Conceptual and theoretical issues economics essay

Economics

INTRODUCTION

Productivity and employment are issues that are central to the social and economic life of every country. The extant literature refers to productivity and unemployment as constituting a vicious circle that explains theendemic nature of poverty in developing countries. And it has been argued that continuous improvement inproductivity is the surest way to breaking this vicious circle. Growth in productivity provides a significant basis foradequate supply of goods and services thereby improving the welfare of the people and enhancing social progress. As pointed out by Dernburg (1985: 63), " Without it there would be no growth in per capita income, and inflationcontrol would be all the more difficult". In fact, the observation has been made that continuous enhancement ofproductivity has been very central to the brilliant performance of the Asian Tigers and Japan in recent years(Simbeye, 1992; World Bank 1993). Recent developments in the world economy have also shown that countrieswith high productivity are not only central to the determination of global balance of powers (e. g Japan andGermany), but also serve as centres of stimulus, where world resources (including labour) are redirected to, asopposed to countries with low or declining productivity. Recent studies, for example, Rensburg and Nande (1999)and Roberts and Tybout (1997) have also shown that high productivity increases competitiveness in terms ofpenetrating the world market. Thus, a country with high productivity is often characterized by a very high capacityutilization (optimal use of resources), high standard of living, low rate of unemployment and social progress. Unemployment, on the other hand, has been categorized as one of the serious impediments to

socialprogress. Apart from representing a colossal waste of a country's manpower resources, it generates welfare loss interms of lower output thereby leading to lower income and well-being (Akinboyo, 1987; and Raheem, 1993). Unemployment is a very serious issue in Africa (Vandemoortele, 1991 and Rama, 1998) and particularly in Nigeria(Oladeji, 1994 and Umo, 1996). The need to avert the negative effects of unemployment has made the tackling of unemployment problemsto feature very prominently in the development objectives of many developing countries. Incidentally, most of thesecountries' economies are also characterized by low productivity. Thus, it seems obvious to many policy makers thatthere must be a straight forward connection between productivity and employment/unemployment. However, thetheoretical linkage between productivity and unemployment is yet to be settled in the literature. While someresearchers posit that higher productivity may increase unemployment (e. g. Diachavbre, 1991; Krugman, 1994), some others argue that it could increase employment (e. g Yesufu, 1984; Akerele, 1994; CEC, 1993). In view of the unfolding reality coupled with the protracted debates this paper attempts to examine thelinkage between productivity and unemployment. Specifically, it examines the dimensions of productivity andunemployment in Nigeria as well as the direction of causality between them. To this end, the rest of the paper isorganized thus. Following this introduction is part II, which examines the conceptual and theoretical is sues. Part IIIdiscusses the profile of productivity and unemployment in Nigeria while the empirical link between them isexamined in part IV. The final part contains the policy implications and conclusions.

II.

CONCEPTUAL AND THEORETICAL ISSUES

The literature is replete with varied categorizations of productivity and unemployment in terms of theirdefinitions, measurements and linkages. It is therefore important to make some clarifications on these issues.

2. 1

Concept of Productivity

Productivity measures the relationship between the quantity and quality of goods and services producedand the quantity of resources needed to produce them (i. e factor inputs such as labour, capital and technology) (Simbeye, 1992; Okojie 1995; Roberts and Tybout, 1997). Mali (1978: 6) defines it thus:" The measure of how resources are being brought together in organizations andutilized for accomplishing a set of results. It is reaching the highest level ofperformance with the least expenditure of resources". Productivity is viewed as the instrument for continuous progress, and of constant improvement of activities. It isoften seen as output per unit of input. Hence, higher productivity connotes achieving the same volume of outputwith less factor inputs or more volume of output with the same amount of factor inputs. Thus, increasedproductivity could result from the reduction in the use of resources, reduction in cost, use of better methods orimprovement in factor capabilities, particularly labour. Two variants of productivity measurements have been citedin the literature: total factor productivity (TFP), otherwise known as multifactor productivity, and partialproductivity. Roberts and Tybout (1997) and Tybout (1992), assuming a neo-classical production function at the2sectoral or industry level, define

total factor output to be a concave function of the vector of inputs and time (a proxyfor shift in technological innovation). To them, the elasticity of output with respect to time is the total factorproductivity. In a more general sense, TFP

=

Total Output..........(1)Weighted Average of all inputsCritical among these factor inputs are labour, capital, raw materials and purchase of spare parts, and othermiscellaneous goods and services that serve as inputs in the production process. In a more practical sense, thesefactor inputs are reduced to the weighted average of labour and capital (Okojie, 1995; Roberts and Tybout, 1997). The second variant, partial productivity (PP), is defined as: PP

=

Total Output............(2)Partial InputThe partial input could either be labour or capital. This can be measured at the national level, sectoral level, industryor factory level. Existing studies on productivity measurement show a predilection for productivity per labour input. Several reasons have been put forward for the choice of labour as against other factors of production. First, Ilyinand Motyler (1986) see labour as the " means and end of production". Labour is the only factor that creates value, influences its prices and those of other factors and sets the general level of productivity. Second, it is the most easilyquantified factor of production (Okpechi, 1991). And finally, given the low technological base of developingcountries' economies, the quest for improved managerial capability and effectiveness should give the human

factorappropriate recognition and attention. While labour productivity seems to be the most convenient to use, it ishowever important to note that this approach has an important limitation. It treats labour as being homogenousinstead of differentiating it according to age, sex, education, application ofskills, aptitude, among others. Nevertheless, this study applies productivity per worker as opposed to per capital ortotal factor productivity.

2. 2

Concept of Unemployment

There seems to be a consensus on the definition of unemployment. The International Labour Organization(ILO) defines the unemployed as numbers of the economically active population who are without work but availablefor and seeking work, including people who have lost their jobs and those who have voluntarily left work (WorldBank, 1998: 63). Although there seems to be convergence on this concept, its applications have been bedeviled withseries of problems across countries. First, most published unemployment rates are recorded open unemployment. People's attitude on this varies from country to country. While this may be high in developed countries and wheregovernment is committed to resolving unemployment problems, it is likely to be very low in countries with theopposite attributes. Okigbo (1991) also points out the problem arising from the concept of labour force. In most countries, particularly Nigeria, people below the age of 15 years and those above the age of 55, who are actively engaged ineconomic activities are usually excluded from labour statistical surveys. All these factors have the tendency toresult in underestimation of unemployment thereby making international comparison very difficult. Factors such as3the preponderance

of full housewives (but who are willing to be engaged in paid job) and unpaid family workersalso contribute significantly to the underestimation of unemployment1.

2. 3

Theoretical Linkage between Productivity and Employment/Unemployment

The relationship between productivity and employment/unemployment is a complex issue. Increasedlabour productivity connotes that the same volume of output can be produced with less labour. By implication, thistends to contract employment (an increase in unemployment rate). The theoretical perspectives on this relationshipvary from one school of thought to another. The classical economists hold the view that the relationship between employment and output is a one-wayrelationship that goes from the input of labour to output2. The classical growth theory, as reflected in aggregateproduction (mostly a variant of Cobb-Douglas function) derived essentially from the technical relations that makethe level of output a function of production inputs such as labour, capital, land, technology, etc. In the classicalmodel's steady state (conditions where the growth rate of capital stock and output are equal), the approach showsthat the rate of growth of labour force and technical progress ultimately determine the growth rate of output. And aspointed out by McCombie and Thirlwall (1994) and Hussain and Nadol (1997), this model fails to explain theultimate determinant of labour force and technical progress. The premise of the classical model therefore is that thegrowth rate of employment is exogenous to the growth rate of output. This, however, does not preclude the classical economists'

belief in the attaintment of a full employmentequilibrium. In this framework, the supply of labour is positively related to the level of real wage, while the demandexhibits a negative relationship with real wage, but a positive relationship with productivity (Fashola, 1983; Todaro, 1990). As pointed out by these authors, if there is some `involuntary' unemployment at or below the current realwage, the real wage would fail to induce employers to take more labour until all involuntary unemployment iseliminated. However, if increases in labour productivity translate to increased wages and such increases induce thesubstitution of capital for labour the effect on unemployment will be positive (Fajana, 1983; Krugman, 1994). Thepolicy implications of this have been viewed as misleading particularly, to developing countries (Todaro, 1990; Hussain and Nadol, 1997). Evidence from the economic recession of the 1980s in Africa and Latin America clearlyshow that real wages declined very sharply. This period of lower real wages coincided with high level of12

We do not intend to do cross-country analysis, hence our unemployment data shall be restricted to the

officially published data. We believe the effect of underestimation will be relatively minor.

By referring to output instead of productivity, we invoke the Verdoorn's Law as espoused in Kaldor (1967). The Law postulates that faster growth of output causes a faster growth of productivity. Thispositive relationship is further confirmed by Dernburg (1985: 55) thus: " .. a fall in output generallybrings with it a very sharp decline in productivity ...". In line with the above, both output andproductivity may be used interchangeable here.

4unemployment than the available jobs (Todaro, 1990: 249). Also as argued by Hussain and Nadol (1997: 3), thepolicy implication of the neoclassical approach to primary commodities-producing countries is that, given theexistence of says Law, whatever that was produced is automatically sold irrespective of the characteristics of thegoods produced and the demand for them. Recent developments in the world market for primary commodities hasproved this to be wrong. In contrast, Keynesian theory explains the determination of output or productivity andemployment/unemployment in terms of aggregate demand. This approach sees demand for labour as a deriveddemand. Productivity growth (a la Verdoorn's Law), should increase the demand for labour thereby reducingunemployment. The Keynesian framework, as examined by Thirlwall (1979), Grill and Zanalda (1995) and Hussainand Nadol (1997), postulates that increases in employment, capital stock and technological change are largelyendogenous. Thus, the growth of employment is demand determined and that the fundamental determinants of longterm growth of output also influence the growth of employment. Contrary to the strong belief of the neo-classicals that equilibrium wage rate, price, interest rate and realcash balances guarantee the quality of national output and full-employment level, the Keynesians strongly believe inthe efficacy of aggregate demand. As shown in Figure 1, in the upper panel of the diagram, C+I+G yield a level ofnational output (Y1) that is less than the potential full-employment output level (Yf). Consequently, the level ofunemployment will be given by the " gap" between Nf and N1 in the lower panel of the diagram. Rather than theworkings of the real wage, price, interest rate and real cash balances, what could guarantee the attaintment

of fullemployment is additional government spending from G to G1. The Keynesian prescription for reducingunemployment is increase in aggregate total demand through direct increases in government spending or policiesthat encourage more private investment. As argued by the Keynesians, as long as there is unemployment and excesscapacity in the economy, the supply of goods and services will respond automatically to this higher demand. A newequilibrium will always be established with higher income and lower level of unemployment. 5

Figure 1

6The extension of the Keynesian model dominated development theorizing in the 1950s and beyond. Suchextensions could be found in Okun's Law and the Harrod-Domar model. For instance, Arthur Okun developed therelationship between the actual and potential output and between the actual and benchmark unemployment in anequation called the " Okun's Law" thus (Dernburg, 1985): Q* - Q

=

"(U - U*).............(3)Qwhere Q* is potential output, Q is actual output, U is the unemployment rate, U* is the benchmark unemploymentrate, and " is Okun's coefficient3. The implication of Okun's coefficient is that a 1 percentage rise in unemploymentcauses the economy to lose " percent of its output. Okun's Law clearly gives a direct relationship between outputand unemployment and indirectly between productivity and unemployment (a la Verdoorn Law). In a similar vein, the neo-keynesians, in their efforts to provide reasons as to why employment growth lagsbehind growth of industrial output, came out

with a typical variant of the Harrod-Domar unemployment equation..........(4)

$\frac{)Y}{Y} - \frac{)(Y/N)}{Y/N} = \frac{)N}{N}$ thus, The

import of this equation is that the rate of output growth (Y) minus the rate of

growth in labour productivity(Y/N) approximately equals the rate of growth of

employment (N). The implication is that the gap between growthrate of

output and the growth of labour productivity accounts for the rate of labour

absorption. As had been arguedhypothetically by Todaro (1990), if output is

growing by 8 percent per year while employment is expanding by only3

percent, the difference is due to the rise in labour productivity, and vice

versa. By implication, rapid economicgrowth could generate lagging

employment creation. This tends to support Essenberg's (1996) argument

that if thereduction in labour demand resulting from productivity increases is

more than compensated by overall increases inoutput, then both

productivity and employment can increase together. This is particularly so

when higherproductivity leads to increased profit and higher rate of

investment, which in turn results in higher rate of growth. In conclusion, the

neo-classical approach posits that the rate of growth of employment

(unemployment) isexogenous to the rate of growth of output (productivity).

In contrast, the Keynesian argument is premised on the factthat it is the

strength of demand that determines the amount of resources utilized. As

such, employment is demanddetermined and the rate of output growth is

itself an important determinant of the rate of growth of employment. Thus,

output, productivity and employment are determined endogenously. This

approach therefore suggests thepossibility of a bi-causal relationship.

III.

3. 1

PROFILE OF PRODUCTIVITY AND UNEMPLOYMENT IN NIGERIA

Trends in Productivity

The centrality of continuous productivity improvement in advancing societal development has been wellacknowledged in the literature. In spite of the general consensus on the importance of productivity, many countries3Okun's coefficient (") was estimated for the American economy between (1970-82) to be 3. 2 percent. 7have not paid serious attention to improving the level of productivity in their economies. Evidence from Nigeria hasshown that both the national and sectoral productivity measures have generally reflected a declining trend over thepast three decades. Given the data limitation on total factor productivity in Nigeria, our analysis is restricted to labourproductivity. As shown in Table 1, gross productivity (i. e. real GDP per worker) consistently rose between 1973and 1977 as a result of the appreciable improvements in the level of economic activities immediately after the oilboom of 1973/74. The motivation associated with the Udoji salary award and the consequent spread to the privatesector also contributed to productivity improvement during the period. The sectoral analysis clearly shows that productivity in the industrial and service sectors are higher than inthe agricultural sector (Table 2). The productivity in the former is more than three times higher than in the latterduring this period. This finding conforms with the outcome of Dike and Ezenwe (1986) who also found thatagricultural productivity was the least among the three sectors

examined above. Phillips (1983) and Udokporo(1983) provided the reasons for low productivity in this sector. Critical among the factors are: subsistenceproduction, prevalence of redundant labour, low income and lack of proper training on issues relating to agriculturalactivities. Total labour productivity declined consecutively from 5. 53 in 1977 to 3. 36 in 1983 with the highest rate ofdecline experienced in 1982 (-29. 53 percent) (Table 1). Meanwhile, the performance varied across the sectors. Though agricultural productivity was at its lowest ebb during the period, it, however, increased marginally from2. 02 to 2. 11 in 1983, perhaps as a result of the implementation of the Green Revolution Programme during theperiod. Productivity in both the industrial and services sectors consistently declined during the period. For instance, they declined at an annual average of 8. 02 and 2. 40 percent for industry and services, respectively. The institutionalization of the War Against Indiscipline (WAI) by the Buhari/Idiagbon administration in1984/85 yielded some positive impacts on national productivity as it recorded the highest growth rate of 20. 73percent in 1985. The ouster of this regime weakened the implementation of WAI and hence ushered in a period ofrelatively low productivity. Thus, productivity dropped from 3. 74 in 1985 to 3. 22 in 1987 (the lowest ever). Theintroduction of the Structural Adjustment Programme (SAP) led to marginal improvement in national productivityduring the period. Though the three sectors recorded some improvements, during this period, those of the industrialand services were more pronounced than the agricultural sector. While agricultural productivity fluctuated between2. 32 and 2. 49 during 1987-1992, the industrial and services productivity fluctuated between 3. 84-

7. 39 percent and4. 49-5. 67 percent, respectively. In spite of the improvement in real GDP between 1993 and 1996, the political upheavals experiencedduring the period seriously affected the overall productivity. Thus, the rate of productivity decline fluctuatedbetween 0. 24 and 2. 03 during 1993-95 period. And as shown in Table 2, the rates of decline were much morepronounced in the industrial and services sectors than the agricultural sector. Evidence from the Central Bank ofNigeria's survey of industrial enterprises attributed the sector's dismal performance largely to low capacity8utilization and high cost of productioN4. For instance, capacity utilization fluctuated between 29. 6 and 30. 4 percentduring the period. This was further compounded by the increasing cost of operation which rose by 75. 6 percent in1995. This arose largely from the continuous depreciation of the domestic currency during the period. Consequently, the cost of

Table 1: Labour Productivity in Nigeria (Gross)

Note:

The growth rate was computed on the basis of the immediate past year rather than the interval of two yearsgiven in the table.

Sources:

Computed by the authors from CBN: Statistical Bulletin (various issues), Nigeria: Economic, Financial and Banking Indicators (various issues); National Planning Commission: NationalDevelopment Plans (various issues); FOS: Annual Abstract of Statistics (various issues); ILO(1996) and World Bank: African Development Indicators (various issues) and World Tables(various issues). 4YearGross Productivity ('000)Annual Growth

Rate1973197519771979198119831985198719891990199119921993199419
95199619741-801981-901991-961974-964. 594. 695. 534. 883. 543. 363.
743. 223. 613. 793. 863. 873. 863. 863. 783. 805. 093. 463. 844. 01

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-5. 77-1. 72-1. 39-29. 53-3. 9320. 73-3. 124. 595. 261. 780. 08-0. 24-0. 05-2.
030. 581. 71-1. 910. 03-0. 17See the details in CBN (1995): Annual Report
and Statement of Accounts, December. 9raw materials (mostly imported)
accounted for 72. 3 percent of the total cost of operation while salaries and
wagesaccounted for only 6. 6 percent (CBN, 1995). Besides the low value
added that could result from thesedevelopments, the relatively low share of
salaries and wages in the total cost of production is a reflection of
lowmotivation in the sector. Low motivation, an important determinant of low
productivity is also prevalent in theservices sector, especially the public
service. For instance the index of real wages for public officers on Grade
Level08 declined from 242 in 1980 to 107, 40 and 32 in 1986, 1990 and
1992, respectively (Odusola, 1997). The samerate of decline applied to other
categories of workers in the public service. The long-term productivity
growth rate for Nigeria (1974-1996) is disappointing. It recorded an
averagegrowth rate of -0. 17 percent during the period (Table 1). This is
quite disheartening when compared with the 5. 0percent in Japan for the
period 1960-1990. Other countries with remarkable performances include
Italy (3. 8%), France (3. 5%) and Germany (2. 8%) (Krugman, 1994: 34). Why
is Nigeria's productivity performance so low relative to other countries? The
issues raised above arequite germane for this performance. Besides the
factors raised above, inadequate training has been a majorproductivity

factor in Nigeria. As pointed out by the National Manpower Board (NMB) (1991), only 5. 34 percent ofthe total employees were sent for training in 1991 in both the private and public sectors in Nigeria. This comprises: Federal Government Civil Service (2. 60%), Federal Parastatals (5. 32%), State Government Civil Service (3. 94%), State Government Parastatals (3. 65%), Local Government (3. 20%), Joint Ownership by Federal and State (24. 87%), Joint Ownership by Government and Private (4. 26%), Purely Private Enterprises (5. 14%) and Voluntary Agency(7. 79%). Given the recent endogenous growth model, which sees continuous training (human capital investment) asa crucial factor in national productivity, then this proportion of trained staff to the total number of employees is toosmall for continuous productivity growth in Nigeria.

Table 2: Sectoral Labour Productivity (Agriculture, Industrial and Services) ('000)

YearAgricultureIndustryServicesProductivityAnnualProductivityAnnualProductivityAnnualGrowthGrowthGrowth1019731975197719791981198319851987198919901991199219931994199519961974-801981-901991-961974-962. 492. 442. 202. 022. 052. 112. 612. 322. 492. 442. 472. 472. 452. 462. 452. 542. 212. 292. 472. 31

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14. 86-9. 67-7. 52-2. 151. 2233. 81-5. 750. 57-1. 951. 120. 17-1. 160. 71-0. 573. 78-2. 042. 010. 680. 418. 566. 236. 315. 875. 824. 785. 003. 846. 727. 117. 397. 046. 696. 626. 346. 436. 485. 166. 755. 73

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-24. 68-0. 91-5. 97-4. 67-13. 418. 11-5. 5163. 355. 853. 88-4. 70-4. 91-1. 15-4. 171. 43-4. 323. 37-1. 60-0. 237. 557. 097. 567. 025. 745. 615. 545. 024. 495. 305. 325. 675. 565. 595. 365. 437. 245. 275. 515. 68

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-7. 37-7. 75-5. 50-0. 43-1. 2811. 222. 09-16. 5118. 040. 236. 76-1. 880. 49-4. 141. 32-3. 31-0. 320. 46-1. 02

Note:

The growth rate was computed on the basis of the immediate past year rather than the interval of two yearsgiven in the table.

Sources:

Computed by the authors from CBN: Statistical Bulletin (various issues), Nigeria: Economic, Financial and Banking Indicators (various issues); National Planning Commission: NationalDevelopment Plans (various issues); FOS: Annual Abstract of Statistics (various issues); ILO(1996) and World Bank: African Development Indicators (various issues) and World Tables(various issues). Evidence from NCEMA and ASCON (2000) also identified low labour compensation (remuneration andmotivation), inadequate training, political interference, and inadequate provision of opportunity to use talents andinitiatives effectively as the bane behind low productivity in the Nigerian public sector. In addition to some of thesefactors, Balogun (1983) and Oloko (1983) also identified lack of technical support staff and equipment, ineffectivesupervision and gross indiscipline as important constraints to civil service productivity. This clearly shows

thatfactors militating against productivity growth in Nigeria are multi-dimensional.

3. 2

Trends in Unemployment

The problem of unemployment has posed a great challenge to many countries (both developed anddeveloping). In recent times, the incidence of unemployment in Nigeria has been deep and widespread, cutting11across all facets of age groups, educational strata and geographical entities. One peculiar feature of theunemployment problem in Nigeria is that it was more endemic in the early 1980s than any other period (a la officialstatistics). This is clearly evident in Table 3. For instance, the unemployment rate rose from 4. 3 percent in 1976 to6. 4 percent in 1980. Though it recorded some marginal decline between 1981 and 1986, the rates were relativelyhigher than what obtained in the 1960s and 1970s. The unemployment rate oscillatedbetween 5. 3 and 6. 4 percent during 1980 - 85 period. This development was as a result of the lull in the economyduring the period. The economic down-turn did not only discourage new investment but also forced government toimplement stabilization measures including restrictions on importation. Given the high import-dependency of mostmanufacturing enterprises, the import restriction forced many companies to operate below installed capacity, causing most of them to close down or retrench a significant proportion of their workforce. For instance, the surveyof manufacturing companies undertaken by the Manufacturers Association of Nigeria (MAN) showed that 61. 0percent of the companies surveyed were shut down for different periods of not less than three months while

between62. 0 and 63. 9 percent of them disengaged over 100 workers (CBN; 1993). This development made job placementfor fresh school leavers to be exceedingly difficult. In addition, the government also placed embargo onemployment from September 1981, though relaxed in some periods (e. g. November 1982). This was implementedpari-passu with the public sector retrenchment. Accordingly, the total disengagement from

Table 3: Nigeria: Unemployment Rates by Urban, Rural and National Classification (1976 - 1997)

YearUrbanRuralNational1219761980198419851986198719881989199019911992199319941995199619971997

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7. 99. 89. 19. 87. 88. 15. 94. 94. 63. 83. 23. 93. 98. 5

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4. 45. 24. 66. 14. 83. 73. 02. 73. 22. 51. 71. 62. 83. 74. 36. 46. 26. 15. 37. 05. 34. 53. 53. 13. 42. 72. 01. 83. 44. 5

Sources:

Data for 1976 and 1980 were obtained from FOS (1997: 99) while the rest were compiled from: CBN - Nigeria: Major Economic, Financial and Banking Indicators , April 1998. the federal civil service rose from 2, 724 in 1980 to 6, 294 in 19845. The Structural Adjustment Programme (SAP), adopted in 1986, had serious implications for the short run unemployment problem. Contrary

to the expectations ofSAP, which was geared towards encouraging greater employment opportunities in the private sector (especiallyamong the small-medium enterprises), the unemployment rate rose from 5. 3 percent in 1986 to 7. 0 percent in 1987. This was partly accounted for by the organizational down-sizing, re-engineering and rationalization policies whichaccompanied the introduction of SAP, especially in the private sector. This was further compounded by thecontinuation of staff retrenchment and placement of embargo on employment in the public sector. Besides, the newpolicy orientation brought about some structural changes within the Nigerian labour market. Sectors such as the oil, banking and the external sectors became the " blue chips" as against the public and industrial sectors which used tobe the " prime" of the labour market prior to the adoption of SAP in 1986. This development consequently createdsome structural and frictional unemployment problems in the country. When this structural and frictionalunemployment is considered along with the lack of job placement for fresh graduates, the situation becomes moreprecarious. As pointed out by Umo (1996), an annual average of about 2. 8 million fresh graduates enter the5

For details see the Annual Abstract of Statistics of the Federal Office of Statistics (various issues), Lagos

13Nigerian labour market, with only about 10 percent of them getting employment. This, no doubt, portraysunemployment as a very serious problem in the country. Evidence from Table 3 shows that unemployment fell very significantly after 1987. It fell consistentlyfrom 7. 0 percent in 1987 to 3. 1 percent in 1991. Although it rose marginally to 3. 4 percent in 1992,

theunemployment rate, however, consistently declined appreciably to 1. 8 percent in 1995 before rising to 3. 4 and 4. 5percent in 1996 and 1997, respectively. However, the estimated unemployment gap for Nigeria, indicates that theunemployment rate varied between 7. 27 and 8. 0 between 1990 and 19986. Why is the gap between the estimatedand the actual unemployment rate as high like this? Raheem (1993) and Ohiorhenuan (1986) exp lained that onlyrecorded open unemployment is published by the official statistics. Many people who felt disenchmented withsearching for jobs refused to register thereby leading to gross under-estimation of the unemployed. Okigbo (1986, 1991) also pointed out that the concept of labour force adopted in the Nigerian Labour Force Statistical Survey, whichexcluded people that were less than 15 and above 55 years but actively working, is an important factor for grossunderestimation of unemployment in the country. This is further compounded by gross inconsistency in governmentdocuments. For instance, all surveys prior 1983 used 55 years as the cut-off point for working age but in 1983, itwas raised to 59 years which was later raised to 64 in 1997. Yet, some categories of people above the age of 64 stillremain government employees e. g. Judges. This again gives room to underestimation. As argued by Okigbo(1991), it also excludes people who have been categorized as incapable of working but are willing to work (e. g. thehandicapped). Also excluded from the labour force are the full housewives who are willing to be engaged in a paidjob. The preponderance of unpaid family workers as a proportion of active workers, as presented by the WorldBank (1999) is also a potential source of underestimation of unemployment or underemployment in the country.

Thus, taking cognisance of the above, Okigbo (1991: 13), estimated the

unemployment rate for 1986 to be 28percent. 6

For details see Federal Republic of Nigeria: Fourth National Development Plan (1981 - 1985) , Federal

Ministry of National Planning, Lagos, and Federal Republic of Nigeria: National Rolling Plan ,

Abuja (Various Issues).

14In spite of the differences, the official unemployment rate appears to be

on a declining trend. The observeddownward trend may be attributed partly

to the intensification of the implementation of the AgriculturalDevelopment

Programmes (ADPs) and the Accelerated Development Area Programmes

(ADAPs). The latter waslater transformed into the Directorate of Food, Roads

and Rural Infrastructure (DFRRI). The activities of theNational Directorate of

Employment (launched in 1986), the Peoples Bank, Better Life for Rural

WomenProgramme, among others, may have also accounted for the decline.

The intensification and expansion of theinformal sector activities could also

be an important factor during this period. Besides the consistent view of

theCBN's annual reports on this issue, the evidence from DPC (2000) also

shows that the informal private sectorexpanded in scope of activities and in

pattern of employment, with more graduates participating in the sector.

Available data also suggest that unemployment rates vary by rural-urban

residence, education, age, professional classification and states. Evidence

from Table 3 shows that the average annual rate of unemploymentwas

higher in the urban areas than in the rural areas for each year between 1984

and 1997. The influx of ruraldwellers into the urban centres in search of

better employment opportunities could have accounted for the

observedpattern. The dynamics of the linkage between educational status

and the unemployment rate in Nigeria is of crucialimportance. In the 1970s,

the people most seriously affected by unemployment were those with no

schooling orthose with primary education. As shown in Table 4, " no

schooling" category accounted for 22. 6 and 65. 4 percent ofthe unemployed

in 1974 and 1976, respectively, while the primary school leavers

correspondingly accounted for64. 3 and 26. 5 percent. The incidence of

unemployment on these categories of people declined very significantly

inthe 1980s and 1990s. The severity of this problem varies according to

Table 4: Composite, Urban and Rural Distribution of Unemployed by Educational Level December 1993 to December 1997 (Per Cent).

EducationalNo. SchoolingPrimarySecondaryPost SecondaryAll LevelsLevel

Composite

1974197619831985Dec. 1990Dec. 199222. 665. 47. 122. 612. 219. 164.

326. 543. 523. 922. 910. 411. 80. 348. 751. 160. 965. 60. 30. 00. 23. 34. 04.

9100. 0100. 0100. 0100. 0100. 0100. 015

Note:

Sources:

The Data for Primary for the period 1974 - 1985 contained below primary

and primary educationlevels. The figures for 1974 - 1985 were compiled

from Ige, C. S. (1986: 20) " Unemployment in Nigeria: Spatial and Sectoral

Patterns and Trends," Annual Conference of the Nigerian Economic

Society1986, Kaduna, May 13 - 16, pp. 20, while those for 1990 and 1992 were obtained from FOS(1997: 101). The data for 1993 - 1997 were compiled from Federal Republic of Nigeria: TheEconomic and Statistical Review , The National Planning Commission, Abuja (1996 - 1998 issues)residential classification. For instance, while the problem was more severe for the " no schooling" rural dwellers, theprimary school leavers residing in urban centres had a greater burden than their rural counterparts. In contrast, theincidence of unemployment on secondary school and post secondary school leavers increased very substantiallyduring the period. The evidence from the educational classification is further reinforced by the evidence from the registeredunemployed. As shown in CBN (1997: 170 and 171), more than 90. 0 percent of the registered unemployed belongto the lower level workers. The number of this category of people registered with the Ministry of Employment, Labour and Productivity rose from 11, 732 in 1970 to 23, 239 in 1975 and 256, 623 in 1980. The figure howeverdeclined thereafter. In contrast, the number of registered unemployed professionals which dropped from 518 in1970, to a mere 135 in 1978, rose very remarkably from 1984. It rose from 2, 514 in 1984 to 16, 293, 22, 206 and32, 942 in 1988, 1992 and 1995, respectively. This represents 1. 8, 12. 3, 19. 7 and 28. 7 percent of the total registeredDec. 1993Dec. 1994June 1995Dec. 1996Dec. 199717. 213. 316. 248. 021. 117. 913. 213. 410. 811. 860. 968. 759. 552. 846. 24. 04. 85. 818. 420. 9100. 0100. 0100. 0100. 0100. 0

Urban

Dec. 1993Dec. 1994June 1995Dec. 1996Dec. 199715. 316. 317. 76. 813. 417. 717. 218. 811. 916. 860. 071. 858. 362. 748. 37. 64. 75. 218. 621. 5100. 0100. 0100. 0100. 0100. 0

Rural

Dec. 1993Dec. 1994June 1995Dec. 1996Dec. 199717. 614. 89. 420. 422. 817. 912. 316. 810. 610. 761. 168. 065. 450. 745. 73. 414. 98. 418. 320. 8100. 0100. 0100. 0100. 0100. 0unemployed people, as opposed to an annual average of 1. 7 percent between 1970 and 1978. 16The demographics of unemployment is shown in Table 5. Unemployment has been unevenly distributedacross the age groups with young people bearing the burden of unemployment. As shown in the table, theunemployed persons are mostly youths aged 15 - 24 years. The proportion of this category of unemployedfluctuated between 41. 6 and 70. 4 percent during 1993 - 1997 period. It recorded an annual average of 56. 3 percentduring the period. This observation is a reconfirmation of the dominance of secondary school leavers among theunemployed, since most of them fall into this age group. Another prominent age group is 25 -44. It is worrisome toobserve that while the percentages of other groups unemployed have been declining consistently over time, those ofthis group have been on the upward trend. This perhaps portends the widening gap between the output produced bythe tertiary institutions and the skill requirements of the labour market. The rising trend of graduate unemployment, as observed by many analysts, may have contributed very significantly to the rising wave and sophistication ofcrime in the country (e. g. Albert, 2000). As also shown in Table 5, an

inverted U-shaped trend is observed for theage group 45 - 59, with 1995 recording the peak of 13. 8 percent. The current wave of self-employed activities mayhave partly accounted for this observation. The inclusion of age group 60 - 64 in the current labour force statisticalsurvey

Table 5:

Unemployment by Age Groups (1993 - 97)

(Per Cent)

Source: Compiled and Calculated from FOS: Annual Abstract of Statistics 1998. is an advancement on the previous exercises. The inclusion of this set of people will reduce, to some extent, thewide gap between the published unemployment rate and the actual one. The exclusion of this group in the past ledto serious underestimation of unemployment. In recent times, attempts have been made to characterize unemployment by its duration (long and shortterm unemployment). The increase in duration of unemployment represents the most serious labour market15-2425-4445-4960-64199369. 025. 25. 8N. A199470. 421. 08. 6N. A199557. 528. 713. 8N. A199642. 946. 011. 1N. A199741. 649. 76. 02. 7Annual Average1993-9756. 334. 19. 1-development. Long term unemployment has become a chronic problem in Nigeria (Okigbo, 1986; Oladeji, 1994). 17As pointed out by Oladeji (1994), 75. 5 and 13. 61 percent of those sampled in the Graduate Employment TracerStudy of the Manpower Board in 1986 has been unemployed for 13 - 34 and 25 - 30 months, respectively. Only10. 8 percent were unemployed for the duration of 1 - 12 months. This type of unemployment has been linked to jobtransition patterns. This approach emphasizes hiring people from the public sector by the private sector, or

betweenfirms, than from the unemployed people. It thereby makes the pool of the unemployed to be increasinglyhomogenous. The risk attached to long-term unemployment has been well acknowledged in the literature (e. g. Okigbo, 1986; Alhson and Ringold, 1996). The longer an individual is unemployed, the more difficult it is to findwork. It is therefore important to put up active labour market programmes for this category of people. The national unemployment rates mask the peculiarities of the states. For instance, states such asthe Old Bendel, Imo, Rivers and Cross Rivers generally experienced very high unemployment rates asopposed to the low rates experienced in Niger, Katsina, Kwara and Kano. Rural unemployment wascommon in Borno and Kwara States while Anambra, Lagos, Plateau, Sokoto, Ogun and Oyo mostlyexperienced high urban unemployment rates. (See FOS (1985: 112-123) and FOS (1990: 269-270) fordetails). An important feature of this approach is the gender structure of unemployment. As shown inTable 6, about 19 states (including Abuja) of the Federation clearly indicate higher female unemploymentrates, with twelve of them from the northern part of the country. This perhaps indicates that more femalesare now interested in paid employment. An important feature of female unemployment is that, this periodcoincided with the time of high female criminality. As pointed out by Oloruntimehin (2000), since 1980s, female criminality has not only increased in number but has also become more serious and significantover the years. The existence of this linkage therefore calls for an urgent attention to femaleunemployment in the country. The incidence of underemployment or disguised unemployment has been acknowledged in theliterature as a serious constraint to economic progress.

In fact, its effects could be worse than those ofopen unemployment (Raheem, 1993). FOS (1997) considers underemployment as a reflection of theextent to which some human resources are rendered potentially idle. This problem has contributed significantly to the widening gap between the reported and actualunemployment in Nigeria. Underemployment has been particularly high in the country. In 1984, 7. 1 and21. 1 percent was recorded for the urban and rural areas, respectively. This later rose to 11. 2 (urban) and28. 7 (rural) percent in 1992. As shown in Table 7, underemployment rates were higher in the rural areasthan the urban centres. In almost all the cases, the rural underemployment rate is twice the rate of urban18underemployment. Besides, irrespective of the place of residence, female underemployment has beenhigher than that of their male counterparts. The predominance of full housewives in the labour force maypartly account19

Table 6: Unemployment Rates By States in Nigeria (1991 and 1993)

Source: National Population Commission (1998): 1991 Population Census of the Federal Republic of Nigeria; AnalyticalReport at the National Level, Abuja. The figures for 1993 were obtained from FOS (1997): Socio-Economic Profile of Nigeria 1996, Lagos , p. 102.

Table 7: Under-employment Rates in Nigeria (1984 – 1996)

YearUrbanRuralMaleFemaleTotalMaleFemaleTotalDecember 1984December 1992September 1993June 199619977. 19. 517. 38. 9NA8. 114. 318. 014. 1NA7. 111. 216. 411. 29. 821. 127. 820. 020. 0NA25. 330. 424. 920. 6NA21. 128. 721. 820. 610. 7Source: Compiled from FOS (1997: 103). The data for

1997 were sourced from CBN: Annual Report and Statement ofAccounts , 1997. States19911993Both Male and FemaleMaleFemaleMale and FemaleUnemployedPopulationUnemployedRateUnemployedPopulationUnemployedRateUnemploymentPopulationUnemploymentRateUnemploymentRate AbiaAkwa-IbomAdamawaAnambraBauchiBenueBornoCross RiversDeltaEdoEnuguImoJigawaKadunaKanoKatsinaKebbiKogiKwaraLagosNigerOgunOndoOsunOyoPlateauRiversSokotoTarabaYobeAbuja

Nigeria

79, 33576, 02131, 58949, 32232, 42530, 12923, 52650, 53464, 82456, 03077, 70792, 79218, 77246, 33139, 58021, 7348, 16047, 65511, 13592, 82516, 62215, 05342, 08613, 72820, 20833, 500176, 21411, 40113, 8619, 5448, 900

1, 311, 603

9. 09. 25. 14. 83. 23. 63. 17. 87. 27. 67. 011. 83. 15. 03. 02. 81. 76. 61. 83. 72. 51. 42. 91. 61. 33. 912. 61. 13. 22. 76. 8

4. 7

37, 85640, 99921, 52221, 77821, 41321, 50615, 19729, 68038, 99235, 59234, 82842, 66314, 02330, 40028, 79916, 0745, 84127, 3235, 71853, 17111, 5228, 06723, 2467, 25511, 12222, 236102, 5297, 61110, 2496, 6935, 910

753, 909

8. 39. 95. 03. 82. 54. 32. 78. 48. 58. 86. 110. 32. 64. 12. 52. 31. 57. 31. 83. 62. 21. 53. 31. 81. 53. 613. 10. 93. 22. 35. 6

3. 4

41, 47935, 02210, 06727, 54411, 0128, 6238, 32920, 85425, 83220, 43442, 87950, 1294, 74915, 93110, 9815, 6602, 31920, 3325, 41739, 6545, 1006, 98618, 8406, 4739, 08611, 32473, 6853, 7903, 6122, 8512, 990

548, 794

9. 78. 55. 36. 07. 52. 54. 57. 05. 96. 27. 713. 46. 99. 45. 87. 03. 35. 81. 83. 83. 41. 32. 51. 31. 24. 912. 02. 83. 15. 011. 3

5. 3

4. 25. 41. 52. 81. 01. 20. 53. 45. 95. 13. 59. 10. 23. 61. 30. 50. 62. 80. 72. 80. 51. 71. 11. 61. 31. 47. 40. 10. 90. 24. 2

-

20for the higher rate of female underemployment. A large proportion of unpaid family workers as a share of active workerswhich was estimated by the World Bank (1999: 285) at 23. 5 percent could also be a factor contributing to the bourgeoningrate of underemployment in Nigeria. To further reinforce the reason for higher female under-employment, we decompose theunpaid family workers-active workforce ratio into gender classification. The females constituted 14. 9 percent as opposed to8. 6 percent for male. The rates of underemployment also vary across the states. For instance, in 1993 high rates ofunderemployment featured in Enugu (5. 74%), Ondo (3. 50%), Sokoto (5. 12%), Adamawa (4. 80%) and Taraba(4. 61%). States with less than 1 percent underemployment rate were Delta, Abia, Cross Rivers, Oyo, Kaduna, Kogiand Niger. Female underemployment was also serious in the following states. Jigawa (10. 4%), Sokoto (10. 13%),

Taraba (7. 5%), Adamawa (7. 13%) Enugu (5. 4%) and Bauchi (5. 15%) (FOS, 1997). The seriousness of the unemployment problem has attracted government attention over the years. Employment generation featured prominently in the past medium-term National Development Plans (1962 - 1985). This led to the establishment of several government parastatals (whose primary objective was to create employmentopportunities) in addition to the creation of institutions such as the Industrial Training Fund (ITF), to drasticallyreduce the problem of underemployment. The adoption of Structural Adjustment Programme also ushered in theNational Directorate of Employment (NDE) whose primary responsibility was to generate employmentopportunities with emphasis on the development of entrepreneurship and self employment. Besides NDE, otherprogrammes, with employment implications, established by the government include: the Directorate of Food, Roadsand Rural Infrastructure; the Better Life for Rural Women/Family Support Programme; the Development of Small-Medium Scale Enterprises; the Raw Materials Research and Development Council; the Peoples' Bank of Nigeria andthe Community Banks. The current poverty alleviation programme also focuses on the unemployed. In spite ofthese efforts, unemployment remains a grave problem in Nigeria.

3. 3

Trend Analysis of Productivity and Unemployment

A review of the existing descriptive analysis of the linkage between productivity and unemployment showssome degree of variations. Maddison (1982) showed that the growth of total employment since 1970 paralleled thatof real GDP in industrial countries. They both accelerated and

decelerated in the same direction. By implication, productivity and unemployment are inversely related. Schaik and Groot (1997) also presented the Europeancountries' experience of high growth of industrial productivity with unprecedented low rates of unemployment in the211950s and 1960s. Grilli and Zanalda (1995) also observed that growth of total employment maintained a positiverelationship with real GDP in developing countries between 1960s and 1980s. In contrast, Krugman (1994) foundno visible pattern among some developed countries between productivity and unemployment. Some countries withthe best unemployment performances turned out to be the worst productivity performances. What is the pattern ofrelationship between productivity and unemployment in Nigeria? A brief highlight of the stylized facts is providedbelow. A cursory look at Figure 2, shows that for most part of the period of analysis, unemployment andproductivity moved in opposite direction. For instance, between 1981 and 1990, periods of high rate ofunemployment were associated with period of declining/low productivity. Labour productivity was relatively higherbetween 1990 and 1996 than what obtained in the 1980s, and the unemployment rate declined up to 1995. The widegap between unemployment and productivity between 1991 and 1996 tends to suggest that productivity andemployment were correlated during the period. The trend analysis seems to suggest an inverse relationship between unemployment and productivity, thussupporting a positive linkage between employment growth and higher productivity. However, it is difficult to usethis type of analysis to determine the direction of causality between the variables, hence one cannot clearly showwhich of the theoretical postulates

holds in the Nigerian situation. This, therefore, informs the use of causality testsas is done inthe next section.

IV.

EMPIRICAL LINK BETWEEN PRODUCTIVITY AND UNEMPLOYMENT IN

NIGERIA

4. 1

Methodology

The existence of correlations in descriptive analysis may not necessarily imply causality as two variablesmay show some correlations even when they are not directly related. It might be possible that they share the sametrend from a third variable i. e. an external factor may influence the two variables in the same way. The use ofcausality tests, therefore provides the opportunity to carry out a more scientific analysis of the issues in question. Asargued in the literature, the use of causal hypotheses makes scientific analysis more determinate and the resultingconclusions more specific. 2223

Figure 2

24The commonly used causality tests in econometric modelling are Granger and Sims tests. While the formeruses the lagged values of a particular variable to explain the behaviour of another variable, the latter uses leadvalues. The loss of degrees of freedom often associated with the use of the Sims approach makes its applicationrestricted in econometric analysis. Hence this study employs the Granger causality test. The standard Granger causality test examines whether past changes in one variable, X (say,

productivity)help to explain the current changes in another variable Y (e. g. employment/unemployment), over and above theexplanation provided by past changes in Y. If, otherwise, then one concludes that X (productivity) does not Grangercause Y (employment/unemployment). To determine whether causality runs in the other direction, from Y to X (oremployment/unemployment to productivity), one simply repeats the experiment, but with X and Y interchanged......(5)$y_t = \sum_{i=1}^{k} \text{''}_i \{Y\}_{t-i} + \sum_{i=1}^{k} \beta_t \sim X_{t-i} + \sim \epsilon_t$.....(6)$X_t = \sum_{t=1}^{k} \{1_i\} X_{t-i} + \sum_{t=1}^{k} \{(_t\} Y_{t-i} + V_t$The above scenario may be given in a Granger causality sense thus: where y and x could stand for either of the variables under consideration (productivity, employment/unemployment). If ß i = ß2 = ... = ß k = 0 then, x does not Granger cause y, hence, we accept the nullhypothesis. The same applies to equation 6. The use of Granger causality test is an important scientific way of determining the direction of causation. However, determining the nature of the relationship is outside its scope. This, therefore, informs the fitting ofsimple regression equations, with a view to making the conclusions and policy deductions more determinate andfocussed. Depending on the outcome of the Granger causality tests, a bivariate model is fitted with any of thevariables (productivity or unemployment) serving as the dependent variable and the other serving as the explanatoryvariable, with an adjustment mechanism of one lag and a disequilibrium term. The simplicity of this model does notwarrant an explicit specification here. The data for this analysis were obtained from many sources: FOS, Annual Abstract of Statistics (variousissues) and Social

Statistics in Nigeria (various issues); CBN, Statistical Bulletin (various issues) and Nigeria: MajorEconomic, Financial and Banking Indicators , April 1997; ILO, Employment Policy Strategy Formulation Mission to25Nigeria , 1996, and International Labour Statistics and World Bank: African Development Indicators , WorldDevelopment Indicators (various issues) and World Tables (various issues).

4. 2

Empirical Results

The Granger Causality tests carried out examine the direction of relationships between productivity andemployment, and productivity and unemployment. In order to get a clearer picture of the structure of productionand employment, the economy is divided into three sectors: agriculture, industry and services. However, the non-availability of public data on the services sector unemployment could not allow us to consider the services sector inthe analysis. The results of the Granger Tests are in Table 8. Evidence from productivity and employment linkage shows bi-causal relationships in all the cases except inthe agricultural sector. This evidence tends to reject the neoclassical framework for productivity and employmentlinkage, which proposes a unidirectional relationship running from employment to output. As shown in Table 8, bi-causal relationships exist between industrial employment and industrial productivity. However, this could not beestablished in the agricultural sector. The rejection of the existence of a feedback relationship running from thesector's employment to productivity could be due to the prevalence of redundant workers in the sector. Thehistorical antecedent of the sector tends to support the result. For

instance, the sector constituted the largest sectoralemployment in the country. As pointed out by ILO (1996), the sector employed 71. 7, 60. 0, 60. 7 and 59. 8 percent ofthe total workforce in 1960, 1980, 1990 and 1996, respectively. Thus, given the subsistent nature of the sector'sproduction, the tendency of diminishing marginal productivity seems operative. Thus, increased productivity in thesector may not require additional employment but rather an optimal utilization of the existing underutilizedresources such as labour and land. Evidence from productivity and unemployment linkage shows that a unidirectional relationship existsbetween national labour productivity and national unemployment. The direction of causation runs from totalproductivity to unemployment (Table 8). By implication, historical and current level of labour productivity clearlypredict the level of national unemployment in Nigeria. The Granger causality test however shows the direction ofcausation but not the nature of the relationship. This is, however, remedied with the regression results in Table 9. This Table shows that higher current national labour productivity tends to result in the absorption of more workers, 26thereby reducing the level of unemployment. The relationship is established at 5. 0 percent significance level. However, arising from additional labour absorption that accompanied increased labour productivity, the law ofmarginal productivity, ensues, hence the level of labour absorption declined in the next quarter. Albeit, thisrelationship is not statistically significant. Expectedly, the cummulation of unemployed people over time tends toexert some positive influence on the current level of unemployment.

Table 8: GRANGER CAUSALITY TESTS

Productivity and Employment

F-ProbabilityRemarkStatisticTotal Employment (TE) ----> Total Productivity (TP)Total Productivity (TP)----> Total Employment (TE)Agricultural Productivity(AP) ----> Agricultural Employment (AE)Agricultural Employment(AE) ----> Agricultural Productivity (AP)Industrial Productivity (IP) ----> Industrial Employment (IE)Industrial Employment (IE) -----> Industrial Productivity (IP)9. 447. 085. 452. 205. 2519. 680. 000. 000. 000. 120. 000. 00AcceptAcceptAcceptRejectAcceptAccept

Productivity and Unemployment

Total Productivity (TP) ---> National Unemployment (NU)National Unemployment (NU) -----> Total Productivity (TP)Industrial Productivity (IP) -----> Urban Unemployment (UU)Urban Unemployment (UU) -----> Industrial Productivity (IP)Agricultural Productivity (AP) -----> Rural Unemployment (RU)Rural Unemployment (RU) -----> Agricultural Productivity (AP)4. 191. 813. 7912. 671. 190. 430. 020. 170. 020. 030. 020. 08AcceptRejectAcceptAcceptRejectRejectThe direction of causation between industrial labour productivity and urban unemployment is established tobe bi-directional (Table 8). In contrast with what obtained under national labour productivity, evidence from theindustrial sector tends to imply the use of less labour for producing the same volume of output. For instance, onepercent increase in labour productivity raises the unemployment rate by 0. 8 percent (Table 9). This relationship isestablished at 1. 0 percent level of significance. Perhaps resulting from the lower labour cost, the consequentreduction in commodity price generates an increase in demand.

Thus, following the accelerator principle, additional27labour is employed in the next quarter. This is evident in the relationship between current level of urbanunemployment and the last quarter productivity level7. The relationship between agricultural productivity and rural unemployment could not be clearlyestablished. This finding suggests that the rural unemployment problem has a life of its own and is not simply partof a generalized deterioration in agricultural performance. Besides, Table 9:

Regression Results

VariablesConstantTotal Productivity ()TP)TotalUnemployment()TU)0. 01(0. 25)-0. 56UrbanUnemployment()UU)-0. 02(-2. 58)*Rural Unemployment()RU)0. 01(1. 82)***(-1. 92)**)TPt-1)TUt-1Industrial Productivity ()IP))IPt-1)UUt-1Agricultural Productivity()AP))APt-1)URt-10. 28(1. 05)0. 89(13. 07)*0. 82(3. 33)-0. 62(-2. 64)-0. 35(-1. 24)-1. 85(-3. 49)*3. 05(4. 22)*2. 89(3. 26)*ECM(-1)-0. 02(-3. 97)*0. 16(3. 24)*-2. 08(-2. 35)*7

The existence of bi-causal relationship between industrial labour productivity and urban unemployment

suggests the existence of simultaneity bias. Thus, using instrumental variable estimation

technique, we regressed urban unemployment rate on industrial productivity. The

unemployment rate is positively related to productivity. However, the relationship is not

statistically significant.

28

Note:

TP = Total Productivity; IP = Industrial Productivity; AP = Agricultural Productivity; ECM (-1) = ErrorCorrelation Factor; Adj. R2 = Adjusted R2 and D. W. = Durbin-Watson Statistic. Also, *, ** and ***indicate that the variables are significant at 1, 5 and 10 percent, respectively. the evidence also tends to suggest that rural underemployment may be more important to agricultural productionthan rural unemployment. In spite of this, we fitted an equation to examine the impact of agricultural productivityon rural unemployment. Evidence from Table 12 shows that higher labour productivity results in more employment. The labour intensive nature of this sector gives more credence to this relationship. And following the cobb-webtheory, an increase in agricultural production in excess of demand creates a glut in the subsequent year therebyresulting in laying-off of workers in the subsequent period. Thus, the lagged value of labour productivity raises theunemployment rate in the subsequent period. The statistics associated with the models (e. g. adjusted R2, F-statistic and D. W.) are well behaved.

V.

POLICY IMPLICATIONS OF THE FINDINGS AND CONCLUSIONS

The analysis presented above established some stylized facts about productivity and unemployment inNigeria. It is clearly evident that productivity is low in Nigeria. Unemployment, on the other hand (when combinedwith underemployment) is very high. Evidence from the analysis of productivity and employment linkage shows bi-causal relationships in all the

cases, except in the agricultural sector. The evidence therefore rejects the neo-classicalframework for productivity and employment linkage. The results of the relationship between productivity andunemployment are mixed. The results show that bi-causal relationships exist in the industrial sector while aunidirectional relationship (running from productivity to unemployment) is established at the national level. However, no linkage is established in the agricultural sector, thereby suggesting that rural unemployment, in most2Adj. R0. 770. 350. 61F-Statistic70. 52*9. 09*24. 92*D. W. 1. 752. 012. 43cases, may not arise from the generalized deterioration in agricultural performance. 29The results also show that contrary to the general expectation that an increase in productivity leads to areduction in employment (particularly, where there is no compensating increase in overall demand), labourproductivity is followed by labour absorption at the current level, at both the national level and agricultural sector. This relationship, particularly in the agricultural sector follows the traditional cobb-web theory. The oppositehowever exists when a lagged value is incorporated. The evidence from the industrial sector supports the generalnotion, where employers use less labour to accomplish the same volume of output as productivity rises. Meanwhile, following the accelerator principle, additional labour is absorbed in the next period. Some policy implications are discernible from the findings. Since more employment means more incomefor the poor, which in turn implies a greater demand for locally produced basic consumption goods, it is imperativefor government to ensure growth and development of the rural and small-scale urban sectors. This should consider, very seriously, encouraging people to establish more

labour-intensive small scale enterprises which have thepropensity to create more jobs and higher incomes. This programme, if well implemented, could reverse the rural-urban drift which has seriously affected the urban employment. However, in order to achieve this goal, acomplementary policy of removing factor-price distortions and promoting labour-intensive technologies ofproduction may be required. As a corollary to this, industrial policy can be directed at supporting industries withhigh growth potential in order to combine the benefits of rising productivity with the net generation of new jobs. Appropriate incentive structures should be designed for investors participating in this programme. In line with our finding from the industrial sector, while acknowledging the benefits of economiccompetition, it should however be confined to relative productivity rather than be allowed to spread into destructivewages and cost cutting exercises. While this is a sacrifice from the part of the private sector, public investmentshould also be directed at improving productivity and supporting job creation. This involves programmes to raiseworkers' skills and investment to improve infrastructure as well as create the enabling environment for enterprises tostrive. One major finding is that productivity and unemployment are inversely related. This suggests the need forpolicies to enhance productivity. Critical among these include: recent developments have shown that human investment is an important factor in any country'sproductiveness. In fact, there exists a level of human investment at which the productivity rate attains its30minimum. Thus, the need to put in place a systematic manpower development programme (especially theskill acquisition type) both in the public and private sectors is imperative; the institutionalization of adequate

penal and reward system is a sine-qua-non to improved productivity. Sequel to this is the need to adopt a satisfactory income policy. This income policy should meet certainrequirements deemed commensurate with the levels of maximum utilization of labour input; andgovernment should create appropriate enabling environment to promote a sustained effective aggregatedemand in order to maintain the required level of domestic production. 31