531.1	64.9	Iceland	47614.7	70.9	New Zealand	36023.4	60.3	Timor-Leste	3034.5	62.3
Burundi	862.0	83.3	India	3815.4	27.3	Nicaragua	4448.2	40.8	Togo	1733.7	55.2
Cambodia	2594.5	69.9	Indonesia	7753.4	50.4	Niger	1038.3	66.8	Tonga	5091.0	43.1
Cameroon	3257.8	73.6	Iran, Islamic Rep.	12851.1	14.1	Nigeria	4083.9	55.2	Trinidad and Tobago	20937.3	48.2
Canada	42715.6	60.4	Iraq	7465.4	10.9	Norway	58490.3	60.3	Tunisia	8795.0	24.5
Central African Republic	988.7	63.2	Ireland	56157.8	51.1	Oman	35705.5	25.9	Turkmenistan	7733.1	51.6
Chad	1357.5	56.3	Israel	34090.7	55.0	Pakistan	3972.3	18.8	Uganda	1607.8	64.8
Chile	18789.4	41.6	Italy	41408.3	37.6	Panama	20711.2	46.1	Ukraine	11157.6	51.9
China	7643.4	66.8	Jamaica	9794.4	58.3	Papua New Guinea	3380.9	58.5	United Arab Emirates	82371.2	40.6
Colombia	11311.1	53.7	Japan	37709.6	49.9	Paraguay	10671.3	54.6	United Kingdom	40232.1	55.4
Comoros	2961.4	32.4	Jordan	9740.7	12.8	Peru	8708.6	61.2	United States	52475.4	57.3
Congo, Dem. Rep.	964.8	67.6	Kazakhstan	17410.9	65.7	Philippines	5707.5	47.1	Uruguay	17448.7	51.5
Congo, Rep.	4466.5	66.6	Kenya	3754.8	70.9	Poland	21088.8	49.6	Uzbekistan	4590.7	45.0
Costa Rica	15276.9	42.9	Korea, Rep.	29389.2	50.2	Portugal	30035.4	53.1	Vanuatu	2869.5	60.5
Cote d'Ivoire	4127.1	51.6	Kuwait	58399.5	45.8	Puerto Rico	30867.3	33.7	Vietnam	5710.8	71.1
Croatia	23716.3	45.1	Kyrgyz Republic	3987.3	52.2	Qatar	94072.3	50.5	West Bank and Gaza	5110.4	14.3
Cyprus	34557.6	52.3	Lao PDR	4384.7	58.7	Romania	18887.6	51.3	Zambia	2674.8	52.0
Denmark	49701.2	59.2	Latvia	21549.7	52.7	Russian Federation	20899.7	55.2	Zimbabwe	2301.8	60.6



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