Scholars Journal of Economics, Business and Management OPEN ACCESS
Abbreviated Key Title: Sch J Econ Bus Manag
ISSN 2348-8875 (Print) | ISSN 2348-5302 (Online)
Journal homepage: https://saspublishers.com

External Public Debt and Poverty Reduction in Cameroon

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DOI: 10.36347/sjebm.2021.v08i08.008 | **Received:** 13.07.2021 | **Accepted:** 19.08.2021 | **Published:** 30.08.2021

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Abstract **Original Research Article**

The objective of this research is to determine the contribution of external public debt on poverty reduction in Cameroon, from 1990 to 2015. The methodological set was inspired from works publish by the IMF in 2003, on the impact of the external public debt on poverty in countries with low income. Considering indicators used by the IMF, in a similar evaluation which are; Life expectancy at birth, Infant mortality rate, and Primary gross enrolment rate, to measure poverty. For our evaluation, the Auto Regressive Distributed Lag (ARDL) model and the Ordinary Least Square (OLS) method implemented under Eviews (analytical software) are used to come out with the results. These results bring out the fact that, the external public debt, has a direct and significant effect on poverty through the per capita income on indicators mention above. It equally affects poverty indirectly through economic growth and development. It is thus suggested an improved debt management and the optimization of the external public debt, with poverty reduction as the target.

Keywords: External public debt, poverty reduction, poverty indicators.

INTRODUCTION

The contraction of debts is a current mechanism for the development of states. It is one of the most used policy strategy for the financing of development projects, in view of poverty reduction. In most developing countries and elsewhere, the mobilisation of financial resources is a necessary condition for all development processes. It is in this sphere that, after their independence, African countries, in view of achieving economic and social development, confronted the fact that, the infrastructural equipment and the production sites available were insufficient for an economic take off.

There existed a wide gap between the necessary investment needs and the available resources. That is why, most countries, including Cameroon, embarked on the contraction of heavy public debts, most especially external debts. The debt phenomenon is a natural consequence of economic activities. It is based on the fact that, some countries or institutions have finances or budgetary surpluses, and others have budget deficits or insufficient budgets, that lead to financial needs. Debt contraction enables a country to invest capital beyond its actual financial capacity, by borrowing capital surpluses from other countries, Klein (1994).

The created debt is expected to generate growth and development. But to avoid a debt crisis, the contracted debt must be used efficiently, in productive sectors, to raise sufficient funds to enhance the debt repayment. Musgrave (1956) defines the functions of public finance as allocation of resources, redistribution and macro-economic stabilization. Inferences on poverty are gleaned when assessing incidence of government spending, Musgrave (1976).

The role of the government in poverty reduction is viewed on how social policy directs public expenditure. Following the principles of government expenditures, it is then possible to assess how government spending can be targeted to eradicate or reduce poverty, Kanbur (1984). In economic principles, poverty emerges as a problem of allocating scarce resources, Samuelson (1954). Resources can be allocated by government, to produce goods that are required by poor households and individuals.

Government resources can also be redistributive either through transfers and subsidies to the poor, Spicker (1993), Van & Nead (1995) or by ensuring that the richer strata of the population do not benefit more from government expenditure, Selowsky (1979). Encouraged by a fast and favourable growth and development context, coupled with low interest rates on debts, developing countries mobilised much

debts from financial institutions. This debt enabled them to realise a high growth rate. In the 1970s, the international environment changed, and became unfavourable, mostly because of a fall in the prices for raw materials (that led to a fall in incomes from exportations), an increase in interest rates, the fluctuation of exchange rates and a deterioration of exchange agreements, Bailo (2007).

We note that, most African countries exported only raw materials. Nevertheless, most developing countries continued on the pathway of indebtedness, without changing their internal debt policy. The borrowed capital was no longer used to finance investments, but to compensate for deficits in the balance of payment, and budgetary deficits. The evolution of debts for developing countries in time shows that, more debts were contracted because of factors other than the financing of productive investment projects. This gave rise to an accumulation of debts and a debt increase in amount that created the debt vicious circle.

It is in this general move, that Cameroon became heavily indebted, and forced to comply with the Structural Adjustment Programmes from the Bretton Woods Institutions (BWI). This further led to the Completion Point (CP), giving entry to Cameroon into the Heavily Indebted Poor Country (HIPC) initiative. Cameroon saw part of its external debt cancelled. It gave momentum for a quest for more debts for the financing of development projects. Most of these debts became more specific. Most lending institutions could now allocate specific amounts to specific projects, for poverty reduction, after a scrupulous project evaluation by their own experts.

In Cameroon, we have various Poverty Reduction Strategy Papers (PRSP), which serves as evaluation guides for projects financing and realisation of set objectives. Embarked in the realisation of a wide range of structural and development projects, that has been at the origin for the uprising of the public debt contraction, Cameroon is still at the quest for more projects financing, more especially with 2035 emergence goal. Our work will equally focus on the nature and causes of poverty in general and the need for appropriate policy interventions, particularly in Cameroun. The trust of our study is the role of external public debt in poverty reduction. The role of government expenditure in reducing poverty has been acknowledged from time immemorial.

The fundamental problem, theoretically and empirically, is poverty. Poverty in Cameroon is both rampant and long standing. Poverty would seem to be a problem Cameroon shares with all other countries in Sub Saharan Africa. The first generic problem is that, while it is easy to point out that poverty in Cameroon like elsewhere has many faces (see e.g. Gordon and Spicker 1999), it has become difficult to apprehend poverty in its entirety. In essence, approaches to poverty reduction are various and rooted in multidisciplinary discourses. In this regard, best practices in poverty reduction are still areas of fierce dispute. But of critical importance is designing a social policy that is suitable for the Cameroon's circumstances.

Secondly, poverty estimates such as those on Cameroon are subject to question. Do they capture the real magnitude and dimensions of poverty? It has a bearing on discussions about the types of remedies that can be adopted in the country-specific situation. The major source of government revenue, which can be used in local investment for poverty reduction, is mostly from taxes paid by the private sector. Due to an insufficient development of the private sector, the Cameroon government has used public debts contraction as a poverty reduction policy strategy. This is not a new strategy, it is an option that was put in place after it independence. This was an option most developing countries opted for.

The debt strategy has not been a gentle flow for developing countries, and Cameroon in particular. They witness the petroleum choc in 1973, even though they could overcome this choc with the use of petrodollars, and because their exports were diversified, they could stand the debt repayment. Cameroon equally witnessed a fall in the prices of her raw materials on the world market, a debt crisis that increased the amount of the debt, coupled with a huge interest rate. This led to the Structural adjustment Programme, imposed by the World Bank, and the International Monetary Fund. Cameroon was later introduced in the Heavily Indebted Poor Countries Initiative. This led to the cancelation of part of its external debt. Nevertheless, Cameroon has not departed from the debt option. The Objective of this study is to evaluate the contribution of external public debt on poverty reduction in Cameroon. This research is organised around the literature review (I), methodology framework (II), results interpretation's (III) and the suggestions (IV).

LITERATURE REVIEW

Amani Ahmed Alzahrani (2018), in his thesis on *The Impact of Government Debt on Macroeconomic Indicators: Evidence from G7 and ASEAN Countries*, Eastern Illinois University, states that, government debt continues to be a critical economic policy issue, which largely affects both developed and developing countries, due to elevated level of debt. From a general viewpoint, government debt is a crucial feature of a country's financial system and a major indicator that contributes to the formation of a country's reputation in the international market. This study investigates the impact of government debt on certain macroeconomic and wellbeing indicators in a group of industrialized and developing countries. That is, the study seeks to examine how government debt influences GDP per

capita, domestic and foreign investment, and HDI in both G7 and ASEAN nations during the period from 1995 to 2015. While the results indicate that there is a positive relationship between government debt and macroeconomic indicators in G7 countries, the government debt of ASEAN countries has a negative impact on macroeconomic and wellbeing indicators. Some presumed causes of the different impact of the debt on G7 vs ASEAN economies is "allocation effect", "threshold effect", and "institutional quality effect."

Ojapinwa Taiwo (2017), in his Thesis *on Impact of Public Debt on Economic Growth in Nigeria*, brings out the fact that, the rising debt profile of Nigeria has been an issue of concern to economic observers, policy makers and even the populace. The study focused on investigating the impact of public debt on economic growth in Nigeria for the period 1986-2014. Time series data on external debt stock and domestic debt stock was used to capture public debt burden. The study set out to test for both a long run and causal relationship between public debt and economic growth in Nigeria. An empirical investigation was conducted using time series data on Real Gross Domestic Product, External Debt Stock, Domestic Debt Stock, Consumer Price Index and Prime Lending Rate from 1986-2014. The techniques of Estimation employed in the study include Augmented Dickey Fuller (ADF) test, Johansen Co-integration, Vector Error Correction Mechanism and Granger Causality Test. The results of the study revealed that there exists a long-run relationship between external debt stock, domestic debt stock, consumer price index, prime lending rate and gross domestic product per capita in Nigeria. Also, it was discovered that external debt stock has insignificant negative relationship with real gross domestic product (RGDP) in Nigeria. However, domestic debt stock (DMD) has a positive and highly significant relationship with real gross domestic product (RGDP) in Nigeria.

Duc Anh, Le, (2017), in his theses on *Essay on fiscal policy, public debt, and growth: applications to Vietnam*, introduces an overview on the Vietnam's economy context in some recent decades. For instance, economic growth, inflation control, taxation system and its renewal, poverty reduction, and public debt issue. First, this thesis distinguishes public debt by two types, domestic and external debt and delivers a main message that an increase of tax on returns to assets can positively impact the steady-state values of main macroeconomic variables expressed in ratios of physical capital (consumption, public expenditure, domestic debt). Second, among other production factors, only provincial labor force exerts a positive impact on the provincial economic growth while government expenditure has no significant effect on growth for our sample during the 2000-2007 period. Finally, decentralization in government expenditure will promote economic growth if the share of local government expenditure is low enough that determined by the ratio of elasticity of local government expenditure to sum of local government and central government elasticities. Estimation results show that decentralization in government expenditure in case of Vietnam has a positive impact on economic growth, the higher level of decentralization in government expenditure leads to higher economic growth.

Naeem Akram (2016**),** in his article on "Public debt and pro-poor economic growth evidence from South Asian countries", shows that over the years, most developing countries have failed to collect enough revenues to finance their budgets. As a result, they face the problem of twin deficits and are relying on public external and domestic debt to finance their developmental activities. NGOs and anti-globalization movements have propagated the view that instead of reducing poverty, public debt has increased the miseries of the poor. The current study examines the consequences of public debt for economic growth and poverty regarding selected South Asian countries, i.e., Bangladesh, India, Pakistan and Sri Lanka, for the period 1975–2010. It develops an empirical model that incorporates the role of public debt into growth equations and the model is extended to incorporate the effects of debt on poverty. The model is estimated by using standard panel data estimation methodologies. The results shows that although public debt has a negative impact on economic growth, neither public external debt nor external debt servicing has a significant relationship with income inequality, suggesting that public external debt is as good/bad for poor as it is for rich. However, domestic debt has a positive relationship with economic growth and a negative relationship with the GINI coefficient, indicating that domestic debt is pro-poor.

Pierre-Richard Agénor, Nihal Bayraktar, Karim El Aynaoui, (2008), in *Roads out of poverty? Assessing the links between aid, public investment, growth, and poverty reduction*, presents a dynamic macroeconomic model that captures key linkages between foreign aid, public investment, growth, and poverty. Public capital is disaggregated into education, core infrastructure, and health. Dutch disease effects associated with aid are accounted for by endogenizing changes in the relative price of domestic goods. The impact of shocks on poverty is assessed through partial elasticity and household survey data. The model is calibrated for Ethiopia. The amount by which (nonfood) aid should increase to reach the poverty targets of the Millennium Development Goals is also calculated, under alternative assumptions about the degree of efficiency of public investment.

David Craig and Doug Porter (2003), in the article on Poverty Reduction Strategy Papers: A New Convergence, states that, Poverty reduction strategy papers represent both a primary policy device of

international development institutions, and an instance of a wider international convergence of public policy around global integration and social inclusion. Charting the emergence of these approaches, this paper argues that this convergence has a number of structural predilections which favor the technical and juridical over the political economic, and a disciplinary framework over a practical contest. Drawing extensively on decentralized governance and poverty reduction programs in Uganda, this paper shows how these predilections obscure power relations and restrict practical and political options, while exacting heavy establishment and compliance costs.

In fact, after the review and analysis of studies above, it appears that our work, though closely related to that of Amani Ahmed Alzahrani, is different. Our work is different in that, the study is targeted to CEMAC and more specifically on Cameroon, with the goal of poverty reduction through pubic external debt.

MODEL SPECIFICATION AND ESTIMATION METHODOLOGY

The methodological set below is inspired from works publish by the IMF in 2003, on the impact of external public debt on poverty in countries with low revenue. Notwithstanding, it application to Cameroon case study requires some modifications at the level of the model specification, and at the level of the estimation method used.

II.1- Variable choices and justifications

New perspective causes and manifestations of poverty bring the fact that, poverty is a multidimensional phenomenon and can be expressed in terms of revenue, physiological basic needs like access to health services and to educational services. In our work, we are going to use three standard indicators of human development (as derived by Dollar and kraay in their regression model) [1] to measure poverty, which are;

- Life expectancy at birth
- Infant mortality rate
- Primary gross enrolment rate

These three indicators were chosen because of the complexity in the notion of poverty, which may vary from one area to another. These indicators were chosen by the IMF as pertinent in explaining the poverty of nations. In the context of Cameroon, these indicators remain pertinent as concern poverty in view and explanation. The table 2 gives us World Bank data for these indicators in Cameroon from 1990 to 2015.

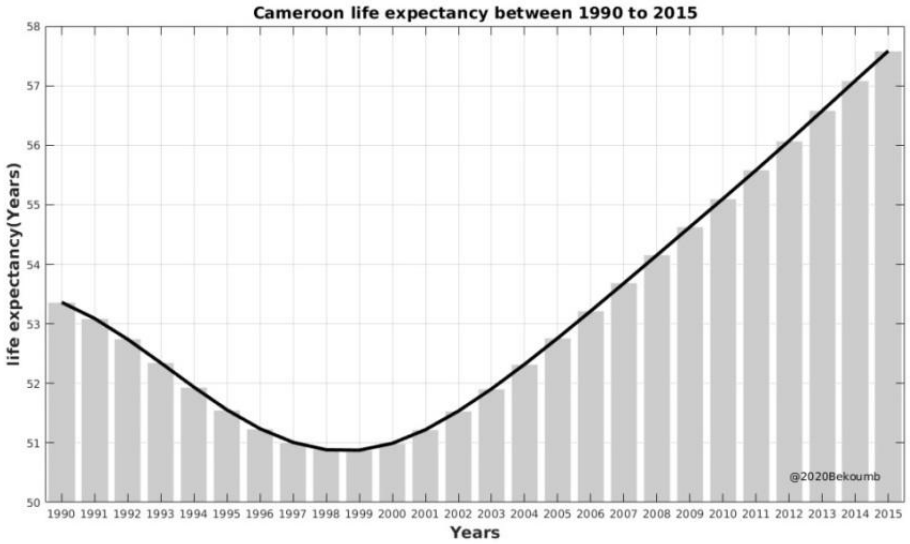
Table 1: Main poverty indicators for Cameroon from 1990 to 2015

Dates	Life expectancy	Infant mortality rate	Primary gross enrolment
1990	53.362	85.1	98.87776
1991	53.088	86.2	96.26161
1992	52.738	87.6	90.41086
1993	52.343	89.2	93.2297189
1994	51.936	90.7	83.48693
1995	51.554	92	81.28503
1996	51.238	92.9	74.67914
1997	51.009	93.3	78.20269
1998	50.885	93.2	80.35401
1999	50.878	92.3	82.84076
2000	50.993	90.7	85.20452
2001	51.222	88.6	100.81173
2002	51.536	86.2	100.80282
2003	51.908	83.7	100.92099
2004	52.321	81.2	105.41287
2005	52.76	79	103.44945
2006	53.215	76.7	102.30476
2007	53.681	74.6	104.24175
2008	54.153	72.1	104.35048
2009	54.627	69.9	106.26686
2010	55.101	67.1	108.13266
2011	55.581	64.9	107.22814
2012	56.073	62.5	111.66619
2013	56.576	60	111.718584
2014	57.083	57.9	113.27903
2015	57.583	55.7	116.21044

Source: World Bank

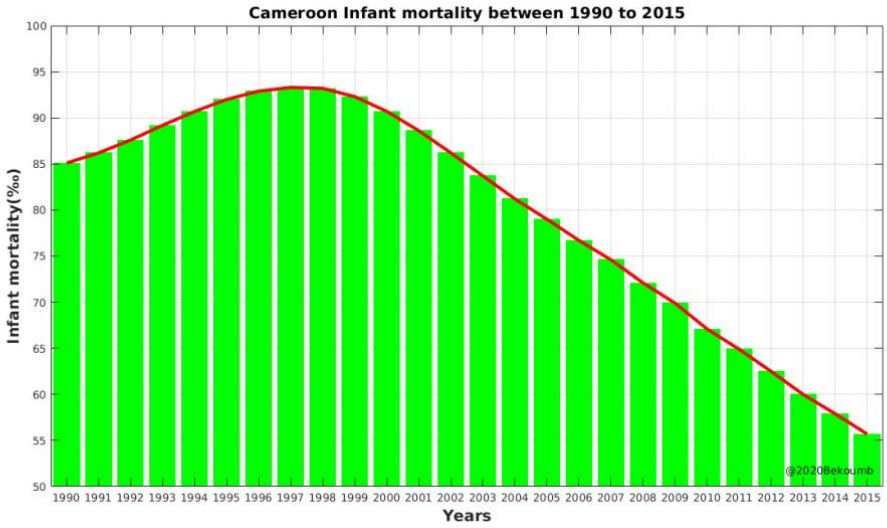
[1]IMF Working Paper WP/03/61

In our table, the first column shows life expectancy, Life expectancy according to the WHO, reflects the overall mortality level of a population. It summarizes the mortality pattern that prevails across all age groups in a given year, children and adolescents, adults and the elderly. From the table, we can witness a drop in life expectancy from 1992 to 2000, and amelioration from 2001 to 2015. In 2015 life expectancy in Cameroon being at 57 years. Graph 5 below will help bring out the variations in life expectancy between the years.



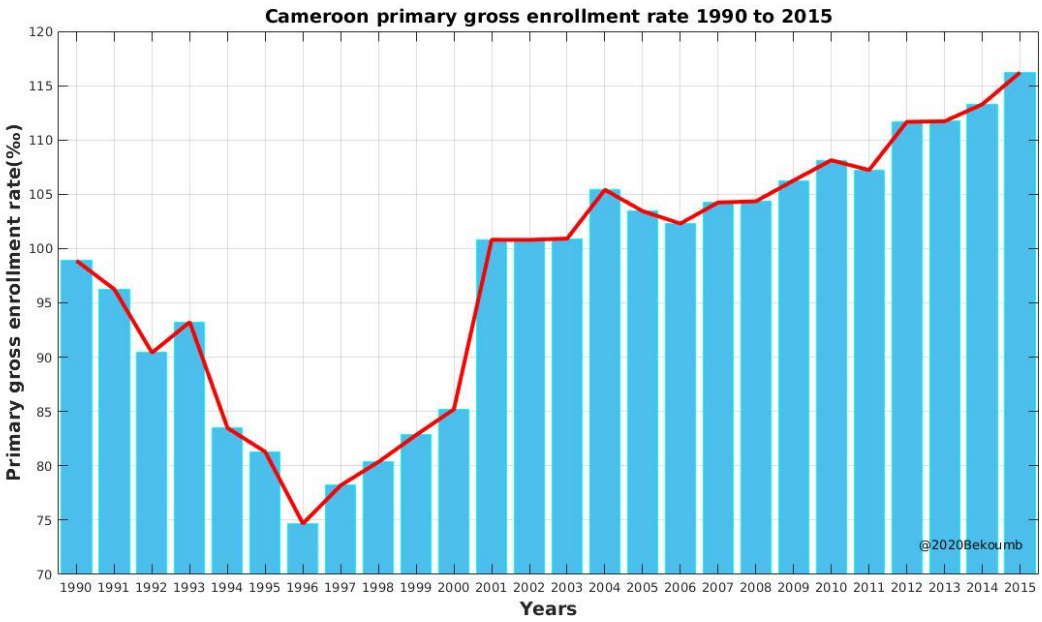
Graph 1: Cameroon life expectancy between 1990 to 2015
Source: Constructed from World Bank data

The second column in our table reptresents infant mortality. Infant mortality that is defined as the death of young children under the age of one (1). This death toll is measured by infant mortality rate (IMR), which is the number of deaths of children under one year of age per 1000 live births. Graph 6 below will bring out the picture of infant mortality in years, from 1990 to 2015 in Cameroon.



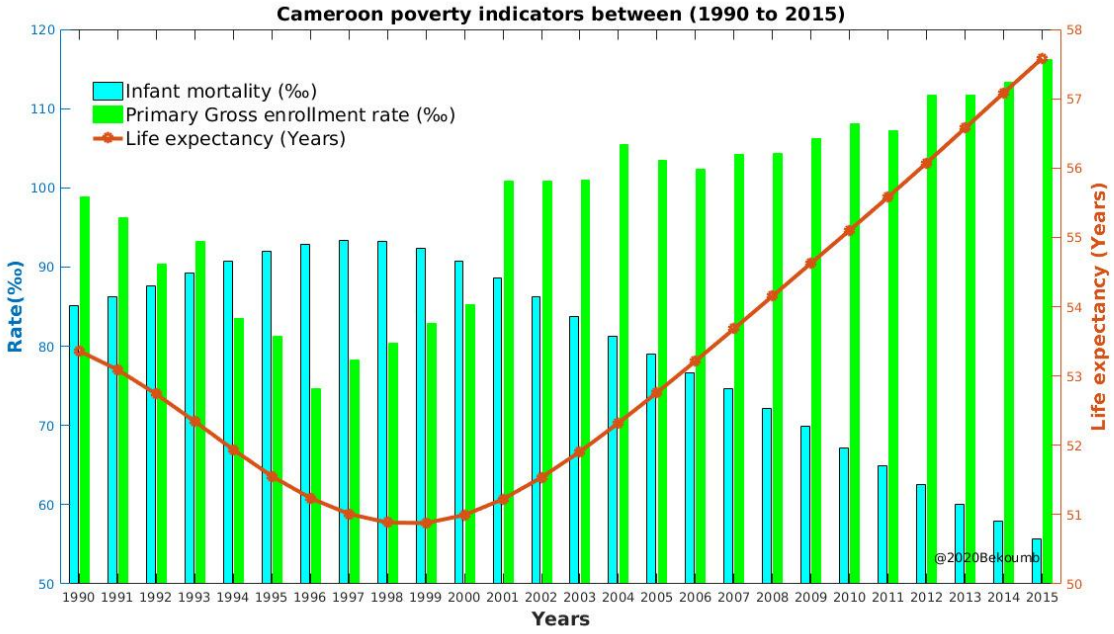
Graph 2: Infant Mortality Rate in Cameroon from 1990 to 2015
Source: Constructed from World Bank data

The third column in our table brings out the gross primary enrolment per 1000. The gross primary enrolment is the share of children of any age that are enrolled in primary school. Graph 7 brings out a variation picture of this indicator in Cameroon over the years, from 1990 to 2015.



Graph 3: Cameroon's primary gross enrolment rate from 1990 to 2015
Source: Constructed from World Bank data

Graph 9 will give us a view of a combination of these three indicators, in a targeted view of poverty in Cameroon.



Graph 4: Poverty indicators between (1990 to 2015)
Source: Constructed from World Bank Data

To take into consideration the impact of external public debt, our work will make use of three indicators that are indeed, calculated ratios. The first ratio is the nominal debt on the GDP; it enables to take into account the level of resources (brought about by the debt) available in the economy. Meanwhile, the value of the nominal debt is not generally a good measure of a country's external public debt, for a non-negligible part of this debt is concessional, that is, it is subsidized, as it is often the case for countries with low revenue. Thus, in addition to the first ratio, we will use the ratio of the debt net actual value on exportations, which takes into account the country's solvency, that is, its capacity to payback a given debt. These two ratios

will permit to isolate all effects linked to over indebtedness. To take into account the debt eviction effect, we will use the debt service on exportations; this ratio permits to apprehend the debt effect on liquidity.

Finally, since the external debt has an effect on economic growth, and consequently on poverty, thus in our model, we take into consideration this effect through the use of real GDP per capita.

II.2- Data sources and observation period

The data used for the realization of this work, all come from the World Bank data on Cameroon. Our period of observation runs from 1970 to 2018, but for some estimates, we judge necessary to limit ourselves to 2015; this is to eliminate the influence of other factors like the security crisis in Cameroon.

Initially, the model we are estimating in this work is given below:

$$PI_t = \propto_1 + \propto_2 Y_t + \propto_3 D_t + e_t$$

- PI_t represents a measure of poverty at time ***t***
- Y_t represents the per capita income at time ***t***
- D_t represents a measure of external indebtedness at time ***t***
- e_t represents the error term

Meanwhile, to take into account eventual delays existing in the transmission of chocks, enabling us to have a more precise view of the economic reality; we introduce a lag in the initial model. These lags will be considered on both exogenous and explanatory variables. The model then takes the following nature:

$$PI_t = \sum_{p=0}^{P} \propto_p PI_{t-p} + \sum_{p=0}^{P} \beta_p Y_{t-p} + \sum_{p=0}^{P} \gamma_p D_{t-p} + e_t$$

To estimate coefficients, we proceeded in two stages. In a first stage, we determine the number of optimal lags for this equation thanks to the Auto Regressive Distributed Lag (ARDL) model implemented under Eviews (analytical software). In the second stage, we used the Ordinary Least Square (OLS) method, to make an estimate of coefficients for the new equation. In all, we thus estimate three models on Eviews (a model for each indicator of poverty).

ANALYSIS OF THE POVERTY RESPONSE IN RELATION WITH EXTERNAL PUBLIC DEBT INFLUENCE

III.1 Descriptive data analysis

Table 2: Evolution of average per Capita GDP, Debt, and poverty

Year	life expectancy	Infant mortality	Primary Gross enrollment rate	GDP per capita (US dollar)	Debt service (% of exports)	Nominal Debt (% of GDP)	NPV Debt (% of exports)
1970 - 1979	48,89	115,47	92,32	710,70	0,08	0,21	244,19
1980 - 1989	52,89	94,68	99,79	1 684,74	0,21	0,39	53,19
1990 - 1999	51,90	90,25	85,96	1 825,77	0,20	0,84	45,47
2000 - 2009	52,64	80,27	101,38	2 429,59	0,13	0,53	18,20
2010 - 2015	56,33	61,35	111,37	3 110,23	0,05	0,15	5,67

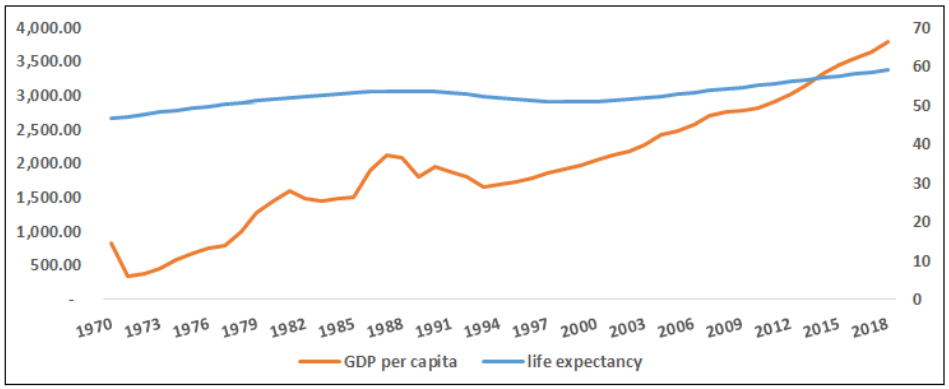
Source: World Bank data

From the table above, what can be note is that each of the poverty indicators have witnessed a positive evolution. In fact, the life expectancy for Cameroonians went from about 49 years in 1970[s] to 56 years in 2015; the same holds for infant mortality and for the primary gross enrolment. In a general notice, from 1970 till date, we notice a reduction in poverty apprehended through indicators cited above.

On the other hand, we can equally note a global amelioration of poverty indicators. In fact, the solvency, measured by the net present value of the external debt to exports shows a tendency to decline (a decreasing trend). This is a forecast that, with time, the capacity of Cameroon to payback its debt through export income is ameliorated, even though the income from exports are still very low as compared to external debt. On the view point of liquidity, we can notice that, during the short run, Cameroon's exports cover the debt service; besides, this liquidity is ameliorated with time. The debt service that represents an average close to 20% of exports between 1980 and 1999 represents only an average of 5% of exports between 2010 and 2015. This reduction is greatly due to the HIPC initiative that Cameroon benefited from the years 2000.

III.2 Comparative analysis of economic growth and subjective poverty indicators

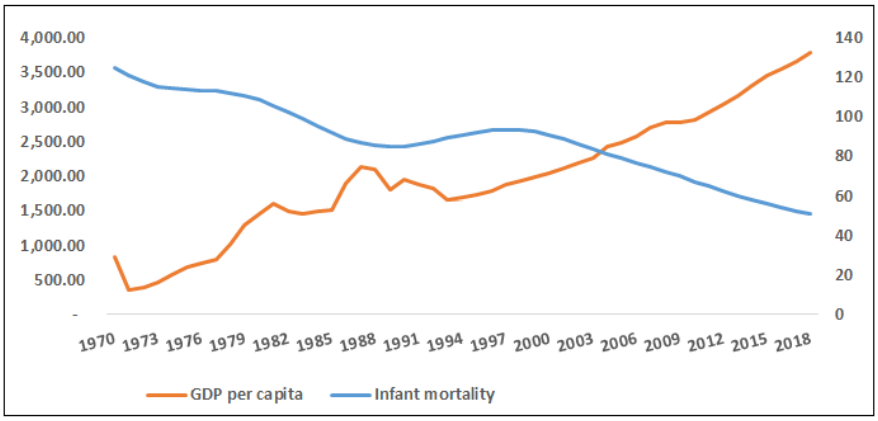
III.2.1 Per Capita GDP and Life expectancy



Graph 5: Per Capita GDP and Life expectancy
Source: World Bank data

From the graph above, we can notice a growth in GDP per capita and an increase in life expectancy in Cameroon, even though the two variables do not increase in the same proportion. In fact, we observe a strong slop for the GDP per capita compared to life expectancy. Meanwhile, the fact that these two variables rises in the same direction permit to presume that the growth of GDP per capita might have an influence on an amelioration in life expectancy and thus on poverty.

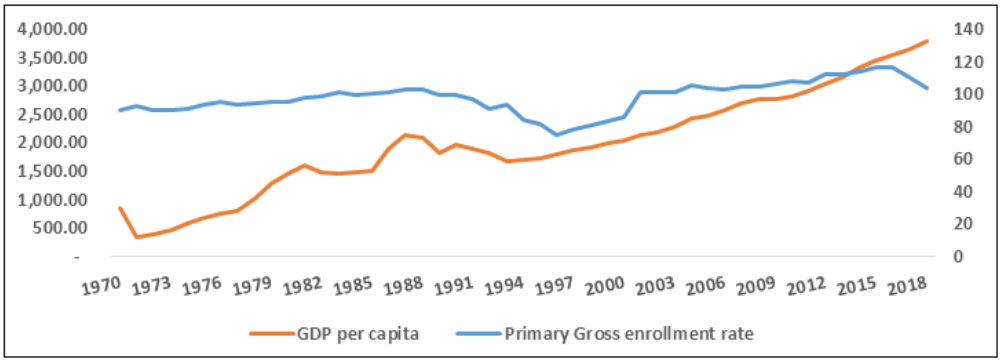
III.2.2 Per Capita GDP and infant mortality



Graph 6: Per Capita GDP and infant mortality
Source: World Bank data

On the graph above, we observe that the upward increase of the DGP per capita goes in pair with a fall in infant mortality for the same period. From this result, we can presume that an increase in Cameroonian riches has as effect on the improvement of living conditions by a fall in infant mortality.

III.2.3 Per Capita GDP and Primary Gross enrolment rate



Graph 7: Per Capita GDP and Primary Gross enrolment rate
Source: World Bank data

Graph 12 brings out the fact that, GDP per capita and the rate of primary school enrolment are moving in the same direction, even though their slope curves are different. We can then say, economic growth in Cameroon equally has a leading influence in the reduction of poverty, through an increase in school enrolment.

The above graphs enable us to ascertain that, in a general note, economic growth has a positive effect on poverty reduction.

III.3 Estimation of results

Table 3: Estimations summary

Regressors/indicators	**Poverty indicators**		
	Life expectancy (Model 1)	**Infant mortality (Model 2)**	**Primary gross enrolment (Model 3)**
Per Capita GDP	**0,003*** (-2)**		**0,16*** **
Nominal Debt to GDP	**0,002*** (-1)**	**0,017*** (-1)**	**0,534*** (-1)**
Debt service to exports	**-0,004*** (-2)**	**0,012*** **	
Net present value of debt to exports		**0,016*** **	**0,04** **
R-Squared (ajusted)	**0,72**	**0,76**	**0,6**
Observations	**36**	**41**	**36**
*** Significant at 1% level ** Significant at 5% level			

Source: E-views estimations

Estimation results are presented in the table above; from these estimations, the following elements emerge:

III.3.1 Model 1: (In this model, poverty is apprehended through life expectancy)

The per capita GDP coefficient lagged by two periods is positive and significant; this means that, the level of real per capita GDP of the year t-2 has an influence on life expectancy. The model shows for instance that, if the per capita GDP for the year 2013 increases by 10%, then, we can expect life expectancy for the year 2015 to increase by 0.03 points, with a confidence threshold of 99%.

More still, the level of the nominal debt on the GDP at the period t-1 exercises a positive and significance influence on life expectancy at period t ; that means, the level of disposable income effect in the economy, as a result of indebtedness is felt on live expectancy and becomes visible only during the next period; more precisely, when indebtedness in year t increases by 10% in Cameroon, we should expect it to be translated by an increase in life expectancy during the year t+1 by 0.02 points.

In addition, we remark that, a 10% reduction in disposable liquidity due to debt repayment during period 1, has as effect the reduction of life expectancy during the period t+2 by 0.04 points, thus increasing the level of poverty.

III.3.2. Model 2: (In this model, poverty is apprehended through infant mortality rate)

The coefficient of the nominal debt to the GDP is significant and positive; this assume that, the level of indebtedness in year t-1 has a negative effect on infant mortality rate in year t. More precisely, when indebtedness in year t-1 increases by 10%, we should expect that the rate of infant mortality at year t increases by 0.2 points. Thus, for poverty on the infant mortality view point, indebtedness has as effect to increase poverty.

More still, we observe that a 10% reduction in disposable liquidity due to the debt servicing, has as immediate effect the same year, an increase in mortality rate by 0.1 points. The debt service thus, has a perverse effect on the poverty level in Cameroon.

In addition, the coefficient of the net actual value of the debt is positive and significant. This shows that the future payments of the debt will have a negative effect on infant mortality. The results from estimates shows that, when the actual value of the future debt increases by 10%, the infant mortality rate increases by 0.2 points for the same period, translating a perverse effect on poverty.

III.3.3 Modèle3: (In this model, poverty is apprehended through primary gross enrolment)

The coefficient for GDP per capita is positive and significant; this means the current level of real GDP per capita has an influence on primary gross enrolment. The model shows that, if the GDP per capita in a year increases by 10%, then we can expect an increase of 1.6 points in primary gross enrolment rate, with a confidence mark at 99%, implying a reduction in poverty.

More still, the level of the nominal debt to GDP at period t-1 exercises a positive and significant influence on primary gross enrolment rate at period t ; that means, the level of available resources in the economy due to indebtedness impact on primary gross enrolment rate is visible only in the next period ; more

precisely, when indebtedness in year t increases by 10% in Cameroon, we should expect that it will bring about an increase in primary gross enrolment rate by 5.3 points in year t+1.

Finally, the coefficient of the net actual value of the debt is positive and significant. This shows that the future debt repayment or servicing has a negative effect on primary gross enrolment. The results from estimations shows that, when the present value of the debt increases by 10%, the primary gross enrolment increases by 0.4 points for the same period, thus translating a positive effect on poverty reduction.

Overall, debt can affect growth and GDP per capita which will also contribute in poverty reduction. We realize the external debt as a resource can be used to reduce poverty through economic growth that is felt on the GDP per capita. This has a positive effect on poverty indicators like life expectancy and primary gross enrolment rate. While leaving infant mortality rate untouched, with a tendency of acting negatively on it. Meaning the infant mortality will be affected by other factors beyond external debt. Nevertheless, the external debt can move indirectly through connected factors like education, which is likely to create awareness on measures to curtail infant mortality. It is clear that, the external public debt as a resource can be an effective tool as poverty reduction or in worsening the poverty situation. For most developing countries, the external debt is a major resource for growth and poverty reduction.

SUGGESTIONS FOR AN EFFICIENT CONTRIBUTION OF EXTERNAL PUBLIC DEBT TO POVERTY REDUCTION IN CAMEROON

For an efficient contribution of external public debt to poverty reduction, it is necessary to formulate some recommendations, on one hand to national authorities, and on the other hand to creditor institutions.

To fight against obstacles to a proper utilization of resources from external debt on direct investment for poverty reduction and indirectly through economic growth, the Cameroonian authorities have to suppress the institutional and administrative obstacles to the putting in place of projects, pursue the macroeconomics reforms, ameliorate in the level of projects maturity, improve the management of the external public debt to perform his productivity, establish the classification of local enterprises apt for the realization of infrastructural projects and allocate the greater part of external debt resources on social projects, for a direct impact on poverty reduction.

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1. APPENDIX

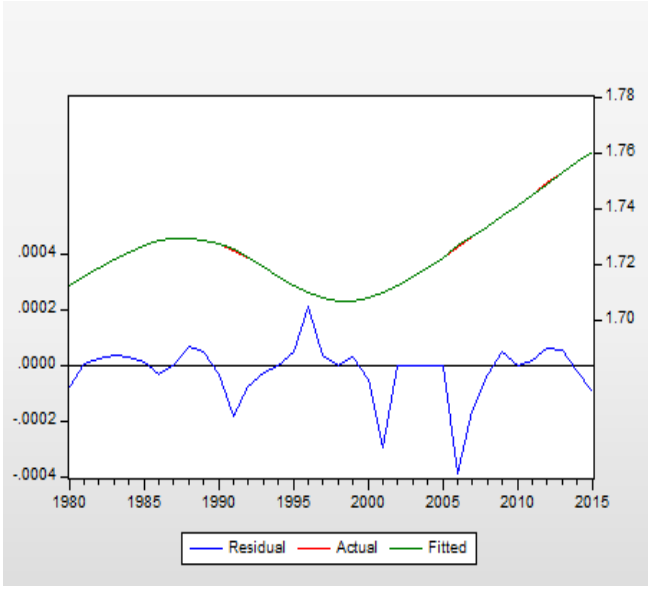
Appendix 1: Model 1 estimations results and tests from EViews

Dependent Variable: LIFE
Method: Robust Least Squares
Date: 08/15/20 Time: 17:57
Sample: 1980 2015
Included observations: 36
Method: M-estimation
M settings: weight=Bisquare, tuning=4.685, scale=MAD (median centered)
Huber Type I Standard Errors & Covariance

Variable	Coefficient	Std. Error	z-Statistic	Prob.
LIFE(-1)	2.103254	0.011698	179.7923	0.0000
LIFE(-2)	-1.125348	0.010101	-111.4066	0.0000
LY(-2)	0.002808	0.000201	13.95241	0.0000
NOMINAL(-1)	0.002149	0.000127	16.85937	0.0000
SERVICE(-2)	-0.004003	0.000289	-13.84456	0.0000
C	0.028293	0.004357	6.494358	0.0000
R2004	-0.000821	7.80E-05	-10.52787	0.0000
R2003	-0.000824	8.04E-05	-10.24275	0.0000
R2002	-0.000600	8.02E-05	-7.484513	0.0000
R2005	-0.000658	7.57E-05	-8.695640	0.0000

Robust Statistics

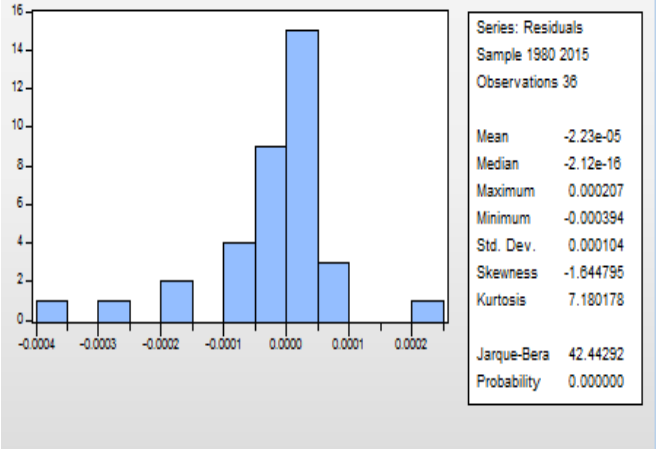
R-squared	0.795185	Adjusted R-squared	0.724288
Rw-squared	0.999990	Adjust Rw-squared	0.999990
Akaike info criterion	65.27484	Schwarz criterion	88.28301



Date: 08/16/20 Time: 01:19
Sample: 1980 2015
Included observations: 36
Q-statistic probabilities adjusted for 2 dynamic regressors

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob*
		1	0.306	0.306	3.6617	0.056
		2	-0.077	-0.188	3.8990	0.142
		3	-0.165	-0.091	5.0269	0.170
		4	-0.192	-0.137	6.6004	0.159
		5	-0.061	0.015	6.7642	0.239
		6	-0.021	-0.066	6.7840	0.341
		7	-0.051	-0.078	6.9080	0.439
		8	-0.012	-0.009	6.9150	0.546
		9	0.056	0.041	7.0737	0.629
		10	-0.139	-0.234	8.0921	0.620

*Probabilities may not be valid for this equation specification.



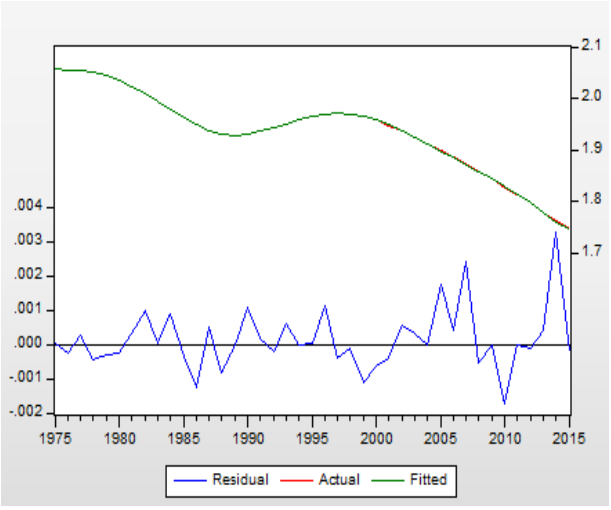
Appendix 2: Model 2 estimations results and tests from EViews

Dependent Variable: INF
Method: Robust Least Squares
Date: 08/16/20 Time: 01:28
Sample: 1975 2015
Included observations: 41
Method: M-estimation
M settings: weight=Bisquare, tuning=4.685, scale=MAD (median centered)
Huber Type I Standard Errors & Covariance

Variable	Coefficient	Std. Error	z-Statistic	Prob.
INF(-1)	1.906775	0.040672	46.88200	0.0000
INF(-2)	-0.991901	0.037648	-26.34664	0.0000
NOMINAL	-0.019711	0.003441	-5.728375	0.0000
NOMINAL(-1)	0.016846	0.003069	5.489268	0.0000
NPV	0.016450	0.001539	10.68925	0.0000
SERVICE	0.011351	0.003705	3.063856	0.0022
C	0.139677	0.012171	11.47584	0.0000
R2009	0.004188	0.000874	4.793861	0.0000
R2011	0.005050	0.000902	5.596252	0.0000

Robust Statistics

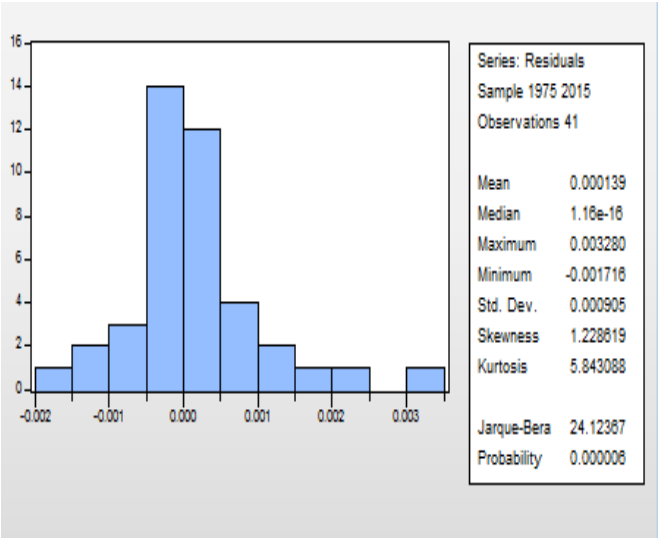
R-squared	0.807702	Adjusted R-squared	0.759627
Rw-squared	0.999948	Adjust Rw-squared	0.999948
Akaike info criterion	69.46889	Schwarz criterion	88.07546
Deviance	1.87E-05	Scale	0.000585



Date: 08/16/20 Time: 01:31
Sample: 1975 2015
Included observations: 41
Q-statistic probabilities adjusted for 2 dynamic regressors

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob*
		1	-0.000	-0.000	6.E-08	1.000
		2	0.137	0.137	0.8465	0.655
		3	-0.151	-0.153	1.8978	0.594
		4	-0.356	-0.388	7.9339	0.094
		5	-0.164	-0.158	9.2445	0.100
		6	-0.108	-0.036	9.8314	0.132
		7	0.130	0.082	10.706	0.152
		8	-0.113	-0.321	11.385	0.181
		9	0.270	0.098	15.401	0.080
		10	-0.056	-0.032	15.581	0.112

*Probabilities may not be valid for this equation specification.



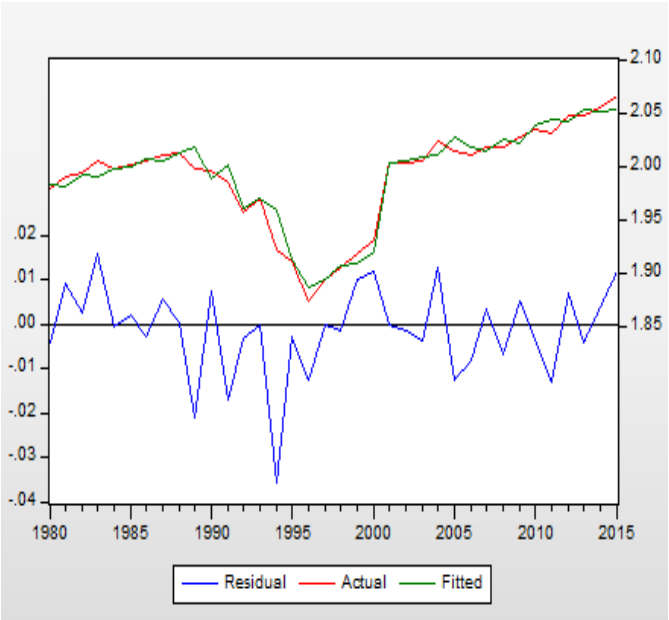
Appendix 3: Model 3 estimations results and tests from EViews

Date: 08/16/20 Time: 00:47
Sample: 1980 2015
Included observations: 36
Method: M-estimation
M settings: weight=Bisquare, tuning=4.685, scale=MAD (median centered)
Huber Type I Standard Errors & Covariance

Variable	Coefficient	Std. Error	z-Statistic	Prob.
PRIM(-1)	0.941178	0.121381	7.753892	0.0000
PRIM(-2)	-0.228741	0.127345	-1.796233	0.0725
LY	0.164131	0.059153	2.774669	0.0055
NOMINAL	-0.332079	0.080729	-4.113496	0.0000
NOMINAL(-1)	0.533702	0.147768	3.611755	0.0003
NOMINAL(-2)	-0.257835	0.078084	-3.302000	0.0010
NPV	0.039749	0.016687	2.382070	0.0172
R2001	0.062111	0.012125	5.122408	0.0000
R1993	0.033820	0.012624	2.679146	0.0074

Robust Statistics

R-squared	0.688260	Adjusted R-squared	0.595893
Rw-squared	0.974095	Adjust Rw-squared	0.974095
Akaike info criterion	65.27772	Schwarz criterion	79.48044
Deviance	0.002464	Scale	0.007222



Date: 08/16/20 Time: 01:38
Sample: 1980 2015
Included observations: 36
Q-statistic probabilities adjusted for 2 dynamic regressors

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob*
		1	-0.088	-0.088	0.3020	0.583
		2	0.207	0.201	2.0283	0.363
		3	0.192	0.236	3.5599	0.313
		4	-0.210	-0.236	5.4506	0.244
		5	0.199	0.083	7.2024	0.206
		6	-0.269	-0.223	10.499	0.105
		7	-0.073	-0.091	10.752	0.150
		8	-0.164	-0.208	12.069	0.148
		9	-0.065	0.134	12.280	0.198
		10	-0.199	-0.280	14.358	0.157

*Probabilities may not be valid for this equation specification.