Impact Of Financial Globalization On Nigerian Women's Vulnerability: A Proxy Analysis

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Abstract
This paper examined the impact of financial globalization on Nigerian women's vulnerability using time series data covering 2000 to 2022. The objectives of the study were to determine the impact of financial globalization in terms of foreign direct investment (FDI), domestic credit to the private sector (DCPS) and stock market capitalization (SMC) on Nigerian women's vulnerability in terms of gender wage gap (GWG), female labor participation rate (LFPR) and female literacy rate (FLR) as well as their direction of causality. Unit root test detected structural break in the components of women's vulnerability and revealed a mixture of I(1) and I(0) stationarity property which necessitated the use of autoregressive distributed lag (ARDL) model technique in estimating the impacts. Granger causality was used to determine the direction of causality among the variables. Findings indicate that FDI impacted positively on GWG, LFPR and FLR in both short and long-runs with those of LFPR and FLR being significant. DCPS made negative impact on GWG, LFPR and FLR in the short-run though its lag 1 impacts were positive; and positive impact on GWG, LFPR and FLR in the long-run with those of LFPR and FLR being significant. SMC impacted positively on GWG and LFPR but negatively on FLR in both short and long-runs with those of LFPR and FLR being significant. Control variables of female school enrolment, exchange and inflation rates produced mixed results. Causality test indicated that some components of financial globalization are predictors of women's vulnerability with feedback effect. Based on the findings, the study concluded that financial globalization helps to reduce women's vulnerability in Nigeria and recommended that the government should create conducive economic and secured environment with attractive policies for FDI; women should be given greater access to financial services and be allowed greater participation in the stock market and labor force, among others.
Keyword: *financial globalization, vulnerability, foreign direct investment, gender wage gap, market capitalization.*

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I.   Introduction

The free movement of finance across boundaries of countries since 1980 spurred up domestic financial repositioning which brought about great benefits to both developed and developing economies. In other words, the financial market integration of nations is associated with both positive and ugly experiences. Inflow and out flow of resources domestically and internationally become easy and making it seamlessly with respect to borrowing and investment in physical and portfolio assets (Bhanumurthy & Kumawat, 2020). However, in recent past, financial globalization has attracted some controversies by various authors. Some authors and economists supported its operation as a global growth promoting economic issues and thereby urging developing economies to promote openness because of its ability to move a low-income economy to higher income level (Fischer, 1998; Summers, 2000), while other scholars opposed to it on the basis of some risks that may thwart the expected growth potential of globalization and giving rise to global financial instability.

Bhagwati (1998); Stiglitz (2002), Kose et al (2009), asserted that besides pursuing macroeconomic policies as prerequisite for supporting financial sector enhancement; institutional quality and trade openness are essential in assisting the developing countries' drive to the benefits of globalization.

Global financial integrations have been known to influence various facets of an economy. Manufacturing industries, farmers, importers, households, men and women are affected positively or negatively depending on the economic situation, institutions and macroeconomic policies.

Sub-Saharan African nations have over the years experienced high volume of international transactions cum financial flow. Consequently, there is a long-run relationship between financial globalization and economic growth in sub-Saharan Africa (Egbetunde and Akinlo, 2015). But the circumstance reversed following the rising global financial crisis, sharp declined interest rates in developed countries and other debilities that compelled investors to scout for an attractive investment opportunity (IMF, 2011). In its survey, IMF noted a remarkable change in external sources of funding for investment and growth in the past two decades. A total inflow rose since 2000 which dominantly come from the private sector, and remittances have rose above official transfers (grants).

There are numerous benefits accruing from integrating with the global financial system such as increased and well developed financial system and financial delivery technologies, which is beneficial to industries and individuals that are well informed. Unfortunately, many factors affect women's economic participation such as age, marital status, educational level, perception towards economic empowerment, financial wellbeing, participation in leadership, and participation in decision making. Consequently, the feminist theorists argued that economic globalization which is the umbrella of financial globalization must be understood in terms of the effects it has on women who constitutes the greater proportion of the global poor. Many studies conclude on the positive effects of globalization on women's rights both economically and socially; David and Galleny (2007) finds that economic globalization is associated with improved women's status and this is in line with (Potrafke, 2011; Asongu et al., 2016; and Cho, 2011; Kaur, 2018). While Gammoudi and Trojette (2014), Cho (2011) and Cho (2013), Richard and Gallecy, (2007) argued that good governance is a medium through which globalization can promote women's right.

Financial globalization allows risk diversification, free flow of wealth across nations and global mobilization and accumulation of savings but there is still extreme gender oppression; which takes many dimension – socially, culturally, domestically, geographically and politically, and all these makes women more vulnerable (Lang, 2009). The perceived benefits of globalization were seen differently in the 2008 Global Financial Crisis that left the developing economies with despondency as to the possibility of promoting the aspired growth intention. It was equally seen as encouraging unequal economic growth and raise the potential of global recession with the associated characteristics of decline in economic activity, job lost, poverty among others. Women are the most affected because they suffer more poverty, overwork, social and economic and property right deprivation, sever gender wage gap especially in less developed nations, low access to finance because they lack collateral. It is obvious that crisis often led to the government reduction of public expenditure which results in rising cost of health, education, employment among others which on its own have adverse effect on women and girls. This situation does put the women in a precarious state, thereby being compelled to rely on unstable employment in the informal sector with associated risks to their lives (Johnston-Anumonwo and Doane, 2011).

The down turn of economic activities usually exposes the vulnerability of women in society and continue to widen the gender gap in employment and wages: a report by F&D (2019) affirmed that women earn 60% less that men globally. The Word Bank (2023) pointed out that in 2022, the labour force participation rate for Nigerian women was 52.1% while men 65.5%; adult literacy, women 52.7%, men 71.3%; vulnerable employment, women 84.7% men, 73.7%; ownership of business, women 34%, men 66%.

Globalization has its own impact stringently on women/girls and the effects of shocks on female gender are rarely examined. Globally women are more vulnerable to every economic shock (UNAIDS, 2012; Mendoza, 2011). But in view of the position of women, their roles and being greater in number among the low-income and extreme poverty population, it becomes necessary to embark on a study on the influence of financial globalization on Nigerian women's vulnerability. In view of the foregoing, it is the aspiration of the researchers to empirically answer the following questions: how does the degree of financial globalization in terms of foreign direct investment (a subcategory of capital flows), domestic credit to the private sector and stock market capitalization influence women's vulnerability in terms of gender wage gap captured by wage and salaried female workers, female labor force participation rate and female literacy rate; and is there a causal link between financial globalization and components of women's vulnerability in Nigeria?

To answer these questions, our objectives are: to examine how the degree of financial globalization in terms of foreign direct investment (a subcategory of capital flows), domestic credit to the private sector and stock market capitalization influence women's vulnerability in terms of gender wage gap captured by wage and salaried female workers, female labor force participation rate and female literacy rate; and to determine the causal link between the components of financial globalization and those of women's vulnerability in Nigeria.

II. Theoretical Literature

Financial globalization can also be referred to as the integration of financial markets around the world in order to create a single financial market that facilitates the smooth movement of financial capital. Prasad, Rogoff, Wei & Kose, (2003) conceptualized financial globalization as the rise in cross-border flows which facilitate financial global linkages supported by (Prasad, Rogoff, Wei & Kose, 2007) while Motelle and Biekpe (2015) added cross-border economic transactions. According to Schmukler (2004a), financial globalization is the

integration of a country's financial system with that of foreign countries and financial institutions. Alternatively, globalization can be viewed as a multi-dimensional phenomenon which is accomplished through a variety of different processes (Dimitrios et al, 2014). The drivers of financial globalization include trade liberalization, financial openness and capital movement, technological advancement and international migration.

According to some authors, financial globalization can be summed up as follows: increased financial development as a result of the flow of capital across borders:

Figure 1: Conceptual framework for financial globalization
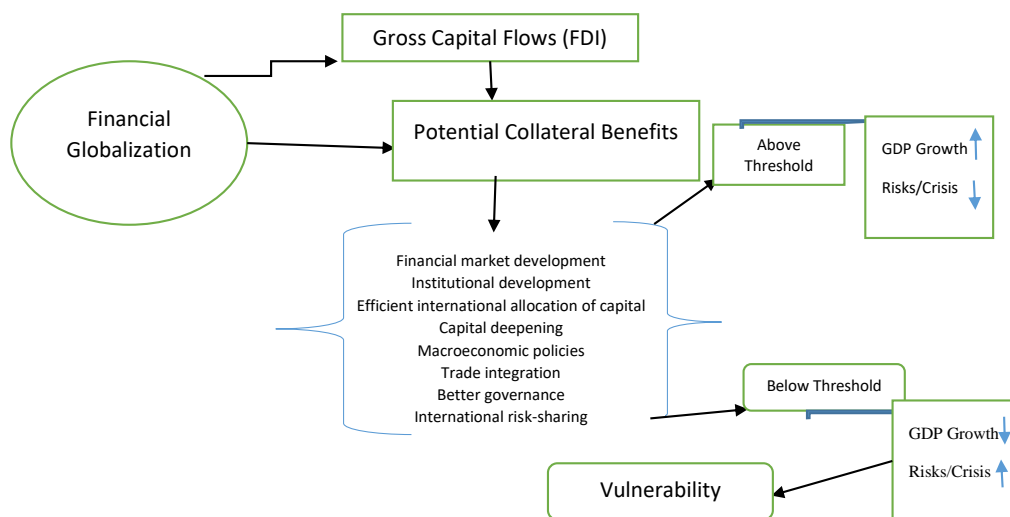
Source: Author's Description (2024)

When financial globalization is implemented with the appropriate institutional policies (Frankel, 2000), it can have positive effects, including increased productivity through diversification and technology transfer. Financial development through international unified financial institutions can promote economic growth by reducing the cost of capital, improvements in corporate governance, advancements in technical capabilities and strict markets (Ozkok, 2015; Garcia, 2012). Segumo and Crown (2006) suggest that globalization affects women's access to employment positively and worsens gender inequality. Globalization of the financial system tends to enhance financing opportunities, reduce capital costs, and increase investment and liquidity through the development of the financial system. Contrary to this, financial globalization can also carry some financial risks and these risks are more likely to manifest in the short run, when countries open up, as a good example of this risk is the financial crisis in Asia and Russia in 1997–98, Brazil in 1999, Ecuador 2000, Turkey 2001, Argentina 2001, and Uruguay 2002.

There are many benefits of globalization for women, such as international pressure on nations to improve women's rights, increased economic opportunities, and a better representation of women in politics. As a result, few authors have tried to assess the impact of globalization on the rights of women globally; Gammoudi and Trojette (2014) affirm that globalization have impacted positively on women's rights using panel data from 17 Middle East North Africa (MENA) supported by Cho (2011), Neumayer and De Soysa (2007) argued on the positive effect of globalization on the economic and social rights of women.

Feminist Theory of Globalization
A feminist theoretical approach to globalization is an umbrella term that refers to a number of specific approaches feminists have used to articulate the challenges that globalization presents for women, people of color, and the global poor. The theorist's approaches seek to provide frameworks for understanding the gender injustices associated with globalization through a specific means. These various approaches include those developed by postcolonial feminists, transnational feminists, and feminists who endorse an ethics of care. Feminist philosophers insist that economic globalization must also be understood in terms of the effects it has had on women, who make up a disproportionate percentage of the global poor. The feminist political philosophers have argued that globalization has contributed to violation of women's human rights, in contrast, numerous studies have found that globalization has a positive impact on women's rights both socially and economically (Richards & Gallancy, 2007; Cho, 2011; Cho, 2013; Gammoudi & Trojette, 2014)

The theory provides valuable insight on how globalization affects women from different perspectives like migration, global governance, political, economic and socially. The feminist theory used non ideal theoretical perspective to analyze the effect of globalization on women with interest to domestic violence, workplace discrimination, human right violation, and health status of women. The theorists argued that gender oppression takes many dimension; social, cultural, domestically, geographical location and politically which makes women more vulnerable in the face of development and even globalization. Lang (2009) emphasizes on structural imbalance and injustice that leads to women's suffering in the world, they suffer more poverty, overwork, social and economic deprivation and political marginalization associated with neoliberal policies. Globalization, be it political, social, economic and financial should be viewed on the basis of the effect it has on women in vulnerable state for example, Jaggar (2009a) emphasized that globalization in its structural form is biased against women. Feminist approach to globalization centers on core-feminist values including an opposition to subordination of women, and the interpretation of feminist understanding of moral and political values that give rise to equality, democracy and human right (Jagger, 2002a p.433; Kang, 2008)

Feminist articulation of these norms can help to identify the patriarchal systems that are responsible for the exploitation of women and girls. It can also help to expose the structural inequalities that exist in society, which contribute to the cycle of poverty and oppression experienced by many women and girls. It is essential to recognize the intersectional nature of these harms, and how they are connected to other forms of oppression such as racism, ableism, and colonialism. Furthermore, feminist articulation of these norms can help to address the gendered power imbalances that allow these harms to continue and lead to economic deprivation (Reilly, 2007; Bunch, 2006; Robinson, 2006a; Robinson, 2006b)

Feminist theory of globalization also contends that gender injustices arise within specific transnational contexts such as the historical relationship among nations and current global economic policies that relate globalization with differences in culture, history and socioeconomic, political circumstances and women contemporary experiences of oppression and vulnerability (Mohanty, 2003; Ackerly, 2009; Ackerly & Attanansi, 2009; Binion, 2006)

III. Empirical Literature

One of the negative impacts of financial globalization is its contribution in increasing financial risks and inequalities and there are outstanding studies that have tried to find the relationship between globalization, risks and inequality. Azzimonti et al. (2014) using multicounty model with incomplete markets showed that public debt and income inequality increases with the level of financial globalization, supported by Roine, Vlacho and Waldenstrom (2008); Claessens &Perotti (2007); and Li Sheng (2015), while World Bank Report (2012) suggests that globalization impacts positively on gender equality. Dimitrios et al. (2014) concentrates on the effect of globalization on income inequality using a panel data technique for 27 EU, the study asserts that financial globalization through the effect of FDI, capital account openness and stock market capitalization drives inequality, supported by similar studies, Sethi et al (2021) using annual data for Indian economy, added financial development alongside globalization , the result supports the argument that globalization aggravates income inequality. On the other hand, Beck (2006) found that financial development raises income for the poor and reduces inequality and poverty, supported by (Dollar, 2004; Goldberg-Koujianou & Pavcvik, 2007). Also Kebede and Tawiah (2021) using quantile regression on 73 countries focused on the effect of financial globalization on income inequality (the study utilized proxies like de facto and de jure measures), they conclude that the de facto financial globalization raises inequality, supported by Lindert and Williamson, (2003); Lee Tue, (2014); Inekwe et al. (2018) while the effect of globalization on wage inequality was examined by Dollar (2004) and Basu (2006). Another set of literature focused on the effect of financial market integration on economic welfare (Dong, 2014; Jaumotter et al, 2013; Nissanke and Thorbecke, 2010). Li Sheng (2015) added that globalization does not affect income inequality but also savings rate., Dong (2014) insists that internal capital flow worsens economic recession in emerging market.

As a result of globalization, women have experienced improvements in their rights, greater economic opportunities, and increased political representation, which have led to an increase in mobility among the female labor force, greater educational opportunities, greater control over reproductive health, and equal representation in politics and the economy. As a result of financial globalization, the development of the financial sector and economic development are stimulated. Many researches have been conducted in the area of economic benefits of globalization, for example, David and Galleny (2007) using data from 130 countries finds that economic globalization is associated with improved women's status and this is in line with (Potrafke, 2011; Asongu et al., 2017; and Cho, 2011; Kaur, 2018). Cho (2013) investigated the impact of globalization on women rights with panel data from 150 countries, the study was able to distinguished between social and economic rights of women and concludes that globalization affects social rights of women positively while economic rights are affected negatively. Again, Gammoudi and Trojette (2014) employs panel data from 17 Middle East North Africa (MENA) to examine whether globalization can enhance women's right, and the study agrees with Cho (2013) and Cho

(2011). Studies like (Cho, 2011; Richard and Gallecy, 2007) argued that democracy is the medium through which globalization can promote women's right.

Another strands of literature focused on the correlation between globalization and female labour force participation, for example, Uwajumogu et al. (2022) adopted the generalized method of moment on a panel data of 37 SSA countries and discovered that de facto and de jure globalization have a positive and negative impact on the proportion of women in vulnerable employment respectively. Asongu et al. (2019) utilized a panel corrected standards errors and fixed effects model in panel data of 47 Sub-Saharan Africans to evaluate the relationship between globalization and economic participation of women. The result indicates that economic and social globalization have a positive impact on women's participation while political globalization reduces the effect. Tifuh (2022) explored data from 35 Sub-Saharan Africa to analyze the nexus between globalization and female labour force participation and revealed a weak correlation between female labour force participation and the dynamics of globalization. Richard and Gellen (2007) focused on the impact of globalization on women's standard of living while Boyer and Buenard (2014) stressed that globalization has impacted positively on lower income earning and provides access to new jobs, supported by Das and Ray (2020).

It is generally assumed that countries with higher level of integration will have well developed financial system because opening up to the rest of the world brings in financial best technologies, practices and procedures which can help to avert and diversify risks and lower costs of foreign transactions (Kalemli- Ozcan et al 2010; Garcia 2012). Heliyon (2022) using panel data and panel corrected standard errors from 33 African nations, finds positive correlation between financial globalization and financial development. This result is supported by the following; Garcia (2012, Chinn and Ito (2015), Muye and Muye (2017).

Does globalization matter for the health of women? Numerous literatures have tried to answer this question; Kossi (2022) utilized data from 37 sub-Sarahan Africa in a dynamic panel model to examine the impact of globalization, economic empowerment on maternal mortality rates and find a robust result; this is supported with (Bettcher &Lee (2002), Bettcher, Yach & Guindon (2000). Again, Goryakin et al (2015) concentrated on the effect of globalization on overweight and obesity in 56 low and middle income countries and found that political and social globalization have a significant effect on women's weight. In addition, Jani and Dholakia (2020) utilized fixed effect panel data analysis to show that both economic, social and political globalization have an impact on health outcomes for African countries and economic globalization is more impactful for lower income countries and this is in line with Jani et al. (2019).

IV. Methodology

Model Specifications

Model 1

$$GWG_t = \beta_0 + \beta_1 DFDI_{1t} + \beta_2 DCPS_{2t} + \beta_3 SMC_{3t} + \beta_4 FSE_{4t} + \beta_5 EXCR_{5t} + \beta_6 INF_{6t} + \varepsilon_t.$$

where;

GWG = gender wage gap captured by wage and salaried female workers (% of female employment); FDI = foreign direct investment net inflows (% of GDP); DCPS = domestic credit to the private sector (% of GDP) as a proxy for financial services; SMC = stock market capitalization in Nigeria (% of GDP); FSE = female secondary school enrollment (% of GDP); EXCR = official exchange rate (LCU per US$, period average); and INF = inflation rate; β_0 = constant; β_1 to β_6 = parameter estimates; t = trend factor; and ε = unexplained factors.

Model 2

$$LFPR_t = \alpha_0 + \alpha_1 FDI_{1t} + \alpha_2 DCPS_{2t} + \alpha_3 SMC_{3t} + \alpha_4 FSE_{4t} + \alpha_5 EXCR_{5t} + \alpha_6 INF_{6t} + \varepsilon_{2t}.$$

where: LFPR = female labor force participation rate (% of female population ages 15+); other variables are as previously defined; α_0 = constant; α_1 to α_6 = parameter estimates.

Model 3

$$FLR_t = \Psi_0 + \Psi_1 FDI_{1t} + \Psi_2 DCPS_{2t} + \Psi_3 SMC_{3t} + \Psi_4 FSE_{4t} + \Psi_5 EXCR_{5t} + \Psi_6 INF_{6t} + \varepsilon_{3t}.$$

where FLR = Female literacy rate (2010-2022%), a binary dummy variable was used from 2000 to 2009. other variables are as previously defined; Ψ_0 = constant; Ψ_1 to Ψ_6 = parameter estimates.

Here are some reasons why the inflation rate and exchange rate were chosen as control variables in a proxy analysis of the impact of financial globalization on Nigerian women's vulnerability:

1. Indicators of Economic Vulnerability: High inflation and exchange rates can erode the purchasing power of a population, affecting the cost of living and the ability to meet basic needs. These can lead to income insecurity and financial stress as changes in these rates may influence the economic circumstances of women in Nigeria.
2. Potential Confounding Variables: Abnormal inflation and exchange rates are often considered confounding factors, as they can independently affect a population's well-being. By including these variables as control factors, the study aims to isolate the specific impact of financial globalization on women's vulnerability.

3. Policy Implications: Inflation and exchange rates are key macroeconomic policy concerns. Changes in these variables may be driven by government policies and economic events, which can, in turn, impact the vulnerability of women. By including these control variables, the study can help assess the effectiveness of macroeconomic policies in mitigating or exacerbating women's vulnerability in the context of financial globalization.

Table 1: Data description and sources

Variables	Description	Source
GWG	Gender wage gap captured by wage and salaried female workers (% of female employment)	World Development Indicator, World Bank, 2023
LFPR	Female labor force participation rate (% of female population ages 15+)	World Development Indicator, World Bank, 2023
FLR	Literacy rate, adult female (% of female aged 15 and above)	World Development Indicator, World Bank, 2023
FDI	Foreign direct investment net inflows (% of GDP)	World Development Indicator, World Bank, 2023
DCPS	Domestic credit to the private sector (% of GDP)	World Development Indicator, World Bank, 2023
SMC	Stock market capitalization in Nigeria (% of GDP)	World Development Indicator, World Bank, 2023
FSE	Female secondary school enrollment (% of GDP)	UNESCO Institute for Statistics, 2023
EXCR	Official exchange rate (LCU per US$, period average)	World Development Indicator, World Bank, 2023
INF	Inflation, consumer prices (% annual)	World Development Indicator, World Bank, 2023

Source: Authors' compilation (2024)

V. Empirical Analysis

Descriptive Statistics

Descriptive statistics was carried out to verify the characteristics of data used in the analysis. These include the measures of central tendency, dispersion and normality. The descriptive statistics in Table 1 indicates that foreign direct investment net inflows (% of GDP) and female labor force participation rate declined from maximum values of 2.90 in 2009 and 56.99 in 2000 to -0.03 in 2022 and 47.59 in 2020 respectively while domestic credit to the private sector (% of GDP) and gender wage gap rose from minimum values of 8.08 in 2002 and 7.87 in in 2002 to 14.09 in 2022 and 14.63 in 2019 respectively. Inflation rate and stock market capitalization (% of GDP) declined from 18.87 in 2001 and 30.80 in 2007 to 5.39 in 2007 and 2.48 in 2002 respectively whereas Exchange rate and female literacy rates rose from 9.90 in 2000 and 1.00 in 2000 to 425.97 in 2022 and 71.36 in 2021 respectively. Female secondary school enrollment (% of GDP) increased from 22.44 in 2000 to 52.22 in 2013. The disparity of foreign direct investment and stock market capitalization about their sample means were with standard deviations of 0.82 and 5.64 respectively. The skewness values indicate that FDI, DCPS and SMC are positively skewed implying that they have longer tails on the right whereas GWG, LFPR, INF, FLR, EXCR and FSE are negatively skewed implying that they have a longer left tail. The kurtosis values indicate that DCPS is mesokurtic while the p-values of the Jarque-Bera statistic reveal that all the variables are normally distributed at 5% significance level except SMC with Jarque-Bera p-value less than 0.05.

Correlation Matrix

The correlation matrix which shows the level of association between the variables of the model is in Table 2. It shows that GWG positively correlated with all the explanatory variables except inflation rate the correlated negatively with it whereas LFPR is negatively correlated with all the variables except FDI and INF that are positively correlated with it. It further indicates that Female literacy rate is positively correlated with all the explanatory variables except DCPS and INF that are negatively correlated with it. The correlation matrix indicates absence of multicollinearity among the explanatory variables as all of them are correlated at a coefficient less than 0.80. Note that high correlation between the dependent variable and an independent variable as seen between GWG and FSE is not an econometrics problem as we can still estimate the impact of FSE on GWG accurately.

Unit Root Test

To determine the stationarity properties of data used in the empirical analysis, the study carried out unit root tests as presented in Tables 3a and 3b.

Table 1: Descriptive statistics

	FDI	DCPS	GWG	LFPR	INF	SMC	FLR	EXCR	FSE
Mean	1.396036	11.90368	11.83370	53.62025	12.62652	11.06523	37.78565	92.12734	36.98016
Median	1.523782	11.53321	12.49000	56.74200	12.54000	11.44354	61.05000	118.5667	40.33626
Maximum	2.900249	19.62560	14.63000	56.99300	18.87000	30.80067	71.36000	157.5000	52.22863
Minimum	-0.039128	8.084343	7.870000	47.59300	5.390000	2.488777	1.000000	9.909492	22.44352
Std. Dev.	0.828343	3.125066	2.250593	3.720931	3.807985	5.642265	33.10953	56.35215	8.379112
Skewness	0.106225	0.808602	-0.474949	-0.376344	-0.048576	1.574543	-0.241162	-0.406048	-0.202029
Kurtosis	2.035687	3.340072	1.944844	1.391278	2.159071	7.802345	1.086987	1.445358	1.921561
Jarque-Bera	0.934408	2.617206	1.931674	3.023089	0.686742	31.60513	3.730079	1.023292	1.271032
Probability	0.626752	0.270197	0.380664	0.220569	0.709375	0.000000	0.154890	0.599508	0.529662
Observations	23	23	23	23	23	23	23	23	23

Source: Authors' computation using EViews 10

Table 2: Correlation matrix

Correlation	FDI	DCPS	GWG	LFPR	INF	SMC	FLR	EXCR	FSE
FDI	1.000000								
DCPS	0.510072	1.000000							
GWG	0.429589	0.694603	1.000000						
LFPR	0.160144	-0.100805	-0.334074	1.000000					
INF	-0.075543	0.334580	0.390712	0.103198	1.000000				
SMC	0.264211	0.560355	0.640800	-0.217851	0.394499	1.000000			
FLR	0.189453	-0.098302	0.041237	0.054827	-0.392883	0.145239	1.000000		
EXCR	0.487236	0.608660	0.785150	-0.271910	-0.598026	0.582630	0.323791	1.000000	
FSE	0.218488	0.551358	0.880645	-0.664152	-0.422224	0.533817	0.037545	0.810187	1.000000

Source: Authors' computation using EViews 10

FDI = Foreign direct investment net inflows (% of GDP); DCPS = Domestic credit to the private sector (% of GDP) as a proxy for financial services; GWG = Gender wage gap captured by wage and salaried female workers (% of female employment); LFPR = Female labor force participation rate (% of female population ages 15+); INF = Inflation rate; SMC = Stock market capitalization in Nigeria (% of GDP); FLR = Female literacy rate (2010-2021%); EXCR = Exchange rate; FSE = Female secondary school enrollment (% of GDP).

Table 3a: Results of ADF and PP unit root tests of stationarity

	ADF Test			PP Test		
Variables	t- statistic I(0)	t- statistic I(1)	Result	t- statistic I(0)	t- statistic I(1)	Result
FDI	-0.362033	-7.332425*	I(1)	-1.183846	-7.564961*	I(1)
DCPS	-2.983156***	-3.656145**	I(0)	-2.038749	-3.242577**	I(1)
GWG	-1.167047	-3.326291**	I(1)	-1.168120	-3.179477**	I(1)
LFPR	0.295526	-3.190701**	I(1)	0.123907	-3.163789**	I(1)
INF	-2.879784***	-4.420054*	I(0)	-3.611122**	-7.391007*	I(0)
SMC	-2.932088***	-6.072568*	I(0)	-2.862950***	-7.033934*	I(0)
FLR	-0.934027	-4.580170*	I(1)	-0.934027	-4.580195*	I(1)
EXCR	-0.978030	-4.446789*	I(1)	-0.978030	-4.446789*	I(1)
FSE	-1.564302	-5.706428*	I(1)	-1.564302	-5.706428*	I(1)

Source: Authors' computation using EViews 10
Note: *, **, *** implies rejection of the null hypothesis at 1%, 5%, or 10% level of significance.

The augmented Dickey-Fuller (ADF) and Pillips-Peron (PP) unit root tests of the series in Table 3a reveal that some of the variables are stationary at first difference while some are stationary at levels. Thus, the variables are integrated of I(1) and I(0). Therefore, the null hypothesis of unit root is rejected since the ADF and PP tests statistics are greater than the critical values at the indicated levels of significance.

Table 3b: Results of unit root test with unknown single structural break

	Level form I(0)			First difference form I(1)		
	t-Statistic	Break Date		t-Statistic	Break Date	Results
FDI	-4.330358***	2013		-8.208638*	2010	I(0)
DCPS	-5.981032*	2006		-4.547272**	2007	I(0)
GWG	-2.401145	2009		-4.905295**	2015	I(1)
LFPR	-6.073045*	2011		-4.374065***	2013	I(0)
INF	-4.203859***	2007		-6.627480*	2006	I(0)
SMC	-5.312324*	2007		-8.866756*	2007	I(0)
FLR	-33.81669*	2009		-154.4179*	2010	I(0)
EXCR	-6.646415*	2007		-8.562222*	2008	I(0)
FSE	-3.380808	2008		-7.113200*	2013	I(1)

Source: Authors' computation using EViews 10
Note: *, **, *** implies rejection of the null hypothesis at 1%, 5%, or 10% level of significance.

Table 3b shows a structural break in all the data series. For gender wage gap capture by wage and salaried female workers (% of female employment), a structural break was found in the series in 2009; female labor force participation rate (% of female population ages 15+) was found in 2011 whereas that of Female literacy rate was found in 2009 which is an indication that these subsectors witnessed significant policy shocks at the selected breakpoint dates. It was in 2009 that the National Population Commission (NPC) observed that women with higher educational qualifications are more likely to be in formal wage employment than those at primary level of education. Consequently, parents were motivated to train their girl child to at least secondary level of education; and the girl child was motivated to put more ambition in her studies. This led to remarkable participation of women in the Nigerian labor force in 2011. The stationary properties validated the ADF and PP tests results of I(1) and I(0) in table 3a. The test was implemented with intercept. Having determined the stationarity properties, the results of the ARDL bounds test to cointegration for models 1, 2 and 3 are presented in Table 4.

Table 4: ARDL Bounds Test to Cointegration Result for Models 1, 2 and 3

Model 1	Result	K	Model 2	Result	K
F-Statistic Value	= 8.620586	6	F-Statistic Value	= 9.330247	6
	Model 3	**Result**	**K**		
	F-Statistic Value	= 22.63708	6		
	Critical Value Bounds				
	Significance	10 Bounds	I1 Bounds		
	10%	1.99	2.94		
	5%	2.27	3.28		
	2.5%	2.55	3.61		
	1%	2.88	3.99		

Source: Authors' computation using Eviews 10

Result of cointegration in Table 4 indicates that a long run relationship exists between the GWG and the independent variables of model 1; between LFPR and the independent variables of model 2; and FLR and the independent variables of model 3 because the F-statistic values of 8.620586, 9.330247 and 22.63708 are greater than the 5% upper bound critical value of 3.28 for models 1, 2 and 3 respectively. The study therefore estimated both short run and long results since cointegration is dictated. The lag selection criteria used in the estimation of the ARDL results of models 1, 2 and 3 are presented in Figures 1, 2 and 3 respectively.

The Akaike information criterion (AIC) was the model chosen lag selection criterion according to Figures 1, 2 and 3. The AIC model lag selection criterion ranges from 1.72 to 1.96 for model 1; 1.1 to 1.7 for model 2, and 5.4 to 6.8 for model 3. The long-run result was based on the Akaike selection criterion, ARDL (1,1,1,0,0,1,0) for model 1; ARDL (1,1,1,1,1,1,0) for model 2; and ARDL (1,0,1,1,1,1,1) for model 3.
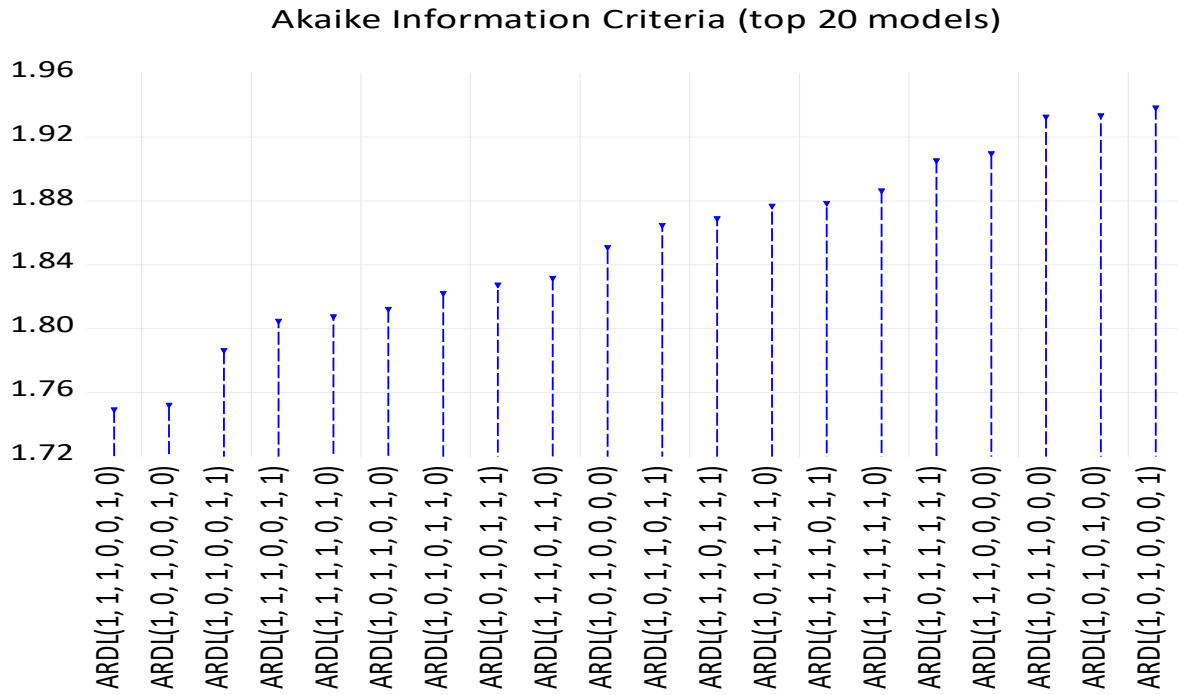
Figure 1: Graph of ARDL Lag Selection Criteria for Model 1
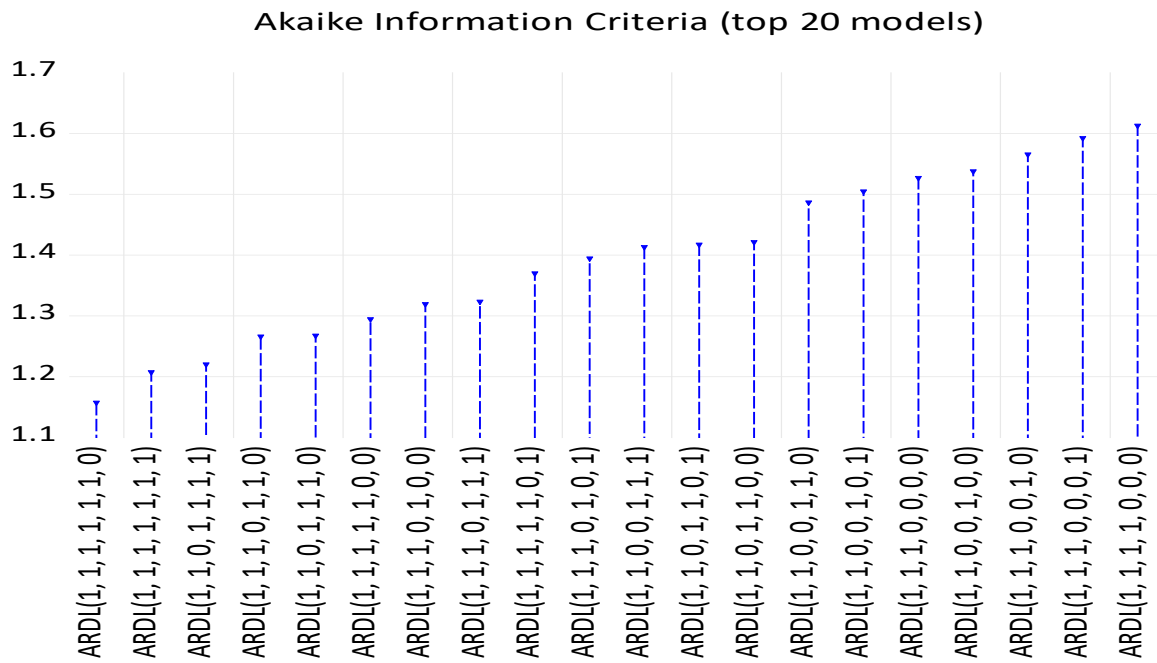**Source: Authors' computation using Eviews 10**

Figure 2: Graph of ARDL Lag Selection Criteria for Model 2
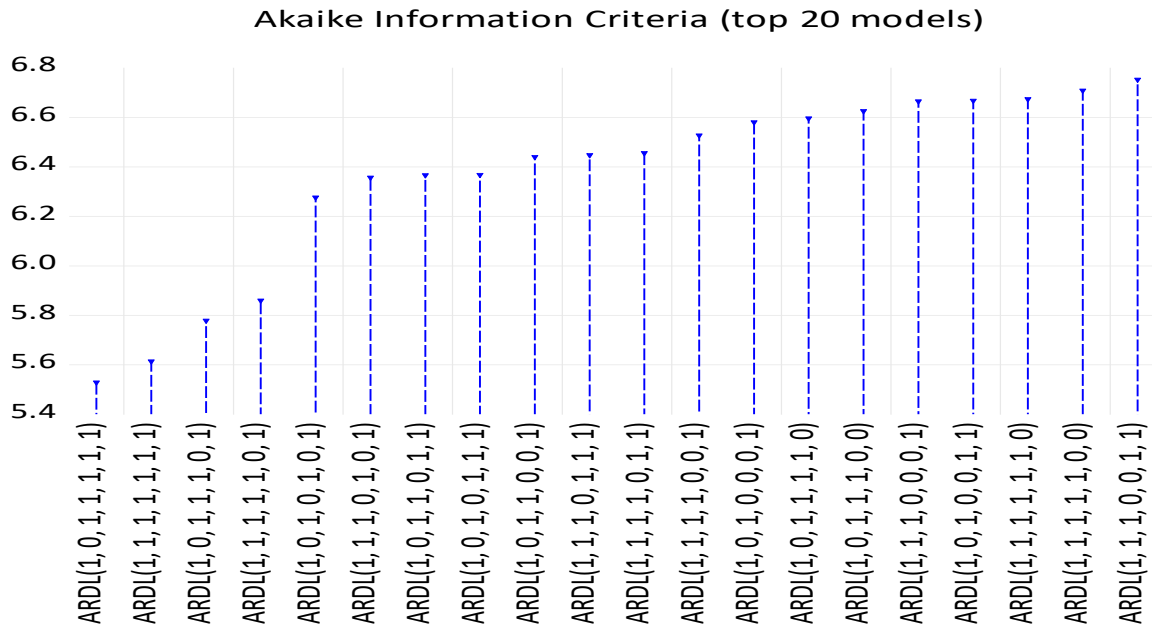**Source: Authors' computation using Eviews 10**

Figure 3: Graph of ARDL Lag Selection Criteria for Model 3
Source: Authors' computation using Eviews 10

The short run and long run results of models 1, 2 and 3 are presented in columns 1, 2, and 3 of Table 5 respectively. The short-run result of model 1 in Table 5 indicates that the previous value of gender wage gap captured by wage and salaried female workers at lag 1 (GWG(-1)) impacted positively and insignificantly on GWG as 1% increase in it led to 0.18% increase in GWG. Foreign direct investment (FDI) and its previous value at lag 1 (FDI(-1)) impacted positively and insignificantly on GWG as 1% increase in FDI and its lag 1 generated 0.36% and 0.07% increase in GWG respectively. This implies that FDI which is a subcategory of capital inflows has contributed in widening the wage gap between male and female workers in Nigeria. This finding supports Dimitrios et al. (2014) but contradicts Beck (2006). Domestic credit to the private sector (DCPS) reduced GWG by 0.08% whereas its previous value at lag 1 (DCPS(-1) widened GWG by 0.12%. Stock market capitalization (SMC) made positive and insignificant impact on GWG as 1% increase in SMC increased GWG by 0.017%. this result agrees with Sethi et al (2021). Female secondary school enrollment (FSE) is negative and insignificant as it reduced GWG by 0.018%. this result is tandem with a priori expectation as education is expected to improve wages and female income status. Exchange rate (EXCR) reduced GWG by 0.0079% whereas its previous value at lag 1 (EXCR(-1) increased GWG by 0.0049%. Inflation (INF) reduced GWG by 0.036% in the short-run. The structural break (emanating from policy changes) found in GWG in 2009 (BK2009) reduced GWG by 0.95%. The error correction term is significant and negative and indicates that only 18% of the disequilibrium in the short-run is corrected annually to ensure convergence in the long-run. This speed of adjustment is very low which may be attributed to vulnerable state of most Nigerian women emanating from discrimination against women in Nigeria in relation to the variables of the model.

Table 5: The short run and long run results of models 1, 2 and 3

Model 1 (Dependent Variable: GWG)				Model 2 (Dependent Variable: LFPR)				Model 3 (Dependent Variable: LFR)			
Short-run result		Long-run result		Short-run result		Long-run result		Short-run result		Long-run result	
Variable	Results	Variable	Results	Variable	Results	Variable	Results	Variable	Results	Variable	Results
GWG(-1)	0.180906	FDI	0.406082	LFPR(-1)	-1.050432*	FDI	2.119691*	FLR(-1)	-0.583251*	FDI	10.01072***
FDI(-1)	0.073463	DCPS	0.692643	FDI(-1)	2.226592*	DCPS	0.055540	FDI	5.838765**	DCPS	5.190322**
DCPS(-1)	0.125303	SMC	0.094628	DCPS(-1)	0.058341	SMC	0.004114***	DCPS(-1)	3.027261*	SMC	-2.417150*
SMC	0.017119	FSE	0.103428	SMC(-1)	0.004321	EXCR	-0.012360*	SMC(-1)	1.409805**	FSE	2.660790*
FSE	-0.018711	EXCR	0.027636	EXCR(-1)	-0.012984**	FSE	-0.138086*	FSE(-1)	1.551909*	EXCR	0.159802*
EXCR(-1)	0.004999	INF	-0.201436	FSE(-1)	-0.145050*	INF	0.119905*	EXCR(-1)	0.093205*	INF	-4.540139*
INF	-0.036441	C	5.870717	INF	0.125952**	C	56.01895*	INF(-1)	2.648041*	C	-74.24699*
D(FDI)	0.366799			D(FDI)	0.947831**			D(DCPS)	1.683417		
D(DCPS)	-0.081052			D(DCPS)	-0.018481			D(SMC)	-0.149009		
D(EXCR)	-0.007938			D(SMC)	0.045657***			D(FSE)	0.661439**		
BK2009	-0.950722			D(EXCR)	-0.031621***			D(EXCR)	0.017458		
CointEq(-1)	-0.180906*			D(FSE)	-0.100438*			D(INF)	-0.884186**		
				BK2011	2.565186*			BK2009	-38.95695*		
				CointEq(-1)	-0.650432*			CointEq(-1)	-0.583251*		
R-squared	0.974535			R-squared	0.996081			R-squared	0.996004		
Adjusted R-squared	0.946524			Adjusted R-squared	0.989712			Adjusted R-squared	0.989511		
S.E. of regression	0.498804			S.E. of regression	0.378682			S.E. of regression	3.367468		
Sum squared resid	2.488050			Sum squared resid	1.147200			Sum squared resid	90.71873		
F-statistic	34.79089			F-statistic	156.3981			F-statistic	153.3863		
Prob(F-statistic)	0.000002			Prob(F-statistic)	0.000000			Prob(F-statistic)	0.000000		
Durbin-Watson stat	2.073439			Durbin-Watson stat	2.039410			Durbin-Watson stat	1.845721		

Source: Authors' computation using Eviews 10

Note: *, **, *** indicates significant variables of the models at 1%, 5% and 10% significance levels respectively

The long run result of model 1 reveals that FDI, DCPS, SMC and EXCR made positive and insignificant impact in GWG whereas FSE and INF made negative and insignificant impact on GWG. Specifically, 1% increase in FDI, DCPS, SMC and EXCR generated about 0.40%, 0.69%, 0.09% and 0.02% in GWG respectively while 1% increase in FSE and INF led to about 0.10% and 0.20 decline in GWG respectively. These long-run results are consistent with the short-run impact of the variables and in line with Dollar (2004) and Basu (2006). The Adjusted R^2 shows that the explanatory variables jointly explained about 94% variations in GWG. The p-value

of the F-statistic (0.000002) indicates that model 1 is significant in explaining GWG while Durbin-Watson statistic of 2.07 indicates absence of autocorrelation which was confirmed by the second order test in Table 7.

The short-run result of model 2 in Table 5 shows that the previous value of female labor force participation rate (LFPR(-1) reduced LFPR significantly by 1.05%. FDI and its lag 1 (FDI(-1)) made positive and significant impact on LFPR as 1% change in FDI and FDI(-1) increased LFPR by 0.94% and 2.22% respectively. This finding agrees with Asongu et al. (2019). DCPS and its lag 1 (DCPS(-1)) impacted insignificantly but negatively and positively on LFPR respectively. Precisely, 1% increase in DCPS reduced LFPR by 0.01% whereas that of its lag 1 (DCPS(-1)) increased LFPR by 0.05%. SMC and its lag 1 (SMC(-1)) made positive and significant impact on LFPR as 1% increase in SMC and its lag 1 (SMC(-1)) led to 0.04% and 0.004% increase in LFPR respectively. EXCR and its lag 1 (EXCR(-1)) impacted negatively and insignificantly on LFPR as 1% increase in EXCR and 1 (EXCR(-1)) reduced LFPR by 0.03% and 0.01% respectively. FSE and its lag 1 (FSE(-1)) produced similar result as 1% increase in FSE and (FSE(-1)) led to 0.10% and 0.14% decline in LFPR respectively. This result contradicts human capital development theory which suggests that education improves skills which enhance employment opportunities. A possible reason for this may be high rate of school dropout among education enrollees which lowers completion rate. INF impacted positively and significantly on LFPR as it increased it increased LFPR by 0.12%. The structural break (emanating from policy changes) found in LFPR in 2011 (BK2011) made significant positive impact on LFPR to the tune of 2.56%. The error correction term is significant and negative and indicates that about 65% of the short-run deviations from equilibrium are corrected annually to ensure convergence in the long-run. The long-run result of model 2 in Table 5 indicates that all the variables impacted significantly on LFPR. FDI, DCPS, SMC and INF made positive impact on LFPR whereas EXCR and FSE made negative impact on LFPR. Precisely, 1% increase in FDI, DCPS, SMC and INF led to 2.11%, 0.05%, 0.004% and 0.11% in LFPR respectively while 1% increase in EXCR and FSE reduced LFPR by 0.01% and 0.13% respectively. Except FSE, most of these results support theoretical literature. The Adjusted R^2 shows that the explanatory variables jointly explained about 98% variations in LFPR. The p-value of the F-statistic (0.000000) indicates that model 2 is significant in explaining LFPR while Durbin-Watson statistic of 2.03 indicates absence of autocorrelation which was confirmed by the second order test in Table 7.

The short-run result of model 3 in Table 5 reveals that previous value of female literacy (FLR(-1)) impacted negatively and significantly on FLR as it reduced it by 0.58%. FDI made positive and significant impact on female literacy rate (FLR) as 1% increase in FDI increased FLR by 5.83%. DCPS made negative and insignificant impact on FLR whereas it previous value at lag 1 (DCPS(-1)) impacted positively and significantly on FLR. 1% increase in DCPS reduced FLR by 1.68% while that of DCPS(-1) increased FLR by 3.02%. SMC and its lag 1(SMC(-1)) impacted negatively but only its lag 1 impact is significant. 1% increase in SMC and SMC(-1) reduced FLR by 0.14% and 1.40% respectively. FSE and its previous value at lag 1 (FSE(-1)) made positive and significant impact on FLR as 1% increase in FSE and FSE(-1) generated 0.66% and 1.55% increase in FLR respectively. EXCR impacted negatively and insignificantly on FLR whereas its previous value at lag 1 (EXCR(-1)) made positive and significant impact on FLR. 1% increase in EXCR led to 0.01% decline in FLR while that of EXCR(-1) led to 0.09% increase in FLR. INF and its lag 1 (INF(-1)) impacted negatively and significantly on FLR as 1% increase in INF and INF(-1) reduced FLR by 0.88% and 2.68% respectively. The structural break (emanating from policy changes) found in FLR in 2009 (BK2009) made significant negative impact on FLR to the tune of 38.95%. The error correction term is significant and negative and indicates that about 58% of the short-run deviations from equilibrium are corrected annually to ensure convergence in the long-run. The long-run result in Table 5 shows that FDI, DCPS, FSE and EXCR made significant positive impact on FLR whereas SMC and INF made significant negative impact on FLR. Precisely, 1% increase in FDI, DCPS, FSE and EXCR generated 10.01%, 5.19%, 2.66% and 0.15% increase in FLR respectively while 1% increase in SMC and INF led to 2.41% and 4.54% decline in FLR respectively. The Adjusted R^2 indicates that the explanatory variables jointly explained about 98% variations in FLR. The p-value of the F-statistic (0.000000) shows that model 3 is significant in explaining FLR while Durbin-Watson statistic of 1.84 which is approximately 2 implies absence of autocorrelation .

Which was confirmed by the second order test in Table 7. Granger causality test is presented in Table 6.

Table 6: Granger causality result

Model 1				Model 2			
Null Hypothesis	Obs	Prob.	Conclusion	Null Hypothesis	Obs	Prob.	Conclusion
FDI does not Granger Cause GWG			Accept	FDI does not Granger Cause LFPR			Reject
			Accept				Accept
GWG does not Granger Cause FDI	21	0.7993		LFPR does not Granger Cause FDI	21	0.0017	
		0.0900				0.7466	
DCPS does not Granger Cause GWG			Accept	DCPS does not Granger Cause LFPR		0.6781	Accept
			Accept			0.7474	Accept
GWG does not Granger Cause DCPS	21	0.0566		LFPR does not Granger Cause DCPS	21		
		0.2535					

Null Hypothesis	Obs	Prob	Conclusion	Null Hypothesis	Obs	Prob	Conclusion
SMC does not Granger Cause GWG GWG does not Granger Cause SMC	21	0.7290 0.9577	Accept Accept	SMC does not Granger Cause LFPR LFPR does not Granger Cause SMC	21	0.0270 0.8553	Reject Accept
FSE does not Granger Cause GWG GWG does not Granger Cause FSE	21	0.7756 0.0141	Accept Reject	FSE does not Granger Cause LFPR LFPR does not Granger Cause FSE	21	0.0036 0.0315	Reject Reject
EXCR does not Granger Cause GWG GWG does not Granger Cause EXCR	21	0.0651 0.3384	Accept Accept	EXCR does not Granger Cause LFPR LFPR does not Granger Cause EXCR	21	0.0275 0.6753	Reject Accept
INF does not Granger Cause GWG GWG does not Granger Cause INF	21	0.6743 0.8858	Accept Accept	INF does not Granger Cause LFPR LFPR does not Granger Cause INF	21	1.69740 0.01784	Accept Reject

Model 3

Null Hypothesis	Obs	Prob.	Conclusion
FDI does not Granger Cause FLR FLR does not Granger Cause FDI	21	0.0139 0.2979	Reject Accept
DCPS does not Granger Cause FLR FLR does not Granger Cause DCPS	21	0.0003 0.3003	Reject Accept
SMC does not Granger Cause FLR FLR does not Granger Cause SMC	21	0.0011 0.8559	Reject Accept
FSE does not Granger Cause FLR FLR does not Granger Cause FSE	21	0.0009 0.0132	Reject Reject
EXCR does not Granger Cause FLR FLR does not Granger Cause EXCR	21	0.4080 0.4222	Accept Accept
INF does not Granger Cause FLR FLR does not Granger Cause INF	21	0.9776 0.6519	Accept Accept

Source: Authors' computation using Eviews 10

The Granger causality test carried out to actualize the fourth objective of the study which is to determine the direction of causality between the components of financial globalization and those of Nigerian women's vulnerability produced the results in Table 6.

Model 1 causality result at the left side of Table 6 reveals no causality between FDI and GWG; DCPS and GWG; SMC and GWG; FSE and GWG; EXCR and GWG; and INF and GWG as the P-values are greater than 0.05. This is a confirmation that the insignificance of the parameters estimates of model 1 is not a fluke. However, causality test of model 2 at the right side of Table 6 established a unidirectional causality from FDI to LFPR; SMC to LFPR; EXCR to LFPR; INF to LFPR; and bidirectional causality between FSE and LFPR as their p-values are less than 0.05. The detection of causality between LFPR and these variables confirms the high significant impact of these variables on LFPR. There is no causality between DCPS and LFPR. Causality result of model 3 in the lower part of Table 6 indicates unidirectional causality from FDI to FLR; DCPS to FLR; SMC to FLR; and bidirectional causality between FSE and FLR; and no causality between EXCR and FLR; and INF and FLR. Again, these results indicate that most of variables of the models are predictors of LFPR and the high level of significant impact of these variables confirms it.

The parameter estimates and the models were subjected to econometrics tests in order to confirm their suitability and reliability for forecasting and policy formulation. The result these tests are presented in Table 7.
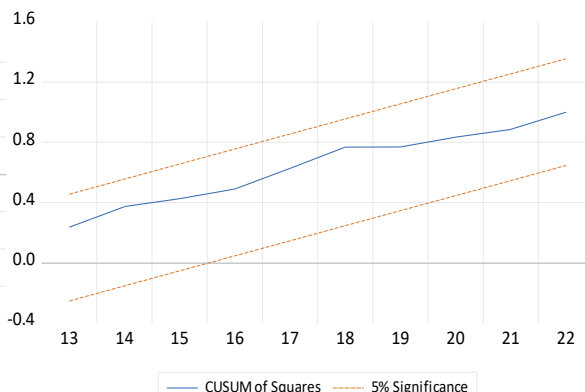
Table 7: Diagnostic tests

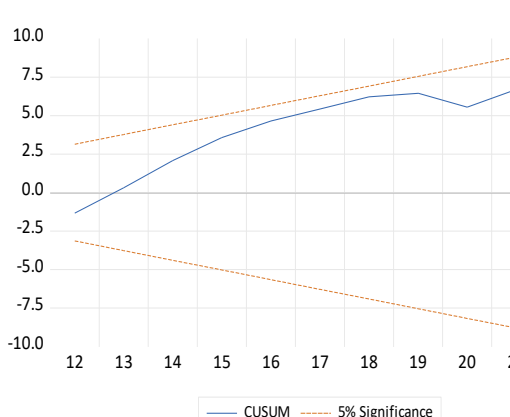| Model 1		Model 2		Model 3	
Test	P-value	Test	P-value	Test	P-value
Autocorrelation	0.7203	Autocorrelation	0.6810	Autocorrelation	0.9299
Heteroskedasticity	0.4177	Heteroskedasticity	0.3294	Heteroskedasticity	0.8463
Normality	0.782013	Normality	0.760932	Normality	0.461551

Source: Authors' computation using Eviews 10

Results in Table 7 indicate absence of autocorrelation and heteroskedasticity; and further show that the data used in the analysis are normally distributed as their probability values (P-values) are greater than 0.05. The model stability test which is very crucial was conducted using the CUSUM and CUSUM of squares as presented in Figures 4, 5, 6, 7, 8 and 9. The CUSUM and CUSUM of squares indicate that the blue lines appear within the acceptable region, hence, the three models are stable and the estimated parameters are suitable for policy making.
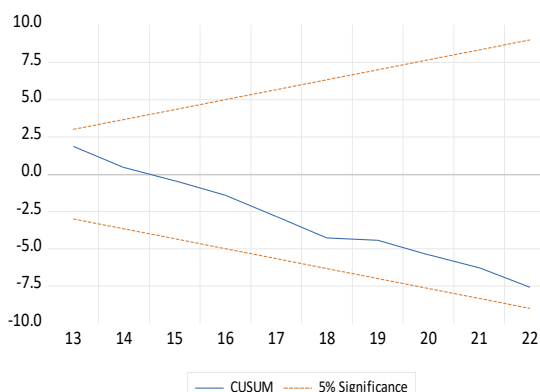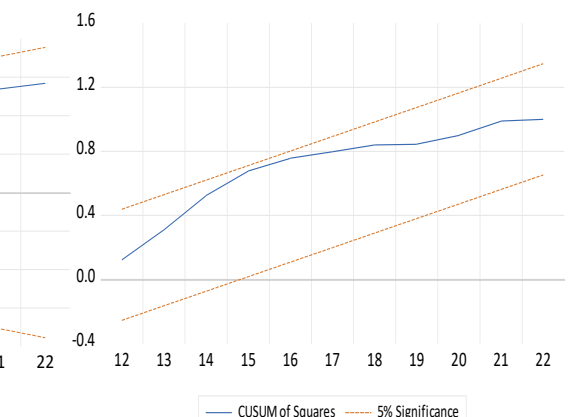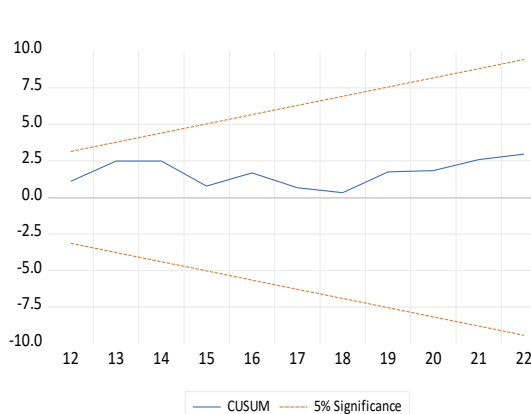

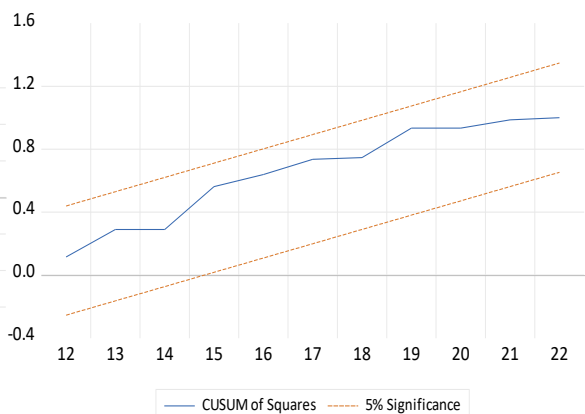**Figures 4: CUSUM test for model 1**   **Figures 5: CUSUM of Squares test for model 1**

Figures 6: CUSUM test for model 2   **Figures 7: CUSUM of Squares test for model 1**

Figures 8: CUSUM test for model 3   **Figures 9: CUSUM of Squares test for model 9**
Source: Authors' computation using Eviews 10

VI.   Conclusion And Policy Recommendation

This paper empirically investigated financial globalization and Nigerian women's vulnerability by specifically focusing on the impact of foreign direct investment (FDI), domestic credit to the private sector (DCPS) and stock market capitalization (SMC) on gender wage gap (GWG), female labor participation rate (LFPR) and female literacy rate (FLR) and their direction of causality. Related literature review was robust. Unit root tests indicated a mixture of I(1) and I(0) which led to the adoption ARDL estimation technique. Cointegration

test revealed long-run relationship between the components of financial globalization and Nigerian women's vulnerability which necessitated the estimation of both short-run and long-run elasticities of the variables. Findings show that FDI and SMC widened gender wage gap and promoted LFPR in both short-run and long-run whereas DCPS produced mixed results. SMC reduced LFPR while FDI and DCPS improved it in both periods. Female secondary school enrollment, exchange and inflation rates include as control variables produced mixed results. The Granger causality test detected some of the components of financial globalization as predictors of some of the components of Nigerian women's vulnerability with some of them having reverse feedback.

        Based on the findings, the study concludes that financial globalization helps to reduce Nigerian women's vulnerability and recommends the following: the government should create conducive economic, commercial and business policies and a secure environment for foreign direct investment to Nigeria; Laws and policies should be instituted to eliminate economic, cultural and social discrimination against women and give women equal access to financial services and education as their male counterparts. It is imperative that laws prohibiting gender wage discrimination, particularly in the private sector, be enacted and rigorously implemented; women should be given greater opportunities to participate in the Nigerian stock exchange market and labor force.; Inflation and exchange rate policies in Nigeria should be reformulated so that they are compatible with economic, business, and social realities in order to mitigate their negative impact on women.