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Econometric Model of Poverty in Cameroon: A System Estimation Approach

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This study examines the full impact of some macroeconomic variables on poverty in Cameroon through a system estimation approach using three stage least squares technique after the application of the co-integration error correction mechanism. The coefficients of our explanatory variable based on seven structural equations, estimated report positive relationship between inflation, unemployment, government revenue, dependency ratio and poverty and negative relationship between GDP, real wage rate, broad money supply and poverty. Poor growth of GDP in Cameroon from our result is being caused by high level of unemployment, excessive fiscal expansion, distortion of the transport system by excessive roadblocks and high cost of fuel. For poverty reduction in Cameroon, we suggest the creation of community action programs for poverty alleviation in Cameroon by the government and non-government organizations.

Field of research: Economics.

1. Introduction

The issue of poverty alleviation is recently emerging as a major subject of concern in notional and international policy discourse after many decades of its relegation to the background. As pointed out by Angaye (2005), poverty is engulfing more and more of the world's human population. According to him, the number of the poor in the world stood at about 1 billion in 1994, 1.3 billion in 1995, 1.74 billion in 1994, 2.04 billion in 2000, 2.56 billion in 2002, and has continued to increase despite all developmental effort put in place by both the government and non-government organizations (NGOs) to eradicate poverty. Olu (2003) observes that while the numbers of poor in the advanced countries of the world has reduced considerably over the years, the reverse is the case with the developing countries. Poverty in developing countries takes various forms including low nutritional status, low level of education, decline in spending on social services by the government, high percentage of household income spent on food, high infant mortality rate, low level of savings, low level of investment, low absorption capacity, poor stage of quality and quantity of infrastructural development and low level of productivity.

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In Cameroon, the development of the modern sectors of the economy was a phenomenon that started from the colonial era, whereas the country's economic performance in the 1950s, 1960s, and 1970s was very encouraging, development in the country in the later parts of 1975s, 1980s and early parts of 2000s have led to increase in absolute poverty as well as in the severity of poverty in the country. Statistics provided by the African development indicators 2000 and interpolated to 2005 shows that in 1970 based on head-count index, 15.65 percent of Cameroonians lived below the poverty line, while 7.22 percent was described as the core poor. In 1975, 19.76 percent of Cameroonians fall below the absolute poverty line with 12.73 percent of the population known to be the core poor. Five years later the number rose to 24.29 percent while that of the core poor rose to 13.90 percent. The 1985 figure for the absolute poor in Cameroon was 29.33 percent, 1990 it rose to 50.52 percent,1995 it stood at 64.72 percent and the value was estimated to be about 67.68 percent in 2003 with their corresponding core poor rates as 9.46 percent, 23.00 percent, 26.12 percent and 31.62 percent respectively. If this trend has to continue, it means that about 80 percent of Cameroonians by 2010 will fall below the poverty line with about 42 percent of such known as the core poor. Given the fact that much seem to have been done to eradicate poverty in Cameroon and yet poverty prevails, it therefore, means that the road causes of poverty in Cameroon have not yet been identified and solved or wrong policies have been directed towards solving the poverty problems. It is based on this that a study such as this is necessitated. Therefore, the main objective of this study is to formulate an econometric model of poverty for the economy of Cameroon in a system estimation approach.

2.Theoretical Framework and Review of Related Literature.

The natural circumstantial theory of poverty. This theory identifies some geographical locations, inadequate natural endowment in human residents, unemployment, old age, physical affected and mental disabilities as explanatory variables for the existence of poverty in some parts of the world. This theory therefore, suggests that for poverty to be eradicated, sectional welfare measures must be provided to the poor. Although the policy suggestion of this theory is considered very useful as poverty alleviation measure, some developing countries have failed to make effective use of such suggestion. Cases in Cameroon include the lake Nyos natural gas disaster of 1986, the Cameroon mountain eruption of 1999 and the affected Bakigiri people, the Kousseri Djamina, Kaele seasonal drought, diseases and constant elephant destruction of crops in the northern Cameroon. It is in record that some gifts aids directed to those victimized by this transitory poverty such as drought, floods, pests, volcanic eruption, landslides etc are not usually directed to the victims in good faith hence the limitation to this theory.

Then, comes the individual attributes theory of poverty. This theory argues that the poor individuals are responsible for their own plight since an individual's location in a society's hierarchy of income and wealth is presumed to be determined, above all by his or her abilities, motivations and aptitudes. Although, it is difficult to deny the fact that individuals' attributes cannot determine one's position in society, but we can also realized that one's position in most societies operates within limits defined by forces beyond individual control. Such forces for example in Cameroon include corruption, political affiliation, market imperfections, tribalism, poor government policies, ethnic conflict etc. Therefore, in Cameroon, an individual who is self-motivated, full of strength, stamina, vigour, vitality and above all having high aptitudes might still remain poor due to the above-mentioned forces. Hence, the limitations of the individual attributes theory of poverty. The vicious circle theory of poverty, attempts to explain that underdevelopment in the LDCs are made possible by the existence of a particular system of mutual relationship of the limiting factors. This sees the causes of low real income as one of the obstacles to development, is low productivity, which in turn has resulted from low capital, and low capital because of low rate capital formation, which results from low buying

power and saving capacity, which again is low because of low real income and the cycle continues. The policy suggestion of this theory is that for the cycle to be broken real income has to be increased but this is not possible because of low capital, which make productivity low, and so the economy is doomed to external poverty. This theory has been criticized for being mechanical and static for no process of social motion can't repeat itself or be repeated without a change. The present day developed countries were once poor and if they cannot explain how it came into being, they must be able to tell the LDCs how it was broken. Also, even though low income is said to result to low savings, it does not also follow that high income per head will always generate high degree of savings. For example, many rich Cameroonians spend much of their income on conspicuous consumption, expensive cars and building, jewelry foreign travel, deposits in foreign banks and hoarding of foreign currencies. Hence, the short fall of the vicious circle theory of poverty.

More importantly in explaining the poverty situations in LDCs is the power theory of poverty. This theory places poverty within the structure of political power in the society. According to this theory, poverty is a necessary result in an economy where a few possess much political power to organize the economic mode of production in their own selfish interest. This Marxian theory of exploitation in which the ruling class legitimizes an exploitative tendency through which it determines the allocation of opportunities, income and wealth using the apparatus of the state power enables wealth and decision making to be concentrated in the hands of the few while the majority of the people languishes in poverty. The implication for poverty alleviation is that poverty will continue unless there is a "revolutionary consciousness" of the majority class to resist exploitation and overthrow the power system of the few in favour of the majority. This suggestion has generated heated debate in the case of the LDCs. For example, the Nigeria civil war of 1967 to 1970, the Burundian political revolution 1991, Mali 1992, Cameroon ghost town operation 1992 were all attempt by the masses to overthrow the power clique peacefully so as to restructure the political power in the society in favour of all but the government in power always resist such tendency using he apparatus of the state. It is also observed that since independence of 1960, Cameroon has been rule by only two heads of state, Amadou Ahidjo 1960 to 1982 and Paul Biya 1982 till date. Since 1989, the emergency of over 114 opposition parties to fight the suppressive forces of the New Deal Paul Biya regime have yielded no positive results since the government always uses the apparatus of the state to resist such. Thus, the powerlessness of the power theory of poverty to deal with poverty alleviation in the short run and peacefully constitutes its greatest shortcoming.

The theory of personal income distribution and poverty alleviation. This theory also called the marginal productivity theory of poverty alleviation provides the microeconomic foundation of income inequality and an organizing framework to determine the channel by which macroeconomic variables are transmitted into changes in poverty rates. This theory focuses it attention in the labour market and the determinants of labour incomes based on the demand and supply of labour under competitive firm. In other words, this theory sees productivity as the driving engine for poverty reduction in any economy. It explains that firm will hire workers up to the point where the value of the marginal product equals real wage rate. That is

$$MP_N = {}^{W}/_{P} \qquad (1.1)$$

Where, W= nominal wage rate, MP_N = marginal product of labour, ${}^{W}/_{P}$= real wage rate and P = price. This theory also affirms that since majority of the households rely on labour market earning for most of their incomes, a rise in unemployment may result in a large decline in income particularly with those whose incomes are low to start with. Hence, the theory predicts a positive relationship between unemployment and poverty. However, this relationship maybe mitigated by government transfer payments, which reduces the role of earned income.. With respect to inflation, the theory is undefined but it is a well-known fact that during periods of inflation, fixed income earners suffer. Thus, we find that households are driven into poverty when inflation rises. Hence, this

phenomenon consists of the positive relationship predicted between unemployment and poverty rate. The theory suggests that policies to eradicate poverty should reduce inflation, reduce income inequality and reduce or deal with the problems of unemployment.

The Trickling-Down Theory of Poverty. The proponents of the trickling-down theory of poverty argue that there exists some transmission mechanisms between macroeconomic variables and the level of poverty in an economy. This theory is of the view that increases in government expenditure on socio-economic development such as provision of physical infrastructures, storage and marketing facilities, educational training, health care service, and subsidies to the production of some essential commodities help to shift the IS-curve to the right. This rightwards shift in the IS-curve all things being equal leads to the increase in the rate of interest which aught to simulate savings and reduces money demand (to hold as an idle balance) hence increase in investment if we go by the classical thinking that investment is equal to savings. This increase in investment according to the monetalists thinking will lead to excess demand for consumer goods, which generate increase in the general price level. This price hikes helps to lower the real wage and stimulate the demand for labour. The demand for labour which is synonymous with increase in employment causes real output or welfare to increase hence increase in standard of living and reduction in poverty. The classical economists that increase in the rate of domestic interest rate stimulates portfolio capital inflows to complement domestic savings hence increase in investment and the chain continues as explained above also observe it. Although the theory is in agreement with inflation as a stimulus to productivity in an agrarian economy such as Cameroon, it is a fact that galloping and hyper - inflations are detrimental to growth and development. Studies in Cameroon by Baye (1998), Obi (1999) and Bernadatte (1999) on poverty show that the price hikes resulting from the 50 percent devaluation of the CFA France in 1994 and the two salary cuts have created a new class of poverty in Cameroon especially within public sector workers. These groups of persons have been pushed towards the consumption of second – hand goods called "Okrikah" and other forms of household equipment. Baye also explains that the nutritional status of most public sectors workers in Cameroon has deteriorated as priority is given to quantity instead of quality. Of recent, government policies seem to be conflicting with their objectives. The slogan is poverty alleviation but at the same time excessive control of the economy, high rate and new taxes introduce, destruction of illegal Kiosks and settlements in some parts of the country without alternatives provided are the order of the day.

3. Analytical methodology.

a. Scope, sources of Data and Limitations.

The study covers the period of thirty – five years ranging from 1970 to 2005 inclusive. This is because it is within this period that most of the data needed for this study were available. The study also required some substantial amount of statistical information extracted from the ministry of Economy and Finance, (MINEFI) Department of Statistics and National Accounts (DNCS) Central Bank for Central Africans States (BEAC), African Development indicators, various issues, world Bank statistical Table, African Economic Research Consortium etc. Therefore, this study lies intensively on secondary data as such an expost factor research design.It is mandatory to point out here that the use of head-count index to capture poverty is limited since such method fails to measure the extend and debt of poverty among the poverty population. This therefore, calls for measures such as the poverty gap / income short fall, the foster – Greer-Thorbecke index etc to be used but in Cameroon consistent data are available only on the head court index. Since there is also an established strong linear relationship between the core poor and the poor in Cameroon, the use of the head count index as a measure of poverty will still lead us to a reasonable conclusion.

Data in between the survey periods were extracted via interpolation. Poverty line is conceptualized as two-thirds of the mean income of households. The head count index or ratio, which is used in this work as the measure of the incidence of poverty in Cameroon, simply is the ratio of the number or percentage of poor individuals to the total number of individuals in the population whose numerical value is obtained as;

$$H = P_O = {}^{Q}/_{N} X\ {}^{100}/_{1} \text{ ----------} (2.1)$$

Where, H = P_O = poverty headcount ratio, Q = number of population that falls below the poverty line and N = total number of people in the population. For the core poor the MINEFI suggestion of one-third of the mean household income (World Bank 1996) is adopted in this work.

This therefore, translates to a poverty line of 14,500FCFA per month between 1970 and 1981 or 174,000FCFA per year between the same period for the urban areas and 7,367FCFA per month or 88,404FCFA per annum in the rural areas within the same period. It also amounts to 212,760FCFA between 1982 and 1992 per annum in the rural area within the same period. Finally, we have 685,980FCFA between 1993and 2005 and 285,600FCFA for urban and rural areas respectively. Thus, any attempt to view poverty and its relationship in Cameroon requires us to highlight it interaction among the crucial variables peculiar to the Cameroon economy. Since the main objective of this work is to formulate an econometric model of poverty for the economy of Cameroon, our model therefore, must contain equations explaining the variables and showing their interrelationships. That is external and internal influences, monetary, structural, fiscal and non-economic factors do inter-dependently determine the fortunes of the poor in the economy of Cameroon;. Therefore, a simultaneous equation or system estimation approach is ideal in the econometric investigation of the poverty situation in Cameroon.

4. Estimation Techniques

The structural models therefore, contain poverty equation, inflation equation, government revenue equation, government expenditure equation, gross domestic product equation, unemployment equation, and growth of broad money supply equation. The models consist of 24 variables, 7 of which are endogenous while 17 are predetermined. The system is complete in that it contains 7 equations in 7 endogenous variables. Since change in the variables in the structural equations are very much influencing each other, adopting the simultaneous equation approach will help reduce the incidence of multicollinearity and eliminate the effect of simultaneous equation bias. We have also chosen to log the structural equation because log linear form permits a direct estimation and interpretation of the associated coefficients of the models as elastricities. We also adopt the co-integration error correction mechanism (unit root test) to correct non-stationary result. Given the above conditions, our structural models become:

$$LPOV_t = A_0 + A_1\, L / NFLA_t + A_2\, LUNEMP_t + A_3\, LGOVR_t + A_4\, LGOVE_t + A_5\, LRWAGE_t + A_6\, BMS_2 + U_1 \text{ ----------} (3.1)$$

A priori, $A_1 > O$, $A_2 > O$, $A_3 > O$, $A_4 < O$, $A_5 < O$, $A_6 < O$

$$LINFLA_t = B_0 + B_1\, LUNEMP_t + B_2\, LGDP_t + B_3\, LTAXF_t + B_4 LBMS_{2t} + B_5\, FCSDY_t + B_6\, EXDDT_t + B_7\, L / MPY_t + U_2 \text{ ----------} (3.2)$$

A priori, $B_1 < O$, $B_2 < O$, $B_3 > O$, $B_4 > O$, $B_5 > O$, $B_6 > O$, and $B_7 > O$.

$LUNEMP_t = C_o + C_1 L / NFLA_t + C_2 POP_t + C_3 LWAGE_t + C_4 LRUMR_t + C_5 LTAXF_t + U_3$------(3.3).

A priori, $C_1 < O, C_2 > O\ C_3 < O, C_4 > O\ C_5 > O$.

$LGOVR_t = D_o + D_1 LDCG_t + D_2 LGDP_t + D_3 LDUTY_t + D_4 LGTAXDG_t + U_4$ ----------(3.4)

A priori, $D_1 > O, D_2 > O, D_3 > O, D_4 > O$.

$LGOVE_t = E_o + E_1 LGDP_t + E_2 LPOP_t\ E_3 LGDVR_t + E_4 LEXDEBTS_t + U_5$ ----------(3.5)

A priori, $E_1 > O, E_2 > O, E_3 > O, E_4 > O$

$LGDP_t = F_o + F_1 EXPINFCA_t + F_2 LBMS_{2t} + F_3 \Delta TANSF_t + F_4 LNORB_t + F_5 LGTAXDG_t + F_6 LUNEMP_t + U_6$----------(3.6)

A priori, $F_1 > O, F_2 > O, F_3 < O, F_4 < O, F_5 < O$ and $F_6 < O$,

$LRWAGE_t = G_o + G_1 LGDP_t + G_2 LLABS_t + G_3 LUNEMP_t + U_7$ ----------(3.7)

A priori, $G_1 > O, G_2 > O$ and $G_3 < O$.

$LBMS_{2t} = MD_t$----------Identity.

Where,

$LPOV_t$ = log of poverty based on head count ratio in current period.

$LINFLA_t$ = log of consumer price index used as proxy for measuring inflation in current period.

$LUNEMP_t$ = Log Of Unemployment In Current Period.

$LGOVR_t$ = Log Of Revenue In Current Period.

$LGOVE_t$ = log of Government Expenditure In Current Period.

$LGOP_t$ = log of Gross Domestic Product in current period.

$RWAGE_t$ = Real wage rate in current period.

$LBMS_{2t}$ = log of broad money supply ($M_1 + M_2$) in current period.

$LTAXF_t$ = log of official urban taxi charges in current period.

$FISDY_t$ = Fiscal deficits GDP ratio in current period.

$EXDD_t$ = Excess demand (y-[C+ 1 + G]) in current period.

$LIMPY_t$ = log of export less import GDP ratio as a measure of openness in current period.

POP_t = population growth rate in current period.

$LRUMR_t$ = log of rural urban migration in current period.

$LDCG_t$ = log of domestic credit to the government sector in current period.

$LDUTY_t$ = log of foreign exchange earning in current period.

$LGTAXDG_t$ = log of taxation on domestic produce goods in current period

$LEXDEBTS_t$ = log of external debt servicing in current period.

$EXPINFLA_t$ = Expected ratio of inflation based on rational adaptive hypothesis in current period.

$\Delta TANSF_t$ = changes in transportation changes in current period. (Official rates).

$LNORB_t$ = log of official road checkpoints in current period.

$LLABS_t$ = log of labour supply (that is active population increase rate in current period.

LDEPR = log of dependency ratio in current period.

A_1 to G_3 = are structural parameters for the various equations (i.e. equation 3.1 to 3.7).

U_1 to U_7 are stochastic error terms for equations 3.1 to 3.7 with their assumed features of normality.

5. Presentation and Discussion of Empirical Results.

Stationarity Test

A cursory perusal of the static regression shows that inconsistencies exist in some of the results in our models. This is due to the non-economic changes that have taken place in Cameroon within the period of our study. Thus, the unit root tests are conducted in all the variables in order to ascertain their stationarity status. This is done by considering the order of integration of each series using the Augmented Dickey- Fuller (ADF) and the Phillips – Perron (PP) classes of unit root tests. Both the ADF and the PP tests strongly support the hypothesis that the variables used are non-stationary. Our results show that the variables are integrated of order one or two and become stationary after first or second difference respectively. Thus, the hypothesis of stationarity is rejected.

As shown in table 4.1 in appendix I the test of the hypothesis that H_o: Y_t (1) against H_1:Y_t(0). We are expected to reject the null hypothesis when the variables are stationary.

The expression of the variables in natural logarithmic form required that all the exogenous variable must have the same order of integration as the dependent variables. It means for example that if inflation parameter is not stationary, then such none stationary series cannot be categorized as economic fundamental. This is because a variable that is stochastically drifts permanently away from it mean cannot be affected in the long-run by a variable that reverts to its means, since such an effect remains only in the shorter run (Dickey and Fuller, 1981); Johansen and Jeselius, 1990; Feyzioglu, 1997; and Jan 1999. From table 4.1 the statistical test fails to reject some of the null hypothesis "meaning that these variables are non-stationary. Thus, it is necessary we find out whether these variables are cointegrated as a condition for accepting the error correction model (ECM). In doing this, we adopt the Johansen and Juselius, 1992) for multi- variate cointegration test thus;
LINFLA -9.1737 LGOVR + 1.9538 LGOVE – 11.5757 RWAGE – 14.94477 LTAXF

(17.6027) (3.61840) (20.1072) (27.7182)

+ 4.4743FISDY – 1.22E05LIMPY + 12.8198 LGTAXDG – 8.22671 EXPNFLA
(7.8411) (2.IE.05) (24.9673) (14.3461)

The figures in parentheses represent the asymptotic standard errors of the coefficients. On the bases of this, the error correction variable (ECM) can be specified as follows:
ECM – LINFLA -9.1737 LGOVR + 1.9538 LGOVE – 11.5757 RWAGE – 14.94477
LTAXF 4.4743FISDY – 1.22E05LIMPY + 12.8198 LGTAXDG – 8.22671 EXPNFLA.

To test the frequently encountered hypotheses existing between poverty, economic and some non-economic variables, we have to specify 7 equations for this work. Considering the eclectic approach to poverty alleviation in Cameroon, a system estimation approach or simultaneous equation approach is adopted as explain above. The application of the order condition of identification shows that each behavioral equation of our structural model is over identified. That is for each of the equation K-M>G-I; Where: K = Numbers of both endogenous and exogenous variables in the system of equation M = Numbers of both endogenous and exogenous variables in a particular equation and G = The numbers of equations in the system. Since, all the equations 3.1 to 3.7 are over identified, consistent estimates of our structural parameters could be obtained based on two-stage least squares, three-stage least squares, generalized least squares, full information maximum likelihood etc. However, in this work we have chosen the three stage least squares as our estimation technique because it is a system method, which is applied to all the equations of the model at the same time, and it gives the estimates of all the parameters simultaneously. It utilizes more information than any of the single-equation techniques. This method also captures the feedback effects of some macroeconomic variables as well as eliminates simultaneous equation bias. Thus, the result based on three-stage least squares co-integration error correction mechanism is as shown in table 4.2 to 4.8 on the Appendix. Note: The numbers in parentheses denote the t-values. The asterisks marked again each coefficient indicate the level at which the coefficient is significant ECM (-1) = Error correction mechanism variable on Engle and Granger (1987). They show that the dependent and independent variables have achieved stationarity when the coefficient of the ECM is less than unity.

The estimated coefficients obtained from the system approach based on three- stage least squares co-integration error correction mechanism have the hypothesized signs and are significantly different from zero at the conventional levels. Specifically, inflation, unemployment, and government revenue are positively related with poverty. That is 10 percent increase in inflation; unemployment and government ability to generate revenue through domestic taxation will result to 2.1194, 4.5321 and 2.5483 percent increase in poverty in Cameroon respectively within our period of study. Unemployment is seen to generate high degree of poverty in Cameroon than it is the case with inflation. Furthermore, government expenditure, GDP, real wage, broad money supply, and dependency ratio are negatively related to poverty. This shows that 10 percent increase in these variables will result to 0.4632, 1.6829, 4.2312 and 0.7164 percent fall in poverty respectively. Both the adjusted R-squared, and the F-statistic show good fit while the D-W value of 1.93093 for the poverty equation falls within the in conclusion region. From the inflation equation, we observe that all the coefficient of the variables specified in this equation are positively related to inflation except that of the GDP. From the results, 10 percent increase in unemployment, urban taxi charges, broad money supply, Fiscal deficits, excess demand and import GDP ratio will result to 2.1951, 3.8807, 1.1651, 0.03126, 0.0131 and 1.1391 percent increase in inflation respectively, all things being equal. Also, 10 percent increase in GDP will generate 2.376 percent fall in inflation all things being equal. The results also reveal that more Cameroonians are pushed below the poverty line as caused by increase in urban taxi charges whose inflational elasticity is very high. These results are all in lines with economic theories accept the link between unemployment and inflation, which is

against the Phillips curve hypothesis but is in agreement with the James Tobin's hypothesis in the long run. The inflation equation also shows good fit and its value of D-W falls with the inconclusive region.

Unemployment, which is highly responsible for the existence of poverty in Cameroon, is here seen to be positively related to inflation, population growth, rural urban migration and increase in transportation costs. It is also negatively related to real wage rate. This means that 10 percent increase in inflation, population growth rate, rural-urban migration and transportation costs, will lead to 1.1476 percent, 0.0693, 6.4313 and 4.6315 percent increase in unemployment respectively, all things being equal. Also, 10 percent increase in real wage leads to 3.5895 fall in unemployment, all things being equal. Their coefficients show that rural urban migration and transportation costs are highly responsible for the existence of high level of unemployment in Cameroon. The results also show good fits. No auto- correction is said to exist in this equation. For the rest of the equations, there are in lines with our econometric theoretical expectation and conventional economic theories. For the government revenue equation, we observe that increase in excise duties impact negatively to the overall government revenue in Cameroon. In fact, 10 percent increase in excise duties will lead to 6.6365 percent fall in government revenue. This is self-explanatory. The results also show that greater share of the government revenue generated are used for external debt servicing and not external debt payments hence worsening Cameroonians situations.

Output has reported a negative link with poverty meaning that if output increases, poverty will reduce. However, in Cameroon output from our results is seen to be retarded by unemployment, excessive fiscal expansion, excessive control of traffic flows (number of checks points) and increase in transportation charges. Specifically, 10 percent increase in unemployment, fiscal expansion, number of roadblocks and increase in transportation costs lead to 8.6841, 5.1386, 6.4301 and 5.5771 percent fall in GDP of Cameroon respectively and vice versa. Expected rate of inflation and broad money supply are here seen as stimulators to our growth and development through poverty reduction. Finally, but not the least, unemployment is also observed to be responsible for the fall in real wage rates in Cameroon. All the results show good fits and the coefficients of our ECM show that our results have achieved long-run stability as such could be used for policy recommendation.

6. Policy recommendations and concluding remarks.

Excessive fiscal expansion as a process of expanding the broad money supply is seen in this work as one of the major causes of poor growth in Cameroon. This has also resulted to a consistently positive relationship between unemployment, inflation and poverty suggesting that joblessness, and inflationary pressures are responsible for pushing many households in Cameroon below the poverty line. Although, inflation and unemployment both have adverse effects on poverty, it is greater for unemployment than for inflation meaning that unemployment and not inflation is the cruelest task.

The results from this study are rather disturbing for monetary policy. For policy makers who believe that expansionary monetary policy could improve the well being of the average person by reducing unemployment without the unpleasant side effect of making some people worse off through inflation, the positive effect estimated for both inflation and unemployment does not provide any cause for joy. The monetary policy implications of our results suggest that an expansionary monetary policy which creates more jobs by reducing unemployment thereby making the average person better off unfortunately eliminates the initial gains of workers through the distributional effects of higher inflation, which drives more people into poverty. Thus, there is urgent need for the government of Cameroon to target policies that will promote employment generation (job creation) such as increase in real wage, encouragement of technical and vocational education, and provision of credit facilities to farmers and manufacturers, reduction of import duties on industrial raw materials and what have you. Economic growth should be encouraged through reduction in transportation costs, which is

directly related to cost of fuel, reduction in the number of road blocks (check points), reduction in the levels and depress of excise duties and increase in monetary expansion. Such policies will go a long way in Cameroon to reduce poverty, which have become endemic. Consequently, we suggest a combination of job creation through economic growth, basic needs fulfillment, rural development strategies, harmonization of real wage rate, price stabilization policy and the creation of "Common Initiative Groups For Poverty Reduction In Cameroon" (CIGPLC) or "Community Action Programmes for Poverty Alleviation in Cameroon" (CAPPAC)

References:

Addison, D. 1979. "Nigeria Poverty Assessment" *In central Bank of Nigeria World Bank*

Angaye, G.S 2005, " Poverty Amid Plenty in Nigeria" *Rivers Journal of the Social Sciences,* Vol.No. 1 and 2, pp.13-46.

Balogwu, E.D. 1999, "Analyzing Poverty Concepts and Methods" *Bullion,* Vol.23 No.4,18-102.

Bardhan, P. 1996; "Efficiency, Equity and Poverty Alleviation Issue in less Developed Countries" *The Economic Journal,* vol.106 No. 43, pp. 18-23.

Baye, F.M. 1998; "Inequality and the Degree of Poverty Among Public Sector Work in Cameroon" *The Nigerian Journal of Economic and Social Studies,* Vol.40 No.3 pp. 13-26.

Bernadette, D.K. and J.T. Pierre 1999; "Poverty in Cameroon" Evolution in an Economic Adjustment Environment. *African Economic Research Consortium*, vol. 23No.12 pp. 10-24.

Collaborative Study on Nigeria, Prospect for Development, Ibadan, Nigeria, pp 16-2.

Ekpo, A. H. 2000, "Poverty Alleviation and Sustenance of Democracy in Nigeria" *civil Society and the Consolidation of EMOCRACY In Nigeria,* Calabar, Nigeria, pp.142-223.

Forgha, N.G. 1998. " Public Enterprises as Agents of Economic Development" *Rivers Journal of Social Sciences.* The CDC experience, Vol.11 No.13 pp. 19-26.

Hendry, D.F 1986., "Econometric Modeling with cointegrated variables: An overview" *Bulletin of Econometrics and Statistics,* Oxford pp. 512.

Kuznet, S. 1942; "Uses of National Income in Peace and War" *National Burea of Economic Research Occasional Paper,* Vol.12 No.6 pp. 16-30.

Ministry of Economic and Finance, Department of *Statistics and National Accounts* pp.1982-2001. Yaounde, Cameroon.

Nyong, M.O. 1999, "Inflation, Unemployment and Poverty Alleviation in a Developing Economy; *The Nigerian Experience" B1 Annual Review,* Vol. 7 No.15, pp. 8-15.

Phillips, P.C.B and P. Person 1988., Testing for a unit root in time series Regression", *Biometrica* Vol. 75, No. 16, pp. 335 – 346.

Tan, C.E 1999. "Was the Real Exchange Rate of Malaysia Misaligned? A cointegration Approach", *The Indian Economic Journal* Vol. 46, No. 3 pp. 76-90.

United Nations Development Programme 1996., "Human Development Report" pp.16-42

World Bank 1997," Poverty Reduction Handbook, pp.1-44

World Bank 1999; *World Development Report on Poverty*. Pp.12-44

World Bank 2000, All Macroeconomic Indicators 1970-1999. Direction *De la Statisttique and W.B estimates NUSCTLWEOUS.*

World Bank 2000, *World Development Reports on Poverty*, pp.164-301

Appendix

Thus: **Appendix I**

Table 4.1	Augmented Dickey Fuller Test		Phillips Peron Test		Remark
Variables	With out trend	With trend	With trend	With trend	
LPOV	-4.4844	-4.37622	-5.9769	-5.8590	1(0)
LINFLA	-1.13114	-2.4515	-1.0689	-2.5631	1(1)
LUNEMP	-5.8910	-5.8800	-7.3221	-7.354	1(0)
LGOVR	-2.5144	-2.4014	-2.9499	-2.9007	1(1)
LGOVE	-0/4799	-2.0428	-0.1070	-1.9095	1(2)
LGOP	-10.2855	-10.6414	-2.9284	-3.0776	1(0)
RWAGE	-1.9880	-4.0090	-0.4184	-1.6465	1(1)
LBMS	-5.3281	-5.3958	-5.24711	-5.3279	1(0)
LTAXF	-3.3281	-3.3862	-2.6877	-2.5993	1(1)
FISDY	-0.2400	-2.6147	-0.3874	-1.9271	1(2)
EXDD	-4.9142	4.9308	-.6.7729	-6.7518	1(0)
LIMPY	-1.05411	-1.25823	-1.05600	-1.76375	1(1)
POP	-5.0027	-4.8709	-6.8827	-6.7212	1(0)
LRUMR	-3.2361	-3.1754	-3.6203	-3.5502	1(1)
LDCG	-0.3817	-2.4541	-0.0488	-1.9632	1(2)
LDUTY	-3.2237	-4.4065	-4.482	-5.2392	1(0)
LGTAXD	-2.2559	-0.8357	-1.6702	-0.6278	1(1)
LEXDEBTS	-4.9248	-4.8140	-6.1489	-5.9915	1(0)
EXPENFLA	-2.21675	-2.1724	-3.0260	-2.93712	1(1)
TRANF	-4.8064	-4.0226	-5.4696	-5.6209	1(0)
LNORB	-5.07010	-5.74008	-7.3253	-6.4264	1(0)
LLABS	-6.2864	-6.64141	-5.9284	-4.0771	1(0)
LDEPR	-5.43182	-5.63859	-5.1114	-5.39071	1(0)
Critical values					
1%	-3.6752	-4.3082	-3.6661	-4.2949	
5%	-2.9665	-3.5731	-2.9627	-3.5670	
Difference	X	X	X	X	
1%	-3.6852	-4.3226	-3.6752	-4.3082	
5%	-2.9705	-3.5796	-2.9665	-3.5731	

Table 4.2: Poverty Equation

Department variable: Poverty. (∆LPOV)

Variable	Coefficient	Std-Error	T- value	P-value
Constant	5.04422	0.13943	(6.35991)*	0.0201
∆LINFLA	0.21194	0.01231	(3.19421)*	0.0221
∆LUNEMP	0.45321	0.00125	(2.96131)*	0.0413
∆LGOVR	0.25483	0.01345	(4.22131)*	0.0501
∆LGOVE	-0.04632	0.00631	(-2.5465)*	0.0521
∆LGDP	-0.03421	0.00056	(-1.96621)**	0.0734
∆LRWAGE	-0.016829	0.03451	(-1.76039)***	0.0983
$\Delta LBMS_2$	-0.42321	0.00038	(-1.81642)***	0.054
∆LDEPR	0.07164	0.00093	(2.34112)*	0.0421
∆LLITR	-0.08947	0.00011	(-1.93314)**	0.0654
ECM(-1)	-0.22539	0.10162	(-2.33612)*	0.0538
R^2 —				=0.94427
F- statistic (10:23)				=71.3093
D-W				=1.93093

Table 4.3: Inflation Equation

Department variable. Inflation (∆LINFIA)

Variable	Coefficient	Std-Error	T-value	P-value
Constant	2.3705	0.48522	(4.50911)*	0.000
∆LUNEMP	0.21951	0.06134	(3.84390)*	0.000
LGDP	-0.23763	0.03284	(-1.8498)***	0.072
∆LTAXF	0.38807	0.12846	(3.72261)*	0.000
$\Delta LBMS_2$	0.11651	0.08917	(1.8993)***	0.074
∆FISDY	0.03126	0.00145	(1.18174)	0.254
∆EXDD	0.00131	0.00050	(1.29901)	0.199
∆LIMPY	0.11391	0.00367	(3.72260)*	0.000
ECM(-1)	-0.4231	0.00238	(-2.56114)	0.003
R^2 —				= 0.94742
F-statistic (6:27)				= 73.0793
D. W statistic				= 1.9726

Table 4.4: Unemployment Equation.

Dependent Variable Unemployment (∆LUNEMP).

Variable	Coefficient	Std-Error	T- value	P-value
Constant	3.98501	0.32929	(9.3629)*	0.000
∆LINFLA	0.11476	0.10581	(92.3421)*	0.003
∆LPOP	0.00693	0.00912	(1.7123)**	0.0082
∆LRWAGE	0.35895	0.11763	(-3.4611)*	0.000
∆RUMR	0.64313	0.96811	(4.3314)*	0.000
∆LTANSF	0.46315	0.02531	(5.4312)*	0.000
ECM (-1)	0.03648	0.47056	(2.233)*	0.004
R^2 —				=0.85439
F – statistic (6.27)				=43.540
D-W statistic				2.2439

Table 4.5: Government Revenue Equation: Dependent Variable = ∆LGOVR.

Variable	Coefficient	Std-Error	T-value	P-value
Constant	0.14111	0.06824	(2.06776)*	0.004
∆LDCG	0.39485	0.12093	(2.5773)*	0.003
∆LGDP	0.53452	0.14036	(3.2135)*	0.000
∆LDUTY	0.64659	0.091719	(6.9486)*	0.000
∆LGTAXDG	-0.66365	0.093054	(-3.7266)*	0.000
ECM (-1)	-0.02063	0.01228	(-3.1677)*	0.000
R^2 —				0.97103
F-statistic				66.334
D-W statistic				1.90176

Table 4.6: Government Expenditure Equation: Dependent variable; Government Expenditure ∆LGOVE

Variable	Coefficient	Std-Error	T-value	P-value
Constant	0.27847	0.07081	3.93229	0.000
∆LGDP	0.65364	0.01045	2.51783	0.004
LPOP	0.30888	0.34192	1.9710	0.089
∆LGOVR	0.60774	0.09495	7.8827	0.000
∆LEXDEBTS.	0.64651	0.09171	6.94182	0.000
ECM (-1)	-0.29258	0.16312	-3.0814	0.000
R^2				0.6946
F- statistic (5.28)				34.621
D-W statistic				2.2043

Table 4.7: Gross Domestic Product Equation: Dependent variable: Gross Domestic Product. ∆LGDP

Variable	Coefficient	Std-Error	T-value	P-value
Constant	0.85409	0.13943	(4.18899)*	0.000
∆EXPINFLA	0.06717	0.00072	(9.22210)*	0.000
$\Delta LBMS_2$	0.67290	0.81431	(2.44901)*	0.003
∆LTRANSF	-0.55771	0.00010	(-50.56701*)	0.000
∆LNORB	-0.64301	0.08371	(-50.9927)*	0.000
∆LGTAXDG	-0.51386	0.14110	(-9.66805)*	0.000
∆LUNEMP	-0.86841	0.08281	(5.60241)*	0.000
ECM (-1)	-0.115164	0.112157	(-1.92681)**	0.193
R^2				= 0.8774
F- statistic (7:26)				24.5032
D-W				2.2247

Table4.8: Real wage Equation: Dependent variable ΔLRWAGE.

Variable	Coefficient	Std-Error	T-value	P-value
Constant	4.46265	0.94049	8.6521	0.000
ΔLGDP	0.59211	0.00373	2.3573	0.004
ΔLABS	--0.35469	0.00845	-1.921	0083
ΔLUNEMP	-0.44819	0.21318	-2.1023	0.003
ECM (-1)	-0.19752	0.21178	2.2213	0.006
$\bar{R}^2$				=0.92361
F- statistic (4:29)				=52.316
D -W				=1.9173