Impact of Private Investment on Labour Productivity in Nigeria

Gilbert Deinde Ifarajimi[1] and Kehinde Oluwole Ola[2]
[1]Department of Accounting and Finance,
Samuel Adegboyega University, Ogwa, Edo State
[2]Department of Economics, Samuel Adegboyega University, Ogwa, Edo State

Abstract

Labour productivity is one of the measures of economic performance. Its growth is essential for sustainable improvements in living standards and business conditions. The growth of labour productivity depends on certain factors, including investment. New growth theory states that labour productivity is driven by investment. It is on this basis that this study examined the impact of private sector investment on labour productivity in Nigeria. The study made use of time-series data of labour productivity, credit to private sector, domestic private investment and foreign direct investment in Nigeria from 1981 to 2016. The data were drawn from various issues of Central Bank of Nigeria statistical bulletin and World Bank data. The study adopted fully modified ordinary least squares to take care of endogeneity and error correction mechanism, which provided information on the long and short-run relationship, as well as the speed of adjustment between the variables. The findings showed that credit to private sector is essential for labour productivity growth in Nigeria in the long-run, while in the short-run, domestic private investment enhances growth in labour productivity; also, the ECM was negatively signed and significant at 5%. It was, therefore, recommended, among others, that there is a need for government to encourage domestic private investment through the creation of enabling environment for private investors to thrive.

Keywords: Endogeneity, labour productivity, private sector investment
JEL Classification: J24, R42

Introduction

Labour productivity is the most widely used indicator for productivity and it reflects the efficiency of utilization of factors of production and the production possibility of all economy (Novotna, Volek and Alina, 2014). Labour productivity refers to the amount of goods and services produced by one hour of labour. According to the United States Bureau of Labour Statistics (1959), labour productivity growth is what enables workers to produce more goods and services than they otherwise could for a given number of hours. Its influence on availability and quality of labour resources and applied technologies makes it a key factor in any economy (Auzina- Emsina, 2014). There has been increasing recognition of labour productivity by economists and policymakers as a key to sustained economic expansion (Owyong, 2000; Ramirez, 2006).

In the developing countries, governments have been the major promoters of labour

productivity due to the lack of a robust private sector, especially in the early years of independence (Pham, 2009; Aladejare, 2013). Government investment in labour productivity, which comes in the form of expenditure on health, housing, education and so on, has been largely ineffective. In recent years, there has been a rapid movement in favour of active participation of the private sector in the economy (Gatawa and Bello, 2011). In Nigeria, the call for active private sector participation in economic issues has been on since 1986 when the country adopted the structural adjustment programme (Bello, Nagwari and Saulawa, 2011). This was further intensified in 2004 when the National Economic Empowerment and Development Strategy (NEEDS) was introduced. Emphasis was placed on the private sector as the driving force of economic growth (Gatawa and Bello, 2011). The failure of government expenditure to bring about impressive increase in labour productivity might be due to lack of commitment, corruption, lack of accountability and weak controls. Private investors exercise effective controls over resource utilization to ensure efficiency and profitability. This was a major issue considered by government officials to justify the privatization of public enterprises in the country during the period of study. Furthermore, the Nigerian government has introduced various initiatives to assist small and medium-scale enterprises to boost labour productivity in the country. This study examined the impact of private investment on labour productivity in Nigeria.

Many of the literature on private investment and labour productivity have focused on foreign direct investment (Ayanwale and Bamire, 2004; Ugur and Ruane, 2004; Lee, 2007; Liang, 2008; Contessi and Weinberge, 2009; Kipkurui, 2015). The studies examined the impact of foreign direct investment on labour productivity without paying attention to domestic private investments. The focus of most of the studies on the impact of foreign direct investment on labour productivity leaves a gap, which justifies the need for the current study. Moreover, the nature of foreign direct investment shows that it cannot be solely relied upon for growth in labour productivity because its supply to countries such as Nigeria is weakened by recession, persistent macroeconomic and political instability, epileptic power supply, corruption and insecurity (Ayanwale, 2007). In addition, most of the inflows of FDI in Nigeria were focused on the oil and gas sector, which is highly capital-intensive with very little labour input. As such, there is need for complementary investments to meet whatever shortfalls in achieving the targeted goal of enhancing the growth of labour productivity in the country. This triggers the need to examine the place of domestic private investment in labour productivity and provides the basis for making policy decisions on the relevance of private investment to labour productivity growth. Credit to private sector eliminates or reduces substantially the crowding out effect of public expenditure on private investment (Nazmi and Ramirez, 2003).

The overall objective of this study is to examine the impact of private investment on labour productivity in Nigeria. Specifically, the study examined the impact of foreign

direct investment on labour productivity, estimated the effect of credit to private sector on labour productivity, and evaluated the influence of domestic private investment on labour productivity in Nigeria. The study investigated whether or not foreign direct investment (FDI) and domestic private investment have significant impact on labour productivity in Nigeria. In examining the impact of private investment on labour productivity, the study adopted time series analysis on four variables: labour productivity, foreign direct investment, credit to private sector and domestic private investment for the period of 1981 to 2016.

The remainder of this report is organized as follows: section 2 provides the literature review which incorporates the theoretical and empirical review, while section 3 describes the methodology, consisting of model specification, sources of data and method of analysis. Section 4 reports the empirical results, while section 5 provides the conclusion and recommendations.

Literature Review

Pioneering theories in the field of labour productivity began with the labour-based theory of value propounded by David Ricardo. The theory holds that economic value is completely determined by the relative amount of labour required to produce commodities. Ricardo (1823) demonstrated that every increase of the quantity of labour must augment the value of that commodity in which it is exercised. This theory was followed by the surplus theory of Karl Marx, which emphasized that nothing has value if it is not due to human labour. Marx (1867) clearly subordinated the value of nature to labour. The neo-classical growth theory is based on the understanding that the accumulation of capital within an economy and the ways in which people use that capital are important for economic growth. Further, the relationship between capital and labour in an economy determines the country's output. Finally, technology is thought to augment labour productivity in such a way that it increases the output capabilities of labour. Basically, to increase economic growth, it is necessary to increase labour productivity, the size of the workforce or the technology.

The theory on labour productivity is further strengthened by the new growth theory (NGT), which explained the role of knowledge and technology by incorporating them into neoclassical production function. The theory introduced a new concept of human capital: the skills and knowledge that make workers productive. The new growth theorists, Arrow (1962), Romer (1986) and Lucas (1988) used endogenous growth to explain the evolution of the residuals, the source of which was the evolution of technology. For increasing returns, not only the capital but also the labour must expand. Arrow (1962) assumes knowledge as a side product of investment. The Lucas model is based on the assumption that investment on education leads to production of human capital, which is a crucial determinant in the growth process. The NGT also emphasizes the role of private sector in technological research and development. Unlike physical

capital, human capital has increasing rates of return (Ramirez, 2012). Research in this area has focused on what increases human capital (such as education) and technological change (such as innovation). Although successive governments in Nigeria have, over the years, committed substantial public funds to human capital development, not much has been achieved in the area of technological changes.

A few empirical studies have been carried out on the impact of private investment on labour productivity with most of them focusing on foreign direct investment and labour productivity. Kumar and Pradham (2002) analysed the relationship between FDI, growth and domestic investment for a sample of 107 developing countries for the periods 1980 – 99. The study used flow of output as the dependent variable and domestic and foreign owned capital stock, labour, human skills, capital stock and total factor productivity as the independent variables. The results showed a positive effect of FDI on growth, although FDI appears to crowd out domestic investments in net terms. The study also found that in general, some countries have had favourable effects of FDI on domestic investments in net terms, suggesting a role for host country policies.

Ayanwale and Bamire (2004) examined the impact of foreign direct investment on productivity at the firm level in the agro/agro-allied sector of the Nigerian economy with data from agro/agro-allied companies using descriptive statistics, correlation and regression techniques to achieve its objectives. The results showed that there is positive and significant spillover effect of foreign direct investment on labour productivity at the firm level. Lee (2007) constructed a panel dataset from nine OECD countries for the period 1971-1999 to investigate the inward foreign direct investment and labour productivity. The study showed that inward foreign direct investment has robustness of long-run positive relationship with the productiveness of a host country. The study also confirmed the long-run relationship between domestic knowledge stocks and productivities in G7 countries.

Ramirez (2012) estimated a dynamic labour productivity function for the 1960-2010 period, incorporating the impact of public and private investment spending, labour force, and export growth. The estimates suggested that (lagged) inward FDI flows had a positive and significant impact on labour productivity growth, while increases in the labour force had a negative effect. The results of the study gave further support to pro-growth policies designed to promote public investment spending and attract inward FDI flows. Kalu and Onyinye (2015) investigated the link between domestic private investment and economic growth in Nigeria, using the Cob-Douglas model framework. The study estimated a model using error correction modelling (ECM) approach and annual data covering 1970 to 2012. The result showed that foreign direct investment (FDI) should at best complement domestic private investment. It was therefore, concluded that macroeconomic policies and overall macroeconomic stability are quite essential for the promotion of domestic private investment.

Methodology

Model specification

The model for the study is specified in functional form as:

$$LPR = f(FDI, CSP, PRI) \quad 1$$

While the regression equation is specified as:

$$LPR_t = b_0 + b_1 FDI_t + b_2 CPS_t + b_3 PRI_t + \mu \quad 2$$

Equation 2 is rewritten in logarithm form to give equation 3, as follows:

$$\ln LPR_t = b_0 + b_1 \ln FDI_t + b_2 \ln CPS_t + b_3 \ln PRI_t + \mu \quad 3$$

Where

LPR = labour productivity
FDI = foreign direct investment
CPS = credit to private sector
PRI = domestic private investment
μ = stochastic term
β_0–β_3 = coefficients to be estimated
ln = natural logarithm

$$D\ln LPR_t = b_0 + b_1 D\ln FDI_t + b_2 D\ln CSP_t + b_3 D\ln PRI_t + b_4 ECM_{t-1} + \mu \quad 4$$

Equation 4 was estimated using fully modified ordinary least squares in order to account for endogeneity among the regressors.

Sources of data and method of estimation

The data for this study were obtained from the World Bank and various issues of Central Bank of Nigeria Statistical Bulletin over the period of 36 years (1981 - 2016). All the variables were converted into logarithm from their monetary values. The estimation began by conducting stationarity test. This test is important because large number of time series data is generally non-stationary. Using such data in estimation may produce spurious regression. Pujula and Zapata (2013) pointed out that stationarity test helps to specify the model that correctly approximates the true data generating process. Tests for stationarity include Phillips-Perron (PP); Kwiatkowski, Phillips, Schmidt and Shin and Augmented Dickey Fuller (Umoru and Yaqub, 2013). The study employed Augmented Dickey Fuller (ADF) test, which operates under the hypothesis that series have a unit root; the Schwarz criterion is used to decide optimal lag length. The study did not choose ADF because of its superiority to other unit root techniques, for according to Virman (2004), no unit root test is superior to another. ADF was chosen because it

allows the regression estimation to be non- spurious (Sjo, 2008)

The stationarity test provided a ground to determine the order of integration of the variables employed in the model. It should be noted that if the variables are integrated of different orders, then there is need to look for cointegration. Cointegration tests help to establish if some long-run equilibrium relationship exists between the dependent variable and all the variables entering the labour productivity function. The study employed cointegration via residual-based procedure to measure the long-run equilibrium relationship among the variables.

Having checked for stationarity and cointegration, estimation of the model was carried out. The FMOLS was originally designed to provide optimal estimates of cointegration regressions (Phillips and Hansen, 1990). According to Aljebrin (2012:274), this 'technique employs kernel estimators of the Nuisance parameters that affects the asymptotic distribution of the OLS estimator'. This technique has the advantage of modifying the least squares to account for serial correlation effects and test for the endogeneity in the regressors that result from the existence of a cointegrating relationships. The technique requires the existence of at least a single cointegrating relationship among the series. This information of the existence of cointegrating equations among the series was further used to carry out short-run estimation. The error correction model (ECM) provides information about the long and short-run relationship as well as the speed of adjustment between the variables in incorporating to estimated equation. In conducting post-diagnostic tests, normality test and Wald statistics were used to test for normality in the residual and to test whether the series were significantly different from zero.

Empirical Results

Table 1 shows the descriptive statistics for the series. The mean and median of the series perform fairly because their values are within the minimum and the maximum values. The possibility of the problems of outliers is revealed through the standard deviation. Labour productivity (LPR) and domestic private investment (PRI) showed no evidence of the existence of outlier as the standard deviations are low. For other series, this cannot be ruled out, as the standard deviations are large.

Table 1: Descriptive statistics

	LPR	*CPS*	*PRI*	*FDI*
Mean	5.32	13.11	10.66	10.91
Median	5.14	10.99	10.51	11.61
Maximum	7.22	36.89	13.17	14.12
Minimum	3.98	5.92	9.46	6.39
Std. Dev.	0.91	6.65	0.82	2.70
Skewness	0.45	1.71	0.81	-0.49
Kurtosis	2.25	6.13	3.63	1.84
Jarque-Bera	2.08	32.17	4.57	3.46
Probability	0.35	0.000	0.10	0.18
Sum	191.83	471.90	383.95	392.69
Sum Sq. Dev.	29.10	1546.30	23.69	255.04
Observations	36	36	36	36

The values obtained for the skewness showed that there is possibility of all series being normally distributed, except foreign direct investment (FDI). Labour productivity (LPR), credit to private sector (CPS), and domestic private investment (PRI) are rightly skewed (table 1) and greater than zero. Labour productivity (LPR), credit to private sector (CPS), and domestic private investment (PRI) are symmetrically around the mean except FDI. Further evidence for being normally distributed for credit to private sector (CPS) and domestic private investment (PRI) are seen in values obtained for Kurtosis. Credit to private sector (CPS) and domestic private investment (PRI) have Kurtosis values which greater than 3 (table 1). Labour productivity (LPR) and FDI have Kurtosi values which are less than 3; hence, there is possibility of their series not being normally distributed. While the Jarque Bera statistics show that labour productivity (LPR), FDI and domestic private investment (PRI) show evidence of being normally distributed. Their pro-value is higher than 5% level of significance. Since credit to the private sector (CPS) is positively skewed, the study cannot conclude that it is not normally distributed.

Unit root test

The data in table 2 show the results of the unit root test estimation on the series using Augmented Dickey-Fuller. ADF was used because of the large sample of the 36 years of study. All the series were stationary after the first difference at 5% significance. The information obtained satisfied the condition for cointegration test, which requires that all series be stationary.

Table 2: Unit root test

Variables	*Level/Difference*	*Critical Value (ADF)*	*ADF*	*ORDER*
*ln*LPR	Level	-2.9484	-0.7053	
	First Diff.	-2.9511	-4.7910*	1(1)
*ln*FDI	Level	-2.9484	-1.6563	
	First Diff.	-2.9511	-7.8839*	1(1)
*ln*CPS	Level	-2.9484	-1.7766	
	First Diff.	-2.9540	-5.9148*	1(1)
*ln*PRI	Level	-2.9511	-0.3771	
	First Diff.	-2.9511	-7.5706*	1(1)

Note: * indicates significance at 5% level.

Cointegration test

Table 3 shows that the residual from static OLS is stationary at level. This result shows that there is long-run relationship among the series. Since there is evidence of long-run relationship, the estimation of the long and short-run relationships was conducted.

Table 3: Cointegration test via residual

	Statistics	*Critical Values*	*P- Values*
Residual	-2.9511	-3.9366	0.0045

Significance at 5% level

Long-run fully modified OLS

Table 4 showed the extracted output from E-view 9 of the long run relationship between the variables.

Table 4: Long-run regression (fully modified OLS)

DV: lnLPR	
Intercept	0.1097
	(0.1000)
	-0.1481
*ln*FDI	(-1.1030)
	0.3307*
*ln*CPS	(4.3737)
	0.4573
*ln*PRI	(0.7765)
R^2	0.6178
Adjusted R^2	0.5808
Long-run variance	0.00187

Note**:** *t- statistic;* *1%, **5% and ***10% level of significance

In table 4, the coefficient of determination is 0.6178, which shows that 61.78% of the variation in labour productivity is explained by the independent variables. Foreign direct investment does not have the expected sign and is also not significant at 5% level of significance. Credit to the private sector and domestic private investments have the expected signs. This implies that 1% increase in foreign direct investment leads to a decrease of 0.14% in labour productivity in Nigeria. This may be due to the fact that the inflow of FDI is concentrated in the oil and gas sector, which have very little labour input. Credit to private sector (CPS) is significant at 5% level of significance. This shows that credit to private sector (CPS) increases labour productivity growth by 0.33% in the period under study. The result shows that the impact of credit to private sector on labour productivity in Nigeria is positive and significant. This also means that government's efforts at providing credit facilities to small and medium-scale enterprises through the CBN is yielding positive results. In the same vein, domestic private investment has the expected sign, but it is not significant at 5% level of significance. A 1% increase in domestic private investment leads to 0.46% increases in labour productivity in Nigeria. The low level of contribution of DPI to labour productivity may be due to the infrastructural deficit and high cost of doing business in the economy, which led to the relocation of some private companies to neighbouring countries during the period of study.

Short-run fully modified OLS

The parsimonious ECM for fully modified OLS is given in table 5. It is computed by generating the error correction term. The variables that are not significant in the over-parameterized ECMs are removed from the final estimation.

Table 5: Short-run fully modified OLS

DV: D(*ln*LPR)	
Intercept	0.0025
	(0.2836)
D(*ln*FDI)	
D(*ln*CPS)	
D(*ln*PRI)	0.4748**
	(2.2050)
ECM	-0.2459**
	(-3.0638)
R^2	0.1120
Adjusted R^2	0.0528
Long-run variance	0.0225
Jarque Bera Statistic	0.8300
	(0.6603)[a]
Wald Statistic on PRI	6.5090
	(0.0161)[a]

Note:*t- Statistic;* *1%, **5% and ***10% Level of Significance, [a]Pro- value

The short-run dynamics in table 4 and the coefficient of determination R^2 and adjusted R^2 are 0.112 and 0.0528, respectively. These show that 11.20% of the variation in labour productivity is explained by the explanatory variables. The ECM is correctly signed, that is, it has negative sign and is significant in all estimations. ECM is significant at 5%. The result shows that 24.59% of the errors in the previous times disequilibrium is corrected. In the short run, it is only domestic private investment (PRI) that is significant and has the expected sign in the parsimonious ECM. It shows that in the short run, domestic private investment promotes labour productivity growth in Nigeria. A 1% increase in domestic private investment leads to 0.47% increase in labour productivity. The Jarque Bera statistic is 0.8300 and the corresponding pro-value is 0.6603. Thus, the test for normality in the residuals of the estimated short-run regression shows no evidence to reject the null hypothesis of normality of the errors. Based on the result, it is concluded that the model is reliable for inference. The Wald statistic in which the F- statistic is 0.6090 indicates that domestic private investment is a key determinant of labour productivity growth in Nigeria, as its coefficient is significantly different from zero.

Conclusion and Recommendations

The study examined the impact of private investment spending on labour productivity in Nigeria. It made use of time-series data of labour productivity, credit to private sector, domestic private investment and foreign direct investment in Nigeria from 1981 to 2016. The data were drawn from various issues of Central Bank of Nigeria statistical bulletin and World Bank data. The adoption of fully modified ordinary least squares was to take care of endogeneity and error correction mechanism which provide information about the long-run and short-run relationship, as well as the speed of adjustment between the variables.

The findings showed that credit to private sector exerted positive impact on labour productivity in the long run, whereas domestic private investment and FDI were not significant in the long run. The ECM was negatively signed and significant at 5%. In the short run, the findings showed that domestic private investment exerted positive impact on labour productivity growth. The study, therefore, recommends the need for government to create a conducive environment for domestic private investment to thrive and encourage financial institutions to increase their commitment to making credit facilities available to private investors in the non-oil sectors.

References

Adeleke, K.M., Olowe S.O. and Fasesin O.O. (2014). The impact of foreign direct investment on economic growth. *International Journal of Academic Research in Business and Social Sciences,* 4(8): 234-242.

Adenikinju, A.F. (2005). *Productivity performance in developing countries: Country case*

studies, Nigeria. Washington DC: UNIDO.

Adetiloye, K.O. and Adeyemo, K.A. (2012). Domestic investment, capital formation and population growth in Nigeria. *Developing Country Studies,* 2(7): 37-45.

Aljebrin, M.A. (2012). Labour demand and economic growth in Saudi Arabia. *American Journal of Business and Management,* 1(4): 271- 277.

Arrow, K.J. (1962). The economic implications of learning by doing. *Review of Economic Studies*, 29(3): 155-173.

Ayanwale, A.B. (2007). *Foreign Direct Investment and Economic Growth: Evidence from Nigeria*. Nairobi; Africa Economic Research Consortium.

Ayanwale, A.B. and Bamire, S. (2004). Direct foreign investment and firm-level productivity in the Nigerian agro/agro-allied sector. *Journal of Social Science,* 9(1): 29-36.

Auzina-Emsina, A. (2014). Labour productivity, economic growth and global competitiveness in post-crisis period. *Procedia-Social and Behavioral Sciences,* 156: 317-321.

Bello, M.Z, Nagwari, A.B. and Saulawa, M.A. (2011). Crowding in or crowding out? Government spending and private investment: The case of Nigeria. *European Scientific Journal,* 8(28): 9-22.

Bleischwitz, R. (2001). Rethinking productivity: Why has productivity focused on labour instead of natural resources? *Environmental and Resource Economics,* 19(1), 23-36.

Contessi, S. and Weinberger, A. (2009). Foreign direct investment, productivity and country growth: An overview. *Federal Reserves Bank of St. Louis Review,* 91(2): 61-78.

Engle, R.F. and Granger, C.W.J. (1987). Cointegration and error correction: Representation, estimation, and testing. *Econometrica,* 55: 251-276.

Gatawa, N.M. and Bello, M.Z. (2011). An analysis of the effect of government expenditure on gross domestic private investment in Nigeria, 1975-2009. *European Scientific Journal*, 8(17): 46-60.

International Labour Organisation (2002). *Key Indicators of the Labour Market, 2001-2002*. ILO; New York.

Kalu, C.U. and Onyinye, M.O. (2015). Domestic private investment and economic growth in Nigeria: Issues and further consideration. *International Journal of Academic Research in Business and Social Science,* 5(2): 302-313.

Kipkurui, K.J. (2015). Foreign direct investment and labour productivity growth in Kenya. Unpublished MA thesis, School of Economics, University of Nairobi.

Kumar, N. and. Pradhan, J.P. (2002). Foreign direct investment, externalities and economic growth in developing countries: Some empirical explorations and implications for WTO negotiations on investment. RIS Discussion Papers 27, Research and Information System for the Non-aligned and Other Developing Countries, New Delhi.

Lee, G. (2007). Long-run equilibrium relationship between inward FDI and productivity. *Journal of Economic Development,* 32(2): 183-192.

Liang, F.H. (2008). *Does foreign direct investment improve the productivity of domestic Firms? Technology spillovers, industry linkages, and firm capabilities*. California, Berkeley:

University of California.

Lucas, R.E. Jr. (1988). On the mechanics of economic development. *Journal of Monetary Economics*, 22(2): 3-42.

Maia, A.G. and Menezes, E. (2014). Economic growth, labour and productivity in Brazil and the United States: A comparative analysis. *Brazilian Journal of Political Economy,* 34(2): 212-229.

Nazmi, N. and Ramirez, M.D. (2003). Public investment and economic growth in Latin America: An empirical test. *Review of Development Economics*, 7(1): 115-126.

Noor, Z.M., Isa N., Said R. and Jalil S.A. (2011). The impact of foreign workers on productivity in Malaysian manufacturing sector. *International Journal of Economics and Management,* 5(1): 169-178.

Nto-Philips, O.O., Igberi, C.O. and Mbanasor J.A. (2012). Determinants of productivity among manufacturing firms in south-eastern Nigeria: Cobb-Douglas stochastic frontier production function approach.

Owyong, D.T. (2011). Productivity growth: Theory and measurement. *APO Productivity Journal,* 19-29.

Pettinger, T. (2012). Gross fixed capital formation. Retrieved from www.economicshelp.org.

Phillips, P.C.B. and Hansen, B.E. (1990). Statistical inference in instrumental variables regression with I(1) processes. *Review of Economics Studies* 57: 99-125.

Pujula, A.L. and Zapata, H.O. (2015). Macroeconomic aspects of Ghana's export performance. Retrieved from http://purl.umn.edu/143039.

Sjo, B. (2008). Testing for unit roots and cointegration. Retrieved from https://pdfs.semanticscholar.org.

Ramirez, M.D. (2006). Does foreign direct investment enhance labour productivity growth in Chile? A cointegration approach. *Eastern Economics Journal,* 32(2): 205-220.

Ramirez, M.D. (2012). Are foreign and public investment spending productive in the Argentine case? A single break unit root and cointegration analysis, 1960-2010. *Modern Economy,* 3: 726-737.

Romer, P. M. (1986). Increasing returns and long-run growth. *Journal of Political Economy*, 94(5): 1002-1037.

Riley, J. (2010). Explain what is meant by labour productivity and how it can be measured? Retrieved from www.tutor2u.net/business/blog.

Spoehr, J., Burgan, B. and Molloy, S. (2012). *Public Investment, Productivity and Economic Growth: The role and contribution of debt funding*. Adelaide: Australian Institute for Social Research, University of Adelaide.

Sprague, S. (2014). What can labour productivity tell us about the US economy? *Productivity,* 3(12):1-14.

Ugur, A. and Ruane, F. (2004). Labour productivity and foreign direct investment in Irish manufacturing industry: A decomposition analysis. Discussion Paper No. 27 Economics Department, IIIS, Trinity College Dublin.

Umoru, D. and Yaqub, O. (2013). Labour productivity and health capital in Nigeria: Empirical evidence. *International Journal of Humanities and Social Science,* 3(4): 199- 221.

Volek, T. (2012). *Sectors Labour Productivity in the Context of Capital-Labour Ratio*. Ceske Budejovice: University of South Bohemia.

Zhang, Z. (2002). Productivity and economic growth: An empirical assessment of the contribution of FDI to the Chinese economy. *Journal of Economic Development* 27(2): 81-95.

Zghidi, N., Sghaier, I.M. and Abdia, Z. (2016). Does economic freedom enhance the impact of foreign direct investment on economic growth in the North African countries? Panel data analysis. *African Development Review,* 28(1): 64-74.