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Estimates of the Impact of COVID-19 on World Poverty in 2020

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Abstract

In this study we have sought to make estimates of the potential short-term poverty impact of COVID-19 in selected countries. While these estimates have important limitations as they are based on distribution neutral assumptions and crucially omit, social and fiscal policy, and household-level responses to economic contractions, they are intended as indicative of the potential increase in poverty as a result of the damaging economic consequences of the pandemic. The study concludes that there is a negative relationship between economic growth and poverty in the short run, where if economic growth changes by one unit, poverty decreases by (4.08). This is a logical result in light of the COVID-19 epidemic. As for the other variables, such as the unemployment rate and inflation, their effect was positive, Also, the main variable of Confirmed cases with the virus to population, its impact was negative in the long run, while in the short run the impact is positive as stated in the economic theory, and this was expected in the research hypothesis, where the number of people infected with the virus increase, the poverty in the world increase in the same direction.

1-Introduction

The short term economic and wellbeing costs of COVID-19 have been severe. Though we hope the pandemic will be a temporary shock, in the interim it has pushed many vulnerable households living at the margins back into poverty. Due to lockdowns and social distancing measures, people have lost jobs and livelihoods, leaving them unable to pay for housing and food. Schools have been closed and some children may not return, shutting off one of the main pathways out of poverty for low-income children. Women and girls have been especially impacted by these school closures. Mothers at all socio-economic levels have dropped out of the labour force to supervise online learning and care for children and older relatives, and many will not reenter. Even before the pandemic, women

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and girls of reproductive age were overrepresented among the poor, making these setbacks all the more concerning

We likely will not know the full impacts of COVID-19 on poverty for a few years, as most poverty data come from household surveys, which have been difficult to carry out during the last year. However, we do know that economic growth is the largest driver of poverty reduction. Conversely, economic recessions drive a rise in poverty, other things being equal. In 2020, however, other things were not equal; national and local governments were able to mitigate the impact of COVID-19 on their poorest people to varying degrees and assessing the economy-wide impact of these measures cannot yet be done systematically. What can be done at this juncture is to use new estimates for economic growth through 2030 to capture the potential impact of COVID-19 on poverty in the long run

In this paper, we estimate the impact of Covid-19 on poverty in selected countries. The main objective of the paper is to estimate the impact of the Corona epidemic on increasing poverty around the world using the standard model and taking some basic variables such as unemployment, inflation and economic growth.

The main problem of the research includes the basic question about the extent of the epidemic's impact on the further exacerbation of poverty around the world and how will its impact be in the short and long term**.**

While the main Hypotheses of the research are summarized as follows

H1: There is a negative relationship between GDP growth and poverty (POV)

H2:There is a negative relationship between the inflation rate and poverty (POV)

H3:There is a negative relationship between the unemployment rate and poverty (POV)

H4:There is a positive relationship between Confirmed Cases/population and poverty (POV)

H5:There is a positive relationship between Death/ Confirmed cases and poverty (POV)

2. Literature review:

Several studies were written in the theoretical side of the impact of COVID-19 on global poverty, but a few take the construction of statistical models that explain this relationship and analyze it, hereinafter a brief overview of the most important of these studies:Andy , Chris and Eduardo (2020) In this paper of the potential short-term economic impact of COVID-19 on global monetary poverty through contractions in per capita household income or consumption. their

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estimates are based on three scenarios: low, medium, and high global contractions of 5, 10, and 20 per cent; they calculate the impact of each of these scenarios on the poverty headcount using the international poverty lines of US$1.90, US$3.20 and US$5.50 per day. their estimates show that COVID poses a real challenge to the UN Sustainable Development Goal of ending poverty by 2030 because global poverty could increase for the first time since 1990 and, depending on the poverty line, such increase could represent a reversal of approximately a decade in the world's progress in reducing poverty.

Yusuke Tateno and Zakaria Zoundi (2021) The paper study the impact of the pandemic on poverty depending on a number of factors. Increasing inequality and further deceleration of economic growth can push more people into poverty. The impact of the pandemic on povertymay be more long-lasting in countries with high reliance on tourism such as Vanuatu. This note finds that more than 1.6 million people will be pushed back into extreme poverty in Bangladesh by 2021. The number of additional poor will be higher if the pandemic lasts longer, since the country has a high population density, a large informal sector, and is facing difficulties applying the lockdown and social distancing.

Hector Cheng and Raymond Tsang (2021) The COVID-19 pandemic has severely affected people's livelihoods around the world and caused a profound impact on the global economy. With worldwide pandemic-related job losses and deprivation amid a deep global recession, there is a growing concern about vulnerable groups around the globe suffering from worsened poverty and income disparity. This literature review briefly summarises the methodologies and preliminary findings of major research articles on the anticipated impact of the COVID-19 pandemic on global poverty and income disparity from an economic perspective.

Nora Lustig and Valentina Martinez Pabon (2020) Based on the economic sector in which household members work, they use microsimulation to estimate the distributional consequences of the COVID-19 pandemic in Mexico. Although the predicted increase in poverty is significant, they find that the worst effects may not be on the poorest, but those (roughly) in the middle deciles of the ea-ante income distribution: the moderate poor and those vulnerable to falling below the poverty line if subject to an adverse shock. they estimate that the economic shock could induce significantly less increase in poverty in rural areas and among the indigenous population. The increase in poverty seems to be similar for male- and female-headed households. Compared to other countries, Mexico stands out because of the absence of mitigation policies. In contrast, in

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Argentina and Brazil, the expanded social assistance seems to significantly offset the impact of the economic dislocation.

Paola PROFETA, Ximena CALÓ and Roberto OCCHIUZZI (2021) This in-depth, case-analytical overview, commissioned by the European Parliament's Policy Department for Citizens' Rights and Constitutional Affairs at the request of the FEMM Committee, examines the impact of the COVID-19 crisis on a representative sample of member states with the aim of alimenting policy recommendations for the COVID-19 recovery period to ensure that the gains of the past years in the matter of gender equality are not overridden by the short-term negative effects of the measures implemented to combat the COVID-19 sanitary crisis.

Chei Bukari and others (2021) This study seeks to provide micro-levele evidence on how COVID-19 is posing a threat to some of the Sustainable Development Goals, particularly poverty in Ghana. Specifically, the study examined the effect of COVID-19 on the poverty and living standards of Ghanaian households. The study further analysed which class of persons within the income distributions has been mostly hit by the pandemic. Data on 3,905 households were obtained via concurrent online surveys and telephone interviews. Multiple analytical approaches were employed—Ordinary least squares, probit model and simultaneous quantile regressions. Results showed that COVID-19 had significantly increased the poverty levels of households while deteriorating living standards. The study also discovered that gender and locational heterogeneities exist regarding the impact of COVID-19 with females and rural dwellers mostly disadvantaged.

Benoit Decerf and others This paper evaluates the global welfare consequences of increases in mortality and poverty generated by the Covid-19 pandemic. Increases in mortality are measured in terms of the number of years of life lost (LY) to the pandemic. Additional years spent in poverty (PY) are conservatively estimated using growth estimates for 2020 and two different scenarios for its distributional characteristics. Using years of life as a welfare metric yields a single parameter that captures the underlying trade-off between lives and livelihoods: how many PYs have the same welfare cost as one LY. Taking an agnostic view of this parameter, estimates of LYs and PYs are compared across countries for different scenarios.

3-Global trends

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Global poverty had been declining before COVID-19. By our calculations, extreme poverty, defined as those living in households spending less than $1.90 per person per day in 2011 PPP terms, had fallen from 1.9 billion people in 1990 to 648 million in 2019, and was on pace to reach 537 million by 2030. As Figure 1 shows, COVID-19 interrupted this trend. The absolute number of people living in extreme poverty rose for the first time since 1997. The economic contraction and job layoffs due to lockdown measures in many countries would have caused poverty to rise by almost 100 million in 2020 to 745 million without offsetting measures.

The pandemic crisis is bound to have an impact on poverty. Conservative estimates suggest that the economic contraction will push 48 million to 135 million people to poverty worldwide, with the estimates depending on the poverty line used (48 million new poor, using the $1.90/day poverty line for all countries; and 135 million new poor, using $1.90/day for low-income, $3.20/day for low middle income and $5.50/day for upper-middle-income). This will make 2020 the first year since 1998 that the global rate of poverty will increase (Mahler et al. 2020; World Bank 2020c).

The face of global poverty is likewise changing. In 2020, 64% of the poor lived in sub-Saharan Africa and 21% lived in South Asia (see Figure 1). By 2030, however, South Asia could have largely ended extreme poverty. Meanwhile, due to continued population growth and low economic growth, sub-Saharan Africa could be home to 84% of the world's poor. Poverty is becoming increasingly concentrated in middle income, fragile and conflict affected, and sub-Saharan African states.

The results are sobering. Table 1 shows topline figures, built up from an analysis of 183 countries for which data is reported.

Table 1 . changes in poverty due to Covid-19 and the policy responses absolute numbers and percentage of world population)

Poverty	2019	2020	2021	2030
Pre- Covid	6504433712	621931609	598347067	536923904
	8.4 %	8.0 %	7.6 %	6.3 %
October 2020	646806659	766032180	726524822	597902578
	8.4 %	9.9 %	9.3 %	7.0 %

source : Author's calculations based on IMF World Economic Outlook October 2020 and World Bank Povocal data (Note: Extreme income poverty is defined as comprising families living in households

The first row of Table 1 shows a baseline of poverty estimates made in late 2019. A total of 650 million people were thought to be in extreme poverty in 2019 and,

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given likely growth trajectories(PATH), poverty was on a path of a steady reduction in most? .

4 -Methodology And Data

The section presents the research method that consists of model specification and data description and estimation method.

Initial Model Specification

The functional relationship between COVID-19 and poverty can be specified as follows:

Poverty= f(GDP,INF, CC ,UN)…….(1)

where poverty is the dependent variable while the confirmcases , growth domestic product ,inflation rate,and unemployment rate are the independent variables .

Data Description and Source

The main objective of this study was to assess the impact of COVID-19 pandemic on poverty and some macroeconomic variables. The study uses a cross section data set for 57 countries of the world including .

Empirical Results And Discussion

Equation (2) is simply a non-stochastic relationship which implies that all changes in the POV are accounted for by changes in the independen variables. the relevant model for estimation is specified in a stochastic manner as follows:

$POV = = \beta_0 + \beta_1 GDP_t + \beta_2 UN\ t + \beta_3 INF\ t + \beta_4 CC\ t + ….. + U……$ (2)

Where, GDP= growth domestic product, UN= unemployment rate, INF= Inflation rate, , CC=confirmed cases, μ = stochastic error term, $\beta 0$ = intercept and β= regression coefficients to be estimated.

The Autoregressive Distributed Lag (ARDL) approach (the bounds testing approach to co-intigrate ARDL modelling incorporates sufficient number of lags to capture the data generating the sufficient number of lags to capture the data generating general model to a specific modelling framework (Mallik & Chowdhury, 2001; Jatil, et al., 2008). In addition, modelling the ARDL with the appropriate lags corrects for both serial correlation and endogeneity problems. In this approach, all the variables are assumed to be endogenous, and the long run and short-run parameters of the model are estimated simultaneously.

4.1. Study Hypotheses

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Depending on the literature review and economic theory, the present study founds the following alternative: Hypotheses:

H1: There is a negative relationship between GDP growth and poverty (POV)

H2: There is a negative relationship between Inflation rate and poverty (POV)

H3: There is a negative relationship between Unemployment rate and poverty (POV)

H4: There is a positive relationship between Confirmed Cases/population and The poverty (POV)

H5: There is a positive relationship between Death/ Confirmed cases and The poverty (POV)

4.1. Data Analysis and Discussion of Findings:

Data Analysis and Discussion of Findings The estimation and interpretation process follows descriptive, statistics summary unit root test, the bound co-integration test, ARDL long-run estimates, and the relevant residuals tests.:

Table- 2- Descriptive Statistics

Source: Author's Compilation Using Eviews 10

	POV	GDP	INR	UN			CCP
Mean	15.59412	-6.243137	5.940196	8.129412			2.630216
Median	14.40000	-5.900000	3.630000	6.500000			2.839100
Maximum	59.20000	3.800000	48.80000	27.60000			5.543100
Minimum	1.300000	-13.90000	-0.100000	1.000000			0.148300
Std. Dev.	11.25946	3.331922	9.185056	5.041916			1.472502
Skewness	1.838772	0.163635	3.935816	1.599036			0.077000
Kurtosis	7.553967	3.765145	18.38273	6.063366			2.128902
Jarque-Bera	72.80877	1.471672	634.5059	41.67524			1.662870
Probability	0.000000	0.479105	0.000000	0.000000			0.435424
Sum	795.3000	-318.4000	302.9500	414.6000			134.1410
Sum Sq. Dev.	6338.768	555.0851	4218.262	1271.046			108.4131
Observations	51	51	51	51			51

Table -2- above displayed the summary statistics for the dataset used. Skewness in the table is positive with all the variables having positive signs showing that the distribution was skewed to the right. This simply implies that even in a frequency distribution form, the data set analyzed was wholly made up of positive values. On the other hand, the kurtosis revealed that almost satisfied its symmetrical condition of the expected value of three (3). CCP had a value of less than three. This implies that the distribution of the variables is flat or plat karstic. On the other hand, RGDP, UNEMP, INFLR and CC had values greater than three. This indicates that the distribution is peaked or leptokurtic. However, all the variables' probability was shown to be positive and relatively low with all

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the variables in the model being statistically insignificant at 5% level of significance. This gives way for the acceptance of the in-built null hypothesis that the data set is approximately standard. Furthermore, an interesting relationship exists between the mean and median for all the variables in the model. The mean to the median ratio for all the data set is within the unit proximity. This implies that when plotted on the standard normal curve, the median will not be significantly different from the distribution's mean value

4-2. the Unit Root Test

Despite the many tests for the unit root, and although the most common ones (Fuller Dickey Augmented), but we will rely also on The Phillips-Perron test (PP), since the PP test is based on the assumption that The time series is generated through the moving Integrated Autoregressive process. , while the (ADF) test is based on a less general assumption that the time series is generated through an Autoregressive process (AR). Accordingly, is considered PP test (more accurate and more suitable for small samples)

Table-3-analysis of unit root test

	Augmented Dickey-Fuller test			
Variables	Level		First Difference	
	Intercept	Trend	Intercept	Trend
POV	0.0000 (-6.3370)	0.0000 (-6.2791)	0.0000 (-5.6121)	0.0003 (-5.5342)
GDP growth	0.0000 (-8.2508)	0.0000 (-8.1802)	0.0000 (-9.6225)	0.0000 (-9.6443)
Unemployment rate	0.0000 (-6.4217)	0.0000 (-6.3869)	0.0000 (-9.9911)	0.0000 (-9.8987)
Inflation rate	0.0000 (-7.6438)	0.0000 (-8.0007)	0.0000 (-15.2601)	0.0000 (-15.3094)
Confirmed Cases/population	0.0067 (-3.7054)	0.0210 (-3.8572)	0.0000 (-9.9854)	0.0000 (-9.8964)
Death/ Confirmed cases	0.0000 (-6.6752)	0.0000 (-6.5795)	0.0000 (-11.759)	0.0000 (-11.654)
	Phillips-Perron test			
Variables	Level		First Difference	
	Intercept	Trend	Intercept	Trend
POV	0.0000 (-6.3010)	0.0000 (-6.2370)	0.0001 (-41.501)	0.0000 (-41.165)
GDP growth	0.0000 (-8.2382)	0.0000 (-8.1712)	0.0000 (-18.607)	0.0000 (-18.589)
Unemployment rate	0.0000 (-6.4200)	0.0000 (-6.3874)	0.0000 (-16.232)	0.0000 (-16.936)
Inflation rate	0.0000 (-7.6406)	0.0000 (-7.9841)	0.0000 (-15.260)	0.0000 (-15.309)
Confirmed Cases/population	0.0000 (-6.1418)	0.0000 (-6.2862)	0.0001 (-20.215)	0.0001 (-19.362)

Source: Author's Compilation Using Eviews 10

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The unit root test result using the Augmented Dickey-Fuller (ADF) and Phillips-Perron test approach was presented in Tables 3 above. The result shows that the following variables: poverty, GDP growth, Inflation rate, confirmed cases/population were stationary, also after first difference, the series became stationary at a 5% level of significance.

5. Analysis of Co-integration Test

Johansen-Jouselus Co-integration Test, which shows the existence of a single vector of co-integration, Table (4) shows the results of the effect test with a significant level of 5%, where the value of trace statistic is greater than the value of critical value except inflation rate, (and therefore we reject the null hypothesis) H0: r = 0: (with no co-integration relationship We accept the alternative hypothesis .(H1: r =1) (Secondly, the results of the maximum value test show that max-Eigen values grater than critical value except for inflation and confirmed cases at a significant at a level of %5, (and therefore, we reject the null hypothesis (H0: r = 0) and accept the hypothesis Alternative (H1: r =1) which confirms the result of the impact test, and accordingly we conclude that there is a long-term relationship between poverty and GDP growth, unemployment rate, inflation and confirmed cases .

Table-4-Johannsen Co-integration Test

	Unrestricted Co-integration Rank Test (Trace)			
Variables	Eigenvalue	Trace Statistic	Critical Value 0.05	Prob.
POV	0.676471	137.7824	95.75366	0.0000
GDP growth	0.580278	90.38685	69.81889	0.0005
Unemployment rate	0.444344	53.92404	47.85613	0.0121
Inflation rate	0.249751	29.24459	29.79707	0.0578
Confirmed Cases/population	0.191210	17.17590	15.49471	0.0277
	Unrestricted Co-integration Rank Test (Maximum Eigenvalue)			
Variables	Eigenvalue	Max-Eigen Statistic	Critical Value 0.05	Prob.
POV	0.676471	47.39558	40.07757	0.0063
GDP growth	0.580278	36.46282	33.87687	0.0240
Unemployment rate	0.444344	24.67945	27.58434	0.1127
Inflation rate	0.249751	12.06869	21.13162	0.5409
Confirmed Cases/population	0.191210	8.913069	14.26460	0.2935

Source: Author's Compilation Using E-views 10

6-Estimating Model Coefficient:

-Estimating short-run coefficient For the short- run analysis, the impact of inflation, unemployment, economic growth and confirmed cases/population on poverty can be illustrated from the table (5).All independent variables significantly affect the poverty rate in the short-run. There are no unmatched expected signs on the coefficients. Although economic theory emphasizes a

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negative relationship between economic growth and poverty, the estimated model indicates a direct relationship in the long run, but in the short term, the relationship is inverse, and this is consistent with economic theory, where if economic growth changes by one unit, poverty decreases by (4.08). This is a logical result in light of the COVID-19 epidemic.

As for the other variables, such as the unemployment rate and inflation, their effect was positive, and this is consistent with the economic theory and what was stated in the basic research hypotheses. Also, the variable of Confirmed cases with the virus to population, its impact was negative, as stated in the economic theory, and this was expected in the research hypothesis, where the greater the number of people infected with the virus, the greater the poverty in the world. In order to obtain the short-run ARDL model, the Error Correction Model (ECM) is necessary because it measures the speed of adjustment to the short-term imbalance to the long-term equilibrium. If the parameter is negative and significant, this indicates that there is a long-run equilibrium relationship. It is clear from the results that the value of the error correction coefficient is (-2.556), with a significance of 1%, which confirms the existence of the long-term equilibrium relationship between the independent variables and the dependent variable (poverty). The short-term poverty (255.6) in the previous period (t-1) can be corrected in the current period (t) in order to restore balance in the long-term in the event of any change in the independent variables.

--Estimating long-run coefficient

In the case of co-integration between the variables, the next stage involves estimating long-run coefficients. The results in long-term showed the existence of an inverse relationship between the confirmed cases and poverty in the long term, unlike what came in the short term, perhaps due to the principle of Trade-Off, which is one of the economic principles, that is, the increase in confirmed cases by one unit led to a decrease in poverty, which confirms giving preference to the economic situation on the health situation. As for the GDP growth variable, the indication was not identical to the economic theory, GDP growth does not necessarily lead to poverty reduction because the effect of this variable on poverty depends on the extent of inequality The results of the study also showed that both of them exert a greater influence on poverty compared to the other variables.

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Table -5- Estimation of (GDP growth, Unemployment rate, Inflation rate and Confirmed cases/population) Impact on poverty using ARDL approach

Variables	Coefficient	Std. Error	t-Statistic	Probability
Constant	145.8195	18.70355	7.796355	0.0000
POV	0.236184	0.190104	1.242391	0.2455
GDP growth	2.677697	0.946008	2.830524	0.0197
Unemployment rate	1.787281	0.528842	3.379610	0.0081
Inflation rate	1.081320	0.238009	4.543181	0.0014
Confirmed cases/population	-2.779049	1.216947	-2.283623	0.0483
	Short run impact			
Variables	Coefficient	Std. Error	t-Statistic	Probability
GDP growth	-4.082992	0.825244	-4.947616	0.0008
Unemployment rate	0.591343	0.354450	1.668339	0.1296
Inflation rate	0.975375	0.313709	3.109174	0.0125
Confirmed cases/population	2.165640	0.950549	2.278305	0.0487
	Long run impact			
Variables	Coefficient	Std. Error	t-Statistic	Probability
GDP growth	3.380377	0.708800	4.769157	0.0010
Unemployment rate	0.856871	0.304534	2.813716	0.0203
Inflation rate	0.073827	0.212840	0.346865	0.7367
Confirmed cases/population	-5.216493	0.650817	-8.015296	0.0000
POV	1.792516	0.246940	7.258908	0.0000
Equilibrium point	-2.556332	0.187753	-13.615412	0.0000
R-squared	0.965259			
Adjusted R-squared	0.864896			
F-statistic	9.617663			
Prob(F-statistic)	0.000657			

Source: Author's Compilation Using Eviews 10

7-Diagnostic test results

The Ramsey test, Breusch-Godfrey, ARCH test and VIF test are displayed in table 6 above. The Ramsey test shows adequate stability of the model with marginal or limited omitted variables. The test is statistically significant. The Breusch-Godfrey test shows no serial autocorrelation with statistically significant probabilities. The ARCH test for heteroscedasticity shows that in fact the model variables are homoscedastic with insignificant probabilities .The VIF test shows no multi-collinearity among the independent variables in a multiple regression model.

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Table-6- Diagnostic test

Diagnostic Checking	Breusch-Godfrey test (Autocorrelation)	VIF test (Multicollinearity)	ARCH test (Heteroscedasticity)	Ramsey test (Identification)	Jarque-Bera test (Normality)
	Obs*R-squared (0.8232)	Variance Inflation Factor (1.05 – 1.26)	Obs*R-squared (0.5746)	Prob of F-statistic (0.1260)	Jarque-Bera (0.0132)

Source: Author's Compilation Using Eviews 10

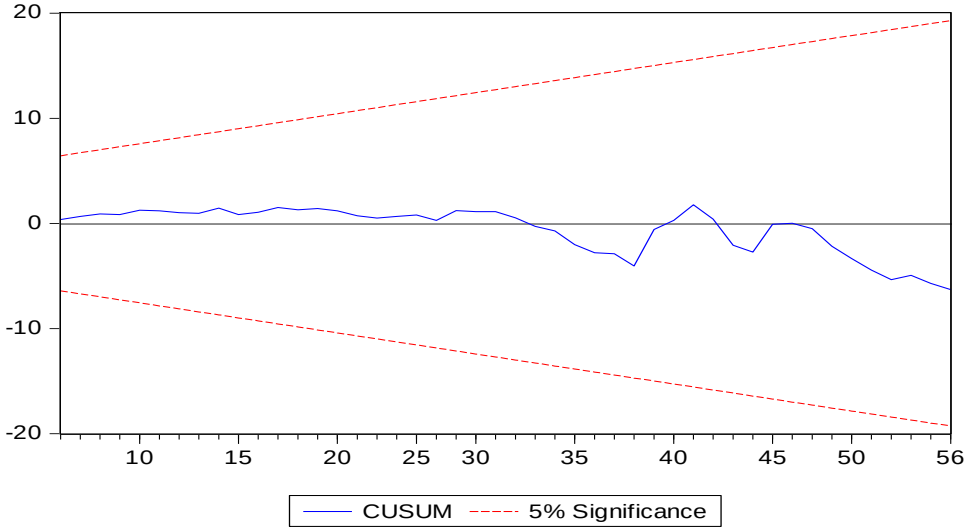
Second model

Diagnostic Checking	Breusch-Godfrey test (Autocorrelation)	VIF test (Multicollinearity)	ARCH test (Heteroscedasticity)	Ramsey test (Identification)	Jarque-Bera test (Normality)
	Obs*R-squared (0.7356)	Variance Inflation Factor (1.02 – 1.18)	Obs*R-squared (0.6886)	Prob of F-statistic (0.3577)	Jarque-Bera (0.1449)

Source: Author's Compilation Using Eviews 10

8-Model Stability (CUSUM)

The UECM of the ARDL model consists of a structural stability test for the short and The long term means that the data used in this study is free from the presence of any structural changes in it through time. To achieve this, two tests are used: the cumulative total test for the follow-up courses Cumulative Sum of Recursive Residual, CUSUM Cumulative Sum of Square Recursive. (Pesaran, M. and Pesaran, B. ,1997). From the two figures below, the results of the CUSUM and TESTS CUSUMSQ tests the model was found to be stable, as the curve fell within 5% confidence limits The model is free from any special structural problems, whether serial correlation, error variance, or stability, The transition is to test the existence of a long-term equilibrium relationship between the model variables.



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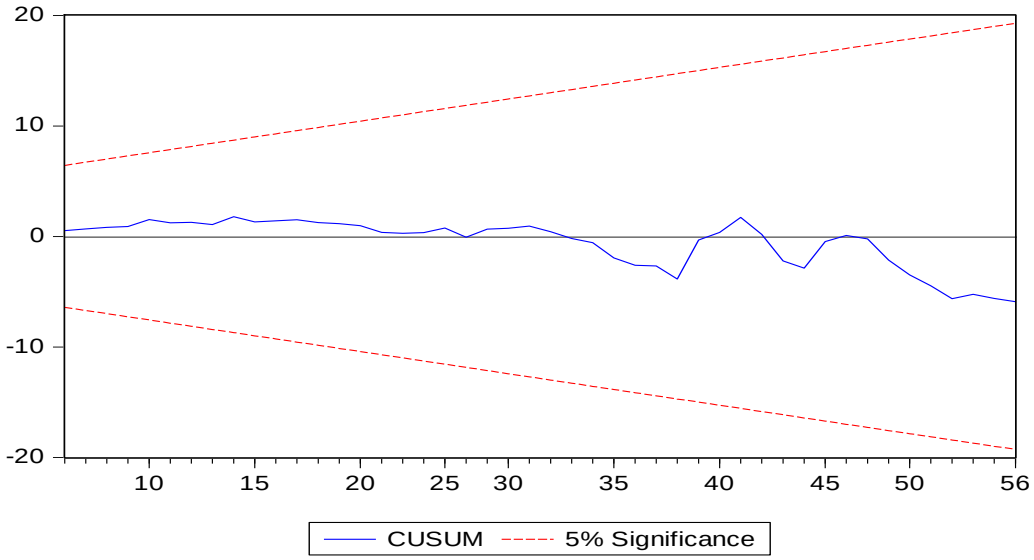

9-Conclusion

In this study we have sought to make estimates of the potential short-term poverty impact of COVID-19 in selected countries. While these estimates have important limitations as they are based on distribution neutral assumptions and crucially omit labour market, social and fiscal policy, and household-level responses to economic contractions, they are intended as indicative of the potential increase in poverty as a result of the damaging economic consequences of the pandemic.

We find that:

1-The impacts of Covid-19 are likely to increase the share of the global population living in extreme poverty for the first time in decades. The rapidly changing circumstances make it difficult to provide estimates with a high amount of certainty but it is likely that tens of millions of people will experience poverty due to Covid-19's disruption to the economy.

2-Most of the statistical tests that were conducted for the model showed the integrity of the model and its absence from the statistical and econometric problems that similar models often suffer from it. And that the model showed high significance in general, and that most of the variables had indication signs agree with the economic theory.

3-There are no unmatched expected signs on the coefficients. Although economic theory emphasizes a negative relationship between economic growth

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and poverty, the estimated model indicates a direct relationship in the long run, but in the short term, the relationship is inverse, and this is consistent with economic theory, where if economic growth changes by one unit, poverty decreases by (4.08). This is a logical result in light of the COVID-19 epidemic.

4-As for the other variables, such as the unemployment rate and inflation, their effect was positive, and this is consistent with the economic theory and what was stated in the basic research hypotheses.

5-Also, the variable of Confirmed cases with the virus to population, its impact was negative, as stated in the economic theory, and this was expected in the research hypothesis, where the greater the number of people infected with the virus, the greater the poverty in the world

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