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GLOBAL UNCERTAINTY AND UNEMPLOYMENT RATE IN THE UK AND NIGERIA: TRIGGER OF REGIME CHANGE AND ITS IMPLICATIONS FOR POLICY ANALYSIS

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Abstract:
This study applies a threshold regression model to explore the impact of uncertainty on unemployment in Nigeria and United Kingdom with data from 1970 to 2021. The empirical results show a significant threshold effect of uncertainty on unemployment. The threshold effect estimated value of global uncertainty on unemployment is significantly higher in Nigeria than in the UK. The trigger estimated value for Nigeria and the UK are 0.421 and 0.092 respectively. However, the impact differs in magnitude. While below the threshold value of 0.092, the impact is higher in the UK than in Nigeria, but the reverse holds beyond this threshold. This shows the differential role and impact of sturdy policy formulation and implementation between the two countries. Unemployment rate is lower in the UK than in Nigeria. Finally, the relationship between global uncertainty and unemployment is linear for Nigeria and positive. However, a non-linear and inverted U-shape relationship was confirmed for the UK. It becomes imperative to build world uncertainty into government future policies formulation if the impacts of vagaries of uncertainty on macroeconomic stability and business cycle fluctuations would be mitigated.

Keywords:
Unemployment rates, Economic fluctuations, Threshold regression, Nigeria, United Kingdom.

JEL Classification:
E24, O11, E24, P51 P51, Q51, Z3

INTRODUCTION

Recent development around the world depicts the tendencies of uncertainty and unpredictability of government policies to impede the attainment of sustainable development objectives. The aftermaths of COVID-19 arouse the need for alteration and inclusion of uncertainty in developmental plans and projections of the government reaction function. Uncertainty shocks play a significant role in trade cycles (Jurado *et al.*, 2015). It characterizes one of the challenges that policy makers need a coordinated and proactive solution in both developed and developing economies. The global financial crisis of 2008 and the recent COVID-19

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pandemic has shown that uncertain economic outlook should be matched with adequate policy response. One of the fallouts of inadequate policy response to economic fluctuations is the disequilibrium in the labor market. It is therefore important to underscore the role of uncertainty in shaping the employment level in any country (Kandoussi and Langot, 2020).

Ahir, *et al* (2022) attempts to measure uncertainty by the frequency of the word "uncertainty" or related terms were used over a period of time in the quarterly Economists intelligence reports.

However, it is a multidimensional concept that cut across financial, macroeconomic and pandemic. Economic uncertainty has continued to be pronounced due to financial crisis, natural disasters, political crisis and maneuverings as well as government announcement and peoples' expectations. According to Van Robays, (2016), the crude oil market is another major source of fluctuation around the world. These sources of uncertainty are often arguably difficult to predict. However, their outcome is usually impactful on the economy for a long while if not well managed.

The frequency and magnitude of uncertainty usually lead to persistent effects of low economic activities, recession and low employment opportunities. It has been suggested in the literature that the effect of economic uncertainty is not static, but changes overtime depending on prevailing macro-economic conditions (Fontaine *et al.*, 2018; Angelini *et al.,* 2018; Arellano *et al.*, 2019).

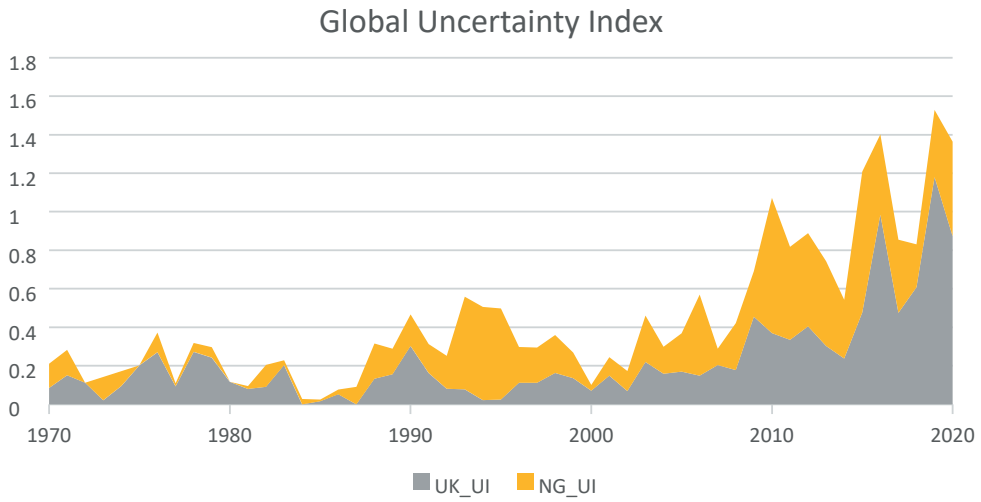
This present study attempts to examine the impact of global economic uncertainty on unemployment in a developed and developing countries. More specifically, the research seeks to determine the threshold that triggers regime change in unemployment rate and the nature of non-linearity that exist between uncertainty and unemployment in the United Kingdom and Nigeria. It can be argued that thresholds are important in determining the extent to which the economy can be negatively or positively affected by uncertainty. A number of previous studies have employed the matching model (DMP model) framework to analyze the labor market fluctuations phenomenon (Petrosky-Nadeau *et al*, 2018; Pizzinelli, *et al*, 2020).

A few studies have attempted to examine the role of economic uncertainty on macroeconomy (Bloom, 2009; International Monetary Fund, 2012; Baker *et al*., 2016; Basu and Bundick, 2017; Okafor and Lokossou, 2018). There is no consensus reached in the literature on the extent and direction of impact of uncertainty on macroeconomic variables, especially, unemployment. Uncertainty spikes tend to affect different economies differently. While the impact of uncertainty will be expected to be significantly higher in developing countries than in developing countries, empirical evidence will be needful to justify such a position.

National Bureau of Statistics (2020) shows that the unemployment rate in Nigeria rose to 33.3 percent in the fourth quarter of 2020 from 27.1 percent in the second quarter of 2020. The UK unemployment rate in the first quarter of 2021 was 4.9 percent. It fell to 4.7 percent in the second quarter of the same period (Office of National Statistics, 2021). This is 0.1 percent below market expectations, thus indicating a recovery process of the labor market from the pandemic.

However, the UK unemployment total as the percentage of total labor force according to ILO (2021) estimate was higher than the world average in the 1990s, but fall below it in 2000. This has continued over the years with the exception of the period of economic recession. Moreover, in relation to the extent or speed of uncertainty spikes, Figure 1.1 shows the relationship of parts to whole overtime. It shows the magnitude of change. Thus, the rate at which World Uncertainty Index changes remains higher in Nigeria than in the UK throughout the period reviewed.

Figure 1.1. World Uncertainty index changes



Source: Ahir, Bloom, and Furceri (2018), "World Uncertainty Index", Stanford mimeo.

Uncertainty has huge and significant impact in developing nations whose economies are largely mono-economy. According to Ahir, *et al* (2018), uncertainty affects the willingness of firms to expand investment and increase employment. Okafor and Lokossou (2018) showed that there is significant impact of macroeconomic uncertainty on real consumption both in the short and long run for euro-zone. Baker, *et al.* (2016) found that policy uncertainty is related with stock price volatility, reduction in investment and employment for the United States. In a study by Folawewo and Adeboje, (2017) low employment elasticity of growth was found in ECOWAS region and the inflation-Phillips curve hypothesis was invalidated. Most of the previous studies that examines the determinants of unemployment failed to incorporate the element of uncertainty into their model-the gap that this present study attempts to fill.

The central question in this study is: how do uncertainty shocks affect unemployment fluctuations? Therefore, this research seeks to determine the impact of uncertainty on unemployment in Nigeria and the United Kingdom and also establish if the relationship between the two variables is linear or non-linear for the countries under consideration. The rest of this study proceeds as follows. Section 2 provides a brief review of the relevant literature. Section 3 describes the theoretical framework, data issues and details the methodology. In Section 4 the main empirical results with are discussions presented and finally, in Section 5, the main findings and the concluding remarks to the study are provided.

BRIEF LITERATURE REVIEW

In this section focus is mainly on two strands of the literature. First is a consideration for the measurement of uncertainty. Second, is on the effects of uncertainty on macroeconomic variables. Uncertainty has been measured in the literature using different approaches depending on the dimension of uncertainty being considered, since the global financial crisis. (Bachmann and Bayer, 2013; Basu and Bundick, 2017; Ozturk and Sheng, 2018; Kurov and Stan, 2018). Common proxies for economic uncertainty are observable and measurable economic indicators (Basu and Bundick, 2017). Jurado *et al.* (2015) suggests considering the volatility of the unforecastable component of important economic

indicators as a measure of uncertainty, Davis (2016) proposes the GEPU using a GDP weighted average of national economic policy uncertainty (EPU) indices. Baker *et al.* (2016) employed newspaper coverage frequency on the term to develop a new index of economic policy uncertainty (EPU). This is also the approach used by Ahir *et al.* (2018) in constructing the world uncertainty index. The index reflects the frequencies of the word "uncertainty" (and its variants) in the Economists Intelligence Unit (EIU) quarterly country reports (see Economic Intelligence Unit, 2024). A number of studies have equally used this approach widely (see Balcilar *et al.*, 2019; Liu and Zhang, 2020; Wang *et al.*, 2019).

The second strand of literature focuses on the relationship between economic uncertainty and macroeconomic variables. Watugala (2019) observed that uncertainty in US economic conditions significantly predict the crude oil price volatility and returns. Ji *et al.* (2018) study on the impact of economic uncertainty on energy prices using copulas shows a negative dependence between changes in uncertainty and energy returns. This is contrary to the study by Aloui *et al.* (2016) who find a positive dependence between the EPU and the crude oil return before the financial crisis. Sill on economic uncertainty and the energy sector, Bakas and Triantafyllou (2019) argued that US macroeconomic uncertainty predicts the volatility of commodity markets.

Kang, *et al.* (2020), in their study on the Impact of Global Uncertainty on the Global Economy, and Large Developed and Developing Economies, established a significant decline in output following a rise in global uncertainty when controlling for domestic uncertainties in each country, except China, which experience decline. The effects for the US and for China are relatively small also. Their analysis further exhibits positive shocks to global uncertainty having debilitating effect on prices official interest rates for most economies, with exceptions of Brazil, Mexico and Russia, due to large capital outflows during the meltdown. Kandoussi and Langot (2020) examined uncertainty shocks and unemployment dynamics using a vector autoregression method. The results from the analysis showed that uncertainty shocks using stock market volatility as proxy, have a significant impact on the US unemployment rate.

Baker et al., (2016) develop a new index of economic policy uncertainty (EPU) based on newspaper coverage frequency from of 12,000 newspaper articles—using firm-level data, the study found policy uncertainty to be associated with higher stock price volatility which reduces investment and increases unemployment in some sectors-such as health care, construction, finance, and infrastructure. Similarly, and still on US economy, at the macro level, policy uncertainty predicted decline in investment, output, and employment when a panel vector autoregressive setting was used. Another related study opined that uncertainty shocks and unemployment dynamics in the US recessions suggests that, uncertainty shocks were found to have a larger impact on unemployment rate (Caggiano *et al*, 2014)

On the contrary, Schaal (2017) study the time-varying impact of risk on the level of unemployment fluctuations between 1972 and 2009 for the United States. The study revealed that although time-varying risk is an important factor in the determinant of the size of fluctuations in total unemployment in US past economic recession since it accounted for 40 percent of the total rise in unemployment between 2007 and 2009 recession, uncertainty could not be the main reason for the persistence unemployment.

Folawewo and Adeboje (2017) followed the Okun's and Phillips curve theoretical frameworks to analyze the relationship between selected macroeconomic aggregates and unemployment in the Economic Community of West African States (ECOWAS) using the fully modified ordinary least squares (FMOL) panel data estimation techniques on annual data from 1991 to 2014. The main findings from the study showed that economic growth has a reducing and insignificant effect on unemployment rate in the region. Phillips curve hypothesis was invalidated since inflation has a positive impact on unemployment.

In addition, labor productivity also had a positive impact of on unemployment rate, suggesting a trade-off between labor productivity and employment in ECOWAS region. Similarly, Balakeffi, *et al,* (2019) analyzed effect of uncertainties in global economic policy and Nigeria's export earnings. The study employed ARDL and GARCH as the estimating procedures, revealed an adverse effect of global economic policy uncertainty on the country's export earnings, confirming the susceptibility of Nigeria's export earnings to external shocks. In its concluding remarks the findings recommended the needs for outright diversification of developing economies to insulate it from such external shocks. Edeme, *et al*. (2024) investigated global uncertainty, climate change and the unemployment-economic growth relationship in Nigeria. Adopting autoregressive distributed lag (ARDL) estimation technique on quarterly time series data, 1990–2020, the study established that global uncertainty and unemployment impact negatively on economic growth both in the short run and long run.

METHODOLOGY

This present study is hinged on Keynesian framework on labor market. Keynes views uncertainty as a phenomenon with unknown probability which makes individuals ignorant about the future (Ferrari-Filho, and Octavio, 2005). Besides, the relationship between unemployment and output as captured under the Okun's theoretical framework is considered (Babalola, *et al*., 2013; Fontanari, *et al*.,2020).

Different uncertainty indicators have been proposed to quantitatively investigate the effects of uncertainty on the macro economy (Shinohara *et al,* 2020). This study empirically investigates the time series properties of global uncertainty and its relational effects on unemployment rate by employing the U.K. and Nigeria data on the proxy proposed by Ahir *et al,* 2018).

The conceptual underpinning is based on Keynesian theory which is fundamentally hinged on uncertainty. Post Keynesians economist argued that in an uncertain environment, the rational preference of an economic agents would rather be to save than invest in financial instruments (Ferrari-Filho, and Octavio, 2005; Bibow, 2013; Sen, 2020). The economic consequence of such an action is the tendency for effective demand to fall and unemployment gap to widen. Following the economic principle of uncertainty, the threshold regression (TAR) analysis is employed to quantitatively determine the economic factor that triggers regime change and the nature of relationship between the economic quantities.

The threshold regression model which was proposed by Hansen (1999) is the estimation technique employed in this study. There are several forms of Threshold regression estimation forms depending on what happens at the threshold. Hansen (1999) proposed the fixed regressor bootstrap testing to determine the number of thresholds. There are three distinct processes in the threshold regression analysis, namely-equation specification; threshold specification, and sample specification. It is assumed that the lagged endogenous regressor in the model would not be subject to structural breaks (Hansen, 2000; Hansen, 1999; Hidalgo, *et al*., 2019). This present study follows the Hansen threshold regression model to test the threshold effect of the global uncertainty on unemployment rate in a developed and developing economies. This will provide an insight into the influence of economic fluctuations as result of globalization on domestic macroeconomic variables, especially, employment. A typical single threshold regression model is as specified in equation 1:

$$y_t = \theta_1 x_t + \varepsilon_t \quad q_t \leq \gamma \tag{1}$$

$$y_t = \theta_2 x_t + \varepsilon_t \quad q_t > \gamma \tag{2}$$

Where t represents the year; y_t represents the endogenous variable; x_t represents the exogenous variable; q_t represents the threshold variable; γ represents the threshold quantity; and e_t represents the white noise. The single threshold regression model is (1) when $q_t \leq \gamma$. Moreover, the single threshold regression model is (2) when $q_t > \gamma$. The indicative function I (·) is constructed and when the condition in parentheses is met, the value is 1, if otherwise it is zero. Combining equation 1 and 2, the result arrived at is equation 3:

$$y_t = \theta_1 x_t I(q_t \leq \gamma) + \theta_2 x_t I(q_t > \gamma) + \theta^l x_t^l + \varepsilon_t \quad (3)$$

Thus, the estimated equation is presented in equations 4 and 5 and all variables remains as earlier defined. NG_UI and UK_UI are global uncertainty index for Nigeria and United Kingdom respectively. UNMPL is the unemployment rate.

$$UNMPL_t = \theta_1 x_t I(NG\_UL_t \leq \gamma) + \theta_2 x_t I(NG\_UL_t > \gamma) + \theta^l x_t^l + \varepsilon_t \quad (4)$$

$$UNMPL_t = \theta_1 x_t I(UK\_UL_t \leq \gamma) + \theta_2 x_t I(UK\_UL_t > \gamma) + \theta^l x_t^l + \varepsilon_t \quad (5)$$

E-view software is used to estimate and test the threshold effect of global uncertainty on unemployment in both Nigeria and the UK. Following the threshold regression methodology proposed by Hansen (1999), the threshold estimation values and parameter values were obtained using the minimum residue sum of squared criterion after the necessary tests were performed.

This study conducts an empirical analysis using 1970–2021 data on global uncertainty and unemployment for Nigeria and United Kingdom. Data were obtained from Ahir *et al*, (2018), "World Uncertainty Index" and International Labour Organization, ILOSTAT database. Data retrieved on June 15, 2021.

EMPIRICAL ANALYSIS AND DISCUSSION OF RESULTS

In this section the result of the analysis conducted to determining the effect of global uncertainty on unemployment in Nigeria and the UK is presented. The descriptive statistics of the variables for each country is presented in Table 1. The mean unemployment value for Nigeria is higher in comparison to the UK. However, the average of global uncertainty index for Nigeria (NG_UI) and global uncertainty index for UK (UK_UI) are approximately the same. The standard deviation which measures the dispersion of dataset relative to the mean were quite small which indicate the variability of the data from the mean. The standard deviation for UK unemployment rate (UK_UNMPL) is 0.63 and unemployment rate for Nigeria (NG_UNMPL) is 2.6. This suggests, on average that the deviation of the dataset is not far from the normal. There are 52 included observations for each individual country.

Table 1. Descriptive Statistics

	NG_UI	UK_UI	NG_UNMPL	UK_UNMPL
Mean	0.208481	0.232538	8.732115	6.738846
Median	0.157000	0.157500	9.365000	5.835000
Maximum	0.732000	1.180000	33.30000	11.77000
Minimum	0.000000	0.000000	1.600000	3.650000
Std. Dev.	0.943334	2.193679	2.563586	0.628491
Observations	52	52	52	52

Sources: Authors' Computation. Notes: Sample: 1970-2021. Included Observations: 52

Table 2 shows the Covariance and Correlation analysis result. Covariance indicates the relationship between two economic variables whenever one variable changes. While a positive covariance for Nigeria's unemployment and global uncertainty index were observed, a negative relation was the case for the UK with varying degree. This suggests that possible increase in uncertainty could lead to increase in unemployment in Nigeria, but a reversed situation for United Kingdom. The result of the correlations is similar with covariance and only slightly differs in terms of magnitude. For instance, a value of 0.5 correlation between unemployment and global uncertainty for Nigeria is considered a positive and a relatively strong correlation.

Table 2. Covariance---Correlation Analysis

Correlation	**NG_UI**	**UK_UI**	**NG_UNMPL**	**UK_UNMPL**
NG_UI	0.034796 1.000000			
UK_UI	0.021313 0.480093	0.056639 1.000000		
NG_UMPL	0.519147 0.472972	0.818154 0.584231	34.62434 1.000000	
UK_UNMPL	-0.007953 -0.018007	-0.222559 -0.394981	-3.203623 -0.229954	5.605549 1.000000

Sources: Authors' computation. Notes: Sample: 1970-2021. Included observations: 52

In order to determine the stationarity of the dataset, two tests of unit root were conducted. The Augmented Dickey-Fuller test and Phillips-Perron test. The Null Hypothesis suggests that the variables have a unit root. The results indicated in Table 3 shows that the variables were stationary after first differencing with the exception of global uncertainty for Nigeria both with the ADF test and Phillips-Perron test. UK global uncertainty was stationary at levels when the Phillips-Perron test was applied.

Table 3. Unit Root Tests

	ADF Test		**Decision**	**PP Test**		**Decision**
Variable	Level	First Difference		Level	First Difference	
UK_UI	1.65	-10.19***	I (1)	-3.69***	-10.67***	I (0)
UK_UNMPL	-2.87	-3.53***	I (1)	-2.04	-3.46***	I (1)
NG_UI	-3.03***	-10.40***	I (0)	-2.89***	-26.59***	I (0)
NG_UNMPL	1.03	-7.14***	I (1)	1.75	-7.14***	I (1)

*Sources: Authors' computation. Note: ADF Test (Null Hypothesis: (Variable) has a unit root) --- Augmented Dickey-Fuller test statistic; PP Test--- Phillips-Perron test statistic (Null Hypothesis: (Variable) has a unit root). *** Statistically significant at 5 percent.*

The main focus of threshold regression is to determine the value of the threshold where a regime change is triggered and its effects on economic indicator. In Table 4A and 4B, the threshold value estimated for the analysis is presented. At the 0.05 level of significance, the estimated threshold value for Nigeria is 0.421 (See Table 4A) and 0.092 for UK (See Table 4B). These is presented in more details thus:

Table 4A shows the results of multiple threshold tests for Nigeria, with the null hypothesis of 0 thresholds tested against the alternative of 1 threshold, 1 threshold against 2, and so on. The F-statistic and scaled F-statistic indicate the strength of evidence for the presence of a threshold at each step. The first row of the table shows that the test for 0 vs. 1 threshold is significant at the 0.05 level, with a scaled F-statistic of 94.67246 exceeding the critical value of 13.98. The other thresholds were not significant. This suggests that there is strong evidence for a single one threshold for Nigerian data (Fong, *et al*, 2017; Raouf, 2022). The threshold value estimated for Nigeria is 0.420. This means that the relationship between the Uncertainty and the unemployment variable changes at the uncertainty value of 0.420.

In table 4B the result of the threshold estimation for UK is presented. The table shows the sum of squared residuals, log-likelihood, Schwarz criterion and LWZ criterion for models with 0 to 5 thresholds. The results suggest that a threshold regression model with one threshold at the value of 0.092 for the variable for UK uncertainty measure provides the best fit to the data based on the Schwarz and LWZ criteria (Chong and Yan, 2014; Fong, *et al*, 2017; Chiou, *et al,* 2018). This implies that the relationship between unemployment rate and uncertainty index changes significantly when the uncertainty measure reach reaches 0.092 in United Kingdom. Overall, this suggests that the threshold for regime change is higher in Nigeria than in UK for the period of the analysis.

Table 4A: Threshold Specification--- Multiple threshold tests Threshold variable NG_UI Threshold value estimation

Threshold Test	F-statistic	Scaled F-statistic	Critical Value**
0 vs. 1 *	31.55749	94.67246	13.98
1 vs. 2	4.245317	12.73595	15.72
2 vs. 3	2.571961	7.715882	16.83
3 vs. 4	1.886951	5.660852	17.61
4 vs. 5	1.416760	4.250281	18.14
Estimated threshold values:			
1: 0.420			
2: 0.0249, 0.420			
3: 0.0249, 0.163, 0.420			
4: 0.0249, 0.163, 0.240, 0.420			
5: 0.0249, 0.101, 0.163, 0.240, 0.420			

** Significant at the 0.05 level. Included observations: 51*

*** Bai-Perron (Econometric Journal, 2003) critical values.*

Sources: Authors' computation. Notes: Threshold type: Bai-Perron tests of L+1 vs. L sequentially determined thresholds. Dependent Variable: NG_UMPL. Included observations: 51 after adjustments. Threshold variable: NG_UI. Threshold selection: Trimming 0.15, Sig. level 0.05. Threshold value used: 0.4209.

Table 4B. Threshold Specification--- Multiple threshold tests Threshold variable UK_UI

Thresh.	# of Coefs.	Sum of Sq. Resids.	Log-L	Schwarz* Criterion	LWZ* Criterion
0	3	35.44	-63.09	-0.13	0.01
1	7	27.68	-56.78	-0.07	0.26
2	11	22.80	-51.83	0.04	0.58
3	15	18.33	-46.28	0.13	0.88
4	19	16.08	-42.94	0.31	1.28
5	23	11.77	-34.98	0.30	1.52

Estimated threshold values:

1: 0.092
2: 0.079, 0.111
3: 0.079, 0.111, 0.162
4: 0.079, 0.111, 0.162, 0.474
5: 0.079, 0.111, 0.162, 0.203, 0.474

** Minimum information criterion values displayed with shading*

Sources: Authors' computation. Notes: Threshold type: Fixed number of globally determined thresholds. Dependent Variable: UK_UNMPL. Included observations: 51 after adjustments. Threshold variable: UK_UI. Sample (adjusted): 1971 2021. Threshold selection: Trimming 0.15, Sig. level 0.05. Threshold value used: 0.0929.

Based on the results of the threshold tests which provides the values that triggers regime change for Nigeria and the UK, the analysis proceeds to the regression modeling. Two set of regime changes were identified as it was also specified in the methodology section.

Table 5. Threshold Regression (Tar) Result (Nigeria)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
		NG_UI < 0.421 -- 41 obs		
NG_UMPL (-1)	0.867	0.059	14.577	0.000
NG_UI	7.110	2.774	2.562	0.013
C	0.385	0.451	0.853	0.398
		0.421 <= NG_UI -- 10 obs		
NG_UMPL (-1)	2.894	0.202	14.285	0.000
NG_UI	3.644	5.003	0.7283	0.470
C	-19.771	3.659	-5.403	0.000

R-squared---0.937 Adjusted R-squared---0.930
F-statistic---134.716 Prob. (F-statistic) ---0.000 Durbin-Watson stat---2.25

Sources: Authors' computation. Notes: Threshold type: Bai-Perron tests of L+1 vs. L sequentially determined thresholds. Dependent Variable: NG_UMPL. Included observations: 51 after adjustments. Threshold variable: NG_UI. Threshold selection: Trimming 0.15, Sig. level 0.05. Threshold value used: 0.4209.

Table 5 shows the Threshold regression result for Nigeria. It indicates the trigger for regime switching with unemployment. The value that triggers regime change is 0.421 for Nigeria. This helps to understand the effect of global uncertainty index around the trigger value on unemployment. At any value below 0.421 or above it, unemployment is positively affected. For instance, when, global uncertainty index was less than 0.241, a unit change in global uncertainty increases unemployment by 7.1 percent. The result is statistically significant at 5 percent. Similarly, the lag of unemployment suggests that at the threshold of 0.241, causes a further rise in unemployment by 0.86 percent which is also statistically significant at 5 percent.

Arguably, accumulated or previous unemployment exacerbate the current unemployment rate because of its reinforcing effect. However, the effect of regime switching has a reverse impact on employment in terms of size. In other words, global uncertainty affects unemployment less, when the trigger value is equal to or above 0.241 compared to the first regime. A unit change in global uncertainty led to 3.64 percent rise in unemployment in Nigeria, although it is not statistically significant at 5 percent. In addition, previous unemployment has more impact on the current unemployment when the trigger value is greater than 0.241. Unemployment increased by 2.9 percent when there is a unit change in previous unemployment and it is statistically significant at 5 percent.

Furthermore, the same positive signs at both instances of regime switching, showing a linear relationship between global uncertainty and unemployment in Nigeria. This is similar to the result obtained by Kandoussi and Langot (2020). This means as global uncertainty increases, unemployment also increases in a straightforward, proportional manner (Fong, *et al,* 2017; Raouf, 2022). In other words, this linear relationship means that if global uncertainty rises by a certain amount, unemployment will consistently rise by a corresponding amount. In practical terms, it connotes that, policymakers and economic planners in Nigeria should be aware that increases in global uncertainty are likely to directly and predictably worsen unemployment rates. This highlights the importance of creating strategies to mitigate the impacts of global uncertainty, such as developing domestic economic resilience or diversifying the economy to reduce reliance on volatile global factors. The proportionality of the impact of global uncertainty could be huge on the economy of Nigeria with respect to employment and economic growth. Sustained high unemployment appears to have reinforced unemployment overtime. The adjusted R-square shows that 93 percent of the variation in unemployment could be explained by global fluctuation. This is verifiable when looking at the external variables such as the exchange rate, interest rate, external trade and terrorism as well as international organizations (IMF, World Bank, ADB among others) who influences and set regulations in providing loans and assistance. The F-test is statistically significant as expected suggesting the overall strength of the exogenous variable in explaining the endogenous term. The DW test at 2.3 shows the absences of serial correction.

Table 6. Threshold Regression (Tar) Result (Uk)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
		UK_UI < 0.0929 -- 13 obs		
UK_UMPL (-1)	1.051	0.063	16.503	0.0000
UK_UI	22.579	5.247	4.303	0.0001
C	-1.394	0.641	-2.174	0.0350
		0.092 <= UK_UI -- 38 obs		
UK_UMPL (-1)	0.829	0.089	9.300	0.0000
UK_UI	-0.322	0.396	-0.814	0.4197
C	1.107	0.495	2.233	0.0305
R-squared---0.901	Adjusted R-squared---0.891			
F-statistic---82.794	Prob. (Fstatistic)---0.000	Durbin-Watson stat---1.152		

Sources: Authors' computation. Notes: Threshold type: Fixed number of globally determined thresholds. Dependent Variable: UK_UNMPL. Included observations: 51 after adjustments. Threshold variable: UK_UI. Sample (adjusted): 1971 2021. Threshold selection: Trimming 0.15, Sig. level 0.05. Threshold value used: 0.0929.

The result for the UK reveals threshold estimation values of global uncertainty on unemployment as 0.093. Therefore, a detailed result of the threshold model is presented in Table 6. The coefficient of unemployment lagged by a year is 1.05, and the P value is 0, which is significant at 0.05, when the global uncertainty index level does not exceed 0.093. Previous year unemployment level is significant in increasing unemployment level in the current year in the UK by one unit, while beyond the 0.093 threshold value, it has the ability to increase current unemployment by 0.83 percent. This is also significant at the 0.05 significant level.

The coefficient of global uncertainty level is 22.6, and the P-value is 0.0001, which is significant at 5 percent when the threshold value is below 0.093. Thus, unemployment is significantly affected when there is slight increase in global uncertainty, although and surprisingly, the effect is reduced when the threshold of 0.093 is exceeded. When global uncertainty level increased by one unit, unemployment decreases by 0.33 percent, this is, however, not statistically significant. The plausible explanation for this result could be a possible quick policy intervention and the elimination of lag factors in policy transmission because of the developed financial and economic system in UK.

In addition, the result of the UK which categories global uncertainty into regimes and how it affects unemployment depicts a non- linear relationship. A non-linear relationship between global uncertainty and unemployment emerges due to varying coefficients, one positive and one negative, during different regime changes. This is indicative of an inverted U-shape and non-linear model. This means that global uncertainty may initially increase unemployment in the UK, but afterwards, it decreases (Fong, *et al,* 2017; Raouf, 2022). Policy intervention appears to be more effective in the developed economy than the less developed economy.

This study also offers implications and suggestions for global uncertainty. First up, unemployment is affected by unpredictable global fluctuations. Therefore, to promote sustainable development and minimize economic instability, unemployment has to be managed by identifying and controlling the factors that triggers global uncertainty. One dimension worth focusing on, is the macroeconomic variables such as exchange rate, crude oil prices and interest rates across the regions of the world. Second

is the quality of population growth. Equipping the teaming youth, especially in the developing world like Nigeria is of essence if unemployment will be curtailed since the result suggests a negative spillover effects of sustained unemployment level overtime on the economy.

The residual diagnostic tests presented in Table 7 shows that the Breusch-Godfrey Serial Correlation LM Test and Breusch-Pagan-Godfrey heteroskedasticity Test with the P-values of 0.35 and 0.29 respectively were not significant at 0.05 significant level. These suggests the absence of both serial corrections and the problem of heteroscedasticity in the model estimated.

Table 7. Residual Diagnostic Test

	UK		Nigeria	
Test	F-statistic	Prob. F(5,45)	F-statistic	Prob. F(5,45)
Breusch-Godfrey Serial Correlation LM Test:	6.725	0.0029	1.087337	0.3462
Heteroskedasticity Test: Breusch-Pagan-Godfrey	1.119510	0.3637	1.287220	0.2862

Sources: Authors' computation.

Similarly, the stability diagnostic tests conducted include the recursive coefficient and the CUSUM tests. The recursive coefficient helps to trace the evolution of estimates for any coefficient with every additional sample data in the estimation with two standard error bands around the estimated coefficients. For both countries, Nigeria and the UK, the coefficient does not display significant variation as addition data were added to the equation to suggest instability as there were no dramatic jumps which could imply significant structural breaks. The estimates rise and falls marginally before remaining steady over the years (See Figures 1.2 and 1.3).

Figure 1.2. Recursive coefficient---United Kingdom

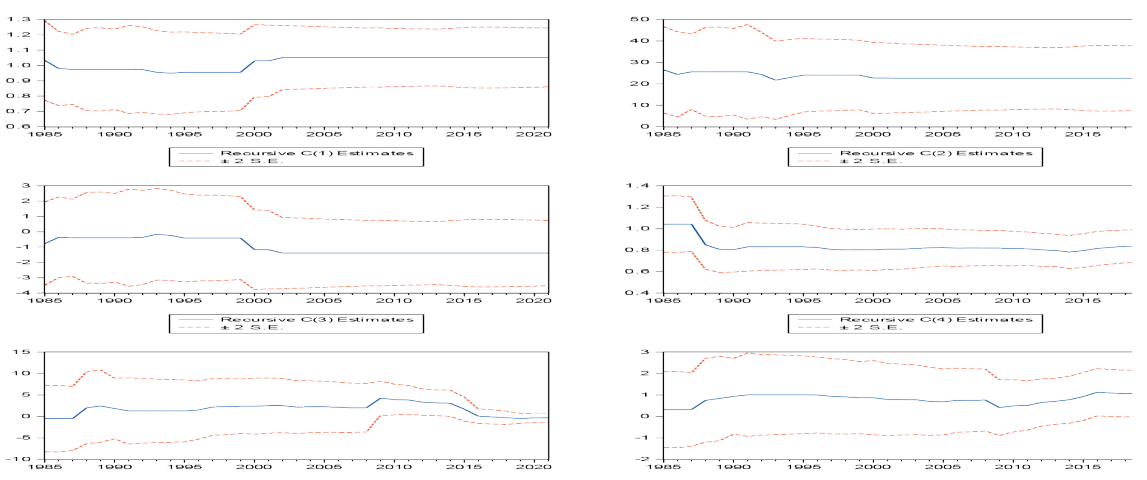
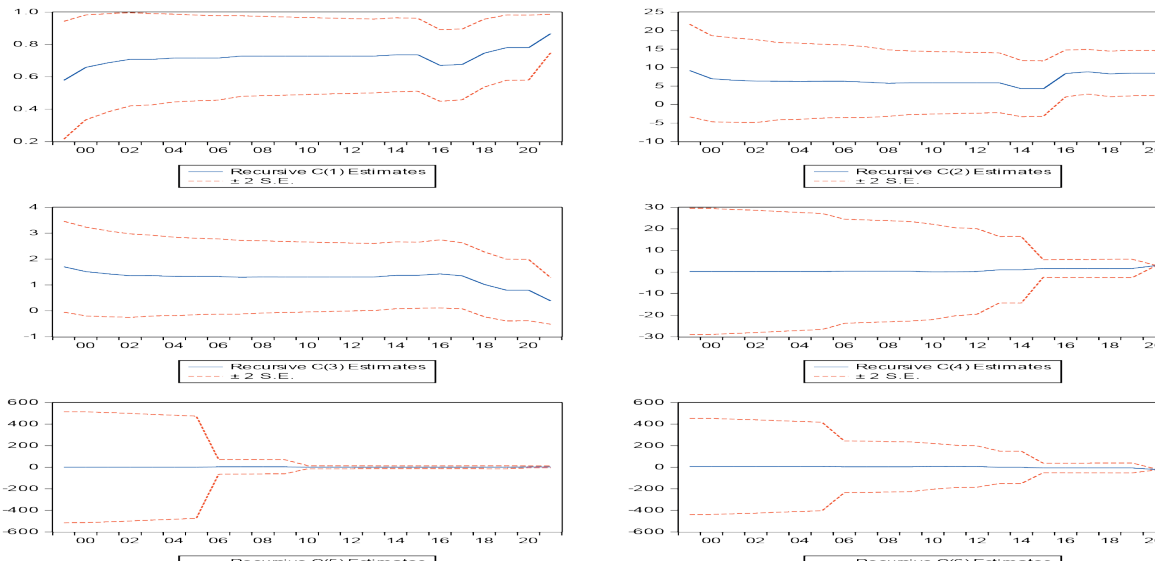


Figure 1. 3. Recursive coefficient--- NIGERIA



Similarly, the CUSUM tests are presented in Figure 1.4 and 1.5 for Nigeria and the UK respectively. UK CUSUM tests were more stable with mild breaks outside the bounds at 5 percent level of significance when compared to Nigeria.

Figure 1.4. CUSUM (Nigeria)

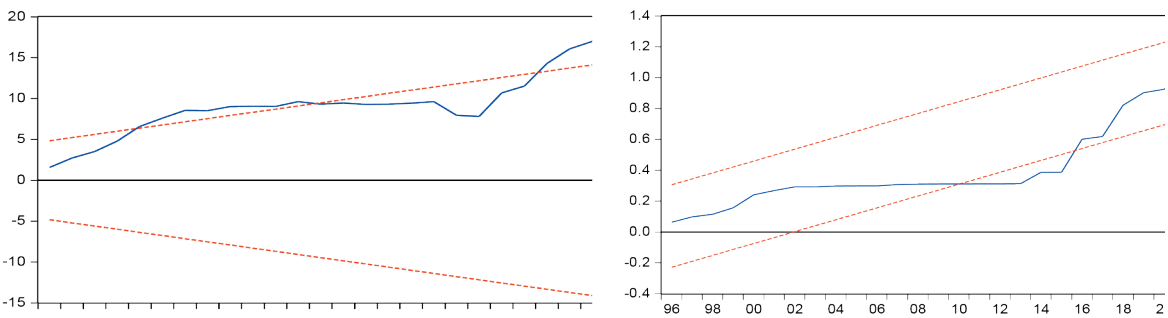
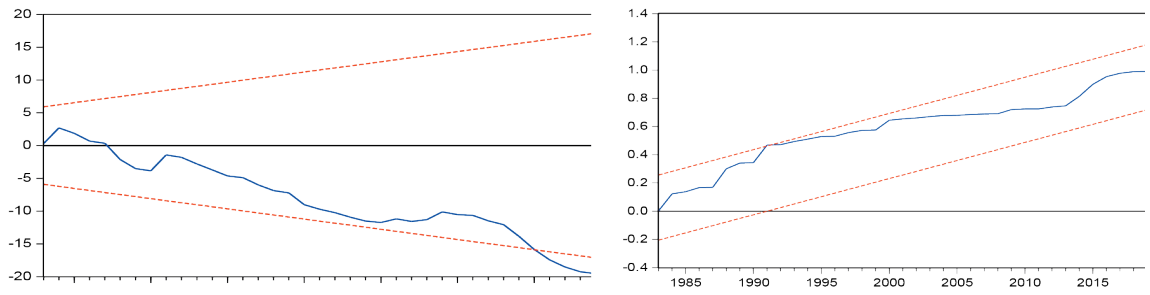


Figure 1.5. CUSUM (UK)



Finally, a forecast for UK unemployment with variance proportion of 0.37 suggest a positive and margin decline in unemployment rate which is within the 2 standard error bound (See Figure 1.6). Similarly, Figure 1.7 shows the forecast for Nigeria with variance proportion of 0.82 showing a negative and margin decline in unemployment rate within the 2 standard error bound. Global uncertainty may further impact negatively on unemployment in Nigeria than in the UK.

Figure 1.6. UK---Unemployment Forecast

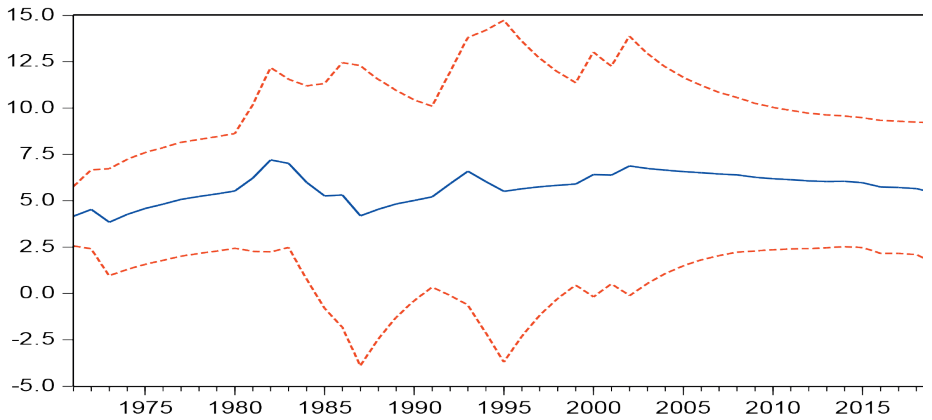
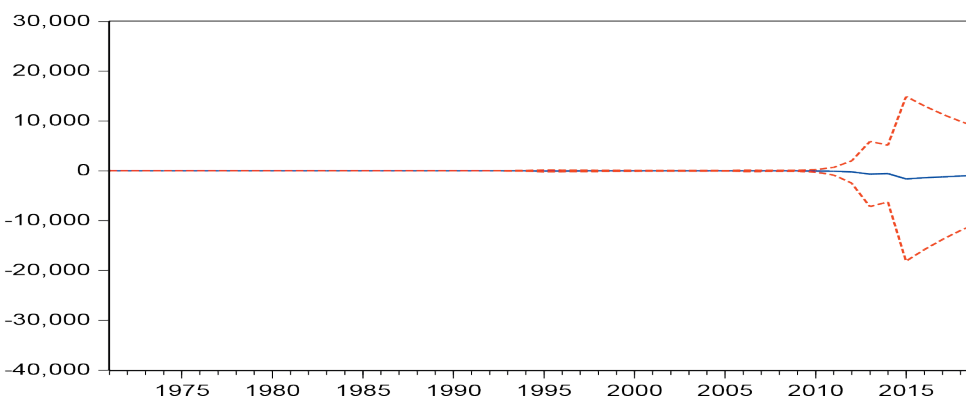


Figure 1.7. Nigeria---Unemployment Forecast



CONCLUSION

This study examines the relationship between uncertainty and unemployment in a developed and a developing country using the threshold regression approach. The trigger estimated value for Nigeria and the UK are 0.421 and 0.092 respectively. The threshold regression model was employed to test the threshold effect of global uncertainty on unemployment for Nigeria and United Kingdom between 1971 and 2021.

There are three main findings. (1) The threshold effect estimated value of global uncertainty on unemployment is significantly higher in Nigeria than in the UK. However, the impact differs in magnitude. While below the threshold value, the impact is higher in UK than in Nigeria, above the threshold values,

the impact is minimal in the UK than in Nigeria. This shows the differential role and impact of sturdy policy formulation and implementation between the two countries. This is underscored by the relative better performance of UK than Nigeria in the face of worsening global uncertainty. (2) Unemployment rate is lower in the UK than in Nigeria. But the interesting finding from this study is the fact that the previous unemployment rate reinforces the present unemployment in Nigeria. A unit increase in unemployment level lagged by one period which led to a rise in unemployment by 0.87 in the current period when below the threshold estimated value, and increases further to 2.89 when above the threshold value for Nigeria. However, for UK, unemployment fell by 0.32 at a value above the threshold point. (3) Finally, the relationship between global uncertainty and unemployment is linear for Nigeria and positive. However, a rather non-linearity inverted U-shape relationship was confirmed for the UK. The linear positive relationship in Nigeria implies a more straightforward, proportional impact, while the inverted U-shape in the UK points to more nuanced dynamics and potential thresholds or turning points in how global uncertainty affects unemployment. This underscores the robustness and effectiveness of policy interventions as well as the resilience of the UK economy in contrast to Nigeria.

It is therefore imperative for a stronger understanding of the factors that triggers uncertainty as a dimension to tackling increasing unemployment level in both developed and developing countries if the trend will be stemmed. Effective macroeconomic policies are required to manage macroeconomic variables such as exchange rate, interest rate and inflation which contribute to global uncertainty. In conclusion, unemployment can be reduced if policies are directed towards minimizing fluctuations in macroeconomic variables.

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GLOBALNA NEIZVESNOST I STOPA NEZAPOSLENOSTI U VELIKOJ BRITANIJI I NIGERIJI: POKRETAČ PROMENE REŽIMA I NJENE IMPLIKACIJE NA ANALIZU POLITIKE

Rezime:

Ova studija primenjuje regresioni model da bi se analizirao uticaj neizvesnosti na nezaposlenost u Nigeriji i Ujedinjenom Kraljevstvu koristeći podatke 1970-2021. Empirijski rezultati pokazuju značajan efekat neizvesnosti na nezaposlenost. Procenjena vrednost uticaja globalne neizvesnosti na nezaposlenost znatno je veća u Nigeriji nego u Velikoj Britaniji. Procenjena vrednost za Nigeriju i UK je 0,421 i 0,092, respektivno. Međutim, uticaj je različitog intenziteta. Iako je ispod granične vrednosti od 0,092, uticaj je veći u Velikoj Britaniji nego u Nigeriji, ali obrnuto je iznad ove granice. Ovo pokazuje različitu ulogu i uticaj čvrste formulacije i implementacije politike između dve zemlje. Stopa nezaposlenosti je niža u Velikoj Britaniji nego u Nigeriji. Konačno, odnos između globalne neizvesnosti i nezaposlenosti je linearan za Nigeriju i pozitivan. Međutim, za UK je potvrđen nelinearni i obrnuti odnos u obliku slova U. Postaje imperativ da se svetska neizvesnost ugradi u formulisanje budućih politika vlade kako bi se ublažili uticaji neizvesnosti na makroekonomsku stabilnost i fluktuacije poslovnog ciklusa.

Ključne reči:

Stopa nezaposlenosti,
ekonomske fluktuacije,
regresija praga,
Nigerija,
Ujedinjeno Kraljevstvo.

JEL klasifikacija:
E24, O11, E24, P51 P51, Q51, Z3