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Assessment of the Impact of Inflation and Unemployment on the Nigerian Economy: Some Mathematical Systems Predictions for Politico-Economic Growth and Development

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Abstract

Economic theory suggests that the rate of inflation rises as unemployment rate falls. This has been formalized according to what is known as the Phillips Curve. However, economists such as Milton Friedman and Edmund Phelps have disapproved of Phillips curve thesis, stating that the trade-off between unemployment and inflation only existed in the short-run. Other Economists over the years, have disproved the authenticity of the trade-off thesis as postulated by Phillips by observing that both high inflation rates and high unemployment rates were discovered to co-exist, giving rise to what has come to be known as stagflation. The existing literature refers to unemployment and inflation as constituting a vicious circle that explains the endemic nature of poverty in developing countries. It has been suggested that continuous improvement in productivity which brings about the adequate supply of goods and services, is the surest way to breaking the vicious circle. This study therefore, applied the Total Differential Modeling approach (ecostatometrics) to reveal the structure of the Nigerian economy and applied Markov Chains analysis to reveal the transition matrix of the economy; used Linear Programming to maximize and minimize the Transition matrix with a view to maximize the chances of real output, growth, employment and purchasing power as well as minimizing the chances of inflation, inflation rate, unemployment rate and penchant for imports among others. The predicted weights were used to formulate a Linear Goal Programming model of the Nigeria economy to elicit the policies and strategies that should be adopted and pursued if the Nigerian economy must grow optimally and develop in real terms and break the vicious circle between unemployment and inflation rates. The result confirmed that Nigeria should restructure and diversify in order to grow the economy and recommendations have been made in that direction.

Key words: ***Inflation, inflation rate, Unemployment rate, employment, economy, total differential modeling approach, Markov Chains, Linear Goal Programming, Growth and Development***

Introduction

Inflation is the rate of increase in prices over a given period of time. Inflation is typically a broad measure, such as the overall increase in prices or the increase in the cost of living in a country. Economic theory suggests that the rate of inflation rises as unemployment rate falls. If unemployment is high, inflation will be low; if unemployment is low, inflation will be high. This has been formalized according to what is known as the Phillips Curve.

However, economists such as Milton Friedman and Edmund Phelps have disapproved of Phillips curve thesis, stating that the trade-off between unemployment and inflation only existed in the short-run. Economists over the years, have in one way or the other disproved the authenticity of the trade-off thesis as postulated by Phillips by observing that both high inflation rates and high unemployment rates were discovered to co-exist, giving rise to what has come to be known as stagflation. These twin problems are currently crucial elements of most Less Developed Countries. Indeed economic theory postulates that the causes of long-lasting episodes of high inflation are often the result of lax monetary policy. If the money supply grows too big relative to the size of an economy, the unit value of the currency diminishes; in other words, its purchasing power falls and prices rise.

Unemployment and inflation are twin problems that are central to both the social and economic life of every nation. Unemployment occurs according to Investopedia, when an active person searching for employment is unable to find work or when an individual who is not employed and is seeking employment cannot find work or when someone is willing and able to work but does not have a paid job. The existing literature refers to unemployment and inflation as constituting a vicious circle that explains the endemic nature of poverty in developing countries. It has been suggested that continuous improvement in productivity which brings about the adequate supply of goods and services, is the surest way to breaking the vicious circle.

Aruofor and Ogbeide (2024a) opine that the desire of most individuals is to live and work within an economic framework that gives them the prospect of steady employment, relatively stable prices and a rising standard of living; which make up a set of macroeconomic objectives. These objectives include full employment, price stability and rapid economic growth, together with long term equilibrium in the balance of payments and a host of others. According to Fatukasi (2005), the maintenance of price stability is one of the macroeconomic challenges facing the Nigerian government in our economic history. John Keynes argues that because the invisible hand of the price mechanism fails to achieve these objectives, either in full or even at satisfactory values, there is the need for government's intervention to overcome economic slumps. In the exercise of government intervention (stabilization) of the economy, there are policy instruments at her disposal which include fiscal policy and monetary policy among others. Whether these policies are working or have worked in Nigeria is not clear.

In our past studies, Aruofor (2017), Aruofor and Ogbeide (2017, 2022a, 2022b, 2023a, 2023b, 2024a, 2024b, 2024c, 2024d, 2024e and 2024f), the Nigerian Government had been advised and urged to among other things, invest more especially in manufacturing, electricity supply, construction, services, non-oil exports and infrastructure; including establishment of factories and industries especially in the rural areas of Nigeria in order to break the bottleneck of poverty

and under-development. It is becoming evident that the extant structure of the Nigeria economy does not facilitate optimum growth and that the bane of development of the Nigerian economy, included first and foremost, corruption and indiscipline; poor and inadequate infrastructure; unstable socioeconomic and political environment; poor expertise and low productivity; poor technology; high crime rate and general insecurity to life and property and unemployment.

This study therefore, applied the Total Differential Modeling approach (ecostatometrics) to reveal the structure of the Nigerian economy and applied Markov Chains analysis to reveal the transition matrix of the economy; used Linear Programming to maximize and minimize the Transition matrix with a view to maximize the chances of real output, growth, employment and purchasing power as well as minimizing the chances of inflation, inflation rate, unemployment rate and penchant for imports among others. The model predicted the weights that should be attached to the optimum basic feasible variables and these weights were applied to formulate a Linear Goal programming model of the Nigeria economy to elicit the policies and strategies that should be adopted and pursued if the Nigerian economy must grow optimally and develop in real terms.

The objectives of this study among others, include:

1. To carry out a complete and escalating analysis of the Nigeria economy on the one hand and to examine the impact of inflation and unemployment on the Nigerian economy with a view to test if there exist inverse trade-off between rates of inflation and rates of unemployment in Nigeria, a'la the total differential modeling approach (ecostatometrics) on the other hand.
2. In particular, to find out if there are gaps in the results of the extant economic analytical paradigm and literature due to incomplete theory and poor understanding of the socio-economic system.
3. To forecast and predict the outlook of inflation, employment, growth and growth rate to year 2035, using Markov Chains Analysis.
4. To determine what it will take for the Nigeria economy to grow optimally and develop in real terms through the application of Linear Programming and Linear Goal Programming.
5. Especially, to determine the specific policies and strategies needed to grow and develop the Nigerian economy.
6. To confirm or infirm extant prescriptions and recommendations for breaking the vicious circle of inflation and unemployment in order to facilitate Nigeria's optimal growth and development, and
7. To draw conclusions and make some recommendations.

The article is therefore divided into five parts. Part I is the introduction and states the objectives of the study. Part II is the literature review; while Part III is the methodology. In Part IV, the results of the analyses are presented and discussed and Part V concludes the study and makes some recommendations.

LITERATURE REVIEW

In the literature, the incident of the crisis of unemployment and inflation in Nigeria began in the 1980s with the collapse of oil prices on which the economy had become over-dependent. Before

the 1980s, the Nigerian economy was able to provide jobs for its increasing population, and was able to absorb considerable imported labour in the scientific sectors. The wagerate compared favorably with international standards, the inflation rate was moderate, and there was relative industrial peace in most industry sub-groups.

With the oil boom in the 1970s, there was mass migration of youths into the urban areas, seeking to get work. However, following the recession experienced in the 1980s, the available data revealed that, the problem of unemployment started to manifest, precipitating into the introduction of the Structural Adjustment Programme (SAP) in 1986, thus culminating in the rapid depreciation of the naira exchange rate and the inability of most industries to import the raw materials and spare parts required to sustain their industries and output levels. As a consequence of the rapid depreciation of the naira, there resulted a sharp rise in the general price level (inflation), leading to a significant decline in the real wages. The low wages in turn fuelled a weakening purchasing power of wage earners and a decline in the aggregate demand. Consequently, industries started to accumulate unsolicited and unintended inventories and the manufacturing firms started to rationalize their market prices and output levels.

The oil boom also triggered a simultaneous rapid expansion in the educational sector and new entrants into the labour market which increased beyond absorptive capacity of the economy. Thus, the government's avowed objective of achieving full employment was not achieved. This was the genesis of the precarious situation the Nigeria economy finds itself today. Since then, inflation and unemployment had continued to defy all policy interventions and initiatives thus fuelling the level of poverty in Nigeria.

At this point we shall just present some of the highlights of economic theory about inflation and unemployment. According to the Phillips Curve, lower unemployment means people spend more, leading to more pressure on prices. Economic theory also posits that as inflation accelerates, workers may supply labor in the short term because of higher wages thus leading to a decline in the unemployment rate; however, over the long haul, when workers are fully aware of the loss of their purchasing power in an inflationary environment, their willingness to supply labor diminishes.

The Phillips Curve is the graphical representation of the short-term relationship between unemployment and inflation within an economy. According to the Phillips Curve, there exists a negative, or inverse, relationship between the unemployment rate and the inflation rate in an economy. The effects of inflation on an economy are primarily seen in the Distribution of Income and Wealth, Production, Income and Employment, Business and Trade, Government Finance and lastly the economy's overall growth. Another significant impact of inflation is seen on income and employment.

The relationship between inflation and GDP is such that Inflation can increase as GDP grows due to the strengthening of demand or a reduction in supply. The relationship must maintain a balance that doesn't fuel a strong growth in inflation. Growing GDP (with a small amount of associated inflation) is important to a healthy economy and nation.

In addition, one of the major causes of stagflation according to economic theory, has been restriction in the aggregate supply. When aggregate supply is reduced, there is a fall in output and employment, and the price level will rise. The reduction in aggregate supply may be due to a restriction in labour supply. The restriction in labour supply, in turn, may be due to a rise in money wages on account of strong Labor unions. When wages rise, firms are forced to reduce production and employment. Consequently, there is a fall in real income and consumer expenditure. Since the decline in consumption will be less than the fall in real income, there will be excess demand in the commodity market, which will push up the price level.

Indeed, Aruofor (2020) opined that "Many studies of different shades have been carried out by scholars using different measures of inflation and growth. The point of emphasis is that practitioners have not only failed to capture, isolate and estimate inflation explicitly, but most of them have either used inflation rate as proxy for inflation, while others employed the consumer's price index (CPI) as surrogates. In addition, others have used gross domestic products (GDP) as proxy for growth. These are anomalies and it is believed that these surrogates are bound to affect the end results obtained. Indeed, Aruofor (2001, 2017 and 2020), posit further and emphasized that not until economics, especially applied economics is approached as an engineering discipline, would rapid strides of professional progress be achieved and the problem of underdevelopment overcome. In the above connection, inflation has been defined variously to include, "a rise in prices" but a more profound and exact definition is the one given by Jhingan, (1975), who defined inflation as a situation of sustained increase in the general price level in an economy.

The point of contention is that inflation is not synonymous to inflation rate nor can they be used interchangeably. Moreover, the CPI is not a proxy for inflation. This becomes evident from the inflation rate which is defined as the annual percentage change in the price level. Inflation is often measured in government statistics by retail price index (RPI) or consumer price index (CPI). Again this is misleading and is not synonymous to inflation. This confusion may have arisen because Investopedia defined inflation as a quantitative measure of the rate at which the average price level of a basket of selected goods and services in an economy increases over a period of time. It is the increase and not the absolute values of RPI or CPI that constitute inflation. In addition to the above, is the fact that economic theory is mixed and conflicting on the issue and most of the empirical tools of the contemporary economic analysts used in an attempt to analyze the impact of inflation on the economy belong to the realms of "partial analysis."

Additionally, politics relates to the governance of a society and how to solve collective-action problems, including inflation and unemployment. Economics on the other hand,deals with the analysis of production, distribution and consumption of goods and services which also affect the concepts of inflation and unemployment.

This brings up the relevance of Lasswell's (2018)view of politics as a process which portrays "who gets what, when, how?" Similarly, Marshall (2013)views economics as the study of man in ordinary business, portraying how he gets and uses income. These all relate to inflation and unemployment in societies, including the Nigerian economy.

So, the intertwined relationship of politics and economics, leading to the paired construct of political economy, cannot be underestimated in the assessment of the impact of critical concepts like inflation and unemployment, on the national economy.

Furthermore, Aruofor (2020) carried out a comparison between the impacts of Inflation and the Inflation Rate and found that inflation as has been acknowledged above, causes money illusion. It increases domestic and external debts and working through the interest rate, causes more inflation in the economy. It also increases savings, investment and capital accumulation but causes the value of the naira to depreciate. The demand for money falls as too much money is already in the hands of consumers. Consumption tends to increase thus causing growth and growth rate to increase. Unemployment rate falls because it trades off with inflation. The inflation rate on the other hand, causes some measure of growth, though the growth rate falls. Both nominal and real incomes decline as well as investment and saving which also fall. As before, unemployment rate falls and the exchange rate depreciates further but the demand for money increases.

It is believed that the results obtained from this study will help to clarify a lot of issues and will be beneficial to policy and decision makers as a first step in the solution of the vicious circle between inflation and unemployment.

METHODOLOGY:

The approach used in this study is divided into several sections. The first is termed the total differential modeling approach (see Aruofor, 2001, 2004, 2007, 2013, 2017 and 2020) also Aruofor and Ogbeide, (2017 and 2022) and Aruofor and Okungbowa, (2018). The total differential modeling approach (ecostatometrics) is the reward of a personal commitment in research that dates back to 1976 by the author. The research results has been published in Aruofor (2020). It assumes and rightly so, that in the real world situation, every economic variable or subsystem depends on and is depended upon by other variables or subsystems.

A schematic representation of the above theory is presented in Fig. 1.

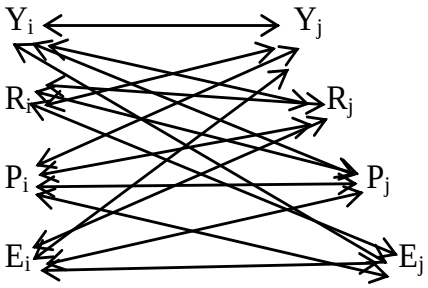

Fig: 1: The True Socio – Economic Causal Chain

Y = Production variables;
R = Primary Factors;
P = Policy instruments;
E = Environmental variables.

This theory was first mooted by Walras as early as 1874 even though it was not developed beyond the conceptual stage. The true practical empirical systems total differential modeling approach (Ecostatometrics), was achieved by Aruofor (2017) when Professor Rex Oforitse Aruofor delivered his inaugural lecture, titled "Economic Systems Engineering, Poverty, Unemployment and Under-Development: A Quest for Solution and Imperatives for Developing the Nigerian Economy" at Benson Idahosa University, Benin City, Nigeria on March 6. 2017. Since then it has crystallized into academic publications (see Aruofor, 2017, 2019 and 2020), Aruofor and Okungbowa, (2018) and also Aruofor and Ogbeide, (2017, 2022a, 2022b, 2023a, 2023a, 2024a, 2024b, 2024c, 2024d, 2024e and 2024f). The total differential modeling approach relies on statistically significant multiple simple linear regression coefficients as opposed to multiple linear regression parameters. It is a blend between the traditional Input Output Analysis and Econometrics and assumes the structure of programming models. The theory behind it is that an economy is not truly dynamic but only dynamically static. It is the change that occurs in an economy in the current year(t) that determines where the economy (the endogenous variables) will be at the end of the current year (t) and not in the next year(t+1). This model is a departure from the normal econometric approach, where the structure of the economy is determined by combinations of economic theories. The true structure of an economy is so complex that economic theory will be self defeating (see Duesenberry et al , 1965 and Gordon, 1968). ***Indeed, Adeyoju (1975) had rightly noted that " the unstable nature of population and its growth, national income and its distribution, investment capacity, employment opportunities, balance of payments and raw material base often lead to conflicting theories of economic development".*** Thus, we do not need any elaborate theories to explain the working of an economy.

If we can estimate all the independent relationships among the variables of the economy taken two at a time, (depending on whether they are statistically significant) and classify the significant coefficients into a matrix, ***B***, according to whether they are endogenous or exogenous, then we would have in matrix notation,

$$Y = BY + CX + A + U$$
$$\therefore [I - B]Y = CX + A + U$$
$$Y = [I - B]^{-1}CX + [I - B]^{-1}A + [I - B]^{-1}U$$
$$\frac{dY}{dX} = [I - B]^{-1}C$$
$$\therefore dY = [I - B]^{-1}CdX$$
$$\textbf{i.e}\ \Delta Y = [I - B]^{-1}C\Delta X$$
$$\therefore Y_t = [I - B]^{-1}CX_t - [I - B]^{-1}CX_{t-1} + Y_{t-1}$$

Where, *Y*=endogenous and *X*=exogenous variables. The fact that the relationships are not estimated by multiple linear regressions means that the issue of simultaneous equation bias is by-passed and all the estimation difficulties, including multi-collinearity associated with econometric multiple linear regression, which renders it inconsistent and therefore non-operational, are also by-passed. Moreover, no complicated econometric and economic theories are needed to proceed. It is then possible to view the whole economy at a glance and the structure of the economy is determined automatically.

Thus, given a simple linear regression between two variables, X *and* Y, we proceed as follows and state the equation as below:

$$Y = a + bX + u$$

Where Y = the dependent variable
X = the independent variable
a & b = parameters
u = error term.

The estimate of the parameters a & b, is achieved by the application of least squares to the data on the variables, with a view to minimize the sum of squared deviations around the regression line (Koutsoyiannis, 1977 and Aruofor, 2001 and 2020).

The parameters can be estimated by solving the following normal equations:

$$a\sum 1 + b\sum X = \sum Y \qquad (1)$$
$$a\sum X + b\sum X^2 = \sum XY \qquad (2)$$

This was the basic procedure adopted and the coefficients were estimated by means of a computer software, ESM-Lab 4.4, that tested for statistical significance at the 5% level of significance using the asymptotic t-ratios.For this study, the data were assembled from the Central Bank Statistical Bulletin (CBN, 2017, 2018, 2019 and 2021) and Aruofor, (2017) and Aruofor and Ogbeide (2019, 2024). The time series ranged from 1981 to 2023. The list of

variables consists of one hundred and fifteen variables, comprising one hundred and eleven (111) endogenous variables followed by four (4) exogenous variables (see fig 2).

THE CONSTRUCTION OF THE COMPOSIT MODEL OF NIGERIA ECONOMY.

The Nigeria model consists of the primary sectors comprising of the agricultural sector, the manufacturing sector, industry, construction, transport, services, education and health; and other real sectors including national income, consumption and investment, population, labor and employment, foreign sector, economic indicators and policy instruments. Together, they comprise the endogenous variables of the model, while the exogenous variable consist of inflation and unemployment and their rates.

THE POPULATION MODEL AND DERIVATION OF VARIABLES

Extant models of the Nigerian economy lacked data on total active work force, employment, etc. These are major defects and according to Stolper, (1966), the development planner cannot afford to assume his facts; he must find them as best as he can. We therefore proceeded as follows:
The population of Nigeria is growing at approximately 3% per year. Given this fact, we back cast the population at 3% discount rate to 1901 and projected it to 2021 assuming that the population has been adjusted for deaths.

1) Going by international standard, children are those people of ages Sixteen (16) years and below and was derived as:
   Children = $Pop_t - Pop_{t-16}$
2) Population of people eighty years and below was derived as:
   $Pop_t - Pop_{t-80}$
3) Estimated potential active work force (EPAWF) = $Pop_t - Pop_{t-80}$ – Children.
4) Population of old people equals the residual.
5) Unemployed work force = EPAWF x Unemployment rate.
6) Employed work force (EMPWF) = EPAWF - Unemployed work force.
7) Employment = $\Delta EMPWF$
8) Average wage rate = $Labor \quad Force \quad Compensation / EMPWF$
9) National Productivity = NGDP/Labor force compensation
10) Estimated potential active work force (EPAWF) = $Pop_t - Pop_{t-80}$ – Children.

Fig 2: LEGEND OF VARIABLES NIGERIA MARKET ECONOMY

S/no.	ACRONYMS	ACTIVITY	UNIT
1	NGDP(t)	GDP at Current Basic Prices	N million
2	AGGDD	Aggregate Demand	
3	AGGSS	Aggregate Supply	
4	INVST(t)	Investment	N million
5	AGRSEC(t)	1. Agriculture	N million
6	INDUST(t)	2. Industry	N million
7	MANUFC(t	(c) Manufacturing	N million
8	OILREFIN	OIL Refining	N million
9	ELECTSS(t)	3. Electricity,Gas,Steam & Air conditioner	N million
10	WATER(t)	4. Water supply, sewage, waste Mang.	N million
11	CONSTN(t)	5. Construction	N million
12	SERVCS(t)	C. SERVICES	N million
13	TRADE(t)	1. Trade	N million
14	ACCOFOOI	2. Accomadation and Food Services	N million
15	TRASPOT(t	3. Transportation and Storage	N million
16	TRANSEV(t	e. Transport Services	N million
17	POSTCUR(t	f. Post and Courier Services	N million
18	INFOCOM(	4. Information and Communication	N million
19	TELECOM(t	a. Telecommunications and Information Services	N million
20	PUBLSHN(t	b. Publishing,	N million
21	MPIC&SNI	c. Motion Pictures, Sound recording and Music production	N million
22	BRODCST(t	d. Broadcasting	N million
23	ARTRECRT	5. Arts, Entertainment & Recreation	N million
24	FININSUR(t	6. Financial and Insurance	N million
25	FINANCE(t	a. Financial Institutions	N million
26	INSURANS	b. Insurance	N million
27	REALEST(t)	7. Real Estate	N million
28	PROFSERV	8. Professional, Scientific & Technical Serv.	N million
29	ADMINSUI	9. Administrative and Support Services	N million
30	PUBADMN	10. Public Administration	N million
31	EDUCATN(	11. Education	N million
32	HLT&SOC	12. Human Health & Social Services	N million
33	OTHSERVS	13. Other Services	N million
34	DISPINC(t)	Disposable Income	N million
35	REALINC(t)	Real Income	N million
36	REALGDP(t	Real GDP	N million
37	GROWTRT	Growth rate	%
38	GROWTH(t	Growth	N million
39	CONS(t)	Consumption	N million
40	CAPITAL(t)	Capital accumulation	N million
41	FDI(t)	Foreign Direct Investment	N million
42	CPI(t)	Consumer Price Index	
43	INFLTD(t)	Inflation Dummy = 1 when CPI increases, otherwise = 0	
44	INFLATN(t)	Inflation = INFTD X CPI	
45	INFLTRT(t)	Inflation Rate	%
46	UNEMPL(t)	Unemployment Rate	%
47	LABCOMP	Labor Force Compensation	N million
48	MALE	Male Population	Million
49	FEMALE	Female Population	Million
50	URBAN	Urban Population	Million
51	RURAL	Rural Population	Million
52	CHLDRN	Children Population (16 years and below)	Million
53	CHDRNSS	Children Supply	Million
54	EPAWF	Estimated Potencial Active Work Force	Million
55	NADDWF	New Addition to Workforce	
56	POPOLD	Population of Old People (80 years and above)	Million
57	UNEMWF	Unemployed Work Force	Million
58	EMPWF	Employed Work Force	Million
59	EMPLMNT	Employment	Million
60	PRDTIVTY	Productivity	
61	LPROVITY	Labor Productivity	
62	AVWAGE	Average Wage Rate	Naira
63	DDEMENT	Demand for Employment	

Fig 2: LEGEND OF VARIABLES NIGERIA MARKET ECONOMY CONTINUED

S/no.	ACRONYMS	ACTIVITY	UNIT
64	EMDDPR	Employment Demand Pressure	
65	POOR(t)	Poor	Million
66	EXTPOOR(	Extremely (Absolute) Poor	Million
67	POVRT(t)	Poverty Rate	%
68	SLAVERY	Slavery	
69	SAVINGS(t	Savings	N million
70	BOT(t)	Balance of trade	N million
71	BOP(t)	Balance of payments	N million
72	EXTRES(t)	External reserve	N million
73	DBTBDN(t)	Debt burden or Bondage	
74	OILREV(t)	Oil revenue	N million
75	NOILREV(t	Non-oil revenue	N million
76	CORPTD(t)	Corruption Dummy = 1 when DDMOPR increases, otherwise = 0	
77	CORRPTN(	Corruption= CORPTD X DDMOPR.	
78	DDMONY(	Demand for money	N million
79	DDMOPR(t	Demand for money pressure	
80	DEMOCY(t	Dummy Variable 1.0 for New Democracy and 0 elsewhere.	
81	CORDEM(t	Equals DEMOCY x CORRPTN	
82	PWLFARE	Personal Welfare (Per capita income)	Naira
83	STDOLIVN	Standard of Living	
84	PUPWER	Purchasing Power	
85	FODSRITY	Food Security	
86	HLTCARE	Health Care	
87	DDHCARE	Demand for Health Care	
88	HCRDDPR	Health Care Demand Pressure	
89	HRESDEV	Human Resource Development	
90	DDEDUC	Demand for Education	
91	EDUDDPR	Education Demand Pressure	
92	WEALTH	National Wealth	
93	PWEALTH	Personal Wealth	
94	IMPDPEN	Import Dependence	
95	DDIMP	Demand for Imports	
96	PENCIMP	Penchant for Imports	
97	TIME(t)	Time	
98	EXCHRTRP	Exchange rate (Relative poverty)	N million
99	POP(t)	Population	Million
100	IMPORT(t)	Imports	N million
101	XPOTOIL(t	Oil export	N million
102	XPTNOIL(t	Non-oil export	N million
103	DODBT(t)	Domestic debts	N million
104	EXTDBT	External debts	$ million
105	GEXPDN(t)	Government expenditure	N million
106	PRIMELR(t	Primary lending rate	%
107	INTSAV(t)	Interest rate	%
108	MONYSS(t	Money supply	N million
109	TAX(t)	Tax	N million
110	ACGSC	Agricultural Credit Guarantee Scheme	N million
111	DFUELP(t)	Domestic fuel price	N/Litre
	EXOGENOUS VARIABLES		
112	INFLATION		Units
113	INFLATION RATE		%
114	UNEMPLOYMENT RATE		%
115	EMPLOYMENT		Million

11) Population of old people equals the residual.
12) Unemployed work force = EPAWF x Unemployment rate.
13) Employed work force (EMPWF) = EPAWF - Unemployed work force.

14) Employment = $\Delta EMPWF$
15) Average wage rate = $Labor \quad Force \quad Compensation / EMPWF$
16) Estimated potential active work force (EPAWF) = $Pop_t - Pop_{t-80}$ – Children.
17) Population of old people equals the residual.
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19) Population of old people equals the residual.
20) Unemployed work force = EPAWF x Unemployment rate.
21) Employed work force (EMPWF) = EPAWF - Unemployed work force.
22) Employment = $\Delta EMPWF$
23) Average wage rate = $Labor \quad Force \quad Compensation / EMPWF$

24) National Productivity = NGDP/Labor force compensation

25) Labor Productivity = NGDP/ EMPWF
26) Demand for Employment = $\Delta EMPWF_{-1}$
27) Demand Pressure for Employment = ($\Delta EMPWF_{-1}$)/Unemployed Work Force
28) Demand for Health care = $\Delta HGDP_{-1}$
29) Demand Pressure for Health care = $\Delta HGDP_{-1} / Pop$
30) Demand for Education = $\Delta EdGDP_{-1}$
31) Demand Pressure for Education = $\Delta EdGDP_{-1} / Pop$
32) Demand for Imports = $\Delta IMPOTS_{-1}$
18) Penchant for Imports = $\Delta IMPOTS_{-1} / Pop$
19) Import Dependence = $IMPOTS / NGDP$
20) Slavery = EXTDEBT/Pop

Some other variables were derived from existing data as follows:

- $GROWT \quad RATE \quad = \quad ((\Delta GDP) / GDP_t) * 100)$
- $DINCOM \quad = \quad GDP - TAX$
- $COLIVN \quad = \quad (CONS_{t-1}((1 + (INFRT_t / 100)))$
- $POOR \quad = \quad POP / ((RGDP / EXCHRT) * \$720)$
- $ABPOOR \quad = \quad POP / ((RGDP / EXCHRT) * \$360)$
- $RICH \quad = POP \quad - \quad (POOR + ABPOOR)$
- $RPOVRT \quad = \quad (1 - ((RGDP / EXCHRT) / RGDP) * 100)$
- $DDMONY \quad = \quad (\Delta MONYSS)_{-1}$
- $DDMOPR \quad = \quad ((\Delta MONYSS)_{-1} / POP)$
- $IMPDD \quad = \quad (\Delta IMPORT)_{-1}$

- $IMPDDPR = ((\Delta IMPORT)_{-1} / POP)$
- $XPOTDD = (\Delta XPORT)_{-1}$
- $DBTBDN = (EXDBT/(GDP/EXCHRT))$
- $INVEDU = (INVSTNENT/NGDP)*EDUGDP$
- $INVIND = (INVSTNENT/NGDP)*INDGDP$

However the 2001 and 2006 census of the Nigerian economy by the National Bureau of Statistics was used to adapt the population of male and female, as well as urban and rural populations in Nigeria according to their shares.
The data on the Nigeria economy was also transformed into elasticity's by taking the logarithms of their absolute values and analyzed further.

MARKOV CHAINS ANALYSIS

The second section is Markov Chains analysis. An economy and indeed the world consists of variables interacting in a dynamic fashion. These variables include people (i.e. children, the work force, employed and unemployed, old people), businesses, vocations, sectors, governments etc interacting and changing in space and time. Even the policies they implement and the policy instrument they use also change in time and space and the ability to manage these changes tend to depend on our ability not only to understand them but to be able to analyze and interpret them.

Markov Chains Analysis provides us with such a tool for analyzing and understanding these changes and ecostatometrics alias total differential modeling approach provides the enabling mechanisms for capturing the changes. Markov Chains Analyses can be approached in terms of flows which is the original concept but also can be approached in terms of change or a combination of both which is a new concept. However, the concept is versatile and depends on how we define our variables in the Markov Chains, especially in the estimation and interpretation of the transition matrix, which is vital to the procedure.

In the above connection, our variables can be defined as the probability of being in one state in period ($t+1$), when another state changes in period (t); or just the probability that a variable will change in period ($t+1$) when another variable changes in period (t) or both. Given the above definitions, it is worthy of note that Markov Chains analysis deals only with probabilities which do not admit of negative values; but an economy interacts in both negative and positive numbers. This impasse can be overcome by reducing the system to conform (see Aruofor, 2003 and 2020). This was the methodology applied in this study.

A computer programme has been developed by the author, Professor Aruofor, Rex Oforitse and Mr. Omoruyi, Kingsley Igbinoba of Microcraft Nigeria Ltd and incorporated into ESM Lab and can be assessed on the Internet as esmlab.ng.com and ran as administrator.

LINEAR PROGRAMMING

Linear programming was developed during the Second World War by George B. Dantzig in collaboration with other members of a group of officials of the U.S. department of the Air Force in 1947. It involves the maximization or minimization of a function subject to certain constraints

on the variables which comprise the function. The basic elements of the linear programming problem in development planning may be summarized to include:

(i) The purely technical possibilities of production in a system
(ii) The constraints i.e. the quantitative limitations on the basic resources (primary factors of production) available to the system or economy
(iii)The general goal or objective for which production is undertaken.
(iv) The optimizing choice which exploits the technical possibilities in relation to the chosen objective

Put formally therefore, a programme is sought which will in some sense, accomplish our objective without exceeding stated resources limitation. This can be done by representing the whole interrelationships of the system (organization, industry, sector, economy or problems) by a system of simultaneous equations. The components or variables being the number of activities that can be distinguished to represent the system; and then deriving the feasible performance levels for these activities. The model of the Nigeria economy consisted of a matrix of (111x111) dimension and was solved by a computer software, Six Pap. Linear Goal Programming is a slight modification of Linear Programming.

RESULTS AND DISCUSSION

IMPACT OF INFLATION ON THE NIGERIA ECONOMY

Inflation impacts positively on aggregate demand causing it to increase by N94.31 billion. It also promotes Agriculture, Industry, Oil Refining, Electricity supply and Water resources to the tune of N25.1 billion, N165.22 billion, N897.1 million, N1.63 billion and N485.2 million respectively. Education and Health and Social services are not left out as inflation causes them to increase by N2.078 billion and N1.984 billion respectively.

Inflation also promotes growth by N18.36 million and Consumption by N82.774 billion and causes the unemployment rate to increase by 0.061% which does not conform to Phillip's hypothesis, and also enhances productivity by N158. However, the demand for employment and employment demand pressure are caused to increase by 67 people and 0.0193 units respectively.

Inflation also promotes poverty as it causes the Absolute Poor people to increase by 601 people and Slavery by N602,440/Nigerian as well as increase the debt burden by 0.003 units. However, inflation promotes savings, balance of trade and non-oil revenue by N56.4 billion, N49.9 billion and N1.444 billion respectively. Inflation also causes a shift of 0.0097 in corruption and causes the demand for Health care and Health care demand pressure to increase by N888.7 million and 6.24 units respectively.

It causes Human resource development to increase by N22.7 million and increases wealth by N0.000144 million; Oil export increase by N44.76 billion but imports increases by N50.2 billion, with import dependence increasing by 0.00163 units. The interest rate also increased by 0.104% while Taxes also increased by N76.85 billion.

IMPACT OF INFLATION RATE ON THE NIGERIA ECONOMY.

Inflation rate has a similar impact on the Nigerian economy as does inflation but the impact appear more profound in many cases (vide Tables 1a and 1b). In the same vein, inflation rate

promotes aggregate demand by N147 billion, Agiculture by N6732 billion, Industry by N686.5 billion, Oil refining by N3.6 billion, Electricity supply by N6.9 billion, Water resources by N1.8 billion, Education by N8.4 billion and Health and Social services by N8.1 billion. The above impacts appear more profound than in the case of inflation.

The impact of the Inflation rate on growth and consumption are also positive at N99.850 million and N48 billion respectively. While the impact on growth is more profound than that of inflation, which was N18.360 million, the impact on consumption is less profound than that of inflation which was N82.8 billion. Inflation rate also exacerbates the unemployment rate by 32% compared to 6.1% in the case of inflation. It also impacts positively on employment and productivity, thus increasing them by 418 persons and N704 but as before, the demand for employment increases by 270 persons while employment demand pressure increases by 0.075. The absolute poor also increase by 1.94 million as a result of inflation rate.

While savings and balance of trade increase by N227.2 million and N216 billion respectively, slavery and debt burden increase by N2.5 million and 0.012 respectively. The shift in corruption is more profound at 0.047 and the demand for health care and human resource development increased by N3.7 billion and N90 million respectively. In addition, health care demand pressure increased by 25.2 compared to 6.2 in the case of inflation. However, inflation rate causes non-oil revenue to increase by N37.8 billion. The other details are as contained in Tables 1a and 1b. However, it will appear that the impact of the inflation rate on the Nigeria economy is more profound than that of inflation but the pattern are the same.

IMPACT OF UNEMPLOYMENT RATE ON THE NIGERIA ECONOMY

Unemployment rate causes nominal income to increase by N1.28 trillion and aggregate supply by N4.07 trillion which is quite the opposite of inflation and inflation rate. It also promotes investment by N3.5 trillion; manufacturing by N515 billion, construction by N49.5 billion, trade by N1.1 trillion, services by N2.73 trillion, food and accommodation by N24.5 billion and transport by N24.9 billion. Most of the other services are also positive as can be seen from Table 1a. Unemployment rate also impacts positively on disposable income which increased by N6.08 trillion. In addition, Real income, Real output and growth rate increased by N11.3 billion, N1.66 trillion and 2.92% respectively. Like inflation and inflation rate, the unemployment rate also impacts positively on consumption causing it to increase by N164 billion which is more profound. Capital, Foreign Direct Investment and general price level also increased byN774 billion, N70 billion and 5.38 units respectively.

Unemployment rate also promotes inflation in Nigeria as it shifts inflation by 0.116; increases inflation by 7.174 units and the inflation rate by 8.3% and negates the trade off theory. It also promotes employment by 394 people, while the employed work force increases by 1.92 million with an associated increase of N34 billion in Labor productivity. However, while the Poor increased by 246 persons and corruption by N8.7 billion, Oil revenue increased by N732 billion.

Table 1a: IMPACT MULTIPLIERS

S/no.		INFLATN(t)	INFLTRT(t)	UNEMPL(t)	EMPLMNT(t)
1	NGDP(t)	-70216.5	-366599	2641313	1282267
2	AGGDD	94308.82	147120.7	-882619	-761969
3	AGGSS	-228701	-844378	4071409	3114084
4	INVST(t)	-212624	-759507	3534291	2730397
5	AGRSEC(t)	25112.24	67239.05	-343752	-214912
6	INDUST(t)	165217.4	686548.2	-3308510	-2562747
7	MANUFC(t	-19846.9	-103327	515147.5	401467
8	OILREFIN	897.1064	3593.985	-14754.7	-12229.4
9	ELECTSS(t)	1630.968	6946.827	-36896.9	-25949.4
10	WATER(t)	485.1882	1857.824	-9086.88	-7126.08
11	CONSTN(t)	-2965.29	-14389.1	49516.41	50287.35
12	SERVCS(t)	-186452	-580470	2732511	2138819
13	TRADE(t)	-68428.6	-216437	1113221	809164.7
14	ACCOFOOI	-1495.38	-5442.3	24501.66	19050.68
15	TRASPOT(t	-569.766	-4461.08	24945.39	21376.28
16	TRANSEV(t	21.54612	67.20348	-506.812	-472.419
17	POSTCUR(t	-75.4703	-181.239	1001.222	708.4308
18	INFOCOM(	-11582.1	-53009.2	254133.5	204449.4
19	TELECOM(t	-14826	-83701.8	396100.1	319874.8
20	PUBLSHN(t	-10.9036	-102.285	636.6041	319.1649
21	MPIC&SNI	-2101.98	-6921.03	35315.03	26265.76
22	BRODCST(t	-65.3915	-5228.61	29644.51	18454.84
23	ARTRECRTI	23.55381	-328.068	3150.993	1630.424
24	FININSUR(t	-13998.6	-44702.1	227156.1	166659.2
25	FINANCE(t	-12301.2	-39383.1	200014	146823.5
26	INSURANS	-1697.53	-5319.05	27143.62	19836.63
27	REALEST(t)	-31790.3	-99809	485563.2	365951.1
28	PROFSERV	-16115.1	-53277.7	269661.3	196863.3
29	ADMINSUF	-126.83	-412.037	2087.702	1541.029
30	PUBADMN	8164.445	44474.21	-200957	-159519
31	EDUCATN(	2078.104	8452.526	-32046.7	-32148
32	HLT&SOC	1984.068	8089.56	-38060.2	-31562
33	OTHSERVS	-6068.39	-39309.2	210694.2	136314.3
34	DISPINC(t)	-379199	-1175139	6087852	4449836
35	REALINC(t)	-610.214	-2542.26	11295.43	9604.313
36	REALGDP(t	-74406.9	-324194	1656508	1139724
37	GROWTRT(	-0.15245	-0.44192	2.921667	2.124499
38	GROWTH(t	0.01836	0.099855	-0.47667	-0.3588
39	CONS(t)	82776.92	48010.47	164014.6	-234510
40	CAPITAL(t)	-23020.6	-139283	773947.7	567031.9
41	FDI(t)	-2643.54	-12911.1	70510	52553
42	CPI(t)	-0.50772	-1.16283	5.384136	4.768411
43	INFLTD(t)	-0.00558	-0.0238	0.115959	0.09248
44	INFLATN(t)	-0.63096	-1.59905	7.174083	6.241603
45	INFLTRT(t)	-0.35189	-1.37275	8.30148	5.934311
46	UNEMPL(t)	0.061027	0.320879	-1.48689	-1.07057
47	LABCOMP	11000.2	-50221.1	221741.7	208033.8
48	MALE	-0.04605	-0.10391	0.433723	0.523059
49	FEMALE	-0.04532	-0.10227	0.426885	0.514803
50	URBAN	0.093491	0.401621	-2.10941	-1.50001
51	RURAL	0.164184	0.705304	-3.70443	-2.63424
52	CHLDRN	-0.04493	-0.2267	1.26704	0.833661
53	CHDRNSS	-0.25508	-1.01673	5.312876	3.958853
54	EPAWF	-0.0569	-0.11349	0.615466	0.596641
55	NADDWF	-0.0002	0.003953	-0.02828	-0.01301
56	POPOLD	-0.00136	0.013548	-0.05972	-0.01677

Table 1b: IMPACT MULTIPLIERS CONTINUED

S/no.		INFLATN(t)	INFLTRT(t)	UNEMPL(t)	EMPLMNT(
57	UNEMWF	-0.00971	-0.10854	0.393994	0.409247
58	EMPWF	-0.09763	-0.41519	1.920643	1.530482
59	EMPLMNT	0.096829	0.418344	-1.95244	-1.62779
60	PRDTIVTY	0.157755	0.704343	-3.20493	-2.51539
61	LPROVITY	-2919.21	-5920.73	34267.15	23718.72
62	AVWAGE	-222.207	-927.444	3936.659	3403.124
63	DDEMENT	0.066974	0.270064	-1.42094	-0.9714
64	EMDDPR	0.019358	0.07488	-0.37886	-0.2845
65	POOR(t)	-0.19309	-0.07259	0.245751	0.328301
66	EXTPOOR(t	0.601404	1.938749	-10.4333	-7.89713
67	POVRT(t)	-0.01692	-0.06542	0.333175	0.257354
68	SLAVERY	602.4478	2510.52	-12345.6	-9770.45
69	SAVINGS(t	56411.95	227243	-1119958	-836610
70	BOT(t)	49900.19	216024.9	-1041041	-769417
71	BOP(t)	-51623.3	-250396	1205539	939679.8
72	EXTRES(t)	-217.127	-611.82	3048.02	2459.205
73	DBTBDN(t)	0.002967	0.011943	-0.05838	-0.04351
74	OILREV(t)	-36448.8	-149875	732056.9	581577.2
75	NOILREV(t	11444.31	37777.64	-178985	-141004
76	CORPTD(t)	0.009674	0.04736	-0.22465	-0.18192
77	CORRPTN(t	-435.819	-1565.78	8700.683	5683.212
78	DDMONY(t	-54383.8	-209446	1113223	779761.4
79	DDMOPR(t	-174.983	-755.861	4417	2937.793
80	DEMOCY(t	0.001687	0.004494	-0.0326	-0.02846
81	CORDEM(t	-439.338	-1579.45	8768.284	5732.649
82	PWLFARE	-1497.8	-3475.17	18899.38	13595.68
83	STDOLIVN	-2754.83	-10051.8	46632.06	34703.29
84	PUPWER	-5.37366	-24.3856	124.3455	88.02244
85	FODSRITY	-275.974	-619.695	2440.809	2300.686
86	HLTCARE	-7.23936	-24.7521	123.082	100.2331
87	DDHCARE	888.7129	3708.923	-18832	-13773
88	HCRDDPR	6.241551	25.20206	-128.872	-94.8207
89	HRESDEV	22.70642	90.35725	-420.306	-339.841
90	DDEDUC	-357.193	-1179.8	415.196	3893.48
91	EDUDDPR	-11.4409	-46.1376	200.2631	169.4387
92	WEALTH	0.000144	0.000861	-0.00358	-0.00336
93	PWEALTH	-61.682	-270.007	1196.647	1056.818
94	IMPDPEN	0.001628	0.005937	-0.03148	-0.02283
95	DDIMP	-45967.1	-170769	939770.7	642394.1
96	PENCIMP	-458.822	-1494.19	7996.768	5677.677
97	TIME(t)	-0.02225	-0.0252	-0.05686	0.175313
98	EXCHRTRP	-0.21104	-0.71643	3.927348	3.195899
99	POP(t)	-0.09137	-0.20618	0.860628	1.037923
100	IMPORT(t)	50221.62	177847.1	-891881	-677256
101	XPOTOIL(t)	44765.84	126450.2	-665966	-473462
102	XPTNOIL(t)	-10041.8	-43716.3	202644.9	168231.5
103	DODBT(t)	16848.44	56193.33	-229516	-213606
104	EXTDBT	-5139.32	-33077.4	139537.2	102771.6
105	GEXPDN(t)	-14749.9	-37398.6	180155.9	139711.5
106	PRIMELR(t	-0.09106	-0.3607	1.79034	1.422642
107	INTSAV(t)	0.104103	0.428267	-2.11509	-1.56229
108	MONYSS(t)	-32562.6	-163432	809060.2	656034.4
109	TAX(t)	76850.84	223803.2	-1284185	-927591
110	ACGSC	-111723	-411181	2150064	1492048
111	DFUELP(t)	-0.6959	-2.16012	11.31937	7.974938

In addition, Personal welfare, standard of living, food security and purchasing power increased by N18,899.38/capita, N46,632.06/capita, N2,440.81/capita and N124.35/caput respectively. Health care also improved considerably by N123.08/caput. It will seem that high unemployment rate forces people to look for alternatives in order to survive.

Unemployment rate also increases the demand for education and the education demand pressure by N415/caput and 200.26 respectively. Personal wealth, i.e. per capita savings, increased by N1,196.65/caput but the demand for imports and penchant for imports increased by N939.77 billion and N8 billion respectively. Also, the naira depreciated by N3.93/US $ while non-oil exports increased by N202.64 billion. External debt increased by N139.5 billion with Government expenditure increasing by N180.15 billion. Money supply also increased by N809 billion while domestic fuel price increased by N11.3/liter as a result of unemployment rate.

IMPACT OF EMPLOYMENT ON THE NIGERIA ECONOMY.

The pattern is the same as that of unemployment rate but less profound (see Tables 1a and 1b) but more profound with regards to construction. Employment, like unemployment rate also shifts inflation by 0.09248 and increases inflation by 6.24 units, while increasing the inflation rate by 5.93%. It will seem that while employment is beneficial, it is not enough to stem poverty in Nigeria. However, employment causes the demand for education to increase by N3,893.48/capita.

Given the impact elasticities in Tables 2a and 2b, it is apparent that the Nigeria economy is not very responsive to inflation and employment and only partially responsive to inflation rate and unemployment rate. In most of the cases, the impact produces less than proportionate increase or decrease in the economy except for inflation rate which falls by -1.18833 with inflation rate; and increases by 1.143381 with respect to unemployment rate, thus confirming that unemployment rate promotes the inflation rate. In addition, slavery which is indicative of the amount every Nigerian owes the International Community, falls by -1.24963 with respect to inflation rate but increases by 1.70782 with unemployment rate; debt burden increases 1.703686 with inflation rate. External debt falls by -1.51737 with respect to inflation rate and increases by 1.066652 with respect to unemployment rate. However, corruption falls by -1.34582 with inflation rate while wealth also falls by -1.02949 with respect to unemployment rate.

Table 2a: IMPACT ELASTICITIES OF ECONOMY

S/no		INFLATN(t	INFLTRT(t	UNEMPL(t	EMPLMNT(t
1	NGDP(t	0.02482	0.26426	-	-
2	AGGD	0.03000	0.00924	0.02950	0.10445
3	AGGS	2	5	0.29951	6
4	INVST(t	0.02051	0.61817	8	0.10759
5	AGRSEC(t	0.03311	0.03516	0.51615	2
6	INDUST(t	0.01245	0.23553	0.03987	0.01747
7	MANUFC(t	0.02954	0.27844	0.14547	0.11943
8	OILREFI	8	0.02273	0.31886	3
9	ELECTSS(t	0.05786	0.76947	8	0.07036
10	WATER(t	1	8	0.12661	-0.1332
11	CONSTN(t	0.04147	0.58407	1	0.10436
12	SERVCS(t	0.04413	0.27858	0.56117	0.01455
13	TRADE(t	0.03908	0.033	0.39534	0.03925
14	ACCOFOOD(t	0.0465	0.7767	0.24477	5
15	TRASPOT(t	0.04999	0.33567	0.73665	-0.0364
16	TRANSEV(t	0.03881	0.59062	0.22625	0.0945
17	POSTCUR(t	-0.03301	0.27209	0.08496	-0.09905
18	INFOCOM(t	0.032323	0.847051	-0.80205	-0.07451
19	TELECOM(t	0.072233	0.400008	-0.64019	-0.11042
20	PUBLSHN(t)	-0.03775	0.285607	-0.28041	0.083019
21	MPIC&SND(t	0.06992	0.440905	-0.31167	-0.03541
22	BRODCST(t)	-0.00071	0.277708	-0.27583	-0.07162
23	ARTRECRTN(t	0.040194	0.55108	-0.43259	-0.09274
24	FININSUR(t	0.021421	0.181593	-0.34932	0.001163
25	FINANCE(t)	0.019741	0.104289	-0.29975	0.010432
26	INSURANS(t	-0.06389	0.368407	-0.1562	-0.15145
27	REALEST(t)	0.072118	0.374482	-0.44456	0.035389
28	PROFSERV(t	0.047464	0.747999	-0.77582	-0.03937
29	ADMINSUP(t	0.050082	0.756642	-0.75388	-0.03237
30	PUBADMN(t	0.055393	0.105154	-0.22886	0.043646
31	EDUCATN(t)	-0.00471	0.57153	-0.41213	0.090707
32	HLT&SOC	-0.04172	0.379155	-0.19495	0.074797
33	OTHSERVS(t	0.011064	0.566793	-0.39555	-0.07483
34	DISPINC(t)	0.043849	0.191751	-0.31911	0.024222
35	REALINC(t)	-0.04003	0.290701	-0.19331	-0.14672
36	REALGDP(t)	0.162565	0.415436	-0.40808	0.101059
37	GROWTRT(t)	-0.23587	-0.4933	0.587113	-0.10191
38	GROWTH(t)	-0.00666	0.026025	-0.01203	0.006176
39	CONS(t)	-0.00051	-0.02119	-0.06459	-0.01846
40	CAPITAL(t)	0.024742	-0.36596	0.070434	0.084998
41	FDI(t)	-0.00912	-0.11631	0.000702	0.18349
42	CPI(t)	0.029143	-0.21833	0.100803	0.160707
43	INFLTD(t)	0.001666	-0.10421	0.038207	-0.03543
44	INFLATN(t)	0.112108	-0.88756	0.528666	0.081082
45	INFLTRT(t)	-0.37716	-1.18833	1.413381	-0.51083
46	UNEMPL(t)	0.098834	0.621781	-0.36378	-0.03335
47	LABCOMP	-0.13055	0.780476	-0.35201	-0.30371
48	MALE	-0.0208	-0.10241	0.079651	-0.02531
49	FEMALE	-0.0208	-0.10241	0.079651	-0.02531
50	URBAN	-0.02078	-0.03682	0.055755	0.003452
51	RURAL	-0.02078	-0.03682	0.055754	0.003452
52	CHLDRN	-0.0281	-0.13965	0.100321	-0.0213
53	CHDRNSS	-0.00485	-0.36515	-0.07575	-0.12937
54	EPAWF	-0.01357	-0.0237	0.033006	-0.02165
55	NADDWF	-0.00992	-0.03322	0.039838	-0.01663
56	POPOLD	-0.01496	-0.02685	0.035491	-0.02368

Table 2b: IMPACT ELASTICITIES OF ECONOMY CONT'D

S/no		INFLATN(t	INFLTRT(t	UNEMPL(t	EMPLMNT(t
5	UNEMW	0.08887	0.58075	-	-
6	EMPW	9	4	0.19315	0.05243
7	EMPLMN	0.05657	0.21891	1	0.07902
8	PRDTIVT	1	0.69302	0.08043	0.03568
9	LPROVIT	0.04921	0.20862	0.26958	0.01716
10	AVWAG	5	0.84604	0.31399	6
11	DDEMEN	0.04137	4	0.60105	0.29296
12	EMDDP	0.1918	0.62070	1	0.40536
13	POOR(t	0.00635	7	0.68645	0.03973
14	EXTPOOR(t	0.04354	0.77225	0.62697	0.17098
15	POVRT(t	2	0.48148	0.39776	2
16	SLAVER	0.04367	0.62695	1.17078	0.0207
17	SAVINGS(t	-0.1805	0.24593	2	0.07761
18	BOT(t	0.02075	9	0.33679	8
19	BOP(t	0.0269	0.42458	9	0.14940
20	EXTRES(t	0.02121	0.14954	0.22386	-0.00521
73	DBTBDN(t)	0.032395	1.703686	-0.83204	-0.10122
74	OILREV(t)	0.01651	0.351065	0.081363	-0.15677
75	NOILREV(t)	0.008521	0.410785	-0.2862	0.115698
76	CORPTD(t)	0.002186	0.054784	-0.1431	0.04878
77	CORRPTN(t)	-0.18303	-1.34582	-0.49008	0.739217
78	DDMONY(t)	-0.14614	-0.60009	0.429565	-0.07519
79	DDMOPR(t)	-0.03473	-0.05476	-0.18064	0.19048
80	DEMOCY(t)	0.101807	0.578709	-0.72474	0.26868
81	CORDEM(t)	-0.02194	0.110821	-1.13134	0.437619
82	PWLFARE	0.046255	0.170244	-0.29273	0.022965
83	STDOLIVN	-0.01163	0.048583	0.071301	-0.1282
84	PUPWER	0.021915	-0.42223	0.291216	-0.00361
85	FODSRITY	0.045661	0.045538	-0.16946	0.042928
86	HLTCARE	0.043133	0.157202	-0.10637	-0.01148
87	DDHCARE	0.02585	-0.33685	0.256316	-0.00665
88	HCRDDPR	0.018891	-0.2977	0.24051	-0.00315
89	HRESDEV	0.008983	0.582786	-0.38342	0.075437
90	DDEDUC	-0.00199	0.350606	0.039586	-0.12459
91	EDUDDPR	0.050596	0.281263	-0.09065	0.11631
92	WEALTH	0.117613	0.805792	-1.02949	0.398282
93	PWEALTH	0.037239	0.353496	-0.25282	0.133185
94	IMPDPEN	-0.08672	-0.74263	0.516956	-0.05053
95	DDIMP	-0.12598	-0.33998	0.44677	-0.15914
96	PENCIMP	-0.11143	-0.33092	0.430267	-0.14352
97	TIME(t)	0.000667	-0.39059	0.178363	0.04486
98	EXCHRTRP	-0.00257	-0.40421	0.257801	0.167834
99	POP(t)	-0.0208	-0.10241	0.079651	-0.02531
100	IMPORT(t)	-0.01236	0.356925	-0.24385	0.109513
101	XPOTOIL(t)	0.022338	-0.43936	0.294224	0.021816
102	XPTNOIL(t)	0.08362	0.254964	-0.15089	-0.01972
103	DODBT(t)	-0.02627	0.234283	-0.22717	0.101234
104	EXTDBT	-0.02327	-1.51737	1.066652	0.213507
105	GEXPDN(t)	0.043502	-0.10753	-0.07591	0.056122
106	PRIMELR(t)	-0.02092	-0.24194	0.18699	-0.0154
107	INTSAV(t)	0.093821	0.499769	-0.3998	-0.00053
108	MONYSS(t)	0.021771	0.819575	-0.55279	0.084832
109	TAX(t)	-0.002	0.108497	-0.03373	0.128446
110	ACGSC	0.083851	0.687138	-0.54242	-0.02452
111	DFUELP(t)	0.059956	-0.28448	-0.02091	0.097784

THE TRANSITION MATRIX OF THE NIGERIAN ECONOMY.

The transition matrix is of dimension (111x111) of which only a part is presented in Tables 3a and 3b indicating the probability of change in the column variables in period (*t+1*) when the row variables change in period (*t*). It is easy to see the ramification of inflation, inflation rate, unemployment rate and employment with the rest of the economy. The outlook forecast of inflation and employment, their rates and growth and growth rate of the economy are shown in Figs 3 and 4.Inflation will reduce from 329.73 units in 2024 to 316.53 units by 2035. On the other hand, inflation rate will be growing in the negative realm from -122.4% in 2024 to -73.07% by 2035. Unemployment rate will fall from 29.36% in 2024 to 28.28% by 2035, while employment will be in deficit from -26.34 million in 2024 to -16.65 million by 2035. Growth rate will be in the negative and will increase from -61.54% in 2024 to -36.89% by 2035; while growth will be sluggish and decline from N18.596 million in 2024 to N18.088 million by 2035.

REQUIREMENTS TO GROW AND DEVELOP THE ECONOMY.

It will look like the Nigeria economy is not well structured and diversified for optimum growth and development; therefore we attempted to maximize the chances of growth and employment and related variables and minimize the chances of inflation and related variables given the transition matrix of the Nigerian economy using Linear Programming (see tables 4a and 4b and Tables 5a and 5b for the results). The objective function included to maximize the chances of nominal GDP, Aggregate demand, Investment, Growth rate, Growth, Employment, Productivity, Labor Productivity, Savings, Oil Revenue, Purchasing Power and Non-oil Exports. In addition, the objective function included to minimize the chances of inflation, inflation rate, unemployment rate, employment demand pressure, slavery and import dependence. This gave us the weights to use to formulate the Linear Goal Programming model of the Nigeria economy. The result is presented in Tables 6a and 6b, indicating that Aggregate demand should be pegged at N2.99e+07, Investment at N4.66e+06, Water Resources at N7.92e+04, Real Output at N1.62e+08, Children at 97367 million, Employment Demand Pressure at 580.69, wealth at N0.1503 million/caput and interest rate at 7.09%.

Table 3a: PARTIAL TRANSITION MATRIX

S/no		INFLATN	INFLTRT	UNEMPL	EMPLMNT
1	NGDP(t)	1.08E-08	0	8.09E-10	0
2	AGGDD	0	8.34E-09	1.6E-09	2.65E-09
3	AGGSS	0	0	0	0
4	INVST(t)	0	0	0	0
5	AGRSEC(t)	9.75E-09	0	7.31E-10	0
6	INDUST(t)	1.13E-08	0	8.19E-10	0
7	MANUFC(t)	1.43E-08	0	8.73E-10	0
8	OILREFIN	1.15E-07	0	1.32E-08	0
9	ELECTSS(t)	1E-08	0	6.89E-10	0
10	WATER(t)	9.08E-09	0	5.31E-10	0
11	CONSTN(t)	9.95E-09	0	6.24E-10	0
12	SERVCS(t)	9.58E-09	0	7.58E-10	0
13	TRADE(t)	9.63E-09	0	7.61E-10	0
14	ACCOFOOD(t)	1.03E-08	0	6.71E-10	0
15	TRASPOT(t)	1.11E-08	0	6.81E-10	0
16	TRANSEV(t)	1.2E-08	0	8.38E-10	0
17	POSTCUR(t)	9.66E-09	0	8.28E-10	0
18	INFOCOM(t)	9.49E-09	0	7.52E-10	0
19	TELECOM(t)	9.61E-09	0	7.72E-10	0
20	PUBLSHN(t)	1.01E-08	0	7.03E-10	0
21	MPIC&SND(t)	9.98E-09	0	7.82E-10	0
22	BRODCST(t)	9.73E-09	0	6.84E-10	0
23	ARTRECRTN(t)	9.49E-09	0	6.62E-10	0
24	FININSUR(t)	9.57E-09	0	7.48E-10	0
25	FINANCE(t)	9.59E-09	0	7.48E-10	0
26	INSURANS(t)	9.45E-09	0	7.44E-10	0
27	REALEST(t)	9.18E-09	0	7.35E-10	0
28	PROFSERV(t)	9.23E-09	0	7.29E-10	0
29	ADMINSUP(t)	9.64E-09	0	7.71E-10	0
30	PUBADMN(t)	9.26E-09	0	7.76E-10	0
31	EDUCATN(t)	1.11E-08	0	7.95E-10	0
32	HLT&SOC	1.32E-08	0	9.79E-10	0
33	OTHSERVS(t)	9.5E-09	0	6.45E-10	0
34	DISPINC(t)	1E-08	0	8.11E-10	0
35	REALINC(t)	8.39E-09	0	7.32E-10	0
36	REALGDP(t)	0	0	6.78E-10	0
37	GROWTRT(t)	1.85E-08	4.81E-09	1.35E-09	8.72E-10
38	GROWTH(t)	4.38E-09	0	3.1E-10	0
39	CONS(t)	9.95E-09	0	6.36E-10	0
40	CAPITAL(t)	1.03E-08	0	0	0
41	FDI(t)	1.25E-08	0	8.35E-10	0
42	CPI(t)	1.08E-08	0	7.74E-10	0
43	INFLTD(t)	3.78E-09	0	3.38E-10	0
44	INFLATN(t)	0.974427	0	7.54E-10	0
45	INFLTRT(t)	1.95E-08	0.952612	1.42E-09	8.17E-10
46	UNEMPL(t)	7.83E-09	0	0.978888	0
47	LABCOMP	9.12E-09	0	7.21E-10	0
48	MALE	6.86E-09	0	4.88E-10	0
49	FEMALE	6.86E-09	0	4.88E-10	0
50	URBAN	6.81E-09	0	4.43E-10	0
51	RURAL	6.81E-09	0	4.43E-10	0
52	CHLDRN	6.15E-09	0	3.52E-10	0
53	CHDRNSS	8.19E-09	0	6.59E-10	0
54	EPAWF	7.19E-09	0	5.46E-10	0
55	NADDWF	7.33E-09	0	5.91E-10	0
56	POPOLD	7.31E-09	0	5.52E-10	0

Table 3b: PARTIAL TRANSITION MATRIX CONT'D

S/no		INFLATN	INFLTRT	UNEMPL	EMPLMNT
57	UNEMWF	9.58E-09	0	1.06E-09	0
58	EMPWF	6.52E-09	0	3.73E-10	0
59	EMPLMNT	1.57E-08	3.37E-09	7.14E-10	0.957978
60	PRDTIVTY	0	0	2.09E-08	0
61	LPROVITY	9.57E-09	0	8.13E-10	0
62	AVWAGE	9.33E-09	0	7.88E-10	0
63	DDEMENT	6.38E-09	0	6.95E-10	0
64	EMDDPR	2.56E-08	4.84E-09	1.85E-09	0
65	POOR(t)	4.37E-08	0	0	0
66	EXTPOOR(t)	0	2.25E-08	0	0
67	POVRT(t)	7.17E-09	0	5.96E-10	0
68	SLAVERY	1.64E-08	3.9E-09	6.59E-10	7.37E-10
69	SAVINGS(t)	1.6E-08	0	1.66E-09	0
70	BOT(t)	8.93E-09	0	7.52E-10	0
71	BOP(t)	7.03E-09	0	6.58E-10	0
72	EXTRES(t)	1.09E-08	0	8.4E-10	0
73	DBTBDN(t)	3.81E-08	8.15E-09	2.9E-09	1.45E-09
74	OILREV(t)	0	1.62E-09	0	0
75	NOILREV(t)	1.02E-08	0	7.84E-10	0
76	CORPTD(t)	1.91E-08	4.64E-09	8.8E-10	7.88E-10
77	CORRPTN(t)	5.87E-09	2.96E-09	6.04E-10	5.8E-10
78	DDMONY(t)	9.21E-09	0	6.46E-10	0
79	DDMOPR(t)	1.25E-08	0	7E-10	0
80	DEMOCY(t)	2.92E-09	3.65E-09	0	6.67E-10
81	CORDEM(t)	5.86E-09	2.95E-09	6.02E-10	5.78E-10
82	PWLFARE	9.75E-09	0	8.31E-10	0
83	STDOLIVN	0	0	0	0
84	PUPWER	0	5.6E-09	0	0
85	FODSRITY	9.85E-09	0	8.13E-10	0
86	HLTCARE	1.05E-08	0	8.65E-10	0
87	DDHCARE	8.87E-09	0	6.38E-10	0
88	HCRDDPR	9.34E-09	0	7.06E-10	0
89	HRESDEV	1.33E-08	0	1.07E-09	0
90	DDEDUC	0	0	0	0
91	EDUDDPR	0	0	0	0
92	WEALTH	2.75E-08	6.32E-09	1.06E-09	0
93	PWEALTH	0	0	0	0
94	IMPDPEN	6.29E-09	0	4.4E-10	0
95	DDIMP	1.43E-08	3.94E-09	1.03E-09	8.34E-10
96	PENCIMP	1.46E-08	4.02E-09	1.05E-09	8.69E-10
97	TIME(t)	9.27E-09	0	6.98E-10	0
98	EXCHRTRP	1.07E-08	0	7.32E-10	0
99	POP(t)	6.86E-09	0	4.88E-10	0
100	IMPORT(t)	1.39E-08	0	1.13E-09	0
101	XPOTOIL(t)	9.34E-09	0	6.01E-10	0
102	XPTNOIL(t)	0	0	0	0
103	DODBT(t)	1.07E-08	0	7.55E-10	0
104	EXTDBT	0	0	0	0
105	GEXPDN(t)	9.6E-09	0	7.62E-10	0
106	PRIMELR(t)	4.71E-09	0	3.66E-10	0
107	INTSAV(t)	0	0	0	0
108	MONYSS(t)	1.36E-08	0	9.93E-10	0
109	TAX(t)	0	0	0	0
110	ACGSC	4.49E-09	3.02E-09	3.44E-10	0
111	DFUELP(t)	9.23E-09	0	7.43E-10	0

Fig. 3:: OUTLOOK OF THE NIGERIA ECONOMY

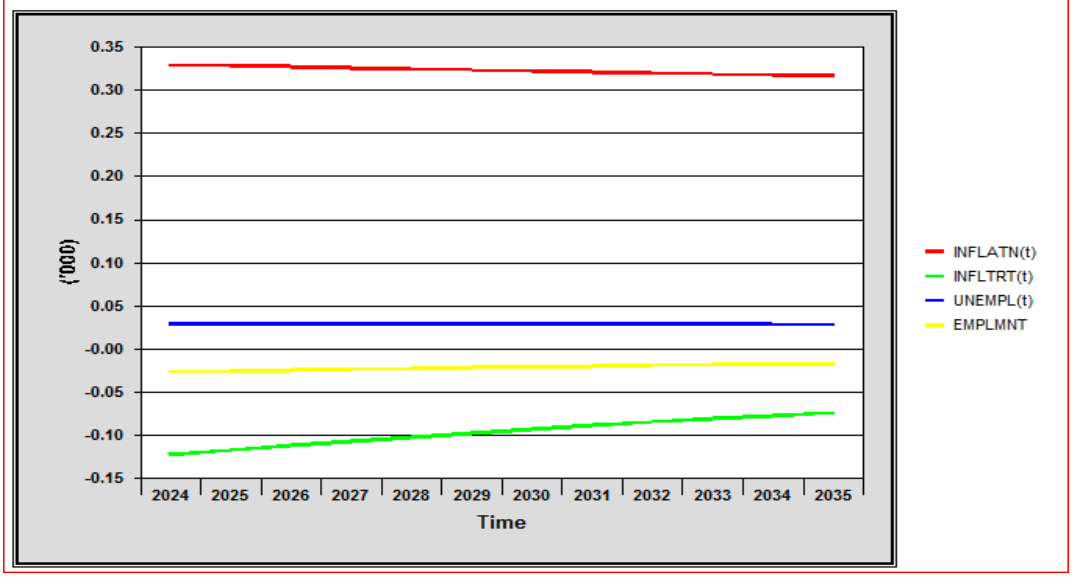

Fig 4: OUTLOOK OF GROWTH AND GROWTH RATE OF NIGERIAN ECONOMY

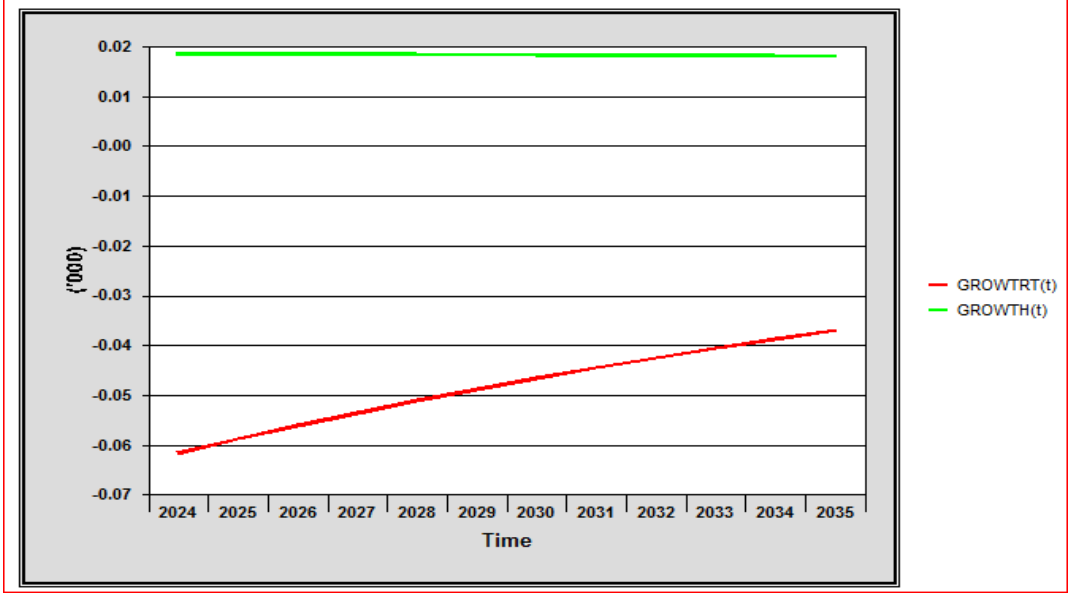

Table 4a: LP RESULT MAXIMIZE CHANCE

OBJF	Max	Obj =12.2761	LPINFEMP1	
1	NGDP(t)	x(1) = 1.0235	constraint no.	1 TRUE : 1 <= 1
1	AGGDD	x(2) = 1.0113	constraint no.	2 TRUE : 1 <= 1
0	AGGSS	x(3) = 0	constraint no.	3 TRUE : 0.0088 <= 1
1	INVST(t)	x(4) = 1.0219	constraint no.	4 TRUE : 1 <= 1
0	AGRSEC(t)	x(5) = 0	constraint no.	5 TRUE : 0.0039 <= 1
0	INDUST(t)	x(6) = 0	constraint no.	6 TRUE : 0.0046 <= 1
0	MANUFG(t)	x(7) = 0	constraint no.	7 TRUE : 0.0057 <= 1
0	OILREFN	x(8) = 0	constraint no.	8 TRUE : 0.0784 <= 1
0	ELECTSS(t)	x(9) = 0	constraint no.	9 TRUE : 0.0038 <= 1
0	WATER(t)	x(10) = 0	constraint no.	10 TRUE : 0.0035 <= 1
0	CONSTN(t)	x(11) = 0	constraint no.	11 TRUE : 0.0037 <= 1
0	SERVCS(t)	x(12) = 0	constraint no.	12 TRUE : 0.004 <= 1
0	TRADE(t)	x(13) = 0	constraint no.	13 TRUE : 0.004 <= 1
0	ACCOFOOD(t)	x(14) = 0	constraint no.	14 TRUE : 0.0038 <= 1
0	TRASPOT(t)	x(15) = 0	constraint no.	15 TRUE : 0.0044 <= 1
0	TRANSEV(t)	x(16) = 0	constraint no.	16 TRUE : 0.0049 <= 1
0	POSTCUR(t)	x(17) = 0	constraint no.	17 TRUE : 0.004 <= 1
0	INFOCOM(t)	x(18) = 0	constraint no.	18 TRUE : 0.0039 <= 1
0	TELECOM(t)	x(19) = 0	constraint no.	19 TRUE : 0.004 <= 1
0	PUBLSHN(t)	x(20) = 0	constraint no.	20 TRUE : 0.004 <= 1
0	MPIC&SND(t)	x(21) = 0	constraint no.	21 TRUE : 0.0041 <= 1
0	BRODCST(t)	x(22) = 0	constraint no.	22 TRUE : 0.0038 <= 1
0	ARTRECR(t)	x(23) = 0	constraint no.	23 TRUE : 0.0037 <= 1
0	FININSUR(t)	x(24) = 0	constraint no.	24 TRUE : 0.004 <= 1
0	FINANCE(t)	x(25) = 0	constraint no.	25 TRUE : 0.004 <= 1
0	INSURANS(t)	x(26) = 0	constraint no.	26 TRUE : 0.004 <= 1
0	REALESTA(t)	x(27) = 0	constraint no.	27 TRUE : 0.0038 <= 1
0	PROFSERV(t)	x(28) = 0	constraint no.	28 TRUE : 0.0039 <= 1
0	ADMINSUP(t)	x(29) = 0	constraint no.	29 TRUE : 0.0041 <= 1
0	PUBADMIN(t)	x(30) = 0	constraint no.	30 TRUE : 0.0039 <= 1
0	EDUCATN(t)	x(31) = 0	constraint no.	31 TRUE : 0.0043 <= 1
0	HLT&SOC	x(32) = 0	constraint no.	32 TRUE : 0.0055 <= 1
0	OTHSERVS(t)	x(33) = 0	constraint no.	33 TRUE : 0.0037 <= 1
0	DISPINC(t)	x(34) = 0	constraint no.	34 TRUE : 0.0043 <= 1
0	REALINC(t)	x(35) = 0	constraint no.	35 TRUE : 0.0036 <= 1
0	REALGDP(t)	x(36) = 0	constraint no.	36 TRUE : 0.0068 <= 1
1	GROWTH(t)	x(37) = 1.0425	constraint no.	37 TRUE : 1 <= 1
1	GROWTH(t)	x(38) = 1.0079	constraint no.	38 TRUE : 1 <= 1
0	CONS(t)	x(39) = 0	constraint no.	39 TRUE : 0.0037 <= 1
0	CAPITAL(t)	x(40) = 0	constraint no.	40 TRUE : 0.0035 <= 1
0	FDI(t)	x(41) = 0	constraint no.	41 TRUE : 0.0051 <= 1
0	CPI(t)	x(42) = 0	constraint no.	42 TRUE : 0.0042 <= 1
0	INFLTD(t)	x(43) = 0	constraint no.	43 TRUE : 0.0017 <= 1
-1	INFLATN(t)	x(44) = 0	constraint no.	44 TRUE : 0.0042 <= 1
-1	INFLTRT(t)	x(45) = 0	constraint no.	45 TRUE : 0.0071 <= 1
-1	UNEMPL(t)	x(46) = 0	constraint no.	46 TRUE : 0.0038 <= 1
0	LABCOMP	x(47) = 0	constraint no.	47 TRUE : 0.0038 <= 1
0	MALE	x(48) = 0	constraint no.	48 TRUE : 0.0027 <= 1
0	FEMALE	x(49) = 0	constraint no.	49 TRUE : 0.0027 <= 1
0	URBAN	x(50) = 0	constraint no.	50 TRUE : 0.0025 <= 1
0	RURAL	x(51) = 0	constraint no.	51 TRUE : 0.0025 <= 1
0	CHLDRN	x(52) = 0	constraint no.	52 TRUE : 0.0026 <= 1
0	CHDRNSS	x(53) = 0	constraint no.	53 TRUE : 0.0037 <= 1
0	EPAWF	x(54) = 0	constraint no.	54 TRUE : 0.0028 <= 1
0	NADDWF	x(55) = 0	constraint no.	55 TRUE : 0.0029 <= 1
0	POPOLD	x(56) = 0	constraint no.	56 TRUE : 0.0029 <= 1

Table 4b: LP RESULT MAXIMIZE CHANCE CONT'D

OBJF	Max	Obj =12.2761	LPINFEMP1	
0	UNEMWF	x(57) = 0	constraint no.	57 TRUE : 0.0052 <= 1
0	EMPWF	x(58) = 0	constraint no.	58 TRUE : 0.0025 <= 1
1	EMPLMNT	x(59) = 1.037	constraint no.	59 TRUE : 1 <= 1
1	PRDTIVTY	x(60) = 1.0478	constraint no.	60 TRUE : 1 <= 1
1	LPROVITY	x(61) = 1.0214	constraint no.	61 TRUE : 1 <= 1
0	AVWAGE	x(62) = 0	constraint no.	62 TRUE : 0.0041 <= 1
0	DDEMENT	x(63) = 0	constraint no.	63 TRUE : 0.0075 <= 1
-1	EMDDPR	x(64) = 0	constraint no.	64 TRUE : 0.0103 <= 1
0	POOR(t)	x(65) = 0	constraint no.	65 TRUE : 0.0117 <= 1
0	EXTPOOR(t)	x(66) = 0	constraint no.	66 TRUE : 0.0046 <= 1
0	POVRT(t)	x(67) = 0	constraint no.	67 TRUE : 0.003 <= 1
-1	SLAVERY	x(68) = 0	constraint no.	68 TRUE : 0.0071 <= 1
1	SAVINGS(t)	x(69) = 1.0347	constraint no.	69 TRUE : 1 <= 1
0	BOT(t)	x(70) = 0	constraint no.	70 TRUE : 0.004 <= 1
0	BOP(t)	x(71) = 0	constraint no.	71 TRUE : 0.0028 <= 1
0	EXTRES(t)	x(72) = 0	constraint no.	72 TRUE : 0.0045 <= 1
0	DBTBDNK(t)	x(73) = 0	constraint no.	73 TRUE : 0.0152 <= 1
1	OILREV(t)	x(74) = 1.0009	constraint no.	74 TRUE : 1 <= 1
0	NOILREV(t)	x(75) = 0	constraint no.	75 TRUE : 0.0041 <= 1
0	CORPTD(t)	x(76) = 0	constraint no.	76 TRUE : 0.0076 <= 1
0	CORRPTN(t)	x(77) = 0	constraint no.	77 TRUE : 0.0041 <= 1
0	DDMONY(t)	x(78) = 0	constraint no.	78 TRUE : 0.0038 <= 1
0	DDMOPR(t)	x(79) = 0	constraint no.	79 TRUE : 0.0049 <= 1
0	DEMOCY(t)	x(80) = 0	constraint no.	80 TRUE : 0.0022 <= 1
0	CORDEM(t)	x(81) = 0	constraint no.	81 TRUE : 0.0041 <= 1
0	PWLFARE	x(82) = 0	constraint no.	82 TRUE : 0.0041 <= 1
0	STDOLIVX	x(83) = 0	constraint no.	83 TRUE : 0.0773 <= 1
1	PUPWER	x(84) = 1.0226	constraint no.	84 TRUE : 1 <= 1
0	FODSRITY	x(85) = 0	constraint no.	85 TRUE : 0.004 <= 1
0	HLTCARE	x(86) = 0	constraint no.	86 TRUE : 0.0042 <= 1
0	DDHCARE	x(87) = 0	constraint no.	87 TRUE : 0.0032 <= 1
0	HCRDDPR	x(88) = 0	constraint no.	88 TRUE : 0.0034 <= 1
0	HRESDEV	x(89) = 0	constraint no.	89 TRUE : 0.0057 <= 1
0	DDEDUC	x(90) = 0	constraint no.	90 TRUE : 0.0233 <= 1
0	EDUDDPR	x(91) = 0	constraint no.	91 TRUE : 0.0001 <= 1
0	WEALTH	x(92) = 0	constraint no.	92 TRUE : 0.0104 <= 1
0	PWEALTH	x(93) = 0	constraint no.	93 TRUE : 0.0049 <= 1
-1	IMPDPEN	x(94) = 0	constraint no.	94 TRUE : 0.0025 <= 1
0	DDIMP	x(95) = 0	constraint no.	95 TRUE : 0.005 <= 1
0	PENCIMP	x(96) = 0	constraint no.	96 TRUE : 0.0051 <= 1
0	TIME(t)	x(97) = 0	constraint no.	97 TRUE : 0.0036 <= 1
0	EXCHRTRT	x(98) = 0	constraint no.	98 TRUE : 0.0042 <= 1
0	POP(t)	x(99) = 0	constraint no.	99 TRUE : 0.0027 <= 1
0	IMPORT(t)	x(100) = 0	constraint no.	100 TRUE : 0.0067 <= 1
0	XPOTOIL(t)	x(101) = 0	constraint no.	101 TRUE : 0.0036 <= 1
1	XPTNOIL(t)	x(102) = 1.0046	constraint no.	102 TRUE : 1 <= 1
0	DODBT(t)	x(103) = 0	constraint no.	103 TRUE : 0.0043 <= 1
0	EXTDBT	x(104) = 0	constraint no.	104 TRUE : 0.0108 <= 1
0	GEXPDN(t)	x(105) = 0	constraint no.	105 TRUE : 0.004 <= 1
0	PRIMELR(t)	x(106) = 0	constraint no.	106 TRUE : 0.0019 <= 1
0	INTSAV(t)	x(107) = 0	constraint no.	107 TRUE : 0.0009 <= 1
0	MONYSS(t)	x(108) = 0	constraint no.	108 TRUE : 0.0058 <= 1
0	TAX(t)	x(109) = 0	constraint no.	109 TRUE : 0.0075 <= 1
0	ACGSC	x(110) = 0	constraint no.	110 TRUE : 0.0038 <= 1
0	DFUELP(t)	x(111) = 0	constraint no.	111 TRUE : 0.0039 <= 1

Table 5a: LP RESULT MINIMIZE CHANCE

OBJF	Min	Obj =-6.2301	LPINFEMP1
1	NGDP(t)	x(1) = 0	constraint no. 1 TRUE : 0. <= 1
1	AGGDD	x(2) = 0	constraint no. 2 TRUE : 0. <= 1
0	AGGSS	x(3) = 0	constraint no. 3 TRUE : 0 <= 1
1	INVST(t)	x(4) = 0	constraint no. 4 TRUE : 0 <= 1
0	AGRSEC(t)	x(5) = 0	constraint no. 5 TRUE : 0. <= 1
0	INDUST(t)	x(6) = 0	constraint no. 6 TRUE : 0. <= 1
0	MANUFC(t)	x(7) = 0	constraint no. 7 TRUE : 0. <= 1
0	OILREFIN	x(8) = 0	constraint no. 8 TRUE : 0. <= 1
0	ELECTSS(t)	x(9) = 0	constraint no. 9 TRUE : 0. <= 1
0	WATER(t)	x(10) = 0	constraint no. 10 TRUE : 0. <= 1
0	CONSTN(t)	x(11) = 0	constraint no. 11 TRUE : 0. <= 1
0	SERVCS(t)	x(12) = 0	constraint no. 12 TRUE : 0. <= 1
0	TRADE(t)	x(13) = 0	constraint no. 13 TRUE : 0. <= 1
0	ACCOFOOD(t)	x(14) = 0	constraint no. 14 TRUE : 0. <= 1
0	TRASPOT(t)	x(15) = 0	constraint no. 15 TRUE : 0. <= 1
0	TRANSEV(t)	x(16) = 0	constraint no. 16 TRUE : 0. <= 1
0	POSTCUR(t)	x(17) = 0	constraint no. 17 TRUE : 0. <= 1
0	INFOCOM(t)	x(18) = 0	constraint no. 18 TRUE : 0. <= 1
0	TELECOM(t)	x(19) = 0	constraint no. 19 TRUE : 0. <= 1
0	PUBLSHNV(t)	x(20) = 0	constraint no. 20 TRUE : 0. <= 1
0	MPIC&SND(t)	x(21) = 0	constraint no. 21 TRUE : 0. <= 1
0	BRODCST(t)	x(22) = 0	constraint no. 22 TRUE : 0. <= 1
0	ARTRECR(t)	x(23) = 0	constraint no. 23 TRUE : 0. <= 1
0	FININSUR(t)	x(24) = 0	constraint no. 24 TRUE : 0. <= 1
0	FINANCE(t)	x(25) = 0	constraint no. 25 TRUE : 0. <= 1
0	INSURANS(t)	x(26) = 0	constraint no. 26 TRUE : 0. <= 1
0	REALEST(t)	x(27) = 0	constraint no. 27 TRUE : 0. <= 1
0	PROFSERV(t)	x(28) = 0	constraint no. 28 TRUE : 0. <= 1
0	ADMINSUP(t)	x(29) = 0	constraint no. 29 TRUE : 0. <= 1
0	PUBADMN(t)	x(30) = 0	constraint no. 30 TRUE : 0. <= 1
0	EDUCATN(t)	x(31) = 0	constraint no. 31 TRUE : 0. <= 1
0	HLT&SOC	x(32) = 0	constraint no. 32 TRUE : 0. <= 1
0	OTHSERVS(t)	x(33) = 0	constraint no. 33 TRUE : 0. <= 1
0	DISPINC(t)	x(34) = 0	constraint no. 34 TRUE : 0. <= 1
0	REALINC(t)	x(35) = 0	constraint no. 35 TRUE : 0. <= 1
0	REALGDP(t)	x(36) = 0	constraint no. 36 TRUE : 0. <= 1
1	GROWTRT(t)	x(37) = 0	constraint no. 37 TRUE : 0. <= 1
1	GROWTH(t)	x(38) = 0	constraint no. 38 TRUE : 0. <= 1
0	CONS(t)	x(39) = 0	constraint no. 39 TRUE : 0. <= 1
0	CAPITAL(t)	x(40) = 0	constraint no. 40 TRUE : 0. <= 1
0	FDI(t)	x(41) = 0	constraint no. 41 TRUE : 0. <= 1
0	CPI(t)	x(42) = 0	constraint no. 42 TRUE : 0. <= 1
0	INFLTD(t)	x(43) = 0	constraint no. 43 TRUE : 0. <= 1
-1	INFLATN(t)	x(44) = 1.0262	constraint no. 44 TRUE : 1 <= 1
-1	INFLTRT(t)	x(45) = 1.0497	constraint no. 45 TRUE : 1 <= 1
-1	UNEMPL(t)	x(46) = 1.0216	constraint no. 46 TRUE : 1 <= 1
0	LABCOMP	x(47) = 0	constraint no. 47 TRUE : 0. <= 1
0	MALE	x(48) = 0	constraint no. 48 TRUE : 0. <= 1
0	FEMALE	x(49) = 0	constraint no. 49 TRUE : 0. <= 1
0	URBAN	x(50) = 0	constraint no. 50 TRUE : 0. <= 1
0	RURAL	x(51) = 0	constraint no. 51 TRUE : 0. <= 1
0	CHLDRN	x(52) = 0	constraint no. 52 TRUE : 0. <= 1
0	CHDRNSS	x(53) = 0	constraint no. 53 TRUE : 0. <= 1
0	EPAWF	x(54) = 0	constraint no. 54 TRUE : 0. <= 1
0	NADDWF	x(55) = 0	constraint no. 55 TRUE : 0. <= 1
0	POPOLD	x(56) = 0	constraint no. 56 TRUE : 0. <= 1

Table 5b: LP RESULT MINIMIZE CHANCE CONT'D

OBJF	Min	Obj =-6.2301	LPINFEMP1
0	UNEMWF	x(57) = 0	constraint no. 57 TRUE : 0. <= 1
0	EMPWF	x(58) = 0	constraint no. 58 TRUE : 0. <= 1
1	EMPLMNT	x(59) = 0	constraint no. 59 TRUE : 0. <= 1
1	PRDTIVTY	x(60) = 0	constraint no. 60 TRUE : 0. <= 1
1	LPROVITY	x(61) = 0	constraint no. 61 TRUE : 0. <= 1
0	AVWAGE	x(62) = 0	constraint no. 62 TRUE : 0. <= 1
0	DDEMENT	x(63) = 0	constraint no. 63 TRUE : 0. <= 1
-1	EMDDPR	x(64) = 1.0682	constraint no. 64 TRUE : 1 <= 1
0	POOR(t)	x(65) = 0	constraint no. 65 TRUE : 0. <= 1
0	EXTPOOR(t)	x(66) = 0	constraint no. 66 TRUE : 0. <= 1
0	POVRT(t)	x(67) = 0	constraint no. 67 TRUE : 0. <= 1
-1	SLAVERY	x(68) = 1.048	constraint no. 68 TRUE : 1 <= 1
1	SAVINGS(t)	x(69) = 0	constraint no. 69 TRUE : 0. <= 1
0	BOT(t)	x(70) = 0	constraint no. 70 TRUE : 0. <= 1
0	BOP(t)	x(71) = 0	constraint no. 71 TRUE : 0. <= 1
0	EXTRES(t)	x(72) = 0	constraint no. 72 TRUE : 0. <= 1
0	DBTBDN(t)	x(73) = 0	constraint no. 73 TRUE : 0. <= 1
1	OILREV(t)	x(74) = 0	constraint no. 74 TRUE : 0. <= 1
0	NOILREV(t)	x(75) = 0	constraint no. 75 TRUE : 0. <= 1
0	CORPTD(t)	x(76) = 0	constraint no. 76 TRUE : 0. <= 1
0	CORRPTN(t)	x(77) = 0	constraint no. 77 TRUE : 0. <= 1
0	DDMONY(t)	x(78) = 0	constraint no. 78 TRUE : 0. <= 1
0	DDMOPR(t)	x(79) = 0	constraint no. 79 TRUE : 0. <= 1
0	DEMOCY(t)	x(80) = 0	constraint no. 80 TRUE : 0. <= 1
0	CORDEM(t)	x(81) = 0	constraint no. 81 TRUE : 0. <= 1
0	PWLFARE	x(82) = 0	constraint no. 82 TRUE : 0. <= 1
0	STDOLIVN	x(83) = 0	constraint no. 83 TRUE : 0 <= 1
1	PUPWER	x(84) = 0	constraint no. 84 TRUE : 0. <= 1
0	FODSRITY	x(85) = 0	constraint no. 85 TRUE : 0. <= 1
0	HLTCARE	x(86) = 0	constraint no. 86 TRUE : 0. <= 1
0	DDHCARE	x(87) = 0	constraint no. 87 TRUE : 0. <= 1
0	HCRDDPR	x(88) = 0	constraint no. 88 TRUE : 0. <= 1
0	HRESDEV	x(89) = 0	constraint no. 89 TRUE : 0. <= 1
0	DDEDUC	x(90) = 0	constraint no. 90 TRUE : 0 <= 1
0	EDUDDPR	x(91) = 0	constraint no. 91 TRUE : 0 <= 1
0	WEALTH	x(92) = 0	constraint no. 92 TRUE : 0. <= 1
0	PWEALTH	x(93) = 0	constraint no. 93 TRUE : 0. <= 1
-1	IMPDPEN	x(94) = 1.0163	constraint no. 94 TRUE : 1 <= 1
0	DDIMP	x(95) = 0	constraint no. 95 TRUE : 0. <= 1
0	PENCIMP	x(96) = 0	constraint no. 96 TRUE : 0. <= 1
0	TIME(t)	x(97) = 0	constraint no. 97 TRUE : 0. <= 1
0	EXCHRTR	x(98) = 0	constraint no. 98 TRUE : 0. <= 1
0	POP(t)	x(99) = 0	constraint no. 99 TRUE : 0. <= 1
0	IMPORT(t)	x(100) = 0	constraint no. 100 TRUE : 0. <= 1
0	XPOTOIL(t)	x(101) = 0	constraint no. 101 TRUE : 0. <= 1
1	XPTNOIL(t)	x(102) = 0	constraint no. 102 TRUE : 0. <= 1
0	DODBT(t)	x(103) = 0	constraint no. 103 TRUE : 0. <= 1
0	EXTDBT	x(104) = 0	constraint no. 104 TRUE : 0 <= 1
0	GEXPDN(t)	x(105) = 0	constraint no. 105 TRUE : 0. <= 1
0	PRIMELR(t)	x(106) = 0	constraint no. 106 TRUE : 0. <= 1
0	INTSAV(t)	x(107) = 0	constraint no. 107 TRUE : 0. <= 1
0	MONYSS(t)	x(108) = 0	constraint no. 108 TRUE : 0. <= 1
0	TAX(t)	x(109) = 0	constraint no. 109 TRUE : 0 <= 1
0	ACGSC	x(110) = 0	constraint no. 110 TRUE : 0. <= 1
0	DFUELP(t)	x(111) = 0	constraint no. 111 TRUE : 0. <= 1

Table 6a: LGP RESULT MAXIMIZE COMPISIT WEIGHTS.

OBJF	ACRONYM	OBJ = 3.50e+07	LPGINFEMPT4	
1.0235	NGDP(t)	x(1) = 0	constraint no.	1 TRUE : 2.04e+08 >= 1.03e+08
1.0113	AGGDD	x(2) = 2.99e+07	constraint no.	2 FALSE: 2.73e+05 >= 5.82e+06
0	AGGSS	x(3) = 0	constraint no.	3 TRUE : 2.21e+07 >= 2.20e+06
1.0219	INVST(t)	x(4) = 4.66e+06	constraint no.	4 TRUE : 2.64e+07 >= 1.80e+06
0	AGRSEC(t)	x(5) = 0	constraint no.	5 TRUE : 4.74e+07 >= 3.16e+07
0	INDUST(t)	x(6) = 0	constraint no.	6 TRUE : 2.79e+07 >= 2.06e+07
0	MANUFC(t)	x(7) = 0	constraint no.	7 TRUE : 2.09e+07 >= 4.50e+06
0	OILREFIN	x(8) = 0	constraint no.	8 TRUE : 4.56e+05 >= 4.27e+03
0	ELECTSS(t)	x(9) = 0	constraint no.	9 FALSE: -6.96e+04 >= 5.39e+05
0	WATER(t)	x(10) = 7.92e+04	constraint no.	10 TRUE : 1.71e+05 >= 1.41e+05
0	CONSTN(t)	x(11) = 0	constraint no.	11 FALSE: -1.89e+05 >= 3.56e+06
0	SERVCS(t)	x(12) = 0	constraint no.	12 TRUE : 9.67e+07 >= 9.04e+07
0	TRADE(t)	x(13) = 0	constraint no.	13 TRUE : 3.08e+07 >= 2.98e+07
0	ACCOFOOD(	x(14) = 0	constraint no.	14 FALSE: -648.6704 >= 7.24e+05
0	TRASPOT(t)	x(15) = 0	constraint no.	15 TRUE : 2.11e+06 >= 1.18e+06
0	TRANSEV(t)	x(16) = 0	constraint no.	16 FALSE: 3.84e+04 >= 4.72e+04
0	POSTCUR(t)	x(17) = 0	constraint no.	17 FALSE: 3.22e+04 >= 4.25e+04
0	INFOCOM(t)	x(18) = 0	constraint no.	18 TRUE : 2.14e+07 >= 1.60e+07
0	TELECOM(t)	x(19) = 0	constraint no.	19 TRUE : 1.66e+07 >= 1.14e+07
0	PUBLSHN(t)	x(20) = 0	constraint no.	20 TRUE : 7.73e+04 >= 2.62e+04
0	MPIC&SND(	x(21) = 0	constraint no.	21 TRUE : 1.83e+06 >= 1.48e+06
0	BRODCST(t)	x(22) = 0	constraint no.	22 TRUE : 3.49e+06 >= 1.76e+06
0	ARTRECRTN	x(23) = 0	constraint no.	23 TRUE : 5.28e+05 >= 2.21e+05
0	FININSUR(t)	x(24) = 0	constraint no.	24 FALSE: 5.39e+06 >= 5.58e+06
0	FINANCE(t)	x(25) = 0	constraint no.	25 FALSE: 4.65e+06 >= 4.83e+06
0	INSURANS(t	x(26) = 0	constraint no.	26 FALSE: 7.37e+05 >= 7.52e+05
0	REALEST(t)	x(27) = 0	constraint no.	27 FALSE: 1.50e+07 >= 1.57e+07
0	PROFSERV(t	x(28) = 0	constraint no.	28 TRUE : 7.31e+06 >= 7.11e+06
0	ADMINSUP(	x(29) = 0	constraint no.	29 FALSE: 3.90e+04 >= 4.22e+04
0	PUBADMN(t	x(30) = 0	constraint no.	30 FALSE: 3.83e+06 >= 6.64e+06
0	EDUCATN(t)	x(31) = 0	constraint no.	31 TRUE : 5.07e+06 >= 1.75e+06
0	HLT&SOC	x(32) = 0	constraint no.	32 FALSE: 2.65e+05 >= 4.21e+05
0	OTHSERVS(t	x(33) = 0	constraint no.	33 TRUE : 1.04e+07 >= 4.00e+06
0	DISPINC(t)	x(34) = 0	constraint no.	34 TRUE : 1.41e+08 >= 1.41e+08
0	REALINC(t)	x(35) = 0	constraint no.	35 TRUE : 1.13e+06 >= 7.89e+05
0	REALGDP(t)	x(36) = 1.62e+08	constraint no.	36 TRUE : 2.14e+07 >= 1.80e+07
1.0425	GROWTRT(t	x(37) = 0	constraint no.	37 FALSE: -70.4231 >= 5
1.0079	GROWTH(t)	x(38) = 0	constraint no.	38 FALSE: 2.3014 >= 18.5963
0	CONS(t)	x(39) = 0	constraint no.	39 TRUE : 1.68e+08 >= 7.63e+07
0	CAPITAL(t)	x(40) = 0	constraint no.	40 TRUE : 2.81e+07 >= 1.24e+07
0	FDI(t)	x(41) = 0	constraint no.	41 TRUE : 1.35e+06 >= 1.24e+06
0	CPI(t)	x(42) = 0	constraint no.	42 TRUE : 308.7434 <= 330.3271
0	INFLTD(t)	x(43) = 0	constraint no.	43 TRUE : 0. == 0
-4.1048	INFLATN(t)	x(44) = 0	constraint no.	44 TRUE : 329.7284 <= 329.7284
-4.1988	INFLTRT(t)	x(45) = 0	constraint no.	45 TRUE : -123.9046 <= 10
-2.0432	UNEMPL(t)	x(46) = 0	constraint no.	46 TRUE : 11.0076 <= 29.362
0	LABCOMP	x(47) = 0	constraint no.	47 TRUE : 5.85e+07 >= 4.13e+07
0	MALE	x(48) = 0	constraint no.	48 FALSE: 92.765 >= 128.1091
0	FEMALE	x(49) = 0	constraint no.	49 FALSE: 91.2926 >= 126.0756
0	URBAN	x(50) = 0	constraint no.	50 FALSE: 7.4329 >= 44.7911
0	RURAL	x(51) = 0	constraint no.	51 FALSE: 13.0533 >= 78.6605
0	CHLDRN	x(52) = 0	constraint no.	52 TRUE : 123.0766 >= 84.2728
0	CHDRNSS	x(53) = 97.6731	constraint no.	53 FALSE: -17.8585 >= 35.0439
0	EPAWF	x(54) = 0	constraint no.	54 TRUE : 119.2226 >= 117.1873
0	NADDWF	x(55) = 0	constraint no.	55 FALSE: 1.8508 >= 3.1354
0	POPOLD	x(56) = 0	constraint no.	56 FALSE: 18.6494 >= 21.8313

Table 6b: LGP RESULT MAXIMIZE COMPISIT WEIGHTS CONT'D

OBJF	ACRONYM	OBJ = 3.50e+07	LPGINFEMPT4	
0	UNEMWF	x(57) = 0	constraint no.	57 TRUE : 22.1626 <= 22.1626
0	EMPWF	x(58) = 0	constraint no.	58 FALSE: 19.6274 >= 65.5474
2.074	EMPLMNT	x(59) = 0	constraint no.	59 FALSE: 11.0356 >= 26.3374
1.0478	PRDTIVTY	x(60) = 0	constraint no.	60 FALSE: -24.0689 >= 8.864
1.0214	LPROVITY	x(61) = 0	constraint no.	61 FALSE: 1.62e+06 >= 2.23e+06
0	AVWAGE	x(62) = 0	constraint no.	62 TRUE : 5.76e+05 >= 4.61e+05
0	DDEMENT	x(63) = 0	constraint no.	63 FALSE: -3.2402 >= 7.9342
-1.0682	EMDDPR	x(64) = 0.8634	constraint no.	64 FALSE: 0.0519 <= -1.4819
0	POOR(t)	x(65) = 0	constraint no.	65 TRUE : 45.3846 <= 50.9558
0	EXTPOOR(t)	x(66) = 0	constraint no.	66 TRUE : 39.5916 >= -14.5534
0	POVRT(t)	x(67) = 0	constraint no.	67 FALSE: 0.2484 >= 3.7729
-1.048	SLAVERY	x(68) = 0	constraint no.	68 TRUE : 6.09e+04 <= 1.05e+05
1.0347	SAVINGS(t)	x(69) = 0	constraint no.	69 TRUE : 3.91e+06 >= 2.92e+06
0	BOT(t)	x(70) = 0	constraint no.	70 FALSE: 4.90e+06 >= 1.12e+07
0	BOP(t)	x(71) = 4.95e+07	constraint no.	71 TRUE : 1.22e+07 >= 1.05e+07
0	EXTRES(t)	x(72) = 0	constraint no.	72 FALSE: 6.46e+04 >= 7.07e+04
0	DBTBDN(t)	x(73) = 0	constraint no.	73 TRUE : -0.6657 <= 0.3448
1.0009	OILREV(t)	x(74) = 0	constraint no.	74 TRUE : 9.24e+06 >= 2.87e+06
0	NOILREV(t)	x(75) = 0	constraint no.	75 TRUE : 1.18e+07 >= 3.83e+06
0	CORPTD(t)	x(76) = 0	constraint no.	76 TRUE : 0. == 0
0	CORRPTN(t)	x(77) = 0	constraint no.	77 FALSE: 2.12e+04 <= -8.03e+04
0	DDMONY(t)	x(78) = 0	constraint no.	78 FALSE: 1.54e+07 >= 1.63e+07
0	DDMOPR(t)	x(79) = 0	constraint no.	79 TRUE : 3.02e+04 <= 3.02e+04
0	DEMOCY(t)	x(80) = 0	constraint no.	80 TRUE : 1. == 1
0	CORDEM(t)	x(81) = 0	constraint no.	81 FALSE: 2.18e+04 <= -8.06e+04
0	PWLFARE	x(82) = 0	constraint no.	82 FALSE: 7.59e+05 >= 9.73e+05
0	STDOLIVN	x(83) = 0	constraint no.	83 TRUE : 5.76e+05 >= 2.52e+04
1.0226	PUPWER	x(84) = 3.17e+03	constraint no.	84 TRUE : 1.91e+03 >= 874.1838
0	FODSRITY	x(85) = 0	constraint no.	85 TRUE : 2.06e+05 >= 2.01e+05
0	HLTCARE	x(86) = 0	constraint no.	86 TRUE : 6.14e+03 >= 4,657.271
0	DDHCARE	x(87) = 0	constraint no.	87 FALSE: 9.47e+04 >= 1.13e+05
0	HCRDDPR	x(88) = 0	constraint no.	88 TRUE : 589.2779 <= 600.2758
0	HRESDEV	x(89) = 0	constraint no.	89 TRUE : 2.24e+04 >= 6,811.028
0	DDEDUC	x(90) = 0	constraint no.	90 TRUE : 4.61e+05 >= 2.37e+04
0	EDUDDPR	x(91) = 580.6909	constraint no.	91 FALSE: 3.27e+03 <= -657.1595
0	WEALTH	x(92) = 0.1503	constraint no.	92 TRUE : 0.0701 >= 0.0627
0	PWEALTH	x(93) = 0	constraint no.	93 TRUE : 4.10e+04 >= 2.27e+04
0	IMPDPEN	x(94) = 0	constraint no.	94 TRUE : 0.3437 <= 0.5178
0	DDIMP	x(95) = 0	constraint no.	95 TRUE : -3.36e+03 <= 1.59e+07
-1.0163	PENCIMP	x(96) = 0	constraint no.	96 FALSE: -2.31e+04 <= -8.12e+04
0	TIME(t)	x(97) = 0	constraint no.	97 FALSE: 53.8461 >= 54.7145
0	EXCHRTRP	x(98) = 0	constraint no.	98 TRUE : 413.226 <= 1,500
0	POP(t)	x(99) = 0	constraint no.	99 FALSE: 184.0576 >= 254.1847
0	IMPORT(t)	x(100) = 0	constraint no.	100 TRUE : 6.60e+06 <= 6.60e+06
0	XPOTOIL(t)	x(101) = 0	constraint no.	101 TRUE : 1.98e+07 >= 1.98e+07
1.0046	XPTNOIL(t)	x(102) = 0	constraint no.	102 TRUE : 3.32e+06 >= 1.46e+06
0	DODBT(t)	x(103) = 0	constraint no.	103 TRUE : 2.42e+07 >= 8.50e+06
0	EXTDBT	x(104) = 0	constraint no.	104 TRUE : 2.39e+06 <= 2.39e+06
1	GEXPDN(t)	x(105) = 0	constraint no.	105 FALSE: 8.73e+06 >= 9.34e+06
0	PRIMELR(t)	x(106) = 0	constraint no.	106 FALSE: 1.8131 >= 39.2515
0	INTSAV(t)	x(107) = 7.0361	constraint no.	107 FALSE: -17.0047 >= 21.5336
-1	MONYSS(t)	x(108) = 0	constraint no.	108 FALSE: 1.13e+07 <= 1.13e+07
0	TAX(t)	x(109) = 0	constraint no.	109 TRUE : 1.24e+07 >= 2.81e+06
0	ACGSC	x(110) = 0	constraint no.	110 FALSE: 1.46e+07 >= 1.85e+07
0	DFUELP(t)	x(111) = 0	constraint no.	111 TRUE : 215.4685 <= 1,020

CONCLUSION

As at 2024, the Phillip curve theory no longer applies to Nigeria as both inflation rate and unemployment rate reinforce each other; however, as observed in 2013 by Aruofor (2020), elements of the trade off between inflation rate and unemployment rate was visible. This actually illustrates the fallacy of economic theory. However, bringing either inflation rate or unemployment rate down will automatically reduce the other.

Returning to the prescriptions of the Linear Goal Programme, it more than emphasizes the need to restructure and diversify the Nigeria economy. It is clear that unemployment will be rife as the employment demand pressure will be as high as 580.69, which is astronomical! The Nigerian government cannot afford to rest on its oars and therefore should concentrate on transforming the entire industrial and economic landscape of the country by investing on infrastructure, including factories and industries especially in the rural areas. Even though high unemployment rate forces people to look for alternative employment, such employment from experience, are restricted to the subsistence level and are concentrated in the unorganized private sector of Nigeria. More facilities and policies that promote employment should be adopted and Nigeria's Trade especially non-oil exports should be enhanced to bring about a remarkable positive balance of payment.

With regard to aggregate demand, the masses of Nigeria should be empowered financially and this underscores the need and calls for an optimal redistribution of income which at present is skewed towards the Poor in Nigeria. Education, especially qualitative education is an imperative and this requires Government to invest more in education and to inspire Nigerian citizens to want to educate themselves in order to contribute their quota to the development of Nigeria.

Water resources and real output should be expanded; meaning that the productivity of the economy should be improved considerably. The purchasing power of Nigerians need to be enhanced which underscores the need to provide employment and redistribute income optimally. In addition, Government should improve the wealth of the nation and by implication of the citizens of Nigeria as well as create the enabling environment that will attract foreign investment among which include pegging the interest rate at 7.09% to stimulate private businesses.

In Nigeria, past Governments have had to divest from Government-owned companies but this has not solved the problem. The real problem is in the attitude of Nigerians to Government property and anything that bears the seal of Government. Rather than divesting Government owned companies and desisting from establishing new factories and industries, Government should have embarked on a massive campaign of reorientation of Nigerians on the need to cultivate the right attitude towards Government property and the consequences and implications of failure to imbibe the right attitude. Most of these attitudes are the result of corruption and indiscipline which is rife in the Nigerian society and the lack of leadership by example.

RECOMMENDATIONS

The following Specific recommendations are hereby made:

1. Nigerian Politicians need and should inculcate in themselves the virtues of leadership and leadership by example instead of the present paradigm of job seekers whose primary objective is to survive and make money at the expense of the masses of Nigeria.

2. In the above connection, Nigerian Government, present and future should embark on massive campaigns of reorientation of Nigerians on the need to shun corruption in whatever guise it takes and cultivate a positive and right attitude towards Government property, public jobs and institutions; and expose them to the consequences and implications of failure to imbibe the right attitude.
3. Nigerian Government must rise up to its responsibility of ensuring the welfare of the Nigerian citizens. This among others, requires the complete transformation of the entire industrial and economic landscape of the nation, requiring massive investments in infrastructure, electricity supply and distribution, construction, including factories and industries as well as creating the right environment for Private Sector led investments.
4. Government should empower the citizens of Nigeria financially and this requires an optimal redistribution of income which appears to be skewed against the Poor under the present Nigeria.
5. Government must revive the educational landscape in terms of qualitative education; Nigeria needs technological and innovative education but regrettably, one cannot teach and impart to others what one does not know or understand fully and can apply practically. This requires expertise which are rare in the country; therefore Government should seek experts who have the knowledge and skills of imparting and training Nigerians in technology, electronics and artificial intelligence and pay them international salaries and allowances to ensure that they deliver. The present paradigm of earning paper certificates which qualifies as meal tickets rather than the value they could add should be discontinued.
6. Government must be resilient in ensuring the security of life and property in Nigeria and be seen to curtail all forms of religious terrorism and violence in the country for Nigeria to hold together and attract foreign investors and investments.
7. Nigerians should be reoriented on the need to work harder to improve productivity of goods and services in Nigeria. Indeed, this is the surest way to break the vicious circle between inflation rate and unemployment rate in Nigeria.
8. The most direct way of fighting unemployment in Nigeria is for Government and the Private Sector to engage in building factories and industries, especially agro-based industries, including food processing; petrochemical industries, electronics and manufacturing.
9. Government must not relent in fighting corruption and indiscipline in the society in whatever guise it takes, with no sacred cows. This requires Political Will and decisive leadership; and finally,
10. Maintain good governance, which transcends all ramifications, at all levels of Government in Nigeria.

REFERENCES

Adeyoju, S. K. (1975). Forestry and the Nigerian economy. Ibadan University Press, Nigeria.

Aruofor, R. O. (2001). Economic Systems Engineering: An Essay in quantitative models and methods for development planning. Thy Kingdom Press (Subsidiary of Systemod Nigeria Ltd.),Miscellaneous Publishers, Sapele, Nigeria, 2001.

Aruofor, R. O. (2003): A Presentation of Two Simulated Approaches to Markov Chains TransitionMatrix Estimation from Aggregate Data. *The Nigerian Economic and Financial Review,Vol. 8 No. 2 pp 51-76,:*Department of Economics and Statistics, University of Benin. December, 2003.

Aruofor, R. O. (2017). Economic Systems Engineering, Poverty, Unemployment and Under Development: A Quest for Solution and Imperatives for Developing the Nigerian Economy. In Proceedings of the 6th Inaugural Lecture Series, Benson Idahosa University, March 6.

Aruofor, R. O. and Okungbowa, E. Flourence (2018). Estimating the Real Impact of Devaluation on an Economy: The Case of the Naira. *The Indian Journal of Economics*. Vol XCVIII, No. 390 Part III pp 343-360, ISSN 0019-5170, Jan.2018.

Aruofor, R. O (2019): Analysis of the Impact of Corruption on an Economy: Understanding the Links and Feedback in the Nigerian Case. *Journal of Research in National Development, 17(2) pp 18-34, December, 2019.*

Aruofor, R. O. K. (2020). Economic Systems Engineering: Modeling And Applied Quantitative techniques For Economic And Development Planning. Amazon Books, ISBN:9798689936024

Aruofor, R. O. and Ogbeide, D. R, (2020): Empirical Evaluation of the Impact of Corruption on Nigeria's New Democratic Governance. *International Journal of Innovative Social Sciences & Humanities Research 8(3):69-90, July-Sept., 2020*

Aruofor, R. O. and Ogbeide, D. R, (2022a): The Buhari-Osinbajo Regime in Nigeria: A Post Mortem. *Journal of Public Administration and Social Welfare Research E- ISSN 2756 5475 P-ISSN 2695-2440 Vol. 7 No. 1 pp 17-34, 2022*

Aruofor, R. O. and Ogbeide, D. R, (2022b): The Impact Of Boko Haram Insurgency And Banditry On The Nigerian Economy: Understanding The Causes And Feedback. *International Journal of Innovative Development and Policy Studies 10(1):14-26, Jan.--Mar., 2022*

Aruofor, R. O. and Ogbeide, D. R, (2023a): The Impact Of Fuel Subsidy On The Nigerian Economy In The Fourth Republic: An Analysis. *International Journal of Social Sciences and Management Research (IJSSMR) E-Issn 2545-5303 P-Issn 2695- Vol. 9 Issue 5, pp 63-80, June 2023.*

Aruofor, R. O. and Ogbeide, D. R, (2023b): Evaluation Of The Consequences And Implications Of The Domestic Petrol Pump Price Increase In Nigeria By The BolaTinubu Administration. *Journal of Humanities &Social Policy (JESP) Volume 9 September Issue, 2023, pp 42-61*

Aruofor, R. O. and Ogbeide, D. R, (2024a): Analysis Of Poverty And Unemployment In Nigeria's Fourth Republic: An Outlook To Year 2035. *International Journal of Social Sciences and Management Research, (IJSSMR)* Vol 10 No. 1, pp 42-54, 2024.

Aruofor, R. O. and Ogbeide, D. R, (2024b):An Escalating Analysis of the Role, Impact and Ramification of Investment in the Nigerian Economy and Outlook to Year 2035 *International Journal of Social Sciences and Management Research E-ISSN 2545-5303 P-ISSN 2695-2203 Vol 10. No. 3 pp. 77-104, 2024www.iiardjournals.org*IIA

Aruofor, R. O. and Ogbeide, D. R, (2024c): A Simulation Analysis of President Bola Tinubu's Price Deregulation Policy on the Nigerian Economy: An Outlook to Year 2035 *Journal of Public Administration and Social Welfare Research E-ISSN 2756-5475 P-ISSN 2695 2440 Vol. 9 No. 1, pp. 74-100, 2024 jpaswrwww.iiardjournals.org*

Aruofor, R. O. and Ogbeide, D. R, (2024d): The 2024 Minimum Wage Review Exercise in Nigeria: Critical Issues to Note. *Journal of Public Administration and Social Welfare Research E-ISSN 2756-5475 P-ISSN 2695-2440 Vol. 9 No. 3, pp. 28-49, 2024 jpaswrwww.iiardjournals.org Online Version.*

Aruofor, R. O. and Ogbeide, D. R, (2024e):The Development of Nigeria and the Bane of Development: A Search for A Satisficing Investment Policy for A Self-Reliant Economy *International Journal of Social Sciences and Management Research E- ISSN 2545 5303 P-ISSN 2695-2203 Vol 10. No. 8 pp. 263-277, 2024 www.iiardjournals.org Online Version*

Aruofor, R. O. and Ogbeide, D. R, (2024f): The Role and Impact of the Banking Industry on the Nigerian Economy: An Outlook to Year 2030 IIARD *International Journal of Banking and Finance Research E-ISSN 2695-1886 P-ISSN 2672-4979 Vol 10. No. 8 2024*www.iiardjournals.org Online Version

Aruofor, R. O. and Ogbeide, D. R, (2024g): Analysis of the Impact of Taxation on A Nation's Citizenry: The Implications of Maximizing Tax Revenue Under Nigeria's Extant Paradigm. *International Journal of Economics and Financial Management (IJEFM) E-ISSN 2545-5966 P-ISSN 2695-1932 Vol 9. No. 9 2024 www.iiardjournals.org Online Version IIARD – International Institute of Academic Research and Development Page 14-31*

Aruofor, R. O. and Ogbeide, D. R, (2024h): Analysis of the Impact of External Debt on the Nigerian Economy: The Implications and Consequences of the Recent Request for $2.2 Billion Loan. *International Journal of Economics and Financial Management (IJEFM) E-ISSN 2545-5966 P-ISSN 2695-1932 Vol 9. No. 9 2024 www.iiardjournals.org Online Version pp242-267*

CBN (2017). *Central Bank of Nigeria Statistical Bulletin,* Abuja.

CBN (2018). *Central Bank of Nigeria Statistical Bulletin,* Abuja.

CBN (2019). *Central Bank of Nigeria Statistical Bulletin,* Abuja.

CBN (2021). *Central Bank of Nigeria Statistical Bulletin,* Abuja.

Duesenberry, J. S, Fromm, G, Klein, L. R and Kuh, E. eds, (1965). *The Brookings: Quarterly Econometric Model of the United States Economy,* Chicago; Rand McNally, 1965.

Gordon, R. J. (1968): The Brookings Model in Action: A Review Article. *Journal of Political Economy,*pp 489-525.

Koutsoyiannis, A.(1977): Theory of econometrics. The Macmillan Press Ltd., London and Basingstoke.

Lasswell, H. D. (2018). *Politics: Who gets what, when, how?* Papamoa Press.

Marshall, A. (2013). *Principles of economics.*

Stolper, W. F.(1966):*Planning without facts.* Harvard University Press, Cambridge, Massachussetts.