

Unemployment, Inflation, Female Labor Force Participation and Economic Growth: Evidence from Developing Countries

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ABSTRACT

Unemployment and inflation may influence economic growth and development. Studies show that gross fixed capital formation, exports, and female labour force participation have positive and tremendous effects on economic growth. We have used data from 1991 to 2024 from selected developing countries. The economic growth was used as a dependent variable. However, unemployment, inflation, exports, gross fixed capital formation, and female labour force participation were used as explanatory variables. OLS result shows that unemployment affected economic growth negatively. Inflation has a positive effect on the economic growth of developing countries. The results also show that gross fixed capital formation, exports, and female labour force participation have enhanced economic growth in the developing countries. On the basis of the results, it is suggested that the Government should generate and provide more employment opportunities to all communities. A steady environment should be provided to increase investment, production, and exports. Females should be given more job opportunities in rural and urban areas. A stable economic and political environment will attract more prosperous businesses, growth, and development in developing countries.

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INTRODUCTION

Gross domestic product, inflation, and unemployment are at the core of the objectives of macroeconomic policies. The sharp or smooth transformation of these three economic factors unswervingly affects societies and might be a reason for communal or economic issues. If economic growth continues too quickly, inflation might go faster, and if economic growth is lagging, then unemployment may increase, implying that economic growth, inflation, and unemployment considerably affect economic development. Unemployment might have a terrible influence on the growth of developing economies. In line with the International Labor Organization, A jobless individual is he who is in search of work to perform but by no means gets the work (Strobl & Byrne, 2002). The market value of every commodity and service formed within the geographical restrictions of an economic area over a sure period of time is referred to as an economy's gross domestic product. Labor demand is a derived demand consistent with labor theory. It indicates that such a requirement contributes to output and is affected by the extent of economic action (Herbener, 2011).

Trade openness has also been well thought-out as an engine for growth in various perspectives. It tends to increase capital formation and enlarges markets by increasing businesses (Miller, 2000) and Sulaiman et al. (2015). It enhances many of the benefits to the economy's manufacturing sectors by raising original approaches of production and increasing earning chances by making additional work opportunities, and may decrease poverty (Pernia & Quising, 2005). Ang (2007) examined the association of energy use and economic growth based on the data used from 1960 to 2000. The author has used the VAR model. Findings showed that energy use tended to increase economic growth. Shahbaz and Lean (2012) pointed out the role of financial inclusion in economic growth in Tunisia. The study result showed that financial development enhanced economic growth in the Tunisian economy. Umaru et al. (2013) focused on the effect of inflation and unemployment on growth in the Nigerian economy. They used data from 1980 to 2010. The ARDL result indicated that growth was the result of unemployment and inflation.

Ademola and Badiru (2016) showed the economic performance by using data from 1981 to 2014. They used the cointegration technique. The results showed that unemployment and inflation have enhanced economic growth. Yelwa et al. (2015) used data from 1987 to 2012 and focused on the association of inflation and economic growth in a developing economy. Findings showed that interest rate and community expenditure enhanced economic growth. However, inflation and unemployment affected the economic growth negatively. Moreover, the study found a causal link between inflation, unemployment and economic growth. The study suggested fine-tuning macroeconomic policy

instruments for gaining a sustainable and enabling environment that will enhance the increase in domestic output. Bokpin (2017) found that FDI influences growth and CO2 emissions. The author has used data up to 2013 in Africa. It was found that FDI has affected environmental degradation positively. Ghosh (2019) analysed the influence of FDI on economic growth using data from 1971 to 2014 from OECD economies. The ARDL result showed that foreign direct investment affected economic growth positively.

Altuzarra et al. (2019) explained an association between female labour participation and economic development in the European Union by using data from 1990 to 2016. Findings showed a U-shaped relationship between the variables. Sinha (2022) focused on the effects of unemployment and inflation and capital stock on the output growth of India based on data from 1990 to 2021. The result showed that capital stock increased economic growth. However, inflation has decreased economic growth. Sekwati and Dagume (2023) checked the performance of growth in South Africa by using data from 1994 to 2018, using quarterly data. Johansen co-integration test results showed the long-run association between factors, and the VECM pointed out that inflation and unemployment led to decreased economic growth.

Muhammad (2023) examined the role of unemployment and inflation in economic growth. The regression result pointed out that inflation has increased economic growth. The study suggested effective monetary policies and measures to control inflation. Tenzin (2019) checked out the effect of inflation on growth in Bhutan using data from 1998 to 2016. Findings indicated that economic growth was the result of inflation in the economy. Ammara et al. (2025) analyzed the effects of gross fixed capital formation, information and communication technology, human capital, labor, and female labor force participation on economic growth in eight ASEAN countries. They used data from 2000 to 2023. The ARDL result showed that gross fixed capital formation led to an increase in economic growth, while information and communication technology and human capital affected the growth positively and negatively. Finally, female labor force participation increased economic growth.

In this research, we have made an effort to highlight the effect of unemployment, inflation, gross fixed capital formation, exports, and female workforce involvement on economic growth in developing economies.

Significance of the Study

A lot of macroeconomic factors like urbanization, industrialization, financial inclusion, poverty act affect economic growth. But our work points out the important role of very emerging factors such as unemployment, inflation, gross fixed capital formation, exports and female labour force participation on economic growth.

Research Hypotheses

The key hypotheses are presented as:

- H1: Unemployment and growth are negatively associated.
- H 2: Higher the inflation, the higher the economic growth.
- H 3: Female labour force participation is positively related to growth.
- H 4: Exports and economic growth are positively related.
- H5: Higher the gross fix capital formation, higher the economic growth.

METHODOLOGY

We have analyzed the impact of unemployment, inflation, female labour force participation rate, exports, and gross fixed capital formation on economic growth. The independent variables were used as unemployment, inflation, female labour force participation rate, exports, and gross fixed capital formation. We have taken data from 1991 to 2024 for this analysis. The OLS regression technique has been used in this analysis. We have taken data from the World Development Indicators.

The model is given as:

$$LGDPPC = \beta_0 + \beta_1 CPINDX_{it} + \beta_2 UNEMPLOY_{it} + \beta_3 EXPORTS_{it} + \beta_4 GROSCF_{it} + \beta_5 FLFPRT_{it} + u_{it}$$

LGDPPC = Log GDP per capita Constant \$ US

UNEMPLOY= Unemployment rate

CPINDX= Consumer price index

EXPORTS= Exports of goods and services (% of GDP)

GROSCF= Gross fix capital formation (% of GDP)

it = (time trend)

u_{it} = (error term)

RESULTS AND DISCUSSION

We have revealed descriptive statistics of factors affecting growth. Table 2 shows OLS regression results.

Table 1: Summary Results

Factors	Observations	Mean	Standard deviation	Minimum	Maximum
GDPPC	272	3345.454	2869.912	480.6734	13121.68
CPINDEX	272	96.94891	52.1755	13.8444	386.8039
UNEMPLOY	272	10.54313	6.2184	0.82	26.301
EXPORTS	272	34.0317	26.5626	6.6626	121.3114
GROSCF	272	27.54216	8.3502	12.9360	46.2703
FLFPRT	272	56.08183	19.9584	15.3962	85.7296

Findings indicate that, on average, economic growth is 3345.454 percent in developing countries. CPINDEX is 96.9489 percent. Moreover, the unemployment rate is 10.5431 percent. However, the range of UNEMPLOY is 0.82 percent to 26.301 percent in developing countries. The mean value is greater than the standard deviation, which shows the stability of the data. The result also shows that GROSCF is 27.5422 percent. Finally, the female labour force participation rate is 56.0818 percent in these countries.

Table 2: Fixed effects results

Variables	Coefficients, Standard Errors, and t-values
CPINDEX	0.0022* 0.0002 (11.37)
UNEMPLOY	-0.0036 ** 0.0018 (-1.97)
EXPORTS	0.0073* 0.0004 (16.70)
GROSCF	0.0047* 0.0016 (2.97)
FLFPRT	0.0076* 0.0007 (10.98)
C	2.3976 .0431 (55.60)
F Statistics	204.99
Probability	0.0000
R-Squared	0.79
Adjusted R-squared	0.79

** p<0.05 and * p<0.1

Consumer price index may affect economic growth. It may affect growth positively and negatively. The result shows that a one percent increase in inflation has resulted in enhanced economic growth by 0.0022 percent in these countries. The reason may be that an increase in demand for goods and services results in more production of commodities, which ultimately increases economic growth. The result is supported by Yelwa et al. (2015).

Unemployment rate also has an effect on economic growth. It tends to increase it in developing economies. The findings show that one unit increased unemployment rate has caused increased economic growth in 0.0036 percent. The reason may be that more unemployment will lead to less investment, lower income, and lower quantity of goods and services. The result is less economic growth. The finding is favoured by Yelwa et al. (2015).

Exports are another significant factor affecting economic growth. It is found that a one percent increase in exports has resulted in increased economic growth by 0.0073 percent in developing countries. More exports tend to increase production, investment, and income. It ultimately increases economic growth.

Gross fixed capital formation may also affect economic growth. It is found that a one percent increase in gross fixed capital formation has resulted in increased growth by 0.0057 percent. For this, more capital formation will lead to an increase more saving, reinvestment, and economic growth. Our finding is favoured by the work of Ammara et al. (2025).

Female labour force participation may lead to increased economic growth. The result shows that a one percent increase in female labour force participation has caused for increased growth by 0.0076 percent. As females are contributing more towards growth and development by involving in industries and different sectors of the economy. The finding is supported by Altuzarra et al. (2019) and Ammara et al. (2025).

CONCLUSIONS

We have examined the effect of unemployment, inflation, and female labour force participation with other variables on growth in emerging countries by means of data from 1991 to 2024. The dependent variable is economic growth. However, unemployment, inflation, gross fixed capital formation, exports, and female labour force participation are used as independent variables. The OLS regression technique was used in this analysis. Furthermore, result shows that unemployment tends to decrease economic growth. Inflation seems to be affecting positively. Gross fixed capital formation also has increased economic growth. Finally, exports and female labour force participation also increased economic growth in developing economies. It is suggested that there should be more focus on employment opportunities for the general public. More female labour force participation should be improved for more economic growth. There should be more capital formation for having more economic growth.

REFERENCES

- Ademola, A. S., & Badiru, A. (2016). The impact of unemployment and inflation on economic growth in Nigeria (1981–2014). *International Journal of Business and Economic Sciences Applied Research*, 9(1), 47–55.
- Altuzarra, A., Gálvez-Gálvez, C., & González-Flores, A. (2019). Economic development and female labour force participation: The case of European Union countries. *Sustainability*, 11(7), 1962.
- Ammara, T. R., Syahnur, S., & Srinita, S. (2025). The moderating effect of female labor force participation on economic growth in ASEAN. *Ekonomikalia Journal of Economics*, 3(2), 93–105.
- Ang, J. B. (2007). CO₂ emissions, energy consumption, and output in France. *Energy Policy*, 35(10), 4772–4778. <https://doi.org/10.1016/j.enpol.2007.03.032>
- Bokpin, G. A. (2017). Foreign direct investment and environmental sustainability in Africa: The role of institutions and governance. *Research in International Business and Finance*, 39, 239–247.
- Ghosh, S. (2019). Foreign direct investment, female education, capital formation, and economic growth in Japan and South Korea. *International Economic Journal*, 33(3), 509–536.
- Herbener, J. M. (2011). The fallacy of the Phillips curve. In *Dissent on Keynes: A critical appraisal of Keynesian economics*. Praeger, New York.
- Miller, S. M. (2000). The effects of openness, trade orientation, and human capital on total factor productivity. *Journal of Development Economics*, 63, 399–423.
- Muhammad, A. A. (2023). Examining the relationship among unemployment, inflation, and economic growth. *Journal of Business and Economic Options*, 6(2), 23–31.
- Pernia, E. M., & Quising, P. F. (2005). Trade openness and regional development in a developing country. In *Globalization and urban development* (pp. 79–94). Springer.
- Sekwati, D., & Dagume, M. A. (2023). Effect of unemployment and inflation on economic growth in South Africa. *International Journal of Economics and Financial Issues*, 13(1), 35–45.
- Shahbaz, M., & Lean, H. H. (2012). Does financial development increase energy consumption? The role of industrialization and urbanization in Tunisia. *Energy Policy*, 40, 473–479.
- Sinha, J. K. (2022). Impact of unemployment and inflation on the economic growth of India. *Journal of Development Economics and Finance*, 3(2), 397–417.

- Strobl, E., & Byrne, D. M. (2002). Defining unemployment in developing countries: Evidence from Trinidad and Tobago. SSRN.
- Sulaiman, C., Bala, U., Tijani, B. A., Waziri, S. I., & Maji, I. K. (2015). Human capital, technology, and economic growth: Evidence from Nigeria. *SAGE Open*, 5, 2158244015615166.
- Tenzin, U. (2019). The nexus among economic growth, inflation, and unemployment in Bhutan. *South Asia Economic Journal*, 20(1), 94–105. <https://doi.org/10.1177/1391561418822204>
- Umaru, A., Donga, M., & Musa, S. (2013). An empirical investigation into the effect of unemployment and inflation on economic growth in Nigeria. *Interdisciplinary Journal of Research in Business*, 2046, 7141.
- Yelwa, M., Awe, S. A. J. O., & Omonoyi, E. (2015). Informality, inclusiveness and economic growth in Nigeria. *International Journal of Management Science and Business Administration*, 1(10), 33–44.