The Effects of Gender Inequality on Economic Development in Nigeria

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ABSTRACT

This paper's purpose is to identify if labour market gender inequality exists in Nigeria and how it affects the Nigerian economic growth. The objective of this study is to explore the impact of gender inequality in the labour market on economic growth of Nigeria for the period between 1991 and 2019 using time series data from World Development Indicators (WDI). The Augmented Dickey Fuller test and Phillip Perron test were carried out to test for the stationarity of the variables and examine the unit root property of the series. The autoregressive and distributed-lag bounds test was used to test for co-integration and also test for the long run relationship between the variables. The ARDL error correction mechanism was also carried out to test for the short run relationship between the variables. The results reveal that gender inequality exists in Nigeria's labour market and we can conclude from the analysis provided using the equal opportunities and conditions approach, that fertility and female unemployment which represent gender inequality both have negative significant relationships with economic growth in Nigeria for both short run and long run periods and we can also conclude that female vulnerable employment and female wage and salaried workers' rate have negative relationships with economic growth in the short run period and positive relationships with economic growth in the long run period. At the end of this study, we concluded that our results align with the feminist theory that was used for this study and gender inequality does indeed affect the economy negatively in terms of growth and development.

Keywords: economic development, gender inequality, Nigeria

ÖZ

Bu makalenin amacı, Nijerya'da işgücü piyasasında cinsiyet eşitsizliğinin var olup olmadığını ve bunun Nijerya'nın ekonomik büyümesini nasıl etkilediğini belirlemektir. Bu çalışmanın amacı, Dünya Kalkınma Göstergelerinden (WDI) alınan zaman serisi verilerini kullanarak, işgücü piyasasındaki cinsiyet eşitsizliğinin Nijerya'nın ekonomik büyümesi üzerindeki etkisini 1991 ile 2019 arasındaki dönem için araştırmaktır. Değişkenlerin durağanlığını test etmek ve serinin birim kök özelliğini incelemek için Augmented Dickey Fuller testi ve Phillip Perron testi yapılmıştır. Eş bütünleşmeyi test etmek ve ayrıca değişkenler arasındaki uzun dönemli ilişkiyi test etmek için otoregresif ve dağıtılmış gecikmeli sınırlar testi kullanıldı. Değişkenler arasındaki kısa dönemli ilişkiyi test etmek için ARDL hata düzeltme mekanizması da gerçekleştirilmiştir. Sonuçlar, Nijerya'nın işgücü piyasasında cinsiyet eşitsizliğinin var olduğunu ortaya koymaktadır ve eşit fırsatlar ve koşullar yaklaşımı kullanılarak sağlanan analizden, cinsiyet eşitsizliğini temsil eden doğurganlık ve kadın işsizliğinin Nijerya'daki ekonomik büyüme ile kısa vadede negatif anlamlı ilişkilere sahip olduğu sonucuna varabiliriz. ve uzun dönemli dönemler ve ayrıca kadınların savunmasız istihdamı ve kadın ücretli ve maaşlı işçi oranının kısa dönemde ekonomik büyüme ile negatif, uzun dönemde ekonomik büyüme ile pozitif ilişkilere sahip olduğu sonucuna varabiliriz. Bu çalışmanın sonunda, sonuçlarımızın bu çalışma için kullanılan feminist teori ile uyumlu olduğu ve cinsiyet eşitsizliğinin gerçekten de büyüme ve gelişme açısından ekonomiyi olumsuz etkilediği sonucuna vardık.

Anahtar Kelimeler: ekonomik kalkınma, cinsiyet eşitsizliği, Nijerya

DEDICATION

I dedicate this research to God my father.

El Roi – The God that sees.

ACKNOWLEDGEMENT

I would like to appreciate God first for helping me complete this program.

I am very grateful to my supervisor for her constant guidance and patience during the research period. Thank you Hocam.

I am extremely grateful to my parents and siblings for their constant support and encouragement through out this program. I love you all.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Chapter 1

INTRODUCTION

1.1 Research Background

Gender inequality is a growing topic that has risen concerning development in the recent years. Its negative effects have been constantly publicized and now, organizations and governments work towards eliminating it completely or to the best of their abilities.

Goal number 5 of the United Nations sustainable development goals (SDGs) states as "achieve gender equality and empower all women and girls". The United Nations believe that gender equality is important to achieve peace, prosperity and sustainability in the world. Maurice Obstfeld, former IMF economic counsellor once said that "Gender equality is more than a moral issue; it is a vital economic issue. For the global economy to reach its potential, we need to create conditions in which all women can reach their potential." (International Monetary Fund, 2017). This is to show that gender inequality affects everyone and not just women as it can affect economies and homes. It affects economic productivity since human capital is not being utilized fully (women are not getting complete education and do not have equal opportunities in the workplace). It also affects governance; the nation is losing access to better governance due to gender bias - women not having the same opportunities to join the parliament (Bertay, et al, 2020).

Most Nigerian cultures encourage patriarchy where the men are seen as more important and superior to women and this has affected the labor force participation, political participation and educational participation of women. It mostly discourages women from contesting for certain roles like governorship and presidency, this just proves to show that women do not have the same opportunities and conditions as men in the Nigerian culture. There are some jobs and roles that are said to be "a man's role" and thus very few women are employed into that sector and this affects economic development negatively (Makama, 2013).

A study by Ferrant (2015) shows that one explanation of gaps in development could be gender inequality as a factor of economic and human growth. Gender inequality has a negative influence on long-term income per capita and human development, according to the research. The outcomes were influenced by gender inequalities and access to economic activity, as well as inequalities in the family in terms of income and paid and unpaid work and access to education. It also discovered that there is an adverse feedback loop between gender inequality and economic growth: more inequality slows down economic development, which then results in more inequality (Ferrant, 2015).

1.2 Research Questions

i. Do women have equal opportunities and conditions as men in the labour market in Nigeria?
ii. How does gender inequality in the labour market opportunities and conditions affect economic growth in Nigeria?

1.3 Research Aim and Objective

This research aims to identify if labour market gender inequality exists in Nigeria and how it affects its economic growth. The goal of this research is to provide evidence on the relationship between gender inequality in the labour force and economic growth, thus development of Nigeria since economic growth is the necessary condition for development.

1.4 Contribution of the Study

This research aims to contribute additional information to the already existing body of knowledge on the effects of gender inequality on economic development in Nigeria. It would highlight on whether women have the same opportunities and conditions as men in Nigeria's labour force and how that affects economic growth and development in the country.

1.5 Research Design and Methodology

Firstly, we will determine if according to equal conditions and opportunities approach, there is existence of gender inequality in Nigeria via descriptive statistics. This is because it is important to have equal conditions and opportunities, if they are not equal, outcomes would also not be equal. Opportunities measures the distribution of paid work while conditions measure the distribution of unpaid work. The following measures would be used to measure gender equality in equal conditions: fertility rate and wage and salaried workers' rate of women compared to men. Female unemployment rate and female vulnerable employment rate would be used to measure gender inequality with the equal opportunities approach. After it has been determined if gender inequality exists in Nigeria or not based on the Feminist theory; equal

conditions and opportunities approach. We will then test the short run and long run relationship between gender inequality and economic growth (GDP per capita growth rate would be used as a variable for this) via ARDL bounds testing method. This is to give a clearer and broader view of the impact of gender inequality in economic growth.

1.6 Structure of the Study

This research will consist of six chapters. Chapter one will cover an introduction into the research and it will cover the research background, research questions, aims and objectives of the research, contribution of the study, research design and methodology and structure of the study. Chapter two will describe the Nigerian economy and give a detailed analysis in relation to gender inequality and economic development and a descriptive study will be carried out to determine the existence or inexistence of gender inequality in the Nigerian labour market using the equal opportunities and conditions approach. Chapter three will provide literature review and theoretical framework relevant to the study. While chapter four will cover the data and methodology of the study while chapter five will discuss the empirical findings of the study and finally, chapter six will provide the conclusion, limitations of study and policy recommendation of the research.

Chapter 2

THE NIGERIAN ECONOMY: GENDER INEQUALITY AND ECONOMIC GROWTH AND DEVELOPMENT

2.1 The Nigerian Economy

Nigeria's population consists of over 200 million people which makes it the most populated country in Africa (World Bank, 2022). Its main source of revenue since the 1960s is from oil production and because of this, the economy is very sensitive to global economic disturbance especially those that affect the world's price of oil like COVID 19 and insecurity issues (there has been massive insurgency and terrorism happening in Nigeria since 2009). An example of this happening is when Nigeria entered into recession which reversed the three years' progress made from its previous recession that occurred in 2016. All this economic instability has led to a rise in insecurity, political instability and corruption in the country and these have impacted the country's development negatively. According to the World Bank, Nigeria is a low-income country. The National Bureau of Statistics (NBS) reports that about 40% of the Nigerian population live below the poverty line as at 2020 (The conversation, 2021).

You can find below in figures 2.1, 2.2, 2.3, 2.4 and 2.5 a brief outlook of Nigeria's main macro-economic variables from 1991 till 2019. The variables are GDP growth

rate, GDP per capita, inflation rate, unemployment rate and trade balance. We are using these variables because they represent the major goals of macroeconomic policies and provide a general analysis of the well-being and macroeconomic performance of the Nigerian economy.

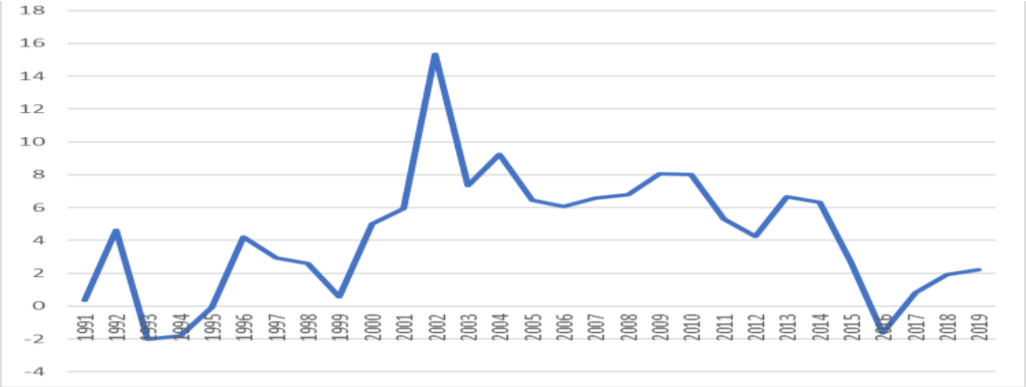

Figure 2.1: Nigeria's GDP Growth Rate (1991 – 2019)
Source: World Bank development indicators

From figure 2.1, we can see that the GDP of the conomy is currently in a poor state with its highest point being in 2002 and lowest 1993. It is seen that the economy suffered a recession from 2014 – 2016 and was in recovering mode from 2016 till 2019. Due to the pandemic that started in 2020 in Nigeria and unavailibility of data, this study is looking ata the growth rate from 1991 to 2019. We can conclude from figure 2.1 that GDP growth rate of Nigeria is unstable.

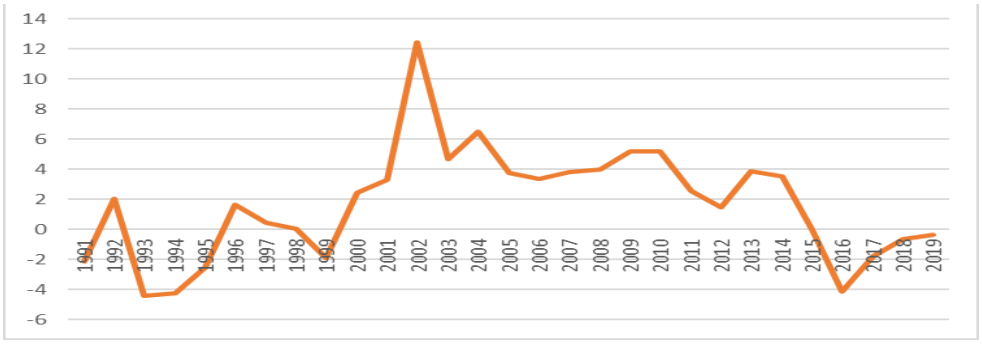

Figure 2.2: Nigeria's GDP Per Capita Growth Rate (1991 – 2019)
Source: World Bank development indicators

GDP per capita growth rate can be used to measure income growth rate in an economy, this is important because income growth is one of the major macroeconomic goals of developing economies. We can see from figure 2.2 that GDP per capita growth rate of the Nigerian economy is unstable and its been fluntuating from 1991 – 2019 with its highest point being 2002 and lowest being 1993.

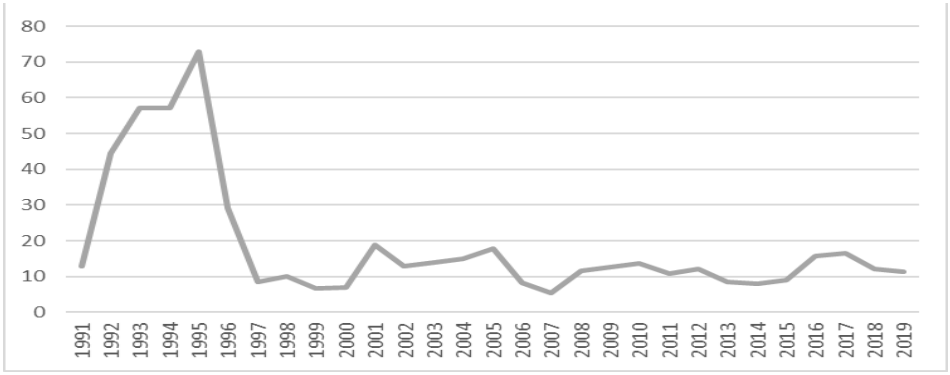

Figure 2.3: Nigeria's Inflation Rate (1991 – 2019)
Source: World Bank development indicators

We can observe from figure 2.3 that the inflation rate was at its highest point in 1995 and lowest 2007 and the inflation rate in the Nigerian economy has been unstable from 1991 – 2019. It is also observed that although, the rate has not gotten as bad as it was

in 1995 yet, it is still quite high. The economy's inflation rate has been high since 1991 till 2019. This is not a good sign of a developed economy.

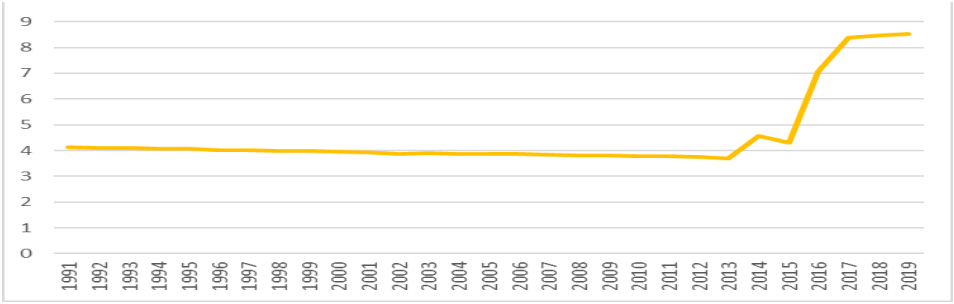

Figure 2.4: Nigeria's Unemployment Rate (1991 – 2019)
Source: World Bank development indicators

From figure 2.4 above, we can observe that unemployment rate in the Nigerian economy is at its highest point in 2019. There was a slight decline from 1991 till 2013, a slight climb in 2013, followed by a slight decrease in 2014 and a sudden alarming climb in 2015 and it has been getting worse since then till 2019. This shows that the economy's unemployment rate is unstable and it is not a good sign as regards the development of the economy.

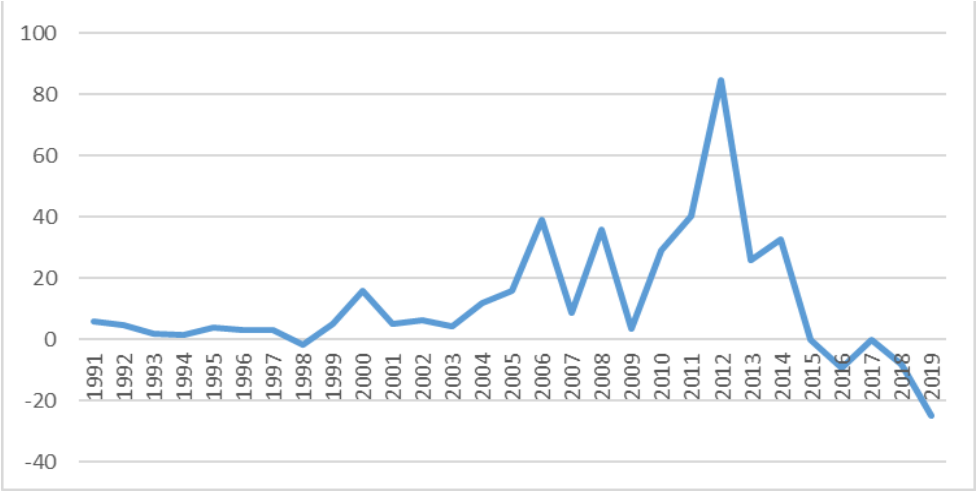

Figure 2.5: Nigeria's Trade Balance (1991 – 2019)
Source: Macrotrends dataset

We can see from figure 2.5 that the trade balance has been unstable with its highest point being 2012 and lowest 2019. The economy has been at a deficit since 2015 with a lot of flunctuations from 1991 till 2019.

From the analysis given ablove, we can conclude that Nigeria's macroeconomic performance from 1991 till 2019 is not stable using the variables- GDP growth rate, GDP per capita growth rate, inflation rate, unemployment rate and trade balance. This is not a good sign for its development and could be impacted by gender inequality. This study is going to examine the impact of gender inequality on economic development in the Nigerian economy and we will see if it can affect these variables negatively or not.

2.2 Gender Inequality in Nigeria

The discrimination based on gender, the persistent favoring or emphasis of one gender over the other leads to gender inequality. Discrimination based on gender is an infringement of the fundamental human right to gender equality. Gender inequalities start in childhood and continue to limit children's potential throughout their entire lives, having a disproportionately negative impact on girls. Basically, gender inequality is a human right violation and it wastes important female labor resources (United Nations, 1995).

United Nations' (1979) Convention on the Elimination of all forms of Discrimination Against Women (CEDAW), Article 1 defines gender discrimination as "Any distinction, exclusion or restriction made on the basis of sex which has the effect or purpose of impairing or nullifying the recognition, enjoyment or exercise by women,

irrespective of their marital status, on the basis of equality of men and women, of human rights and fundamental freedoms in the political, economic, social, cultural, civil or any other field" (UN, 1979. Pg 2).

Almost all human rights treaties forbid discrimination based on gender. This includes agreements made at the international level that guarantee both men and women the same gender rights as well as agreements made specifically to advance women's rights, such as the CEDAW, which is frequently known as the as the global bill of rights for women (UN, 1979). Putting gender equality first, especially while pursuing foreign policy goals, is thought to help advance a more prosperous and peaceful world (UN, 1979).

UN Women, 2022, claim that, "Gender inequality is a major cause and effect of hunger and poverty: it is estimated that 60 percent of chronically hungry people are women and girls." (World Food Programme, 2015 - 2020).

For the past few decades, the discussion of development policy has centered on gender inequality and it can be traced back to 1848 when a women's suffrage conference was first called in the US for women to be allowed to vote as much as men and 1974 when the first world conference for women was held in Mexico where the Women in Development (WID) approach was encouraged. The approach highlighted women's right to development, acknowledged women's economic role in national economies and gave a voice to women in developing countries (Chege, 2007). An equivalent amount of research interest has been shown in this policy topic, leading to a substantial

amount of study focused at demonstrating how lowering gender inequality benefits women generally. Examples of such research works are “Gender equality for development” carried out by the World Bank and “Gender equality and sustainable development” carried out by the United Nations. The results from the research have been used to formulate inequality-reducing policies that promote development directly and indirectly (Bandiera & Natraj, 2013).

2.2.1 Analyzing Gender Inequality in Nigeria

From a Feminist perspective that there is material equality; people born with equal rights, there are two methods to measure gender inequality in an economy:

i. Equality in opportunities and conditions: This approach argues that if all genders have equal opportunities and conditions there will be no gender inequality.
    a) Equality in opportunities: This measures if both women and men have equal opportunities, in other words if they have equal “starting points” in economic, social and political life.
    b) Equality in conditions: This goes hand in hand with equal opportunities. If both men and women have equal opportunities to enter the labor market, they should also have equal conditions to operate and excel in the labor market. It aims at ensuring equal level of paid and unpaid work and income in economic life, equal representation in all decision-making bodies in social and political life.

ii. Equality in outcomes: This approach argues that if there is a gender gap in any area it means there is inequality in opportunities and conditions. Thus, it

suggests tools transformation of inequalities to equality. For examples, if women are disadvantaged when it comes to having high positions in the labour market, this approach works towards ensuring that women start getting high positions in the labour market.

Based on our research questions; the impact of gender inequality on economic growth, we are going to identify gender inequality in opportunities and conditions in the labour market in Nigeria. The reason is because most studies focus on all three measures or on just equal outcome or just equal conditions or just equal opportunities. This study is giving a broader perspective and looking into both equal conditions and opportunities in the labour market. To give a deeper level of understanding of the level of gender inequality in the Nigerian labour market when this study introduces sex specific labor market indicators into this study, the distribution of Nigerian population by gender will be provided in order to have a better insight of the economy and the gender distribution of the economy. Gender inequality affects population growth and studies have shown that countries that do not encourage girls to attend school have far higher birth rates. In nations where women's legal rights are not recognized, girls are more likely to marry before turning 18 than in other countries. In countries where women do not have easy or any access to healthcare, birth rates are much higher. Women need to have easy access to contraception, rape kits, and abortions through healthcare in order to cut down population growth (Lycett, 2016). More research has revealed that reducing gender inequality may enhance population-level health outcomes by raising the average life expectancy and lowering the number of years lost to illness, years lived with disability, and burden of disease for both men and women.

This supports the idea that, for the benefit of society as a whole, gender-sensitive public policies are necessary (Veasa, et al, 2021). Data from 1991 – 2019 are provided because our regression analysis covers 1991 – 2019 and the coronavirus pandemic started in 2020 in Nigeria, therefore the data ended at 2019 since the years following 2019 cover the coronavirus pandemic period and recovery period from the coronavirus pandemic. From figure 2.6, we can see that the population difference between both genders in Nigeria is not high and the male population is higher. Knowing this, we can now go ahead to measure gender equality in Nigeria using equal opportunities and conditions approaches.

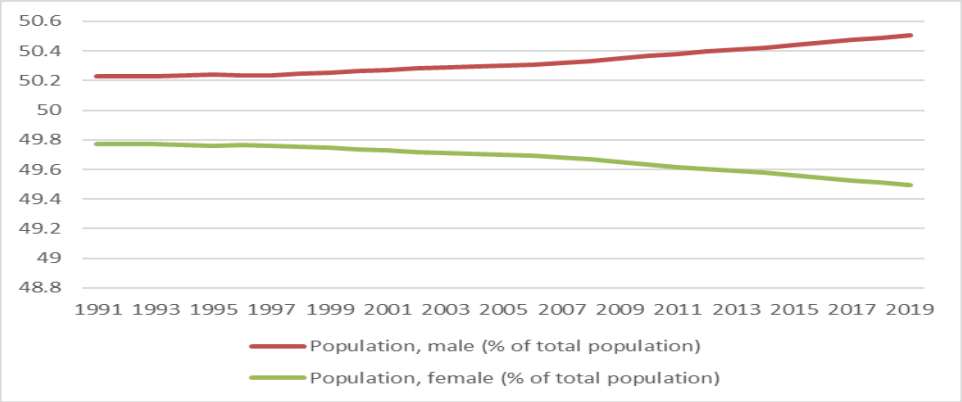

Figure 2.6: Population by Gender
Source: World Bank development indicators

EQUAL CONDITIONS APPROACH

To support the analysis that will be provided in chapter 4, this study will be using equal conditions and opportunities approach here to determine if gender inequality exists in Nigeria or not. The measures used here are the same measures that are used for the empirical investigation in chapter 4, due to the problem of unavailability of data, the data will be time series from 1991 to 2019 and the following variables have been

selected for this study. Therefore, we can use the following indicators to determine if there are equal conditions for both men and women in Nigeria or not:

1. **Fertility rate:** The relationship between fertility and gender inequality is complicated and according to Neyer, et al. (2011), demographic findings have shown different results for different economies (high developing and low developing countries). To determine if there are equal conditions for both men and women in the economy, we need to look at the fertility rate of women in the economy. From figure 2.7 below, we can see that the fertility rate has been on a constant decline from 1991 till 2019. A study by Da & Fuster (2006) revealed that women who are unemployed are more likely to delay reproducing which in turn leads to reduced fertility rate and this in turn leads to lower unpaid work for the women. And less unpaid work means that the women have more time to educate themselves and enter the labour market (Da & Fuster, 2006). This does not mean that men and women share the benefit of low unpaid work though because men are still at the advantage here. Because unpaid work is not distributed equally due to societal beliefs and gender role stereotypes. Usually, women spend ten times more than men on unpaid work and although low fertility closes the gap a little, gender inequality still exists (Ferrant, et al, 2014).

   Therefore, we can conclude that women do not have equal conditions in Nigeria as the fertility has been on a decline.

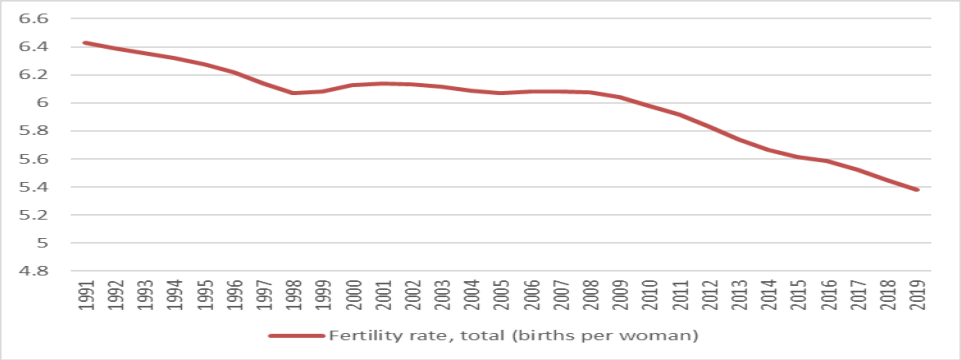

Figure 2.7: Fertility Rate
Source: World Bank development indicators

2. **Wage and salaried workers' rate of women compared to men:** According to WorldBank (2022), women who are employed on an hourly or salaried basis, as opposed to being self-employed or working in unpaid family companies, are referred to as wage and salaried workers (WorldBank, 2022). Since the principle of equal conditions suggests that both men and women ought to be given the same chances and treatment at work, such as access to the same occupations, compensation that is proportionate with the worth of the labor performed and comparable working conditions. One of the various ways that female wage and salaried workers may experience inequality in the workplace is the wage gap, in which women may be paid less than men for performing the same job, even though they have the same qualifications and experience. This could be brought on by discrimination or other problems, such ambiguous pay practices. Another factor is work-life balance where women may find it challenging to manage their work and personal responsibilities, especially if they don't have access to flexible work schedules or affordable child care options. In general, addressing these issues and promoting equal rights for

female wage and salaried workers is a critical first step in reducing gender inequality in the workplace (Schieder & Gould, 2016).

From figure 2.8 we can see that the rate of male wage and salaried workers is significantly greater than that of women. Based on this, we can conclude that men and women do not have equal opportunities in the Nigerian labour market using wage and salaried worker's rate as an indicator.

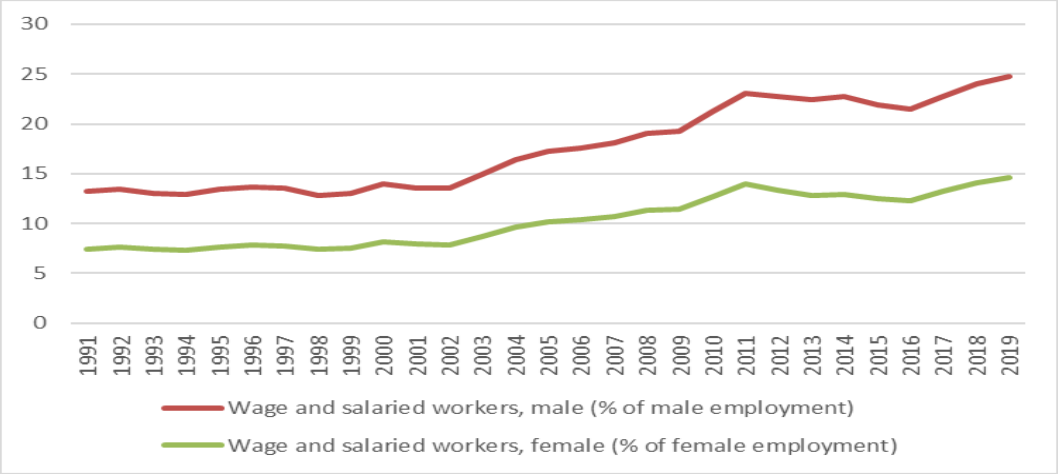

Figure 2.8: Wage and Salaried Workers' Rate of Women Compared to Men
Source: World Bank development indicators

Therefore, we can conclude that using the equal conditions approach, there is presence of gender inequality in Nigeria.

EQUAL OPPORTUINITIES APPROACH

We can use the following measures to determine if there is gender equality in Nigeria or not:

1. **Female unemployment rate:** To determine if there are equal opportunities for women in the Nigerian economy, we will have to look at the female

unemployment rate in Nigeria. It has been demonstrated that raising the proportion of highly educated women in the workforce, followed by a low degree of corruption, promotes women's entrepreneurship, reduce female unemployment rate and in turn, lower gender inequality (Chowdhury & Audretsch, 2014). According to figure 2.9, female unemployment rate was on a steady decline from 1991 till 2012 and rose from 2013 till 2018 and dropped slightly from 2018 till 2019. Although it has been unstable, the rate is still high through all the years and we can conclude that female unemployment rate in Nigeria is high. And in turn conclude that women do not have equal opportunities in the Nigerian labour market using female unemployment rate as an indicator.

Figure 2.9: Female Unemployment Rate
Source: World bank development indicators

2. **Female vulnerable employment rate:** Uncertain, unstable, or low-paying jobs are referred to as having "vulnerable employment" when they frequently do not have access to benefits or protections like paid leave or social security. These jobs may have a disproportionately negative effect on women, which exacerbates gender inequality. Everyone should have the same opportunity to

access education, employment, and other services regardless of their gender, race, ethnicity, or other traits. Vulnerable work usually limits access to stable and well-paying jobs, which can function as a barrier to equal opportunities. People and their families may be affected for a long time by this. Women who are forced into precarious employment, for instance, may have less financial security, less opportunities for advancement, and less money to invest in their own or their children's education. This might result in a difficult-to-break cycle of disadvantage that would further entrench gender inequality (International Labour Organization, 2016).

Fighting vulnerable employment and expanding equal chances are necessary to reduce gender imbalance and advance greater justice and fairness in society as a whole. From figure 2.10 below, we can see that female vulnerable employment rate has been on a decline from 1991 to 2019 but it is still really high around 85% as at 2019. This shows that women do not have equal opportunities to enter the Nigerian labour market using female vulnerable employment rate as an indicator.

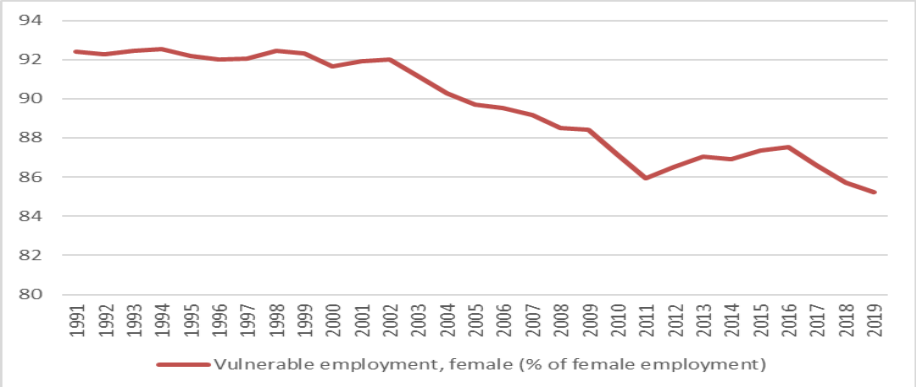

Figure 2.10: Female Vulnerable Employment Rate
Source: World bank development indicators

From the analysis given above, we can conclude that using the equal conditions and equal opportunities approaches, gender inequality exists in Nigeria's labour market.

2.3 Economic Growth and Development in Nigeria

Economic growth can be defined as the steady rise in real national income during two successive quarters of the year. An important macroeconomic policy goal is stable growth because it raises standards of living and creates more employment opportunities (Ames, et al, 2001).

Economic development refers to policies, rules, and practices that raise the standard of life and financial security in a community (Columbia, 2022). Economic growth is very important to achieve economic development because it is a combination of sustainable growth, structural change in production patterns, technological progress, social, political and institutional modernization and general human standard of living (Adelman, 2000). This definition is gotten from a World Bank document titled "Fifty Years of Economic Development: What Have we Learned?" and it was chosen because it states social, political and institutional modernization and human standard of living as part of the combination that make economic development.

Development is such an important topic that the United Nations Department of Economic and Social Affairs created Sustainable Development Plans (SDGs). The goals were created and endorsed by all its members because they "recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests" (United

Nations Department of Economic and Social Affairs, 2022; page 1). Goal 8 is “to promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.” (United Nations Department of Economic and Social Affairs, 2022; page 1). Based on this and due to data unavailability, GDP per capita growth rate will be used as a measure for economic development in this study.

Since sustained economic growth implies increases in GDP per capita, it offers a key indicator of output value per person and is connected with declining poverty. GDP per capita and GDP growth are regarded as general indicators of economic development (World Bank, 2022). Growth in the manufacturing of goods and services is a key aspect in determining how the economy performs. Allocating the entire production to each population head demonstrates a country's population's capacity to distribute its entire output. The increase in real GDP per capita serves as a stand-in for the population's rate of income growth per person. It serves as a useful summary indicator of economic development when used as a single composite indicator. It does not evaluate sustainable development directly, but it is an important indicator of the economic and social aspects of sustainable development (United Nations Statistics Division, 2007).

The Human Development Index (HDI) can also be used to measure economic development because it measures how income is transformed into human development, such as education and health (UNDP, 2022) which is related to the labour market and the aim of this study is to identitfy the relationship between labour gender inequality and economic development in Nigeria. HDI is a UN-developed

statistic for assessing a country's level of human development; the higher the HDI, the wealthier the country. It is calculated on a regular basis and put on a scale between 0 and 1 with most developed having a score above 0.8 (UNDP, 2022).

Table 2.1: Nigeria's Human Development Index

Year	Human Development Index (HDI Value)
2017	0.531
2018	0.534
2019	0.539

Source: Human Development Report 2020.

From the table above, we can conclude that Nigeria is a developing country because its HDI values range around 0.5 which is relatively low to all developed countries.

Human capital index can also be used to measure development and despite recent major socioeconomic advances, Nigeria is placed 150th out of 157 countries on the World Bank's 2020 Human Capital Index. Significant developmental problems yet remain for the country, includes the requirement to lessen its dependence on oil, extend its economy, reinforce effective institutions, and tackle issues with governance and public financial management, as well as the need to enhance infrastructure. Attempts to end poverty are thwarted by the persistence of wealth and opportunity disparity. High levels of poverty, geographical inequality, and social and political turmoil are caused by a lack of employment possibilities. Rising prices has had an influence on household well-being and 2020's high prices will likely have pushed prices even higher. (The World Bank, 2021).

From this chapter, we have discovered that the health of Nigeria's economy is poor and through descriptive analysis we concluded that gender inequality exists in Nigeria and through three measures of economic development (GDP per capita, HDI and human capital index) we also concluded that Nigeria is a low developing country. From this results we can conclude that the Nigerian economy is unstable and in need of an intervention and there is still a lot of work for Nigeria to do to grow and develop its economy.

Chapter 3

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

3.1 Literature Review

A study by Awoyemi and Adeoti (2006) examined the impact of job discrimination against women on rural Nigeria's cassava farmers' production levels. It was determined that rising gender inequality decreased labor productivity effectiveness. The article holds the belief that inequality over the means of production and economic development are linked and have an impact on society's economic expansion and effectiveness. Also, more problematic than allocative inefficiency was technological inefficiency, hence the majority of cost savings will come from improved technical efficiency (Awoyemi & Adeoti, 2006).

In an empirical inquiry on a sample of 26 African nations between 1995 and 2012, Karoui and Feki (2015) used a dynamic panel data model where the results' interpretation was thought to be provided by the index of inequality. According to the research, gender inequality had a negative impact on economic growth (Karoui & Feki, 2015).

Klasen's (2018) study on gender inequality's effects on developing nations' economic performance revealed that systematic assessments of cross-country research consistently demonstrate that closing gender disparities in the classroom result in better economic success and his study shows how reducing specific gender inequalities at the household, farm, or business level might improve economic performance in specific situations, with large benefits in some sectors and less clear evidence in others (Klasen, 2018).

A working paper written by Bertay et al. (2020) on gender inequality and economic growth provide evidence from industry-level data that gender inequality has a positive relationship with economic events. The study investigated whether greater gender equality boosts economic growth by making better use of a female labor is a significant resource. They proposed that if female labour is fully utilized efficiently and gender inequality is reduced, firms with higher share of female employees compared to others will have greater advantage. They looked at within-country variation in business to see if industries that hire more women countries with less gender imbalance tend to prosper quicker. The result of the evaluation determined the gender inequality's link to decreased labor productivity and value-added industrial growth and the study's findings revealed that gender inequality has an impact on economic growth (Bertay, et al, 2020).

A study by Klasen (2002) studied the effect gender inequality in education has on long term economic growth. The results show that educational gender inequality has a direct negative influence on economic growth by lowering the average level of human

capital. Furthermore, the impact of gender inequality on investment and population growth has a knock-on effect on growth. Between East Asia and Sub-Saharan Africa, South Asia, and the Middle East, education disparities between men and women account for 0.4 to 0.9 percentage points of the annual per capita growth rates (Klasen, 2002).

A study by Okoroafor and Iwueke (2019) titled Gender Inequality and Women Economic Development in Nigeria which delves into gender inequality and its ramifications for women's dynamic positions in modern Nigeria. It claims that gender disparity hinders women's economic development, identifies gender issues that contribute to this negative socioeconomic balance, and emphasizes the significance of removing injustices to increase women's productivity. The article advises that all Nigerians encourage all-round equality and minimize prejudice against women in order to increase women's economic development and sustainable development in Nigeria (Okoroafor & Iwueke, 2019).

Another study by Anochie and Anumudu (2015) discussed the effect of gender inequality on economic growth in Nigeria and they believe that gender equality is an important aspect in a country's economic growth and gender inequality negatively affects economic growth. Women's empowerment, as demonstrated by the support for women's rights and increased access to resources and education, is vital to economic development. The two most significant variables that promote economic development are gender equality in the workplace and in social connections. The impact of gender equality on economic growth is most visible in women's participation in the labor

force. Only a part of the possible workforce is employed when women are not included in the workforce, resulting in the wastage of financial resources. More women may enter the workforce thanks to gender equality, which boosts the size of the labor force and economic output (Anochie, et al, 2015).

Ogbeide-Osaretin and Orhewere (2020) carried out research on population growth, gender inequality and economic development in Nigeria which investigates the effects of gender inequality and population on economic development in Nigeria. They used the generalized method of moment estimation and 1985-2017 period annual time series data. The result showed that female tertiary enrolment and sex employment ratio have a positive substantial impact on development, while sex employment ratio has a negative insignificant impact on development. According to them, the influence of population growth on development has been large and bad. According to the study, birth control, an increase in female tertiary enrolment, and female employment, particularly at the higher level, could be used to reduce population and improve human capital (Ogbeide-Osaretin & Orhewere, 2020).

A study by Abolade (2021) on gender equality and sustainable development in Nigeria: issues and challenges concluded that gender inequality exists in Nigeria's labour and political sectors and said inequality affects sustainable development negatively. It recommends that the government, its agencies, and employers of the labour force have the political will to integrate women in the scheme of things and put them on par with their male colleagues in order to accomplish sustainable development in the country (Abolade, 2021).

Ngwoke (2020) wrote a study on Gender Inequality in Education: Implications for Socioeconomic Development in Nigeria. It emphasized education as a driver of poverty reduction and a catalyst for socioeconomic growth by encouraging human capital development, among other things. The study concluded that gender inequality is detrimentally both socially and economically for the economy. It believes that gender inequality in education places women in a socially inferior position compared to men, exposing them to various forms of marginalization, exploitation, and domestic abuse. In terms of the economy, gender inequality in education locks women out of the competitive and profitable labor market because they lack the educational credentials required in various areas. Because education is such a crucial component of a country's socioeconomic development, the study advocates for the Nigerian government to outlaw illiteracy and educational inequity based on gender discrimination. Declare an education emergency and provide free education at all levels of education in Nigeria, including primary, secondary, and university (Ngwoke, 2020).

Klaus and Holger (2017) wrote an article on gender equity and the escape from poverty and their study showed that if there are considerable variations in men and women's preferences for the quantity and quality of their children, female empowerment leads to a faster start to the demographic transition and a faster transition to sustainable growth. In this environment, female empowerment is projected to be a potent tool for development and poverty reduction. They created an integrated growth model based on intercouple bargaining inside households. Based on evidence from underdeveloped countries, they assumed that women do not want more children than males and do not

invest less in schooling per child. The study provided an analytical demonstration of how women's empowerment aids nations in making the transition from high fertility, low education, and slow economic growth to low fertility, high education, and rapid economic growth when their spouses' preferences for the number and quality of their children differ significantly. Implementing special measures to empower women would be a viable development approach in this situation (Klaus & Holger, 2017).

Bandiera and Natraj (2013) wrote an article titled “Does Gender Inequality Hinder Development and Economic Growth? Evidence and Policy Implications” which sought to find out if there is any evidence of the effectiveness of policies that enhance economic growth by reducing gender inequality. From evidence based on country differences, they argued it is insufficient for policymaking since it fails to identify the underlying cause between inequality and growth. According to them, however, this does not entail that that efforts to reduce inequality are ineffective. To put it another way, absence of a causal relationship supported by evidence does not rule out the possibility of one. The creation of effective policies must be guided by thorough microstudies to provide insight into the ways in which gender inequality affects growth and development (Bandiera & Natraj, 2013).

Lawanson and Umar (2019) on their article titled “Gender Inequality and Its Implication for Inclusive Growth in Nigeria from 1980 to 2018”. The findings of this study, which employed the ARDL co-integration approach in its analysis, revealed that gender imbalance in education and employment has serious repercussions for Nigeria's inclusive growth, for both short and long terms. To avoid economic losses, the

government should implement appropriate policy measures to ensure that men and women have equal access to school and labor. Nigeria's inclusive growth will be impossible to attain without gender equality. Therefore, it is suggested in this paper that policies for the implementation of gender equality at the municipal, state, and federal levels in the public and private sectors be supported by the National Development Agenda (Lawanson & Umar, 2019).

Hakura and Newiak (2016) wrote a working paper on Inequality, Gender Gaps and Economic Growth: Comparative Evidence for Sub-Saharan Africa. This study discovers that income and gender inequalities, particularly those resulting from legally enacted gender-specific limitations, are inversely correlated with per capita GDP growth using dynamic panel regressions and new time series data. We discover that the influence is greatest in low-income countries when we look at the relationship for countries at various stages of development. In instance, lowering inequality in Sub-Saharan Africa to levels found in fast-growing developing Asian nations might boost per capita income growth by as much as 0.9 percentage points. High levels of economic inequality appear to be generated in part by structural reasons in Sub-Saharan Africa. The findings of the research, meanwhile, show that policies that affect low-income homes and women's ability to take part in economic activities are important, and that if formulated properly and targeted, they can assist to reduce inequalities (Hakura & Newiak, 2016).

A study by Kleven and Landais (2017) on gender inequality and economic development: fertility, education and norms shows that there is a sizable gender

convergence in total salaries throughout all stages of development. This is pushed by female labor force participation and wage rates, not by hours worked under the condition of employment. They suggested that the population shift that occurs at all developmental levels is the primary driver of this convergence. Over the range of GDP per capita that we consider, lifetime fertility rates decline from more than 6 children per woman to less than 2 children per woman. Due to the fact that children have a significant impact on gender gaps at both low and high stages of development, such drastic reductions in fertility have serious negative effects on gender inequality. Despite being less significant than fertility in terms of its influence on earnings convergence, we nevertheless maintain that education convergence is significant. We also note that it is empirically difficult to distinguish the real causal effects of education and fertility over the course of development, in contrast to what growth models with endogenous fertility imply. As they go down the growth path, the viewpoints on gender roles, particularly those that apply to working women with children, have undergone a number of shocking shifts (Kleven & Landais, 2017).

A study by Schober and Winter-Ebmer (2009) on "Gender Wage Inequality and Economic Growth: Is There Really a Puzzle?" shows that gender inequality has a negative relationship with economic growth and gender wage inequality affects gender inequality negatively. When they looked at figures for gender wage discrimination that are comparable around the globe, the effect of gender inequality on GDP is actually negative. There is no proof that more discrimination will stimulate economic growth, according to our research. Promoting greater gender equality, even in terms of

compensation, is advantageous for concerns about fairness and, at the very least, is not harmful to growth (Schober & Winter-Ebmer, 2009).

A study by Yerrabati (2022) on "Vulnerable employment and economic growth" points to a non-linear U-shaped relationship between growth and vulnerable employment. Therefore, with increasing levels of vulnerable employment, a positive relationship between vulnerable employment and growth is seen. Lower levels of the connection are unfavorable. The threshold rates for vulnerable employment overall, among men and women, are 46.80%, 49.29, and 50.94%, respectively. Therefore, it is discovered that susceptible employment beyond the threshold levels is positively correlated with expansion (Yerrabati, 2022).

The previous researchers covered a lot of area on economic development and gender inequality, they used GDP per capita, Human development index and Human capital to measure development but they did not use the perspective of equal opportunities and conditions to measure gender inequality in the labour market. This study is looking at the labour market because it is the most important access to productive resources which is very important for women and I believe the effect will be larger especially access to the labour market. Because if women have access to education and do not have access to the labour market, it will not help economic growth and development. This is the reason why I am looking at the labour market to know if women have equal opportunities and conditions to access it. Because if they do, then it will matter and yield equal outcomes which will lead to an improved economy. Development is multidimensional and hard to measure. They are different indices used to measure like

Human Development Index, Human Capital Index and GDP per capita. But in this study, economic growth will be measured with GDP per capita due to unavailability of HDI data for Nigeria from 1991 till 2019. This study considers all this and aims to use the equal opportunities and conditions approach to answer the research question and contribute to the already existing body of knowledge.

3.2 Theoretical Framework

A school of economic thought and political activism known as feminist economics first emerged in the mid nineteenth century and gained popularity in the 1990s. Since then, feminist economics has developed a unique collection of ideas, frameworks, and procedures. It aims for an improved holistic and humane understanding of the economy and its inclusive and exclusive processes, with gender as a significant component. Furthermore, political engagement has evolved from feminist economics aiming at upgrading the economy's operations so that everyone can live a decent and equal existence (Agenjo-Calderón & Gálvez-Muñoz, 2019).

This study's theoretical framework will be based on the Feminist development theory. It sees gender inequality as a series of activities that, regardless of gender, results in injustices that slows down development. According to the model for men and wives negotiating within the household, preferences vary among genders, with women being more focused on the quality of the child than that of men. As a result, given the significance of developing human capital, empowering women will lead to faster economic growth (Klaus & Holger, 2017). Furthermore, given the generational change toward women being the major caregivers for their children, educating women reduces

the likelihood of Malthusian prediction by lowering fertility and creating more and better human capital (Silva & Klasen, 2018).

Other sorts of inequality that could coexist alongside gender inequality are a source of worry for many feminist economists. While feminist economists stress the importance of achieving an acceptable level of provisioning and expanding capabilities in a gender-equitable manner, many feminist economists are concerned about other sorts of inequality that might exist alongside gender inequality (Berik, et al, 2009). In terms of jobs, pursuits, and assets like money and property, feminist economists advocate for gender equality. Equal opportunity and equal results, they believe, are intrinsically intertwined, with systemic disparities in results contributing to unequal possibilities because of uneven power. Given the potential negative impacts that could follow from the historical and modern social structures, equal opportunity will not be sufficient to produce equality of results. Instead of lessening inequality, market behaviors may exacerbate it. In labor markets, gender norms are deeply embedded, and increasing competitiveness can increase gender inequality (Berik, et al, 2009).

Women, for example, are usually paid less than men when they first enter the workforce, owing to the perception that they are reliant on men. Males being allocated to the position of breadwinner offers a justification for employing men into higher-paying occupations. On the other side, women are allocated to low-paying, insecure professions that are regarded acceptable for their predicted position as a secondary earner of income. Furthermore, labor markets are skewed against women, who struggle to maintain labor force attachment levels equivalent to males, without legislation to

handle women's unpaid domestic and caring duties or paid employment situations that permit caring labor. This in turn fuels persistent pay and career disparities between men and women (Berik, et al, 2009).

There are different approaches to feminist theory like women in development (WID), women and development (WAD) and gender and development (GAD). Women in development was introduced in the early 1970s from liberal feminists, women were able to be more productive and incorporated into the workforce because to the WID approach, which helped to raise their standard of living. However, others have critiqued this approach being distinctly westernized. Its approach has drawn criticism for being a little taxing on women because it does not take into consideration the household responsibilities of women but only the public workplace of women. The WID approach stressed the importance of women being actively involved in development as active agents as a necessary corrective step if productive and effective development is to be accomplished (Razavi & Miller, 1995).

Women and development was introduced in the late 1970s from neo-Marxist feminists. They argued that women have always aided in the growth and development of the economy whether from the household or workplace. WAD emphasized that women play an important part in reproduction and production and both roles have to be acknowledged as important for development (Muyoyeta, 2004).

Gender and development was introduced in the 1980s by the socialist feminists. The variation of this method catered to the requirements and conditions of women in

developing countries. Its primary goals are to first show how the gender gap hinders female participation and advancement. The second strategy is to alter the power structure in order to achieve the long-term goal of gender-neutral decision-making and distribution of development advantages. The GAD approach focuses on how these differences connect to social duties, reproductive responsibilities, and economic roles in addition to the biological differences between the sexes - men and women (Razavi & Miller, 1995).

This research is going to focus on the gender and development approach and based on this, emphasis will be placed on GDP per capita (due to unavailability of HDI data for Nigeria from 1991 till 2019), equal opportunities and conditions approaches to investigate how gender inequality affects economic growth. This is because they all cover what the GAD approach focuses on like social roles, reproductive roles and economic roles. Based on this theory and approach, the economic model will consist of variables that encompass economic development, equal opportunities and conditions.

Chapter 4

DATA AND METHODOLOGY

4.1 Data

Annual time series data of the Nigerian population from 1991 – 2019 will be used for this research. A set that consists of surveys on a variable or several variables over time can be referred to as time series dataset. Time is an essential factor in a time series data collection process because it can alter future events and because behavioral lags are common in the social sciences. Time series surveys are usually chronologically arranged to convey possibly important information. The frequency of data collection is a characteristic of time series data that may call for special consideration. The most frequent frequency in economics are daily, weekly, monthly, quarterly, and yearly (Wooldridge, 2014, pg 8).

4.1.1 Method of Data Collection

Quantitative approach would be used to get the secondary data that will be used in this study.

Statistical and mathematical techniques are used in quantitative research methodologies to assess events and explain their frequency. Furthermore, the "how many?" and "how often?" inquiries are commonly made in quantitative investigations. Quantitative data collecting techniques are based on numbers and mathematical calculations. The basis of quantitative data collection methods is organized data

gathering equipment and random sampling. Its results are often easy to present, condense, contrast, and generalize (Audrey, 2022).

Secondary data analysis is the analysis of data that has already been gathered from other sources. Using secondary analysis, researchers can explore research issues using huge data sets, typically containing individuals from underrepresented sets, while also saving time and money (Donnellan & Lucas, 2013).

This study's secondary data will be sourced from The world bank development indicators databank (World Bank, 2019).

4.2 Economic Model

The macro socio-economic variables that will be used for the co-integration regression analysis for both men and women in Nigeria in this research are:

Dependent variable: GDP per capita

Independent Variables: Fertility rate, female wage and salaried workers' rate, female unemployment rate and vulnerable employment rate. Below are some literatures that explain the causal relationships between the dependent and independent variables:

a) **Fertility rate:** This variable will be used to represent the number of kids a woman would have if she bore children in the given year at the age-specific fertility rates and continued to produce children until the end of her reproductive years. It measures equal conditions between men and women. A study by Li (2015) shows that fertility rate and GDP per capita have a negative

relationship. When human capital is in short supply, returns on investments in human capital will be lower than returns on investments in children. Due to this, in cultures where the supply of human capital is limited, people opt for higher birth rates and spending little on each child. Meanwhile, economic growth first occurs in a high fertility rate, and as it accelerates, fertility rate begins to decline. If human capital is higher, investing in it will have a higher rate of return, which encourages more investment in human capital and reduces spending on procreation while also promoting faster economic growth. Investment in human capital has a greater impact on scale returns in declining fertility of economic development (Li, 2015). Based on the gender and development aproach of the feminist theory, fertility rate would contribute to the social roles, reproductive roles and economic roles of the different genders in the economy (Razavi & Miller, 1995) which is why it is an important variable to use in this research.

b) **Female wage and salaried workers' rate:** This variable is used to determine if there are equal conditions for women in the Nigerian labour market. A study by Lawin, et al (2022) on women promotion in formal wage employment and improving GDP per capita in Africa shows that there is a positive relationship between GDP per capita and female wage and salaried worker's rate (Lawin, et al, 2022).

c) **Female unemployment rate:** This variable is used to determine if there are equal opportunities for women in the Nigerian labour market. A study by

Filippidis, et al (2015) showed that as GDP per capita decreased, female unemployment increased. Therefore, they both have a negative relationship. There is a significant correlation between GDP per capita and unemployment rates for both men and women. Obviously, when unemployment rises, both male and female employees suffer, but regardless of GDP changes, women incur greater unemployment rates during both good and bad economic times (Filippidis, et al, 2015).

d) **Female vulnerable employment rate:** Sad to say, many developing countries have not been able to create enough jobs for the weak and the poor. In such circumstances, vulnerable employment is crucial for determining the social and economic growth of such economies as well as for offering unemployed people an opportunity to make a living. This variable will be used as a measure of equal opportunities for gender inequality. A study by Sridevi Yerrabati (2022) shows that there is a positive relationship between GDP per capita and vulnerable employment. The author advised that by recognizing their contributions to growth, nations should actively encourage these people to increase their economic contributions. In either case, given the hazardous conditions in which these people execute their occupations and the pitiful earnings they receive, governmental actions aimed at ensuring acceptable working conditions and improved compensation for these people are supported (Yerrabati, 2022).

For this research the following equation will be used for its economic model:

GDP per capita = f(fertility rate + female wage and salaried worker's rate + female unemployment rate + female vulnerable employment rate).

Where *GDP per capita growth rate* represents economic development, *fertility rate* is representing the number of kids a woman would have if she bore children in the given year at the age-specific fertility rates and continued to produce children until the end of her reproductive years, *female wage and salaried workers rate* is the percentage of women who work in "paid employment occupations," which are positions where the incumbents have explicit (written or oral) or tacit employment contracts that guarantee them a basic income that isn't reliant on the unit's revenue (employees), *female unemployment rate* is percent of women unemployed in the economy and *female vulnerable employment rate* is the female percentage of the vulnerable employment sector which is made up of family workers and independent contractors (World Bank, 2022).

4.3 Methodology

The econometric model for this research is:

$lgGDPCt = \beta 0 + lg\ \beta 1FERt + lg\ \beta 2WAWt + lg\beta 3FUNEMPt + lg\ \beta 4VEMPt + Ut$

Where lgGDPCt is log coefficient of GDP per capita, β0 is the constant or intercept, β1 is fertility rate's log coefficient, β2 is female wage and salaried workers' rate's log coefficient, β3 is female unemployment rate's log coefficient, β4 is female vulnerable employment rate's log coefficient and Ut is the error term.

The log of the variables are taken because the variables have different units of measurement and the logarithm was taken to even out the variance of the series (Lütkepohl & Xu, 2009).

The relationships between the dependent and independent variables must be determined through the Eviews Econometrics Software Package and data of the variables from appendix B will be utilized to estimate the regression equation.

The data analysis for this study will be conducted using the following methodologies:

4.3.1 Unit Root Test

The unit root test is used to ascertain whether the mean and variance of a time series data remain stationary over the whole time period or not. The Augmented Dickey-Fuller and Phillip Perron tests are used to assess whether the time series in this study are stationary and makes the assumption that the time series is an Auto Regressive 1 (AR1) process. The results of the ADF and PP tests show if the time series is stationary (Dickey & Fuller, 1979). In general, if the absolute value test (ADF and PP tests) statistics are higher than the critical value at 1%, 5%, and 10%, we reject the null hypothesis that the variables are non-stationary. If it is less significant, the null hypothesis is accepted (Dickey & Fuller, 1979).

4.3.2 Autoregressive and Distributed-Lag Approach

The ARDL approach begins with the lag length selection first, then the ARDL bounds test, the ARDL cointegration test and finally the ARDL error correction regression:

4.3.2.1 Lag Length Selection

This study applied the Vector Autoregression (VAR) lag order selection criteria test for the selection of the appropriate lag order for this research.

4.3.2.2 Autoregressive and Distributed-Lag Bounds Test for Cointegration

The ARDL co-integration technique is preferred when engaging in variable work that are integrated in distinct orders—I(0), I(1), or a combination of both. When there is

only one significant long-term relationship between the underlying variables in a limited sample size, it is also trustworthy. The long-term link between the variables is assessed using the F-statistic (Wald test). The long-term relationship between the sequence has been proven using this method when the F-statistic is above the critical value band. The main benefit of this approach is the ability to locate the co-integrating vectors in the presence of many co-integrating vectors. However, this approach will be unsuccessful if there is an integrated stochastic trend of I(2). It is advisable to test for unit roots to avoid time waste though it is not necessary (Nkoro & Aham, 2016).

4.3.2.3 Autoregressive and Distributed-Lag Long Run Bounds Test

This test examines the long run co-integration and relationship between the variables (Belloumi, 2013).

4.3.2.4 Autoregressive and Distributed-Lag Error Correction Regression

This test is used to examine the short run co-integration and relationship between the variables. The speed of long-term equilibrium adjustment following short-term shocks is shown by the ECM (Belloumi, 2013).

4.3.3 Autocorrelation

We encounter the issue of (positive first-order) autocorrelation when the error/stochastic term in one time period has a positive correlation with the error/stochastic term in the preceding time period. This frequently occurs in time-series analysis and causes reduced standard errors, which causes incorrect statistical tests and confidence intervals. The Breusch-Godfrey serial correlation LM test will be used to test for autocorrelation in this study and the rule of thumb is if Prob. Chi-Square is greater than 0.01 and 0.05. Therefore, we cannot reject null hypothesis at 1% and 5% significant levels, there is no autocorrelation. And if it is less than 0.01 and 0.05, we

reject null hypothesis at 1% and 5%, there is autocorrelation (Salvatore & Reagle, 2002).

4.3.4 Heteroscedasticity

If the OLS assumption that the variance of the error term is constant for all observations is broken, heteroscedasticity is an issue. As a result, estimates of the standard errors are skewed and estimates of the coefficients are unbiased but ineffectual (i.e., larger than the minimal variance) (and as a result, erroneous statistical tests and confidence intervals). The rule of thumb is if Prob. Chi-Square is greater than 0.01 and 0.05. Therefore, we cannot reject null hypothesis at 1% and 5% significant levels, there is no heteroscedasticity. And if it is less than 0.01 and 0.05, we reject null hypothesis at 1% and 5%, there is heteroscedasticity (Salvatore & Reagle, 2002).

4.3.5 Ramsey Reset Test

This test is used to detect general functional form misspecification. The rule of thumb is if the P-value of the F-stat is lower than 0.01, 0.05 and 0.1, we can reject null hypothesis. Misspecification exists at 1%, 5% and 10% significance levels. And vice versa (Wooldridge, 2014).

4.3.6 Jarque-Bera Histogram Normality Test

The Jarque-Bera test determines if the skewness and kurtosis of sample data are consistent with a normal distribution. A goodness-of-fit test is used. If the Jarque-Bera test statistic considerably deviates from zero, the sample data do not have a normal distribution because it is always positive (Jarque & Bera, 1987).

4.3.7 CUSUM and CUSUM Square Tests

The CUSUM and CUSUM square tests look at the stability of the regression model's coefficients. When coefficient stability is ruled out as a possibility, values in the

sequence outside the projected range suggest that the model's structure changes with time (Phillips & Xiao, 2002).

Chapter 5

EMPIRICAL FINDINGS

5.1 Unit Root Test Results

The results of the Augmented Dickey Fuller and Phillip Perron test statistics ran on the time series data for this study is shown in Table 5.1 below.

[Eviews, lgGDPCGt = log of GDP per capita, lgFERt = log of fertility rate, lgWAWt = log of wage and salaried workers' rate, lgFUNEMPt = log of female unemployment rate, lgVEMPt = log of vulnerable employment rate]

Table 5.1: Unit Root Test

Variables	ADF and PP Test		
	Level without Trend	First Difference Without Trend	Stationarity
lgGDPCGt	-1.485628 (0) -0.634811 (0) PP	-4.127302 (0) -4.127302 (0) PP	I(1)
	[0.8105] [0.8471] PP	[0.0036] [0.0036] PP	
lgFERt	1.209141 (0) 1.346831 (2) PP	-2.775516 (1) -1.664999 (0) PP	I(1)
	[0.9973] [0.9982] PP	[0.0756] [0.4369] PP	
lgWAWt	-0.066982 (0) -0.057281 (1) PP	-4.500284 (1) -3.685457 (9) PP	I(1)
	[0.9571] [0.9449] PP	[0.0015] [0.0103] PP	
lgFUNEMPt	-4.634624(3) -0.722893 (2) PP	Not applicable -5.221302 (2) PP	I(0)
	[0.0012] [0.8249] PP	Not applicable [0.0002]	

lgVEMPt	-0.378737 (0) 0.197635 (1) PP	-2.758854 (3) -3.469188 (8) PP	I(1)
	[0.9783] [0.9675] PP	[0.0792] [0.0171] PP	

Figures in brackets are the optimal lag length chosen by the Schwarz Bayesian Criterion (SBC).
Max Length = 6
Figures with PP represent Phillip Perron test results.
Figures in square brackets are P-values
Source: Result was obtained from Eviews 9 output and table compiled by author. See Appedix D for Eviews output.

According to Table 5.1, the variables have a combination of stationary at I (0) and I (1).

5.2 Autoregressive and Distributed-Lag Approach

This approach must be due to all of the variables being a combination of stationary at I (0) and I (1). The results of the ADRL approach on the time series data for this study is shown in Tables 5.2, 5.3, 5.4, 5.5 and 5.6 below.

5.2.1 Lag Length Selection

Table 5.2: Lag Length Selection

Lag Order	LogL	LR	FPE	AIC	SC	HQ
0	334.4525	NA	1.73e-17	-24.40389	-24.16392	-24.33253
1	464.4824	202.2688	7.53e-21	-32.18388	-30.74407*	-31.75575
2	498.2796	40.05584*	4.86e-21*	-32.83552*	-30.19585	-32.05061*

NOTE: Sequential modified LR test statistic (each test at 5% significance level), Final prediction error, Akaike information criterion, Schwarz information criterion, and Hannan-Quinn information criteria are abbreviated as FPE, AIC, SC, and HQ, respectively.
Source: Result was obtained from Eviews 9 output and table compiled by author. See Appedix D for Eviews output.

According to table 5.2, the most often selected lag order is 2. It implies that lag order 2 will give better results than lag order 1. Therefore, that is the lag order 2 that will be used to carry out the ARDL tests.

5.2.2 Autoregressive and Distributed-Lag Bounds Test for Cointegration

Table 5.3: ADRL Bounds Test For Cointegration

F-bounds test				
Test Stat	Value	Significance	I(0)	I(1)
		Finite sample: n=35		
F-stat	6.8730	10%	2.46%	3.46%
K	4	5%	2.947%	4.088%
Actual sample size	28	1%	4.093%	5.532%

Source: Result was obtained from Eviews 9 output and table compiled by author. See Appedix D for Eviews output.

From the result gotten, the F-Bounds test F-stat is 6.87 which is greater than the finite samples I(0) and I(1) results at 1%, 5% and 10% significant levels. Therefore, the variables are cointegrated at 1%, 5% and 10% significant levels and we conclude that the variables are cointegrated.

The ARDL cointegration test was also carried out to support the bounds test and determine the cointegration of the variables.

Table 5.4: ADRL Cointegration Test

Variable	Coefficient	Probability		
C	-91.7354	0.0021	R-squared	0.9808
lgGDPCGt	0.3761	0.0044	Adjusted R-squared	0.9764
lgFERt	-3.6677	0.0287	S.E of regression	0.0529
lgWAWt	6.8568	0.0000	Prob(F-stat)	0.0000
lgFUNEMPt	-0.4943	0.0041		
lgVEMPt	46.0836	0.0018		

Source: Result was obtained from Eviews 9 output and table compiled by author. See Appedix D for Eviews output.

The result from above shows that fertility has a negative and significant relationship with GDP per capita. Female unemployment also has a negative and significant relationship with GDP per capita. Female vulnerable employment has a positive and significant relationship with GDP per capita and female wage and salaried workers' has a positive and significant relationship with GDP per capita. And this aligns with the apriori expectations that was discussed in chapter 4. This means that a 1% increase in fertility rate will lead to a 3.67% decrease in GDP per capita, ceteris paribus. Also, a 1% increase in female unemployment rate will lead to a 0.49% decrease in GDP per capita, all things being equal. A 1% increase in female vulnerable employment will lead to a 46.08% increase in GDP per capita, ceteris paribus and a 1% increase in female wage and salaried workers' will lead to a 6.86% increase in GDP per capita, all things being equal. The R square is high at 98% which implies 98% of the total variation in GDP per capita can be explained by changes in the independent variables (fertility, female unemployment, female vulnerable employment and female wage and salaried worker's). Because the R square is too high, it cannot be fully trusted, so therefore we will use standard error to measure the goodness of fit for the model in this research. The standard error of the regression is the average distance between the observed values and the regression line. Utilizing the units of the response variable, it conveniently informs you of how consistently off the regression model is. Better values are smaller ones since they show that the observations are more closely parallel to the fitted line (McHugh, 2008). The standard error as seen in the result is 5% and the rule of thumb to measure standard error is the closer its value is to zero, the more

precise the prediction of the data is. The p value of the F statistics shows that our overall estimate is significant at 1%, 5% and 10% significant levels.

With these results, we can conclude that the variables are cointegrated and now go ahead to test for the long run and short run relationships of the variables.

5.2.3 Autoregressive and Distributed-Lag Long Run Bounds Test

Table 5.5: ADRL Long Run Bounds Test

Variables	C	lgFERt	lgWAWt	lgFUNEMPt	lgVEMPt
Coefficient	-147.0473	-5.8791	10.9911	-0.7923	73.8697
Probability	0.0006	0.0226	0.0000	0.0052	0.0004

Source: Result was obtained from Eviews 9 output and table compiled by author. See Appedix D for Eviews output.

lgGDPCGt = -147.08–5.88lgFERt+10.99lgWAWt–0.79lgFUNEMPt+73.87lgVEMPt

(0.00) (0.00) (0.00) (0.00) (0.00)

*P-values are indicated in the brackets.

From the result in table 5.5, we can see that a 1% increase in Fertility rate will lead to a 5.88% decrease in GDP per capita in the long run, ceteris paribus.

A 1% increase in female wage and salaried workers' rate will lead to a 10.99% increase in GDP per capita in the long run, ceteris paribus.

A 1% increase in female unemployment rate will lead to a 0.79% decrease in GDP per capita in the long run, ceteris paribus.

A 1% increase in female vulnerable employment rate will lead to a 73.87% increase in GDP per capita in the long run, ceteris paribus.

The P-values for lgFERt, lgWAWt, lgFUNEMPt and lgVEMPt is 0.00 respectively which is less than 0.01, 0.05 and 0.1 making its coefficient significant at 1%, 5% and 10% significant levels.

5.2.4 Autoregressive and Distributed-Lag Error Correction Regression

Table 5.6: ARDL Error Correction Regression

Variable	Coefficient	Std. Error	t-Statistic	Probability
CointEq(-1)*	-0.6238	0.0876	-7.1141	0.0000

Source: Result was obtained from Eviews 9 output and table compiled by author. See Appedix D for Eviews output.

From the result given, CointEq(-1)* is -0.623 which is a negative and its corresponding p-value is 0 which makes its coefficient significant at all significant levels. This states that if a shock disrupts the economy, it will return to normal at 62.3% of the time the following period. We find that there is a short run association that corresponds to the rate of adjustment to the long-run association. Therefore, we conclude that there is a negative short run relationship between the variables.

Based on these results, we can then check for stability and residual diagnostics.

5.3 Test for Autocorrelation

H0: No autocorrelation.

H1: Autocorrelation exists.

From the result below, Prob. Chi-Square is 0.07 which is greater than 0.01 and 0.05. Therefore, we cannot reject null hypothesis at 1% and 5% significant levels. There is no autocorrelation.

Table 5.7: Autocorrelation Test

Null hypothesis: No serial correlation at up to 1 lag			
F-stat	Obs*R-squared	Prob.F(1,21)	Probability Chi-Square(1)
2.6352	3.1218	0.1194	0.0772

Source: Result was obtained from Eviews 9 output and table compiled by author. See Appedix E for Eviews output.

5.4 Test for Heteroscedasticity

H0: No heteroscedasticity.

H1: Heteroscedasticity exists.

From the result below, Prob. Chi-Square is 0.06 which is greater than 0.01 and 0.05. Therefore, we cannot reject null hypothesis at 1% and 5% significant levels and there is no heteroscedasticity.

Table 5.8: Heteroscedasticity Test

Null hypothesis: Homoskedasticity			
F- Stat	Obs*R-squared	Prob. F(5,22)	Prob. Chi-Square(5)
2.6656	10.5636	0.0497	0.0608

Source: Result was obtained from Eviews 9 output and table compiled by author. See Appedix E for Eviews output.

5.5 Ramsey Reset Test

H0: No misspecification.

H1: Misspecification exists.

The P-value of the F-stat is 0.6476 which is greater than 0.01, 0.05 and 0.1, therefore cannot reject null hypothesis at 1%, 5% and 10% significance level. Therefore, misspecification does not exist.

Table 5.9: Ramsey Reset Test

	Value	df	Probability
F-Stat	0.2151	(1,21)	0.6476

Source: Result was obtained from Eviews 9 output and table compiled by author. See Appedix E for Eviews output.

5.6 Jarque-Bera Histogram Normality Test

H0: Residuals are normally distributed.

H1: Residuals are not normally distributed.

The Jarque-Bera result is 88.6% and its probability is 0.64, therefore we cannot reject null hypothesis. The residuals are normally distributed.

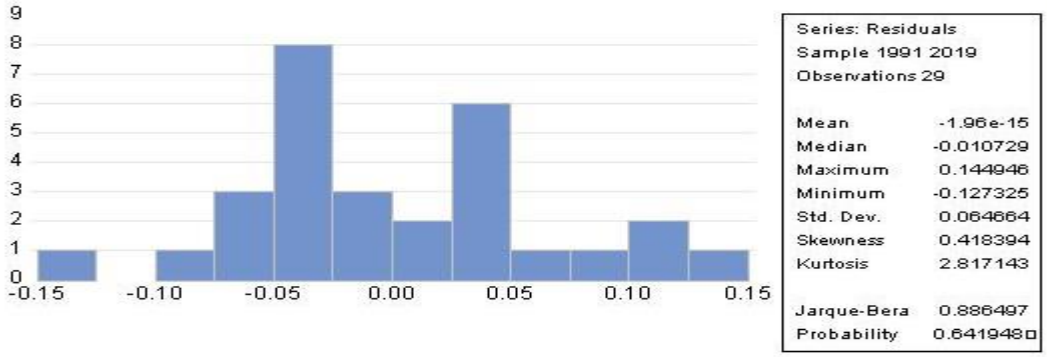

Figure 5.1: Jarque-Bera Histogram Normality Test
Source: Result was obtained from Eviews 9 output

5.7 CUSUM Test

H0: Parameters are stable.

H1: Parameters are not stable.

From the result gotten below, we cannot reject null hypothesis. The parameters are stable at 5% significance level.

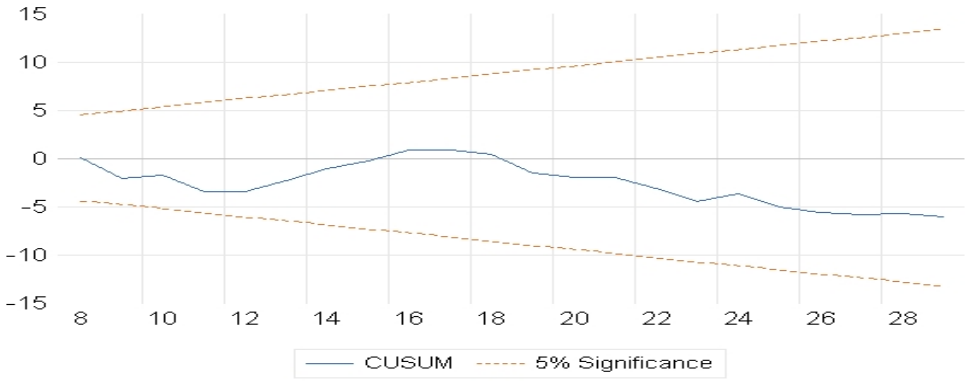

Figure 5.2: CUSUM Test
Source: Result was obtained from Eviews 9 output

5.8 CUSUM Square Test

H0: Parameters are stable.

H1: Parameters are not stable.

From the result gotten below, we cannot reject null hypothesis. The parameters are stable at 5% significance level.

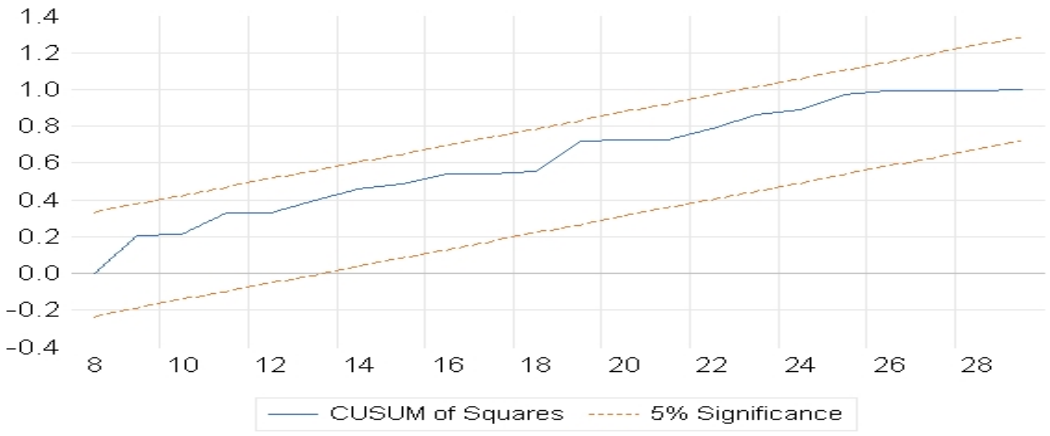

Figure 5.3: CUSUM Square Test
Source: Result was obtained from Eviews 9 output

Chapter 6

CONCLUSION AND RECOMMENDATION

6.1 Conclusion

This research aims to identify if labour market gender inequality exists in Nigeria and how it affects the Nigerian economic growth and there are two research questions:

i. Do women have equal opportunities and conditions in the labour market as men in Nigeria?
ii. How does gender inequality in the labour force affect economic growth in Nigeria?

The first question was answered in chapter 2 using descriptive analysis where we saw that men and women in Nigeria did not have equal opportunities and conditions which implies that gender inequality does exist in Nigeria. From the analysis that was given, we can conclude that using the equal conditions and equal opportunities approaches, gender inequality exists in Nigeria's labour market.

We then moved on to answer the second research question in chapter 5 and we can conclude from the analysis provided using the equal opportunities and conditions approach and using annual time series data from 1991 – 2019, that fertility and female unemployment which represent gender inequality both have negative significant relationships with economic growth in Nigeria both in the short run and long run

periods. We can also conclude that female vulnerable employment and female wage and salaried workers' rate have negative relationships with economic growth in the short run period and positive relationship with economic growth in the long run period.

This proves that our results align with the feminist theory that was used for this study and gender inequality does indeed affect the economy negatively in terms of growth.

6.2 Policy Recommendation

The following are the policy recommendations for this research:

i. Lawmakers should implement and execute new laws that would ensure the provision of equal opportunities and conditions for men and women. They should ensure that women have equal access to enter the labour force as well as men.

ii. The Federal Ministry of Women Affairs and Social Development (FMWASD) should create more awareness through seminars and media outlets on the need to "open up" the labour market for women across various sectors in the economy and ensuring that the wages and salaries of the women is similar or equal to that of their male colleagues.

iii. Nigeria should adopt goals 5, 8 and 10 of the sustainable development goals in order to eliminate the problem of gender inequality and its negative impact on economic growth and development.

iv. The government should work towards reducing vulnerable employment rate in the economy and increasing the rate of female wage and salaried workers' in order to reduce gender inequality in the economy and in turn help in the growth and development of the Nigerian economy.

v. Efforts should be made towards reducing the fertility rate in the country as the study shows that fertility rate and economic growth have a negative relationship. Policies should be put in place to reduce fertility rate in order to promote economic growth in the Nigerian economy.

vi. A higher budget should be allocated to bodies that tackle gender inequality in Nigeria like The Federal Ministry of Women Affairs and Social Development (FMWASD), Women's Rights Advancement and Protection Alternative (WRAPA), Women Advocates Research and Documentation Centre (WARDC) and so on, considering that gender inequality in the labour market affect economic growth and development.

6.3 Limitations of Study and Recommendations for Further Studies

The major limitation to this study was the lack of proper data for macro-economic variables of Nigeria within the time period used and even earlier dates. There was not sufficient data for certain variables which is why the dependent and independent variables used for this study were selected.

I suggest future researchers to increase the sample size of their research and also include more relevant variables to their economic model when running a research on the effects of gender inequality on economic development.

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APPENDICES

Appendix A: Nigeria's Main Macro-Economic Variables from (1991 – 2019)

Year	GDP growth rate (%)	GDP per capita growth rate (%)	Inflation rate (%)	Unemployment rate (%)	Trade balance (Billions of US$)
1991	0.3583526	-2.164464982	13.00697	4.122000217	5.63493
1992	4.6311929	2.025824564	44.58884	4.089000225	4.646676
1993	-2.0351188	-4.457078143	57.16525	4.102000237	1.779839
1994	-1.8149245	-4.232818328	57.03171	4.085000038	1.366603
1995	-0.0726648	-2.530052289	72.8355	4.06099987	3.870118
1996	4.195924	1.634594009	29.26829	4.02699995	2.958143
1997	2.9370994	0.406825955	8.529874	4.014999866	3.179519
1998	2.5812541	0.05719452	9.996378	3.999000072	-1.63289
1999	0.5841269	-1.895720223	6.618373	3.99000001	4.874985
2000	5.0159348	2.419132598	6.933292	3.953999996	16.00859
2001	5.9176847	3.29057075	18.87365	3.934999943	5.049919
2002	15.329156	12.45746816	12.87658	3.881999969	6.14692
2003	7.347195	4.657786291	14.03178	3.898999929	4.372517
2004	9.2505582	6.489603677	14.99803	3.875999928	11.7452
2005	6.4385165	3.721623939	17.86349	3.871000051	15.86695
2006	6.059428	3.326217878	8.225222	3.855999947	38.87617
2007	6.5911304	3.822072301	5.388008	3.836999893	8.642909
2008	6.7644728	3.972510493	11.58108	3.819000006	35.79203
2009	8.0369251	5.197954409	12.55496	3.796000004	3.545924
2010	8.0056559	5.15854535	13.7202	3.778000116	28.91821
2011	5.3079242	2.525322229	10.84003	3.769999981	40.32085
2012	4.2300612	1.472851229	12.21778	3.742000103	84.54476
2013	6.6713354	3.853722679	8.475827	3.700000048	25.69384
2014	6.3097187	3.51397656	8.062486	4.559999943	32.7189
2015	2.6526933	-0.029282305	9.009387	4.309999943	-0.00016
2016	-1.616869	-4.168388406	15.67534	7.059999943	-9.25151
2017	0.8058866	-1.788817621	16.52354	8.390000343	-0.01681
2018	1.9227573	-0.679724708	12.09473	8.456000328	-7.99964
2019	2.2084293	-0.379752402	11.39679	8.529999733	-25.0142

Appendix B: Data for Regression Model (1991 – 2019)

Year	GDP per capita	Fertility rate, total	Wage and salaried workers, female	Unemployment, female	Vulnerable employment, female	LOG GDP per capita	LOG Fertility rate, total	LOG Wage and salaried workers, female	LOG Unemployment, female	LOG Vulnerable employment, female
1991	502.8228697	6.426	7.4699998	4.239999771	92.39999771	2.70141502	0.807940721	0.87332059	0.627365833	1.96567196
1992	477.0807565	6.391	7.5900002	4.198999882	92.27000046	2.6785919	0.805568818	0.880241785	0.623145862	1.965060523
1993	270.0275238	6.354	7.4200001	4.202000141	92.44000435	2.43140803	0.80304721	0.87040391	0.623456063	1.965859957
1994	320.8257868	6.319	7.3600001	4.176000118	92.52000427	2.50626927	0.800648355	0.866877822	0.620760502	1.966235644
1995	407.2782992	6.273	7.6900001	4.143000126	92.18000031	2.60989127	0.797475288	0.885926343	0.617314946	1.964636705
1996	460.3241902	6.217	7.8499999	4.099999905	92.01000023	2.6630638	0.793580867	0.894869651	0.612783847	1.963835032
1997	478.5769399	6.138	7.79	4.078999996	92.07000351	2.67995177	0.788026884	0.891537456	0.610553705	1.96411816
1998	467.9390142	6.069	7.3899999	4.053999901	92.46999931	2.67018926	0.783117137	0.868644431	0.607883734	1.966000854
1999	496.030187	6.082	7.54	4.03399992	92.3200016	2.69550811	0.784046416	0.877371344	0.605735885	1.965295803
2000	565.3043172	6.124	8.21	3.989000082	91.6400013	2.7522823	0.787035182	0.914343159	0.600864045	1.962085087
2001	577.0569695	6.139	7.9099998	3.960999966	91.93999672	2.76121869	0.788097633	0.898176475	0.597804839	1.963504484
2002	733.5381615	6.135	7.8699999	3.900000095	91.99000359	2.86542271	0.787814567	0.895974726	0.591064618	1.963740636
2003	786.8024093	6.116	8.6999998	3.904999971	91.14999962	2.89586568	0.786467477	0.939519243	0.591621035	1.959756671
2004	992.7452801	6.085	9.6000004	3.871999979	90.26000023	2.99683783	0.784260583	0.98227125	0.587935346	1.95549533
2005	1250.406675	6.068	10.14	3.855999947	89.71999741	3.09705128	0.783045572	1.00603797	0.586137019	1.952889252
2006	1652.15369	6.081	10.34	3.83100009	89.50999641	3.21805044	0.783975003	1.014520545	0.583312162	1.95187154
2007	1876.412777	6.08	10.71	3.801000118	89.14999962	3.27332838	0.783903579	1.029789472	0.579897883	1.950121346
2008	2227.789952	6.078	11.37	3.773000002	88.48999977	3.34787424	0.783760696	1.05576046	0.576686805	1.946894194
2009	1883.887348	6.039	11.45	3.739000082	88.40999794	3.27505493	0.78096503	1.058805479	0.572755475	1.94650138
2010	2280.111979	5.98	12.75	3.710000038	87.11999702	3.35795618	0.776701184	1.105510185	0.569373914	1.940117852
2011	2504.878279	5.918	13.93	3.690000057	85.93000031	3.39878663	0.772174961	1.143951126	0.567026373	1.934144813
2012	2728.022683	5.832	13.35	3.53399992	86.51000214	3.43584798	0.765817515	1.125481278	0.548266535	1.937066323
2013	2976.756736	5.738	12.8	3.364000082	87.05999947	3.47374335	0.758760544	1.107209976	0.526855998	1.93981866
2014	3200.953146	5.664	12.96	5.385000229	86.8900032	3.50527932	0.753123245	1.112605003	0.731185726	1.938969813
2015	2679.554765	5.616	12.49	5.097000122	87.35000229	3.42806264	0.749427099	1.09656243	0.707314644	1.941262921
2016	2144.779938	5.584	12.32	8.100999832	87.52000141	3.33138274	0.74694541	1.090610697	0.908538623	1.942107316
2017	1941.879485	5.523	13.23	9.256999969	86.59999943	3.28822227	0.742175043	1.121559829	0.966470262	1.937517889
2018	2125.834282	5.447	14.11	8.362000465	85.72999668	3.32752941	0.736157375	1.149527003	0.922310187	1.933132807
2019	2204.181574	5.379	14.63	7.472000122	85.21000385	3.34324737	0.730701544	1.16524433	0.87343687	1.930490585

Appendix C: Augmented Dickey Fuller Test for Stationarity

Augmented Dickey-Fuller Unit Root Test on LOGGDP_PER_CAPITA

Null Hypothesis: LOGGDP_PER_CAPITA has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=6)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.485628	0.8105
Test critical values:	1% level	-4.323979	
	5% level	-3.580622	
	10% level	-3.225334	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LOGGDP_PER_CAPITA)
Method: Least Squares
Date: 12/27/22 Time: 05:44
Sample (adjusted): 2 29
Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGGDP_PER_CAPITA(-1)	-0.174809	0.117666	-1.485628	0.1499
C	0.455173	0.290573	1.566465	0.1298
@TREND("1")	0.006644	0.004947	1.343005	0.1913

R-squared	0.081527	Mean dependent var	0.022923
Adjusted R-squared	0.008050	S.D. dependent var	0.077529
S.E. of regression	0.077216	Akaike info criterion	-2.183456
Sum squared resid	0.149059	Schwarz criterion	-2.040720
Log likelihood	33.56839	Hannan-Quinn criter.	-2.139821
F-statistic	1.109552	Durbin-Watson stat	1.463388
Prob(F-statistic)	0.345404		

Augmented Dickey-Fuller Unit Root Test on LOGGDP_PER_CAPITA

Augmented Dickey-Fuller test statistic		-0.634811	0.8471
Test critical values:	1% level	-3.689194	
	5% level	-2.971853	
	10% level	-2.625121	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LOGGDP_PER_CAPITA)
Method: Least Squares
Date: 12/27/22 Time: 05:43
Sample (adjusted): 2 29
Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGGDP_PER_CAPITA(-1)	-0.027696	0.043628	-0.634811	0.5311
C	0.106668	0.132752	0.803517	0.4290

R-squared	0.015263	Mean dependent var	0.022923
Adjusted R-squared	-0.022612	S.D. dependent var	0.077529
S.E. of regression	0.078401	Akaike info criterion	-2.185222
Sum squared resid	0.159813	Schwarz criterion	-2.090065
Log likelihood	32.59311	Hannan-Quinn criter.	-2.156132
F-statistic	0.402985	Durbin-Watson stat	1.575290
Prob(F-statistic)	0.531099		

Augmented Dickey-Fuller Unit Root Test on D(LOGGDP_PER_CAPITA)

Null Hypothesis: D(LOGGDP_PER_CAPITA) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=6)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.127302	0.0036
Test critical values:	1% level	-3.699871	
	5% level	-2.976263	
	10% level	-2.627420	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LOGGDP_PER_CAPITA,2)
Method: Least Squares
Date: 12/27/22 Time: 05:45
Sample (adjusted): 3 29
Included observations: 27 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOGGDP_PER_CAPITA(-1))	-0.803929	0.194783	-4.127302	0.0004
C	0.020070	0.015760	1.273485	0.2146

R-squared	0.405252	Mean dependent var	0.001427
Adjusted R-squared	0.381462	S.D. dependent var	0.099757
S.E. of regression	0.078456	Akaike info criterion	-2.181377
Sum squared resid	0.153883	Schwarz criterion	-2.085389
Log likelihood	31.44858	Hannan-Quinn criter.	-2.152834
F-statistic	17.03462	Durbin-Watson stat	1.700533
Prob(F-statistic)	0.000357		

Augmented Dickey-Fuller Unit Root Test on LOGFERTILITY_RATE__TOTAL

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		1.209141	0.9973
Test critical values:	1% level	-3.711457	
	5% level	-2.981038	
	10% level	-2.629906	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LOGFERTILITY_RATE__TOTAL)
Method: Least Squares
Date: 12/27/22 Time: 13:38
Sample (adjusted): 4 29
Included observations: 26 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGFERTILITY_RATE__TOTAL(-1)	0.024270	0.020072	1.209141	0.2394
D(LOGFERTILITY_RATE__TOTAL(-1))	1.110371	0.182987	6.068042	0.0000
D(LOGFERTILITY_RATE__TOTAL(-2))	-0.567754	0.190450	-2.981122	0.0069
C	-0.020111	0.015812	-1.271869	0.2167

R-squared	0.707238	Mean dependent var	-0.002783
Adjusted R-squared	0.667316	S.D. dependent var	0.002696
S.E. of regression	0.001555	Akaike info criterion	-9.953916
Sum squared resid	5.32E-05	Schwarz criterion	-9.760362
Log likelihood	133.4009	Hannan-Quinn criter.	-9.898179
F-statistic	17.71542	Durbin-Watson stat	1.788971
Prob(F-statistic)	0.000004		

Augmented Dickey-Fuller Unit Root Test on LOGFERTILITY_RATE__TOTAL

Null Hypothesis: LOGFERTILITY_RATE__TOTAL has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 2 (Automatic - based on SIC, maxlag=6)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.392873	0.9823
Test critical values:	1% level	-4.356068	
	5% level	-3.595026	
	10% level	-3.233456	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LOGFERTILITY_RATE__TOTAL)
Method: Least Squares
Date: 12/27/22 Time: 13:39
Sample (adjusted): 4 29
Included observations: 26 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGFERTILITY_RATE__TOTAL(-1)	-0.020791	0.052921	-0.392873	0.6984
D(LOGFERTILITY_RATE__TOTAL(-1))	1.088628	0.185135	5.880184	0.0000
D(LOGFERTILITY_RATE__TOTAL(-2))	-0.486536	0.210486	-2.311492	0.0310
C	0.016703	0.043015	0.388318	0.7017
@TREND("1")	-0.000107	0.000116	-0.920774	0.3676

R-squared	0.718599	Mean dependent var	-0.002783
Adjusted R-squared	0.664998	S.D. dependent var	0.002696
S.E. of regression	0.001561	Akaike info criterion	-9.916572
Sum squared resid	5.11E-05	Schwarz criterion	-9.674630
Log likelihood	133.9154	Hannan-Quinn criter.	-9.846901
F-statistic	13.40662	Durbin-Watson stat	1.760261
Prob(F-statistic)	0.000014		

Augmented Dickey-Fuller Unit Root Test on D(LOGFERTILITY_RATE__TOTAL)

Null Hypothesis: D(LOGFERTILITY_RATE__TOTAL) has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=6)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.775516	0.0756
Test critical values:	1% level	-3.711457	
	5% level	-2.981038	
	10% level	-2.629906	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LOGFERTILITY_RATE__TOTAL,2)
Method: Least Squares
Date: 12/27/22 Time: 13:40
Sample (adjusted): 4 29
Included observations: 26 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOGFERTILITY_RATE__TOTAL(-1))	-0.359217	0.129423	-2.775516	0.0108
D(LOGFERTILITY_RATE__TOTAL(-1),2)	0.514994	0.187237	2.750499	0.0114
C	-0.001000	0.000456	-2.192854	0.0387

R-squared	0.322621	Mean dependent var	-0.000113
Adjusted R-squared	0.263719	S.D. dependent var	0.001830
S.E. of regression	0.001571	Akaike info criterion	-9.966498
Sum squared resid	5.67E-05	Schwarz criterion	-9.821333
Log likelihood	132.5645	Hannan-Quinn criter.	-9.924696
F-statistic	5.477206	Durbin-Watson stat	1.739374
Prob(F-statistic)	0.011339		

Augmented Dickey-Fuller Unit Root Test on LOGUNEMPLOYMENT__FEMALE

Null Hypothesis: LOGUNEMPLOYMENT__FEMALE has a unit root
Exogenous: Constant
Lag Length: 3 (Automatic - based on SIC, maxlag=6)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.634624	0.0012
Test critical values:	1% level	-3.724070	
	5% level	-2.986225	
	10% level	-2.632604	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LOGUNEMPLOYMENT__FEMALE)
Method: Least Squares
Date: 12/27/22 Time: 05:47
Sample (adjusted): 5 29
Included observations: 25 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGUNEMPLOYMENT__FEMALE(-1)	-1.144283	0.246899	-4.634624	0.0002
D(LOGUNEMPLOYMENT__FEMALE(-1))	0.870742	0.252207	3.452493	0.0025
D(LOGUNEMPLOYMENT__FEMALE(-2))	1.721890	0.353014	4.877680	0.0001
D(LOGUNEMPLOYMENT__FEMALE(-3))	1.284556	0.326453	3.934890	0.0008
C	0.693508	0.148395	4.673387	0.0001

R-squared	0.548979	Mean dependent var	0.010107
Adjusted R-squared	0.458775	S.D. dependent var	0.060886
S.E. of regression	0.044792	Akaike info criterion	-3.196697
Sum squared resid	0.040127	Schwarz criterion	-2.952921
Log likelihood	44.95871	Hannan-Quinn criter.	-3.129084
F-statistic	6.085962	Durbin-Watson stat	2.033161
Prob(F-statistic)	0.002260		

Augmented Dickey-Fuller Unit Root Test on LOGVULNERABLE_EMPLOYMENT__FEMALE

Null Hypothesis: LOGVULNERABLE_EMPLOYMENT__FEMALE has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=6)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.378737	0.9783
Test critical values:	1% level	-3.689194	
	5% level	-2.971853	
	10% level	-2.625121	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LOGVULNERABLE_EMPLOYMENT__FEMALE)
Method: Least Squares
Date: 12/27/22 Time: 05:49
Sample (adjusted): 2 29
Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGVULNERABLE_EMPLOYMENT__FEM...	0.015999	0.042243	0.378737	0.7080
C	-0.032502	0.082502	-0.393960	0.6968

R-squared	0.005487	Mean dependent var	-0.001256
Adjusted R-squared	-0.032764	S.D. dependent var	0.002572
S.E. of regression	0.002614	Akaike info criterion	-8.987097
Sum squared resid	0.000178	Schwarz criterion	-8.891940
Log likelihood	127.8194	Hannan-Quinn criter.	-8.958007
F-statistic	0.143441	Durbin-Watson stat	1.445964
Prob(F-statistic)	0.707959		

Augmented Dickey-Fuller Unit Root Test on LOGVULNERABLE_EMPLOYMENT__FEMALE

Null Hypothesis: LOGVULNERABLE_EMPLOYMENT__FEMALE has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 3 (Automatic - based on SIC, maxlag=6)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.820651	0.2034
Test critical values:	1% level	-4.374307	
	5% level	-3.603202	
	10% level	-3.238054	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LOGVULNERABLE_EMPLOYMENT__FEMALE)
Method: Least Squares
Date: 12/27/22 Time: 05:50
Sample (adjusted): 5 29
Included observations: 25 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGVULNERABLE_EMPLOYMENT__FE...	-0.394755	0.139952	-2.820651	0.0109
D(LOGVULNERABLE_EMPLOYMENT__F...	0.645498	0.193191	3.341241	0.0034
D(LOGVULNERABLE_EMPLOYMENT__F...	-0.303940	0.192271	-1.580789	0.1304
D(LOGVULNERABLE_EMPLOYMENT__F...	0.482347	0.198587	2.428897	0.0252
C	0.779773	0.276604	2.819100	0.0110
@TREND("1")	-0.000618	0.000214	-2.888039	0.0094

R-squared	0.499285	Mean dependent var	-0.001430
Adjusted R-squared	0.367517	S.D. dependent var	0.002666
S.E. of regression	0.002120	Akaike info criterion	-9.268996
Sum squared resid	8.54E-05	Schwarz criterion	-8.976466
Log likelihood	121.8625	Hannan-Quinn criter.	-9.187861
F-statistic	3.789143	Durbin-Watson stat	1.750270
Prob(F-statistic)	0.015040		

Augmented Dickey-Fuller Unit Root Test on D(LOGVULNERABLE_EMPLOYMENT__FEMALE)

Null Hypothesis: D(LOGVULNERABLE_EMPLOYMENT__FEMALE) has a unit root
Exogenous: Constant
Lag Length: 3 (Automatic - based on SIC, maxlag=6)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.758854	0.0792
Test critical values:	1% level	-3.737853	
	5% level	-2.991878	
	10% level	-2.635542	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LOGVULNERABLE_EMPLOYMENT__FEMALE,2)
Method: Least Squares
Date: 12/27/22 Time: 05:51
Sample (adjusted): 6 29
Included observations: 24 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOGVULNERABLE_EMPLOYMENT__F...	-0.954761	0.346072	-2.758854	0.0125
D(LOGVULNERABLE_EMPLOYMENT__F...	0.597004	0.319891	1.866274	0.0775
D(LOGVULNERABLE_EMPLOYMENT__F...	-0.090128	0.236556	-0.380999	0.7074
D(LOGVULNERABLE_EMPLOYMENT__F...	0.462737	0.222709	2.077762	0.0515
C	-0.001290	0.000613	-2.103898	0.0489

R-squared	0.593871	Mean dependent var	-4.35E-05
Adjusted R-squared	0.508370	S.D. dependent var	0.003276
S.E. of regression	0.002297	Akaike info criterion	-9.131597
Sum squared resid	0.000100	Schwarz criterion	-8.886169
Log likelihood	114.5792	Hannan-Quinn criter.	-9.066485
F-statistic	6.945789	Durbin-Watson stat	1.960240
Prob(F-statistic)	0.001272		

Augmented Dickey-Fuller Unit Root Test on LOGWAGE_AND_SALARIED_WORKERS__FEMALE

Null Hypothesis: LOGWAGE_AND_SALARIED_WORKERS__FEMALE has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=6)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.066982	0.9571
Test critical values:	1% level	-3.689194	
	5% level	-2.971853	
	10% level	-2.625121	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LOGWAGE_AND_SALARIED_WORKERS__FEMALE)
Method: Least Squares
Date: 12/27/22 Time: 05:53
Sample (adjusted): 2 29
Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGWAGE_AND_SALARIED_WORKERS...	0.002607	0.038920	0.066982	0.9471
C	0.007842	0.038791	0.202149	0.8414

R-squared	0.000173	Mean dependent var	0.010426
Adjusted R-squared	-0.038282	S.D. dependent var	0.020836
S.E. of regression	0.021231	Akaike info criterion	-4.797982
Sum squared resid	0.011719	Schwarz criterion	-4.702824
Log likelihood	69.17175	Hannan-Quinn criter.	-4.768891
F-statistic	0.004487	Durbin-Watson stat	1.498060
Prob(F-statistic)	0.947109		

Augmented Dickey-Fuller Unit Root Test on D(LOGWAGE_AND_SALARIED_WORKERS__FEMALE)

Null Hypothesis: D(LOGWAGE_AND_SALARIED_WORKERS__FEMALE) has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=6)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.500284	0.0015
Test critical values:	1% level	-3.711457	
	5% level	-2.981038	
	10% level	-2.629906	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LOGWAGE_AND_SALARIED_WORKERS__FEMALE,2)
Method: Least Squares
Date: 12/27/22 Time: 05:55
Sample (adjusted): 4 29
Included observations: 26 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOGWAGE_AND_SALARIED_WORKE...	-1.047604	0.232786	-4.500284	0.0002
D(LOGWAGE_AND_SALARIED_WORKE...	0.388733	0.191039	2.034834	0.0536
C	0.011518	0.004511	2.553275	0.0178

R-squared	0.479447	Mean dependent var	0.000983
Adjusted R-squared	0.434181	S.D. dependent var	0.026234
S.E. of regression	0.019733	Akaike info criterion	-4.904862
Sum squared resid	0.008956	Schwarz criterion	-4.759697
Log likelihood	66.76321	Hannan-Quinn criter.	-4.863060
F-statistic	10.59188	Durbin-Watson stat	1.760559
Prob(F-statistic)	0.000549		

Augmented Dickey-Fuller Unit Root Test on LOGWAGE_AND_SALARIED_WORKERS__FEMALE

Null Hypothesis: LOGWAGE_AND_SALARIED_WORKERS__FEMALE has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 3 (Automatic - based on SIC, maxlag=6)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.570274	0.2953
Test critical values:	1% level	-4.374307	
	5% level	-3.603202	
	10% level	-3.238054	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LOGWAGE_AND_SALARIED_WORKERS__FEMALE)
Method: Least Squares
Date: 12/27/22 Time: 05:54
Sample (adjusted): 5 29
Included observations: 25 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGWAGE_AND_SALARIED_WORKERS...	-0.351507	0.136758	-2.570274	0.0187
D(LOGWAGE_AND_SALARIED_WORKE...	0.627461	0.196999	3.185093	0.0049
D(LOGWAGE_AND_SALARIED_WORKE...	-0.339620	0.189434	-1.792811	0.0889
D(LOGWAGE_AND_SALARIED_WORKE...	0.497848	0.196563	2.532767	0.0203
C	0.282386	0.107490	2.627095	0.0166
@TREND("1")	0.004680	0.001847	2.533636	0.0202

R-squared	0.474468	Mean dependent var	0.011935
Adjusted R-squared	0.336170	S.D. dependent var	0.021454
S.E. of regression	0.017480	Akaike info criterion	-5.049946
Sum squared resid	0.005806	Schwarz criterion	-4.757416
Log likelihood	69.12433	Hannan-Quinn criter.	-4.968811
F-statistic	3.430771	Durbin-Watson stat	1.956266
Prob(F-statistic)	0.022373		

Phillips-Perron Unit Root Test on LOG_GDP_PER_CAPITA

Null Hypothesis: LOG_GDP_PER_CAPITA has a unit root
Exogenous: Constant
Bandwidth: 0 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-0.634811	0.8471
Test critical values:	1% level	-3.689194	
	5% level	-2.971853	
	10% level	-2.625121	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	0.005708
HAC corrected variance (Bartlett kernel)	0.005708

Phillips-Perron Test Equation
Dependent Variable: D(LOG_GDP_PER_CAPITA)
Method: Least Squares
Date: 12/31/22 Time: 21:17
Sample (adjusted): 1992 2019
Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG_GDP_PER_CAPITA(...	-0.027696	0.043628	-0.634811	0.5311
C	0.106668	0.132752	0.803517	0.4290

R-squared	0.015263	Mean dependent var	0.022923
Adjusted R-squared	-0.022612	S.D. dependent var	0.077529
S.E. of regression	0.078401	Akaike info criterion	-2.185222
Sum squared resid	0.159813	Schwarz criterion	-2.090065
Log likelihood	32.59311	Hannan-Quinn criter.	-2.156132
F-statistic	0.402985	Durbin-Watson stat	1.575290
Prob(F-statistic)	0.531099		

Phillips-Perron Unit Root Test on LOG_GDP_PER_CAPITA

Null Hypothesis: LOG_GDP_PER_CAPITA has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 2 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-1.807333	0.6741
Test critical values:	1% level	-4.323979	
	5% level	-3.580623	
	10% level	-3.225334	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	0.005324
HAC corrected variance (Bartlett kernel)	0.007654

Phillips-Perron Test Equation
Dependent Variable: D(LOG_GDP_PER_CAPITA)
Method: Least Squares
Date: 12/31/22 Time: 21:18
Sample (adjusted): 1992 2019
Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG_GDP_PER_CAPITA(...	-0.174809	0.117666	-1.485628	0.1499
C	0.455173	0.290573	1.566465	0.1298
@TREND("1991")	0.006644	0.004947	1.343005	0.1913

R-squared	0.081527	Mean dependent var	0.022923
Adjusted R-squared	0.008050	S.D. dependent var	0.077529
S.E. of regression	0.077216	Akaike info criterion	-2.183456
Sum squared resid	0.149059	Schwarz criterion	-2.040720
Log likelihood	33.56839	Hannan-Quinn criter.	-2.139821
F-statistic	1.109552	Durbin-Watson stat	1.463388
Prob(F-statistic)	0.345404		

Phillips-Perron Unit Root Test on D(LOG_GDP_PER_CAPITA)

Null Hypothesis: D(LOG_GDP_PER_CAPITA) has a unit root
Exogenous: Constant
Bandwidth: 0 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-4.127302	0.0036
Test critical values:	1% level	-3.699871	
	5% level	-2.976263	
	10% level	-2.627420	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	0.005699
HAC corrected variance (Bartlett kernel)	0.005699

Phillips-Perron Test Equation
Dependent Variable: D(LOG_GDP_PER_CAPITA,2)
Method: Least Squares
Date: 12/31/22 Time: 21:19
Sample (adjusted): 1993 2019
Included observations: 27 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOG_GDP_PER_CAPITA(-1))	-0.803929	0.194783	-4.127302	0.0004
C	0.020070	0.015760	1.273485	0.2146

R-squared	0.405252	Mean dependent var	0.001427
Adjusted R-squared	0.381462	S.D. dependent var	0.099757
S.E. of regression	0.078456	Akaike info criterion	-2.181377
Sum squared resid	0.153883	Schwarz criterion	-2.085389
Log likelihood	31.44858	Hannan-Quinn criter.	-2.152834
F-statistic	17.03462	Durbin-Watson stat	1.700533
Prob(F-statistic)	0.000357		

Phillips-Perron Unit Root Test on LOG_FERTILITY_RATE__TOTAL

Null Hypothesis: LOG_FERTILITY_RATE__TOTAL has a unit root
Exogenous: Constant
Bandwidth: 2 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		1.346831	0.9982
Test critical values:	1% level	-3.689194	
	5% level	-2.971853	
	10% level	-2.625121	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	5.40E-06
HAC corrected variance (Bartlett kernel)	1.13E-05

Phillips-Perron Test Equation
Dependent Variable: D(LOG_FERTILITY_RATE__TOTAL)
Method: Least Squares
Date: 12/31/22 Time: 21:20
Sample (adjusted): 1992 2019
Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG_FERTILITY_RATE__TOTAL(-1)	0.055208	0.024040	2.296451	0.0300
C	-0.045769	0.018735	-2.443013	0.0217

R-squared	0.168630	Mean dependent var	-0.002759
Adjusted R-squared	0.136654	S.D. dependent var	0.002596
S.E. of regression	0.002412	Akaike info criterion	-9.147932
Sum squared resid	0.000151	Schwarz criterion	-9.052775
Log likelihood	130.0711	Hannan-Quinn criter.	-9.118842
F-statistic	5.273688	Durbin-Watson stat	0.585325
Prob(F-statistic)	0.029958		

Phillips-Perron Unit Root Test on LOG_FERTILITY_RATE__TOTAL

Null Hypothesis: LOG_FERTILITY_RATE__TOTAL has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 2 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-0.343424	0.9849
Test critical values:	1% level	-4.323979	
	5% level	-3.580623	
	10% level	-3.225334	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	5.37E-06
HAC corrected variance (Bartlett kernel)	1.13E-05

Phillips-Perron Test Equation
Dependent Variable: D(LOG_FERTILITY_RATE__TOTAL)
Method: Least Squares
Date: 12/31/22 Time: 21:20
Sample (adjusted): 1992 2019
Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG_FERTILITY_RATE__TOTAL(-1)	0.032399	0.067413	0.480602	0.6350
C	-0.027167	0.054666	-0.496953	0.6236
@TREND("1991")	-5.75E-05	0.000158	-0.363067	0.7196

R-squared	0.172991	Mean dependent var	-0.002759
Adjusted R-squared	0.106830	S.D. dependent var	0.002596
S.E. of regression	0.002453	Akaike info criterion	-9.081763
Sum squared resid	0.000150	Schwarz criterion	-8.939026
Log likelihood	130.1447	Hannan-Quinn criter.	-9.038127
F-statistic	2.614704	Durbin-Watson stat	0.574483
Prob(F-statistic)	0.093085		

Phillips-Perron Unit Root Test on D(LOG_FERTILITY_RATE__TOTAL)

Null Hypothesis: D(LOG_FERTILITY_RATE__TOTAL) has a unit root
Exogenous: Constant
Bandwidth: 0 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-1.664999	0.4369
Test critical values:	1% level	-3.699871	
	5% level	-2.976263	
	10% level	-2.627420	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	2.79E-06
HAC corrected variance (Bartlett kernel)	2.79E-06

Phillips-Perron Test Equation
Dependent Variable: D(LOG_FERTILITY_RATE__TOTAL,2)
Method: Least Squares
Date: 12/31/22 Time: 21:21
Sample (adjusted): 1993 2019
Included observations: 27 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOG_FERTILITY_RATE__TOTAL(-...	-0.218957	0.131506	-1.664999	0.1084
C	-0.000696	0.000484	-1.439686	0.1624

R-squared	0.099820	Mean dependent var	-0.000114
Adjusted R-squared	0.063813	S.D. dependent var	0.001795
S.E. of regression	0.001737	Akaike info criterion	-9.802480
Sum squared resid	7.54E-05	Schwarz criterion	-9.706492
Log likelihood	134.3335	Hannan-Quinn criter.	-9.773938
F-statistic	2.772223	Durbin-Watson stat	1.249291
Prob(F-statistic)	0.108398		

Phillips-Perron Unit Root Test on LOG_WAGE_AND_SALARIED_WORKERS__FEMALE

Null Hypothesis: LOG_WAGE_AND_SALARIED_WORKERS__FEMALE has a unit root
Exogenous: Constant
Bandwidth: 1 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-0.057281	0.9449
Test critical values:	1% level	-3.689194	
	5% level	-2.971853	
	10% level	-2.625121	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	0.000419
HAC corrected variance (Bartlett kernel)	0.000523

Phillips-Perron Test Equation
Dependent Variable: D(LOG_WAGE_AND_SALARIED_WORKERS__F
EMALE)
Method: Least Squares
Date: 12/31/22 Time: 21:22
Sample (adjusted): 1992 2019
Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG_WAGE_AND_SALARIED_WORK...	0.002607	0.038920	0.066982	0.9471
C	0.007842	0.038791	0.202149	0.8414

R-squared	0.000173	Mean dependent var	0.010426
Adjusted R-squared	-0.038282	S.D. dependent var	0.020836
S.E. of regression	0.021231	Akaike info criterion	-4.797982
Sum squared resid	0.011719	Schwarz criterion	-4.702824
Log likelihood	69.17175	Hannan-Quinn criter.	-4.768891
F-statistic	0.004487	Durbin-Watson stat	1.498060
Prob(F-statistic)	0.947109		

Phillips-Perron Unit Root Test on LOG_WAGE_AND_SALARIED_WORKERS__FEMALE

Null Hypothesis: LOG_WAGE_AND_SALARIED_WORKERS__FEMALE has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 0 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-2.006797	0.5725
Test critical values:	1% level	-4.323979	
	5% level	-3.580623	
	10% level	-3.225334	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	0.000354
HAC corrected variance (Bartlett kernel)	0.000354

Phillips-Perron Test Equation
Dependent Variable: D(LOG_WAGE_AND_SALARIED_WORKERS__FEMALE)
Method: Least Squares
Date: 12/31/22 Time: 21:23
Sample (adjusted): 1992 2019
Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG_WAGE_AND_SALARIED_WORK...	-0.230341	0.114781	-2.006797	0.0557
C	0.193306	0.093966	2.057187	0.0502
@TREND("1991")	0.003136	0.001465	2.140543	0.0423

R-squared	0.155035	Mean dependent var	0.010426
Adjusted R-squared	0.087438	S.D. dependent var	0.020836
S.E. of regression	0.019904	Akaike info criterion	-4.894841
Sum squared resid	0.009904	Schwarz criterion	-4.752105
Log likelihood	71.52778	Hannan-Quinn criter.	-4.851205
F-statistic	2.293515	Durbin-Watson stat	1.424151
Prob(F-statistic)	0.121754		

Phillips-Perron Unit Root Test on D(LOG_WAGE_AND_SALARIED_WORKERS__FEMALE)

Null Hypothesis: D(LOG_WAGE_AND_SALARIED_WORKERS__FEMALE) has a unit root
Exogenous: Constant
Bandwidth: 9 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-3.685457	0.0103
Test critical values:	1% level	-3.699871	
	5% level	-2.976263	
	10% level	-2.627420	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	0.000406
HAC corrected variance (Bartlett kernel)	0.000242

Phillips-Perron Test Equation
Dependent Variable: D(LOG_WAGE_AND_SALARIED_WORKERS__FEMALE,2)
Method: Least Squares
Date: 12/31/22 Time: 21:23
Sample (adjusted): 1993 2019
Included observations: 27 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOG_WAGE_AND_SALARIED_WO...	-0.748007	0.193690	-3.861880	0.0007
C	0.007978	0.004491	1.776257	0.0879

R-squared	0.373655	Mean dependent var	0.000326
Adjusted R-squared	0.348601	S.D. dependent var	0.025950
S.E. of regression	0.020944	Akaike info criterion	-4.822750
Sum squared resid	0.010966	Schwarz criterion	-4.726762
Log likelihood	67.10713	Hannan-Quinn criter.	-4.794208
F-statistic	14.91412	Durbin-Watson stat	1.786048
Prob(F-statistic)	0.000706		

Phillips-Perron Unit Root Test on LOG_UNEMPLOYMENT__FEMALE

Null Hypothesis: LOG_UNEMPLOYMENT__FEMALE has a unit root
Exogenous: Constant
Bandwidth: 2 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-0.722893	0.8249
Test critical values:	1% level	-3.689194	
	5% level	-2.971853	
	10% level	-2.625121	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	0.003158
HAC corrected variance (Bartlett kernel)	0.003745

Phillips-Perron Test Equation
Dependent Variable: D(LOG_UNEMPLOYMENT__FEMALE)
Method: Least Squares
Date: 12/31/22 Time: 21:24
Sample (adjusted): 1992 2019
Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG_UNEMPLOYMENT__FEMALE(...	-0.053752	0.100438	-0.535182	0.5971
C	0.043083	0.065021	0.662599	0.5134

R-squared	0.010896	Mean dependent var	0.008788
Adjusted R-squared	-0.027146	S.D. dependent var	0.057538
S.E. of regression	0.058314	Akaike info criterion	-2.777212
Sum squared resid	0.088412	Schwarz criterion	-2.682055
Log likelihood	40.88097	Hannan-Quinn criter.	-2.748122
F-statistic	0.286420	Durbin-Watson stat	1.985367
Prob(F-statistic)	0.597072		

Phillips-Perron Unit Root Test on LOG_UNEMPLOYMENT__FEMALE

Null Hypothesis: LOG_UNEMPLOYMENT__FEMALE has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 1 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-1.265036	0.8759
Test critical values:	1% level	-4.323979	
	5% level	-3.580623	
	10% level	-3.225334	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	0.002824
HAC corrected variance (Bartlett kernel)	0.002716

Phillips-Perron Test Equation
Dependent Variable: D(LOG_UNEMPLOYMENT__FEMALE)
Method: Least Squares
Date: 12/31/22 Time: 21:24
Sample (adjusted): 1992 2019
Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG_UNEMPLOYMENT__FEMALE(...	-0.142150	0.109669	-1.296176	0.2068
C	0.062355	0.063702	0.978857	0.3370
@TREND("1991")	0.002561	0.001490	1.718854	0.0980

R-squared	0.115433	Mean dependent var	0.008788
Adjusted R-squared	0.044667	S.D. dependent var	0.057538
S.E. of regression	0.056238	Akaike info criterion	-2.817485
Sum squared resid	0.079068	Schwarz criterion	-2.674749
Log likelihood	42.44479	Hannan-Quinn criter.	-2.773849
F-statistic	1.631205	Durbin-Watson stat	2.037653
Prob(F-statistic)	0.215842		

Phillips-Perron Unit Root Test on D(LOG_UNEMPLOYMENT__FEMALE)

Null Hypothesis: D(LOG_UNEMPLOYMENT__FEMALE) has a unit root
Exogenous: Constant
Bandwidth: 2 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-5.221302	0.0002
Test critical values:	1% level	-3.699871	
	5% level	-2.976263	
	10% level	-2.627420	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	0.003294
HAC corrected variance (Bartlett kernel)	0.003865

Phillips-Perron Test Equation
Dependent Variable: D(LOG_UNEMPLOYMENT__FEMALE,2)
Method: Least Squares
Date: 12/31/22 Time: 21:25
Sample (adjusted): 1993 2019
Included observations: 27 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOG_UNEMPLOYMENT__FEMALE(-1))	-1.057438	0.203448	-5.197575	0.0000
C	0.009897	0.011691	0.846577	0.4053

R-squared	0.519367	Mean dependent var	-0.001654
Adjusted R-squared	0.500142	S.D. dependent var	0.084358
S.E. of regression	0.059641	Akaike info criterion	-2.729746
Sum squared resid	0.088927	Schwarz criterion	-2.633758
Log likelihood	38.85157	Hannan-Quinn criter.	-2.701204
F-statistic	27.01479	Durbin-Watson stat	1.932148
Prob(F-statistic)	0.000022		

Phillips-Perron Unit Root Test on LOG_VULNERABLE_EMPLOYMENT__FEMALE

Null Hypothesis: LOG_VULNERABLE_EMPLOYMENT__FEMALE has a unit root
Exogenous: Constant
Bandwidth: 1 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		0.197635	0.9675
Test critical values:	1% level	-3.689194	
	5% level	-2.971853	
	10% level	-2.625121	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	6.35E-06
HAC corrected variance (Bartlett kernel)	8.08E-06

Phillips-Perron Test Equation
Dependent Variable: D(LOG_VULNERABLE_EMPLOYMENT__FEMALE)
Method: Least Squares
Date: 12/31/22 Time: 21:25
Sample (adjusted): 1992 2019
Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG_VULNERABLE_EMPLOYMENT__...	0.015999	0.042243	0.378737	0.7080
C	-0.032502	0.082502	-0.393960	0.6968

R-squared	0.005487	Mean dependent var	-0.001256
Adjusted R-squared	-0.032764	S.D. dependent var	0.002572
S.E. of regression	0.002614	Akaike info criterion	-8.987097
Sum squared resid	0.000178	Schwarz criterion	-8.891940
Log likelihood	127.8194	Hannan-Quinn criter.	-8.958007
F-statistic	0.143441	Durbin-Watson stat	1.445964
Prob(F-statistic)	0.707959		

Phillips-Perron Unit Root Test on LOG_VULNERABLE_EMPLOYMENT__FEMALE

Null Hypothesis: LOG_VULNERABLE_EMPLOYMENT__FEMALE has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 0 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-2.024786	0.5631
Test critical values:	1% level	-4.323979	
	5% level	-3.580623	
	10% level	-3.225334	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	5.24E-06
HAC corrected variance (Bartlett kernel)	5.24E-06

Phillips-Perron Test Equation
Dependent Variable: D(LOG_VULNERABLE_EMPLOYMENT__FEMALE)
Method: Least Squares
Date: 12/31/22 Time: 21:26
Sample (adjusted): 1992 2019
Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG_VULNERABLE_EMPLOYMENT__...	-0.235599	0.116358	-2.024786	0.0537
C	0.464475	0.229547	2.023439	0.0538
@TREND("1991")	-0.000387	0.000168	-2.296152	0.0303

R-squared	0.178694	Mean dependent var	-0.001256
Adjusted R-squared	0.112989	S.D. dependent var	0.002572
S.E. of regression	0.002423	Akaike info criterion	-9.107026
Sum squared resid	0.000147	Schwarz criterion	-8.964290
Log likelihood	130.4984	Hannan-Quinn criter.	-9.063390
F-statistic	2.719662	Durbin-Watson stat	1.386257
Prob(F-statistic)	0.085371		

Phillips-Perron Unit Root Test on D(LOG_VULNERABLE_EMPLOYMENT__FEMALE)

Null Hypothesis: D(LOG_VULNERABLE_EMPLOYMENT__FEMALE) has a unit root
Exogenous: Constant
Bandwidth: 8 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-3.469188	0.0171
Test critical values:	1% level	-3.699871	
	5% level	-2.976263	
	10% level	-2.627420	

*MacKinnon (1996) one-sided p-values.

Residual variance (no correction)	6.05E-06
HAC corrected variance (Bartlett kernel)	3.40E-06

Phillips-Perron Test Equation
Dependent Variable: D(LOG_VULNERABLE_EMPLOYMENT__FEMALE, 2)
Method: Least Squares
Date: 12/31/22 Time: 21:26
Sample (adjusted): 1993 2019
Included observations: 27 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOG_VULNERABLE_EMPLOYMENT...	-0.710963	0.192384	-3.695547	0.0011
C	-0.000932	0.000544	-1.713380	0.0990

R-squared	0.353288	Mean dependent var	-7.52E-05
Adjusted R-squared	0.327419	S.D. dependent var	0.003118
S.E. of regression	0.002557	Akaike info criterion	-9.028797
Sum squared resid	0.000163	Schwarz criterion	-8.932809
Log likelihood	123.8888	Hannan-Quinn criter.	-9.000254
F-statistic	13.65707	Durbin-Watson stat	1.785948
Prob(F-statistic)	0.001078		

Appendix D: ARDL Approach Test Results

Lag	LogL	LR	FPE	AIC	SC	HQ
0	334.4525	NA	1.73e-17	-24.40389	-24.16392	-24.33253
1	464.4824	202.2688	7.53e-21	-32.18388	-30.74407*	-31.75575
2	498.2796	40.05584*	4.86e-21*	-32.83552*	-30.19585	-32.05061*

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

Conditional Error Correction Regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-91.73547	26.36512	-3.479425	0.0021
LOGGDP_PER_CAPITA...	-0.623850	0.118488	-5.265076	0.0000
LOGUNEMPLOYMENT_...	-0.494333	0.154458	-3.200437	0.0041
LOGVULNERABLE_EM...	46.08361	12.99139	3.547242	0.0018
LOGWAGE_AND_SALA...	6.856814	1.635583	4.192275	0.0004
LOGFERTILITY_RATE_...	-3.667711	1.566498	-2.341344	0.0287

* p-value incompatible with t-Bounds distribution.
** Variable interpreted as Z = Z(-1) + D(Z).

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LOGGDP_PER_CAPITA(-1)	0.376150	0.118488	3.174576	0.0044
LOGFERTILITY_RATE__TOTAL	-3.667711	1.566498	-2.341344	0.0287
LOGUNEMPLOYMENT__FEMALE	-0.494333	0.154458	-3.200437	0.0041
LOGVULNERABLE_EMPLOYMENT__FEM...	46.08361	12.99139	3.547242	0.0018
LOGWAGE_AND_SALARIED_WORKERS...	6.856814	1.635583	4.192275	0.0004
C	-91.73547	26.36512	-3.479425	0.0021

R-squared	0.980833	Mean dependent var	3.046711
Adjusted R-squared	0.976477	S.D. dependent var	0.344947
S.E. of regression	0.052905	Akaike info criterion	-2.853214
Sum squared resid	0.061578	Schwarz criterion	-2.567741
Log likelihood	45.94499	Hannan-Quinn criter.	-2.765942
F-statistic	225.1610	Durbin-Watson stat	2.532884
Prob(F-statistic)	0.000000		

*Note: p-values and any subsequent tests do not account for model selection.

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LOGGDP_PER_CAPITA(-1)	0.376150	0.118488	3.174576	0.0044
LOGFERTILITY_RATE__TOTAL	-3.667711	1.566498	-2.341344	0.0287
LOGUNEMPLOYMENT__FEMALE	-0.494333	0.154458	-3.200437	0.0041
LOGVULNERABLE_EMPLOYMENT__FEM...	46.08361	12.99139	3.547242	0.0018
LOGWAGE_AND_SALARIED_WORKERS...	6.856814	1.635583	4.192275	0.0004
C	-91.73547	26.36512	-3.479425	0.0021

R-squared	0.980833	Mean dependent var	3.046711
Adjusted R-squared	0.976477	S.D. dependent var	0.344947
S.E. of regression	0.052905	Akaike info criterion	-2.853214
Sum squared resid	0.061578	Schwarz criterion	-2.567741
Log likelihood	45.94499	Hannan-Quinn criter.	-2.765942
F-statistic	225.1610	Durbin-Watson stat	2.532884
Prob(F-statistic)	0.000000		

*Note: p-values and any subsequent tests do not account for model selection.

Levels Equation
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGUNEMPLOYMENT_...	-0.792391	0.255424	-3.102258	0.0052
LOGVULNERABLE_EM...	73.86971	17.91905	4.122412	0.0004
LOGWAGE_AND_SALA...	10.99113	1.981936	5.545651	0.0000
LOGFERTILITY_RATE_...	-5.879155	2.396850	-2.452867	0.0226
C	-147.0473	36.54443	-4.023796	0.0006

EC = LOGGDP_PER_CAPITA - (-0.7924*LOGUNEMPLOYMENT__FEMALE +
73.8697*LOGVULNERABLE_EMPLOYMENT__FEMALE + 10.9911
*LOGWAGE_AND_SALARIED_WORKERS__FEMALE -5.8792
*LOGFERTILITY_RATE__TOTAL - 147.0473)

F-Bounds Test — Null Hypothesis: No levels relationship

Test Statistic	Value	Signif.	I(0)	I(1)
		Asymptotic: n=1000		
F-statistic	6.873020	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37
Actual Sample Size	28	Finite Sample: n=35		
		10%	2.46	3.46
		5%	2.947	4.088
		1%	4.093	5.532
		Finite Sample: n=30		
		10%	2.525	3.56
		5%	3.058	4.223
		1%	4.28	5.84

ECM Regression
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CointEq(-1)*	-0.623850	0.087692	-7.114100	0.0000

R-squared	0.620570	Mean dependent var	0.022923
Adjusted R-squared	0.620570	S.D. dependent var	0.077529
S.E. of regression	0.047756	Akaike info criterion	-3.210356
Sum squared resid	0.061578	Schwarz criterion	-3.162778
Log likelihood	45.94499	Hannan-Quinn criter.	-3.195811
Durbin-Watson stat	2.532884		

* p-value incompatible with t-Bounds distribution.

F-Bounds Test — Null Hypothesis: No levels relationship

Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	6.873020	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Appendix E: Stability Diagnostic Test Results

Breusch-Godfrey Serial Correlation LM Test:
Null hypothesis: No serial correlation at up to 1 lag

F-statistic	2.635203	Prob. F(1,21)	0.1194
Obs*R-squared	3.121856	Prob. Chi-Square(1)	0.0772

Heteroskedasticity Test: Breusch-Pagan-Godfrey
Null hypothesis: Homoskedasticity

F-statistic	2.665686	Prob. F(5,22)	0.0497
Obs*R-squared	10.56362	Prob. Chi-Square(5)	0.0608
Scaled explained SS	13.64602	Prob. Chi-Square(5)	0.0180

Ramsey RESET Test
Equation: UNTITLED
Omitted Variables: Squares of fitted values
Specification: LOGGDP_PER_CAPITA LOGGDP_PER_CAPITA(-1) LOGUNEMPLOYMENT__FEMALE LOGVULNERABLE_EMPLOYMENT __FEMALE LOGWAGE_AND_SALARIED_WORKERS__FEMALE LOGFERTILITY_RATE__TOTAL C

	Value	df	Probability
t-statistic	0.463801	21	0.6476
F-statistic	0.215112	(1, 21)	0.6476
Likelihood ratio	0.285357	1	0.5932

F-test summary:

	Sum of Sq.	df	Mean Squares
Test SSR	0.000624	1	0.000624
Restricted SSR	0.061578	22	0.002799
Unrestricted SSR	0.060953	21	0.002903