International Journal of Social Ecor

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Journal:	*International Journal of Social Economics*
Manuscript ID	IJSE-01-2025-0055.R2
Manuscript Type:	Research Paper
Keywords:	VAT, Gender gaps, Labour market outcomes, IMF programs, IMF-recommended tax reforms

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Abstract

Purpose – This paper examines whether or not gender disparity exists in labour market outcomes during IMF austerity programs with tax conditionality.

Design/Methodology/Approach – Annual time series data on the Ghanaian economy from 1990 to 2023 is used. The empirical strategies are the Autoregressive Distributed Lag bounds test and the Two-Stage Least Squares Instrumental Variable techniques.

Findings - The main findings indicate that the unemployment gap between women and men widens during IMF programs, especially when tax conditionality is imposed. The evidence also suggests that, besides widening the labour force participation gap, the decline in labour force participation of women is more pronounced than that of men during IMF programs. However, stronger democratic regimes can help reduce these negative effects on women's participation.

Practical implications - To address Sustainable Development Goal (SDG) 5, which aims to achieve gender equality and empower women, policymakers may need to incorporate gender considerations into public policy formulation. Particularly, gender indicators must be incorporated in the performance metrics during program design. Additionally, disaggregated data on gendered labour market outcomes must be collected and analyzed appropriately to inform policy.

Originality/value –This paper presents a unique case for developing countries, particularly in the Ghanaian context, due to the frequency and multiplicity with which IMF bailouts are sought. Besides focusing on unemployment and labour force participation gaps as outcome variables, gendered disaggregated data and interactive regressions are also employed to enhance the depth of the analysis.

1. Introduction

The International Monetary Fund (IMF) is obligated to conduct annual Article IV surveillance in member countries, where policy advice is prescribed on fiscal and monetary issues. Governments of developing countries, particularly, turn to the IMF when they require a bailout to stabilize their balance of payments operations. However, the IMF bailout, which may ultimately help to restore macroeconomic stability, is not without conditionality. Most governments are asked to implement radical spending cuts, phase out subsidy schemes, and reform some tax schemes (Reinsberg et al., 2020). Accordingly, to create fiscal space and reduce tax evasion, most developing countries reform their tax systems by shifting from trade and corporate taxes to consumption taxes (Bastiaens & Rudra, 2018; Reinsberg et al., 2020). The IMF's prescription for most countries facing balance of payment challenges is to shift towards broad-based consumption taxes. A key feature of this advice is to adopt or adjust the Value Added Tax (VAT) base (Buenaventura & Miranda, 2017; Dunno et al., 2024). Thus, the IMF is known to be very instrumental in the introduction of VAT in most countries, and empirical evidence shows revenue increases during IMF programs (Reinsburg et al., 2020).

The VAT, which is applied at every stage of the production chain and computed based on the value added to a product, is considered effective in generating more revenue for the government than sales tax. It is also broad-based, covering persons in the informal sector. However, consumption-based taxes that include VAT are regressive, affect marginalized groups, and in some cases are gender insensitive (Kunawotor et al., 2021). Detraz and Peksen (2016) suggest that IMF austerity measures disproportionately affect women's economic empowerment. Following a similar line of reasoning, ActionAid (2024) argues that IMF tax reforms disproportionately affect women, exacerbate gender disparities, and inadvertently undermine economic stability and growth. Also, Asai and Zhang (2023) argue that cuts in essential social spending reduce women's labour force participation. With specific reference to VAT, Donno et al. (2024) present empirical evidence of the adverse effect of IMF-induced VAT imposition on the life chances of women in developing countries. Baer and Williams (2023) argue that taxes create economic and social inequalities in women's economic participation. Similarly, Buenaventura and Miranda (2017) assert that VAT is regressive for lower earners, among whom women, particularly those in wage employment or the informal sector, are disproportionately represented. The above discussion suggests that women are more disadvantaged during economic crises because they engage in

vulnerable employment than men. That notwithstanding, IMF programs, which are associated chiefly with contractionary fiscal policies, adversely affect the labour market outcomes of women.

The interest in undertaking this study is sparked by Ghana's recent program with the IMF, where the country secured a US$3 billion Extended Credit Facility (ECF) arrangement in May 2023. At about the same time, the VAT rate was increased by 2.5%, from 12.5% to 15%. In addition, poverty levels continue to rise, with close to one-quarter of Ghanaians (23.4%) wallowing in poverty, of which women are the worst hit (Adjei-Mantey & Kunawotor, 2024). Additionally, the labour force participation rate for women in Ghana lags behind that of men, and the unemployment rate for women is higher. For example, the modeled ILO estimate of the labour force participation rate for men in 2023 is 72.45%, while that for women is 65.27%. Similarly, the unemployment rate for women is 0.7 percentage points higher than that of men (World Bank, 2024). Figure 1 depicts the gender dimensions of unemployment in Ghana. The global gender gap index, compiled by the World Economic Forum (2024), also ranks Ghana 88th out of 146 countries. The IMF (2022; 2013a) posits that emerging evidence suggests that economic growth increases when more women participate in the labour force. The IMF acknowledges gender inequality as a macrocritical issue, where gender disparity can undermine macroeconomic stability (ActionAid, 2024). The Fund also concurs that mainstreaming and narrowing gender gaps fall within its mandate. Accordingly, they instituted a gender strategy document outlining how the IMF can assist its member countries in addressing gender disparities while fulfilling its core functions of surveillance, lending, and capacity development (IMF, 2022). The strategy document, they note, is timely given the current economic uncertainties and recent shocks, which are exacerbating pre-existing gender gaps. However, these have not been practically incorporated into its recent lending program to Ghana.

To further the frontiers of knowledge in this grey area, incorporating Goal 5 of the SDGs, which seeks to achieve gender equality, we test the assertions mentioned above by providing first-hand empirical econometric evidence in the Ghanaian case. Accordingly, we not only examine the impact of being under an IMF program in general, but we also investigate the unintended consequences of IMF conditionality, specifically through VAT imposition and adjustments, on gender equality. In other words, do VAT imposition and adjustments during IMF programs widen the unemployment gap between women and men? What effects does it have on women's labour force participation? This study complements the extant literature in several ways. First, we

primarily focus on labour market outcomes by computing the unemployment gap and labour force participation gap as key outcome variables. These two outcome variables capture key socioeconomic metrics of gender inequality, besides gender disparity being pervasive in women's labour market outcomes (Kern et al., 2024).

Additionally, the World Economic Forum (2024) posits that these outcome variables capture essential dimensions of women's economic empowerment. The IMF (2024) also suggests that reforms aimed at addressing gender inequality in labour force participation can yield gains comparable to those of pro-growth structural reforms. Second, although the unemployment and labour force participation gaps capture the differential impact of IMF programs on women, we additionally use the female and male labour force participation rates and unemployment rates as gender-disaggregated outcomes. Third, unlike existing studies that focus on the general effects of IMF programs, this study focuses on the impacts of IMF tax conditionality through VAT imposition and adjustment, in addition to an IMF program. Fourth, we gauge the interactive effects of IMF programs and democracy on labour market outcomes. Fifth, we address potential endogeneity between IMF programs and labour market outcomes by instrumenting IMF tax conditionality programs with natural disasters. Sixth, we provide a novel experience through a case study of Ghana, which is a suitable case study due to the frequency and multiplicity with which IMF bailouts are sought. The remainder of this paper is structured to include a review of gender inequality in Ghana, a theoretical and empirical literature review, the methodology, and a discussion of the results. It ends with some policy suggestions and directions for future research.

2. Gender Inequality in Ghana

This section is divided into three subsections. The first presents some relevant statistics on gender inequality in Ghana. The second discusses the relationship between government economic policy, the IMF's role, and gender inequality in Ghana. The final part analyzes the impact of the gender gap on economic performance.

Statistics on the Gender Gap in Ghana

Government economic policy reforms, even when well-intentioned, can increase or hinder economic participation in different ways. For instance, labour market policies, tax reforms, and welfare programs can create unequal opportunities for men and women (ActionAid, 2024). The outcome of government policies is observed in the recent statistics below. Thus, a detailed current

statistic on the gender gap in Ghana is presented in Table 1. The labour force participation gap in 2024 shows a deficit of 3.26%, indicating that more males participate in the labour market than females. There are also 0.64% more unemployed females than males.

Furthermore, male legislators, senior officials, and managers outnumber their female counterparts by 11.46%. This is concerning given that the representation of women in managerial positions is positively correlated with firm performance (IMF, 2022). Additionally, greater gender balance in senior positions enhances the diversity of thought and fosters checks and balances, ultimately contributing to greater stability and profitability (IMF, 2024). Professional and technical male workers also exceed their female counterparts by 16.66%. Females in Ghana also earn $2,930 less than males, indicating persistent income inequality, as observed in other African economies (Kunawotor et al., 2022; 2020). Low-income limits women's access to essential services, including healthcare, education, and housing. These points reinforce the argument that females have fewer economic opportunities than males.

The statistics on educational outcomes are not significantly different from those in the labour market. Besides enrollment in secondary school, where gender parity exists, females are underrepresented in the other educational categories. This is evident in the higher male-to-female ratios in primary school enrollment and tertiary education. Consequently, 3% more males graduate from tertiary institutions.

Gender disparity is also pronounced in national-level political representation. The male representation in parliament exceeds that of females by a staggering 70.8%. Similarly, there are 65.52% more men in ministerial positions than women. This adversely affects economic development, as noted that women in political leadership are associated with higher infrastructure spending and female educational attainment (IMF, 2024; 2022). The trend of statistics clearly shows the depth of women's marginalization in Ghana.

Government Economic Policies, Role of IMF, and Gender Inequality in Ghana

Ghana has a complex history of economic policies that predates independence. Due to some of these non-transforming economic policies, the country has resorted to the IMF for Standby arrangements and extended credit facilities multiple times to support its economic agenda, primarily towards restoring macroeconomic stability. Accordingly, the IMF has been a principal advisor to Ghana in shaping economic and tax policy during periods of economic distress. To improve revenue generation, tax efficiency, and broaden the tax base, the IMF team recommends

a spectrum of reforms as inputs in their deliberations with the Ghanaian government. Key among them was the introduction and periodic increases in the VAT. These policies have been quite effective in closing the fiscal space, particularly in revenue generation, but are mostly associated with concerns over socio-economic and gender inequality. Equity is often sacrificed for the sake of efficiency and macroeconomic stability. For example, there are no specific tax reliefs for low-income earners and women in the informal sector, which limits the effectiveness of promoting inclusive growth (ActionAid, 2024).

IMF (2022) argues that mainstreaming gender at the Fund begins by acknowledging that reducing gender disparity is linked to higher economic growth, economic stability, and lower income inequality. They argue that emergent evidence indicates economic growth rises when more women participate in the labour force. However, economic and financial policies can either exacerbate or reduce gender inequality; hence, they need to be well-designed and structured. The IMF has instituted a gender strategy outlining how the Fund can assist its member countries in addressing gender disparities while fulfilling its core functions of surveillance, lending, and capacity development. The IMF proposed four key pillars in its maiden gender strategy document (IMF, 2022). The first entails collecting gender-disaggregated data and developing modelling tools for policy analysis. The second seeks to develop a robust governance framework based on the macrocriticality of gender. The third strategy aims to strengthen collaboration with external partners to benefit from knowledge sharing and peer learning, and the final one is to ensure the efficient use of resources allocated to gender by establishing a central unit to realize scale economies and support country teams.

Despite the recognition of gender issues as critical to macroeconomic stability and development of a strategy document in this respect, the recent IMF program in Ghana is deficient in mainstreaming gender sensitive issues. There are no targeted policies to address gender inequalities, and no evidence of discussions on how this program affects men and women differently. The practical implementation of the gender strategy to Ghana's tax structure is missing, hence these issues remain at the theoretical level. The disparity between men and women in the labour market, income levels, and asset ownership continues to widen, as shown in Table 1. Gender disparity creates unequal access to resources and opportunities, hindering women's economic participation. It limits women's ability to benefit from and contribute to growth. It is instructive to

note that the IMF discussed incorporating gender issues into its surveillance program a decade ago (IMF, 2013b).

Macrocriticality of the Gender gap/The impacts of the Gender gap on economic performance

Gender disparity is harmful to economic growth and development. For instance, gender gaps indicate that productive human resources are underdeveloped, underemployed, and/or misallocated, which adversely affects productivity and growth (IMF, 2024). Where the burden of macroeconomic adjustment disproportionately falls on women, children's education suffers because women tend to invest more in their children's education than men (Doepke & Tertilt, 2019). Additionally, monetary policy intervention through higher interest rates reduces women's access to credit and impacts their economic participation. A lower gender gap is thus associated with reduced income inequality, improved social stability, and economic growth (IMF, 2022). Furthermore, reducing gender gaps can improve the economy's resilience to shocks and enhance the prospective balance of payments stability by increasing competitiveness and the variety of goods countries produce and export.

IMF (2022) identified the following as the main drivers of the gender gap: unequal access to education, health services, infrastructure, assets, and technology; unequal legal rights; violence against women; unequal distribution of unpaid care and domestic work between men and women; and cultural factors. Accordingly, to narrow the gender gap in developing countries, the Fund argues that economic policies should focus on investing in education, health, and infrastructure. Policies should also be directed towards increasing financial inclusion and reducing legal barriers. Furthermore, policies addressing unpaid care work, flexible work arrangements, parental leave, and tax disincentives for secondary earners must be critically evaluated.

3. Theoretical and Empirical Literature

This section is divided into two sections. The first is a theoretical review, and the second is an empirical review. The empirical literature review is further compartmentalized into two sections. The first discusses the nexus between IMF programs and gender outcomes. The second section addresses the relationship between IMF tax conditionality and gendered outcomes.

Theoretical Review

The theory regarding the nexus between IMF programs and gender disparity can be viewed from the perspective of feminist economics. This theory introduces gender concerns into the assumptions of traditional economics, arguing that gender plays a significant role in an individual's participation in economic activities. The theory critiques traditional economics for limiting the definition of production activities to paid work in the market, while unpaid household work is classified under consumption (Kamal, 2022). Feminist theory argues that the domestic tasks performed by women, such as childbearing, elderly care, or household chores, contribute to the household's income by saving or providing unpaid care services necessary for the home's sustainability. Consequently, the traditional definition of production underestimates the significance of women's non-remunerated work and their contribution to household income. The theory emphasizes the limitations the patriarchal nature of domestic work creates, as it places the majority of the unpaid care work burden on females, affecting their ability to participate in the paid labor market activities due to limited time (Paltasingh & Lingam, 2014).

Consistent with this study, the feminist economics theory highlights the gender disparity created in developing countries as they participate in structural adjustment programs. The austerity measures imposed by lending institutions, such as the IMF, are associated with public spending cuts, tax increases, and the removal of subsidies to achieve macroeconomic stability. This, however, fails to recognize the disproportionate adverse impacts on women. For instance, consumption cuts reduce public spending on female-dominated sectors like health and education, increasing women's unpaid care burden and entrenching gender-based power imbalances that limit women's access to resources and decision-making. It also compels women to allocate more of their time to unpaid care services, restricting their participation in the labour market.

IMF Program and Gender Outcomes

In a recent study, Kern et al. (2024) examined the consequences of IMF austerity and liberalization policies on women's labour market outcomes in 128 developing countries from 1992 – 2018. The findings suggest that IMF programs, particularly during periods of economic turbulence, exacerbate existing gender inequalities. Thus, IMF programs have a negative impact on the unemployment gap, suggesting that women are more adversely affected by these programs than men. Reinsberg et al. (2023) investigated the role of women's leadership in the gendered consequences of IMF programs in 95 countries from 2000 to 2018. They find that the gendered

impacts of IMF programs are more pronounced for women when an all-men cabinet implements IMF reforms. However, when women ministers are in cabinet, these effects are lessened with a higher employment rate for women. They argue that the significance of women in leadership positions lies in their ability to mitigate the adverse effects of IMF programs. A while back, Detraz and Peksen (2016) assessed the impact of IMF programs on women's economic and political rights from 1981 - 2004 in a cross-country evidence that includes 119 low- and middle-income countries. The result shows women's economic rights deteriorate during IMF involvement, while no such effect is observed for political rights. The studies catalogued above suggest that women are disadvantaged when IMF programs are in place compared to their male counterparts.

VAT, IMF Tax Conditionality and Gender Equality

In the second group of studies, Donno et al. (2024), using panel data that cover 141 countries from 1980 – 2019, estimate the effects of IMF programs with tax conditionality on women's labour force participation, education enrollment rates, and cardiovascular disease. The results show that under the IMF program with tax conditionality, women exhibit lower labour force participation, higher unemployment, and lower tertiary school enrollment. Adverse outcomes are noticed in the areas of economic activity, educational enrollment, and cardiovascular diseases for women's life chances when VAT is instrumented with IMF tax programs. Similarly, Buenaventura and Miranda (2017) provide an overview of the impact of IMF advice on tax reforms, mainly VAT, poverty, women's rights, and gender equality. They argue that the VAT that the IMF consistently insists should be adopted by developing countries in raising revenue is plagued with unending criticism, which relates to its regressivity, weighs heavily on poor women, and has gender discriminatory elements that adversely affect women. Maisonnave and Mamboundou (2022) conducted a gender analysis of tax reforms in Burkina Faso using a computable general equilibrium model (CGE) and simulation. The result shows that VAT reforms undermine household welfare, gender equality, and increase poverty.

Similarly, but in South Africa, Escalante et al. (2021) show how fiscal reforms that include a VAT increase affect women's labour market outcomes and poverty levels. Accordingly, they find that an increase in VAT increases poverty among female-headed households than male-headed ones. Specifically, they find that fiscal reforms increase the unemployment rates of women and lower their income levels and purchasing power.

4. Methodology

4.1 Data and Estimation Technique

An annual time series data on the Ghanaian economy from 1990 to 2023 is used. The data is sourced from the World Bank's World Development Indicators, Laeven and Valencia (2018), and Polity 5. The Autoregressive Distributed Lag (ARDL) bounds testing approach is used to estimate the model. Among other reasons, the ARDL is better suited to small samples (Haug, 2002). It is also useful irrespective of the order of integration, such as I(0) or I(1) (Pesaran et al. 2001). In addition, the Two-Stage Least Squares (2SLS) instrumental variable design addresses inherent endogeneity concerns related to IMF programs and labour market outcomes.

4.2 Empirical Model and Variable Measurement

The generic form of the empirical model underlying this paper is specified as follows;

$$y_t = \alpha_0 + \alpha_1 IMFTax_t + \alpha_2 X_t + u_t \text{ --- (1)}$$

Where y_t denotes measures of gender inequality, which is the outcome variable. IMFTax represents tax policy reforms under IMF programs in Ghana over the years. The "X" represents the vector of control variables that influence gender outcomes. Explicitly, the long-run and short-run error correction models are specified respectively as follows;

$$y_t = \alpha_0 + \sum_{i=1}^{p} \alpha_1 y_{t-i} + \sum_{i=0}^{p} \alpha_2 IMFTax_{t-i} + \sum_{i=0}^{p} \alpha_3 GDPpc_{t-i} + \sum_{i=0}^{p} \alpha_4 INF_{t-i} + \sum_{i=0}^{p} \alpha_5 FIN_{t-i} + \sum_{i=0}^{p} \alpha_6 DEM_{t-i} + u_t --(2)$$

$$\Delta y_t = \alpha_0 + \sum_{i=1}^{p} \alpha_1 \Delta y_{t-i} + \sum_{i=0}^{p} \alpha_2 \Delta IMFTax_{t-i} + \sum_{i=0}^{p} \alpha_3 \Delta GDPpc_{t-i} + \sum_{i=0}^{p} \alpha_4 \Delta INF_{t-i} + \sum_{i=0}^{p} \alpha_5 \Delta FIN_{t-i} + \sum_{i=0}^{p} \alpha_6 \Delta DEM_{t-i} + \eta_t ECT_{t-1} + u_t --(3)$$

To evaluate the gendered impact of IMF programs and tax policies, different dependent variables are used to measure gender inequality in the labour market. These are the unemployment gap and labour force participation gap. A similar approach was used by Kern et al. (2024). The

unemployment gap is calculated as the difference in unemployment rates between men and women, expressed as a ratio of the total unemployment rate. Formally, the unemployment gap (y^U) is calculated as $y^U = \frac{UM - U_F}{U} * 100$, where U_M represents the unemployment rate of men or males. U_F represents the unemployment rate of women or females, while U represents the total unemployment rate, which is the sum of the men's and women's values.

It should be noted that the unemployment rate of women is subtracted from the men's value, given that unemployment is a negative outcome. Hence, a higher value of the unemployment gap indicates relatively less unemployment among women. The unemployment rate indicates the number of unemployed individuals as a percentage of the total economically active population in the labour force. The male or female unemployment rate is the share of males or females in the labour force who are unemployed or seeking employment. The data is sourced from the World Bank's World Development Indicators.

The second outcome variable used is the labour force participation (LFP) gap. Like the unemployment gap, the LFP gap is computed as the difference in labour force participation between women and men as a ratio of the total labour force participation rate. Formally, the labour force participation gap (y^P) is calculated as $y^P = \frac{PF - P_M}{P} * 100$, where P_F represents the female labour force participation. P_M and P represent the male and total labour force participation rates, respectively. The labour force participation rate indicates the percentage of all working-age people who are either employed or actively seeking work. Hence, higher values of the LFP gap indicate relatively more female participation in the labour force. In addition to the unemployment and labour force participation gap as outcome variables, gender-disaggregated labour market data is used. This includes male and female labour force participation rates as well as unemployment rates.

To analyse the gendered impact of tax policies, the main regressor is a binary variable. This represents the year of the introduction or increase in VAT, which must also coincide with IMF programs. For example, in 2023, Ghana secured an IMF bailout, and the VAT rate was effectively increased from 12.5% to 15%. In addition, a binary variable is used to denote periods when Ghana was under an IMF ECF program. This helps to assess the impact of being under an IMF program on gender outcomes. To strengthen the results and address concerns about endogeneity, the

instrumental variable design is implemented. We use natural disaster as an instrument for IMF programs, with tax conditionality, following the argument by Kern et al. (2024) that natural disasters disrupt labour market outcomes, often necessitating IMF assistance. Thus, the frequency of natural disasters in a country would cause financial distress, necessitating an IMF bailout. The data on natural disasters is gleaned from the Centre for Research on the Epidemiology of Disasters (CRED). Similar to the IMF program, a binary variable is created to represent the occurrence of natural disasters, where at least 10 lives are lost or 100 people are affected.

Recognizing that IMF programs are typically implemented during crisis periods, we introduce control variables that may mitigate the crisis's impact to isolate the effects of tax policies on gender. Thus, this paper employs multiple control variables that may influence the relationship between the IMF program and gender outcomes. This includes Gross Domestic Product per capita (GDPpc), inflation (INF), financial crisis (FIN), and democracy (DEM). The logs of GDP per capita and inflation capture worsening economic situations, so that the effects of tax measures or the IMF ECF program will be fully reflected in the gendered outcomes. Inflation is measured by the Consumer Price Index (CPI). These data are also gleaned from the World Bank. Financial crisis is included as a binary variable using the updated version of the original data compiled by Laeven and Valencia (2018). In this regard, a financial crisis is noticed when there are significant signs of financial distress in the banking system (as indicated by significant bank runs, losses in the banking system, and/or bank liquidations) and when there are significant banking policy intervention measures in response to significant losses in the banking system. The first year these outcomes become systemic denotes the year of the financial crisis. It is included because a financial crisis fundamentally triggers IMF programs. Lastly, the polity index is used to measure democracy. Governments that prioritize democracy are more likely to promote the rights of women and are also more committed to international credibility. Accordingly, we interact IMF programs with democracy, following Detraz & Peksen (2016). This provides more insight into how IMF programs during periods of stable democracy influence labour market outcomes. It is expected that during periods of stable democracy, governments under an IMF program will prioritize the promotion of women's rights, thereby lessening the adverse impacts on their participation in the labour market.

5. Results and Discussion

The descriptive statistic in Table 2 shows the distributions of the variables used in the estimation. The diagnostic statistics for the main estimates are presented alongside the results, as shown in Table 4. Other relevant statistics, such as the residual and stability diagnostics, are presented in the Appendix. This includes the tests for normality, serial correlation, autocorrelation, heteroskedasticity, correct specification, and multicollinearity. The variables are normally distributed, there is no serial correlation, no autocorrelation, no heteroskedasticity, and they are correctly specified as presented in Appendix 1. The correlation matrix and variance inflation factor in Appendices 2 and 3 show no concern for multicollinearity. Also, the cumulative sum of recursive residuals (CUSUM) and the cumulative sum of squares of recursive residuals (CUSUMQ) are displayed in Appendices 4 and 5. The CUSUM shows strong signs of parameter stability over the period within the standard 5 percent critical bounds, while the CUSUMQ also shows no structural breaks, but for a brief period between 2011 and 2013. After that, stability was restored.

The primary estimates are presented in Tables 3 and 4. While Table 3 shows the long-run estimate, the error correction model is shown in Table 4. First, the results suggest that a negative relationship exists between being under an IMF program and the unemployment gap, although it is not statistically significant. This is apparent in both the long- and short-run, as shown in the first columns of Table 3 and Table 4. There is thus no discernible trend to show that under an IMF program, women are disadvantaged compared to men in the labour market in terms of the unemployment gap. However, the results indicate that the IMF-recommended tax reforms, particularly those related to VAT imposition and subsequent upward adjustments, negatively correlate with the unemployment gap. This result is statistically significant in both the short and long run, as shown in the second columns of Tables 3 and 4.

To reiterate, a higher value of the unemployment gap indicates relatively less unemployment among women. Hence, the negative correlation between IMF tax reforms and the unemployment gap indicates that women are more adversely affected by unemployment than their male counterparts when IMF-recommended tax reforms are implemented in Ghana. This is evident from the coefficient of IMF with tax conditionality, which is negative and statistically significant in both the long and short run. In the long run, the unemployment gap widens by 0.264% points when the IMF imposes tax reforms. In the short run, it widens by 0.055% points. Thus, IMF programs with tax conditionality exacerbate gender inequality in Ghana. This confirms the

unemployment gap displayed in Figure 1.

The intuition of this result is that VAT is a regressive tax, which widens the gender inequality gap. Besides, women tend to be more engaged in vulnerable employment than men. Hence, disturbances such as tax reforms that contract firms' productivity lead to layoffs, of which women are the most marginalized. Even for the self-employed, upward VAT adjustment is associated with higher compliance costs. This may eventually lead to business collapse and unemployment, particularly for small- and medium-sized enterprises where women are disproportionately represented. In this regard, Kern et al. (2024) and Blankton et al. (2019) argue that IMF programs have an adverse impact on women than on men, as the former are more likely to be engaged in less crisis-proof jobs. This finding aligns with those of Donno et al. (2024), who find that IMF programs with tax conditionality negatively correlate with women's labour force participation and positively correlate with women's unemployment. Thus, they argue that under the IMF program with tax conditionality, women exhibit lower labour force participation and higher unemployment. Our finding also aligns with Maisonnave and Chitiga (2021), who find that fiscal reforms increase the unemployment rates of women and lower their income levels in South Africa.

Besides the unemployment gap, different regressions are run with the labour force participation gap as the outcome variable. Although a negative coefficient is observed when the labour force participation gap is regressed on the IMF program, this relationship is not statistically significant in the long run to merit further discussion, as shown in the third column of Table 3. Thus, in the long run, no discernible effect is seen. However, in the short run, under an IMF program, the labour force participation of women is adversely affected as fewer women participate. Thus, the labour force participation gap widens by 0.001% points, to the detriment of women's economic empowerment. This is shown in column 3 in Table 4. The imposition and adjustment of VAT, although it shows a negative correlation with the labour force participation gap, is not statistically significant. This applies both in the long and short run. The study by Kern et al. (2024) confirms that IMF programs have a negative impact on the labour force participation gap, although this result is contingent upon the absence of control variables. When the relevant control variables are introduced, no consistent evidence is seen.

The outcome mentioned above is confirmed using gender-disaggregated data in the error correction model displayed in Table 5. The IMF program is negatively correlated with the female

labour force participation rate and the male labour force participation rate in columns 3 - 4. This means that regardless of gender, IMF programs worsen the labour force participation rate. However, the adverse effect is more pronounced for women than for men, as their elasticity is higher. This is shown by the coefficients, which are -0.136 for females and -0.019 for males. Similarly, IMF programs aggravate the male unemployment rate in column 5, but no significant effect is observed for the female unemployment rate, which is not shown in the Tables to save space.

To provide more insights, an interactive regression analysis is conducted. This result shows that although IMF programs have adverse effects on gendered outcomes, when IMF programs and IMF programs with tax conditionality are interacted with democracy, positive interactive effects are noticed in Table 5. First, in column 1, during IMF programs under governments with stable and good democratic practices, the labour force participation gap narrows, indicating more female labour force participation. Similarly, interacting IMF tax conditionality programs with democracy in column 2 narrows the labour force participation gap. Democratic regimes promote women's rights and help mitigate the adverse impacts of IMF programs on the labour force participation gap. Consistent with this result, Detraz and Peksen (2016) argue that democratic regimes have a higher respect for women's rights because democratically elected leaders are constrained by numerous institutional mechanisms, including the prospects of losing office through elections and systems of checks and balances.

Endogeneity concerns are also addressed in this paper using the 2SLS instrumental variables approach. Instrumenting IMF tax conditionality programs with natural disasters yields relatively similar results, as shown in Table 6. First, the labour force participation gap widens during IMF programs with tax conditionality, suggesting less female participation in the labour force. Second, these programs have an adverse effect on both female and male labour force participation rates. However, the adverse effect is more pronounced for women than for men. This is due to higher elasticity. Nonetheless, no significant effect is noticed for the unemployment gap.

In the primary model, with unemployment gap as the outcome variable, both GDP per capita and financial crisis are positively correlated with the unemployment gap. This means that an increase in per capita income has a positive effect on gender outcomes, thereby reducing gender inequality. Hence, there are no unemployment fears for women once the economy prospers. On the contrary, the financial crisis, which is a significant trigger for undergoing an IMF program

contrary to expectations, positively affects the unemployment gap. No significant relationship is observed between democracy, inflation, and the unemployment gap.

6. Conclusion, Recommendations, and Directions for Future Research

Ghana, like most developing countries, turns to the IMF when it requires a financial bailout to stabilize its balance of payments operations. Due to Ghana's economic fragility, it has sought financial bailout from the IMF 17 times after independence. Nonetheless, the IMF bailout, which may restore macroeconomic stability, especially in the short term, is not without conditionality. One foremost conditionality is the imposition or upward adjustment of the VAT. However, the VAT is said to be regressive and gender sensitive. To adduce a shred of empirical econometric evidence, this paper investigates the relationship between being under an IMF program with tax conditionality and gender outcomes in Ghana. The ARDL and 2SLS instrumental variable estimation procedures are used.

The result shows that the unemployment gap between women and men widens during IMF programs, especially when tax conditionality is imposed. The evidence also suggests that, besides widening the labour force participation gap, the decline in labour force participation among women is more pronounced than that of men during IMF programs. Conversely, improved democratic regimes tend to mitigate the adverse impacts of IMF programs on the labour force participation gap through higher respect for women's rights.

This study underscores the need for policymakers to incorporate gender concerns in public policy formulation. The periodic upward adjustments in the VAT rate should be reconsidered due to its adverse effects on women's economic participation, while not losing sight of revenue generation. Particularly, tax provisions that discriminate against secondary earners and adversely affect female labour force participation should be removed. The IMF should incorporate gender indicators in its performance metrics during program design. Additionally, disaggregated data on gender issues needs to be collected and analyzed appropriately. Finally, the government of Ghana should consolidate its democratic credentials by allowing more female participation in economic activities.

Future studies can consider incorporating a model that adequately reflects the realities of the informal labour market, where many women in Ghana are employed. These nuances could provide a vital context to enhance the overall gender analysis, offering a more comprehensive

understanding of the labour market's impact on women. Additionally, other significant fiscal policies, such as corporate tax changes or income tax reforms, which may affect labor market outcomes differently across genders, should also be considered.

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Appendices

Table 1: Statistics of Gender Gap in Ghana, 2024

Indicator	Female	Male	Difference
Economic participation and opportunity			
Labour force participation rate (%)	61.98	65.24	-3.26
Estimated earned income ($ 1,000)	4.02	6.95	-2.93
Legislators, senior officials and managers (%)	44.27	55.73	-11.46
Professional and technical workers (%)	41.67	58.33	-16.66
Unemployed adults (% of labour force)	3.51	2.87	0.64
Educational attainment			
Enrolment in primary education (%)	80.56	80.92	-0.36
Enrolment in secondary education (%)	76.61	76.96	-0.35
Enrolment in tertiary education (%)	19.77	21.00	-1.23
Graduates from tertiary education (%)	11.86	14.92	-3.06
Political empowerment			
Women in parliament (%)	14.60	85.40	-70.8
Women in ministerial positions (%)	17.24	82.76	-65.52

Source: World Economic Forum (2024)

Table 2: Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max	Skewness	Kurtosis
IMF Program	0.676	0.475	0	1	-0.754	1.569
IMF Tax reform	0.294	0.462	0	1	0.904	1.817
Natural disaster	0.794	0.410	0	1	-1.455	3.116
Financial crisis	0.176	0.387	0	1	1.697	3.881
Labour force gap	-7.722	3.03	-11.998	-2.771	0.181	1.580
Unemployment gap	-13.537	9.559	-39.021	6.582	-0.387	3.559
Male labour force	75.258	2.024	71.772	78.657	0.022	1.830
Female labour force	69.603	3.994	64.668	76.488	0.257	1.620
GDP per capita	1105.129	793.454	253.38	2422.086	0.371	1.473
Polity index	4.586	4.42	-7	8	-0.996	2.871
Inflation	20.296	13.174	4.865	59.462	1.213	3.751

Source: Authors

Table 3: IMF programs on Unemployment and Labour gap – The Long Run Model

	1	2	3	4
Dependent variables	Unemployment gap	Unemployment gap	Labour force participation gap	Labour force participation gap
IMF program	**-0.223**	**---**	-0.017	**---**
	(0.182)		(0.011)	
IMF with tax conditionality	**---**	**-0.264****	---	-0.017
		(0.103)		(0.012)
GDP per capita	0.040	0.142*	-0.022***	-0.009
	(0.073)	(0.073)	(0.006)	(0.008)
Inflation	-0.137	0.037	-0.000	0.003
	(0.135)	(0.066)	(0.005)	(0.005)
Financial crisis	0.171	0.363**	-0.024**	-0.009
	(0.106)	(0.157)	(0.011)	(0.017)
Democracy	-0.004	0.003	-0.003**	-0.004***
	(0.019)	(0.011)	(0.001)	(0.001)
Constant	0.103	-1.157**	0.109**	0.016**
	(0.558)	(0.511)	(0.047)	(0.052)

Source: Authors Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 4: IMF programs on Unemployment and Labour gap – The Error Correction Model

	1	2	3	4
Dependent variables	Unemployment gap	Unemployment gap	Labour force participation gap	Labour force participation gap
ΔIMF program	**-0.022**	**---**	**-0.001****	**---**
	(0.016)		**(0.001)**	
ΔIMF with tax conditionality	**---**	**-0.055*****	---	-0.001
		(0.015)		(0.001)
ΔGDP per capita	---	-0.023	---	---
		(0.030)		
ΔInflation	-0.021	0.001	---	---
	(0.014)	(0.009)		
ΔFinancial crisis	---	0.046***	-0.001*	-0.001
		(0.013)	(0.001)	(0.000)
ΔDemocracy	0.041***	0.031***	---	---
	(0.011)	(0.008)		
Constant	0.030	-0.468**	0.014	0.016**
	(0.161)	(0.173)	(0.008)	(0.052)
ECT_{t-1}	-0.295***	-0.405***	-0.126***	-0.109***
	(0.050)	(0.052)	(0.028)	(0.025)
Diagnostic statistics				
Adj. R^2	0.608	0.740	0.810	0.830
F-stats	3.355	5.589	2.004	1.988
Durbin-Watson stats (DW)	2.103	1.801	2.294	2.622
Akaike info criterion (AIC)	-3.854	-4.219	-10.697	-10.780
Schwarz info criterion (SIC)	-3.515	-3.784	-10.455	-10.490
Hannan-Quinn criterion (H-Q)	-3.757	-4.094	-10.627	-10.697

Source: Authors Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 5: The Interactive Effects and Gender Disaggregated Outcomes – The Error Correction Model

	1	2	3	4	5
Dependent variables	Labour force participation gap	Labour force participation gap	Female Labour force participation	Male Labour force participation	Male Unemployment
Δ(IMF program × Democracy)	**0.0004*** **	**---**	**---**	**---**	**---**
	(0.0001)				
ΔIMF program	**-0.004*** **	**---**	**-0.136** **	**-0.019*** **	**0.867** **
	(0.001)		**(0.048)**	**(0.006)**	**(0.347)**
Δ(IMF with tax × Democracy)	**---**	**0.0002*** **	**---**	**---**	**---**
		(0.000)			
ΔIMF with tax conditionality	---	---	---	---	---
ΔGDP per capita	---	---	-0.179*	-0.013	-0.838
			(0.101)	(0.013)	(0.881)
ΔInflation	---	---	---	---	---
ΔFinancial crisis	-0.002***	-0.0004	-0.072	-0.002	-0.136
	(0.0005)	(0.0003)	(0.043)	(0.005)	(0.336)
ΔDemocracy	-0.0005**	-0.0002	---	---	---
	(0.0002)	(0.0001)			
Constant	0.011	-0.468**	5.849	0.951	4.940
	(0.007)	(0.173)	(3.476)	(1.042)	(6.573)
ECT_{t-1}	-0.095***	-0.104***	-0.063***	-0.012***	-0.196***
	(0.015)	(0.015)	(0.014)	(0.003)	(0.057)
Adj. R^2	0.899	0.919	0.796	0.603	0.678

Source: Authors Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 6: Two-Stage Least Squares Instrumental Variable (IV)

	1	2	3	4
Dependent variables	Labour force participation gap	Unemployment gap	Female Labour force participation	Male Labour force participation
IMF with tax conditionality	-0.032***	0.107	-26.088***	-24.095***
	(0.010)	(0.091)	(8.623)	(8.060)
GDP per capita	-0.008***	-0.043**	10.699***	11.269***
	(0.002)	(0.018)	(1.718)	(1.605)
Inflation	0.003	0.016	4.771	4.574
	(0.004)	(0.032)	(3.059)	(2.859)
Financial crisis	-0.006	0.005	-1.869	-1.483
	(0.006)	(0.054)	(5.113)	(4.779)
Democracy	-0.004***	0.014**	-0.889	-0.593
	(0.001)	(0.007)	(0.656)	(0.613)

Source: Authors Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Appendix 1: Residual and Stability Diagnostics

Test type	Test statistics	P-value	Interpretation of result
Jarque-Bera Normality Test	0.657625	0.719778	Fail to reject the null hypothesis of normal distribution
Correlogram of residuals (Q-statistics)	0.2382	0.626	Fail to reject the null hypothesis of no autocorrelation
Breusch-Godfrey Serial Correlation LM Test	0.834488	0.4651	Fail to reject the null hypothesis of no serial correlation
Ramsey RESET Test	2.316522	0.1543	Fail to reject the null hypothesis of correct specification
Heteroskedasticity Test: ARCH	1.343224	0.2584	Fail to reject the null hypothesis of no heteroskedasticity

Source: Authors

Appendix 2: Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)
(1) IMF Program	1.000					
(2) Financial crisis	-0.175	1.000				
(3) Unemployment gap	0.391	-0.009	1.000			
(4) Democracy	0.058	0.043	0.469	1.000		
(5) Inflation	0.208	0.207	-0.104	-0.440	1.000	
(6) GDP per capita	-0.316	0.096	0.163	0.662	-0.422	1.000

Source: Authors

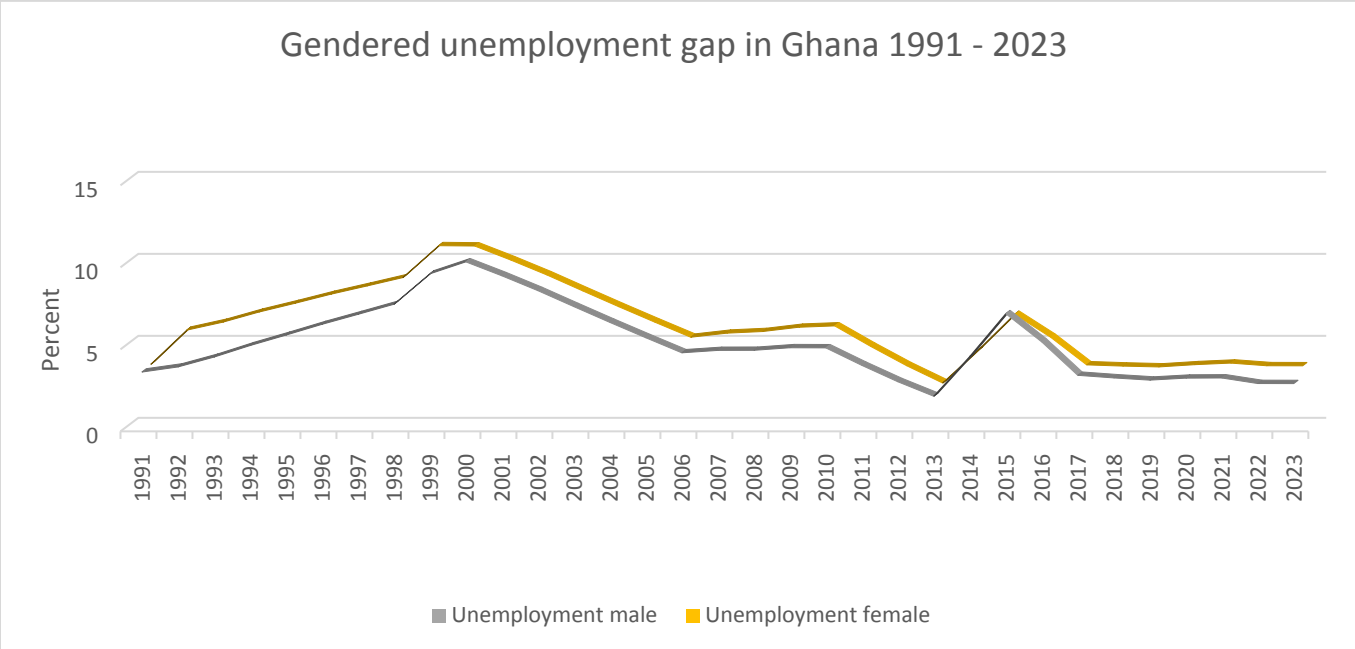
Appendix 3: Variance inflation factor

	VIF	1/VIF
GDP per capita	2.365	.423
Democracy	2.092	.478
Inflation	1.409	.71
IMF program	1.139	.878
Financial crisis	1.107	.903
Mean VIF	1.623	.

Source: Authors

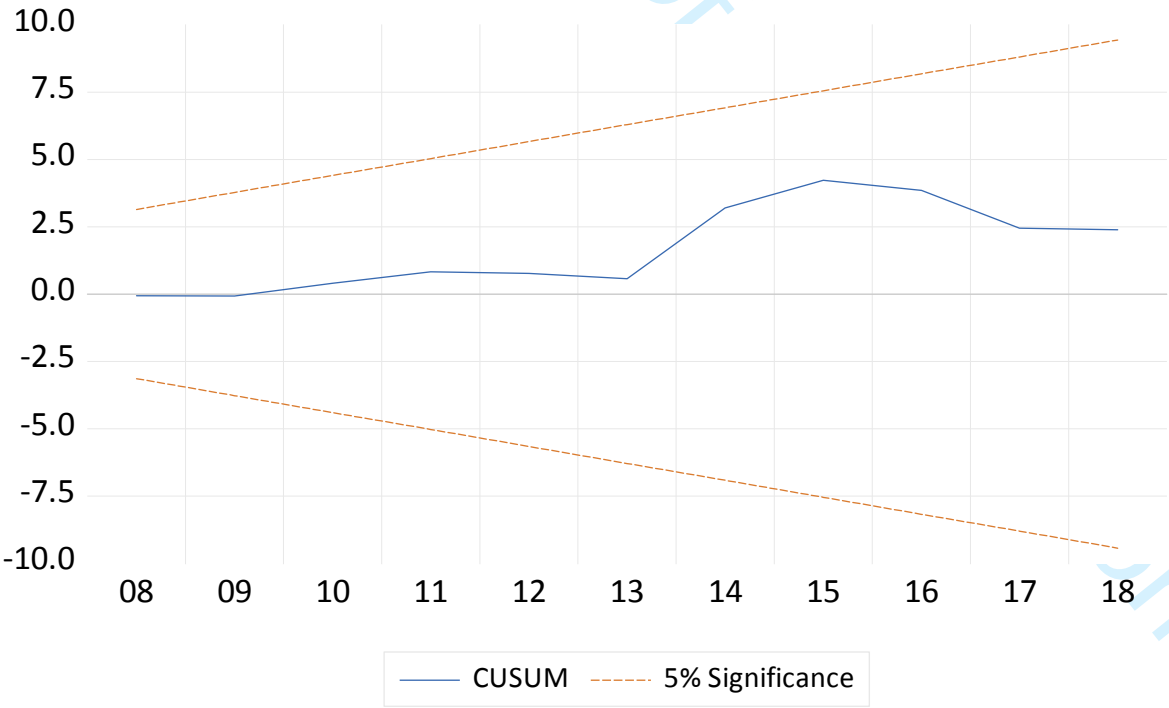
Figures

Figure 1: Unemployment Gap in Ghana



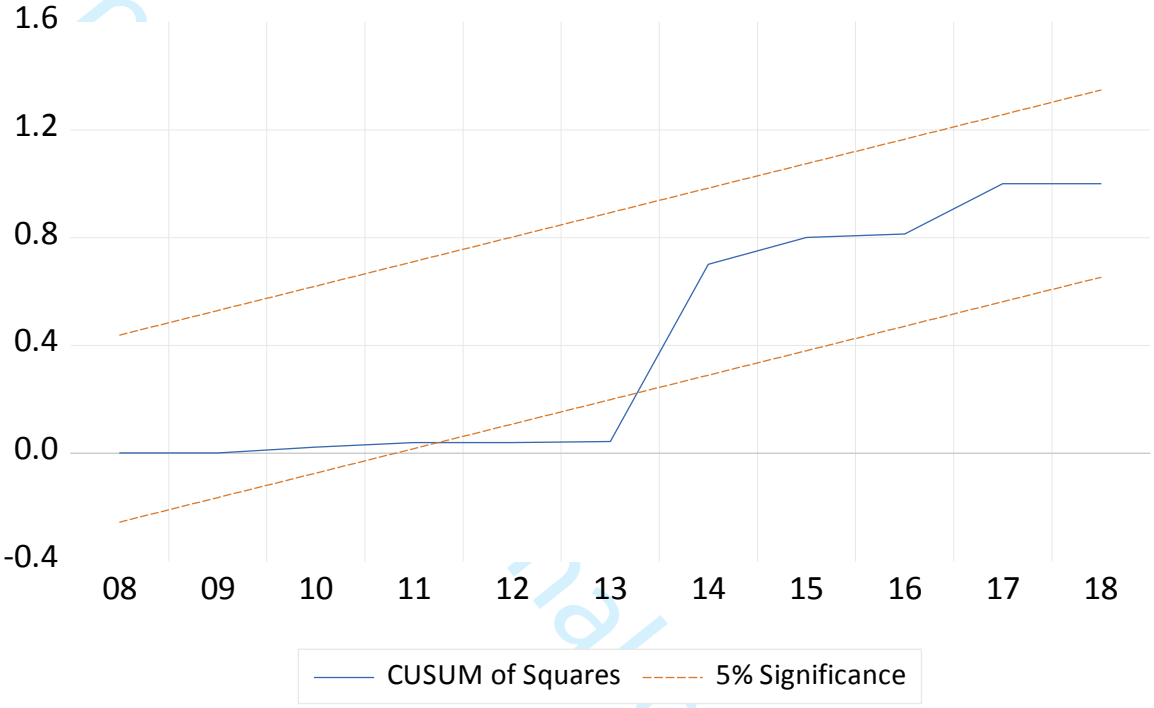
Source: Authors

Appendix 4: The plot of the cumulative recursive residuals



Source: Authors

Appendix 5: The Plot of the cumulative sum of squares of recursive residuals



Source: Authors