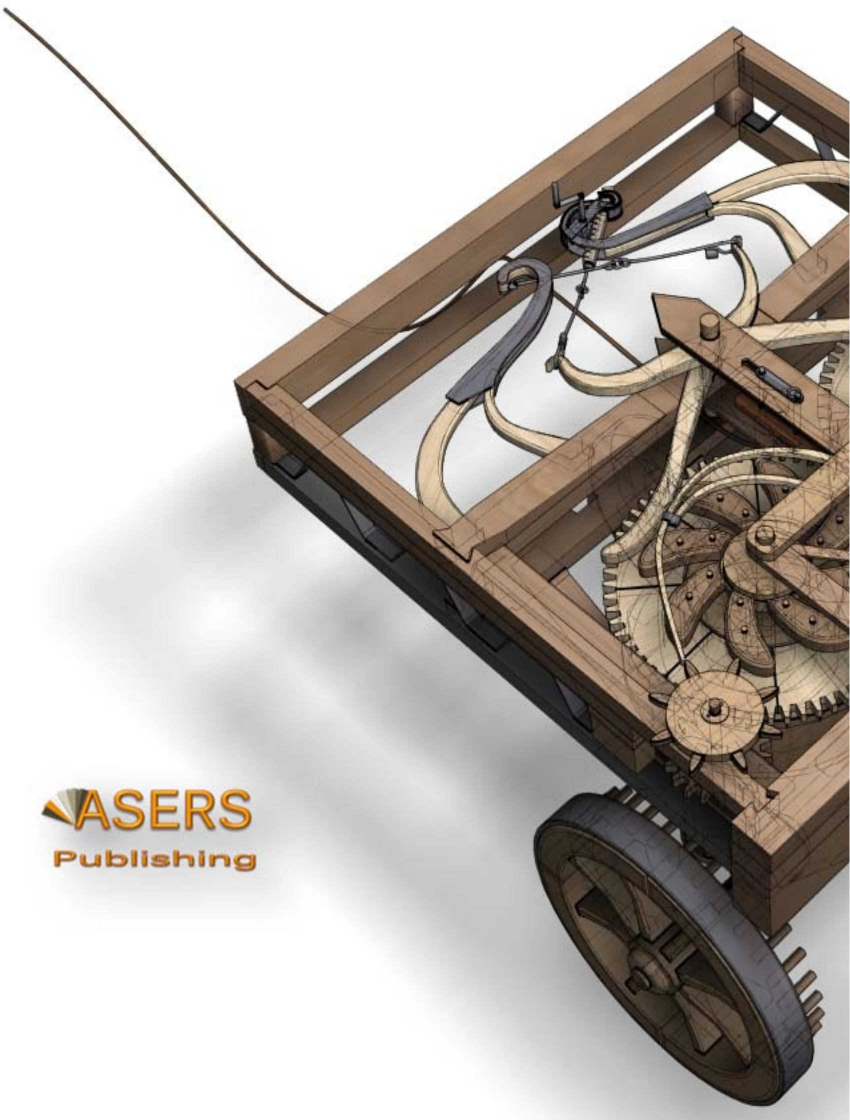
Theoretical and Practical Research in Economic Fields



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Theoretical and Practical Research in Economic Fields

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Theoretical and Practical Research in Economic Fields

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WHERE IS KENYA BEING HEADED TO? EMPIRICAL EVIDENCE FROM THE BOX-JENKINS ARIMA APPROACH

Thabani NYONI
University of Zimbabwe, Zimbabwe
nyonithabani35@gmail.com

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Abstract: *Using annual time series data on GDP per capita in Kenya from 1960 to 2017, the study analyzes GDP per capita using the Box – Jenkins ARIMA technique. The diagnostic tests such as the ADF tests show that Kenyan GDP per capita data is I (2). Based on the AIC, the study presents the ARIMA (3, 2, 1) model. The diagnostic tests further show that the presented parsimonious model is stable and reliable. The results of the study indicate that living standards in Kenya will improve over the next decade, as long as the prudent macroeconomic management continues in Kenya. Indeed, Kenya's economy is growing. The study offers 3 policy prescriptions in an effort to help policy makers in Kenya on how to promote and maintain the* much-needed *growth.*

Keywords: GDP per capita; forecasting; Kenya.

JEL Classification: C53; E37; 047.

Introduction

Policy makers and analysts are continually assessing the state of the economy (Barhoumi *et al*. 2011). The Gross Domestic Product (GDP) is one of the primary indicators used to measure the healthiness of a country's economy (Onuoha *et al*. 2015). GDP is the broadcast measure of the total output of the economy (Ruffin 1998). GDP is also used to determine the standard of living of individuals in an economy (Onuoha *et al*. 2015) and is also a popular measure of economic growth. Economic growth can be defined as a sustained increase in per capita national output or net national product over a long period of time (Nyoni and Bonga 2018).

Sustainable economic growth mainly depends on a nation's ability to invest and make efficient and productive use of the resources at its disposal (Nyoni and Bonga 2017). In Kenya, just like in any other country, the need for a more consistent and accurate GDP forecast for the conduct of forward-looking monetary policy is unstoppable. This could be attributed to the fact that the availability of real-time data is very important especially in determining the initial conditions of economic activity on latent variables such as the output gap to make more realistic policy recommendations. This research attempts to model and forecast Kenyan GDP per capita over the period 1960 – 2017. The rest of the paper is organized as follows: literature review, materials and methods, results and discussion and conclusion; in chronological order.

1. Literature Review

Using an econometric Artificial Neural Network (ANN) model, Junoh (2004), predicted GDP growth in Malaysia using data ranging over the period 1995 – 2000 and found out that the neural network technique has an increased potential to predict GDP growth based on knowledge-based economy indicators compared to the traditional econometric approach. Lu (2009), in the case of China; modeled and forecasted GDP based on ARIMA models using annual data from 1962 to 2008 and established that the ARIMA (4, 1, 0) model was the optimal model.

Bipasha and Bani (2012) forecasted GDP growth rates of India based on ARIMA models using annual data from 1959 to 2011 and found out that the ARIMA (1, 2, 2) model was the optimal model to forecast GDP growth in India. Dritsaki (2015) analyzed real GDP in Greece basing on the Box-Jenkins ARIMA approach during the period 1980 – 2013 and found out that the ARIMA (1, 1, 1) model was the optimal model. Wabomba *et al.* (2016), in a Kenyan study, modeled and forecasted GDP using ARIMA models with an annual data set ranging from 1960 to 2012 and established that the ARIMA (2, 2, 2) model was the best for modeling the Kenyan GDP.

2. Materials and Methods

2.1. ARIMA Models

ARIMA models are often considered as delivering more accurate forecasts then econometric techniques (Song *et al.* 2003b). ARIMA models outperform multivariate models in forecasting performance (du Preez and Witt 2003). Overall performance of ARIMA models is superior to that of the naïve models and smoothing techniques (Goh and Law 2002). ARIMA models were developed by Box and Jenkins in the 1970s and their approach of identification, estimation and diagnostics is based on the principle of parsimony (Asteriou and Hall 2007). The general form of the ARIMA (p, d, q) can be represented by a backward shift operator as:

$$\emptyset(B)(1-B)^d GDP_t = \theta(B)\mu_t \tag{1}$$

Where the autoregressive (AR) and moving average (MA) characteristic operators are:

$$\emptyset(B) = \left(1 - \emptyset_1 B - \emptyset_2 B^2 - \cdots - \emptyset_p B^p\right) \tag{2}$$

$$\theta(B) = \left(1 - \theta_1 B - \theta_2 B^2 - \theta_q B^q\right) \tag{3}$$

and

$$(1-B)^d GDP_t = \Delta^d GDP_t \tag{4}$$

where: $\emptyset$ is the parameter estimate of the autoregressive component;

θ is the parameter estimate of the moving average component; Δ is the difference operator; d is the difference; B is the backshift operator;

μ_t is the disturbance term.

2.2. The Box – Jenkins Methodology

The first step towards model selection is to difference the series in order to achieve stationarity. Once this process is over, the researcher will then examine the correlogram in order to decide on the appropriate orders of the AR and MA components. It is important to highlight the fact that this procedure (of choosing the AR and MA components) is biased towards the use of personal judgement because there are no clear – cut rules on how to decide on the appropriate AR and MA components. Therefore, experience plays a pivotal role in this regard. The next step is the estimation of the tentative model, after which diagnostic testing shall follow. Diagnostic checking is usually done by generating the set of residuals and testing whether they satisfy the characteristics of a white noise process. If not, there would be need for model re – specification and repetition of the same process; this time from the second stage. The process may go on and on until an appropriate model is identified (Nyoni 2018).

2.3. Data Collection

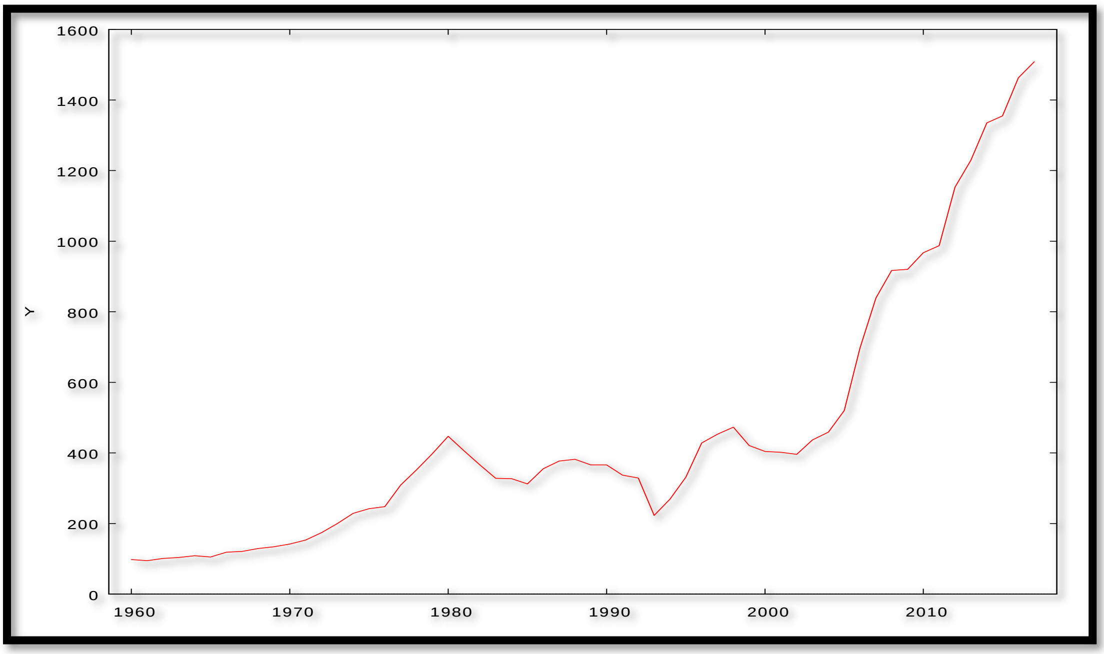
This paper is based on 58 observations (1960 – 2017) of annual GDP per capita (Y, referred to as GDP in the mathematical formulations above) in Kenya. The data used in this paper was collected from the World Bank online database, one of the most credible sources of macroeconomic data.

3. Diagnostic Tests & Model Evaluation

3.1. Stationarity Tests: Graphical Analysis

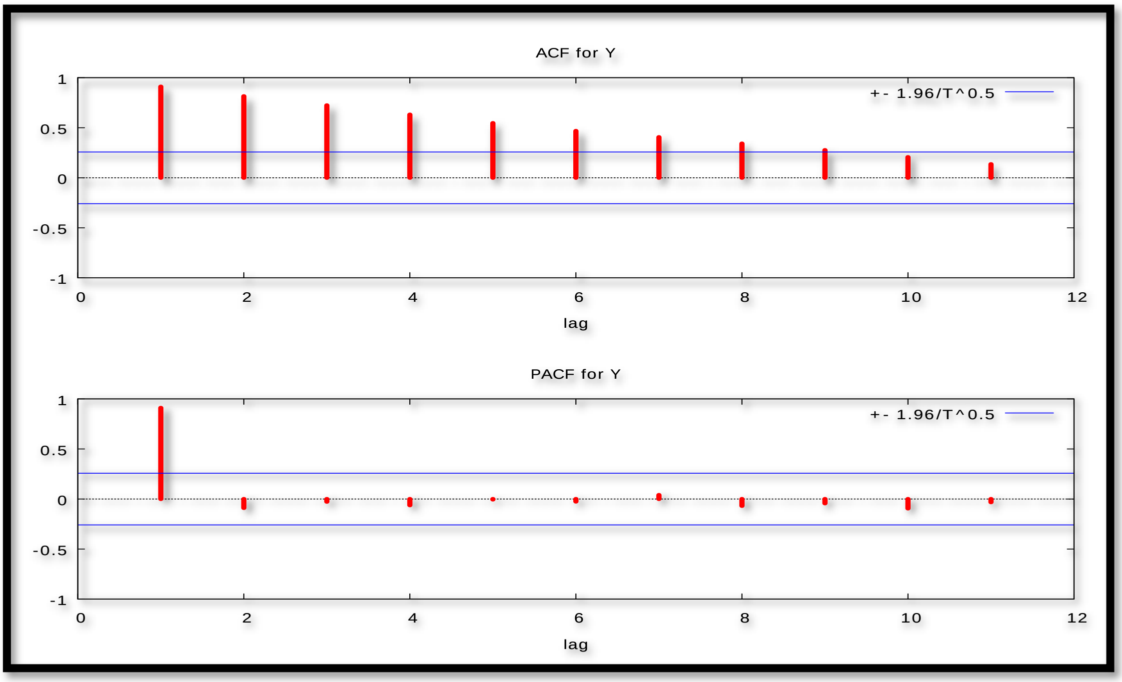
Y variable is not stationary because it is trending upwards over the period under study and this simply shows that the mean of Y is changing over time and thus its variance is not constant over time.

Figure 1. Graphical analysis



3.2. The Correlogram in Levels

Figure 2. Correlogram in levels



3.3. The ADF Test

Table 1. Levels-intercept

Variable	ADF Statistic	Probability	Critical Values		Conclusion
Y	2.686539	1.0000	-3.557472	@1%	Not stationary
			-2.916566	@5%	Not stationary
			-2.596116	@10%	Not stationary

Table 2. Levels-trend & intercept

Variable	ADF Statistic	Probability	Critical Values		Conclusion
Y	1.021526	0.9999	-4.137279	@1%	Not stationary
			-3.495295	@5%	Not stationary
			-3.176618	@10%	Not stationary

Table 3. Without intercept and trend & intercept

Variable	ADF Statistic	Probability	Critical Values		Conclusion
Y	3.547690	0.9998	-2.608490	@1%	Not stationary
			-1.946996	@5%	Not stationary
			-1.612934	@10%	Not stationary

3.4. The Correlogram (at 1st Differences)

Figure 3. Correlogram at 1st differences

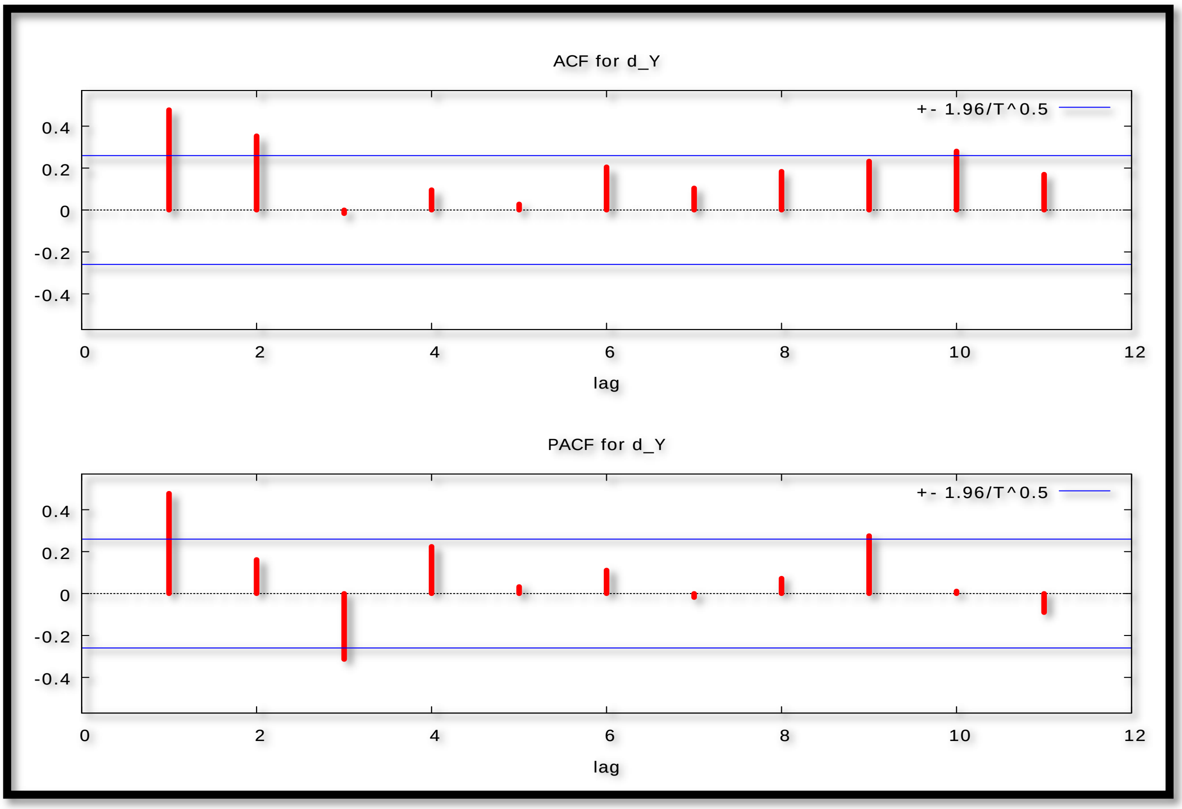


Table 4. 1st Difference-intercept

Variable	ADF Statistic	Probability	Critical Values		Conclusion
Y	-4.366350	0.0009	-3.552666	@1%	Stationary
			-2.914517	@5%	Stationary
			-2.595033	@10%	Stationary

Table 5. 1st Difference-trend & intercept

Variable	ADF Statistic	Probability	Critical Values		Conclusion
Y	-4.829923	0.0014	-4.137279	@1%	Stationary
			-3.495295	@5%	Stationary
			-3.176618	@10%	Stationary

Table 6. 1st Difference-without intercept and trend & intercept

Variable	ADF Statistic	Probability	Critical Values		Conclusion
Y	-1.723889	0.0802	-2.609324	@1%	Not stationary
			-1.947119	@5%	Not stationary
			-1.612867	@10%	Stationary

Figures 2 and 3 as well as Tables 1 – 3 and Tables 4 – 6, all indicate the non-stationarity of Y in both levels and after taking first differences respectively.

3.5. The Correlogram in (2nd Differences)

Figure 4. Correlogram in 2nd differences

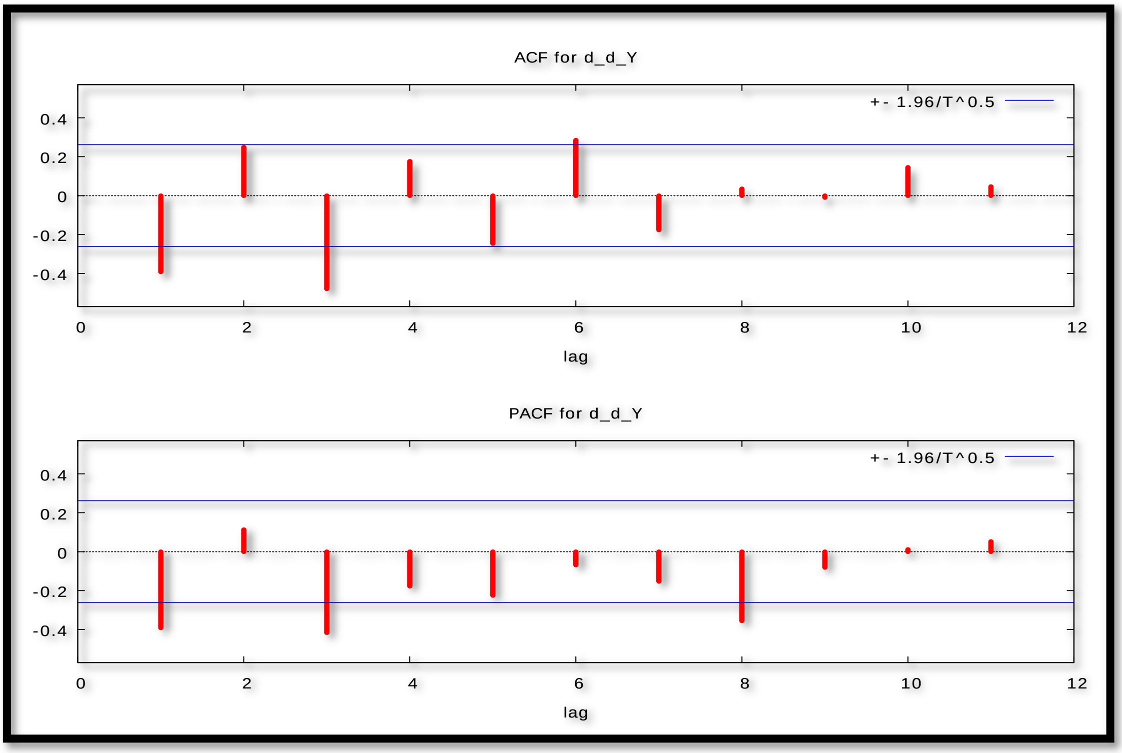


Table 7. 2nd Difference-intercept

Variable	ADF Statistic	Probability	Critical Values		Conclusion
Y	-6.772896	0.0000	-3.560019	@1%	Stationary
			-2.917650	@5%	Stationary
			-2.596689	@10%	Stationary

Table 8. 2nd Difference-trend & intercept

Variable	ADF Statistic	Probability	Critical Values		Conclusion
Y	-6.711486	0.0000	-4.140858	@1%	Stationary
			-3.496960	@5%	Stationary
			-3.177579	@10%	Stationary

Table 9. 2nd Difference-without intercept and trend & intercept

Variable	ADF Statistic	Probability	Critical Values		Conclusion
Y	-6.820462	0.0000	-2.609324	@1%	Stationary
			-1.947119	@5%	Stationary
			-1.612867	@10%	Stationary

Figure 4 and Tables 7 – 9 confirm that Y is stationary after taking second differences. Thus Y is an I (2) variable.

3.6. Evaluation of ARIMA Models (without a constant)

Table 10. Model evaluation

Model	AIC	U	ME	MAE	RMSE	MAPE
ARIMA (1, 2, 1)	589.9070	0.96927	1.5439	29.635	44.163	7.1836
ARIMA (1, 2, 2)	591.6601	0.95719	1.6738	29.47	43.999	7.1579
ARIMA (1, 2, 0)	594.3610	0.9815	1.6394	31.238	47.025	7.4152
ARIMA (1, 2, 3)	586.1932	0.87921	5.8464	27.536	41.091	6.7615
ARIMA (0,2, 1)	593.0066	0.94439	4.7982	31.301	46.208	7.5529
ARIMA (0, 2, 2)	592.1265	0.92318	5.9013	30.23	44.986	7.3011
ARIMA (3, 2, 1)	**581.0519**	**0.8653**	5.6265	25.44	39.115	6.432

A model with a lower AIC value is better than the one with a higher AIC value (Nyoni 2018). In this paper, I only make use of the AIC in order to select the optimal model. Therefore, the ARIMA (3, 2, 1) model is chosen.

3.7. Residual & Stability Tests

3.7.1. ADF Tests of the Residuals of the ARIMA (3, 2, 1) Model

Table 11. Levels-intercept

Variable	ADF Statistic	Probability	Critical Values		Conclusion
ε_t	-6.999771	0.0000	-3.562669	@1%	Stationary
			-2.918778	@5%	Stationary
			-2.597285	@10%	Stationary

Table 12. Levels-trend & intercept

Variable	ADF Statistic	Probability	Critical Values		Conclusion
ε_t	-7.052709	0.0000	-4.144584	@1%	Stationary
			-3.498692	@5%	Stationary
			-3.178578	@10%	Stationary

Table 13. Without intercept and trend & intercept

Variable	ADF Statistic	Probability	Critical Values		Conclusion
ε_t	-6.906506	0.0000	-2.610192	@1%	Stationary
			-1.947248	@5%	Stationary
			-1.612797	@10%	Stationary

Tables 11, 12 and 13 show that the residuals of the ARIMA (3, 2, 1) model are stationary.

3.7.2. Stability Test of the ARIMA (3, 2, 1) Model

Figure 5. Stability test

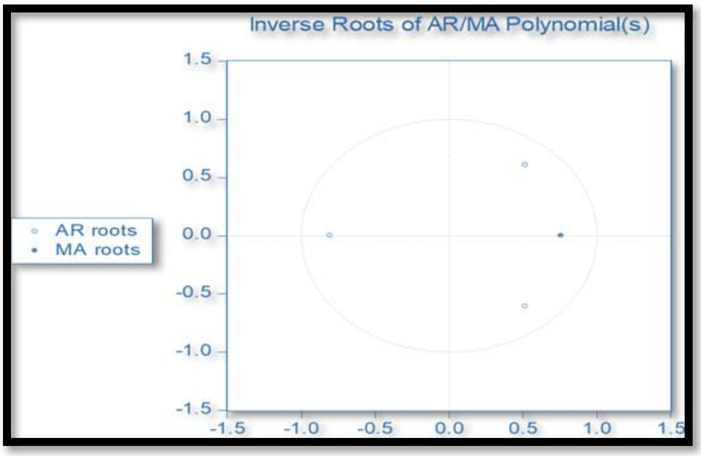


Figure 5 reveals that the ARIMA (3, 2, 1) model is very stable because the corresponding inverse roots of the characteristic polynomial lie in the unit circle.

4. Results and Discussion

4.1. Descriptive Statistics

Table 14. Descriptive Statistics

Description	Statistic
Mean	462.86
Median	366
Minimum	95
Maximum	1508
Standard deviation	372.57
Skewness	1.4372
Excess kurtosis	1.1020

Table 14 above, shows that the mean is positive, *i.e.* 462.86. The minimum GDP per capita is 95 and was realized in 1961. The maximum GDP per capita is 1508 and was realized in 2017. The skewness is 1.4372 and the most essential feature is that it is positive, indicating that the Y series is positively skewed and non-symmetric. Nyoni and Bonga (2017) aver that the rule of thumb for kurtosis is that it should be around 3 for normally distributed variables and yet in this piece of work, kurtosis has been found to be 1.1020; indicating that the Y series is indeed not normally distributed.

4.2. Results Presentation[1]

ARIMA (3, 2, 1) Model:

$$\Delta^2 Y_{t-1} = 0.2277\Delta^2 Y_{t-1} + 0.1896\Delta^2 Y_{t-2} - 0.4844\Delta^2 Y_{t-3} - 0.7446\mu_{t-1} \quad (5)$$

P: (0.1270) (0.1444) (0.0001) (0.0000)

S. E: (0.149252) (0.129933) (0.127317) (0.137812)

Table 15. Results

Variable	Coefficient	Standard Error	z	p-value
AR (1)	0.227745	0.149252	1.526	0.1270
AR (2)	0.189633	0.129933	1.459	0.1444
AR (3)	-0.484357	0.127317	-3.804	0.0000***
MA (1)	-0.744627	0.137812	-5.403	0.0000***

4.3. Interpretation of Results

Table 15 shows that the coefficient of AR (3) is negative and statistically significant at 1 % level of significance while the MA (1) coefficient is also negative and statistically significant at 1% level of significance. This indicates the importance of the AR (3) and MA (1) components in explaining GDP per capita in Kenya. The striking feature of these results is the importance of previous period shocks in explaining GDP per capita in Kenya, as reveal by the MA component. This implies that shocks to the Kenyan economy, for example, unpredicted political outcomes are quite pivotal in influencing the level of living standards in Kenya.

Figures 6 and 7, with a forecast range of 10 years; clearly reveal that Kenyan GDP per capita is set to improve over the next decade, especially if the current economic policy stance is either maintained or improved. By the end of the year 2020, Kenyan GDP per capita is expected to be approximately 1760.19 USD, which clearly confirms that Kenyan is being headed to the "promised land of milk and honey".

[1] The *, ** and *** means significant at 10%, 5% and 1% levels of significance; respectively.

Figure 6. Forecast graph

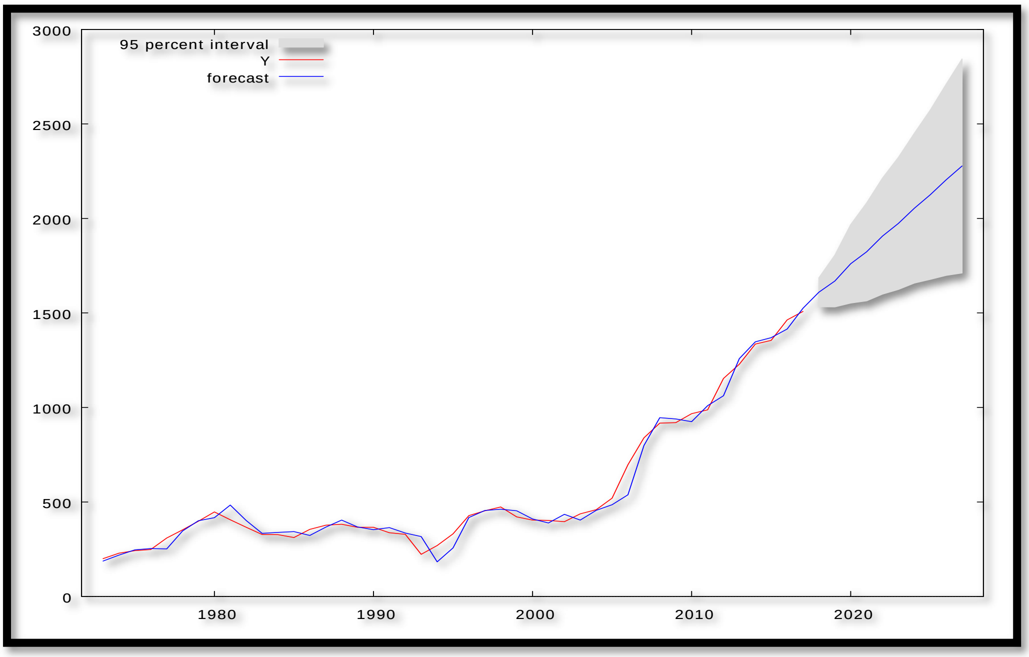
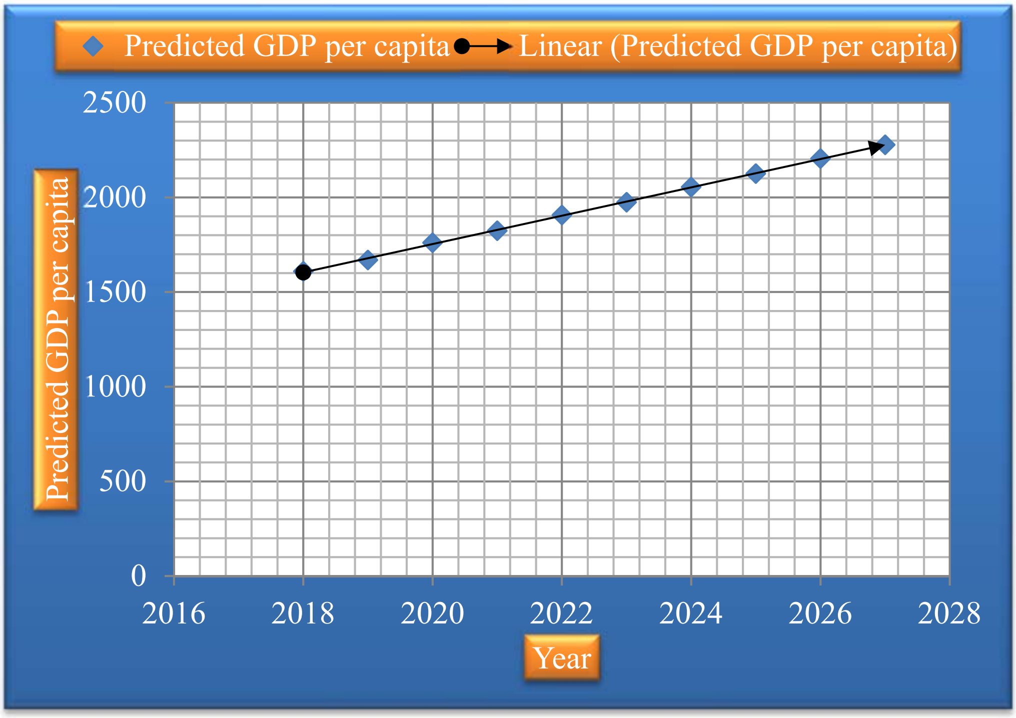


Figure 7. Predicted GDP per capita for the next 10 years



5. Policy Recommendations

- The CBK should continue to prioritize low and stable inflation and encourage growth through their monetary policy;
- Supporting long-term public debt sustainability through stables interest rates is also good policy stance and should be equally taken seriously;
- The CBK should continue to enhance financial access in the economy.

Conclusion

This study showed that the ARIMA (3, 2, 1) model is the optimal model to model and forecast GDP per capita in Kenya over the period 1960 – 2017. The study indicates that GDP per capita of Kenya is expected to rise in the next decade, as long as prudent macroeconomic management continues. This study is not the end of the road, but simply the starting point for policy makers in Kenya and the next thing is that they should act accordingly.

References

[1] Asteriou, D., and Hall, S.G. 2007. *Applied econometrics: A modern approach using eviews and microfit revised edition.* Palgrave MacMillan. ISBN: 0230506402, 9780230506404, 256 pp.

[2] Barhoumi, K., *et al*. 2011. Monthly GDP forecasting using bridge models: Application for the French economy. *Bulletin of Economic Research*, 64 (1): 53-70. DOI:https://doi.org/10.1111/j.1467-8586.2010.00359.x

[3] Du Preez, J., and Witt, S.F. 2003. Univariate and multivariate time series forecasting: An application to tourism demand. *International Journal of Forecasting*, 19 (3): 435-451.

[4] Goh, C., and Law, R. 2002. Modeling and forecasting tourism demand for arrivals with stochastic non-stationary seasonality and intervention. *Tourism Management*, 23(5):499-510. DOI:https://doi.org/10.1016/S0261-5177(02)00009-2

[5] Nyoni, T. 2018. *Box – Jenkins ARIMA approach to predicting net FDI inflows in Zimbabwe*. Munich University Library – Munich Personal RePEc Archive (MPRA), Paper No. 87737.

[6] Nyoni, T. 2018. Modeling and forecasting inflation in Kenya: Recent insights from ARIMA and GARCH analysis. *Dimorian Review*, 5 (6):16-40. ISSN: 2394-9163

[7] Nyoni, T., and Bonga, W.G. 2017. An empirical analysis of the determinants of private investment in Zimbabwe. *DRJ – Journal of Economics and Finance,* 2 (4): 38-54

[8] Nyoni, T., and Bonga, W.G. 2017. Population growth in Zimbabwe: A threat to economic development? *DRJ – Journal of Economics and Finance,* 2 (6): 29-39.

[9] Nyoni, T., and Bonga, W.G. 2018. What determines economic growth in Nigeria?" *DRJ – Journal of Business and Management*, 1 (1): 37-47.

[10] Onuoha, D.O., *et al*. 2015. Analysis of the Gross Domestic Product (GDP) of Nigeria: 1960 – 2012. *West African Journal of Industrial & Academic Research*, 14 (1): 81-90.

[11] Ruffin, R.J. 1997. *Principles of macroeconomics.* University of Chicago Press. ISBN: 9780673460219.

[12] Song, H., *et al*. 2003. Tourism forecasting: Accuracy of alternative econometric models. *International Journal of Forecasting*, 19 (1): 123-141. DOI:http://dx.doi.org/10.1016/S0169-2070(01)00134-0

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WILLIAM NASSAU SENIOR AND THE RELATIONSHIP BETWEEN ABSTINENCE, CAPITAL AND INTEREST

Alessandro MORSELLI
University of Rome Unitelma Sapienza, Italy
alessandro.morselli@tin.it
alessandro.morselli@unitelmasapienza.it

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Abstract: *This paper highlights Senior's credit for having introduced the analysis of "abstinence" into the economic vocabulary and its importance in the formation of capital; and also, how the latter, with him, undergoes a strong improvement compared to the original formulations. It is reasonable to believe that Senior's influence was truly important, since all the subsequent efforts to extend the analysis of marginal utility to the distribution of resources over time by the concept of temporal rate derive from Senior's theory of abstinence.*

Keywords: abstinence, capital, capitalist, interest, marginal utility, value.

JEL Classification: B12, B13, E14.

Introduction

The original theory of interest related to abstinence (Senior 1836-1965, 58-60; Conard 1959, 26), and for which Senior is famous, has long been recognized as the most comprehensive of "classical" theories (Bowley 1937, 137; Brandford Delong 1986, 326).

However, as soon as this theory is related to "classical" analyses[2], it is only considered as a necessary missing link in the cost of production theory of value; this fact has been overlooked because Senior's work has not been understood as an effort to build a system that would hold together Say's and Ricardo's results. It would be reductive, however, if the theory of capital of one of the most eminent representatives of the marginalistic approach had served merely to improve a theory of value[3] with which Senior disagreed (Rossitto 1993, 67).

And if this is the case, it would be impossible to explain why the later theories of capital depended in any way on Senior's concept of abstinence. Therefore, it is plausible that there must be some important detail in the theory of abstinence that needs to be highlighted (Senior 1836-1965, 66-67).

Senior (1836-1965, 58-59) introduced the term *abstinence*, corresponding to the sacrifice made by capitalists who invested their profits rather than using them in unnecessary expenses. Abstinence justified profit in the same way that hard work justified wages.

Senior had been able to put into practice the ideas underlying the Ricardian analysis of the time. Capital, for him, is neither labour nor land, nor any particular combination of both, but it is the intermediate product that results from the application of current uses to provide for the future, postponing current consumption. The productivity of capital is explained, at the same time, as originating in the release of current resources in order to

[2] For an exhaustive criticism of the logical structure of the classical model see Bailey (1825, 1-5).
[3] For a subjective interpretation of value, see Whately's work (1832), *Introductory lectures on political economy*. Furthermore, Lloyd (1832) in his analysis distinguishes between total and marginal utility and links his subjective history of value to a principle of decreasing marginal utility.

produce intermediate goods with the same deferral of enjoyment; in short, the application of resources for remote purposes makes it possible to produce through indirect methods (Mill 2006, 581-586).

Thus, Senior justified both the demand for capital and abstinence with the higher physical productivity of the indirect method of production, which can only be used if the future is put before the present enjoyment. In this proposition, perhaps, the real omission rests in the function of capital in making possible adjustments between the marginal utility of income in different time spans. After his analysis of productive and unproductive consumption this was inevitable, although Senior generally defined abstinence to include it (Marx 2006, 14-16; De Marchi 1987). However, his presentation of the conditions concerning the offer of abstinence contains traces of temporal discomfort. He stated that the formation of capital concerns a defined present and a painful sacrifice, namely the abstinence of the current consumption to which people submit only with a view to a future reward. In fact (Senior 1836-1965, 140):

"Profits and Wages differ in almost all respects from Rent. They are each subject to a minimum and a maximum. They are subject to a minimum, because each of them is the result of a sacrifice. It may be difficult to say what is the minimum with respect to profit, but it is clear that every capitalist, as a motive to abstain from the immediate and unproductive enjoyment of his capital, must require some remuneration exceeding the lowest that is conceivable. On the other hand, as the rate of wages depends in a great measure on the number of labourers, and the rate of profit on the amount of capital, both high wages and high profits have a tendency to produce their own diminution".

The question of why people should prefer present goods to future goods was made less transparent by Senior, except for the part in which he related the inability to understand the future, namely the lack of foresight; a reluctance to abstain (Senior 1836-1965, 59-60):

"To abstain from the enjoyment which is in our power, or to seek distant rather than immediate results, are among the most painful exertions of the human will. It is true that such exertions are made, and indeed are frequent in every state of society, except perhaps in the very lowest, and have been made in the very lowest, for society could not otherwise have improved; but of all the means by which man can be raised in the scale of being, abstinence, as it is perhaps the most effective, is the slowest in its increase, and the least generally diffused. Among nations, those that are the least civilized, and among the different classes of the same nation those which are the worst educated, are always the most improvident, and consequently the least abstinent".

Thus, Senior's theory of capital and interest (Ricossa 1998, 256) was based on the explanation of the demand for capital due to the peculiar productivity of capital, and the supply of capital in the form of the real cost of saving. The relationship between time and productivity was introduced into Smith's "Wealth of Nations", it was only admitted as capital in formation and considered as an independent source of productivity by Ricardo after an intellectual struggle (Ekelund and Hébert 1975, 103).

These were the foundations on which Senior began to analyze the relationship between capital and other factors and the nature of the real cost that seemed to limit the supply of capital. In identifying this cost by calling it "abstinence," Senior was only able to make explicit the relationship between the supply of capital offer and its price. In fact (Senior 1836-1965, 97-98):

"The term "cost of production" must be familiar to those who are acquainted with the writings of modern Economists; hut, like most terms in Political Economy, though currently used, it has never been accurately defined; and it appears to us impossible that it should have been defined without the assistance of the term "abstinence," or of some equivalent expression. Mr. Ricardo admits that profit also forms a part of the cost of production. Mr. Mill, by a stretch of language, in the convenience of which we cannot concur, includes profit under the term labour. The definitions of Mr. Ricardo and Mr. Mill appear, therefore, to coincide. And that adopted by Mr. Malthus only differs from them in referring, not to the labour that has been employed, but to that which must be employed if the production must be continued. In this respect the language of Mr. Malthus is undoubtedly the most correct. The sacrifices that have been made to produce a given commodity have no effect on its value. All that the purchaser considers is the amount of sacrifice that its production would require at the time of the exchange. And when Mr. Ricardo and Mr. Mill speak of the labour which has been employed on a commodity as affecting its value, they must be understood as implying that the circumstances of production remain unchanged".

However, this explanation does not mark a regression to the cost of production of the theory of value either of capital or of goods; it puts both profits and wages on an equal footing. The mere mention of real costs does not mean that the value is determined solely by the cost of production. For this reason von Böhm-Bawerk (1907) criticized Senior's theory of abstinence, because of the link between value and cost of production theory.

Except where production takes place under constant cost conditions (Senior took great care in pointing this out) costs are only a part of the determinants of value. Senior denied that the value derived from work or abstinence or any other cost; it is governed solely by costs. As for the relationship between the cost of abstinence and the present value of abstinence, Senior did not propose that this cost be the only determinant of price. In fact, he spent much more time explaining why abstinence is productive than why it is scarce.

In the absence of direct evidence to the contrary, it is more reasonable to think that Senior's assumption derived the income of all factors from the value of their products rather than from their respective production costs. However, there are passages that support this interpretation in relation to the analysis of rent. In fact, he states (Senior 1836-1965, 128-129):

"We will begin by recurring to a subject to which we have already alluded, the frequent difficulty of deciding whether a given revenue ought or ought not to be called Rent. When an estate has been for some time leased to a careful tenant, it generally receives permanent ameliorations, which enable the owner, at the expiration of the lease, to obtain a higher rent. Is the increase of revenue rent or profit? It arises from an additional fertility, now inseparably attached to the land. It is received by the owner without sacrifice on his part. It is, in fact, undistinguishable from the previous rent. On the other hand, its existence is owing to the abstinence of the farmer, who devoted to a distant object, the amelioration of the land, labour which he might have employed in producing immediate enjoyment for himself. If the owner of the estate had farmed it himself, and had directed labour to be employed on its permanent improvement, the additional produce occasioned by those improvements would clearly have been termed profit. It appears, therefore, most convenient to term it profit when occasioned by the improvements made by a tenant".

It is evident in this passage that Senior derives profit directly from the value of that extra-product made possible by that abstinence. Since rent derived directly from the value of the product, it is clear that if profits are confused with rent in certain circumstances, they must derive from the value of the product of abstinence. This position is made clear by Senior (1836-1965, 128-129) in the following passage:

"For all useful purposes, the distinction of profit from rent ceases as soon as the capital, from which a given revenue arises, has become, whether by gift or by inheritance, the property of a person to whose abstinence and exertions it did not owe its creation. The revenue arising from a dock, or a wharf, or a canal, is profit in the hands of the original constructor. It is the reward of his abstinence in having employed capital for the purposes of production instead of for those of enjoyment. But in the hands of his heir it has all the attributes of rent. It is to him the gift of fortune, not the result of a sacrifice".

In the end, the analysis of this work highlights the scientific progress achieved by Senior through the elaboration of the theory of "abstinence", which contributed, in a significant way, to the improvement of the formation of capital.

1. Abstinence and Capital

After describing the relationships between profit, rent and abstinence, Senior dwells on the importance of abstinence in the formation of capital. In fact, he states (Senior 1847-52, lecture 8):

"To a certain extent it is the gift of nature. Nature gave to man all the globe and all its contents: Scarcely any gift of nature, however, except the sea, is of much service to man until he has fashioned it to his use. And that fashion in general contributes to its utility much more than the mere bounty of nature. The ore out of which an anchor has been made had little value while it was buried in the mine. A second cause therefore of the existence of capital is human industry. All the products of human industry are not capital, or the word capital would be synonymous with the word wealth.[4] Capital is wealth destined to be employed productively. Something therefore besides nature and industry must concur to produce it, and to that third something, to the cause which occasions a given article of wealth to be used productively I give the name of abstinence. By that term I express the conduct of a person who either abstains from the unproductive use of what he can command or designedly prefers the production of remote to that of immediate results. The union of industry and abstinence I express by the term accumulation".

It is evident that Senior thought of the existence of capital as dependent on people's propensity to allocate current resources to future productions and this function makes it possible to achieve greater production through indirect methods of production (Bowley 1936).

[4] According to Senior, wealth is everything that is the object of exchange, that is, everything that has value. This is characterised by the coexistence of three elements: 1) transferability; utility; limitation of supply. Transferability is an intrinsic characteristic of the exchange value, whereas utility and limitation of supply indicate the magnitude of the value of an asset that depends not only on utility, *i.e.* the propensity to satisfy a need, but also on the quantity available. Thus, the principle that later on marginalists will call 'decreasing marginal utility' is outlined (Senior 1836-1965, 11).

To make the capital-time relationship clearer, Senior introduced the distinction between thrift and prudence that he considered to be derived from abstinence; thrift was seen as mere refraining from using a commodity and prudence as the use of work to produce distant results (Rossitto 1993, 77).

As for the reasons that influence savings, Senior devoted more attention to the relationship between the return of capital and the supply of it, as well as opportunities for investment. In fact (Senior 1847-52, lecture 9):

"In fact it is in general the average price paid for the purchase or for the hire of durable instruments, and, in particular, the average number of years' purchase of land, and the average interest of money, which decides, in every particular society, the extent to which a member of that society will carry his providence, or, in other words, what degree of future advantage will induce him to sacrifice for a given time a given amount of the means of present enjoyment. Those people whose providence is less than the average providence of the society in which they live, if they are born poor, remain poor. The average remuneration of abstinence appears to them inadequate. Those on the other hand who are born rich, if deficient in ordinary providence do not remain rich. They can part with the instruments from which their incomes are derived for sums which according to their estimate of the present com-pared to the future are above their value. Those whose providence exceeds that of the society in which they live become rich. They become purchasers of the productive instruments which the improvident sell. They work up materials affording a return rather more distant or a profit rather smaller than those generally used, and of those instruments they can choose the most certain. With every fall of the ordinary rate of interest the sphere of providence is extended".

2. Interest and Capital

The theory of capital with Senior underwent a considerable improvement over the original terms, but the theory was not consistent overall. As a matter of fact, he never explained the relationship between interest rate and the maintenance of fixed capital (Rossitto 1993, 78).

Leaving aside his actual credits, it must be admitted, however, that Senior's concept of abstinence had influenced the evolution of economic theory (Gootzeit 1992).

From 1836 onwards the insufficiency of the cost of production theory, as the foundation of the theory of value, was filled by the simple word 'abstinence' and in this respect Mill accepted it by incorporating it into the English theory of capital (Senior 1848). Where the cost of production theory of value was never accepted, as in France and Germany, the usefulness of the term was reduced to a concept necessary to complete cost analysis rather than value analysis. But it is an integral part of the theory that prevailed in the United Kingdom, although the change in the word 'abstinence' with 'expectation' is due to Marshall's recognition (Augello and Guidi 2007, 79). As a result, Senior's direct experience of the development of the English theory of capital was probably greater than others.

Outside England, however, his theory was much criticised by von Böhm-Bawerk (1930) and Fisher (1930). Their main criticism lay in the fact that saving does not imply any particular additional cost compared to what is always included in the choice between rare satisfactions; therefore, abstinence cannot - they claim - be separated from any other form of sacrifice. As a first step, this criticism appears justified, but the problem remains to explain the scarcity of supply of capital. Von Böhm-Bawerk recognized the problem and tried to overcome it with the analysis of the three degrees of the greater value of the present assets compared to the future ones. The technical superiority of the present resources over future ones, the better provision for the future than the present and the psychological underestimation of the future.

Perhaps it is unnecessary to discuss his failure to set the first of these levels as an independent explanation, as this has been extensively demonstrated. However, the last level is important because the presence of discomfort is as much a good explanation for limiting the supply of capital as the sacrifice of saving, or abstinence. It seems clear that if there were no underestimation of the future there would be no particular sacrifice associated with saving apart from that associated with any other choice between poor satisfactions, since there would be no difference between the distribution of income flows between different current expenditures and between present and future expenditures. The act of saving resources would therefore have a three-dimensional value. If, on the other hand, and in general, there is a temporal discomfort, it means that people feel a difficulty and dissatisfaction in having taken into account the future when considering their own expenses. In short, the existence of a temporal reduction was due to sacrifice, that is to the disutility connected to saving or as Senior says: "the pain in practising abstinence". Fisher's criticism of his concept of capital income makes this clearer and, at the same time, allows for an explanation of why he criticizes the theory of abstinence. Fisher (1930), in considering the whole problem of capital and interest as one of the balancers of the marginal utility of income flows over time, deliberately considers in capital all the resources of future income as stocks of consumer goods and durable consumer goods, whoever the owners may be.

Fisher says that capital is global wealth considered over a given period of time; income is the total of services derived from all stocks. In this sense it is understood as a flow over time. Senior strove to avoid this broad concept, using the distinction between productive consumption and unproductive consumption. The effort was almost superfluous with reference to the aspect of abstinence that he was trying to highlight, namely the distinction of scarce resources over time. Given these circumstances, and in the absence of further clarification, Fisher had rather understood the theory of abstinence as a denial of the broad approach that he favored, and as a branch of the cost of production. It is also likely that Fisher's interest in analysing the various factors that influence the expression of individual and temporal discomfort prevented him from fully appreciating the relationship between the existence of general discomfort and the sacrifice related to practising prudence. But this is precisely the fundamental disutility of prudence, which prevents individuals from distributing their income over time in order to maximize the utility of their lives.

If the interpretations of von Böhm-Bawerk's (1930) and Fisher's (1930) criticisms are correct, it is reasonable to believe that Senior's influence was really important. After Longfield (1931, 25-28), considered as the forerunner of the doctrine of marginal utility in post-Ricardian England, all subsequent efforts to extend the analysis of marginal utility to the distribution of resources over time through the concept of "temporal rate" derive, either directly or indirectly, from Senior's theory of abstinence.

3. The Difference Between Abstinence and Rent

Senior had the merit of introducing the analysis of abstinence or savings into the economic vocabulary. He affirms that abstinence does not produce wealth, but it possesses the strength to create it because it pertains to sacrifice (or surrender) in the same way as the labour factor. Until Senior, capital income had been the least justifiable of all forms of income, since only Ricardo had analysed it incidentally, representing it as a residual surplus after paying wages (Rossitto 1993, 81).

The demand for capital was considered as important as land and labour; but is it entitled to justify remuneration, unlike the other two factors? Is it a product and not an original factor of production? And here comes abstinence. According to Senior, as has been noted, the cost of production consists of two elements, namely labour and abstinence. Where competition is imperfect, *i.e.* there is a degree of monopolistic activity between cost of production and (exchange) value, there is an extra-revenue margin for the recipients. This income, according to the definition of labour and abstinence, is independent of any personal sacrifice or effort. Senior defines this remuneration as "rent" and his theory, therefore, is a mere extension of Ricardian theory (Depoortère 2013).

Rent is not only the result of the best placed or most fertile land; it may also originate from the possession of certain natural agents or from the possession of certain personal abilities such as the voice of a tenor or the ability of a surgeon or may simply be the product of social causes or accidental circumstances. Senior shows that rent, far from being an extraordinary phenomenon, is quite common. This type of remuneration is extremely important and absorbs a great deal of global wealth. In fact, Senior goes further, stating that, when, as in the case of death, the capital moves from the people who produced it and earned it to those who inherit it immediately, it becomes a rent. The heirs cannot invoke abstinence: virtue cannot be passed on and they have no reason to rejoice in their own fortune except good fortune (Barro 1974).

This confusion between rent and inherited wealth may create a false problem since the two facts belong to two different categories: rent is an economic fact resulting from the necessary conditions of exchange. It is not due to social organisation or to the institution of private property. On the other hand, inheritance is a legal phenomenon, resulting from private law. Even if, hypothetically, the institution of inheritance were to be abolished, there would probably be no difficulty in assisting and increasing the rent, if it were obtained from the land or any other asset; whereas under the hypothetical system of perfect competition, although rent no longer has to be recognised, inheritance could still continue to exist, together with all its privileges. By the term 'rent' Senior obviously meant any type of income that did not derive from a personal effort.

4. Criticism of Senior's Theory of Abstinence

As was the case with the supporters of the labor-value theory, Marx also considered consumption as the end of production, but it is not the peculiar end of the capitalistic mode of production (Garegnani 1984).

In "Capital", Volume I, Marx (2006, 238-247) states that what characterizes capitalism is not the consumption of use values, but the continuous expansion of exchange values whereby money in itself is not capital; it becomes capital when it is used to multiply value, *i.e*. when it becomes an instrument to produce surplus value, that is, a surplus that exceeds the means of subsistence of living labour. In other words, money is not capital if it represents only the intermediation of the exchange of goods: this is expressed in the triad C-M-C (Commodity-Money-Commodity). But if the object of the exchange is the increase in the exchange value, money undergoes a metamorphosis into capital, and this is expressed in the formula:

$$M\text{-}C\text{-}M' \qquad (1)$$

where: $M'>M$; $M' - M$ = profit

This triad shows the meaning of capital as a functional value for the increase of the latter, *i.e*. self-increasing value. The capitalist as such does not take into account the values of use of commodities, but only the exchange values, and, by virtue of competition, his aim is to enlarge the entity of his capital, which is an evident component of his being.

Posing the question in psychological terms, Marx (2006, 14-17) observed that the sacrifice implicit in abstinence, in the case of the capitalist, does not occur in the abstinence of consumption, but, rather, in the abstinence from saving. In fact, he states that a part of the surplus value is consumed by the capitalist as income, another is used as capital, that is, accumulated. Given the mass of surplus value, the greater one of these parts is, the smaller the other part will be. Considering all other circumstances always equal, the proportion in which this division occurs determines the magnitude of the accumulation. But this division is carried out by the owner of the surplus value, that is to say the capitalist. Therefore, it is an act of will of the capitalist; as a supporter of the valorisation of value, he encourages human race to produce for production's sake, pushing it towards the development of society's productive forces, and the creation of those material conditions of production which alone can form the real basis of a higher form of society whose fundamental principle is the full and free development of each individual.

The capitalist represents the personification of capital; as such, he shares with the miser an absolute drive towards self-enrichment. But what appears in the miser as the mania of an individual is in the capitalist the effect of a social mechanism in which he is merely a cog. Moreover, the development of capitalist production makes it necessary constantly to increase the amount of capital laid out in a given individual undertaking, and competition subordinates every individual capitalist to the immanent laws of capitalist production, as external and coercive laws. It compels the capitalist to keep extending his capital, so as to preserve it, and he can only extend it by means of progressive accumulation.

With the development of the capitalistic mode of production, of the accumulation of wealth, the capitalist ceases to be a mere embodiment of capital (Morselli 2017, 35). In order to charm out of his bosom the awful conflict between the desire for enjoyment and the chase after riches, Malthus (1836, 319-320), advocated a division of labour, which assigns to the capitalist actually engaged in production, the business of accumulating, and to the other sharers in surplus-value (to the landlords, the place-men, the beneficed clergy, &c.), the business of spending.

This is an unacceptable approach for Marx. He says, referring to Malthus, it is of the highest importance "to separate the passion for spending and the passion for accumulation". The capitalists having long been good livers and men of the world, uttered loud cries. What! exclaimed one of their spokesmen, a disciple of Ricardo, Mr. Malthus preaches high rents, heavy taxes, &c., so that the pressure of the spur may constantly be kept on the industrious by unproductive consumers! By all means, production, production on a constantly increasing scale, runs the shibboleth; but production will, by such a process, be far more curbed in than spurred on. Nor is it quite fair thus to maintain in idleness a number of persons, only to pinch others, who are likely, from their characters, if you can force them to work, to work with success" (Malthus 1821, 67).

Our Ricardian considers it unjust to incite the industrial capitalist to accumulate by skimming the fat from his stock, so it seems necessary to him to limit as far as possible the worker to a minimum wage in order to keep him laborious. And it makes no mystery for a moment that the secret of the genesis of profit is the appropriation of unpaid work:

"The very meaning of an increased demand by them is, a disposition to take less themselves, and leave a larger share for their employers, and if it be said that this, by diminishing consumption, increases glut, I can only answer, that glut then is synonymous with high profits" (Malthus 1821, 59).

The scholarly quarrel as to how to share the worker's spoils, in the most favourable form for accumulation, between industrial capitalist and idle land owner, fell silent with the July revolution. Shortly after, in Lyon the urban proletariat rang the hammerhead bell, and in England the agricultural proletariat flew the red cock. Owenism raged on the European side of the English Channel, Sansimonism and Fourierism raged on the other side. The time of the common economy had come. Just one year before he discovered in Manchester that the profit (including interest) of capital is the product of the last twelfth unpaid hour of work, Senior (1836, 309) announced another discovery to the world:

"I replace the term 'capital', considered as an instrument of production, with the term 'abstinence'".

Senior (1836, 342) continues:

"When the savage makes bows, he exercises an industry, but he does not practise abstinence. That explains how and why, in the earlier stages of society, the instruments of labour could be made without the practice of capitalist abstinence. "The more society progresses; the more abstinence is demanded" — abstinence demanded from those whose business in life it is to appropriate the fruits of others' industry (Hupfel 2010). Henceforward, all the conditions of the labour process become transformed into so many acts of abstinence on the part of the capitalist. If the corn is not all eaten, if some of it is reserved for seed, this is because the capitalist is abstinent. If vine is given time to mature, this is because the capitalist abstains".

Conclusions

Senior marks, in some ways, the watershed between the last defences of the Ricardian positions and the theoretical improvements that later on had to give analytical completeness to a subjective conception of value. He undoubtedly felt the vigour of Ricardian analysis, but also its limitations; influenced by Say (1803), he approached Bailey's (1825) and Whately's (1832) essays. And although he did not have Longfield's conceptual excellence (1834), he can be considered as one of the forerunners of utility in the nineteenth century. But Senior did not aspire to become a representative of the new theoretical approach; he did not aim to present this approach as an alternative to the Ricardian one, on the contrary he tried to carry out a work of mediation and synthesis.

In his most significant work, *an outline of the science of political economy*, published for the first time in 1836, Senior gives a definition of wealth in which the fruits of his intense conceptual work are gathered. Wealth now becomes everything that can be traced back to exchange, or everything that has value. What are the elements that are essential to the validity of this definition? Transferability, limitation of supply and utility. The latter is considered as the attitude of a commodity to offer a certain satisfaction.

In this case utility becomes an element of the concept of value and Senior specifies its characteristics referring, precisely, to the limitation of supply and to the transferability that tends to eliminate the objective criterion of value that was present in Smith's thought. In this context, we have a fairly explicit notion of the phenomenon of decreasing marginal utility. Senior does not assign utility a prominent task in the exchange model but seeks to consider it in its relationship to cost. Senior's cost is inclusive of the phenomenon of productivity of capital that is expressed with the term, maybe not completely explicative, of "abstinence". It appears as that factor distinct both from labour and from work of nature, the compensation of which is necessary for capital, and the relationship of which to profit is the same as labour's relationship to wages. In this way Senior tries to overcome the contradictions into which the post-Ricardians Orthodox had fallen in their attempts to overcome profit. The production cost would represent for Senior the sum of the labour and the "abstinence" necessary for the production of a certain quantity of goods. He intends to exclude profit as such from the analysis, and to consider "abstinence" as the remuneration of a behaviour that he would like to make look like that explication of energies that is called labour.

Senior also remained partly faithful to Ricardo in the way he deals with the labor market and although he tried to follow Say and Longfield's approaches to the problem of productivity, he preferred to conduct his reasoning by reworking, first of all, the ancient doctrine of the wage fund. In fact, Senior expresses the proposition that the actual salary, received on average during a year, corresponds to the ratio between the volume of commodities set aside in that period for the maintenance of the working population, and the amount of this population. To proceed beyond analytically, however, it was necessary to be able to determine the fund set aside; Senior did not examine the problem in depth, but provided some criteria for a solution, referring, precisely, to the concept of labour productivity and the relationship between wages and profit (Meoli 1972, 835). In this way he paved the way for linking the theory of wages with that of capital, the profitability of which Senior admits.

Without a doubt, the analytical progress made by Senior contributed to freeing the logical structure of classical economy from many rigidities, from certain excessively simplified causal relations, from that trend pessimism which fatally derived from them and which is easily recognizable in certain Ricardian inferences. Perhaps it was his long experience in public affairs and their specific problems that led Senior to consider the theorist's work important in his autonomy, in his independent ability to make generalisations. Senior knew very well that solutions of practical importance cannot be derived mechanically from them. He felt the problems of human welfare, but left economists a warning that was interpreted in different ways, because it concerns a field of assessments on which, probably, disagreement will never cease. In fact, Senior stated that economic science and what he defined as the two economic arts that deal respectively with the institutions and the relations between wealth and welfare, are at the same time connected and distinct. Every economist can face the problems of human happiness, but he must be aware that for their solution, if achievable, his considerations as a scientist are not enough, because different ideals participate in them or, even, some which are opposite to those that economic theory, as such, would suggest.

References

[1] Augello, M.M., Guidi, M.E.L. 2007. *L'economia divulgata. Stili e percorsi italiani, 1840-1922,* Volume 3. Milano, FrancoAngeli. Centro Interuniversitario di documentazione sul Pensiero Economico Italiano. Biblioteca storica degli economisti italiani.

[2] Bailey, S. 1825. *A critical dissertation on the nature, measure, and causes of value*. London, R. Hunter..

[3] Barro, R.J. 1974. Are government bonds net wealth? *Journal of Political Economy*, 82(6): 1095-1117.

[4] Bowley, M. 1936. Nassau Senior's contribution to the methodology of economics. *Economica*, 3(11): 281–305.

[5] Bowley, M. 1937. *Nassau Senior and classical economics*. London George Allen & Unwin, 358 p.

[6] Brandford, DeLong, J. 1986. Senior's 'last hour': Suggested explanation of famous blunder. *History of Political Economy,* 18(2): 325-333.

[7] Conard, J. 1959. *An introduction to the theory of interest*. Berkeley and Los Angeles, University of California Press. Available at: https://archive.org/stream/in.ernet.dli.2015.138005/2015.138005.An-Introduction-To-The-Theory-Of-Interest_djvu.txt

[8] Depoortère, C. 2013. William Nassau Senior and David Ricardo on the method of political economy. *Journal of the History of Economic Thought*, 35(1): 19-42.

[9] De Marchi, N. 1987. *Abstinence*, in Eatwell J., Milgate M., Newman P., eds., "The New Palgrave: A Dictionary of Economics", (1): 8–9, London Macmillan.

[10] Ekelund, R., Hébert, R. 1975. *A history of economic theory and method*. New York, McGraw-Hill. ISBN: 0070191433, 9780070191433, 508 p.

[11] Fisher, I. 1930. *The theory of interest*. New York, The Macmillan Company. Available at: http://files.libertyfund.org/files/1416/0219_Bk.pdf

[12] Garegnani, P. 1984. Value and distribution in the classical economists and Marx. *Oxford Economic Papers*, 36(1): 291–325.

[13] Gootzeit, M.J. 1992. Senior's abstinence theory of the supply of business saving. *Journal of the History of Economic Thought,* 14(2): 244-256.

[14] Hupfel, S. 2010. The spitalfields acts and the classics: Ricardo, J.S. Mill, Bowring, and Senior on the London silk industry (1823 to 1841). *The European Journal of the History of Economic Thought*, 19(2): 165-195.

[15] Lloyd, W.F. 1834. A *lecture on the notion of value*. London, Roake and Varby. Available at: https://archive.org/details/lectureonnotiono00lloy/page/n4

[16] Longfield, M. 1834. *Lectures on political economy*. Dublin, Milliken.

[17] Malthus, T.R. 1821. *An inquiry into those principles respecting the nature of demand and the necessity of consumption.* London, Printed for R. Hunter.

[18] Malthus, T.R. 1836. *Principles of political economy, considered with a view to their pratical applications, Second edition.* London, Pickering. ISBN: 9781851961054, 439 p.

[19] Marx, K. 2006. *Il Capitale*, libro primo, in Classici dell'economia. Milano, Milano Finanza Editori.

[20] Meoli, U. 1972. *Storia delle idee politiche economiche e sociali*, volume quinto. Torino Utet. 919 p.

[21] Mill, J.S. 2006. *Principi di economia politica*, in Classici dell'economia. Utet, Libreria Torino. ISBN: 978-88-02-07263-0, 1276 p.

[22] Morselli, A. 2017. *Crisi e ciclo economco. Un richiamo alla teoria malthusiana*. Roma, Aracne. ISBN: 978-8825509304, 100 p.

[23] Ricossa, S. 1998. *Dizionario di economia*, Torino, Utet. ISBN: 8802052336, 9788802052335, 581 p.

[24] Rossitto, E. 1993. *La metafora del capitale*. Acireale, Galatea Editrice.

[25] Say, J.B. 1803. *Traité d'économie politique*. Paris, Deterville. Available at: https://www.institutcoppet.org/wp-content/uploads/2011/12/Traite-deconomie-politique-Jean-Baptiste-Say.pdf

[26] Senior, N.W. 1836. *Principes fondamentaux de l'économie politique : Tires de leçons édites et inédites*. Paris, Librairie Aillaud, 403 p.

[27] Senior, N.W., Whately, R. 1836. *An outline of the science of political economy*, reprint of economic classics, New York, Augustus M. Kelley, Bookseller, 1965, 249 p. Available at: http://digamo.free.fr/senior36.pdf

[28] Senior, N.W. (1847-52), *Lectures, course II, lecture 9*.

[29] Senior, N.W. (1847-52), *Lectures, course II, lecture 8*.

[30] Senior, N.W. 1848. J.S. mill on political economy. *Edinburgh Review*, 88: 293–339.

[31] Von Böhm-Bawerk, E. 1907. Capital and interest once more. *Quarterly Journal of Economics*, 21: 247–282.

[32] Von Böhm-Bawerk, E. 1930. *The positive theory of capital*. New York, GE. Stechert & Co, Vol. I, Chapter 1. Available at: https://mises-media.s3.amazonaws.com/The%20Positive%20Theory%20of%20Capital.pdf

[33] Whately, R. 1832. *Introductory lectures on political economy*, 2nd edition. London, J.W. Parker. Available at: https://oll.libertyfund.org/titles/whately-introductory-lectures-on-political-economy

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TRADE OPENNESS AND INDUSTRIAL OUTPUT GROWTH IN NIGERIA: EMPIRICAL LESSONS FOR DIVERSIFICATION

Peter N. MBA
Department of Economics, University of Calabar, Nigeria
petermbanta@yahoo.com

Anthony ORJI
Department of Economics, University of Nigeria, Nigeria
tonyorjiuss@yahoo.com

Donald CHUKWUMAEZE
Department of Economics, University of Calabar, Nigeria
chukwumaeze08@yahoo.com

Onyinye ANTHONY-ORJI
Department of Economics, University of Nigeria, Nigeria
onyinye.anthony-orji@unn.edu.ng

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Abstract: *This study examines the relationship between trade openness and industrial output growth in Nigeria using time series data, endogenous growth framework as well as export-led growth model. The adopted framework contends that domestic policies on trade liberalization cannot be avoided but harnessed for optimal benefit of the economy. The empirical results show that trade openness contribute positively to industrial output growth and supports general economic diversification. In the short-run, the dynamic impact of trade openness on industrial output growth is insignificant while its long-run impact is significant.*

Keywords: trade; openness; industrial output; growth; Nigeria.

JEL Classification: F13 ; F14 ; L50 ; L60 ; O24.

Introduction

In many developing economies, discussions on trade openness and industrial output determinants have received some serious attention. This is largely due to various contenting arguments in the literature and the relatively declining performance of the industrial sector in these economies. Having realized the backwardness associated with protected trade policies to earn economic success; developing countries in Africa including Nigeria are implementing trade liberalization policies. However, to achieve some sustainable levels of growth and greater diversification in any economy through the expansion of the industrial sector, domestic policies on trade openness and liberalization have critical roles to play.

Many economists and policy commentators see economic development as being synonymous with industrialization or modernization. It is also widely accepted that the speed of industrial development is dependent on domestic policies and organization of international trade; hence the importance of studying how economy grows is also linked to trade openness, industrial output and diversifying away from traditional commodities.

Nigeria is a monoculture economy which depend majorly on crude oil production with neglect in other areas of investments resulting to fall in foreign exchange earnings, high rate of unemployment and inflation due to lack of investment in other key areas. Indeed, industrialization has been a top priority of government to move population out of poverty. Thus, focus has been on identifying factors capable of boosting industrial performance in Nigeria, among the key issues are openness of trade and industrial output growth leading to diversification.

The manufacturing sectors performances in Nigeria have not been impressive due to the preference and reliance on imported goods. The poor performance may be for other reasons such as policy instability, poor macroeconomic environment, bureaucratic bottlenecks, legal environment which does not guarantee property rights and safety, poor governance, corruption and low commitment of governments to industrial development (Albaladejo 2003). It could be the case of high rise of importation of production input that may hinder industrial performance in Nigeria. Ajakaiye, Jerome and Alaba (2016) argued that the sharp depreciation of the naira adversely affected the manufacturing firms because of the increasing cost of importation of spare parts and infrastructural deficit, weak demand resulting from declining domestic purchasing power, high interest rate and gross under-utilization of capacity.

It is worthy to note that the adoption of the structural adjustment programme (SAP) in 1986 initiated the process of termination of the hostile policies towards trade. A new industrial policy was introduced in 1989 with the debt to equity conversion scheme as a component of portfolio investment. In summary, the polices embarked on by the Nigerian government to attract foreign investors as a result of the introduction of the SAP could be categorized into five: the establishment of the Industrial Development Coordinating Committee (IDCC), investment incentive strategy, non-oil export stimulation and expansion, the privatization and commercialization programme, and the shift in macroeconomic management in favour of industrialization, deregulation and market-based arrangements (Mba 2010, and Orji and Mba 2011).

The second trade policy created the National Economic Empowerment and Development Strategy (NEEDS) in 2003 which was a medium-term economic strategist covering 2003-2007. According to African Trade Policy Centre (2007) NEEDS was described as Nigeria's plan for prosperity and vision for greater tomorrow with focus on: re-orienting values, reducing poverty, creating wealth and generating employment. In the trade policy area, it deepens Nigeria's integration with the rest of the world and maximizes the benefits of strategic integration with regional integration and trade as the two instruments. However, the impact of these policy thrusts on our economic performance still remains ambiguous.

Against this background, this article examines the impact of trade openness on industrial output performance, and equally draws some lessons for diversifications.

1. Literature Review

Smith and Ricardo's theory commonly known as the orthodox or traditional theory of international trade by the classical economists argues that trade will promote growth and development in the form of higher production and consumption. But the theory attracted lots of criticisms from the modern trade theory due to its bases on unrealistic assumptions such as the assumption of labour cost; since it neglected other cost like capital. The Heckscher-Ohlin-Samuelson (HOS) model postulates that trade will help in reducing the income gap between poor and rich countries. Therefore, countries that have abundance labour (L) should use more of labour in production while the ones that have capital abundance should use more capital (K) in production so that at the long run, the gap of inequality will be wiped out.

In other words, HOS imply that poor countries with abundant labour should specialize in producing and trading in labour intensive goods while the richer countries with relatively scarce labour but abundant capital should specialize in capital intensive commodity. It also implies that free trade specializing in production will tend to bring about factor price equalization and thus increase the return to labour in poor countries that will be equivalent to the rich countries. This is based "on the assumption that some factors of production" are perfectly immobile internationally. The HOS model is found by utilizing Heckscher's observations such as: (i) countries differ in their relative endowments of the factors, (ii) production processes for different goods employ different relative intensities of the factors. Thus, the HOS have a growth dimension with implications for future outputs and trade patterns (Verick 2006).

Dunning (1981) put forward his eclectic integrated approach to international trade. He observed that technology is not the main determinants that give a country advantage over another country through internationalizing. Internationalization could occur through transfer, price manipulation, security of supplies and markets and control over use of intermediate goods. While Caves (1971) opined that avoidance of oligopolistic uncertainty and erection of barriers to the entry of new rivals are the factors underpinning the investment decision in LDCs. This observation was further enhanced by the deficiencies of capital, technology and expertise to exploit and enhance the natural resources that abound in the less developed countries.

Empirical studies on trade openness and industrial output varies in their findings and conclusions. Some studies have focused on developing country specifics and some on cross country studies of developed or developing countries. Spiezia (2004) examines the impact of trade on the manufacturing sector using a set of panel data for a sample of 39 countries over different periods within the mid-1980s to 1990s. The study found no significant employment impact of Foreign Direct Investment (FDI) and domestic investment. But when disaggregated by income level, it showed a positive and significant impact of foreign direct investment on middle- and high-income countries with the low-income countries not showing any impact on FDI on employment. He observed that in 21 out of the 39 developing countries under study, an increase in the volume of trade resulted in an increase in employment, increased integration produced reduction in employment in the remaining 18 countries.

Njikam (2009) examined the effect of trade openness and growth of industrial performance in Cameroon and explored whether relationship exists between infrastructure and industrial performance during the two time periods, before and after trade openness. The study utilized the annual values throughout the import-substitution era (1986-94) and proximately after trade restructuring (1995-2003) for a sample of 29 industrial sectors. By means of panel data techniques, it established that advancement in infrastructure tends to boost the efficiency of industrial sector and in trade openness agenda.

On impact of trade related reforms and openness on technical efficiency with reference to agro based industries in Pakistan, study by Sheikh and Ahmed (2011) showed their effect which is closely linked with the overall development of the country with a contribution of 25% share in Gross Domestic Product (GDP). Another study in Pakistan by Ahmed, Arshad and Afzal (2015) utilizing a panel of twenty-seven 3-digit manufacturing industries over the period of 1980-2006 with a variant of Cob-Douglas function and estimating output elasticity and Total Factor Productivity (TFP). Result showed trade liberalization has positive but negligible impact on TFP, and effective rate of protection exerts negative impact on TFP in the post liberalization than the pre-liberalization period.

There are some studies whose findings were divergent. The study by Ulaşan (2015) introduced four categories of openness indicators: trade volumes; direct trade policy measures, such as tariff rates and parallel premium for exchange rate; measures that indicate the difference between predicted and actual trade; and subjective measures, such as real exchange rate distortion index. Relationship between trade openness and growth in a panel of 119 countries was conducted by using dynamic panel data methods for the period from 1960 to 2000. The study outcome is in the opposite that openness has a direct robust relationship with economic growth in the long-run". Kim (2011) introduced the differential effect of openness on economic growth using fixed effect model with data from 61 countries from 1960 – 2000. Findings showed that trade openness has a positive effect on economic growth in high income countries, but the opposite effect is the case of low economies.

Studies focusing on crowding out or crowding in and their effect are few. Silajdzic and Mehic (2017) focused on less technologically advanced economies given their limited ability to reap off the benefits of free trade including limited absorptive capabilities, pervasive market and coordination failures inhibiting development of strategic, infant or new industries, and potential 'crowding out' effect of trade covering Central and Eastern European transition economies in the period from 1992-2014. The results point to the specification of trade, proper treatment of the possible simultaneity bias in the relationship, and the differences in the levels of industrial and technological development across countries and positive significant impact of trade intensity indices on economic growth in CEE countries robust to different methods of investigation. However, the results of their empirical studies do not render support to the hypothesis that trade liberalization policy is beneficial to growth performance in the specific context of selected transition economies.

Joining the contentious debate on capacity utilization and its role on economic performance of the manufacturing firms, Gu and Wang (2013) examined the Canadian manufacturing industries and findings showed that industrial productivity slowdown was associated with decline in capacity utilization. While Okunade (2018) also finds a positive but insignificant relationship between capacity utilization and manufacturing firms' output in Nigeria using data from 1981 to 2016 and Autoregressive Distributed Lag (ARDL) model approach.

In Nigeria, results of some studies such as Onakoya, Fasanya and Babalola (2012), Umoru and Eborieme (2013), Okoye, Nwakobi and Okorie (2016) and Adamu and Dogan (2017) are not unanimous with regards to output growth. Hence there is no consensus on the impact of trade openness on industrial output in the short and long run. Studies on Nigeria did not take into account the period of economic recession and subsequent devaluation/depreciation of Nigerian naira (2015-2017) which significantly reduced export than import. This research therefore empirically studied the relationship between openness and industrial output growth by augmenting other works done and adding core variables like gross domestic investment and their lessons for diversification.

2. Methodology

2.1 The Models

The study seeks to empirically assess the impact of trade openness on industrial output growth with the assumption that dynamic industrial output model is represented as an error correction model framework and that time series data are non-stationary at level. The generalized error correction model framework is represented as follows:

$$\Delta y_t = \beta_0 + \Delta\alpha_1 y_{t-1} + \beta_i \Delta x_{it} + \varphi(x_{t-1} - y_{t-1}) + \varepsilon_t \tag{1}$$

where: Δ is the difference operator;

y_t = endogenous variable;

y_{t-1} = lagged value of the endogenous variable;

x_{it} = exogenous variables;

$(x-y)_{t-1}$ = error correction term;

ε_t = stochastic error term;

φ = coefficient of the error correction term which measures the degree of adjustment;

β_0, β_i are intercept and slope coefficient;

α_1 = coefficient of the lagged dependent variable.

From Equation 1, the empirical model is presented as follows:

$$\Delta INDOUT_t = \lambda_0 + \sum_{i=1}^{i} \lambda_{1i}\Delta OPN_{t-i} + \sum_{i=1}^{i} \lambda_{2i}\Delta GDI_{t-i} + \sum_{i=1}^{i} \lambda_{3i}\Delta EXR_{t-i} + \sum_{i=1}^{i} \lambda_{4i}\Delta FDI_{t-i} + \sum_{i=1}^{i} \lambda_{5i}\Delta INF_{t-i} + \phi ECM_{t-i} + \mu_t \tag{2}$$

The functional form of our model is specified as thus:

INDOUT = f (OPN, GDI, EXR, FDI, INF) (3)

where: INDOUT = Industrial Output;
OPN = Trade Openness measured as exports + imports / GDP;
GDI = Gross Domestic Investment;
EXR= Exchange rate;
FDI = Foreign Direct investment;
INF=Inflation Rate.

To address the objective of the study, we estimate a long run relationship using a specified econometric model as:

Log (INDOUT) = α_0 + α_1LogOPNt + α_2Log GDIt + α_3LogEXRt + α_4LogFDIt+ α_5LogINFt + μ_t (4)

2.2. Descriptive Analysis of Variables

Table 1 Summary Statistics

Statistics	INDOUT	OPN	GDI	EXR	FDI	INF
Mean	275993.3	2567202	2302.279	76.34289	296477.3	18.54711
Std. Dev.	286585.5	1756860	3487.667	70.82855	359881.4	18.49105
Jarque-Bera	4.847835	3.191205	1.948764	2.229035	1.085788	1.025960
Probability	0.088574	0.202786	0.706913	0.520692	0.604388	0.690179
Observations	38	38	38	38	38	38

Source: Computed using E-Views 9 software

The summary of descriptive statistics of variables of study is as reported in Table 1. It provides the mean, standard deviation and Jarque-Bera statistic values of the variables under consideration. The mean measures the average value of the series. Standard deviation (std. dev.) measures the dispersion or spread in the series. The higher (lower) the value, the higher (lower) the deviation of the series from its mean. Jarque-Bera is a test statistic for normal distribution. The null hypothesis for the test is that the series is normally distributed at conventional level of statistical significance of 5% (0.05). Thus, if the computed probability value for the test is greater than 5% (0.05), we do not reject the null hypothesis otherwise, we reject it.

As can be observed from table 1, the mean values of INDOUT, OPN, GDI, EXR, FDI and INF are 275993.3, 2567202, 2302.279, 76.34289, 296477.3 and 18.54711 respectively while their respective standard deviations are 286585.5, 1756860, 3487.667, 70.82855, 359881.4 and 18.49105. The results showed that EXR and INF had the lowest or least mean and variability (standard deviation) while INDOUT and FDI had the highest or largest mean and variability (standard deviation). Lastly, the Jarque-Bera statistic values showed that INDOUT, OPN, GDI, EXR, FDI and INF are all normally distributed.

2.3. Unit Root Test Results

Table 2 Augmented–Dickey Fuller (ADF) Test Results

Variables		ADF Statistics	Remark
	Level	First Difference	
INDOUT	-0.068763	-3.179421**	I(1)
OPN	-1.560945	-10.39922**	I(1)
GDI	2.748521	-5.261166**	I(1)
EXR	0.251892	-5.785191**	I(1)
FDI	-0.549672	-5.654844**	I(1)
INF	-3.006429**	-	I(0)

Note: ** indicates the rejection of the null hypothesis of existence of unit root at 5% significance level. Lags are selected based on Schwarz Information Criteria (SIC)
Source: Computed using E-Views 9 software

The ADF unit root test results as reported in Table 2 showed that INDOUT, OPN, GDI, EXR and FDI were non-stationary at level except INF. This means that INDOUT, OPN, GDI, EXR and FDI have mean, variance and covariance that are not constant overtime. However, after first differencing, each of these time series variables became stationary. The implication of the unit root test results is that INDOUT, OPN, GDI, EXR and FDI are integrated of order one, *i.e.,* I(1) while INF is integrated of order zero, *i.e.*, I(0). Therefore, in testing for cointegration, the appropriate method to use is the bounds cointegration test method which is based on autoregressive distributed lag (ARDL) framework. The choice for bounds test approach is based on the assumption that it is best suitable for cointegration test involving mixture of I(0) and I(1) integrated time series.

2.4. Bounds Cointegration Test Results

Table 3 Results of Bounds Cointegration Relationship

Critical Bounds Value of the F-statistic						
K	*1% level*		*5% level*		*10% level*	
	I(0)	*I*(1)	*I*(0)	*I*(1)	*I*(0)	*I*(1)
5	3.93	5.23	3.12	4.25	2.75	3.79
Calculated *F*-statistic= 7.185877						

Note: The lag length was selected based on the Schwartz Information Criterion (SIC). K is the number of regressors.
Source: Computed using E-Views 9 software.

The results of the bounds test for the presence of long-run relationships between the variables are reported in Table 3. Since this study employed annual data, we follow the tradition of Narayan and Smyth (2005) and set the maximum lags in the ARDL model to 2 ($i_{max} = 2$). The estimated model of the ARDL-bounds test is based on minimizing the Schwartz Information Criterion (SIC). The bounds *F*-test for cointegration test yields evidence of a long-run relationship between the concerned variables. The computed *F* statistic, $F_C = 4.396907$ is respectively greater than the lower and upper bounds at 1%, 5% and 10% critical value resulting in the rejection of the null hypothesis of no long-run relationship between the examined variables. This evidence implies that a long-run relationship exists between the variables which rules out the possibility of estimated relationship being spurious.

3. Regression Results and Discussion

Table 4 The Short-run Relationship and Error Correction Mechanism

Dependent Variable: INDOUT				
Variable	*Coefficient*	*Standard Error*	*t-Statistic*	*P-Value*
C	15761.61	6702.081	2.351749	0.0272
D(OPN)	0.005976	0.001437	0.363446	0.7195
D(OPN(-1))	0.003342	0.006233	0.536140	0.5968
D(GDI)	5.587820	1.244110	4.491419	0.0003
D(GDI(-1))	19.86873	5.693714	3.489590	0.0014
D(FDI)	0.020353	0.048362	0.420857	0.6776
D(FDI(-1))	0.027682	0.053452	0.517877	0.6093
D(EXR)	-752.1723	320.7247	-2.345227	0.0196
D(EXR(-1))	-41.88969	14.94348	-2.803208	0.0075
D(INF)	-108.0239	306.8214	-0.352074	0.7279
D(INF(-1))	-100.6335	307.3354	-0.327439	0.7462
ECM(-1)	-0.564320	0.116271	-4.853489	0.0000

Diagnostic Checks

R-Squared: 0.78
Adjusted R-Squared: 0.75
Durbin-Watson: 2.01
F-Statistic: 53.32014; PV: 0.000000

Note: PV= Probability Value.
Source: Computed using EViews 9 Software.

Table 4 presents the parsimonious encompassing error correction model which shows the short-run evolution of the time series under consideration and their dynamics of adjustments overtime. At 5% level of significance, trade openness (OPN) and foreign direct investment (FDI) impacted positively and insignificantly on industrial output growth (INDOUT) in the short-run while the short-run impact of gross domestic investment (GDI) on INDOUT was positive and statistically significant. Both exchange rate (EXR) and inflation rate (INF) impacted negatively on INOUT in the short-run, however, while EXR impacted significantly on INOUT on one hand, the impact of INF on INDOUT on the other hand, was statistically insignificant. The coefficient of the loading factor *i.e.*, error correction term (ECM) is correctly signed and statistically significant at 5% level of significance. This implies that an error correction mechanism exists so that the deviation from long-run equilibrium has a significant impact on INDOUT in Nigeria. The value of -0.56 implies that 56% of the disequilibria in INDOUT of the previous years' shocks adjust back to the long-run equilibrium in the current period. It also implies that adjustment to long-run equilibrium is moderate.

The adjusted coefficient of determination value of 0.75 shows that the estimated error correction model has a good fit. The F-statistic of value of 53.32014 with probability value of 0.000000 suggests that the parameters of the model are jointly significant while the Durbin-Watson statistic of 2.01 indicates the absence of first-order autocorrelation; implying that the estimated model is free from the problem of spurious regression.

From the long-run regression results as reported in Table 5, it can be observed that in exception of inflation rate (INF), other factors such as trade openness (OPN), foreign direct investment (FDI), gross domestic investment (GDI) and exchange rate (EXR) had positive relationship with industrial output growth (INOUT) in the long-run. Thus, a percentage change in OPN, GDI, FDI and EXR, on average, increased INDOUT by 7.36%, 8.33%, 0.0916% and 82.81% respectively. Since INF negatively relates with INDOUT, a percentage change, on average, reduced the value of INOUT by 0.1662%. But while the long-run impacts of OPN and FDI on INDOUT were statistically significant, those of GDI, EXR and INF were statistically insignificant.

In terms of the goodness of fit of the estimated long-run model, the adjusted coefficient of determination value of 0.96 indicates a good fit. The F-statistic of value of 66.70032 with probability value of 0.000000 suggests that the parameters of the model are jointly significant while the Durbin-Watson statistic of 1.92 indicates the absence of first-order autocorrelation; implying that the estimated model is free from the problem of spurious regression.

Table 5 The Long-run Relationship

Dependent Variable: Log (INOUT)				
Variable	Coefficient	Standard Error	t-Statistic	P-Value
C	1.128408	0.829815	1.359831	0.1834
LOG(OPN)	0.073641	0.011485	6.411929	0.0000
LOG(GDI)	0.083336	0.127951	0.651315	0.5195
EXR	0.000916	0.002429	0.377057	0.7086
LOG(FDI)	0.828123	0.124085	6.673822	0.0000
INF	-0.001662	0.003002	-0.553615	0.5837

Diagnostic Checks

R-Squared: 0.98
Adjusted R-Squared: 0.96
Durbin-Watson: 1.92
F-Statistic: 66.70032; PV: 0.000000

Note: PV=Probability value.
Source: Computed using EViews 9 Software.

Conclusion and Recommendations

The observed short-run and long-run positive relationship between trade openness and industrial output growth is in agreement with the findings of, for example, Spiezia (2004) for panel of 39 countries, Njikam (2009) for Cameroun, Sheikh and Ahmed (2011) for Pakistan, Arshad and Afzal (2015) for Pakistan, and Ulaşan (2015) for 119 countries. However, just like these studies observed, evidence from the present study shows that in the short-run, the dynamic impact of trade openness on industrial output growth is insignificant while its long-run impact is significant.

This study therefore recommends that Nigeria's trade liberalization policies targeting industrial growth should have a long-term outlook. Again, the study also recommends that government should evolve sound policies to ameliorate the short-run distortions and adverse effects that come with trade openness. Important lessons can also be drawn for diversification here. For example, since the impact of trade openness on industrial output is not significant in the short run, it could be a pointer to the government that there is need to diversify the economy and stop depending on a mono product. When the economy is diversified it will open up more frontiers of businesses with the international community which could be beneficial to the domestic economy both in the short run and in the long run. Finally, the government should be careful while implementing trade openness policies to avoid making the country a dumping ground for unwanted developed countries' goods and service.

References

[1] Adamu, F.M and Dogan, E. 2017. Trade openness and industrial growth: Evidence from Nigeria. *Panoeconomicus*, 64(3): 298-314

[2] Ahmed, G., Arshad, K.M., and Afral, M. 2015. *Trade liberalization and industrial productivity: Evidence from Pakistan.* MPRA paper 70744.

[3] Ajakaiye, O., Jerome, D.N. and Alaba, O.A. 2016. *Understanding the relationship between growth and employment in Nigeria.* United Nations University, UNU-WIDER, 1-30 pp.

[4] Albaladejo, M. 2003. *International realities in Nigeria: From bad to worse*. QEH Working Paper Series-QEHWPS101.

[5] Briggs, I. 2007. Nigeria: Mainstreaming Trade Policy into National Development Strategies. *African Trade Policy Centre Work in Progress No.52,* Nairobi. Available at: www.uneca.org/atpc/work%20%progress/52.pdf=

[6] Caves, R.E. 1996. *Multinational enterprise and economic analysis*. 2nd edition. Cambridge: Cambridge University Press. ISBN: 0521478588, 9780521478588, 322 p.

[7] Dong-Hyeon, K. 2011. Trade, growth and income. *The Journal of International Trade and Economic Development: An International and Comparative Review*, 20(5): 677- 709.

[8] Dunning, J.H. 1981. Explaining the international direct investment position of countries: Towards a dynamic or developmental approach*. Review of World Economics (Weltwirtschaftliches Archiv)*, 117 (1): 30-64.

[9] Mba, P.N. 2010. Foreign *private investment, capital formation and economic growth in Nigeria*. An unpublished M.sc thesis submitted to the Department of Economics, University of Nigeria, Nsukka.

[10] Njikam, O. 2009. *Trade liberalization, infrastructure and industrial performance in Cameroon*. Faculty of Economics and Management, University of Yaounde.

[11] Okoye, L.U., Nwakoby, C.I. and Okorie, E.U. 2016. *Economic openness and industrial development in Nigeria*. *Journal of Policy and Development Studies*, 10(1): 12-26.

[12] Onakoya, A.B., Fasanya, I., and Babalola, M.T. 2012. Trade openness and manufacturing sector growth: An empirical analysis for Nigeria. *Mediterranean Journal of Social Science*, 3(11): 637-646.

[13] Orji, A., and Mba, P.N. 2011. Foreign private investment, capital formation and economic growth in Nigeria: A two stage least square approach. *Journal of Economics and Sustainable Development*, 2(2): 14-27.

[14] Sheikh, S.A., Ahmed, S. 2011. Impact of trade liberalization and domestic economic reforms technical efficiency of agro based industries in Pakistan. *International Journal of Business and Social Science,* 2(23).

[15] Silajdzic, S., and Mehic, E. 2017. *Trade openness and economic growth: Empirical evidence from transition economics.* Management International Conference, Monastier di Treviso (Venice), Italy, 581-594 pp.

[16] Spiezia, V. 2004. *Trade, foreign direct investment and employment: Some empirical evidence*. In: Lee E. and Vivarelli M. eds. Understanding Globalization, Employment and Poverty Reduction. Palgrave Macmillan UK. ISBN: 978-1-4039-4149-7, 389 p.

[17] Ulaşan, B. 2015. *Trade openness and economic growth: Panel evidence*. *Applied Economics Letters*, 22(2): 163-167.

[18] Umoru, D., and Eborieme, M. 2013. Trade liberalization and industrial growth in Nigeria. *Journal of Poverty, Investment and Development,* 1: 148-156.

[19] Verick, S. 2006. *The impact of globalization on the information sector in Africa.* Economic and Social Policy Division, United Nations Economic Commission for Africa (ECA) and institute for the study of Labor (IZA). Available at: https://www.researchgate.net/publication/255606611_The_Impact_of_Globalization_on_the_Informal_Sector_in_Africa

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TAXATION AND WELFARE: MEASURING THE EFFECT OF BULGARIA'S 2007-08 CORPORATE-PERSONAL INCOME TAX REFORMS

Aleksandar VASILEV
University of Lincoln, United Kingdom
avasilev@lincoln.ac.uk

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Abstract: *This paper utilizes a simple general-equilibrium model to analyse the long-run effects of Bulgaria's 2007-08 corporate-personal income tax reforms. In particular, we consider the effect working through the firm's capital structure and argue that the new reforms incentivize firms to increase investment, as the new regime benefits retained earnings. The increase in capital increases output and productivity, which in turn increases consumption and welfare. On average, households are enjoying 8.65% higher consumption in the new steady-state in the benchmark scenario. As a robustness check, we allow for a variable labour supply, where the gain increases further by additional 3.9% of consumption, to produce an overall gain of 13.55%.*

Keywords: general equilibrium tax reform; firm's capital structure; welfare gain.

JEL Classification: H25; H32; O41; O52.

Introduction

We set up a general-equilibrium model with a detailed corporate finance sector in order to provide a quantitative assessment of the 2007-08 corporate-personal income tax reforms in Bulgaria. Starting from a rate of 32.5% in 2000, the corporate tax rate was decreased in several steps down to its current rate of 10% in 2007. Similarly, the progressive income tax schedule was flattened until a uniform rate of 10% was introduced in 2008, which is in place today as well. In addition, a dividend tax of 5% was introduced. The particular focus of the paper falls on the effect of tax changes for the cost of finance, and how that changes the firm's financial structure. Under the new regime, the firms realize certain benefits from retained earnings, which is an incentive to increase investment and accumulate physical capital. That in turn leads to expansion of output and profit. Since after tax profit is distributed to firm owners (households), consumption increases as well.

The novelty relative to Vasilev (2019) is that in this model households face an explicit utility-maximization problem, which is a function of their consumption path. This allows us to measure the welfare gain of the introduction of the two tax reforms in Bulgaria in terms of additional consumption enjoyed. The rest of the paper is organized as follows: Section 2 outlines the model. Section 3 describes the calibration procedure and presents the results from the computational experiments performed in this paper. Section 4 concludes.

1. The Model

For the most part, the model follows closely Funke and Strulik (2006), which in turn is a general-equilibrium extension of Funke's (2002) partial-equilibrium representation. In particular, we start with a representative firm, which uses physical capital, K, and labour, L, and combines them using a Cobb-Douglas production function to maximize intertemporal profit

$$\pi = AK^{\alpha}L^{1-\alpha} - wL - \delta K, \tag{1}$$

where: a denotes total factor productivity;

δ is the *economic* depreciation rate.

Note that in this paper we distinguish between economic depreciation and *accounting* depreciation, *i.e.* depreciation for tax purposes. In particular, following Sinn (1987), we divide tax depreciation into a part of gross investment (*I*) that is written off immediately (*z*), while the remainder (*1-z*) depreciates at the economic rate δ. Therefore, total depreciation for tax purposes equals $z(I+\delta K)+(1-z)\delta K = zI+\delta K$. Next, before-tax dividends are defined as follows:

$$D = \pi - I - T, \tag{2}$$

where:

$$T = \tau(\pi - zI - D) \tag{3}$$

are the corporate taxes on the firm's retained earnings. Equation (1) - (3) then imply that dividends are then $D = AK^{\alpha}L^{1-\alpha} - wL - \delta K - \frac{(1-\tau z)I}{1-\tau}$.

Next, we introduce a "tax discrimination" variable θ to capture the opportunity cost of retained earnings in terms of the net dividend foregone, *e.g.* King (1977), where:

$$\theta = \frac{1-m}{1-\tau}, \tag{4}$$

and *m* is the personal tax rate on dividends.

Note that for $\theta < 1$, there is a preferential tax treatment of retained earnings, which will affect the financial structure of the firm and the choice of investment in particular.

The firm is assumed to maximize the discounted stream of after-tax dividends

$$V(0) = \int_0^{\infty} \theta D e^{-\int_t^{v}(1-m)r(s)ds}\, dv, \tag{6}$$

where: the real interest rate r is taken as given by the firm.

In addition, the maximization problem is subject to the following capital accumulation constraint:

$$\dot{K} = I. \tag{7}$$

Setting up a Hamiltonian, we can derive the optimality condition for the capital user cost:

$$\alpha A[\tfrac{K}{L}]^{\alpha-1} - \delta = \theta(1-\tau z)r. \tag{8}$$

In other words, the net return on equity and bonds needs to be the same in order to prevent arbitrage opportunities.

Next, on the consumer side we have a representative on-member forward-looking household, which is infinitely-lived and maximized the sum of discounted utility streams, represented by:

$$U = \int_0^{\infty} \frac{C^{1-\sigma}}{1-\sigma} e^{-\rho t} dt, \tag{9}$$

where: C denotes consumption;

ρ is the time preference parameter (assumed to be constant);

$1/\sigma$ is the intertemporal elasticity of substitution for consumption.

The household financial wealth (*W*) consists of equity (*V*) and bond (*B*) holdings. The law of motion for bonds is:

$$\dot{B} = (1-m)w + (1-m)rB + \theta D + Z - (1+\tau_c)C, \tag{10}$$

where: Z is the lump-sum transfers from the government;

τ_c is the consumption tax rate.

Together with $\dot{V}$, the law of motion for wealth becomes:

$$\dot{W} = (1-m)w + (1-m)rW + Z - (1+\tau_c)C. \tag{11}$$

The first-order condition emerging from the household's constrained optimization problem is the modified Ramsey rule:

$$\frac{\dot{C}}{C} = \frac{r(1-m)-\rho}{\sigma}. \tag{12}$$

Next, the government finances its expenditure G via taxes and issue of bonds (B^G), and its budget constraint is:

$$G + rG^G = \dot{B^G} + m\left[wL + rB^G + rB + \frac{D}{(1-\tau)}\right] + \tau_c C + \tau(\pi - zI - D) \tag{13}$$

Note that government debt is "Ricardian," which means that instead of debt we can have government transfers balancing the government budget constraint, or:

$$Z = m\left[wL + rB^G + rB + \frac{D}{(1-\tau)}\right] + \tau_c C + \tau(\pi - zI - D) - G \tag{14}$$

In other words, the path of government debt can be represented as a time series of government transfers. Additionally, we also assume that *G/Y=g=const*, and L=1.

National accounts then imply that:

$$I = (1-g)AK^{\alpha} - C - \delta K. \tag{15}$$

Substituting this expression back into the law of motion for capital (7), and after some algebra, we can obtain:

$$\frac{\dot{K}}{k} = (1-g)AK^{\alpha-1} - \frac{C}{K} - \delta, \tag{16}$$

where: we have defined $c = C/K$;

$k = K/L.$

We can further rewrite the equation above as:

$$\frac{\dot{k}}{k} = (1-g)k^{\alpha-1} - c - \delta - 1. \tag{17}$$

Similarly, using (8), (12) could be rewritten as:

$$\frac{\dot{c}}{c} = \frac{\phi(\alpha k^{\alpha-1}-\delta)-\rho}{\sigma} - 1 - \frac{\dot{k}}{k}, \tag{18}$$

where: $\phi = (1-\tau)(1-\tau z)$.

The two non-linear ordinary differential equations above comprise the dynamic system of the model economy, together with an initial condition for capital, as well as a boundary ("transversality") condition for capital preventing non-stationary solution paths. Next, in steady-state,

$$k^* = [\frac{\sigma+\rho+\phi\delta}{\alpha\phi}]^{1/(\alpha-1)} \tag{19}$$

$$c^* = (1-g)(k^*)^{\alpha-1} - 1 - \delta \tag{20}$$

It is easy to show that $\frac{\partial\phi}{\partial\tau} < 0$, and also that $\frac{\partial k^*}{\partial\phi} < 0$. In other words, a reduction in the corporate tax rate increases investment and steady-state capital stock. Steady-state consumption will then also increases, as consumption is a monotone function of capital.

Using the notation we introduced earlier, and holding total factor productivity level constant (*A=1*), the utility function can be expressed as follows:

$$U = \int_0^{\infty} \frac{(C/A)^{1-\sigma}A^{1-\sigma}e^{-\varrho t}}{1-\sigma}dt = \int_0^{\infty} \frac{(ck)^{1-\sigma}e^{-\varrho+(1-\sigma)}}{1-\sigma}dt, \tag{21}$$

And the equilibrium interest rate is given by $r^* = \sigma + \rho$. Next, as in Lucas (2003) we will compute the compensatory variation as the welfare gain measured in percentage of additional consumption relative to the consumption under the old tax policy. But before we can provide a quantitative assessment of the tax reforms, we need first to assign values to all parameters in the model. We do this in the next section.

2. Model Parameterization and Calibration

We follow the tradition in modern quantitative macroeconomics, *e.g.* Vasilev (2105c, 2016b, 2017e) and calibrate the model in order to perform a quantitative analysis of the tax reforms through the use of a computational experiment. First as in Vasilev (2015a), the capital share is set to its average rate in data, or $\alpha = 0.429$. Next the discount rate was set to $\varrho = 0.02$ as in Vasilev (2019). Due to the lack of data, we set $\sigma = 1.01$, as in Vasilev (2015b), which results into an approximately logarithmic specification for utility.

As in Vasilev (2017a), the capital-output ratio was set to K/Y= 3.5. Depreciation rate was estimated in Vasilev (2016) to be $\delta = 0.05$. Thus, produces an investment-to-output ratio of 0.18% which is very close to that in data. Next, as in Vasilev (2017b) the value of g was set to the average government consumption-to-output in Bulgaria (0.15). The depreciation for tax purposes is $d = 0.2$, which reflects the five-year depreciation plan adopted in Bulgaria. As in Vasilev (2017d), the value added tax was set to $\tau_c = 0.2$, and the tax on wage and dividend income is $m = 0.325$ (=0.14+0.135+0.05) pre-reform, and $m = 0.281$(=0.1+0.131+0.05) post-reform. Corporate tax equals $\tau = 0.325$ pre-reform, and $\tau = 0.1$ post-reform. This in turn produces $\theta = 1$ pre-reform, and $\theta = 0.8$, post-reform, clearly benefitting investment, due to the now preferential treatment for retained earnings. Finally, as in Funke and Strulik (2006), we set z=0.72.

We then perform the computational experiment, which asks how much household's consumption under the old tax regime should go up in order to make it as well off as under the new tax regime. The quantitative analysis performed predicts a long-run consumption gain of 8.65 % between the two steady-states. As a result of the introduction of the new tax regime, capital and investment are higher by 22%, and output is higher by 9.4% as well.

One of the limitations of this analysis is that the household works all the time, and labour supply is held fixed at unity, as the household does not value leisure. As a robustness check, we therefore extend the analysis by allow for leisure in the household's utility function, which means that the households will now choose their hours of work. Following Funke and Strulik (2006), this amends the utility function to:

$$U = \int_0^\infty \frac{(x^\eta C)^{1-\sigma}}{1-\sigma} e^{-\rho t} dt, \tag{22}$$

where: L=1-x denotes the household's labour supply.

For typical calibration value, setting η such that L=0.333 as in Vasilev (2017c). As expected, endogenizing labour supply brings additional gains, more specifically another 3.9% towards steady-state consumption. The higher consumption gain in this scenario is due to the increase in employment (which follows directly from the complementarity between capital and labour in the Cobb-Douglas production function), which generates an increase in income and consumption, which more than compensates for the lower utility of leisure. Note that in this scenario labour income equals wL. Households increase hours worked due to the increase in wages. Labour markets are competitive and in equilibrium the wage rate equals the marginal product of labour, which in turn is increasing in capital.

Conclusions

In this paper, we set up a dynamic general equilibrium model with fiscal policy to study the welfare effect of Bulgaria's 2007-08 corporate and personal income tax reforms. Overall, the model suggests that the tax reforms increase investment incentives, and thus bring positive effect in the long-run in the form of expanded output, and higher consumption and welfare under the new regime.

References

[1] Funke, M., and Strulik, H. 2006. Taxation, growth and welfare: Dynamic effects of Estonia's 2000 income tax act. *Finnish Economic Papers,* 19(1): 25-38.

[2] Funke, M. 2002. Determining the taxation and investment impacts of Estonia's 2000 Income tax reform. *Finnish Economic Papers,* 15: 102-09.

[3] King, M. 1977. *Public policy and the corporation*. Chapman & Hall: London, UK. ISBN: 0470992638, 9780470992630, 309 p.

[4] Lucas, R. 2003. Macroeconomic priorities. *American Economic Review,* 93: 1-15.

[5] Sinn, H.W. 1987. *Capital income taxation and resource allocation*. North-Holland: Amsterdam, The Netherlands. Available at: http://www.hanswernersinn.de/dcs/sinn-capital-income-taxation-1987-ref.pdf

[6] Vasilev, A. 2015a. Welfare effects of flat income tax reform: The case of Bulgaria. *Eastern European Economics,* 53(2): 205-220.

[7] Vasilev, A. 2015b. Welfare gains from the adoption of proportional taxation in a general-equilibrium model with a grey economy: The case of Bulgaria's 2008 flat tax reform. *Economic Change and Restructuring,* 48(2): 169-185.

[8] Vasilev, A. 2015c. Macroeconomic effects of public-sector unions. *LABOUR,* 29(2): 101-126.

[9] Vasilev, A. 2016a. Progressive taxation and (in) stability in an endogenous growth model with human capital accumulation. *Journal of Economics and Econometrics,* 59(2): 1-15.

[10] Vasilev, A. 2016b. *Search and matching frictions and business cycle fluctuations in Bulgaria*. Bulgarian Economic Papers BEP 03-2016, Center for Economic Theories and Policies, Sofia University St. Kliment Ohridski, Faculty of Economics and Business Administration, Sofia, Bulgaria.

[11] Vasilev, A. 2017a. Business cycle accounting: Bulgaria after the introduction of the currency board arrangement (1999-2014). *European Journal of Comparative Economics,* 14(2): 197-219.

[12] Vasilev, A. 2017b. A Real-Business-Cycle model with efficiency wages and a government sector: The case of Bulgaria. *Central European Journal of Economics and Econometrics,* 9(4): 359-377.

[13] Vasilev, A. 2017c. A Real-Business-Cycle model with reciprocity in labor relations and fiscal policy: The case of Bulgaria. *Journal of Economics and Econometrics,* 61(2): 47-76.

[14] Vasilev, A. 2017d. VAT evasion in Bulgaria: A general-equilibrium approach. *Review of Economics and Institutions,* 8(2): 2-17.

[15] Vasilev, A. 2017e. On the cost of opportunistic behavior in the public sector: A general-equilibrium approach. *Journal of Public Economic Theory*, 19(2): 565-582.

[16] Vasilev, A. 2019. Determining the investment impact of Bulgaria's 2007-08 income tax reforms. *Journal of Advanced Studies in Finance,* Volume X, Issue 2(20), Winter 2019.

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OFFLINE ADVERTISING VERSUS ONLINE ADVERTISING

Cristina Mihaela BARBU
Faculty of Legal, Economic and Administrative Sciences
Spiru Haret University, Romania
cristina_barbu2000@yahoo.co.uk

Ștefan PONEA
Faculty of Legal, Economic and Administrative Sciences
Spiru Haret University, Romania
ponea.stefan@yahoo.com

Cristiana-Luminiţa BOGDĂNOIU
Faculty of Legal, Economic and Administrative Sciences
Spiru Haret University, Romania
cristina82b@gmail.com

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Abstract: *The starting point of the article is the following: is the online environment appropriate to the requirements and needs for affirmation and efficiency of advertising considered a concern by itself? How effective is this advertising model? How can we demonstrate the effectiveness of online advertising? What new does this "new media" bring?*

The present paper aims to define online advertising in the light of the environment in which it is developed but also of the promotion tools and to present the stages of designing an advertising campaign conducted exclusively in the online environment.

Keywords: marketing; communication; advertising; efficiency; sales.

JEL Classification: M3; M30; M31; M37.

Introduction

Advertising according to the American Marketing Association, can be defined as: "Any paid form of non-personal promotion of ideas, goods or services, by an identified advertiser" (Agee, Ault, Emery 1988).

Analysing this definition the following results: advertising and its products, advertisements, are transmitted largely on media and have to be paid (space in newspapers or magazines, space for broadcasting on TV or radio, internet); the ones elaborating the advertisement must act as intermediaries between "the announcers" (companies, brands, organizations, etc.) and their audience (consumers); advertising refers not only to a simple promotion of products or services, but also to ideas, for example, campaigns on social or political issues.

Regarding the appearance and evolution of advertising, two main factors can be observed that favored it, namely: the development of commercial activities on the one hand, and on the other hand the appearance and evolution of the mass-media and the Internet.

1. Brief History of Advertising

Most of the works that refer to the origins of advertising, consider it to be of the same age as the civilization itself, and place its roots in antiquity.

Petre and Nicola (2004), say that three stages can be distinguished in the evolution of advertising:

(1) The *pre-marketing period*;

This period, which can be called the "prehistory of advertising" being characterized by primitive means of communication. It was discovered, as the first evidence of the existence of advertisements at that time, a Babylonian clay tablet dated around 3000 BC., through which a shoe workshop, an oil shop and an "office" dealing with the copying of documents are made known; the ancient Egyptians had the papyrus within reach and used it to write about various products and services or to announce the rewards offered for catching fugitive slaves; In ancient Greece there were people shouting or singing through cities, announcing the arrival of various ships with different products; archaeologists have discovered in the ruins of the ancient Greek-Roman city Pompeii stone inscriptions that were accompanied by visual symbols announcing the offer of certain shops; In the European Middle Ages, for the public announcements in cities there were used "shouters", there were painted signs of shops and inns (Petre, Nicola 2004).

In England, in 1472 the first guide for prelates' guide was printed, which was then displayed on the churchs' doors (this being considered the first form of outdoor advertising); also in England, the first advertising laws were established, using as a first measure the prohibition of using signs that exceeded a certain distance from the frontage of the buildings. In 1525, in Germany, the first advertisement for a medicine was distributed in the mass, printed in a brochure and the first advertisement printed and distributed in the press "in a form similar to those used in the present", appeared in an English newspaper (Petre, Nicola 2004).

(2) *Period of mass communication;*

In 1840 the first advertising agency was created by Volney B. Palmer. This agency, like those that followed in that period, was a link between those who wanted to advertise and the publishers of newspapers, reprinting the ads themselves. In 1860 there were about 30 advertising agencies that rented advertising space for about 4000 American publications. As newspaper and magazine print runs grew and new technological advances in print were made, American advertising reorganized, with new slogans, copywriters and designers arising, and product and market analysis methods improved. In 1910, due to the advertising that was done in an exaggerated way, there were protests from buyers and various organizations demanding the introduction of legal regulations but also assuming responsibility from those working in advertising. In 1911 the first legal regulations appeared which were intended to protect the consumers but also to prevent unfair competition. In the 1920s the radio appeared, a new environment in which the advertising agencies had to adapt their advertising messages, being forced to use spoken texts, sounds or music.

Also, in that period, the "father of modern advertising", Albert Lasker revolutionized advertising messages that consisted of a simple list of products for sale, transforming insipid advertising into "the art of selling through writing", after his own definition. Although radio existed, Albert Lasker focuses on print advertising and begins to pay more attention to messages and less to the images that accompany them.

(3) *The period of scientific advertising;*

It begins in 1950 and continues even today, being characterized by: increasing the importance given to the consumer, developing specialized advertising agencies, introducing new legal regulations that would punish the false and deceptive advertising, the appearance and development of two new environments television and Internet. Slowly, advertising has become a staple in the marketing mix, workers in the field not being able to rely solely on flair and native communication skills anymore.

According to American authors Agee, Ault, Emery 1988, we can highlight some trends in US advertising, starting from 1950, trends that have been also recorded in countries with a developed economic environment from Europe:

(3.1) The 1950s marked as the product era, with the advertising being concentrated on the information side, with more and more products that were to be known by potential consumers. Also, in this period simplified formulas, such as slogans, as well as the appearance of symbol characters began to appear, a good example being the Malboro cowboy, still existing in today's advertising;

(3.2) In the 1960s there is a tendency to combine words with images, these years being marked as the image era;

(3.3) The 1970s, when the era of comparative advertising was born and which corresponded to the intention of the traders to define their products by comparing them with those of the competitors, thus highlighting the unique position of a product or service. At the recommendation of the Federal Trade Commission, in 1972, the "positioning" method appeared which involved the direct comparison between brands, considering that this way more information about products is given and competition is favored. In Europe, this modality is forbidden unlike in the USA, where in the mid-1980s the comparative advertisement represented more than a quarter of the totality of the television advertising, which resulted in a lot of lawsuits between different producers;

(3.4) The 1980s represented the era of "targets" and "thesis" advertising, a period in which the "positioning" method was perpetuated, as well as other trends. Manufacturers are beginning to model their products according to different aspects of consumers' lives, for example, decaffeinated coffee or non-alcoholic beverages.

1.1. Advertising in Romania from the Beginning to the Present

With the entry into force of the "Regulation on trade" in 1832 is also marked the beginning of advertising in the Romanian Countries. The first advertorial in Romania is signed by Costache Negruzzi and appears in Albina Romaneasca in 1846 with the title *Magaziile Ieşilor* and lists the necessary products for someone who wanted to be fashionable or to enjoy luxury and comfort, things that could be found in the store of a certain G. Caliman from Iasi (Petcu 2002, 19).

Slowly, slowly, starting with the 19th century, in various publications such as Albina Romaneasca or Curierul Romanesc, sections such as "private messages, sales and particular notices" began to appear equivalent to today's advertisements from the small advertising. The first "announcements" or "notices", as they were called at that time, were formulated in a simple and concise manner - who sells, what, where, under what conditions, sometimes being the case of "pre-announcements" for books or magazines.

According to Petcu (2002, 23), the first advertising "media" can be considered "pre- announcements", posters, leaflets or small-format newspapers, through which the project of editing a publication was presented and registrations or subscriptions were requested. The first fly papers (flyers of today) that were intended for information, being glued to the walls, in markets or frequented public places, have been used in Moldova since 1642. Subsequently, the ads with images appear, with a slightly humorous touch, this step marking the passage from the simple informative announcement to the publicity. In 1886, the first linear zincographic cliches were obtained, which allowed the reproduction of photographs, vignettes and borders with floral motifs, later engravings and photographs (Petcu 2002, 31, 32).

C.A. Rosetti, a trader and publisher at the "*Romanul"* newspaper, was to become a pioneer of advertising in Romania, introducing a new element to the advertisement-ads that were in the daily content, namely the comparison of prices between Bucharest and other European capitals for identical products. Looking at it from the perspective of modern advertising, this seems surprising, as M. Petcu 2002, 35 also notes, "the issuer of the message often appeared as the depositor of the products that were the subject of the ad, meaning that the publisher was a trader at the same time."

The first specialized publication can be considered *Cantor de avis e comers*, published in Bucharest, in 1837. In 1839, in Braila, *Mercur* magazine, "commercial journal of the port of Braila", appeared in the Romanian and Italian languages. In 1845, G. Asachi published in Iasi the commercial supplement of the *Romanian Albina*, called *Mercurial de Iaşi* or *Avizuri comerciale si interesante*, in a sample number. The number of publications specialized in ads and advertising increased from 26 titles between 1837 - 1900 to 41 titles between 1837 and 1914, in Muntenia and Moldova (Petcu 2002, 44, 45).

In Romania, in Bucharest more precisely, the first advertising agency was born, founded by David Adania, which bore the name "D.Adania Advertising Agency".

In 1924 the American agency J.W. Thompson, with a branch in Bucharest, invites the Queen Mary of Romania to appear in a commercial that praises the qualities of Ponce Cold cream, a year that becomes an extremely important one in the history of advertising in Romania, a year that marks the appearance of the "testimonial" with a celebrity (Petcu 2002, 66), type of advertisement that is also found today under the name of endorsement (advertising messages that use the image of personalities from different fields).

Between 1937-1938 the advertising agencies in Romania are marked by a strong development. The appearance of the radio and the increase of the number of subscribers (in 1930, in Bucharest the number of radio subscribers was around 500.000) offers the possibility of creating and broadcasting on the radio of audio ads under the form of musical creations, with dialogues and sound effects. During the interwar period, especially between 1930 and 1940, when the standard of living in Romania was high, the press abounded with advertising messages of some Romanian and international companies, on the most diverse products and services (Petcu 2002, 69, 70).

With the begining of the communist period, the advertising industry begins to stagnate and even disappear, given that the economy, like all other areas, has been kept under the strict control of communist ideology and politics.

At present, the trends recorded by the advertising in Romania have aligned with those of the international industry, which is a natural thing, due to the phenomenon of globalization. Since this industry has been active for a long time at a global level, large international groups and networks have also established their headquarters in our country, which helps to propagate international trends, three of which are also relevant for the current Romanian advertising: implementation and use of the concept of integrated communication of advertising and marketing, the predominance of the visual communication in relation to the verbal one and the use mainly of the strategies of persuasive communication of emotional-affective order.

1.2. Advertising in the Online Environment

The Internet is a geographically unlimited virtual space and unhindered by any cultural barrier where progress is dictated by time. If, more than 60 years ago, when television appeared, humanity viewed this as a technological boom, the emergence of the Internet began to be viewed as a threat to TV audiences, due to the new facilities that this new environment offered. What is more spectacular is that the Internet has become a necessary and indispensable place for searching information, for socialization and entertainment, but in particular this new environment has begun to be conducive to the development of profitable businesses.

With the appearance of the Internet, traditional advertising made so far only on known media (newspapers, magazines, TV or Radio) began to know essential transformations, transformations that were due to the fact that this environment incorporated all the characteristics of other traditional media.

The Internet has begun to be approached by the big advertising companies, who have seen real opportunities for success in this new environment and it has proven to be extremely profitable. Under these conditions, a new branch of advertising, online advertising (webvertising) was laid.

As a definition of online advertising, in the absence of an unanimously accepted one, I chose to use the one advanced by the authors Iulian Veghes Ruff and Bogdan Grigore, as it seems to me one of the most comprehensive but conclusive definitions.

"*Online advertising is that type of advertising displayed on the Internet, having similar purposes to traditional advertising, but the means and methods of expression, communication and interaction with the target audience specific to the electronic environment. This characteristic is manifested mainly by direct interaction, real-time communication and feedback and targeting restricted to the individual level* (Veges, Grigore 2003, 90).

Volvo's "REVOLVOLUTION" campaign at the launch of the S60 model (Veges, Grigore 2003, 89) was the first Internet advertising campaign, a campaign that marked a first step in realizing the efficiency of the Internet. It should be noted that a "smart" campaign on the Internet is significantly cheaper than a TV one, being able to effectively reach the same audience and much more.

The Internet allows contact with customers 24 hours a day, 7 days a week, 365/366 days a calendar year, which means real-time information dissemination, anywhere around the world, efficient information about everything the customers are trying to find out with the latest news uploaded to date, you can view customer reviews, and at a low price you can conduct studies and surveys to determine the needs of customers or determine the degree of satisfaction. All these benefits could not be ignored by advertisers, marketers or any company that respects itself and wants to be more "hi-tech".

1.3. Planning an Online Campaign

In order to carry out a campaign strictly in the online environment, it is indicated that the promoted product or the company to be as close to the online formulas, and the relations with the public or to the potential clients to be maintained especially through this channel (Patrascu, M. managing partner iLeo).

The first and most important step to take when organizing an online campaign is to take the decision that starts from evaluating the potential efficiency of the Internet as a communication environmnet between the organization and its audience. Although the Internet is an obvious presence in the lives of potential consumers, its use and directly the online advertising largely depends on the main features of the products or services that will be promoted through the Internet (it has been proven that the Internet is an efficient environment for promoting tourism services but for example for the promotion of detergents, Internet advertising has not yielded the same output as TV advertising.). Another element that must be taken into account when making the decision to carry out an online advertising campaign is the one regarding the ability of the Internet and the advertising made through online tools to differentiate the organization, the offer of products and services, in relation to its main competitors present on market. The costs of use and the benefits obtained from this decision should also be evaluated using the cost-benefit analysis method.

Another stage in planning a campaign is *setting goals* (Butnar, B. manager MRM Worldwide Romania).

The specific objectives of online advertising refer to: *creating notoriety* for the organization, its products, services, *generating traffic* to the distribution points of the products and services of the organization and *supporting the organization's sales* in the short and medium term.

Creating notoriety can be achieved very effectively using online advertising banners. The issue of creating notoriety needs to be approached differently in relation to the audience to whom the campaign is addressed: if a general audience is targeted, the aim is to increase the level of information given to virtual consumers. If it is about a specific audience, the level of retention of the organization, its products, its services, among the virtual consumers is searched.

Generating traffic to the distribution points of the organization's products and services is a very important objective of online advertising for new products. It is very important to convince the client to return to the website of the organization.

Supporting sales involves persuading consumers who access a website to act favorably for the organization, buying a product, participating in a promotional contest, completing an information sheet or answering a questionnaire. This is the meaning of the concept of conversion.

Once the objectives have been chosen, the budget allocated to the promotion campaign is to be set. The budget of an online campaign is determined by objectives, target and affinity. The budget can vary between 50 euros and 50,000 euros, amounts which depend on the target, objectives, affinity and especially on the product. In this sense, the use of the online media plan helps to establish the budget accurately, depending on which advertising agencies are chosen, on their portfolio, on the chosen online advertising models, their size but also according to the websites which will be used and, on the CPM (cost-per-thousand views).

The duration of a campaign is like the budget, it depends on the type of the campaign, the objectives, the specificity of the product, the action expected from the consumers, the market on which you act. Very fast feedback helps you adjust the duration of a campaign based on the response you get from consumers. The average duration of an online campaign is 4-6 weeks (Marinescu, C. Manager Splendid Interactive). The duration of the campaign is directly proportional to the time required to reach the proposed objectives.

Another important step in the planning process is to *establish the target audience*, this being done in relation to the specific features of the product. If, for example, we decide to run a campaign to promote a certain car brand, then the target audience we are targeting will be mainly men, or young couples looking for a personal car or young people who are keen on adventures behind the wheel. In order to get effective results in an online advertising campaign you must first and foremost target a specific audience with specific interests, you also need to make sure you know exactly who will buy the product and where you will find those people online.

Creating and testing advertising banners is the next step in planning. Advertising banners can be viewed in the same way as advertisements for print communication environments (daily and periodical press, views). Their creation and testing generally follow the general rules for creating advertising ads for the press (display) less a number of particularities regarding their dimension. Choosing a particular size of the ad banner leads to restrictions on the informational content of the banner. Thus, the smaller the banner is in size, the more the information that can be presented through it will be more limited in content or presentation. The larger the banner, the more the information that can be presented through it will be richer, but in this case, it appears the problem of loading it with a web page which is hosting it, so if the upload duration is longer, the chances of viewing a banner are lower.

The elements that appear in most of the advertising banners circulating on the Internet are the following: the name of the organization, its advertising slogan, the call to action addressed to the visitor, an incentive for the visitor's action (a special price offer or a free gift), the main advantage offered by the organization, the product or the service promoted through the advertising banner. Video or interactive banners will always have much better results than standard ones. Banners positioned in the center of the page give the best results, because they are much easier to be seen by the users.

The next step involves *identifying and selecting the appropriate placements for advertising banners* (Butnar, B. manager MRM Worldwide Romania).

The advertising banners are to be placed on the web pages of the different websites existing on the network or on websites that are in the portfolio of some advertising agencies. If a general audience is targeted, it is desirable that the banner to be placed on the introduction pages of the main search engines used by visitors of the network (*e.g.* Yahoo!, Google, Infoseek, Altavista, Excite), but if a specific audience is targeted, it is desirable for the banner to be placed on the pages (both introduction and content) of some sites with an informational content which is close to that of the organization.

As a general rule, there will be selected as host websites of the organization's advertising banners the ones which: are accessed by the highest number of users, the degree of users' loyalty to the site is high or very high, the geographical structure, demographic, psychological and behavioral of those who access the site largely matches the structure of the audience targeted by the organization, the content of the website does not create negative associations with the products and services of the organization, in the minds of the consumers, the site is updated regularly, the quality of its content being one of the strengths appreciated by the visitors, the owner of the site offers the organization the possibility to present the banners individually on the page, the duration of the exposure of the banners and the frequency with which they are replaced correspond to the communication objectives of the organization, the supplier of advertising space has a very efficient tracking and reporting system of the traffic of the website.

*The evaluation of the effectiveness (*Marinescu, C. Manager Splendid Interactive) *of the online advertising campaign* will be pursued starting from its three major objectives: the notoriety created, the traffic generated and maintaining the sales. In order to evaluate the notoriety created through the views of advertising banners, the indicator number of "impressions" is used. Impressions represent the frequency with which a browser in the virtual space is exposed to an ad banner. The notoriety of the organization increases when as many people see the advertising banner.

For the evaluation of the created traffic, the most useful indicator is the access rate. This is expressed as a share of impressions accessed by network users. The access rate has values between 1 and 5%. The level of the access rate depends significantly on the attractiveness of the promoted product (service), the quality of the created advertising and the quality of the website chosen as a support for the advertising banner.

Sales support can be assessed through the conversion rate. This is expressed as a percentage of the people who accessed a site and took a favorable action for the organization. It is not enough for a site (banner) to generate a high access rate, it must also be accompanied by a high conversion rate.

2. Online Elements of Efficiency

2.1. Offline Advertising versus Online Advertising

Online advertising has a specificity that is predominantly manifested through interaction, real-time feedback, precise targeting that can reach to the level of the individual but not least through interactivity, an important feature that is not found in other environments (Veges, Grigore 2003, 90). Although they are somehow different because of the media channels in which they are propagated, the amounts of money that are allocated or because of the benefits, we must not forget that both traditional and online advertising are aimed at achieving the same goals, namely promoting and awareness of the brand.

Online advertising, implicitly online marketing has completely changed the patterns of transmission of advertising, so much that instead of transmitting the message to a target audience, selected by the transmitter, which either respond or reject the message, in the electronic environment we have to deal with a unique situation, consumers seek information and publicity, so they are the ones initiating communication (Veges, Grigore 2003, 96, 97). Because the web is considered the main source of information, Internet advertising allows users to search and find with minimal effort, exactly the products that they need, and can even make a price comparison.

Unlike traditional advertising, online advertising must consider the following key issues: space, time, image creation, direction of communication, interactivity, call to action.

2.1.1. Space

If in traditional advertising, space is a limited and very expensive resource, which imposes extremely exigent limits, for example a TV or radio advertisement should have a maximum of 30 seconds, the advertiser having to be limited to the minimum and necessary information required to fit in (Veges, Grigore 2003, 95, 96), in online advertising, space is not a problem as it is also the price. Although there are limitations only in creating the banner according to certain dimensions, on the page to which that banner sends you, everything that the advertiser wants to convey can be put without any limit, all these things being done in exchange for a much smaller amount compared to an advertisement in other media. Because of this, different messages can be created for different types of consumers (those who seek information, those who seek the best price, those who are value oriented). If the messages are visual, you can put pictures, even movies. If consumers are focused on numbers, a lot of statistics can be displayed. In fact, they can create their own sales scenarios as they search for the information that interests them, avoiding other types of information.

2.1.2. Time

In the traditional media, time is the product for which the advertiser pays most of the money, this being limited but also expensive. For this reason, the advertiser must be able to concentrate in as short time as possible all the information needed to convey a clear message about the product. Exception from time is made in the written media where readers decide exactly how much time to spend to read an advertisement, but it has usually been established that the time is somewhere around 2 seconds. Due to limitations, companies try to build an image of the company or product, based on visual effects with a strong effect and which appeal to feelings.

Time represents for online advertising what consumers spend. The time is unlimited, and the exposure to the message is permanent (Veges, Grigore 2003, 98). Time is a commodity for consumers full of value for two reasons: it takes a lot of money to be online and time away from personal business or activity. In order to attract them to the store, they need to be maintained on the website, determined to return and tell their friends to go over there, something has to be added to their online store experience. The first step is to have high quality products and information presented in an attractive way. The second step is to add something real to the consumer's experience in the virtual store. The message will provide beyond images, information, solutions to the needs of consumers, will provide a guide and directions for their real-time and fast satisfaction.

2.1.3. Creating the Image

Traditional advertising offers only the possibility of displaying a message anchored within the expression limits of the respective mass-media (sound for radio, image for print and image and sound for TV). Images are static or moving, contain music, lights and action. Images are primary and information is secondary. The image is created using words and scenes that generate emotions, the information appearing very little or not at all. The advertising message will have as its main resort the affectivity, the association of symbols with the brand.

The online advertising message can use the affectivity as well as the objective and scientific information (the links offer the possibility of displaying the opinion of certain persons or consumers). Spatial-temporal freedom gives way to any form of message display and image creation. The possibilities of rendering the advertising message are unlimited, offering all forms of expression from the traditional media (a banner can include from audio-visual elements to static images, games, animation and interactivity).

2.1.4. The Direction of Communication

Through television, messages and images can only be transmitted to passive people who either listen to the message being transmitted or ignore it, and if they have questions, the answers are not immediately available (for example, if they see a commercial with a new car and they want to know its price, they have to go to the car dealership that has it for sale). Some ads also show a toll-free phone number, thus starting a relationship. Like any conventional communication process, offline advertising will deliver a message that will reach the receiver through an environment (media). In turn, the receiver will react to the message by transmitting a response (feedback), in this case the feedback being the purchase of a product, its appreciation, the awareness of the brand, which will cause the sender to reshape his message, so as to have a maximum effect. (Veges, Grigore 2003, 99). Unlike traditional media, consumers are looking for the company's message in the online environment. They choose to visit the company's virtual store and read information about the product and eventually, for other details, they can communicate with the representatives of the company much easier and faster, maybe even instantaneously. Ideally, virtual shops should have people especially hired to communicate with customers and provide them with all the required information without delay.

2.1.5. Interactivity

Supposing that, watching a television, you see an advertisement for a new car. More information is required. How much does it cost? What is the consumption of gasoline? Where is the local dealer? The ad does not tell you these things because it does not have the space to present all this information. A toll-free phone number appears for a few seconds on the screen, but there is a risk that it will be forgotten until the next advertisement begins.

The consumer watches the advertisement on the television and becomes very interested in the image. He reads the web address on the TV and connects to the Internet to read the home page. He finds all the information he needs and then joins a car discussion group and reads the messages other people have written about the car. Questions can be asked and after a few minutes the answer is received from a car owner, and not from a company representative. Through online advertising, a flow of information is transmitted, on which he can rely in order to make the purchase decision.

2.1.6. The Call to Action

If in traditional environments one uses messages such as: *Only on Thursday you have a discount on the product x!* or *Buy one now and get one more free!* advertisers, based on emotions and incentives, in the online environment the consumer wants to have as much information about that product, to look for comparisons between different products that have the same use, which makes the products that are correctly described to have an extra chance to be sold than if it were for emotion.

2.1.7. Coverage

The Internet is not yet mature enough to provide coverage as wide as other advertising environments, especially in certain geographical areas. From this point of view, the television has the widest audience, both nationally and internationally, being able to realize much wider advertising campaigns. The same can be said about radio, in most countries of the world there is at least one radio in each house.

The Internet cannot attract or target certain market segments, such as people with lower education levels or people who do not know how to use the computer, but it covers segments with certain demographic characteristics, which would be difficult to reach through other means. The ability to attract new customers is considered to be the greatest benefit of the environment. Most companies adopt nowadays online promotion in their communication strategies and integrate online advertising within the marketing mix.

2.1.8. Selectivity

At least theoretically, through the Internet, one can communicate with segments that are much better defined by consumers than other environments, but companies have not been able to make the most of this. Rather, it may be a self-selection process, carried out by the consumer, choosing a specific advertisement, a specific site, so his interest in the message communicated by the company is much higher from the beginning than in the case of traditional media. Consumers individualize their experience by choosing a certain order of accessing the pages, the most popular sites being the ones that allow users to personalize their interaction with the message of the company. No other media channel offers consumers such a high degree of control, but also the possibility of individualized communication (Veges, Grigore 2003, 100).

2.1.9. The Public

In traditional media, advertising is addressed to a geographically limited audience with common general features, having no representation at the individual level, but a composition from the entire socio-demographic sphere, the target audience being targeted, searched. The public's reaction to the advertising campaigns cannot be measured precisely because it cannot interact in real time and directly with the advertiser (Vegeş, Grigore 2003, 101). Online advertising as opposed to traditional advertising is addressed to an audience that is not geographically limited. The audience can be individualized, the groups can be identified by the features that are important to the campaign. The audience is represented by specific socio-demographic categories, ideal for the advertising activity, being able to send an immediate response, in real time, through the same environment being abel to interact with the advertiser, the message being interactive.

In addition to the differences listed above between online and traditional advertising, we can also add other differences in terms of costs, turnover or payment methods.

2.2. The Advantages of Online Advertising

From the point of view of the advertisers and the efficiency control the main advantages offered by the online advertising are: targeting, monitoring, displaying the advertising, its changing and interactivity.

2.2.1. Targeting

By targeting an advertising campaign can address to only certain regions or nationalities or the campaign can run only at certain time frames taking into account the personal preferences of the consumers. For the most accurate targeting, a multi-step structured optimization process is used. In the first stage, as much data is collected about the target audience (what kind of sites they visit, what kind of articles they prefer to read) and after these data are centralized the company sends advertising messages to a large number of recipients. In the second stage, information about the public is collected from all existing sources, from databases to data obtained from the website hosting the advertisement. The third stage in the targeting process is reserved for analyzing the collected data and grouping them into similar segments so that each segment is addressed the message that interests it the most, this division representing group level targeting. In the next step, with the help of the collected data, a personalization of the message that must be transmitted can be made up to the individual level. The final stage will run for the entire duration of the campaign and will represent a new starting point for the offers targeted on groups and individuals. Targeting means nothing more than restricting the target audience from an indefinite number of recipients to sending personalized offers at the individual level (Veges, Grigore 2003, 92, 95).

2.2.2. Monitoring

Monitoring is done in order to establish exactly what are the points of interest for current or potential customers, depending on how they interact with the presented products. At the same time, it is also possible to monitor how users have browsed inside the page, what they viewed before or how long they spent on a certain page. The efficiency of an advertisement can be determined by the number of clicks it receives or by the number of sales it has generated.

2.2.3. Displaying the Advertising and Changing It

One of the great benefits of displaying an advertisement in the online environment is the fact that it can be displayed non-stop, 7 days a week, 365 days a year and in addition to this unique feature, the advertisement can be modified, interrupted or optimized at any time. The advertising campaign can be followed daily and depending on its effect, it can be modified (Veges, Grigore 2003, 96).

2.2.4. Interactivity

Due to this unique feature of the online environment, the consumer can move very quickly from the advertisement to the producer, who has the opportunity to interact with the product, can hear the opinions of other consumers and most importantly, can buy it from home or from the office, during the lunch break, with no need to travel to the headquarters of the company.

2.2.5. The Advantages of the Consumer

In online advertising, the consumer is an active participant who helps to build commercial messages by choosing what he wants to see, when and how often he sees it. Basically, due to the interactivity with the consumer, this is perhaps the most important link from the transition from mass advertising to a very precise selection of the target group and ending with the individual, personalized communication.

3. Online Efficiency

As in other environments, the success of an online campaign depends very much on the knowledge of the domain, advertising, but also the knowledge of the environment, namely the Internet. According to specialists, (http://www.refresh.ro/) online advertising is more effective than traditional advertising.

Their main arguments refer to:

- better quality of the targeted audience considered from the point of view of income, level of training, concern for technical issues and technology);
- better selectivity through the number and growth rate of highly specialized websites significantly exceeds the same references for traditional communication media, press, radio or television)
- the performance and evaluation of the efficiency of the online advertising actions can be done much faster, much more accurately, allowing appropriate and prompt corrections of the specific carried out campaigns.

3.1. Efficiency of Online Campaigns

The objectives of an online campaign can be very specific and that is why when we talk about the efficiency of online campaigns, we have to refer strictly to the set objectives. With its help, notoriety can be gained (for a brand, product, offer, service), customer relationship (a free online service can be offered to develop a long-term relationship with the target audience), sales leads (through which the user can be brought to the point of the offline sale or even online, if the product is sold through a virtual store), data about the users can be collected and content generated by consumers can be obtained.

The evaluation of the efficiency of an online advertising campaign will be done starting from the three major objectives: the notoriety created, the traffic generated and the sales support. In order to evaluate the notoriety created through the displayed advertising banners, the indicator number of "impressions" is used. Impressions represent the frequency with which a browser in the virtual space is exposed to an ad banner. The notoriety of the organization increases when as many people see the advertising banner.

For the monitoring of traffic, the most useful indicator is the access rate. The level of the access rate depends very much on the attractiveness of the promoted product but also on the quality of the advertisement and the site. The access rate is expressed in percentages and has values between 1 and 5%, representing the share of impressions accessed by the people browsing the network.

Sales support can be monitored through the conversion rate, which represents the percentage of people who visited that site and took a favorable action *(for example, they bought a product or a service).* The most important things are that the conversion rate must be high, and it is not enough to have only a high access rate. *For example, if an ad banner of Company X generated an access rate of 6% and a conversion rate of 75% and a banner of Company Y generated an access rate of 10% and a conversion rate of 40%, we can say that the banner of Company X was more efficient (conversion X = 0.06 * 0.75 = 0.045, which is 4.5%) compared to the banner of Company Y, which despite a nearly double access rate achieved a lower conversion rate (conversion Y = 0.1 * 0.4 = 0.04 namely 4%.)*

3.2. Online Efficiency Indicators

The efficiency indicators can be defined according to each site separately, according to its type and activity, but as indicators considered, we can mention the following:

Turnover from advertising: a good indicator, which is not directly related to traffic, but to the quality of the content. There are websites of 200 visitors a day that make more money than websites with 10,000 users per day. The digital environment had a share of 3% of the total 540 million euros invested in the media, and this year it will reach 4% of the market which will be of 340 million euros. Worldwide, the Internet advertising market is about $ 54 billion (36.2 billion euro), with Google being the only company among the 15 largest media companies in the world with such growth. Marketers expect that next year online advertising spending will increase by 7.6%, and in 2012 by 15%, believing that investments in Internet advertising will increase due to its efficiency and precise targeting of the public.

The number of orders is a direct indicator related to the quality of the presentation on the site. A company with a better web presence produces more prospects, more contracts than one that didn't prepare so well. It matters the approach method of the user until he or she decides you are the chosen one.

The number of subscriptions to the newsletter. In a world where you can see thousands of sites every day, on some occasions you subscribe to see what some of them have to say. It is an indicator of the efficiency of web communication. It can often be linked to a particular event, and then the measurement of the effect can be direct and better than in other environments.

Online store deliveries. The indicator really reflects the state of the store, the relationship with the suppliers and the negotiation power.

Number of replies. When using Blog or Comments platforms, the power of the community is directly reflected in its quality. The more quality (subjective) answers, the stronger the online tool is.

The number of constant clicks. The number of clicks on a banner or other advertising object, made by one or more visitors, the number of pages with constant advertising (namely the number of pages with advertising visited on a site during a certain period by a single visitor), the percentage of clicks (that is, the number of constant clicks divided by the number of pages with advertising). The basic criterion in analyzing the efficiency of an online campaign should not be the direct increase of sales on a short-term, but its effects on the level of perception on the brand and on the image. The Internet is, first and foremost, an excellent way of communication, before being a very good way for sales or direct marketing. The online environment is a very good space for communicating values, positive associations or emotional benefits, a space where interaction with potential customers takes place, creating a favorable perception for those who have not been taking contract with the brand or loyalty and correct orientation of the decision to purchase for those who have already done this thing (Anja 2004, 73).

3.3. Internet Promotion

With the increasing popularity of the internet due to technological innovations, a new activity begins to make its presence, becoming more profitable and being used by a growing number of companies. This activity included electronic advertising and marketing, tools that could be used at minimal cost but offered enormous possibilities.

With over 30 million users worldwide and registering a growth rate of over 10% per month, Internet marketing is becoming easier and handier than traditional methods. Taking into account that a marketing company can determine a response rate of at least 2%, comparing this rate with the Internet users, would result in a few thousand responses on the Internet.

More and more companies from different economic sectors are beginning to realize the enormous potential that is offered through the Internet. In the past, to attract the attention of several millions of "spectators" and potential customers, television networks offer advertising packages consisting of several commercials lasting up to 30 seconds for prices of tens of thousands of dollars, prices that were huge for the small companies, only giants like Coca-Cola or Ford being able to afford to use this form of advertising.

Thanks to the internet nowadays, any company can afford to form an image and get to attract the attention of customers in exchange for considerably smaller amounts of money than advertising through television networks. Another method is to rent advertising space on a popular site with high traffic. As television channels charge directly in proportion to the number of viewers of a program, so do the rates of an advertising "banner" - which points to the site of the company that rented the advertising - depend on the traffic on the site. Being connected to such a service offers an important visibility to the commercial companies, visibility without which their presence on the Net would remain inefficient.

A successful graphic design cannot by itself guarantee the success of a website. A good content associated with a good graphic design complement each other, ensuring the success of a web page.

Designing and managing a successful site is therefore not a trivial activity. It is rather an activity that needs to be well coordinated, which can become costly both in time and in money. However, the results can exceed by far the investments made. Particular attention should be paid to the way of combining the informational content with the graphic content, without neglecting, as far as possible, the technical content.

A large number of sites, which have achieved great success, however, have a rather modest and simple graphic and technical design, but they are overflowing with informative content, new, fresh and interesting. Because the key to the Internet is content. There are several ways to make money on the Internet, being online, and even offline. Considering the large number of advertising messages carried over the Internet, certain advertising companies, instead of including the advertising messages on their site, pay the user with some of the money obtained from the advertising contracts to download a program which, when it is executed, it displays a window where the advertising messages are displayed.

Another method of promotion is through the banners displayed on the website of the advertising company. Some advertising companies pay the user to login to the website displayed in the banner.

There are also offline methods of advertising: emails with advertising messages and links. The user must click on the links and visit the respective pages and they receive a sum of money for each address visited.

One of the most effective methods of advertising on the Internet is through search engines.

With 51.98% of the total visits made on the Internet, search engines are the main source of traffic for Romanian sites. Google is the favorite of Romanians in online searches, with a smashing 97.16%. Yahoo is at a great distance, with just little over one percent (only 1.44%), and Bing is on the third place with 0.42%.

All the pages found are stored in a database. When a user searches in a search engine for a particular phrase or word, the search engine will look in that database and, according to certain priority criteria, will create a list of results that will be displayed as a result.

Advantages of online advertising (Badiu 2013):

- It represents a fast and easily accessible means used for an increasing number of people;
- Advertising messages can be complex, they can contain text, sound and image within the same message;
- The space in which the advertisement is displayed is unlimited;
- It is the perfect research tool. It has the ability to accurately measure how many people have accessed a particular web page or virtual store and how many of them have purchased a particular product;
- Through the Internet, the consumer does not only see the advertising, but he can interact with the product, can find reviews of other buyers, from different sites, forums, sometimes he can test the product, or even buy it, without moving to a store, with just a few clicks on the computer;
- Online advertising can be displayed 24 hours a day, 7 days a week, and 365 days a year;
- An online advertising campaign can be launched, modified or interrupted immediately. The person who deals with Internet advertising can follow a campaign daily, and if it generates too little response, he can change it at any time, a fact which cannot happen in print or TV advertising;
- The Internet campaign is significantly cheaper than the one on TV, effectively reaching the same and more accessible audience. The small and medium budgets of companies, which cannot reach the TV, can go online;

- In the case of online advertising, feedback is much faster than in other promotional cases, and the duration of a campaign can be adjusted according to the response received from the consumers;
- Targeting is also an advantage, advertising on the Internet offers targeting possibilities that no other form of advertising can offer. The opportunity of this advantage is that the company can create a campaign by categories of consumers, for example a campaign can be addressed to users from certain companies, of certain nationalities, from different geographical regions, it can be placed at a certain time, for a certain way of communication (PCs, tablets, phones using the Internet);
- The company can monitor the products with the most success among the users;
- Advertisers can measure the effective response to an advertisement, by the number of clicks the advertisement receives, or by the number of purchases generated through the banner, etc., a thing which is almost impossible by traditional means.

Therefore, there are many benefits of online advertising, and a company of nowadays that respects itself has to take into account and keep in mind that everything will slowly depend on the Internet, and so they should use this form of promotion as well in order to attract as many customers as possible.

Disadvantages (Plugaru 2017):

- One of the biggest disadvantages of online advertising is the phenomenon called banner blindness. This is about the tendency of web page visitors to ignore the ad banners. This can happen even when the banner contains the information that the user is looking for. As often, the phenomenon is encountered in the case of promotional messages, especially when these emails are received in large numbers, taking the form of SPAM;
- Another disadvantage of advertising in the virtual environment relates mainly to interactive and multimedia advertising. Although it's a form that enjoys popularity and offers many benefits, dynamic ads are harder to load than static banners. Therefore, they should be used with greater care;
- Online advertising can often be blocked. This can be done with the help of specially designed programs to prevent the display of advertisements on the Internet. Whether it's simple banners, flash, text, or other types of ads, they often make browsing difficult and become annoying for the consumer;
- Another disadvantage of online advertising is that small businesses do not have enough financial possibilities to promote themselves through virtual advertising. This is all the more difficult to do, as there are millions of companies selling similar products and services;
- One problem that cannot be overcome by those who intend to promote a product through online advertising are the difficulties that may arise in estimating the legitimacy of certain transactions. Another disadvantage of online promotion is that sellers and customers are isolated from one another. The contact between the two parties is minimal both before and after the conclusion of the transaction. As a result, the chances of repeated sales decrease, and many companies can turn to other methods of promotion;
- Sometimes, online advertising also involves additional expenses. For example, to be able to support a video playback, the hosting service may need upgrades. As a result, the costs of operating the site will increase. Moreover, online advertising can be a wrong choice if the targeting is based on an audience less involved in the virtual world and without too much technological knowledge.

Conclusions

The two types of advertising, traditional and online, most often complement each other, taking into account the fact that many online campaigns are supported and come as an extension of an offline promotion campaign. More specifically, online advertising comes only to complete the marketing mix that lies at the basis of a successful promotion.

Most of the companies - market leaders, created their own websites, hired real digital marketing teams, teams that, most of the time belong to the IT department and, some of them, diversified their range of products offered to the market. A well-known example: eMag, which started its activity in 2001 as an online store for computer systems and office products, which has diversified its activity in the future to household and electronic products, and currently, eMag sells articles of personal care, car products, sports goods, books, music, movies, home and garden products, petshop, products for children, etc. eMag is currently one of the most popular online sales platforms. Most companies, however, supplement their classic sales, in physical stores, with online sales, or, regardless of the form of sale, they use both classic advertising and online advertising. From the online forms of advertising, it is preferred, banners, companies placing ads on search engines and on sites that attract the target audience and can thus persuade them to visit the site. As a classic form of promotion, advertisements are used in special sections of newspapers and business publications. Also, the big companies create TV commercials / spots, broadcasted on the television channels, local, or national, according to the allocated budget.

Visitors can be drawn to a particular site by being offered samples or free information. Some companies have free delivery for any product, or starting from a certain value, to any place. Companies create their own awards, or use entertainment elements on the site, or use the personalization of the site - building customer relationships, thus creating the feeling of exclusivity. Customers' email addresses are typically acquired when customers subscribe to the site. The use of such tactics helps to create a database to help determine the needs and requirements of customers, which will lead to increased sales. By creating a domain with a password on the site, people have the feeling that they belong to a special community. Members can also provide demographic information, the area of origin, what captures their attention on the site, the number of clicks, etc. People like to see what other people think. Readers can make their views known on certain topics and see the results immediately. TV or the press advertising does not allow you to know the exact number of people who saw the advertisement or their reaction to the advertisement or to the offered products. Predictions can be made, of course, but they are not as accurate as the information obtained on the Internet.

Analyzing the characteristics of online and offline promotion, we can conclude that the online environment offers more advantages than the classic one. However, the two types of advertising have at least one point in common: in both cases, you have to know very well the target audience you are addressing to. Online and offline advertising must complement each other, express the same idea, reinforce the message and not mislead the consumer. As a result, online advertising has become the most profitable business for advertisers in a record time, when we talk about annual balances of billions of dollars of profit.

References

[1] Agee, W.K., Ault, P.H., Emery, E. 1988. *Introduction to mass communications. 9 th edition. New York:* Harper and Row Publishing. ISBN: 0-7021-3649-2.

[2] Anja, J. 2004. *Web advertising-new forms of Internet communication.* John Benjamins Publishing Company Publishing, Amsterdam / Philadelphia.

[3] Badiu, O. 2013. *Avantajele publicităţii online (Advantages of online advertising)*. Available at: http://iqmk.blogspot.com/2013/01/advantele-publicitatii-online.html. (in Romanian)

[4] Butnar, B. managing director of MRM Worldwide Romania. Available at: http://mad.wall-street.ro/top/Media-Advertising/78533/Top-10-lucruri-pe-care-un-manager-tre- to you know-about-advertising-online.html. (in Romanian)

[5] Cathelat, B. 2005. *Publicitate şi societate* (*Advertising and society).* Trei Publishing House. Bucharest. ISBN 9737070356, 237 p. (in Romanian)

[6] Graur, E. 2001. *Tehnici de comunicare* (*Communication techniques).* Mediamira Publishing House, Cluj-Napoca. 27 p. Available at: http://itee.elth.pub.ro/~mm/tcp/exemple/Bibliografie/Tehnici-de-comunicare%20-%20MANUAL.pdf (in Romanian)

[7] Marinescu, C. Executive Director Splendid Interactive. Available at: http://mad.wall-street.ro/top/Media-Advertising/78533/Top-10-lucruri-pe-care-un-manager-treabli-sa -le-know-about-advertising-online.html. (in Romanian)

[8] Patrascu, M. Managing Partner iLeo. Available at: http://mad.wall-street.ro/top/Media-Advertising/78533/Top-10-lucruri-pe-care-un-manager-treabli-sa- he knows-about-advertising-online.html. (in Romanian)

[9] Petcu, M. 2002. *O istorie ilustrată a publicității românești (An illustrated history of Romanian advertising)*. Tritonic Publishing House, Bucharest. ISBN: 973-8497-05-8, 348 p. (in Romanian)

[10] Petre, D., Nicola, M. 2009. *Introducere în publicitate* (*Introduction to Advertising).* Comunicare.ro Publishing House, Bucharest. ISBN: 9789737111852, 248 p. (in Romanian)

[11] Plugaru, R. 2017. Ce riscuri şi ce avantaje aduce publicitatea online? (*What are the risks and benefits of online advertising)*? Available at: https://www.sebastian-radu.ro/ce-riscuri-si-ce-avantaje-aduce-publicitatea-online/ (in Romanian)

[12] Vegeş, R.I., and Grigore, B. 2003. *Relaţiile publice şi publicitatea online (Public relations and online advertising).* Polirom Publishing House, Iași. 90 p. (in Romanian)

*** https://www.sebastian-radu.ro/ce-riscuri-si-ce-avantaje-aduce-publicitatea-online/

*** http://info.emag.ro

*** http://profitshare.emag.ro

*** http://www.refresh.ro/

*** http://www.iaa.ro/Articole/Analize/Eficienta-campaniilor-de-publicitate-online/70-2.html

*** www.afaceri.net

*** www.bursadereclama.ro

*** www.iaa.ro

*** www.iab-romania.ro

*** www.markmedia.ro

*** www.newtonad.ro

*** www.openzone.us

*** www.refresh.ro

*** www.sethgodin.typad.com

*** www.studentsonmarketing.wordpress.com

*** www.trafic.ro

*** www.videobanners.com

*** www.wall-street.ro

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PREDICTING DISAGGREGATED TOURIST ARRIVALS IN SIERRA LEONE USING ARIMA MODEL

Emerson Abraham JACKSON
Bank of Sierra Leone, Sierra Leone
ejackson@bsl.gov.sl

Edmund TAMUKE
Bank of Sierra Leone, Sierra Leone
etamuke@bsl.gov.sl

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Abstract: *This study has uniquely made use of Box-Jenkins ARIMA models to address the core of the three objectives set out in view of the focus to add meaningful value to knowledge exploration. The outcome of the research has testified the achievements of this through successful nine months out-of-sample forecasts produced from the program codes, with indicating best model choices from the empirical estimation. In addition, the results also provide description of risks produced from the uncertainty Fan Chart, which clearly provide possible downside and upside risks to tourist visitations in the country. In the conclusion, it was suggested that downside risks to the low-level tourist arrival can be managed through collaboration between authorities concerned with the management of tourism in the country.*

Keywords: ARIMA methodology; out-of-sample forecast; tourist arrivals; Sierra Leone.

JEL Classification: C32; C52; C53; L83.

Introduction

Tourism is a very important sector that generate economic activities to boost revenue generation for an economy, particularly in terms of employment and GDP contribution. In short, it provides essential means of diversified livelihoods given the fact that the purpose of visitation by tourists would be for different reasons as explored in this research paper, for example holiday making, business activities, etc. As excerpted from the latest report produced by the World Travel & Economic Council (2019), travel and tourism are perceived as one of the world's largest economic sector, with a 10.4% contribution of GDP to the global economy, and a recorded 3.9% growth rate in 2018. Under ceteris paribus condition, the sector is considered to be resilient to adverse shocks given the fact that people utilize activities in the sector as a way of relaxing after arduous months of work, while also being pursued as an important source of livelihoods through activities pertaining to business ventures and many more.

With particular reference to Sierra Leone, the tourism sector was very buoyant prior to the civil crisis that erupted in the early 1980s, and since then it has struggled to recover despite efforts to promote the industry. Apart from the crisis that struck, the industry in Sierra Leone also experienced plethora of challenges, despite the aesthetic historical location of the Freetown Peninsula, which is perceived as a unique venue, with the "Lion look" of the mountains protruding the sea shore of the Atlantic Ocean, hence its nomenclature as "*the Lion Mountain*", also the origin of the name "Sierra Leone" (Jackson, 2015a; Jackson, 2015b).

The use of empirical study of this nature, which utilizes disaggregated time series data is very important for planning the tourism industry, more so tourist visitation in a country like Sierra Leone. In this vein, institutions like the National Tourist Board of Sierra Leone, the Ministry of Tourism and other key stakeholders like Travel Agents can benefit immensely by devoting attention in commissioning studies geared towards providing meaningful forecast of tourist visitations in the country. Such organized means of planning is also considered beneficial to a nation as businesses and the government in boosting (economic) activities and also revenue generation needed for fiscal operations by the government.

In this vein, the main aim for disaggregating components for a study of this nature is to make sure judicious planning is prepared to improve capacity for tourist arrivals, whether in its aggregated or disaggregated form as addressed in this study. It is hoped that this will help boost sectoral activities in the tourist industry, and most importantly, to the government in terms of stock-taking of tourist visitations in and out of the country, as equally done in studies carried out by Petrevska (2017) and Mason (2015).

1. Significance of the Study, Scope and Emerging Knowledge

Sierra Leone is a naturally endowed nation with lots of tourist attraction, particularly its brilliant sea-shore venues located along the Western Area Freetown Peninsula (WAPFoR), with scattered beaches in nearly all its communities. Prior to the war which broke out in the late 1980s, tourism was quite a booming activity (Trading Economics, n/d), with people coming from all over the world to relax in the country. As time passes on, the scope for the country's power of harnessing the natural facility of its sea-shore environment was more of a history as opposed to be a reality for generating economic activities and ultimately revenue to support much needed fiscal operations.

In real term, the country was able to gain a lot from tourism through GDP contribution, while also creating opportunity for people to be gainfully employed, particularly in areas connected with the hotel/leisure services (Statistics Sierra Leone 2018). Equally, the influx of visitors coming into the country to explore business opportunities, also another area of benefit to the country in terms of its contribution to economic activities, namely employment (Betts 2016).

With the advent of the civil crisis, this was seen as a lost blessing and also a real loss to the country's hope of harnessing revenue, which in most cases comes in the form of foreign reserves to support vital fiscal operations for government and the expansion of subsidiary business activities to support continuity in the tourist sector. Desperate efforts have been made since the end of the war in the early 2000's to revitalise the tourism sector through schemes like attractions that support diaspora return into the country and rebranding of hotel venues in particular.

On account of the aforementioned points, this study has made it a core part of its focus to provide short term disaggregated forecast in capturing tourist visitation in and around the country's border. The emerging knowledge to be gained from this study is the exploration of disaggregating components of tourist visitation data in the country (2013M01-2019M03) to produce out-of-sample forecast covering 2019M04 – 2019M12, with an overall scope for addressing risks to the aggregate tourist visitation variable.

2. Objectives and Structure of the Paper

In view of the above discourse pertaining to the exploration of emerging knowledge of this study, the main objectives are hereby highlighted:

- Provide short term disaggregated forecast for each component that constitute tourist visitation in the country using Box-Jenkins ARIMA model;
- Examine risks to the forecast outlook for the aggregated / headline tourist variable;
- Propose relevant policy recommendation(s) for effective monitoring as a way of improving tourist visitation in the country.

In view of the highlighted objectives, the remaining sections addresses the following: literature review in section four, sub-sectioned into theoretical and empirical reviews. Section five covers the methodology, again sub-sectioned into the description of ARIMA methodology in particular and also, description of the variable and its disaggregated components. Section six addresses the findings and description of results. Finally, and not the least, section seven provide a conclusion of the findings and recommendations for policy actions.

3. Literature Review

3.1. Theoretical Literature

The use of time series model is very common in the use of past movement of variable(s) as a way of predicting future values / events. Unlike structural models which relate to the model at hand, time series models are not necessarily rooted on economic theory, while the reliability of the estimated equation is normally based on out-of-sample forecast performance as first observed by Stock and Watson (2003). The use of times series econometric study, normally stated as Autoregressive Moving Average (ARMA) models was first produced by Slutsky (1927) and Wold (1938); it is very popular in tracking past events of the same variable, which normally helps in determining future outcome of events (Nosedal 2016, Jackson *et al.* 2018, Jackson 2018).

In her master's thesis, Green (2011) used the ARIMA models with attention focused on Box-Jenkins Approach - in this, she found out that ARIMA model is the most appropriate for classifications of time series data sets on the basis of their behavior. While ARIMA only looks at the Univariate component of past events of the same variable, an extension of it (ARIMAX) which makes use of exogenous variable, tracks moment or shocks to the variable with independent predictor(s). According to Kravchuk (2017), the ARIMAX model is considered to be a form of multivariate regression model which allows to take advantage of autocorrelation that may be present in residuals of the regression to improve the accuracy of a forecast.

3.2. Empirical Literature

Nyoni (2019) made use of annual time series data on inflation in Israel from 1996 to 2017 to model and forecast inflation using the Box-Jenkins approach. Test outcomes shows that Q is I(1), with ARIMA (1,1,2) model been identified as the best for predicting inflation dynamics during the observed periods. Further test outcomes also show that the presented parsimonious model is stable and acceptable for predicting inflation outcomes, hovering around 1.6%over the next decade. This in effect encourages the Bank of Israel to continue its transparency and independence in order to retain credibility in the process of engineering successful macroeconomic policy actions.

The use of ARIMA has proved very popular in terms of its reliability as a univariate methodology to address short term inflation forecast in a county. To prove this, empirical research conducted over the years by researchers at the BSL and elsewhere (for example, in other central banks and the academia) have shown that inflation is very well tracked with both univariate and exogenous component (ARIMAX) to address external influences of the direction of inflation in a country over a given period of time (Jackson *et al*. 2019, Jackson 2018, Jackson *et al.* 2018, Jackson and Tamuke 2018, Tamuke *et al.* 2018).

Petrevska (2017) provided a short-run estimation of international tourism demand by focusing on the case of F.Y.R. Macedonia using Box-Jenkins methodology for data collected around the period 1956-2013. The research outcome identified the model of ARIMA (1,1,1) as the most suitable for forecasting. It shows that 13.9% increase in international tourist arrivals is expected by the year 2018.The forecast values of the chosen model is seen as a way of mitigating potential impacts, particularly in pursuit of the preparation of a tourism development plan for the country.

Apergis *et al.* (2017) examined the performance of four alternative univariate seasonal time series forecasting models (seasonal autoregressive integrated moving average (SARIMA) with Fourier transformation, ARAR, and fractionally integrated autoregressive-moving average of tourist arrivals to 20 Croatian counties and the City of Zagreb. The study made use of both in-sample and out-of-sample forecasts, which revealed that the SARIMA model with Fourier transformation consistently outperforms the other models across the respective regions investigated.

Kwasi and Sharma (2015) also carried out a study to explore modelling and forecasting of wholesale groundnut monthly prices in Bikaner district of Rajasthan using the Autoregressive Integrated Moving Average (ARIMA) model and Vector Autoregressive (VAR) model. The authors made use of Augmented Dickey Fuller (ADF) test, DF-GLS test and Philips Perron (PP) test to assess the presence of unit root in price series. In addition to this, Autocorrelation (ACF) and Partial autocorrelation (OACF) functions were also used to assist in deciding the appropriate orders of the Autoregressive model of order p (AR) and Moving Acerae model of order q (MA). The BIC test was also conducted given the fact that several ARIMA models were used, with the model (0,1,0) coming out as the lowest BIC value of 11.612 and with a regression R square value of 84.7%, followed by a best fit Mean Absolute Percentage Error value of 7.602%.VAR model was used in Model factored in Jaipur, Jodhpur monthly groundnut market prices and cumulative rainfall and rain days per month over the period of 2005-2014, and this showed high forecasting error with MAPE of 0.769% compared to ARIMA model of 2.745%.

Kelikume and Salami (2014) carried out independent investigation of inflation rate in Nigeria using VAR and ARIMA. They made use of CPI data obtained from the National Bureau of Statistics and the Central Bank Nigeria (CBN) during 2003 to 2012 to predict movements in the general price level. The study highlighted limitations in terms of its reliance on univariate analysis, but also brought to the fore some positive outcomes of using ARIMA model. It also outlined the limitation of using a single variable which may not necessarily have anything to compare with unless based on its past values.

Bokhari and Feridun (2006) also carried out investigation using comparative univariate analysis of VAR and ARIMA to forecast inflation in Pakistan. In their analysis, ARIMA was seen to have produced a better outcome in the forecast than that of a singular VAR study. Despite the fact that the study was able to unearth some issues around macroeconomic forecasting, it also brought to the fore the implication of such forecast technique for small scale macroeconomic model.

The use of Univariate studies is also found to be very important and applicable in different areas of studies dealing with time series data; Taylor (2008) made use of this using ARIMA to forecast trends associated with intra-day arrivals by operators at a retail bank call centre in the UK. The study confirmed use of methods like "*seasonal ARIMA modelling and AR modelling, an extension of Holt-Winters exponential smoothing for the case of two seasonal cycles, robust exponential smoothing based on exponentially weighted least absolute deviations regression and dynamic harmonic regression, a form of unobserved component state space modeling*". The use of Univariate forecast is quite prominent given its quick response in finding solution to problems, as manifested in Taylor's (2003) research in forecasting short-term electricity demand using double exponential smoothening technique.

4. Methodology and Description of Components within the Variable

4.1. The ARIMA Methodology

Time series models in makes use of past movement of variable(s) as a way of predicting future values/events. Unlike structural models which relates to the model at hand to forecast, time series models are not necessarily rooted on economic theory, while the reliability of the estimated equation is normally based on out-of-sample forecast performance (Stock and Watson 2003, Jackson 2018, Jackson *et al.* 2018). Times series models can be expressed by Autoregressive Moving Average (ARMA) models as first produced by Slutsky (1927) and Wold (1938). This is expressed in the following equation:

$$\mathbf{Y_t = e_t - \theta_1 e_{t-1} - \theta_2 e_{t-2} - \theta_3 e_{t-3} - \ldots\ldots\ldots - \theta_q e_{t-q}} \qquad (1)$$

The above series is referred to as a moving average of order **q**, with the nomenclature MA(**q**); where Y_t is the original series and e_t as error term in the series. As presented by Pankratz (1983), the autoregressive process of the moving average series can be expressed as:

$$Y_t = \varphi_1 Y_{t-1} + \varphi_2 Y_{t-2} + \varphi_3 Y_{t-3} + \ldots\ldots\ldots\ldots + \varphi_p Y_{t-p} + e_t \qquad (2)$$

It is assumed that t, is independent of Y_{t-1}, Y_{t-2}, Y_{t-3}, ... Y_{t-q} .

The above model is a form of Box-Jenkins Autoregressive Integrated Moving Average (ARIMA) model, which is the generalised model of the non-stationary ARMA model represented by ARMA(p,q):

$$Y_t = \varphi_1 Y_{t-1} + \varphi 2Y_{t-2} + \varphi_3 Y_{t-3} + \ldots + \varphi_p Y_{t-p} + e_t - \boldsymbol{\theta_1 e_{t-1}} . - \boldsymbol{\theta_2 e_{t-2}} \ldots\ldots - - \boldsymbol{\theta_p e_{t-p}} \qquad (3)$$

where: Y_t is the original series, for every t.

We assume that is independent of: Y_{t-1}, Y_{t-2}, Y_{t-3}, …, Y_{t-p}:

Based on Hamjah (2014, 170-171; see also, Jackson 2018), the following steps in the two procedures below (A and B) are worth considering when using the Box and Jenkins approach to ARIMA forecasting:

Procedure A

- *Preliminary analysis:* Data at hand should conform to a stationary stochastic process;
- *Identification:* specify the orders p, d, q of the ARIMA model so that it is clear the number of parameters to estimate and also recognition of the importance of autocorrelation functions in the model;
- *Estimate:* efficient, consistent, sufficient estimate of the parameters of the ARIMA model (maximum likelihood estimator);
- *Diagnostics:* Model to be checked for appropriateness using tests on the parameters and residuals of the model. Even when the model is rejected, still this is a very useful step to obtain information to improve the model;
- *Usage of the model:* Once tests outcomes are sufficiently passed or satisfies specification, it can then be used to interpret a phenomenon based on forecast outcome(s).

Procedure B

- Check normality assumption, proceed to the “Jarque-Bera” test, which measure goodness of fit from normality, based on the sample Kurtosis and skewness;
- The “Ljung-Box” test can also be applied under the hypothesis that there is no autocorrelation in the residuals;
- Autocorrelation Function (ACF) and Partial Autocorrelation Function (PAC) can also be used to detect the order of difference of Stationarity conditions;
- Use of Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) for model selection criterion.

To simplify the process, this study has made use of a program coded system in EVIEWS (Version 9), with attention focused in Procedure B to evaluate outcomes from the ARIMA/Box-Jenkins study (see highlight of codes used in Appendix 1). This have taken cognizance of steps connected with the use of stability values, AIC, Durbin-Watson and R^2 values for each component in the Tourist Arrival variable (See Table 1).

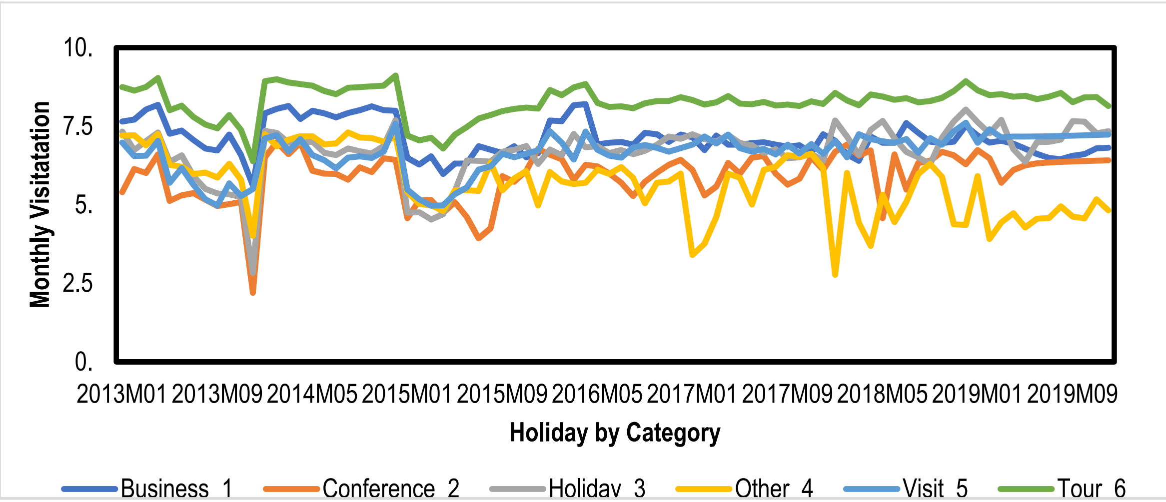
In connection with uncertainty surrounding the out-of-sample forecast, the use of Fan Chart was used, with 20% confidence upper and lower bands difference. The justification for this is based on the fact that ARIMA only deals with short-term forecast, and hence the need to ensure risks are captured to address uncertainty surrounding short term periods, which in this case covers 2019M04 to 2019M12 (see Appendix 3).

4.2. Variable and Description of Components

The headline variable of interest in this study is Tour Arrivals, which is a univariate study, but further to this, the variable was disaggregated to incorporate five sub-components in addition to the headline TOUR component.

Figure 1 below provide a typical stylized fact about the tour arrival variables and components in Sierra Leone spanning 2013M01 to 2019M03. The information shown is typical of a nation that is finding its way to revive the sector, particularly in providing transparent data-set relating to tourist arrivals in the country. The green line specifies the aggregate / headline of all tourist arrivals in the country. Breakdown of the six components include ‘*Holiday makers, Conference, Business, Visits, Other and Tour*’ as indicated in Figure 1 below.

Figure 1 Forecast for all Components from 2019M4-2019M12



Source: Bank of Sierra Leone Datawarehouse

Based on statistical evidence from Trading Economics (n/d) the tourism sector has witnessed great challenge in terms of revenue generation since as early in the days of the civil war, in the early 1980s (Statistics Sierra Leone 2012). Tourist arrivals decreased to 51 Thousand in 2017 from 55 Thousand in 2016; evidence also shows that average of tourist arrivals in the period 2000 to 2017 was in the region of 40.83 Thousand, reaching an all-time high of 81 Thousand in 2013 and a recorded low of 16 Thousand in 2000. As seen in Figure 1 above, visitations for the disaggregated components seem to exhibit a fluctuating pattern.

5. Findings and Discussion

Using the Box-Jenkins univariate ARIMA methodology, we have produced forecast for all components of Tourist arrival in Sierra Leone covering 2019M04 to 2019M12. Based on the automated codes produced in Appendix 1, the study has made use of a univariate variable, disaggregated into 6 sub-components of Tourist Arrivals (Business, Conference, Holiday, Others, Visit and Tour), with a maximum of 11 scalar AR (p) and MA (q) roots. To ensure the data are smoothened out, data were seasonalised, with a maximum lagged order length of 12 for each AR and MA series from 2013M01. Selection of Best model for each disaggregated component were then outputted based on the Akaike Information Criterion (AIC), hence making it possible to reveal the best choice of out-of-sample forecast for each component from 2019M04 to 2019M12.

The summary statistics in Table 1 below shows the best model for each component as indicated in Column 2. The R^2 values for all, except for two of the components (Conference_2 and Visit_5) have shown strong outcomes, which is an indication of good performance in the outcome of the explained component(s). The AIC values on the other hand is an estimator of the relative quality of the statistical models. As given, the best model for each component have revealed the lowest value of AIC to reflect the model's best performance. The Durbin-Watson Statistic in Table 1 indicate a test for degree of auto-correlation in the residuals. In this case, nearly all the components, except Visit_5 revealed negative autocorrelation, which is a good sign to show that problem of serial correlation was addressed in the choices of best models selected. Equally, the best model components have indicated stable outcomes, which means that all AR and MA root values lie within the root polynomial. The values for the Probability F-statistic values are all significant, indicating that the model choices are good for forecasting the given out-of-sample range in the short-term period.

Table 1. Summary of Best Model Outcomes

Component	Best Model	R-square	AIC	Durbin Watson	Root [AR and MA]	Prob (F-Stat)
Business (tour_1)	(7,1,8)	51%	1.34	2.02	AR <1 MA<1	0.00
Conference (tour_2)	(1,1,1)	33%	2.33	2.06	AR<1 MA=1	0.00
Holiday (tour_3)	(3,1,11)	55%	2.25	2.02	AR<1 MA<1	0.00
Other (tour_4)	(8,1,4)	51%	2.67	2.03	AR<1 MA<1	0.00
Visit (tour_5)	(3,1,2)	20%	1.45	1.96	AR<1 MA<1	0.00
Tour (tour_6)	(10,1,8)	59%	1.15	2.07	AR<1 MA<1	0.00

Table 2 below shows a summary outcome of forecast for all six tourist arrival components. The outcome as shown in the table below when compared to Appendix 2 indicate a likely risk of forecast for Tourist arrival falling for all of the identified components towards the end of 2019M12.

In view of risks to this as presented in the Uncertainty Fan Chart shown in Appendix 3, there is 70% chance that tourist arrivals for all components will drop the baseline tour forecast point towards the end of the year. Likely possibility for this can be explained in terms of an upside and downside risks. In view of the upside risk, which in this case indicate tourist arrivals falling around the 70% lower confidence band of the uncertainty chart, might be attributed to the country's two-decades of political instability (also an outcome from a study by Statistics Sierra Leone 2012), which is likely to resonate in the minds of would-be / potential tourists, who are still viewing Sierra Leone as a risky nation to visit, despite the endowment of its natural environment of lovely seaside resorts in areas around the WAPFoR communities. In addition, the present state of spiraling inflation in the country may also be a sign of low confidence on the part of people to visit the country, given the fact that high inflation may sometimes ring-the-bell about high level instability and deprivation, particularly in terms of people's inability to meet decent living standard – a possible sign of worries connected with risk of visitation (see Yuksel and Yuksel, 2007, Pereda 2002).

Equally, there is also a chance for downside risk to surface, which in this case imply high prospect for the country to positively re-brand herself to attract high visitation for various reasons as specified in the disaggregated components. In this regard, authorities can resort to the use of effective policy instruments to regenerate economic activities in areas related to eco-tourism for example. In this case, a visitors' entry in the country, particularly those on holiday tour will be very much inclined to wanting to explore the natural aesthetics of the country, and with high chances of paying for services that may help citizens in different activities connected with eco-tourism to become economically active, while also adding value in the prospect of revenue generation, for example, airport tax and various others (*a possible receipt in the Balance of Payment account compilation*) in support of government's fiscal operations. In a cautious note, the National Tourist Board would need to revisit exploitative hotel fees charged for visitors' accommodation; prices charged must be attracted enough so as to make it affordable, competitive and cost effective for potential tourist visitors, of which neighboring countries with beautiful tourist venues like the Gambia and other economies in Sub-Saharan African are enjoying. Furthermore, and specific to improving prospects for tourist visitation, is the need to promote the improved look of venues like the Banana Island resort, which is considered the relics of Sierra Leone's historical heritage connected with the slave trade activities.

Table 2. Summary of Forecast Results for Individual Components

Component	Forecast Outcome [2019M04 – 2019M12]								
	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec
Business (tour_1)	6.94	6.78	6.62	6.49	6.45	6.56	6.61	6.80	6.81
Conference (tour_2)	6.10	6.26	6.32	6.35	6.36	6.38	6.39	6.40	6.42
Holiday (tour_3)	6.77	6.37	6.99	7.00	7.07	7.66	7.64	7.27	7.34
Other (tour_4)	4.73	4.28	4.56	4.57	4.95	4.62	4.57	5.17	4.82
Visit (tour_5)	7.17	7.17	7.17	7.18	7.19	7.20	2.21	7.22	7.23
Tour (tour_6)	8.44	8.47	8.36	8.44	8.56	8.27	8.42	8.43	8.14

Conclusion and Recommendation for Policy Outcome

The authors in their efforts have demonstrated uniqueness in exploring new knowledge by utilising the Univariate Box-Jenkins ARIMA models to forecast out-of-sample tourist arrivals in Sierra Leone. Unlike other studies, which to date have concentrated efforts in the use of ARIMA models to forecast in particular inflation dynamics using aggregated time series data (see Jackson 2018, Jackson and Tamuke 2018, Jackson *et al.* 2018, Tamuke and Jackson 2018), the main focus of this research have geared itself towards forecasting disaggregated components of tourist arrivals in Sierra Leone, while also addressing risks (upside and downside) to the out-of-sample tour arrivals forecast periods.

Given the use of historical data ranging from 2013M01 to 2019M03, the out-of-sample forecast for the period 2019M04 – 2019M12 shows that the outlook for tourist arrivals (by category / component) will fall over the periods under investigation. The use of a programmed codes have produced (automated) best and stable models and also assessment of risks, which in this case need some form of policy intervention to boost tourist attraction in the country.

With regard to risks surrounding outcomes from the Fan Chart (see Appendix 3), it is clearly evident that authorities in areas connected with the promotion of tourist attraction in Sierra Leone must consider implementing policy measures to increase tourist visitation, particularly in areas around seaside communities, for example the WAPFoR communities, while also promoting the country's natural wealth to attract business opportunities in locations outside the country's capital, for example, Kono district.

In view of the aforementioned points, it is hoped that the Ministry of Tourism, The National Tourist Board and relevant stakeholders (*e.g.,* Travel Agents, Airlines, etc.) will establish cooperation to improve tourist attraction in the country. In this regard, negative stereotype surrounding the country's two decades of civil war must be discouraged by promoting key areas of attraction to would-be / potential tourists, particularly those who may wish to visit for the purpose of holiday attraction and also, Diasporas in the developed economies who have left the country in despair of destruction/emotional pain inflicted during the civil crisis.

Equally, efforts must be made to promote naturally endowed environments, while also ensuring business tax policies are very much favourable for those wishing to visit purely in exploration for business opportunities, which is also an area of economic benefit to the country as a whole. In this regard, protection must be accorded to their safety while in the country, particularly from the hands of unscrupulous individuals, which is viewed as an area of upside risks to the country's projected scope for tourist visitations. With effective and collaborative efforts from stakeholders, it is possible for the country to make economic gains through improved tourist visitation, which eventually will bring about improved economic gains in areas pertaining to employment in the tourism sector and on the part of the Bank of Sierra Leone (BSL), an easily accessible means of monitoring receipts for Balance of Payment computation.

References

[1] Apergis, N., Mervar, A., and Payne, J. 2017. Forecasting disaggregated tourist arrivals in Croatia: Evidence from seasonal univariate time series models. *Tourism Economics*, 23(1): 78-98.

[2] Betts, BSH. 2016. The role of tourism in the development of Sierra Leone. *American Scientific Research Journal for Engineering, Technology, and Sciences*, 26(4): 205-224.

[3] Bokhari, H., and Feridun, M. 2006. Forecasting inflation through Econometric Models: An empirical study on Pakistani. *Data Dogus Universitesi Dergisi*, 7(1): 37-47.

[4] Green, S. 2011. *Time series analysis of stock prices using the Box-Jenkins Approach*. Master's Thesis submitted to College of Graduate Studies, Georgia Southern University.

[5] Hamjah, M.A. 2014. Climatic effects on major pulse crops production in Bangladesh: An application of Box-Jenkins ARIMAX Model. *Journal of Economics and Sustainable Development*, 5(15): 169-180.

[6] Jackson, E.A. 2015a. Deforestation on the Freetown Peninsula – A case of Livelihood and Biodiversity Loss in the Goderich community. *International Journal of Research in Agriculture and Forestry*, 2(7): 21-34.

[7] Jackson, E.A. 2015b. Ethnographic narrative of forest decline in the Goderich community: The people's perspectives. *Forest Research*, 4(4): 1-7. DOI:https://doi.org/10.4172/2168-9776.1000157.

[8] Jackson, E.A. 2018. Comparison between static and dynamic forecast in autoregressive integrated moving average for seasonally adjusted headline consumer price index. *Revista Economica*, 70(1): 53 – 65.

[9] Jackson, E.A., and Tamuke, E. 2018. Probability forecast using fan chart analysis: A case of the Sierra Leone economy. *Journal of Advanced Studies in Finance*, 9(1): 34-44.

[10] Jackson, E.A., Sillah, A., and Tamuke, E. 2018. Modelling monthly Headline Consumer Price Index (HCPI) through Seasonal Box-Jenkins methodology. *International Journal of Sciences*, 7(1): 51-56. DOI:https://doi.org/10.18483/ijSci.1507.

[11] Jackson, E.A., Tamuke, E., and Jabbie, M. 2019. Disaggregated Short-Term Inflation Forecast (STIF) for monetary policy decision in Sierra Leone. Lucian Blaga University of Sibiu, Faculty of Economic Sciences, *Revista Economica*, 71(3): 31-53, November.

[12] Kelikume, I, and Salami, A. 2014. Time series modeling and forecasting inflation: Evidence from Nigeria. *The International Journal of Business and Finance Research,* 8(2), 41-51.

[13] Kravchuk, K. 2017. Forecasting: ARIMAX Model Exercises (Part-5). Available at: https://www.google.co.uk/amp/s/www.r-bloggers.com/forecasting-arimax-modelexercises-part-5/amp/.

[14] Mason, P. 2015. *Tourism impacts, planning and management*. London: Routledge; 3th Edition. ISBN: 978-1138016293, 272 p.

[15] Nyomi, T. 2019. Understanding Inflation trends in Israel: A Univariate approach. MPRA_Paper_92427.

[16] Pankratz, A. 1983. *Forecasting with Univariate Box - Jenkins Models: Concepts and cases*. USA: John Wiley & Sons, Inc. ISBN: 9780471090236.

[17] Pereda, M.H. 2002. Repeat visitors of a tourist destination. *Journal of Travel Research*, 36(1): 35-43.

[18] Petrevska, B. 2017. Predicting tourism demand by A.R.I.M.A. *Models. Economic Research*, 30(1): 939-950. DOI:https://doi.org/10.1080/1331677X.1314822.

[19] Slutsky E.E. 1927. Slozhenie sluchainykh prichin, kak istochnik tsiklicheskikh protsessov. *Voprosy Kon Yunktury,* 3: 34–64.

[20] Stock, J.H., and Watson, M.W. 2003. *Introduction to econometrics*. Amsterdam: Addison Wesley. ISBN: 9780201715958. Available at: https://www.sas.upenn.edu/~fdiebold/Teaching104/Ch1-7_slides.pdf

[21] Tamuke, E., Jackson, E.A., and Sillah, A. 2018. Forecasting inflation in Sierra Leone using ARIMIA and ARIMAX: A comparative evaluation. *Theoretical and Practical Research in the Economic Fields*, Volume IX, Issue 1(17): 63-74.

[22] Taylor, J.W. 2003. Short-term electricity demand forecasting using double seasonal exponential smoothing. *Journal of Operational Research Society*, 54: 799-805.

[23] Taylor, J.W. 2008. A Comparison of univariate time series methods for forecasting intraday arrivals at a call center. *Management Science,* 54: 253-265.

[24] Wold, H. 1938. *A study in the analysis of stationary time series.* Doctoral Thesis, Uppsala: Almqvist & Wiksell.

[25] Yuksel, A., and Yuksel, F. 2007. Shopping risk perceptions: Effects on tourists' emotions, satisfaction and expressed loyalty intentions. *Tourism management*, 28(3): 703-713. DOI: 10.1016/j.tourman.2006.04.025.

*** Statistics Sierra Leone. 2018. Report on the 2016 and 2017 Real Gross Domestic Product (RGDP) Figures at 2006 Price Index. Available at: www.statistics.sl/images/StatisticsSL/Documents/gdp/2017_gdp_analysis.pdf.

*** Statistics Sierra Leone. 2012. Tourism statistics bulletin 2011. Available at: https://www.statistics.sl/images/StatisticsSL/Documents/Publications/2011/tourism_bulletin_2011.pdf.

*** Trading Economics (n/d). Sierra Leone tourist arrivals. Available at: https://tradingeconomics.com/sierra-leone/tourist-arrivals.(accessed: 13th August, 2019).

*** World Travel & Economic Council. 2019. Travel and tourism impact 2019. Available at: https://www.wttc.org/-/media/files/reports/economic-impact-research/regions-2019/world2019.pdf.

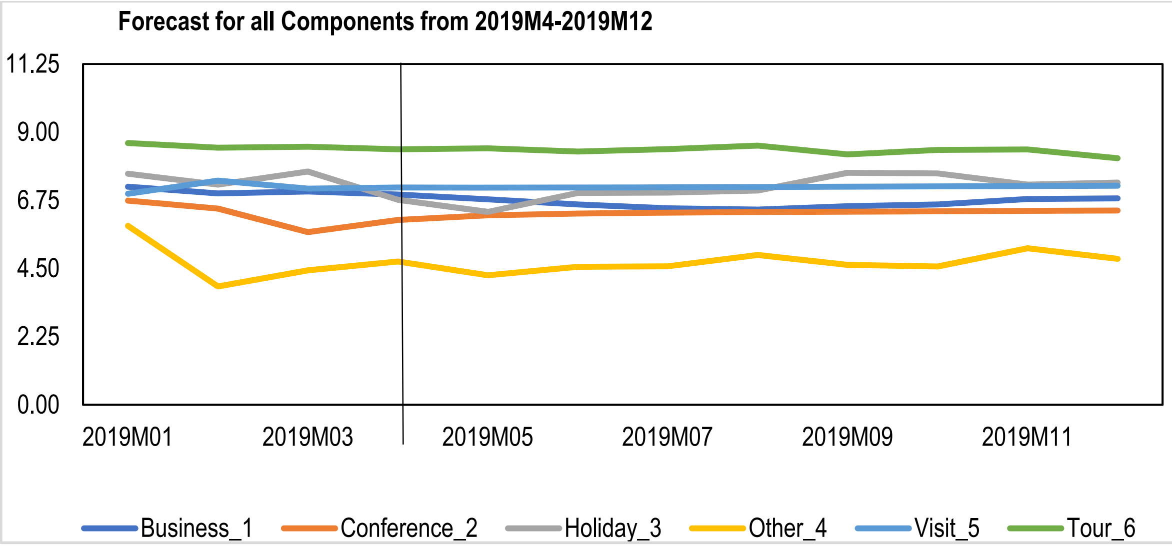
Appendices

Appendix 1. Disaggregated ARIMA Programmed Code

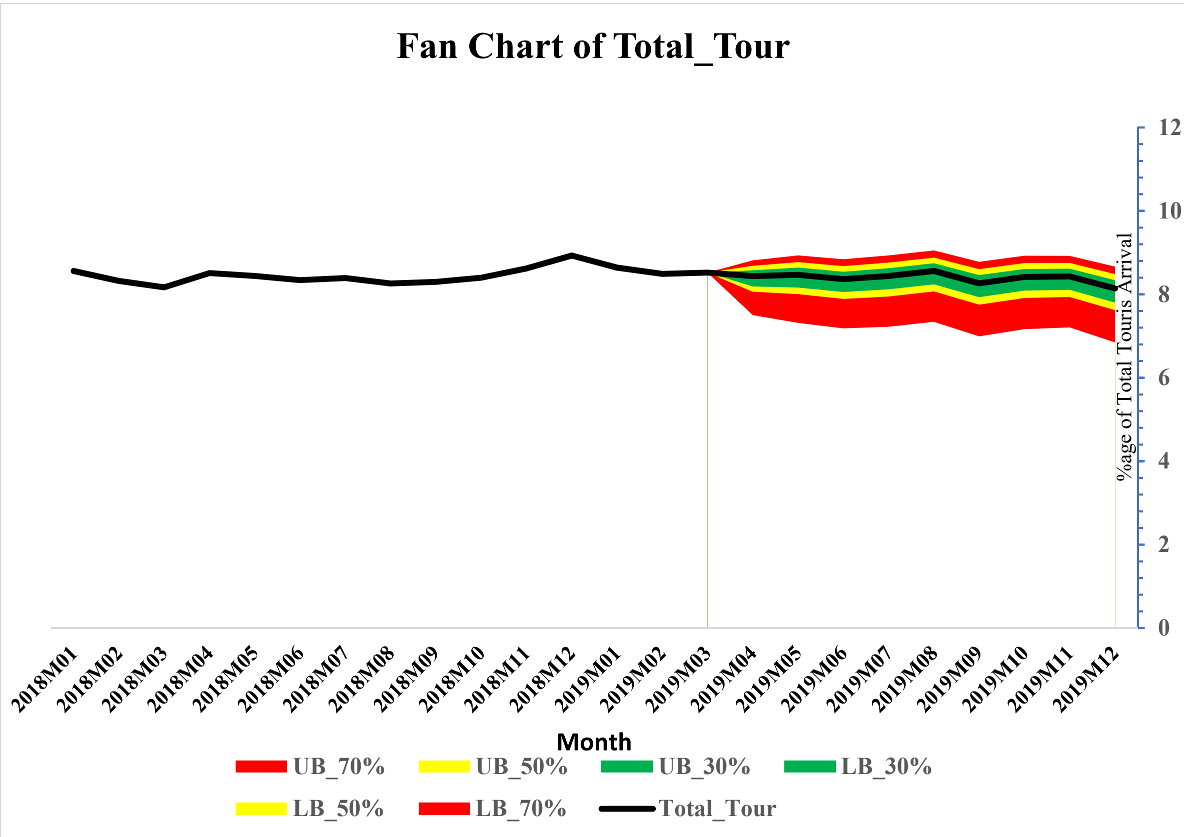
```
'Eviews code: ARMA selection
'Code for selecting optimal lag lengths for ARMA models
smpl @all 'Set sample period
scalar n1=@obs(tour) 'Number of observations of TOUR data
scalar components = 6 'Number of TOUR components, including aggregate index
scalar maxar = 11
scalar maxma = 11
'Rename series
series tour_1 = busi
series tour_2 = conf
series tour_3 = hol
series tour_4 = other
series tour_5 = visit
series tour_6 = tour
'Seasonally adjust data
for !i = 1 to components
tour_!i.x12(mode=m) tour_!i
next
'For each component produce ARMA(a,m) with varying orders
for !i = 1 to components
    for !a = 1 to maxar '12
        for !m = 1 to maxma '12

        smpl 2013m1 2013m1+n1-1
        equation arma_!i_!a_!m.ls d(tour_!i_sa) c ar(1 to !a) ma(1 to !m)
        next
    next
next
'Identify the ARMA for each component with the optimal AR and MA orders according to the Akaike Information
Criterion.  Change to @schwarz or @hq for Schwarz and Hannan-Quinn criteria.
for !i = 1 to components
!mininfocrit = 9999
    for !a = 1 to  maxar '12
        for !m = 1 to maxma '12
        if arma_!i_!a_!m.@aic<!mininfocrit then
        !besta = !a
        !bestm = !m
        !mininfocrit = arma_!i_!a_!m.@aic
        endif
        next
    next
'Save the equation with the best order structure
smpl 2013m1 2013m1+n1-1
equation arma_best_!i.ls d(tour_!i) c ar(1 to !besta) ma(1 to !bestm)
'equation arma_best_!i.ls d(cpi_!i) c ar(1 to !besta) ma(1 to !bestm)
smpl 2019m4 2019m12
arma_best_!i.forecast tour_forecast_!i
next
'Show best ARMA models for selected components
for !i = 1 to 6
show arma_best_!i
next
```

```
show exp(tour_forecast_6)/exp(tour_forecast_6(-12))*100-100
show exp(tour_forecast_5)/exp(tour_forecast_5(-12))*100-100
show exp(tour_forecast_4)/exp(tour_forecast_4(-12))*100-100
show exp(tour_forecast_3)/exp(tour_forecast_3(-12))*100-100
show exp(tour_forecast_2)/exp(tour_forecast_2(-12))*100-100
show exp(tour_forecast_1)/exp(tour_forecast_1(-12))*100-100
```

Appendix 2. Forecast for all Tourist Arrival Components



Appendix 3. Fan Chart



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TRADITIONALISM OR MODERN IN ROMANIAN MANAGEMENT ACCOUNTING?

Silvia SIMIONESCU
Faculty of Legal, Economic and Administrative Sciences
Spiru Haret University, Romania
silviasimionescu@yahoo.com

Elena BICĂ
Faculty of Legal, Economic and Administrative Sciences
Spiru Haret University, Romania
elena.bica@spiruharet.ro

Cristiana – Luminița BOGDĂNOIU
Faculty of Legal, Economic and Administrative Sciences
Spiru Haret University, Romania
cristiana.bogdanoiu@spiruharet.ro

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Abstract: *The economic competition, which is becoming more and more fierce, imposes efficiency and performance on the economic environment. On the other hand, the rapid evolution of the technologies requires the continuous updating of the competences and of new forms of organization and management of the activity. In this dynamic context, managerial accounting becomes vital because it transforms organizations and exerts an influence on the social, economic and physical environment.*

In a thorough investigation of the problems it is observed that there is a certain perception of the companies, to act and react, to make decisions and to use systems different from the existing models, especially American and Japanese, which are often difficult to describe formalized, but which exists. On the other hand, there are differences between European countries. The management-specific tools are identical but do not apply equally in practice.

Keywords: managerial accounting; cost calculation; sales costs; implementation costs.

JEL Classification: M40; M41.

Introduction

Recent research in the field of managerial accounting reveals a significant evolution of its fundamental concepts. They emphasize the key issues of the activities managed in direct relation with decision making. Cost analysis and calculation, as priority objectives of managerial accounting, are performed in a much broader context, as compared to the traditional way, in the sense that there is a closer connection of these specific activities with the elements related to the organization's strategy. Thus, cost information plays a major role in developing better strategies that give organizations a sustainable competitive advantage (M. Porter 1985).

Taking on Porter's idea, a number of authors, including M. Gervais, P. Lorino, L. Dubrulle, Ch. Hohmann, argue that the new approach in managerial accounting must aim at integrating the production and strategy of an organization.

In the same sense, Bouquin also spoke about the limits of traditional management accounting and also noted the importance of identifying and evaluating the financial consequences of strategic options. Like the followers of strategic cost management, the author situates and analyzes the organization in a larger framework that also includes its relations with its partners, especially with suppliers and customers, an idea also embraced by N. Rostocki. In this context, as a novelty element, the need to calculate some non-existent costs yet, which did not take into account the classical (traditional) management accounting, but also the cost-value couples modeling (Iacob 2006).

1. Current Trends in Management Accounting under the Influence of Socio-Cultural Factors

The problem of changing the economic environment and the adaptation needs of the companies determined the reorientation of the managerial accounting. At the same time, finding that the techniques and practices used by traditional management accounting, applied in the new production conditions, did not lead to the expected results, it is increasingly obvious the need to improve the management accounting system in which the management by costs represents, more rather than the actual measurement and reporting of costs and determining direct involvement in the cost decision making process. The argument is that the costs do not simply happen but are the result of some decisions.

For the purposes of the above, A. Burland and C. Simon, argue the loss of relevance of the traditional cost calculation systems by the existence of a gap between the current model of control and management of a company and the model that was based on the method of the analysis centers, but also by the differences between the way the real cost is composed and the image rendered to it by the management accounting.

In other news, it is noted that the rigorous determination of the production costs, insofar as they fall within the sales price imposed by the market, allows the establishment of the strategy of expanding or decreasing, as the case may be, the manufacture of the product to which it refers. In other words, the market determines the price and the cost determines the profitability (K.V. Mahidhar).

Therefore, in the conditions of the market economy, a new vision on the costs is required, in the sense that the starting point must be the market price and according to it the possibility of adjusting the costs for the decision on the manufacturing situation of the respective product should be considered. Such an operation requires a great deal of accuracy and economics regarding the consumption that affects the cost, which, through the information it offers, becomes decisive for substantiating the decisions that are adopted in order to schedule and control the demanding operations resulting from obtaining and capitalizing the production.

The idea that the market dictates sales prices and not company costs, is the basis of the target costing or target costing method. This method has a logic diametrically opposed to the traditional one, which considers obtaining a product with certain technical features, determining its cost and then adding a profit margin to obtain the sale price. The method we refer to has aroused the interest of many specialists, among them A. Nishimura, P. Lorino, S.L. Ansari and J.E. Bell, who considered it to be a true cultural revolution, in relation to the classical fundamental concepts.

On the other hand, it should be emphasized that in such conditions managerial accounting is indispensable and in this case the realization of an integrated accounting information subsystem, by grouping the information needed for management into a homogeneous whole, imperative to ensure a coherent management, the managerial accounting becoming the purpose, and the calculation a technique of reaching it. This option is quite controversial. While in the Anglo-Saxon countries, which have an accounting monism, they are inclined towards a separation of management accounting from financial accounting, in countries of continental Europe, which have an accounting dualism, there is an interest in integrated accounting, but which it is in the empirical phase and there is no real interest from the decision makers.

Starting from the fact that the process of internationalization of accounting standardization initially manifested itself at regional level, as is the case of the member states of the European Union, in the face of the different practices, norms and laws of different European countries, C. Jacob asks whether or not there is a European culture in the field of accounting and management control?

As long as, from the point of view of accounting standardization, there are important divergences and resistances, often reaching compromises, in the wrong sense of the word, the Europeans are looking, from the point of view of management practices, of the accounting information and management control systems. Trying to discern the Japanese and American skills in management.

A first issue we are discussing is to show that the analysis of differences can be interesting if we refer to the research of the concrete and tangible effects of a European culture, to the literature on management, as well as the less interesting and relevant management practice studying similarities between different countries.

The analysis of differences, whatever their level of practice, or their fundamentals and theoretical currents, helps us to understand what Europe is.

In the context above, we can say that whatever the accounting and management information systems in different European countries, at first glance we are struck by the resemblance between them. If accounting rules and fiscal legislation shape the presentation of accounts and financial aspects and dictate the choice of accounting methods, in a nuanced way, in different countries, the "formal" management accounting information systems are indisputably less similar. Nothing looks like a budget or an analysis of deviations from a budget, made by the British compared to the analysis of deviations performed by French, German, Dutch or Spanish.

Thus, an empirical study conducted in France and the United Kingdom found that the same instruments were used in the two countries: budgetary procedure and budgetary control, accounting in standard costs, calculation and analysis of deviations in relation to the budget, group reporting or branches, procedures for choosing and granting investments, etc. However, there are certain differences between companies regarding the importance given to the planning, reporting or level of delegation, issues that mainly concern the national context, structure, internal organization, or the size of the parent company and its subsidiaries.

In a different context, but illustrating the same idea, we have the opportunity to observe that a heterogeneous set of cases, relatively insipid, does not really outline the characteristics of a European management. These are new, very general and widespread problems - problems of allocating and accounting for indirect costs, implementation of budgetary procedures, reporting problems in parent-subsidiary relationships, etc.

So, can we talk about European management tools? These are common, identical and present instruments throughout Europe. At the same time, if we look closely, closer and closer, we notice that nothing has a European specificity. These are mostly US management practices, sometimes Japanese (for newly introduced methods) and imported into Europe. These tools and practices are the result of the work of a school of officials trained according to the American model.

Therefore, it is difficult to speak of a European culture in terms of management practices. If there are some specific French, German or Italian instruments that can be emphasized, the common body, specific to Europe, is reduced to a few aspects. Researching the current description and the level of the instrument's risks highlighting only the aspects that are not European ones.

As a result, we observe that there are difficulties in studying the similarities between the European countries and which have several factors, two of which are most often encountered:

- the notion of "least common denominator"; it is difficult to capture and describe the smallest common denominator between research practices or trends in German, Italian, French, English, Danish or Spanish management;
- the study of the similarities between countries often goes through a focus of the "formal" aspects of the instruments and systems; In essence, it is extremely delicate to perceive the similarities in the level of social mechanism, informal aspects, use of management control systems. At the same time, the similarities regarding the management tools are not European own; the formal aspects and techniques are related to the temptation of the near universal implantation.

In the face of the difficulties and limitations of studying the similarities between countries and the methods of management in Europe, there arises the interest of a comparative approach to highlight the differences, the second aspect that we discuss.

In a thorough investigation of the problems it is observed that there is a certain perception of the companies, to act and react, to make decisions and to use different systems to the American models that are often difficult to describe, to formalize but that exist. On the other hand, there are differences between European countries. The management-specific tools are identical but do not apply equally in practice.

2. IAS/IFRS - A Possible Integration of Management Accounting into Financial Accounting or a Simple Complementarity?

Since 2005, accounting has been steeped towards globalization. Europe is not alone in facing these challenges. In total, over 100 countries from six continents have complied or converged to the application of IAS/IFRS, both directly and through national accounting regulations aligned to them.

A study conducted on the accounting regulatory factors in Romania highlighted the following aspects (Ionaşcu 2006): the decision to harmonize the accounting in Romania with IFRS standards, although it can be justified by the objective of European integration, was, in fact, a process of implementing the standards international accounting started earlier, under the advice of British experts and at the pressures of international financial bodies (World Bank and International Monetary Fund) in order to create an attractive business environment for foreign investors; the manner of applying IFRS standards to a large category of entities exposed the Romanian companies to risks related to the large implementation efforts, but, nevertheless, the efforts to adopt the IFRS standards did not adversely affect the performances of the companies.

But the ad literam implementation of IFRS standards, which had to be done from January 1, 2005, for a large number of entities, according to Order no. 1.827 / 2003, it took a "dramatic" turn. This is because in 2005, Order no. 1.752 / 2005 (subsequently amended by Order no. 2.374 / 2007) regarding the approval of the accounting regulations in accordance with the European accounting directives, an order that was to apply from January 1, 2006. According to this order, all entities in Romania, including those that have previously adopted IFRS standards, it must apply the European accounting system. The big change of this order was, at the same time, in the partial disconnection of the tax accounting, so that in the accounting the economic transactions are reflected according to their economic reality and not only according to fiscal reasons. The size criteria, which previously differentiated the entities in the application of a developed or simplified accounting system, are those that now determine whether an entity draws up annual financial statements with five elements (balance sheet, profit and loss account, statement of changes in equity, cash flow statement, annexes) or simplified annual statements, with three elements (balance sheet, profit and loss account, annexes). This has gone from a harmonization of the accounting to a compliance with the European accounting directives.

Order no. 907/2005 (amended by Order no. 001 / 2006 and Order no. 1.121 / 2006) regarding the approval of the categories of legal persons applying the accounting regulations complying with the international financial reporting standards, respectively accounting regulations complying with the European directives, established for the economic entities whose securities at the balance sheet date are admitted to trading on a regulated market and which prepare consolidated financial statements, starting January 1, 2007 to apply IFRS. Other entities considered to be of public interest may apply IFRS standards when preparing individual or consolidated financial statements, for their own information needs. All entities that have the obligation to apply or have opted for the application of IFRS standards must ensure their continued application. In addition, Order no. 907/2005 states that "in relation to the state, all entities, including those applying IFRS standards, prepare annual financial statements in accordance with the European accounting directives".

We find that, in relation to the initial intention of the accounting standardizer, in Romania there has been a restriction of the application of IFRS standards in favor of the European accounting directives. We consider it a positive step, given that the provisions of these directives become legal norms in the accounting law of each EU member country.

Even so, IFRS standards still dominate the European accounting directives, qualitatively, because, in case a series of general rules remain without concrete answers, the accounting regulations take over and integrate a series of resolutions from the general IASB and IFRS standards. The most typical case is the one regarding the definition and recognition of assets, debts, revenues and expenses, but let's not forget the resolutions that appear in the case of particular situations, such as: construction contracts, government subsidies, cost of debt, depreciation of assets, provisions, etc.

In a summary analysis, we conclude that the steps of the internationalization process of accounting standardization are mainly manifested in the field of financial accounting. And yet, if we look at the ten functions of management accounting as outlined by J.M. Clark (1923), we notice that some standards also take into account aspects of management accounting.

If cost determination is an internal problem, covered by business secrecy, there is a tendency to break the opacity of the economic model of the enterprise that is slowly no longer a secret. However, the consolidated financial statements regarding diversified activities can be a real challenge for the analysis: the companies being present in several strategic or business fields, the financial statements aggregate several economic models but which remain individually masked. Accounting rules today tend to force large companies to become more transparent. Thus, the FASB, which elaborates the American accounting rules, has adopted SFAS 14 (subsequently replaced by SFAS 131), which provides financial information on segments, entities that are already subject to such separate follow-up in listed companies. The information, subject to the significance thresholds, must take into account: the turnover, profits, assets and liabilities of the fields of activity in order to delimit the main revenues and clients.

These rules reopen and reduce the complementarity between financial accounting and management accounting. An example of this complementarity is the norm of IAS 18 (revenues from current activities) which provides that the revenues from services must be evaluated according to the method of advancing the works and not the method of finishing them, which implies a very high internal traceability on the works to be performed in accounting.

Although H. Bouquin (2006) supports the idea of approaching management accounting to financial accounting, we still believe that international IAS/IFRS norms emphasize with sufficient importance the complementarity aspect if we consider that decisions regarding results, processes and entities are based. On information that must meet three major criteria set by Emery (1969):

- an information has value for a manager if it contributes to reducing uncertainty in the future;
- additional information has value if it is likely to affect the decision in question;
- an information has value if it contributes to the sensitive modification of the consequences of a decision.

The results of the managers depend on the decisions they will make regarding the representation of the company. Until now, financial accounting applying the rule of prudence and historical cost, it presented the result of the enterprise and the management accounting analyzed it. The new IFRS accounting rules break this perception, this vision. The financial accounting must present the value of the company and show the changes that have taken place. In this case, the management accounting must analyze the mechanisms for creating or destroying the elements of the value.

3. The Future Accounting Analyst in Romania

If the problem of integrating management accounting into financial accounting is an issue of accounting option, we ask ourselves another question: it is possible an accounting globalization? In our opinion, we can speak of a convergence, an approximation of the accounting theory and practice, but not a conformity, a perfect alignment on a global level. A manager in management is interested in studying the specifics as they are, because he is Romanian, German, Spanish, French, Dutch etc., and is neither American, nor Brazilian, nor Korean.

Therefore, globalization of management accounting will only be possible when cultural differences between European and non-European countries will disappear. This approach involves the transition from the accumulation of intercultural studies to the elaboration of synthetic studies and the following directions of action should be considered:

- lifelong learning, formal and informal, to become an important part of the managerial accounting process;
- the cost, time, quality and services are the foundation of the managerial accounting that will link the strategic visions with the operational performance;
- the accounting and accounting analyst will have to offer a full understanding of the organizational and business processes and will have to implement them properly, because the organizational and business processes are themselves resources that must be managed so as to ensure the provision of value;
- the new guidance for the accounting analyst should focus on processes and their improvement.

It turns out that the future for the accounting analyst is challenging and demanding, while also offering multiple possibilities for those who respond positively to change.

It is clear that in the coming years, the accounting analysts will have to change the way they perceive and carry out their mission. They will have to reach the level of the decision-makers keeping their role of supporter and constructive critic of the manager and the managerial act. Thus, they will have to expand their skills in the field of information management in order to handle non-financial information to give substance to the new definition of performance that is reflected in the Total Quality Management (TQA) and culture of the organization.

Focused on increased attention given to understanding the causes of resource consumption, the managerial accountant will become more interventionist and will be involved both in organizational engineering and in his transformation into an agent of change throughout the production cycle, from identifying strategic intentions to strategic analysis of performance, through change and communication management.

Cost of production or responsibility centered on costs can no longer be the main concern of accounting analysts. The focus of their attention should be on ensuring that absolutely all costs are in line with the strategy being implemented. This means that they must identify and contribute to the management of the causes of all costs.

In order to reach these desires some essential changes and approaches are needed.

First of all, it is necessary to change the mission of the accounting analyst, starting from the fact that his basic missions have not changed much during the last 30 years. Thus, it is appreciated that the field of managerial accounting has undergone few conceptual changes, all the new techniques or instruments with which it operates being considered only permutations of the relation between the relevant costs and motivation.

The second essential problem concerns the definition and correct understanding of the notion of performance and the assurance of an adequate performance management.

According to this approach, the accountant must use his own skills to help create a context in which, before the actions are selected and implemented, they maximize the possible results satisfactorily. The results are not recorded passively, they are created for a purpose. One of the accounting analyst's contributions to such a creation is cost management.

Cost management is not synonymous with cost minimization but is rather the search for that level of costs "appropriate and adequate" to the strategy that managers are considering. Because the processes are built and the costs derive from these choices, the costs can no longer be considered a burden, they result from the manager's decisions. Productivity, market share, production cycle times, quality, flexibility, and many other non-financial criteria provide an implication on the final result long before that outcome can be estimated. In order to be a good cost manager, the accounting analyst must himself resort to managing the factors that cause the costs, and those factors are essentially non-financial. Based on these requirements, the essence of the accounting analyst's work should not continue to be based solely on measurements.

In this context, it is considered important to redefine the mission of the accounting analyst so as to include the whole set of actions and activities called performance management. Obviously, the accountant is by far not the only one involved in carrying out this task, but it can play an essential role in creating the conditions for the performance to appear.

The third approach aims at expressing a clear choice between the single enterprise variant or the network enterprise variant. The second option is increasingly oriented to large companies, proliferating worldwide agreements between producers, as suppliers and their customers.

Accounting analysts will need to explore the causal models that determine costs in the process of providing resources. They will have to determine the ways in which the customers will have to use the product because not only will this affect the user costs but will have an impact on the warranty period and on the manufacturer's after-sales costs.

In such a networked enterprise, the accounting analyst must have an integrated view, encompassing the area between the supplier and the client.

The following realities that businesses and the economy as a whole feel strongly about, namely: the process of globalization, new communication technologies and information technologies, cannot be eliminated from the category of influence factors.

Conclusion

Globalization is a major change in the context in which the accounting analyst operates. Thus, European companies are not only competing against each other; they are in competition, among others, with the American, Japanese, Korean and subsidiaries of these companies that they have opened in the free zones of China and other parts of the world. Accounting analysts need to understand how competitors produce and sell their products and where they remain vulnerable. In these conditions, the accounting analysts must cross the border of competitiveness and thus become competition analysts.

At the same time, it should not be neglected that, developments in the new communication technologies and information technologies open up new possibilities for the accounting analyst. Massive amounts of information can be transmitted almost instantly across the globe at a cost that goes beyond just the postal cost for a simple letter. This technology allows the accounting analyst to achieve in seconds or minutes what he used to achieve in days or months.

It is generally accepted that this transaction accounting would not have been possible if electronic transmission of information had not been available. Accounting analysts need to explore the new possibilities that open up to them.

The object of managerial accounting represents a complex and coherent set of resources held, processes carried out and results obtained within the entity and its components following the allocation and use of the resources controlled by the entity and aimed at their inclusion within the economic optimum.

The information provided by the managerial accounting has a confidential character intended exclusively for a single category of respective users, the managers of the entity as opposed to the information provided by the other component of the financial accounting system that provides information of public character to several categories of users.

The new concept of time and time horizon brings to mind at least three issues that revolutionize the mission of the accounting analyst, namely: Target cost, Life cycle and Discontinuous time.

Target cost management simply reverses the time scale. Instead of limiting the input data of the analyst at the moment "after the product has been manufactured", the philosophy of the target cost extends the scope of work "even before the product was designed".

Managers and engineers create products and processes for markets where the price is set. Instead of determining the price through a cost-plus approach, the manager must completely reverse the equation. Today, the price is given by the market, the profit must be considered as a known one given by the needs imposed by the long-term strategy and, therefore, the target cost is equal to "the sale price minus the profit margin". The manager's role is to design the product and manufacture it to suit the target cost. The role of the accountant is to assist the manager in such tasks, and, this task begins long before the possibility of measuring outputs or of any kind of financial data is available for processing.

References

[1] Bhimani, A., Horngren, Ch.T. 2008. *Management and cost accounting.* Financial Times Press. ISBN: 0273711490, 9780273711490, 992 p.

[2] Bogdanoiu, C.L. 2017. *Contabilitate financiară de raportare (Financial accounting reporting*) (in Romanian), Universitaria Publishing House, Craiova. ISBN 978-606-14-1191-7. Available at: http://editurauniversitaria.ucv.ro/contabilitate-financiara-de-raportare/rasfoire. (in Romanian)

[3] Bouquin, H. 2006. *Comptabilite de gestion,* 4-e edition, Economique Publishing House, Paris. Available at: http://www.crefige.dauphine.fr/publish/bouquin/comptabilite_gestion.asp (in Romanian)

[4] Burlaud, A., and Simon, C. 1983. Analyse des coûts et contrôle de gestion. *Politiques et Management Public*, 1-2: 119-120.

[5] Clark, J.M. 1923 *Studies in the economics of overhead costs*. Chicago: University of Chicago Press, 502 p.

[6] Emery, F.E. 1969. *Organizational planning and control system: Theory and technology,* New York, Macmillan, 166 p.

[7] Iacob, C. 2005. Contabilitatea şi controlul de gestiune dincolo de frontiere *(Accounting and management control across borders)* (in Romanian)*, Analele Universităţii din Craiova*, 33: 69-73. (in Romanian)

[8] Iacob, C. 2007. *Present and perspectives in management accounting,* International Conference Series (II) The Future of Accounting and Accounting profession, Istanbul Commerce University.

[9] Iacob, C., Simionescu, S., and Manea, D. 2016. *Contabilitatea de gestiune, instrument fundamental al activitatii manageriale (Management accounting, a fundamental instrument of managerial activity)* (in Romanian), Universitaria Publishing House, Craiova. ISBN: 978-606-14-0990-7, 314 p. (in Romanian)

[10] Porter, M., 1985. *Competitive advantage: Creating and sustaining superior performance.* ISBN: 0029250900, 9780029250907, 557 p.

*** Order no. 1752/2005 for the approval of the accounting regulations conforming to the European directives.

*** Order no. 1827/2003 regarding the modification and completion of some regulations in the field of accounting.

*** Order no. 2374/2007 regarding the modification and completion of the Order of the Minister of Public Finance no. 1.752 / 2005 for the approval of the accounting regulations in accordance with the European directives.

*** Order no. 907/2005 regarding the approval of the categories of legal persons applying accounting regulations in accordance with the International Financial Reporting Standards, respectively accounting regulations in accordance with the European directives.

*** https://www.iasplus.com/en

*** https://www.ifrs.org/

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FISCAL DEFICIT AND THE GROWTH OF DOMESTIC OUTPUT IN NIGERIA

Joseph Ibrahim ADAMA
Department of Economics
Landmark University, Nigeria
ibrahimjoseph@lmu.edu.ng

Bright Onoriode OHWOFASA
Department of Social Sciences (Economics Unit)
Delta State Polytechnic, Nigeria
brightohwofasa@yahoo.com

Victor Ahmed AYODELE
Department of Economics
Landmark University, Nigeria
ahmed.ayodele@lmu.edu.ng

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Abstract: *The study focuses on the relationship between fiscal deficit and domestic output (using agricultural output as a proxy) in Nigeria. In other to have a robust model, other parameters of fiscal operations were included as explanatory variables namely, government revenue, government expenditure and government total debt stock. The study argued that even though there are no shortages of theoretical justifications on the impact of fiscal deficit on the national domestic output, empirical probe of the issue is scarcely pursued most especially for the agricultural sector. The model was estimated using the Engle-Granger testing approach to cointegration for the long-run analysis while a restricted error correction model was relied upon to explore the contemporaneous dynamics. The data obtained from Central Bank of Nigeria Statistical Bulletins covered the period 1986-2018. The study found that agricultural output has a long-run relationship with fiscal policy variables. In the long run, the study finds that government revenue and expenditure exert significant positive impact on agriculture output contrarily to the negative impact exhibited by government fiscal deficit and total debt stock. However, in the short run, agriculture output responded negatively to changes in fiscal deficit by 0.03%, government expenditure 0.03% and government total debt stock 0.09% contrarily to its 0.16% response to changes in government revenue. The paper recommended that government may consider reduction in deficit spending so as to minimize the country's current level of borrowings. Also, government may consider broadening its revenue bases by intensifying its taxation policy. Finally, no effort should be spared by the government in blocking all looped holes in the country's expenditure operations such as rent seeking and inflation of contracts.*

Keywords: fiscal deficit; agriculture; domestic output; Engle-Grange co-integration test; ECM.

JEL Classification: H20; H30; H53; H68; Q14.

Introduction

The persistence rises in fiscal deficits have been blamed for much of the economic crisis that have engulfed the Nigerian economy most especially the growth of the domestic output over the last three decades or so. This resulted in high debt profile thereby leading to debt crisis, high inflation, high unemployment as well as poor investment and growth (Fagbohun 2017). According to Umeora (2013), the high annual fiscal deficits in Nigeria were predicated on bloating of government bureaucracy, cost of providing critical infrastructures and shortage of revenue generation. A number of factors have contributed in exacerbating the fiscal deficit of the federal government among which the reliance on oil revenue is relatively more pronounced (Obinabo and Agu 2018). This is hinged on the fact that the crude oil price is determined at the world market thereby making oil revenue highly volatile. There is the problem of both external and internal debts where external debt servicing involves a quantum of large sum. The implication of these is a fall on the nation domestic output.

Anecdotal evidence reveals that Nigerian economy found itself in the deficit web following the collapsed of the world oil market in the early 1980s. Although, the economy has been making frantic efforts to exit the deficit trap but only little success (if any) has been recorded, rather the strategy that will aid in financing the deficit has been a key policy issue. Accordingly, a number of macroeconomic fundamentals have been experienced within the Nigeria economy. They included but not limited to rapid monetary growth, exchange rate depreciation and rising inflation. Previous studies in the field focused on the relationship between fiscal deficit and economic growth in Nigeria (see Wosowei 2013, Ubi and Inyang 2018, Tung 2018). The present study narrows the effect of fiscal deficit on the output of the agricultural sector in Nigeria. Although, fiscal deficit is not a problem peculiar to the Nigerian economy alone, but rather a common problem for the majority of developing countries especially sub-Sahara Africa (SSA).

Accordingly, the World Bank's statistics noted that rising fiscal deficit has been a reoccurring decimal in most developed and developing economies. Although many of these economies have strengthened their policies and accumulated significant savings over the past two decades, they still could not fully solve their fiscal problems and stabilized their macroeconomic fundamentals. In Nigeria, statistics from the Central Bank Statistical Bulletin (2018) indicate that average deficit stood at 0.13% of GDP in 1986 and in a decade later rose to 6.48% of GDP in 1996. It witnessed significant decline in 2006 falling to 1.91% of GDP before declining further to -1.17% of GDP in 2018. In the case of agricultural output as a percentage of GDP, it recorded 19.6%, 19.5%, 25.6% and 25.1% respectively in the same period. Whilst there are no shortages of theoretical justifications on the impact of fiscal deficit on the national domestic output, empirical evidences on the issue are sparse most especially for the agricultural sector.

Added to this is the issue of available research results on this topic which provide rather contradictory conclusions. Thus, there were some evidences showing negative impact of fiscal deficit on domestic output (Adam and Bevan 2005, Tung 2018) and some other researchers presented positive impact (Narayan 2006, Obinabo and Agu 2018) or an insignificant one (Wosowei 2013, Obinabon and Agu 2018). Essentially, the study even becomes more imperative as the agricultural sector holds the largest share in gross domestic product (GDP) of the Nigerian economy and in fact the entire SSA. It is against this backdrop that the current study is germane. The objectives of the study therefore are two folds namely, to access the long run relationship between fiscal deficit and domestic output of the agriculture sector and also establish from the list of fiscal policy variables if fiscal deficit is a key determinant of domestic output. Expectedly, the sequence of the paper is clear. Section two presents a brief theoretical and empirical underpinning of the paper. In section three, the method of study is unveiled. Whist section four presents and discusses the results, section five concludes the paper with policy remarks.

1. Review of Related Literature

Basically, the fiscal policy of the government encompasses public expenditure and government revenue where the latter entails income from all taxes. There is also revenue from crude oil export which in the case of Nigeria made up of about 80% of government revenue. Deficit may be financed either by printing money or issuing debt or both. Again, debt may be domestic or external where domestic debt involves interest rate equal to the net private rate of return (Adam and Bevan 2005). Accordingly, the authors aver that two types of government spending exist namely consumption and capital with basically five ways of financing spending. They are taxes, grants, printing money, domestic and external debts. The last three forms of financing spending are referred to as deficit financing. The difference between government expenditure and revenue is what has come to be regarded as fiscal deficit. Obinabo and Agu (2018) argue that fiscal expenditure in Nigeria is predicated on crude oil sales which is characterized by volatile revenue. The volatility leads to decline in government revenue thereby resorting to fiscal deficits.

A number of theories of fiscal deficit exist in the literature. Earlier theory was developed by Ricardian Equivalence Theory (RET) which argues that fiscal deficit has little or no effect on private consumption and interest rates only if certain criterions were present. They include but not limited to: that the capital market is well-organized and that individuals should internalize to ensure the certainty of government's budget constraint and also to ensure that distortion of taxes does not exist (Obinabo 2018). In the view of Barro (1989), the RET is relevant for government deficits or debts financed with tax income which does not affect trade balance and the real exchange rate thereby implying absence of a relationship between deficit expenditure and current account deficit.

On the other hand, Keynesian economics postulated that the growth of domestic output is a function of the increase in government expenditure which is predicated on deficit financing. They aver that the family units feel better off in the short run if growth of output is spurred by deficit spending thereby leading to rise in private and public consumption spending (Okpanachi and Abimiku 2007 cited in Ubi and Inyang 2018). They stress that deficit spending will only affect macroeconomic activities positively if and only if there is increase in aggregate demand. However, the Keynesians foresee that in the event of trade deficit, fiscal deficits might negatively affect the external sector should the domestic economy unable to absorb the excess liquidity which result from output expansion. They further argue that if deficit rises faster than the domestic supply of output, demand for imports will rise and trade deficit is then likely to occur thereby affecting the exchange rate, a phenomenon characterized as "the twin-deficits" hypothesis (Monacelli and Perotti 2006, Okpanachi and Abimiku 2007). To the monetarists, fiscal deficits refer to transfer of resources from the private sector to the public sector with very little effect on output. They believe that increase in government spending financed by monetary expansion has the potential to stimulate the economy thereby raising aggregate demand (Okpanachi and Abimiku 2007).

From the empirical corridor, Adam and Bevan (2005) investigate the effect of fiscal deficits on growth using a panel of 45 developing countries covering the period, 1970-1999. The study made growth as a function of deficit financing disaggregated into taxes, grants, printing money, domestic and external debts. The study finds that a threshold effect of 1.5% of GDP was evidence in deficit financing in developing countries. It was observed by the study that increase in deficit financing reduces growth and vice versa. Also, the study finds evidence of correlation existing between deficits and debt stocks where further increase in debt stocks exacerbated the effect on high deficits. The empirical results also suggest that while the impacts of taxes and grants on growth were reasonably straightforward, the overall impact of deficit on growth was likely to be complex, depending on the financing mix and the outstanding debt stock. The authors argue that if deficits where been financed by limited seigniorage its positive effect on growth may be relatively pronounced. Contrariwise, effect of deficits on growth may be deleterious if financed by domestic debt (Adam and Bevan 2005).

Narayan (2006) accesses the relationship between government spending and the economy level of output growth. He finds that government spending had a positive and highly significant impact on output growth rates. The study suggests that an increase in current expenditure positively and significantly affects growth while a negative relationship has the opposite effect. Wosowei (2013) examines the effect of fiscal deficit on macroeconomic performance in Nigeria spanning a data period of 1980-2010. The study observes that fiscal deficits exerted insignificant negative impact on macroeconomic output. Also, the study reveals evidence of bidirectional causality between government deficit and gross domestic product as well as government tax and unemployment. However, the study could not establish any relationship between government deficit, government expenditure and inflation. The Ordinary Least Square, co integration and the Engle Granger procedure were utilized for the study.

Sanya and Abiola (2015) assess the extent at which fiscal deficit affects the growth of Nigerian economy. Employing co-integration and error correction model, the study finds that fiscal deficit has significant negative impact on the growth of the economy. Edame and Okoi (2015) employ the Chow breakpoint and co-integration tests to assess the impact of fiscal deficit on economic growth in Nigeria. The study finds evidence of growth difference between the military and civilian regimes in Nigeria using the Chow test. Similarly, the study also found that economic growth responded significantly to changes in fiscal deficit during the military era contrarily to its insignificant response during the democratic regime. The study covers the period, 1985-1998 for military era and 1999-2013 for civilian regime.

The dynamic effect of changes in fiscal deficit on economic growth of Sri-Lanka was evaluated by Aslam (2016). The study made gross domestic product as a function of fiscal deficit, exports earnings, exchange rate and inflation rate. Among other things, the study finds a negative impact of fiscal deficit on economic growth of Sri-Lanka economy. The study utilizes the Johansen co-integration technique and error correction model for a data period spanning 1959-2013. Fagbohun (2017) in his examination of the relationship between budget deficit and economic performance in Nigeria found a positive significant relationship between the variables. The study which utilized the OLS on data spanning 1970 to 2013 also employed bank rate, broad money supply, external reserves and fiscal balance among the list of independent variables.

Obinabo and Agu (2018) assess the relationship between fiscal deficit and some macroeconomic variables in Nigeria. These variables include gross domestic product (GDP), money supply and inflation. Employing the Johansen co-integration, OLS and granger causality tests on data covering the periods, 1986-2018, the study finds that money supply and inflation had negative and insignificant response to changes in fiscal deficit contrary to its insignificant positive response to changes in GDP. Ubi and Inyang (2018) aver that between 1980 and 2016, Nigeria ran a fiscal deficit for 35 of the 37 years. A deficit which was tailored in favour of recurrent expenditure at the expense of capital expenditure. Their study examines the relationship between fiscal deficit and some macroeconomic variables namely, per capita income, economic growth, unemployment, inflation and balance of payments. The study which was largely descriptive found that fiscal deficit in Nigeria has positively contributed to the growth of per capita income, economic growth and balance of payments stabilization. The study however observed that the growth of unemployment and inflation rates was not affected by the ever-rising fiscal deficit in Nigeria. In Vietnam, Tung (2018) scrutinizes the effect of fiscal deficit on economic growth for a data period of 2003 – 2016. The study finds the deleterious impact of fiscal deficit on economic growth, private investment, foreign direct investment as well as net export not only in the short run but also in the long run as well. The study uses co-integration and error correction model.

From the review of the empirical literature, it can be observed that virtually all the studies concentrated on the relationship between fiscal deficit and economic growth to the exclusion of the agricultural sector. Similarly, most of the studies have only included fiscal deficit in their models as variable of interest to the exclusion of other fiscal policy variables. The present study intends to fill this lacuna by disaggregating fiscal operations in our model as well as narrowing output growth to agricultural sector.

2. The Model

The study specifies a linear model of agricultural output as a function of disaggregated fiscal policy variables with fiscal deficit as variable of interest for the period, 1986-2018 as follows:

$$AGO = f(GFD, GRV, GEX, GDS) \qquad (1)$$

In long stochastic form, equation (1) becomes:

$$AGO_t = \alpha_0 + \alpha_1 GFD_t + \alpha_2 GRV_t + \alpha_3 GEX_t + \alpha_4 GDS_t + \varepsilon_t \qquad (2)$$

where: AGO = agriculture output, GFD = government fiscal deficit, GRV = government revenue, GEX = Government expenditure and GDS = government total debt stock.

A positive relationship is expected between agriculture output and the explanatory variables. The error correction model (ECM) is estimated as follows:

$$\Delta InAGO_t = \sigma_0 + \sum_{i=1}^{K} \sigma 1i \Delta InAGO_{t-1} + \sum_{i-1}^{K} \sigma 2i \Delta InGFD_{t-1} + \sum_{i=1}^{K} \sigma 3i \Delta InGRV_{t-1} + \sum_{i=1}^{k} \sigma 4i \Delta InGEX_{t-1} + \sum_{t-1}^{k} \sigma 5i \Delta GDS_{t-1} + \lambda ECT_t \qquad (.3)$$

The ECT_{t-1} in Equation 3 is the error correction term and λ signifies the speed of convergence to the equilibrium process. It used to ascertain the stability of the parameters using the cumulative sum of recursive residuals (CUSUM) and or cumulative sum of square of recursive residuals (CUSUMSQ) or both developed by Brown, Durbin and Evans (1975).

3. Unit Root Test

The Augmented Dickey Fuller (ADF) test is conducted to ensure that none of the series is integration of order 2 to avoid breaks down of the model and also to avoid spurious regression. The ADF test is estimated as follows:

$$\Delta Y_t = C_i + \omega Y_{t-1} + C_{2t} + \sum_{t=1}^{p} di \Delta Y_{t-1} + \varepsilon t \qquad (4)$$

where: yt = relevant time series; Δ = first difference operator; t = a linear trend and εt = error term.

The null hypothesis of the existence of a unit root is Ho: ω=0. Failure to reject the null hypothesis leads to conducting the test on further differences of the series. Further differencing is conducted until stationarity is reached and the null hypothesis is rejected.

4. Co-integration Test

Two types of cointegration tests are used, namely Engle-Granger (1987) procedure which states that if all variables are stationary, it is not necessary to proceed since standard time series method apply to stationary variables and if the variables are integrated of different orders, it is possible to conclude they are not cointegrated for the set of 1(1) and 1(0) variables. But when specifying a model say W_t as an unrestricted vector autoregressive (VAR) involving up to k-lags, the EG test becomes deficient.

The other test is the Johasen (1988) and Johasen and Juselius (1990) where they specified the lag length in such a way as to render the error terms serially uncorrelated since the results of the cointegration test tend to be sensitive to the order of VAR test. Johasen and Juselius (1990) then propose the use of two likelihood ratio tests namely, the trace and the maximum eigenvalue tests. On the one hand, the trace statistic for the null hypothesis of co-integrating relations is computed as follows:

$$\Gamma_{trace}(r) = -\tau \sum_{i=1}^{m} \log\left[1 - \lambda_t\right] \qquad (5a)$$

On the other hand, maximum Eigen value static tests the null hypothesis of r co-integrating relation against r + 1 co-integrating relations and is computed as follows:

$$\Gamma_{\max}(r, r+1) = \iota \log(1 - \lambda r + 1) \qquad (5b)$$

5. Data and Discussion

Nigeria like most developing countries is an agrarian economy and the fiscal operations of the government should go a long way in positively affecting the sector. This is not the case as the agricultural sector has performed below expectation. This is so as most food items ranging from tooth pick to rice are imported thereby creating employment in those economy. Although, among the non-oil contribution to GDP, the output of the agriculture sector is relatively more pronounced. The Nigerian government has been running huge fiscal deficit but has very little impact in funding the agriculture sector.

Table 1. Growth of Agricultural Output and Fiscal Policy Variables (%)

Year	Agric Output	Fiscal Deficit	Govt Revenue	Govt Expt	Total Debt Stock
1986-1990	5.0	-165.5	54.2	36.3	54.9
1991-1995	2.8	-1741.8	45.1	38.9	26.3
1996-2000	4.0	12.0	42.0	29.0	40.5
2001-2005	16.0	125.8	27.4	21.9	3.1
2006-2010	6.5	-10-0	10.6	18.6	10.2
2011-2015	4.1	-294.4	2.3	4.7	16.0
2016-2018	3.2	72.8	14.0	16.2	23.6

Source: CBN Statistical Bulletin (2018)

For instance, Table 1 indicates that the growth of the agricultural sector has consistently hovers below double digit except during the 2001-2005 period when it recorded an average growth of 16.0%.

Figure 1. Trend of Agricultural Output and Fiscal Policy Variables

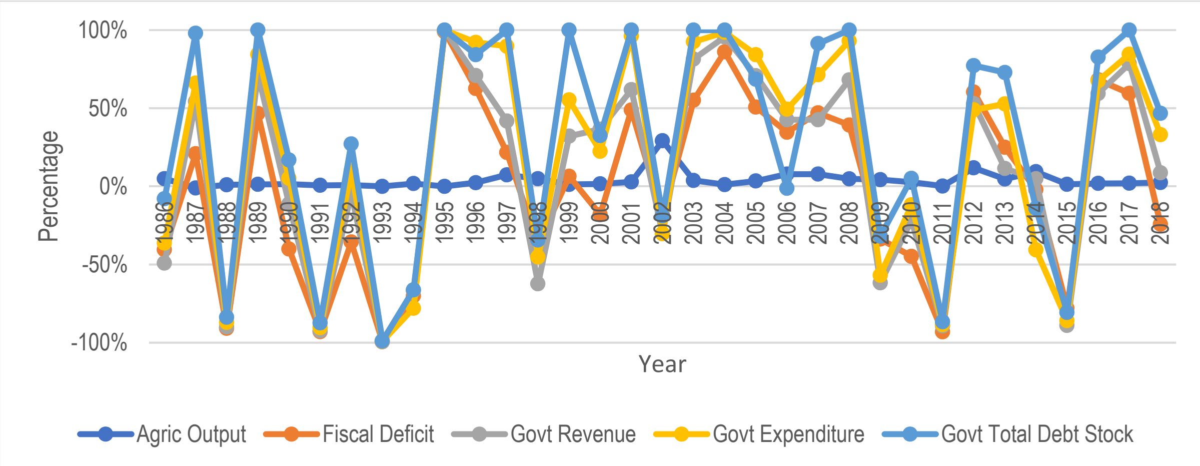


Table 1 also reveals that for most of the period under review the government budget was mainly funded by deficit financing with very little surpluses. The period of surplus fiscal operations, 1996-2005, was occasioned by favourable crude oil price at the global market before the country slide into recession by 2007. Even at that the surpluses may be partly influenced by the five years moving average analysis. Also, the growth rate of government revenue, expenditure and total debt stock can be seen in Table 1. Similarly, the trend of the variables in Figure 1 indicates that agricultural output was relatively stable while the fiscal operations were highly volatile.

Table 2. Unit Root Test Results

	Augmented Dickey Fuller Test					Phillips-Peron Test		
Variable	Level	First Dif	2nd Diff	Order	Level	First Diff	2nd Diff	Order
LAGO	-2.00	-3.63	-	I(1)	-1.90	-5.40	-	I(1)
GFD	-0.44	-2.25	-5.58	I(2)	-1.61	-2.67	-7.12	I(0)
LGRV	-0.73	-5.72	-	I(1)	-0.20	-8.90	-	I(1)
LGEX	-0.47	-6.70	-	I(I)	-0.60	-12.58	-	I(1)
LGDS	-2.84	-3.34	-5.06	I(2)	-2.63	-3.92	-	I(1)
C.V = 5%	-3.56	-3.57	-3.57		-3.56	-3.56	-3.57	

Source: Author's computation using Eview 8.0

Table 2 shows that the variables were integrated at orders 1 and 2. Essentially, integration of order 2 variables violate the necessary condition for the application of Johasen co-integration test. Similarly, the ARDL model intended for the study is also violated. Consequently, the Engle-Granger test is utilized to determine con-integration between agriculture output and fiscal operations namely government fiscal deficit, government revenue, government expenditure and government total debt stock.

Table 3. Engle-Granger cointegration test

Variable	ADF	5% Critical Value	Order
ECM	-5.65	-3.57	I(1)

Source: Author's computation using Eview 8.0

In conducting the test in Table 3, agriculture output is made as a function of the averages of all four fiscal variables taken as one variable since the EG test can only permit the estimation of bivariate model. The test reveals that the ECM coefficient exceeds the critical value thereby indicating the presence of a long run relationship between agriculture output and fiscal policy variables. As such, the dynamic long run model is presented in Table 4. Thus, the result shows that 94% of agriculture domestic output is explained by the independent variables. Also, the DW of 1.86 falls within the range of 1.59-2.41 of no autocorrelations while the F-statistic suggests that the model is statistically significant.

The result further reveals that government fiscal deficit, expenditure and total debt stock were significant at 1% level while government revenue was weakly significant at about 10% level. However, agricultural output had negative significant responses to changes in fiscal deficit and debt stock contrarily to its positive responses to changes in government revenue and expenditure. For instance, a 1% increase in fiscal deficit led to about 0.1% decrease in agriculture output and vice versa. On the other hand, a unit increase in government revenue and expenditure increases agriculture output by 0.21% and 0.45% respectively.

Table 4. Long run dynamic estimate
Dependent variable: LAGO
Method: Least Square

Variable	Coefficient	Std Error	t-statistics	Probability
Constant	7.44	0.22	33.69	0.00
LGFD	-0.10	0.02	-4.21	0.00
LGRV	0.21	0.11	1.93	0.07
LGEX	0.45	0.13	3.40	0.00
LGDS	0.35	0.07	-4.71	0.00
Diagnostic Test				
R^2	0.94			
DW	1.86			
F-stat	79.13			

Source: Author's computation using Eview 8.0

The over-parameterized error correction model not shown in the paper for lack of space is estimated. The lag length suggested by Akaike information criterion (AIC) and Schwarz Baysian information criterion (SBC) is 1. Accordingly, Table 5 depicts the parsimonious error correction model. Using the general to specific, parsimony was achieved by eliminating insignificant variables. The diagnostic tests conducted revealed that the model is serially uncorrelated. The null of no heteroscedasticity hypothesis (ARCH effect) was accepted. Likewise, the DW statistic of 1.81 reveals that there is no autocorrelation while the F-stat of 6.63 supports the joint significant level of the model. Further, the test of parameter stability indicates that the model is stable as the CUSUM plot does not cross the two critical lines. Thus, the model passes all the diagnostic tests considered and is satisfactory.

A cursory look at the short run results in Table 3 indicate that only government revenue had positive significant impact on agriculture output as against the significant negative impact of government fiscal deficit, expenditure and total debt stock.

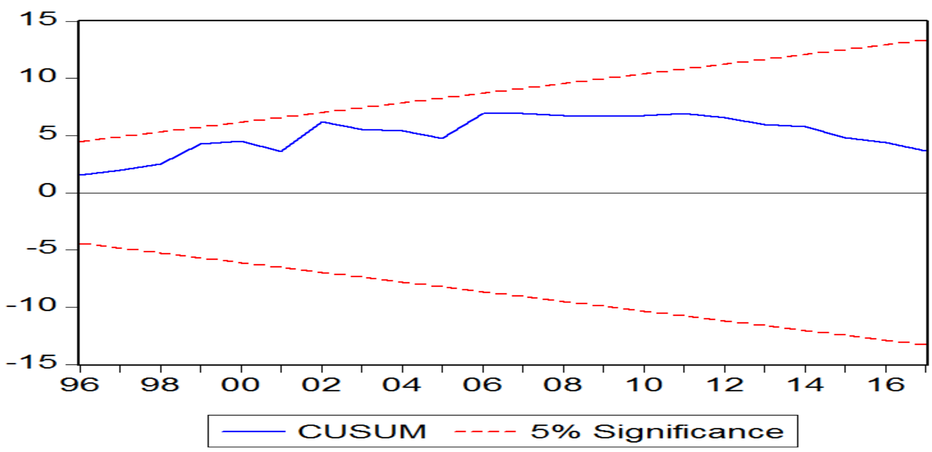
Table 5. Parsimonious Error Correction Model of Domestic Output and Fiscal Variables
Dependent Variable: DLAGO
Method: Least Square

Variable	Coefficient	Std error	t-statistic	Probability
Constant	0.10	0.04	2.84	0.01
ΔLGFD	-0.03	0.01	-2.57	0.02
ΔLGRV(-1)	0.16	0.08	2.06	0.04
ΔLGEX(-1)	-0.03	0.02	-2.19	0.04
ΔLGDS	-0.09	0.02	-3.72	0.01
ECM(-1)	-0.31	0.07	-4.13	0.00
Diagnostic Test				
R^2	0.69			
DW	1.81			
F-stat	6.63			
Serial Correlation	0.44(0.65)			
ARCH LM	0.26(0.62)			

Source: Author's computation using Eview 8.0

This implies that in the period of review, agriculture output responded negatively to changes in fiscal deficit by 0.03%, government expenditure (0.03%) and government total debt stock (0.09%) contrarily to its 0.16% response to changes in government revenue.

Figure 2. Test of Stability (CUSUM)



Adam and Bevan (2005) in their study of 45 developing countries, Sanya and Abiola (2015) in Nigeria, Aslam (2016) in Sri-Lanka and Tung (2018) in Vietnam have earlier reached similar findings on the relationship between fiscal deficit and domestic output. Also, the finding reveals that the coefficient of the ECM which is the speed of adjustment between the short and the long runs is very robust and statistically significant. It implies that in the event of disequilibrium in the system, equilibrium is restored with a speed of about 31% a year.

Conclusion

The study scrutinizes the relationship between agricultural output (a proxy for domestic output) and fiscal deficit in Nigeria. In other to have a robust model, other parameters of fiscal operations were included as explanatory variables namely, government revenue, government expenditure and government total debt stock. The study which covers the periods, 1986-2018, uses descriptive and analytical approaches. In the long run, the study finds that government revenue and expenditure exert significant positive impact on agriculture output contrarily to the negative impact exhibited by government fiscal deficit and total debt stock. On the other hand, whilst the impact of government revenue on agriculture output is positive, government expenditure, fiscal deficit and total debt stock induce significant negative impact on agriculture output in the short run.

The findings suggest that fiscal deficits contribute significantly to the overall performance of the economy and the management of which will go a long way in ensuring economic stability. Over the last three decades or so, the Nigerian government has been running a consistent budget deficit usually financed by both domestic and external borrowings. A number of factors have contributed to the rising deficit in Nigeria among which is over inflation of the country's expenditure and government contracts. All of which are largely unproductive. Although, the growth in government expenditure could be attributed to growth from revenues accruing from the rent seeking activities prevalent in the oil sector, both in the up and down stream sectors, high level of official corruption in Nigeria is major reason for frivolous spending by government officials. Annually, the government budgets for debt servicing are huge thereby reducing funds available for domestic productivity including the agriculture sector. The use of external borrowing in financing deficit in turn creates a deficit in the current account resulting in exchange rate appreciation and disequilibrium in the balance of payments, while domestic borrowing stimulates high interest rates and a decrease in private investment borrowing and seigniorage. The result is a crowding out of private investment. Therefore, it is recommended that government may consider reduction in deficit spending so as to minimize the country's current level of borrowings. Also, government may consider broadening its revenue bases by intensifying its taxation policy. Finally, all looped holes in the country's expenditure operations such as rent seeking, inflation of contracts, should closed.

References

[1] Adam, C.S., and Bevan, D.L. 2005. Fiscal deficits and growth in developing countries. *Journal of Public Economics, 89*: 571–597. DOI: 10.1016/j.jpubeco.2004.02.006. Available at: www.elsevier.com/locate/econbase.

[2] Aslam, A.L.M. 2016. Budget deficit and economic growth in Sri Lanka: An econometric dynamic *analysis. World Scientific News,* 46: 176-188

[3] Barro, R.J. 1989. The Richardian approach to budget deficit. *Journal of Economic Perspectives, 3*(1): 37-54.

[4] Brown, R.L., Durbin, J., and Evans, J.M. 1975. Techniques for testing the constancy of regression relations over time. *Journal of the Royal Statistical Society, 37*: 149-192.

[5] Edame, G.E., and Okoi, O.B. 2015. Fiscal deficits and economic growth in Nigeria: A chow test approach. *International Journal of Economics and Financial Issues, 5*(3): 748-752.

[6] Engle, R.F., and Granger, C.W.J. 1987. Cointegration and error correction: Representation, estimation and testing. *Econometric, 55*: 251 – 76.

[7] Fagbohun. A. 2017. The economic performance of budget deficit in Nigeria. *Research Journal of Finance and Accounting*, 8(8): 128-135.

[8] Monacelli, T., and Perotti, R. 2006. Fiscal policy, the trade balance and the real exchange rate. *The Economic Journal, 3*: 437 – 461.

[9] Obinabo, C.R., and Agu, B.O. 2018. Effect of fiscal deficit on selected macroeconomic variables in Nigeria: A time Series analysis, 1986-2018. *International Journal of Academic Research in Business and Social Sciences*, *7*(3): 78–91.

[10] Sanya, O., and Abiola, L.N. 2015. Fiscal and economic growth. Nigeria experience. *International Journal for Innovation Education and Research,* 3(11): 06-15. Available at: https://ijier.net.

[11] Tung, L.T. 2018. The effect of fiscal deficit on economic growth in an emerging economy: Evidence from Vietnam. *Journal of International Studies,* 11(3): 191-203. DOI: 10.14254/2071-8330.2018/11-3/16.

[12] Ubi, P., and Inyang, J. 2018. Fiscal deficit and Nigeria's economic development. *International Journal of Economics, Commerce and Management, 6*(5): 137-150.

[13] Wosowei, E. 2013. Fiscal deficits and macroeconomic aggregates in Nigeria. *Kuwait Chapter of Arabian Journal of Business and Management Review, 2*(9): 72-82

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EUROPEAN UNIFICATION AND EUROPEAN INTEGRATION AS A PHILOSOPHICAL PRINCIPLE

Bogdan GHIDIRMIC
Faculty of Legal, Economic and Administrative Sciences
Spiru Haret University, Romania
bogdan.ghidirmic@spiruharet.ro

Student Alexandru MATEI
Faculty of Letters
University of Craiova, Romania

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Abstract: *In the mentioned coordinates of the European studies, the European unification is an attempt to establish a conceptual, philosophical framework for these studies, oriented, according to their stage, towards the fundamental aspects: the specificity of Europe and the European crisis; European unification; the cardinal philosophical problems of European unification and the resistance it faces. Using disciplinary approaches (economics, political science, sociology, history, etc.), she seeks to clear the philosophical side and support it, away from the positivist rendering of what is, but also from the usual slip in generalizations without sufficient basis, which is encouraged by generous topics, which are in public controversy.*

Keywords: unification; integration; philosophical; European studies.

JEL Classification: A12; F59; N40; N44.

Introduction

If by paradigm we understand what the members of a community share, the constellation of beliefs, values, methods within which they ask questions and elaborate answers, then we have reason to say that, in different degrees, we are experiencing a paradigm shift in Europe. Our problems of life and specific cultural demands go unnoticed from the national paradigm, which has had a long way in European culture, in the European paradigm.

Open to the adoption of the French language by the intellectual elite, as well as to the influences of Enlightenment, the German Romantics argued the thesis after which each language incorporates a Volksgeist[5], and the peoples have specific contributions to the common civilization of humanity. Herder, in his famous Ideas on the Philosophy of Human History[6], and, later, Fichte[7], in no less the famous Words to the German Nation,

[5] National spirit or the concept of "Volksgeist" gives a common soul to the community of a people. It is a general concept similar to Zeitgeist or Weltgeist and thus belongs to the spiritual world of the 19th century. Frederick Carl von Savigny was one of the first to use the notion of law developed by the people in the early 19th century. Savigny supported, among others, Montesquieus and Voltaire's views on spirit. Voltaire spoke of a spirit of the nation as a characteristic of nations, and Montesquieu advocated a principle of spirit on the basis of social coexistence, which a leader should not ignore. Savigny, on the other hand, sought to restore the right to a common cultural and historical consciousness, which he called Volksgeist. By Hegel's idea of a super-personal "objective spirit", the Volksgeist had a philosophical foundation.

[6] Johann Gottfried von Herder (1744 - 1803), German philosopher, theologian and poet - between 1784 and 1791 appears his capital work in four volumes Ideen zur Philosophie der Geschichte der Menschheit ("Ideas on the Philosophy of Human History") in which he tries to prove that natural history and the history of mankind are governed by the same laws.

[7] Johann Gottlieb Fichte (1762 - 1814) German philosopher, father of German idealism.

outlined this thesis by which cultural history was split into the culture of various nations. When it came to culture, in romance it was considered what is sentimental, rather than what is the elaboration of reason, the "soul" rather than the "intellect" of form, we can say that through the culture of a nation it was held in view of a "spiritual power", located in the initial phases of history, itself in folklore. In the folklore, then, other national ideologues, national coordinates, sought, for the followers of political nationalism, as a kind of normative framework of the national cultural movement. In the degraded variants of this direction, the writers of popular inspiration were transformed into tutelary figures of the national cultures, identified with their pre-modern stages.

In the variants inspired by Enlightenment, this direction was related to the belief that the cultural flourishing of nations generates the flowering of the culture of humanity. Through the service of their nation, people fulfill their duty to serve others and God, and the nation is essentially a mission to civilize and bring civilization forward. Faith passes into Eastern Europe and takes a simpler form, detached from the religious metaphysics in which it was framed in the West.

The national paradigm rests on several assumptions - the compatibility of all national goals, the capacity for immanent universalization of national "perspectives", the relativism of truth and other values - which have not been confirmed. Strong critics, aiming at the idealization of the past they encourage, the conflict with the modernization needs, the encouragement and legitimization that nationalism has always offered to corruption and impostors, have undermined the success of the national paradigm in relation to the universal, European one. Moreover, since the European states have gained in power and self-confidence, they have pushed their borders outside, both in Europe and globally, in a wave of imperial expansion. The nation-state itself has begun to seem too small to be able to achieve national goals. Writers and politicians began to proclaim the "civilizing mission" they had, to bring light to their national values in the dark corners of the globe. Such expansionist tendencies created growing national conflicts, which were rationalized in the pseudo-Darwinian language as a struggle for survival of the most adapted. In such feelings, the original inspiration behind the principle of national self-determination was completely obscured (Eccleshall, Geoghegan, Jay, Wilford 1984).

Western Europe became aware of the shortcomings of the national paradigm, which dominated it for a long time, and passed, economically, politically, but also culturally, to a new paradigm, which integrates existential questions, even the "national" ones, by origin, the sphere and their significance, in a European approach. The national horizon is inscribed in the more comprehensive, but less abstract, horizon of our continent. In the factuality of life, European citizenship today grows naturally on the basis of nationality and gradually acquires the primacy in relation to it.

Against the background of this paradigm shift, today, in one sense, to be resumed, in another sense, to be consolidated, and finally, in a third sense, to simply launch European studies. Of course, when we talk about studies, we consider a kind of works, distinct, for example, commentary, article, essay, in that it involves approaching a problem in the perspective of its own unbundling, based on a comprehensive analysis of the data and literature of the problem, based on the analysis of contradictory explanations, of systematic research (Marga, 1992). And when we speak of European studies, we consider such works on the problems of European culture and civilization.

European studies are to be resumed today. The statement makes sense if we consider the circumstance that one of the effects of the national paradigm was the gradual narrowing of the sphere and, of course, the horizon of research and reflections devoted to European problems. Within this paradigm were produced monographs of the national cultures, in particular of the philosophy, literature, history, sciences, even of the technique, considered "national", which showed less well-known data of the European culture. But within this paradigm, and even as a direct effect, research and reflections have tended to be restricted to "national" topics.

The constraint went so far that comparative, as a subject of study, was practically destroyed. It has remained somewhat alive in literature, very modest in history and philosophy, but in economics, in law, for example, "national" research as a subject is broken by more comprehensive research. There are "specialists" who do not hide the fact that they possess knowledge regarding only the "national economy", only "national law" and do not confuse themselves with the fact that in knowledge, and especially in science, there are facts pertaining to the lives of nations, but there are no "national" theorems. And the mass media hold the illusion of this isolationist mentality, even a large-scale cultivation, promoting a technique that unparalleled the performance of its own population and without considering in any way the consequences of the performances. In terms of isolationist mentality, everything that is produced in Europe or at least in Europe is European. In any case, where the isolationist mentality is strong, European studies are simply to be resumed, if they have ever been started.

European Unification and European Integration as a Philosophical Principle

The assertion that these studies are to be consolidated makes sense if we consider the fact that the national paradigm has ceased to be unconditionally shared in Western approaches to European problems and has been practically absorbed, with the creation of Small Europe and its enlargement, in the European paradigm. European studies appear that mean the research of problems common to national entities under the premise of their passing, voluntarily, within the competence of the supranational courts established jointly. In the last decade, and especially in the years after 1989, the literature on the construction of the European Union and, therefore, of Western Europe as a not only economic, but also administrative and political entity, has developed. It is focused on the political, legal and institutional aspects involved in articulating, with the means of democracy and on the basis of the values of pluralistic democracy, the new Europe, as a result of a new attempt to unify the continent.

The assertion that European studies are about to be launched makes sense if we consider the fact that unified Europe can only be achieved if it relies on what Europe is geographically and historically and tries to integrate what belongs to its culture. Unified Europe involves studies that reach the foundations common to national entities on the continent and look at historical, social, cultural facts from the perspective of these common foundations and of a possible common future. Unified Europe is the result of promoting the European paradigm, just as the Europe of the last two centuries was the result of promoting the national paradigm. In this sense, the European studies are to be launched as an investigation of the facts on the horizon given by the existence of a European foundation and of a prospect of its recovery and reunification.

Conceived as a research of the problems that have arisen in the European space, in different national entities profiled within or between them, as exceeding the limits of each one, within the European paradigm, that is, considering the common foundation of the different national cultures on the continent and on the horizon of European unification, European studies do not become so general that they break from factual research. Local studies, regional studies and interregional studies, as well as national and international studies, focusing on European issues, are mainly European studies. This quality is not given by the sphere of interrogations, but rather by the paradigm that is promoted. Sharing the European paradigm together with assuming European problems establish the belonging of a research in the field of European studies.

Like any other study species (American studies, classical studies, ancient studies, etc.), and European studies have different degrees of relevance. From this point of view, in the current situation, European literature studies are presented as European studies. In many universities, European studies are confused with European literature studies, as American studies are often reduced to research in American literature. It can be admitted that literature is always a good indicator of the patterns of mentalities and behavior, but the truth is that its research is not enough to know a community. Its reality is not absorbed by the lived reality expressed by literature. It also contains data that only the research of the type of science and technology, the organization of the economy, the institutions and the formation of the political decision, the legitimation, the self-interpretations can render. Therefore, the relevance of the literature study is limited.

European studies are often confused with research into what has happened in Europe. The common concept of European studies is at stake here. It is considered that, since a subject is taken from the sphere of life at some point in Europe, his study is, by this means, European. But there are manifestations in European life that have nothing European in origin, style, concepts, etc. On the other hand, there have been events in the European life of the past that had no significant consequences for the subsequent history of localities, countries, regions and the continent. If we generalize this criterion, then we can rightly consider that the series (scientific, technical, economic, legal, political, etc.) started in the modern era have greater relevance. European studies are essentially studies of modern Europe.

We know, however, that in the modern European history there is at one point another turning point: the European organization on the principle of separation of national entities is in crisis, and, on the other hand, a new organization, based on the principle of European unity, has become a problem and an immediate practical concern. By staying focused on modern Europe, European studies tend to become, on this background, studies of European unification. This, in the first instance, from a thematic point of view. The most substantial literature in the field of European studies is now the European Union construction literature. But European studies are becoming studies of European unification and from another point of view: that of the perspective of approach. It is a principle enshrined in historical approaches that the more developed forms allow us to understand the simpler, incipient forms. Hegel[8] applied it in his philosophy of history, in which he sought to understand the universal history starting from the perspective opened by the Reformation, of the freedom realized by every human person. Freed from finalism, however, the principle remains vigorous and offers an excellent benchmark for intelligently reconstructing a confusing history at least by the volume of facts. As a result, European studies certainly gain the status of Europeans when they start from the perspective of European unification, even if the topics and their factual basis precede, in time, considerably, the actual, consciously engaged process of European Union construction.

European studies are, by their nature, multidisciplinary, because they aim to describe, conceptualize, explain and understand a reality that is not exhausted by a single discipline. In addition, the increased complexity of life in late modernity generally provokes traditional, monodisciplinary approaches. We still have monodisciplinary European studies and it remains essential that the disciplinary division of knowledge be maintained and even developed. The return behind the disciplinary division would be just as catastrophic as the return behind the division of activities. The late modernity frequently puts us in the face of such a disciplined specialization that it risks not understanding the object anymore, because, in fact, after excessive fragmentation, on an abstract level, it no longer operates with it. The solution is rather a healthy pluridisciplinarism, supported by continuous interdisciplinary communication. It is not the rebirth of pre-modern elementalisms, but only a deep philosophy of communication that can hold the modernity of late, because only it is at the level of its complexity.

The multidisciplinary research is temporary and dissolves in isolated approaches, only nominally assembled, if not supported by a conceptual framework which, in turn, allows the formulation of questions. However, the research begins with the questions, and the quality of the research depends on the quality of the questions. However, the questions themselves have a conceptual background. This prior may have different ranks of generality and is often relative to the disciplines outlined on the specialized knowledge map. He is all the more specific as a discipline has advanced more toward maturity. When the disciplinary framework exists, it is normal for questions to be taken into account. In other words, a step backwards is taken when a question that can be asked precisely and specializedly is passed into the register of more general questions. Said as simple as possible, a general question can be asked and, therefore, it can be philosophically practically related to anything, but it is always counterproductive that, when there is a disciplinary perspective, it should be abandoned in favor of a philosophical approach. It is not possible to make a spatial separation of the particular disciplines, on the one hand, and of the integrative discipline which is philosophy, on the other hand, but it can be claimed that a particular approach is not taken as a philosophy and also that the approaches they should not be replaced by a philosophical approach, when possible.

When alternatives appear in the unraveling of a problem formulated within a discipline, when the approaches, even disciplinary ones, employ not only given realities, but also projections of virtual realities - at least in these situations - the philosophical approach is inevitable and indispensable. European studies encounter such situations: alternatives to unraveling essential issues within disciplines, employing the virtual reality of Europe. Especially in the latter case a philosophical approach is demanded. Said as accurately as possible, this is a philosophy of European unification as a systematic reflection on the philosophical problems encountered by the process of European unification, in order to shape the conceptual framework of European studies, whether they are specialized disciplines.

Philosophy has made greater progress in the present century than in its entire previous history. But, at least in Eastern Europe, including us, it risks a new marginalization in the sphere of culture. The fact has, I think, internal explanations for the discipline: the passism, materialized in the return of many philosophers facing the past, together with the resumption of blind traditions to the realities of today and, anyway, incapable of understanding them; to confuse philosophy with minor artistic exercises, in the case of essays; replacing disciplinary interrogations, even when they are possible, with philosophical questions to which, in fact, they have long been answered; illicit substitution of reality considerations with the expression of reality experiences. The fact, however, also has external explanations for the discipline, which basically concern the proliferation, even among specialists, of the false opinion, after which philosophy is not involved in what they do, as specialists, but starts from the moment they they ended their role. From this marginalization, philosophy cannot leave without reflexivity on its own condition. It means, first of all, to seek a new position in knowledge, so that the role of philosophy can be preserved to integrate the human experience of the world, but without the pretense of

[8]Georg Wilhelm Friedrich Hegel (1770 - 1831) was a German philosopher, the main representative of idealism in nineteenth-century philosophy.

Letztbegründung[9]; to take the data of the sciences in order to elucidate their meaning and the conditions of their possibility, but not necessarily to generalize them.

William Wallace (1990) in The Dynamics of European Integration uses the term European integration, but in fact, he thinks prematurely of European unification, where he notices an inflation of integration theories, which occurred in the 1950s and 1960s and were supported by a an atmosphere of dissatisfaction with the factual results of the programs. In the 1980s, the Western European governments and the European Commission re-launched the process. But, from time to time, in relation to contexts created by elections, referendums, polls, etc., the atmosphere of discomfort arises in the public life, among intellectuals and even in the daily opinion, and the daily atmosphere can alternate combinations of euphoria and euphoria. pessimism, and credibility is distributed between the moderate variant of integration and the more radical perspective of unification.

Beyond the atmosphere, however, it is worth noting that the term European integration better covers what has happened so far in Western Europe: a combination of economies and institutions, from legal ones, to educational, cultural ones, and so on. so that the European Community works under as many aspects as a whole. Here the term integration has a meaning close to that of the current language, through which it is understood the establishment of an increasing interdependence between the community countries, so that they gradually become part of an entire.

Integration has this connotation that comes from the experience of obtaining integers through the functional linking of the different parts in a more comprehensive set. These parts are connected according to functionality criteria. Explicitly, European integration was conceived and promoted by actors on the Western European scene, after the signing of the Treaty of Rome, in the sense of creating and maintaining models of intense and diversified interaction between the previously autonomous units. These patterns may be partly economic, partly social, partly political, but the definitions of political integration imply the accompanying of high levels of economic and social integration.

Integration theories have recently made the distinction between formal integration and informal integration in the case of the European process involved with the Treaty of Rome. By formal integration, they understand changes in the legal and other regulations in the direction of mutual compatibility and achieving the efficient functionality of the community. Informal integration covers, on the other hand, the dynamics of production and market exchanges of communication products and systems. While the former depends directly on political initiatives, the latter is carried out somewhat by the force of the mechanisms of today's European civilization.

The term of European integration has been applied so far, to designate the community process, from the realistic view that, in fact, it has achieved more than an addition of the Western European countries in a more comprehensive set, but less than a European unification. . In many respects, economic, social, political and cultural, these countries have remained differentiated and remain so. And if we talk about integration, then it has to be added that it has been predominant so far as economic integration and that the integration of other areas of Western European countries has just begun.

However, in social and philosophical approaches, the term European unification is preferred. The sufficient reason for this option is given by multiple arguments. The first concerns the fact that the purpose, stated in the Treaty of Rome, of the European process transcends economic integration and integration in general, being the political purpose of establishing the foundations of an ever closer union among the European peoples, so as to substitute for age -old rivals the merging of their essential interests; community, the basis for a broader and deeper community among peoples long divided by bloody conflicts; and to lay the findings for institutions that will give direction to a destiny henceforward shared. In relation to this purpose, the conceptual framework of the European process approach must be established and, finally, the results of each moment must be evaluated. The second argument: the conceptual framework organized around the term of European integration was satisfactory to approach the process of articulation of the European Community, but it does not cope with the process initiated with the agreement of Maastricht, of articulation of the European Union. We are not only through the announced projects, but also through what has been done, on the path of European unification. Finally, the third argument stems from the fact that we can approach an ongoing process by operating at different times. A philosophical approach remains faithful by approaching a process in the long-term perspective of its ultimate purpose.

[9] Thesis of the "ultimate reason" (in German: Letztbegründung), which proposes as the ultimate reason for investigating the truth the possibility of communicating through language.

Conclusion

To designate the process that led to the formation of the European Community and, after 1993, with the adoption and implementation of the Maastricht agreement of the European Union, the term of European integration is usually used, but here it is preferable a somewhat more radical term, that of European unification.

For Eastern Europe, too, assuming the European paradigm is now a condition of cultural relevance and, perhaps more acute, of survival. Only illusory cultural relevance is achieved by relaunching the national paradigm of a century or more ago. No matter how refurbished, it is simply in contrast with the experiences accepted by today's civilized world, and its cultivation is definitely counterproductive. And here, including in Romania, the paradigm shift, from the national one, to the European one, is a matter of lucidity and, ultimately, of responsibility.

References

[1] Bugajski, J*:* 2002. *Political parties of Eastern Europe. A guide to politics in the post-communist era.* Armonk, NY–London, England: M.E. Sharpe (The Center for Strategic and International Studies). ISBN: 978-1563246760.

[2] Cunningham, F. *Theories of democracy. A critical introduction*, London–New York: Routledge, 2002. ISBN: 1134584954, 9781134584956, 256 p.

[3] Eccleshall, R., Geoghegan, V., Jay, R., Wilford, R. 1984. *Political ideologies. An introduction,* Unwin Hyman, London. ISBN:978-0091561314, 224 p.

[4] Lijphart, A. 1977. *Democracy in plural societies. A comparative exploration*, New Haven–London: Yale University Press, 1977. ISBN: 0300024940, 9780300024944, 248 p.

[5] Marga, A. 1992. Introducere în metodologia şi argumentarea filosofică, Dacia, Cluj-Napoca. ISBN: 9733503010, 9789733503019, 194 p. (in Romanian)

[6] Marga, A. 1995. *Filozofia unificari europene*, Editura Apostrof, Cluj. ISBN: 978-9739682565, 255 p. (in Romanian)

[7] Prodi, R. 2001. *O viziune asupra Europei*, Editura. Polirom, Bucuresti. (in Romanian)

[8] Russ, J. 2002. *Aventura gândiri europene. O istorie a ideilor occidentale*, Institutul European, Bucureşti, 326 p. (in Romanian)

[9] Stein, J.P. (ed.) 2002. *The politics of national minority participation in post-Communist Europe. State-Building, democracy, and Ethnic Mobilization*, Armonk, NY–London, England: M.E. Sharpe (EastWest Institute), 298 p.

[10] William, W. 1990.*The dynamics of European integration*, Pinter Publishers, London and New York for The Royal Institute of International Affairs, London. ISBN: 0861878434, 9780861878437, 308 p.

*** European Comission. 2001. How Europeans see themselves. Looking through the mirror with public opinion surveys, Luxembourg:Ofice for oficial publications of the European Communities.

*** European Commission. 2003. The galup organization, candidate countries eurobarometer, eurobarometer 2003.4. Public opinion in the acceding and candidate countries, Hungary.

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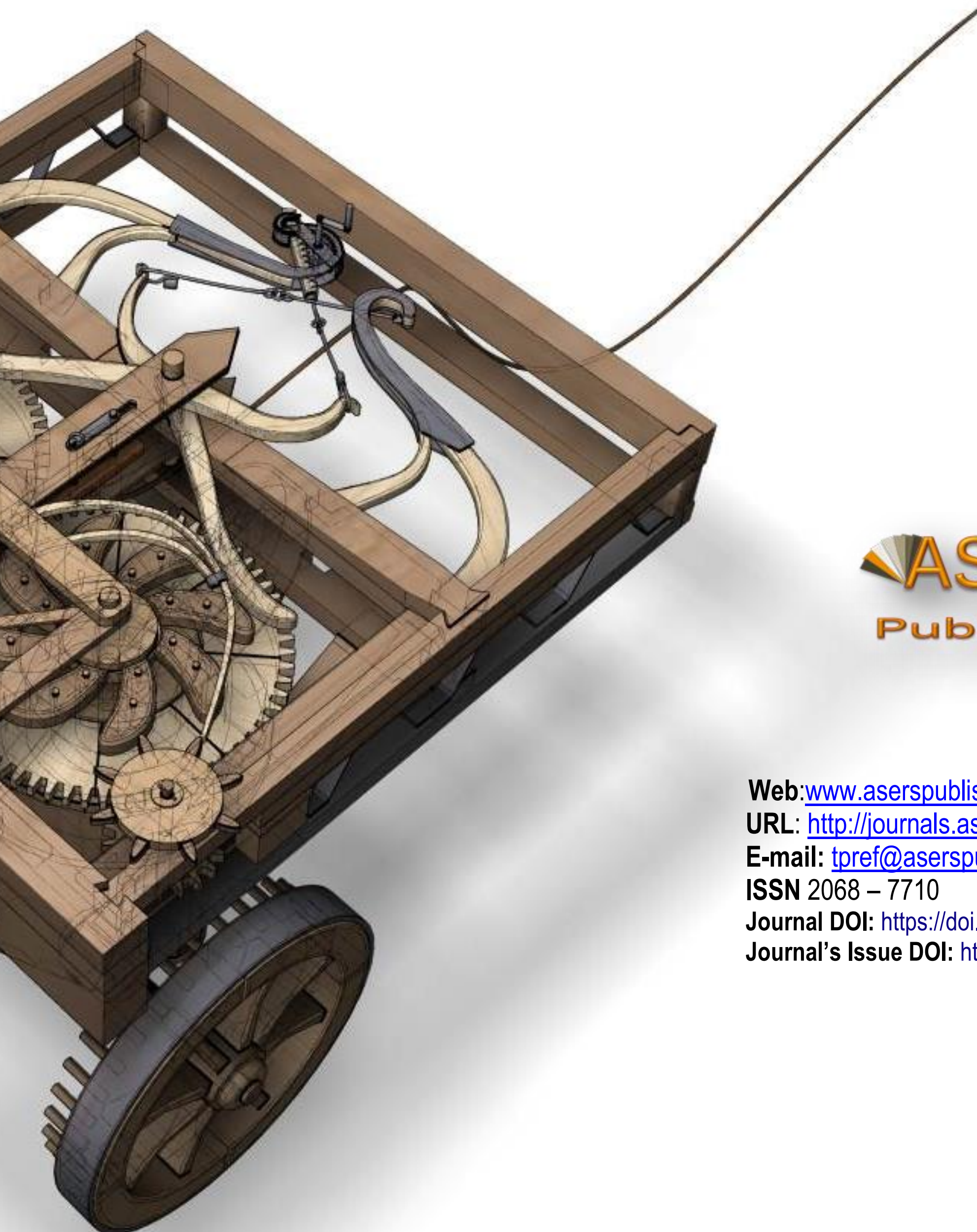

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