Economic Development, Technological Change, and Growth

Barometers of Regional Development
Trends in the case of South-East region of Romania

Gabriela Marchis[1]

Abstract: «How to approach the sustainable spatial development in South-East region of Romania? » is the main question to which this research-paper tries to find answers. New development trajectories are needed in order to tackle the current challenges posed by the rapid dynamics of the labour market, in a globalized, increasingly digitized economy, and in the context of technological, climate and demographic changes. This paper analysis the internal socio-economic inequalities that South-East region of Romania experiences, highlighting the main challenges of territorial development. The internal development capability of South-East region of Romania is presented by an inventory of needs and resources during the 2010-2016 period, using the most recent statistical data available on the website of Romanian National Institute of Statistics. This region is confronted with multiple vulnerabilities such as mass unemployment (due to the lower wages and the territorial proximity with capital-region: Bucharest-Ilfov), insufficient public income transfers, out-migration (causing high social costs and also constituting a barrier to regional adjustment) and if these trends persist in long-run, at the extreme, possibly desertification. Moreover, in absence of some basic preconditions for regional development, in terms of infrastructure, accessibility, basic public services, growth could be a dream and not a reality. The paper concludes by proposing suggestions on how to respond to the specific and particular challenges that the South-East region of Romania is now facing, on the basis of the previous conceptual and empirical evidence.

Keywords: knowledge-based economy; governance connectivity; territorial capital; sustainable economic growth; training and education.

JEL Classification: R58; O15; R11

1. Introduction

This article explores the governance challenges of South-East region of Romania and the persistent gap between rhetoric and the reality of regional policy. The paper is organized as follows. The debate on sustainable territorial development is illustrated in the first section together with a reflection on the importance of

[1] Associate Professor, PhD, Danubius University of Galati, Romania, Address: 3 Blvd. Galati, Romania, Tel.: + 0372361102, Corresponding author: gabrielamarchis@univ-danubius.ro.

territorial capital of South-East region of Romania. The current challenges that the South-East region of Romania are facing, in terms of demographical, economic, and social profile, are presented in the second section, leading to some concluding remarks regarding the need of strategic development planning and strong linkages with sectorial policies, trans-territorial networking and governance connectivity that's equivalent to equilibrated and equitable presence of diversified development trajectories across counties (section 3).

2. What is Sustainable Territorial Development?

Sustainable development in a holistic perspective, where environmental, cultural, economic and social concerns intersect, was for the first time used in Brundtland Report (1987) – "Our Common Future" which contains the following definition: "a process of changes in which exploitation of resources, directions of investments, directions of technical progress and institutional changes remain in harmony and preserve now and for the future a possibility of satisfying human aspirations". The concept of sustainable development appeared for the first time, in the primary law of the Community in 1992 in the Treaty of Maastricht, in reference to economic, environmental and regional issues and afterwards this concept was assumed not only as a principle or a task, but also as the goal of the European Union functioning (art. 3 clause 5 of the TEU). In the doctrine it is noted that the concept of sustainable development is too general and has a pronounced program character that causes the formation of numerous ideas and possibilities of interpretation. As a consequence, in the absence of a cohesive definition of sustainable development in the European Union legislation, no consequences can be drawn against any state, institution and organization in case of the lack of its implementation or even an action which is contrary to an idea of sustainable development.

3. Current Challenges in South-East Region of Romania: Complexity and Opportunities

The special peculiarities of the socio-economic life in the South-East region of Romania are imprinted by the strategic positioning in the vicinity of the Black Sea (it is the only coastline region of Romania); the diversity of reliefs (the Danube Delta, the second largest and best preserved of the deltas in Europe; the presence of more than half of the fertile fields of the Bărăgan Field; the mountainous area of the Bend Sub-Carpaths, which occupies about 50% of the region's surface); the most famous vineyards and wine-growing centres in the country (the region occupies the first place from the vineyards perspective); the variety of natural resources (the only surface oil deposit in Europe is located in Buzău county), the high energy potential,

etc.. The South-East region comprises 6 counties: Brăila, Buzău, Constanța, Galați, Tulcea and Vrancea.

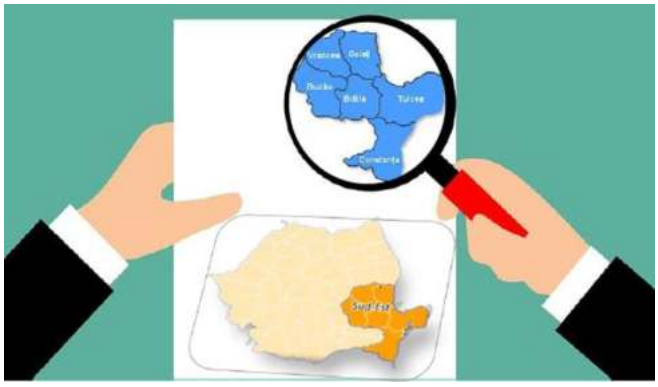


Figure 1. The South-East Region of Romania

3.1. Demographical profile

On July 1st 2017, the population of the South East region numbered 2,849,489 people, representing 12.83% of the total population of Romania. The South East is the third region in number of population, after North-East and South-Muntenia. The most populated counties of the region are: Constanta, with 768,170 inhabitants (26.95% of the total population of the region), Galați, with 628,146 inhabitants (22.04% of the total population of the region) and Buzău, with 472,743 inhabitants (16.59% of the total population of the region). On the opposite side are the counties of Vrancea, with 388,495 inhabitants (13.63% of the total population of the region), Brăila, with 350 874 inhabitants (12.31% of the total population of the region) and Tulcea, with 2,410,611 inhabitants (8.45% of total population of the region).

Between 2008 and 2017, the region's population at July 1st decreased continuously. All counties of the region experienced population fluctuations during the analysed period. In absolute terms, the largest population decreases were recorded in Buzau County, where in 2017, the population decreased by 28,871 persons compared to 2008 and in Braila County, where the differences in absolute values were 27,328 people. In percentages, the highest reductions were recorded in the counties of Braila (7.23%), Tulcea (6.03%) and Buzau (5.76%). Only Constanta County recorded a total population increases of 0.20%.

3.2. The Migratory Movement

The evolution of the number of permanent emigrants for the period 2006-2016 shows a fluctuating trend both at the regional level and at the level of each county, the overall trend being positive.

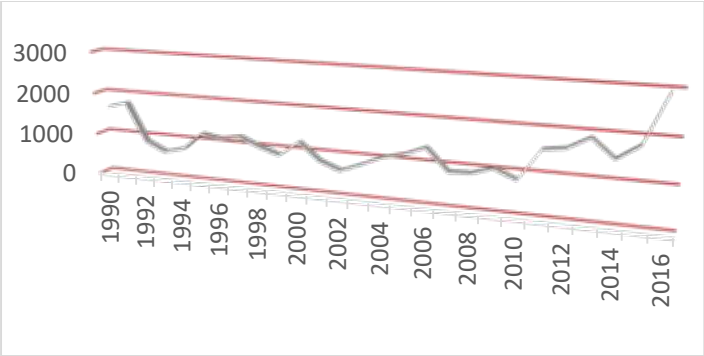


Figure 2. Evolution of the Number of Permanent Emigrants in the South-East Region (2006-2016)

Source: Processing after NIS, TEMPO data base, June 2018, POP309A

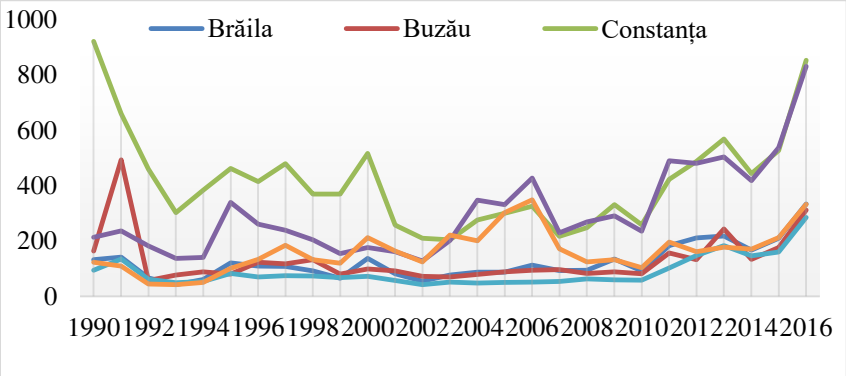


Figure 3. Evolution of the Number of Permanent Emigrants in the South-East Region, at county level (2006-2016)

Source: Processing after NIS, TEMPO data base, June 2018, POP309A

The counties most affected by the migratory movement of population during 1990-2016 were: Constanta and Galati.

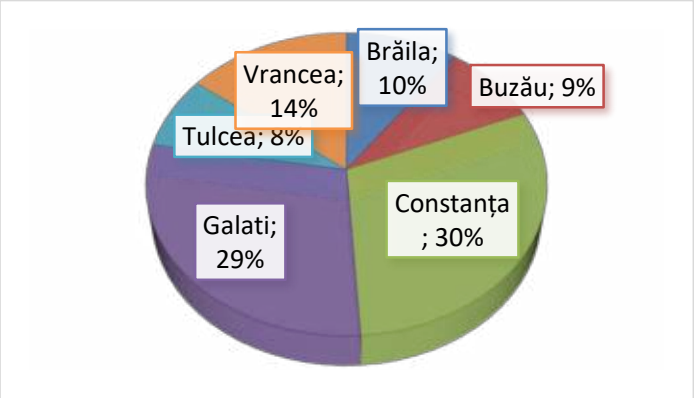


Figure 4. Evolution of the Number of Permanent Emigrants at Intra-Regional Level (2016 / 2006)

Source: Processing after NIS, TEMPO data base, June 2018, POP309A

3.3. The Living Standard

The living standard can be determined using different indicators. The NIS provides us with the rate of severe material deprivation and the risk of poverty or social exclusion (AROPE).

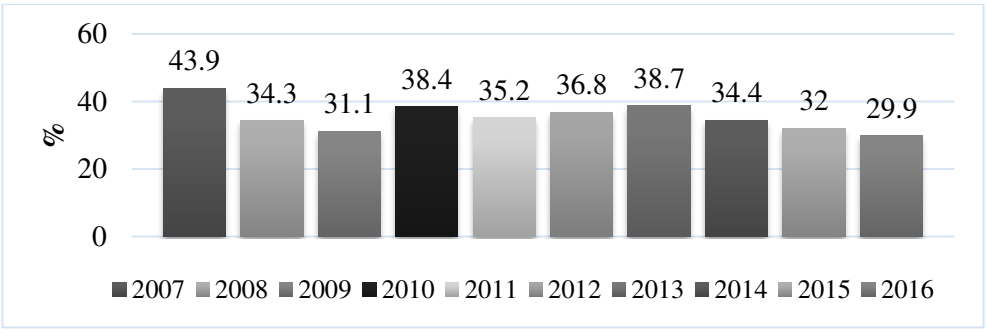


Figure 5. The Rate of Severe Material Deprivation in the South-East Region (2007-2016)

Source: Processing after NIS, TEMPO data base, June 2018, SAR112C

With a value of 29.9% severe material deprivation rate, the South East region ranks first among the country's development regions, 6.1 percentage points above the national average. The evolution of the indicator over the period 2007-2016 is fluctuating, with a total decline from 43.9% in 2007 to 29.9% in 2016. From the perspective of the AROPE indicator (the poverty risk or social exclusion rate), the South-East region ranks second among the regions of Romania, after the North-East

region, with a value of 44.9% in 2016, a value of more than 6.1 points percentages compared to the national average.

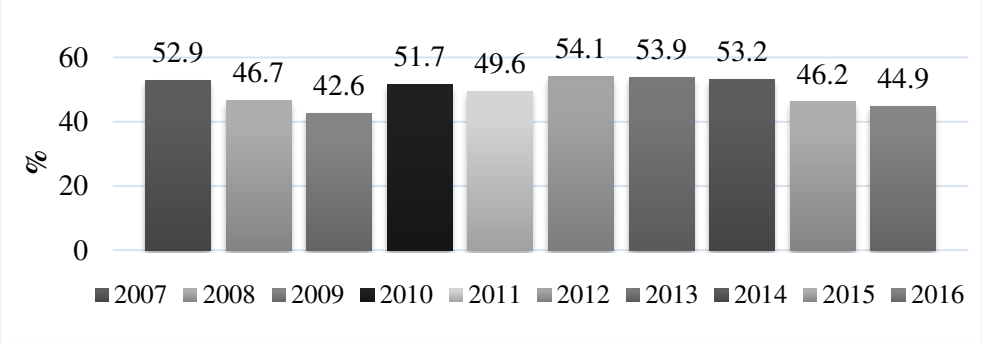


Figure 6. Poverty Ratio or Social Exclusion Rates in South-East Region (2007-2016)

Source: Processing after NIS, TEMPO data base, June 2018, SAR111C

The evolution of this indicator over 2007-2016 period, for the South-East region, shows that no significant improvements have been made, but there has been a slight downward trend over the last four years. The negative demographic change is an important cause for these poor economic results.

3.4. The Economic Performance

Relevant economic indicators, selected to characterize the economic development of South-East are regional GDP, regional GDP per capita and gross value added by sector of economic activity.

The value of regional GDP in million lei was 76184.3 in 2015, representing 10.69% of Romania's GDP. The evolution of the Gross Domestic Product in the South-East Region in the period 2012-2015 shows an upward trend, this positive dynamics being recorded at national and European level.

In the 2012-2015 timeframe, regional GDP per capita also recorded a positive trend, following the trend of national development, the only county that experienced a decrease in this indicator in 2015 compared to 2014, being Constanţa. However, this county has the highest value of GDP per capita, throughout the period, significantly detaching the counties of Tulcea and Braila. The lowest values of this indicator throughout the analysed period were recorded in Vrancea County. This information reflects the fact that the region has undergone a period of economic recovery, which can also be felt in the welfare of the population.

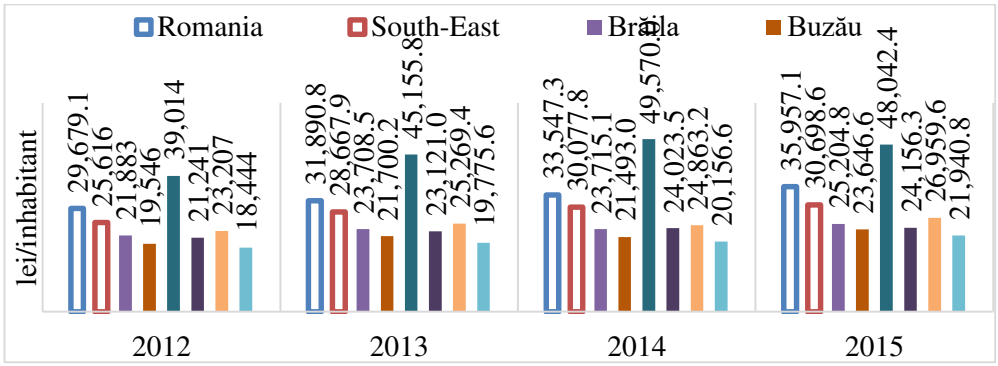
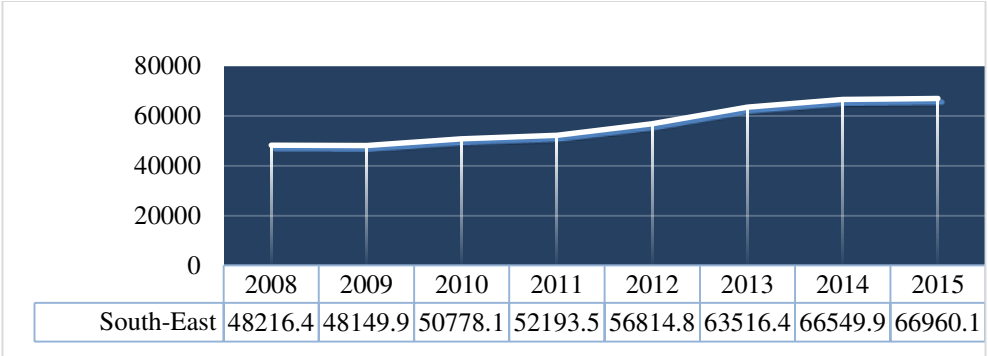


Figure 7. Evolution of GDP per capita at Current Prices

Source: NIS, National Regional Accounts 2014-2015 and Regional National Accounts 2010-2014, http://www.insse.ro/cms/en/tags/regions-regional.

In terms of gross value added by sector of economic activity in the South East it can be noticed that the sectors with the largest contribution to GVA formation in 2015 were: industry with a contribution of 32%, followed by: wholesale, retail, transport, accommodation and restaurants (20%); public administration and defense, social security in the public system, education, health and social care (11%) and real estate transactions (10%). The smallest contribution to the gross value added were the financial and insurance intermediation (1%) and information and communication (2%). At the intra-regional level, it is noted that in 2015, the industry sector contributed most to the formation of GVA in the following counties: Constanta (37.7%), Buzau (32.2%) and Galati (27.5%), followed by the wholesale and retail sector, repair of motor vehicles and motorcycles, transport and storage, hotels and restaurants; whose contribution (around 18%) is balanced distributed between the South-East' counties, with the exception of Constanta County, where the contribution of this sector was 22.5%, above the average for regional (i.e., 20.1%). GVA evolution in the South-East region presents an upward trend, from 48216.4 million lei in 2008 to 66.960,1 million in 2015. Throughout the analysed time horizon the share of regional GVA in national GVA remained relatively constant, around of 11%, the trend of this indicator being slightly increasing.



	2008	2009	2010	2011	2012	2013	2014	2015
South-East	48216.4	48149.9	50778.1	52193.5	56814.8	63516.4	66549.9	66960.1

Figure 8. Evolution of the Regional GVA 2008 - 2015 (Lei - million current prices)

Source: NIS, TEMPO data base, June 2018, CON103G

3.5. The Business Environment

The business environment is perceived as a source of innovation and socio-economic realignment of the community to the standards imposed by globalization. The analysis of the structure of local active units, including economic sectors and size classes, provides complex information on size, business profile, spatial distribution at the intra-regional level, etc., which can be used subsequently in studies and forecasts by political decision makers at local/regional level. In order to illustrate the structure of local units active in the South-East region we will consider statistical information on active local units by activity of national economy and its related workforce.

The hierarchy of South-East's counties based on the number of local active units, shows that the business environment is more developed in the counties of Constanta and Galati, at the opposite pole being Tulcea County.

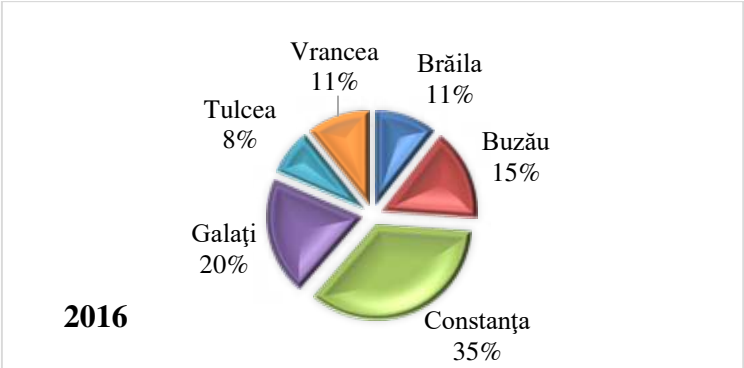


Figure 9. Intra-Regional Distribution of Active Local Units

Source: NIS, TEMPO data base, June 2018, INT101R

In 2016, the hierarchy of the counties of the South-East region, according to the sectors of activity developed by the business environment, corresponding to the NACE Rev.2 classification, was presented as follows:

A - Agriculture, forestry and fishing: Constanta (25.48%), Buzau (15.91%), Braila (15.77%), Tulcea (15.49%), Galati (14.47%) and Vrancea (12.85%);

B - Extractive Industries: Constanta (41.86%), Tulcea (18.6%), Buzau (15.5%), Vrancea (10.85%), Galaţi (10.07%) and Braila (3.1%);

C - Manufacturing: Constanta (30.46%), Buzau (19.24%), Galati (17.45%), Vrancea (14.95%), Braila (11.12%) and Tulcea (6.75%);

D - Production and supply of electric and thermal energy, gas, hot water and air conditioning: Constanta (39,16%), Tulcea (20,97%), Buzau (13,98%), Braila (11,18%), Galaţi (7.69%) and Vrancea (6.99%);

E - Water distribution; sanitation, waste management, decontamination activities: Constanta (35.62%), Galati (23.17%), Buzau (14.59%), Vrancea (11.15%); Tulcea (10.72%) and Braila (4.72%);

F - Constructions: Constanta (34%), Galati (23.63%), Buzau (15.7%), Vrancea (11.75%), Braila (8.77%) and Tulcea (6.12%);

G - Wholesale and retail trade; repair of motor vehicles and motorcycles: Constanta (29.57%), Galaţi (23.16%), Buzau (16.98%), Braila (11.45%), Vrancea (11.53%) and Tulcea (7.27%);

H - Transport and storage: Constanta (42.28%), Buzau (15.67%), Galati (15.74%), Braila (10%), Vrancea (8.34%), and Tulcea (7.95%);

I - Hotels and restaurants: Constanta (49.82%), Galati (15.44%), Tulcea (10.36%), Buzau (8.7%), Braila (8.32%) and Vrancea (7.34%);

J - Information and communications: Constanta (38.38%), Galati (21.46%), Buzau (13.18%), Braila (10.32%), Vrancea (10.10%) and Tulcea (6.52%);

K - Financial intermediation and insurance: Constanta (34.28%), Galaţi (23.73%), Buzău (16.66%), Braila (12.55%), Vrancea (8.43%) and Tulcea (4.32%);

L - Real estate transactions: Constanta (51.46%), Galaţi (18.92%), Brăila (10.61%), Buzău (8%), Tulcea (5.61%) and Vrancea (5.38%);

M - Professional, scientific and technical activities: Constanta (42.42%), Galati (17.79%), Buzau (15.06%), Vrancea (9.04%), Braila (8.32%) and Tulcea (7.35%);

N - Administrative and support service activities: Constanta (44.66%), Galaţi (19.62%), Buzău (11.16%), Brăila (9.36%), Vrancea and Tulcea (7.56%);

P - Education: Constanta (41.25%), Galati (21.74%), Buzau (12.78%), Braila (8.52%), Tulcea (8.29%) and Vrancea (7.39%);

Q - Health and social assistance: Constanta (34.88%), Buzau (17.17%), Galaţi (16.72%), Vrancea (12.75%), Braila (9.45%) and Tulcea (9%);

R - Performing, cultural and recreational activities: Constanta (47.83%), Galaţi (19.58%), Buzău (12.07%), Braila (7.74%), Vrancea (6.03%);

S - Other service activities: Constanta (41.14%), Galati (20.07%), Buzau (13.05%), Braila (10.25%), Vrancea (8.82%) and Tulcea (6.65%).

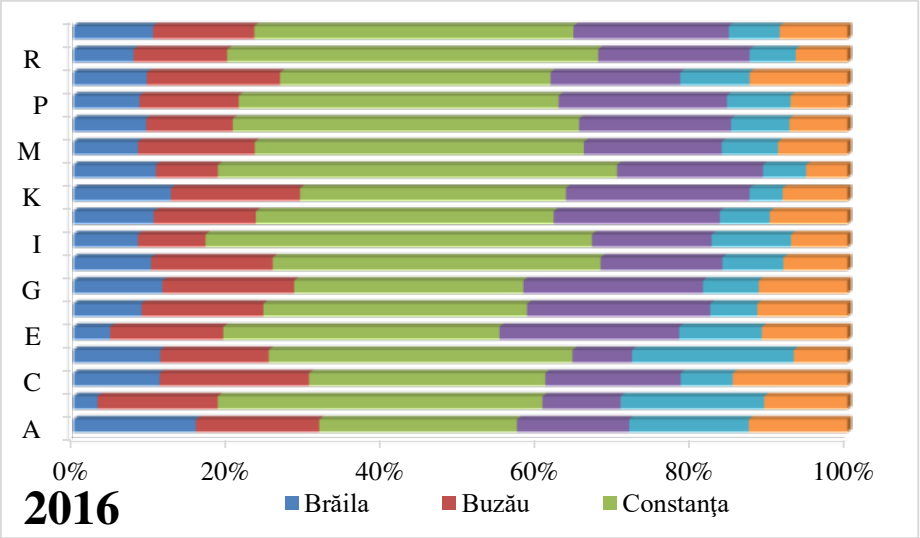


Figure 10. Intra-Regional Distribution of Active Local Units by of National Economy' Activities, at Section Level NACE Rev. 2

Source: NIS, TEMPO data base, June 2018, INT101R

In terms of intra-regional distribution of active local units by main sectors of activity of the national economy, we notice that at the level of 2016, Constanta County outperforms the other counties of South-East region, in all branches of economic activity.

By analysing the density of active units, determined as the ratio between the number of active units and the surface of the county, it is observed that the most developed counties are Constanta and Galati, and the last one is Tulcea County. In Constanta, if the density was 3.1 in 2010 active units per square kilometre, it decreased slightly to 3 active units per square kilometre, by 2016. These disparities between Constanţa and Tulcea can be explained by the fact that Constanţa County is a growth pole at

the level of the region, attracting a considerable number of foreign direct investments, but also European and governmental funds, while Tulcea is a county with a low population and a large surface of protected areas, which limits the possibility of business development.

Table 2. The Density of the Active Units, at the County Level, 2010-2016 (%)

County	2010	2011	2012	2013	2014	2015	2016
Brăila	1.4	1.3	1.3	1.3	1.4	1.4	1.3
Buzău	1.6	1.4	1.4	1.5	1.5	1.5	1.5
Constanța	3.1	2.8	2.9	3.0	3.0	3.0	3.0
Galați	2.6	2.3	2.5	2.5	2.6	2.6	2.7
Tulcea	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Vrancea	1.3	1.2	1.2	1.3	1.3	1.3	1.3

Source: NIS processing, TEMPO database, June 2018, INT101R

With regard to the number of start-ups in the South-East region, at the level of 2016, 79% were active, 13% inactive and 8% dissolved. Analysing the dynamics of the number of newly created active enterprises in the period 2010-2016, there is a slight increase in the number of active enterprises starting with 2013 and a decrease in the number of inactive enterprises.

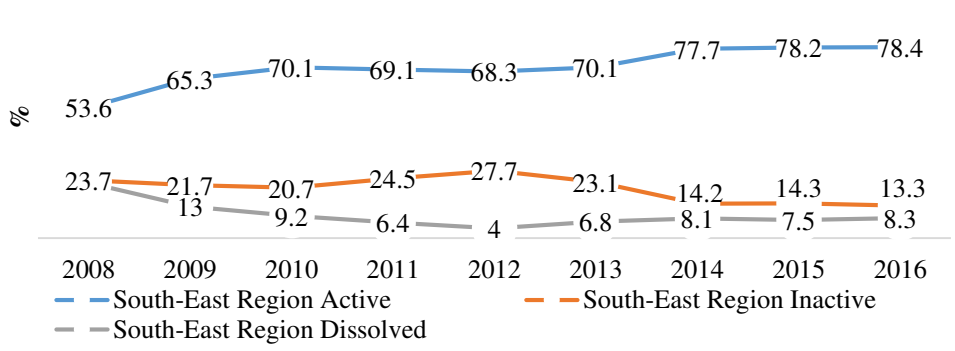


Figure 11 Newly Created Enterprises One Year After Their Establishment

Source: NIS, TEMPO data base, June 2018, Business Demographics - INT 111Y

In 2016, nearly half of newly created firms (50.7%), were founded by graduates of secondary and higher education, South-East region being ranked in last place from this perspective, well below the level recorded at national level, of 60.3%.

SMEs can be an important factor in accelerating the process of regional development. According to the "The White Charter of Romania SMEs" (2016

edition), the South-East region hosts 13.36% of all small and medium-sized enterprises.

3.6. Labour factor

The labour market is a barometer of the socio-economic development trends of the region. At the level of 2016, the distribution of personnel from the local units active in the South-East region, by field of activity, shows a high share of 28% in the manufacturing sector, 24% in the wholesale and retail sector; repair of motor vehicles and motorcycles and about 10% in the fields of transport and storage; construction; real estate transactions, rentals and services mainly provided to businesses. Unfortunately, it can be noticed a trend of specialization in low-value-added and low-productivity industries. The specialization of the South-East economy in these low-value and low labour productivity sectors is closely linked to the salaries of the personnel working in these areas, the trend of the last years being the increase in the share of employees in the minimum wage area, in total workforce.

"Labour market dynamics survey of the main employing industries in Romania in the period 2016-2017" by PIAROM shows that the share of the South-East region in the total national employment contracts is only 9.36%, the number of contracts work at the level of 2017, being 486,990. Thus, the South-East region occupies the penultimate place in the ranking of the 8 development regions, this position being also explained by the location of the region in the vicinity of the capital, which allows easy relocation and intra-regional mobility of the labour force, considering that the level of salaries in Bucharest is 24.71% higher than the national average. Average wage levels far below national and even regional averages are recorded in Vrancea (-25.00% vs. the national average, -12.97% compared to the average of the South-East region), Braila (-20.88% vs. the national average, -8.19% compared to the average of the South-East region) and Buzau (-20.88% compared to the national average, -8.19% compared to the average for the South-East region).

Table 2. Distribution of Employment Contracts by Wage Intervals 01.10.2017 - Comparative Analysis at County Level in the South-East Region

County	Brăila	Buzău	Constanţa	Galați	Tulcea	Vrancea
Below 350 €, %	58.79	59.32	51.87	50.51	53.63	62.66
350-400 €, %	10.26	9.11	8.68	12.15	9.20	8.42
400-500 €, %	10.65	11.19	12.74	13.78	11.75	10.21
500-600 €, %	6.32	6.61	8.41	7.21	7.02	5.77
600-700 €, %	5.47	4.79	5.86	5.57	6.19	4.91
700-1000 €, %	5.86	5.96	7.73	7.27	8.96	5.61
1.000-2000 €, %	2.35	2.58	4.09	3.12	2.92	2.26
Over 2000 €, %	0.28	0.43	0.63	0.39	0.34	0.17
Deviation from the regional average %	***-8.19***	***-8.19***	***4.78***	***2.39***	***1.37***	***-12.97***
Deviation from the national average %	**-20.88**	**-20.88**	**-9.71**	**-11.76**	**-12.65**	**-25.00**

Source: PIAROM, Labour market dynamics survey of the main employing industries in Romania 2016-2017

The evolution of the labour force in newly established enterprises with foreign capital is sinusoidal at the level of the South-East region, which can be explained by the selection criteria applied (foreign languages, skills to work in multi-cultural environments, willingness to travel for business interests, etc.) but also by the dynamics of these enterprises in the South-East region.

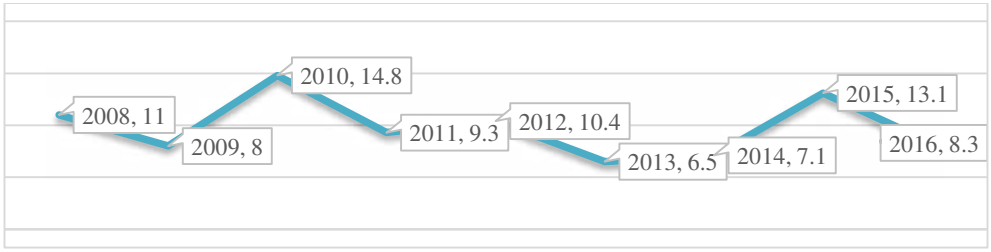


Figure 12. Evolution of Labour Force Share of Newly Created Enterprises with Foreign Capital in the Period 2008-2016 (%)

Source: NIS, TEMPO data base, June 2018, Business Demographics - INT 111Y

3.7. Investments

Statistical data on investment reflects important information on the degree of modernization of the business environment, which is a particularly relevant element in determining the level of economic development of the region.

Gross investment in tangible goods of local units in the South-East region has declined significantly in recent years, from 11,414 million lei in 2013 to 6,642 million lei in 2016. This negative trend is worrying because the level of gross investments is reflected in the capacity to upgrade the equipment, develop of advanced technologies, and expand of the information transfer infrastructure and, in the long run, the level of these investments affects the quality standards offered.

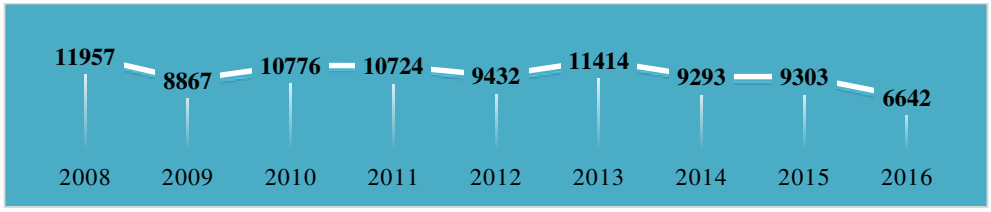


Figure 13. Evolution of Gross Investments in Tangible Goods from Local Units at the Level of the South-East Region, During 2008-2016 (Million Lei)

Source: NIS, TEMPO data base, June 2018, Business Demographics - INT 105D

Regarding the volume of gross investments by branch of activity in the South-East region, in 2016, there is a significant reduction in the area of water distribution, sanitation, waste management, decontamination activities (about 77, 55%); production and supply of electricity and heat, gas, hot water and air conditioning (by approximately 45.71%); manufacturing (approximately 35.12%). This strong downward trend in the areas mentioned adversely affect the business environment in the region, and the attractiveness of the region as a whole, given that infrastructure areas have been affected. Investments in "construction" have exceeded by approximately 8.75% the value of investments in 2015 and in the ICT sector there is

an increase in the volume of investments in 2016, by about 11.36%, compared to the previous year.

4. How to do Otherwise?

Achieving sustainable territorial development is an aim for the whole society in the European Union. Sustainability is perceived from three different perspectives: economic sustainability (financial sustainability, services, household needs, agriculture growth, industrial growth, SMEs, efficient use of labour); environmental sustainability (water and soil conservation, climate change, disaster risk reduction, renewable energies, food and environmental legislation, biodiversity, ecosystem integrity, clear air and water) and socio-cultural sustainability (sustainable urbanism, education, governance sustainability, human development, equity, participation, social mobility, cultural preservation). The entities such as regions and cities play a very important role in achieving sustainability. According to "The 2030 Agenda for Sustainable Development", their main priorities should be: no poverty; zero hunger; good health and well-being; quality education; gender equality; clean water and sanitation; affordable and clean energy; decent work and economic growth; industry, innovation and infrastructure; reduced inequalities; sustainable cities and communities; responsible consumption and production; climate action; life below water and life on land; peace, justice and strong institutions; and finally partnership for the goals (Eurostat, 2016, p. 139).

Governance connectivity is a starting point for achieving sustainable territorial development, because development policies at regional and local level are drastically influenced by national and sectorial policy decisions. Therefore it requires good communication between public authorities at different levels of governance, long run predictability and consistency in policy making.

Withal, it is very important to have precise knowledge of when a political intervention is applied, the segment in which it applies (activity, location, group of companies, etc.) and with what intensity.

Moreover, in designing and implementing development strategies, the time factor is particularly important, the rapid pace of change arising from globalization and the process of European integration makes the measures and instruments that have been successful in a certain time, to be totally inappropriate at a later stage. On the other hand, the model of taking good-practice lessons can only be used to a small extent, because the regional economies are not homogeneous and consequently the success stories of a region cannot be easily understood and transferred to another region.

One of the core problems in South-East region is the decrease of population, which has an impact on other indicators of territory development. Economic revival may

slow down the pace of migration, but a dynamic economy requires a regulatory environment conducive to economic activity and a proper administration of public goods. Without a favourable environment, businesses cannot create enough jobs and people will relocate. An innovative network strategy is also necessary in order to ensure the region's territorial development. Connecting people from companies, industries, universities and authorities may increase the efficiency of using production, financial and infrastructural resources. Facilitating flexible structures for interaction between economic entities in the region, on the one hand, and between them and policy decision-makers from local and regional level, will result in an integrated territorial development. Digital transformation plays also an important role in strengthening territorial cohesion and in supporting the growth and jobs creation, as well as a socio-ecological development in the South-East region. Another possible solution is to promote a knowledge-based economy by strengthening synergies between education, research and innovation activities.

5. Conclusion

Deep knowledge of socio-economic and cultural peculiarities of a particular area, is essential in designing policies and strategies for territorial development, and this study attempts to bring more information in this direction. This paper contains the data about the territorial development indicators of the 6 counties from the South-East region of Romania and the results of the first steps of this research reveal the need for rethinking strategic planning of this area. The main research methods involved were: theoretical study, empirical – data collection, statistical – data processing, comparative analysis and synthesis.

The main conclusions: territories of counties in South-East region of Romania have uneven development and stratification; there is the big difference between Constanta and Galati and other cities, which is an obstacle in the balanced development of this region as a whole. The results have confirmed that the territorial development is not balanced, local advantages are not used, South-East region having a fragmentized administrative – territorial system.

The results obtained can be utilized in subsequent years to examine the pace and directions of changes needed in order to decrease the significant developmental disparities between the counties of South-East region. The purpose of rethinking strategic planning is to ensure such spatial development planning that would raise the quality of living environment, ensure sustainable, effective and rational use of territories and other resources, as well as ensure targeted and balanced economic development.

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Does FDI Cause Economic Growth?

Alexander Maune[1], **Ephraim Matanda**[2]

Abstract: This article examined the impact of foreign direct investment on economic growth and development in Zimbabwe. There is, however, inconsistency regarding the impact of foreign direct investment on economic growth and development across economies. An econometric strategy was used to test the depth of correlation between the variables by applying the regression analysis of the Ordinary Least Squares approach for the period 1991 – 2017. The findings of the study show that foreign direct investment had a positive correlation coefficient with Gross Domestic Product and was statistically significant at all levels. Policy recommendations are provided in light of the study findings.

Keywords: Foreign Direct Investment; Gross Domestic Product; Economic Growth; Economic Development

JEL Classification: F21; O11; O16; O47

1. Introduction

Foreign direct investment refers to direct investment equity flows in an economy. It is the sum of equity capital, reinvestment of earnings, and other capital. OECD (2008) defines foreign direct investment (FDI) as a set of investments in which a resident enterprise in one country establishes a long-term interest in another enterprise outside its country borders. Direct investment is a category of cross-border investment associated with a resident in one economy having control or a significant degree of influence on the management of an enterprise that is resident in another economy. Ownership of 10% or more of the ordinary shares of voting stock is the criterion for determining the existence of a direct investment relationship (World Bank, 2016). This is operationally defined as having at least a 10% equity stake in the foreign firm. Inward Foreign direct investment (FDI) refers to foreign investment flows into the home countries, whereas outward FDI is the countries' investment flows to other countries. FDI is classified into two types: (1) Greenfield investment which involves constructing new operational facilities (factories, machinery, etc.)

[1] Research Associate, UNISA, Pretoria, South Africa, Address: Preller St, Muckleneuk, Pretoria, 0002, South Africa, Tel: +263 71 756 7452, Corresponding author: alexandermaune6@gmail.com.
[2] Senior Lecturer, GZU, Masvingo, Zimbabwe, Address: Great Zimbabwe University, 1235, Masvingo, Zimbabwe, Tel.: +263 77 374 2494, E-mail: eematanda@gmail.com.

from the ground up and (2) mergers and acquisition (M&A) involve foreign firms acquiring existing assets from local firms. FDI has proven useful in the past to advance economic development and foster structural changes in host countries. Recent literature and empirical evidence suggests that due consideration is needed from policy makers to maximize benefits of FDI. Such benefits include skills and technological transfer, and foster overall spillover effects to the domestic economy. These arguments are strongly supported by the practical experiences of East Asian Tigers, of China, of Ireland and of Israel where FDI contributed significantly to the upgrading and diversification of their industrial structure.

FDI plays a constructive role in economic development by transferring capital, skills and know-how. However, attracting FDI does not automatically guarantee economic development (Chen, Geiger & Fu, 2015). Previous findings suggest that whether FDI contributes to development depends on macroeconomic and structural conditions in the host economy (UNCTAD, 2005). And a recent study further established that long term and sustainable development comes from the aggregated productivity growth brought by FDI spillover effects (Farole & Winkler 2014). The successful cases are from developing Asia. China has shown how foreign investment has exhibited positive impact on employment, productivity, and exports. Examining firm-level data covering 1998 to 2007 in China's manufacturing sector, Du et al. (2011) conclude that trade reforms and tax policies adopted by China have generated productivity spillovers, especially for backward linkages. They also find that China's successful industrial policy harnessed the FDI spillovers potential, as evidenced by the finding that foreign investors who received corporate tax breaks transmitted larger spillovers to domestic enterprises.

Romer (1993), for example, argues that there are important "idea gaps" between rich and poor countries. He notes that foreign investment can ease the transfer of technological and business know-how to poorer countries. These transfers may have substantial spillover effects for the entire economy. Thus, foreign investment may boost the productivity of all firms - not just those receiving foreign capital (Rappaport, 2000). While there are sound conceptual reasons for believing that FDI can ignite economic growth, the empirical evidence is divided. But does FDI really benefit the host country? Researches by Maune, 2018b; Munyanyi, 2017; Choi & Baek, 2017; Barua, 2013; Ghoshal & Saxena, 2012; Jacob et al., 2012; Khan, 2007; Bengoa & Robles, 2003; Choe, 2003; Zhang, 2001; Xu, 2000; De Mello, 1996; Blomstrom et al., 1994; Dunning, 1993; De Gregorio, 1992; and Findlay, 1978 show that FDI is critical for economic growth whilst a handful of researches such as Saqib et al., 2013; Falki, 2009; Durham, 2004; Manzolillo et al., 2000; Fry, 1992; and Singh, 1988 show negative effects of FDI on economic growth.

Falki (2009) discusses the role of FDI as a growth-enhancer in the developing countries. In his study Falki (2009) argues that the effects of FDI in the host economy

are increase in; employment, productivity, exports and amplified pace of transfer of technology. The potential advantages of the FDI on the host economy are; it facilitates the utilization and exploitation of local raw materials, introduces modern techniques of management and marketing, eases the access to new technologies, foreign inflows can be used for financing current account deficits, finance flows in form of FDI do not generate repayment of principal and interests (as opposed to external debt) and increases the stock of human capital via on the job training (Falki, 2009).

The new dispensation, that has seen the ushering in of the second republic in Zimbabwe, is actively engaging and re-engaging with the global world with the mantra 'Zimbabwe is Open for Business.' But is the country really open for business? If so what are the pointers to show its openness given that the country was in isolation for decades? To show its commitment the government of Zimbabwe has tabled a number of reforms that will see Zimbabwe being a destination conducive for foreign investments. Some of these reforms include; ease of doing business reforms, State Enterprises and Parastatals reforms, regulatory reforms, control of corruption, monetary and fiscal reforms among others. Attracting meaningful FDI is a key challenge for Zimbabwe due to a number of factors. Some of these challenges include sanctions, corruption, monetary and fiscal, external and domestic debt, poor governance, political instability and violence, poor regulatory framework, lack of accountability and disrespect of property rights.

The country's dilemma is to strike a balance between FDI-led growth, export-led growth and external debt. Export-led growth has proven to be a more sustainable channel for FDI (Nunnenkamp & Spatz, 2003 and Younus et al., 2014). Domestic investments have proved to be the most favorable but due to limited capacity the government is forced to look outside, that is, to attract FDI to stimulate the economy.

But what are the determinants of FDI, that is, reasons other countries are recipients of huge amounts of FDI than others? Maune (2018a) argues that there are a number of key drivers of FDI. One approach in the literature sees FDI as being market-seeking (driven by economy size and country location), efficiency-seeking (driven by human capital or infrastructure quality) or resource-seeking (driven by the availability of natural resources or other strategic assets) (UNCTAD, 2016). According to Doing Business (2013) cited by Maune (2018a), many studies use a gravity model, which seeks to explain what causes FDI flows between two specific countries. Studies such as Dogan (2014); Doing Business (2013); Haidar (2012); Hornberger et al. (2011); Blonigen & Piger (2011); Wagle (2011); Jayasuriya (2011); Walsh & Yu (2010); Eifert (2009); Busse & Groizard (2008); Desai et al. (2003); Banga (2003) and Wei (2000) confirms that factors such as market size, growth prospects, distance to markets, openness to trade, well-educated labour forces, judicial independence and labour market flexibility, better doing business

ranking, better transport and communication infrastructure, fiscal incentives, strength of the arbitration regime, real exchange rates among others are significantly associated with FDI inflows. However, other findings show that corruption, substantial increases in the tax rate, indirect taxes, the number of procedures required to start a foreign-owned business are a significant deterrent to FDI.

The remainder of the article is organized as follows: literature review; research methodology; data presentation, analysis and interpretation; conclusions and recommendations; references and appendices.

2. Literature Review

2.1. Zimbabwe`s Foreign Direct Investment

Despite the increase in FDI inflows in Africa, Zimbabwe`s FDI inflows has been trending below USD500 million since the 1970s. This was due to a number of factors stemming from the Indigenisation and Economic Empowerment policy, expensive cost structure, regulatory burden, labour market rigidities, and doing business restrictions among others. Figure 1 below depicts the trend of Zimbabwe`s FDI net inflows from 1970 to 2017. Zimbabwe has not attracted significant FDI inflows despite the fact that the country is rich in minerals that include: gold, platinum, nickel, ferrochrome and diamonds among others. These normally attract resource-seeking FDI inflows. The insignificant FDI through commodities has, however, affected the country`s economic growth over the period. FDI inflows were expected to augment domestic investment as it brings in the much needed capital investment, employment creation, managerial skills and technology and at the end accelerate growth and development. Zimbabwe`s inability to attract meaningful FDI inflows is troubling. FDI inflows presents a potential solution to the country`s liquidity, growth and development challenges.

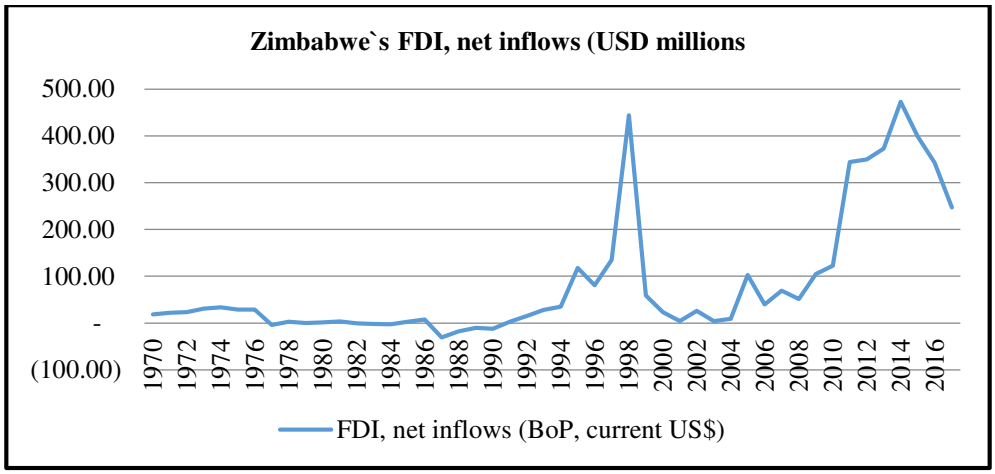

Figure 1. Zimbabwe`s FDI net inflows (BoP in USD million)
Source: World Development Data Indicators (2019)

2.2. Zimbabwe`s Gross Domestic Product

Gross domestic product is a very strong measure to gauge the economic health of a country and it reflects the sum total of the production of a country and as such comprises all purchases of goods and services produced by a country and services used by individuals, firms, foreigners and the governing bodies (Jain, Nair & Jain, 2015). It is used as an indicator by almost all governments and economic decision-makers for planning and policy formulation. It enables one to judge whether the economy is contracting or expanding, whether it needs a boost or restraint, and if a threat such as a recession or inflation looms on the horizon. When government officials plan for the future, they consider the various economic sectors' contribution to the gross domestic product (GDP). GDP was first developed by Simon Kuznets for a US Congress report in 1934 (Jain et al., 2015). The volume of GDP is the sum of value added, measured at constant prices, by households, government, and industries operating in the economy. GDP accounts for all domestic production, regardless of whether the income accrues to domestic or foreign institutions (Jain et al., 2015). Figure 2 below shows Zimbabwe`s FDI inflows as a percentage of GDP and GDP annual growth from 1970 to 2017. Zimbabwe recorded some significant GDP annual growth rates since 1970, that is, 1970 (22.6%), 1980 (14.42%), 1981 (12.53%), 1996 (10.36%), 2009 (12.02), 2010 (19.68%), 2011 (14.19%) and 2012 (16.67%). However, negative GDP annual rates were recorded in the following years, 1977 (-6.86%), 1992 (-9.02%), 2002 (-8.89%), 2003 (-17%) and 2008 becoming the worst year in the history of Zimbabwe after recording -17.67%. This was, however, due to a number of macroeconomic and political challenges. These

challenges saw Zimbabwe abandoning its local currency and adopting a basket of foreign currency in January 2009.

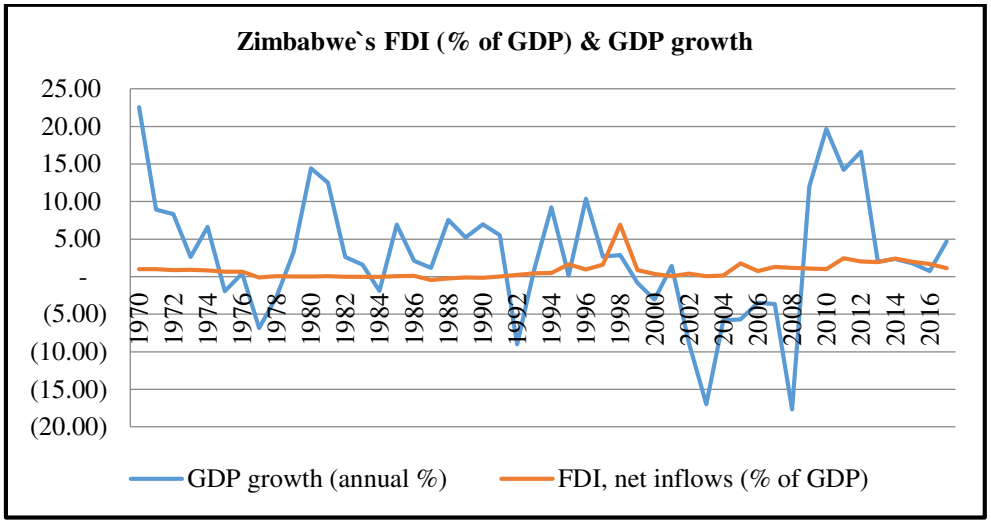

Figure 2. FDI, net inflows (% of GDP) and GDP annual growth in Zimbabwe.

Source: World Development Data Indicators (2019)

It is also critical to trend Zimbabwe`s FDI as a percentage of GDP against its neighboring countries in the region such as South Africa, Botswana, Mozambique, Zambia, Malawi, Namibia, Angola as well as the performance of sub-Saharan Africa (Figure 3). Zimbabwe`s performance has been below 10% since 1990, recording a high of 6% in 1998 before subsiding to a low of 0.86% in 1999. In 2011 it grew to 3.53% points before stabilizing within this range until 2015. Its performance has been below Mozambique, Zambia, Botswana as well as the Sub-Saharan Africa though above South Africa. Mozambique has recorded a significant upward trend of FDI net inflows as a percentage of GDP from 2010 to 2017 with the highest of 41.81% recorded in 2013 before dropping to 29.47% in 2014 and 18.34 in 2017. However, the rest were in the 0 to 10% range.

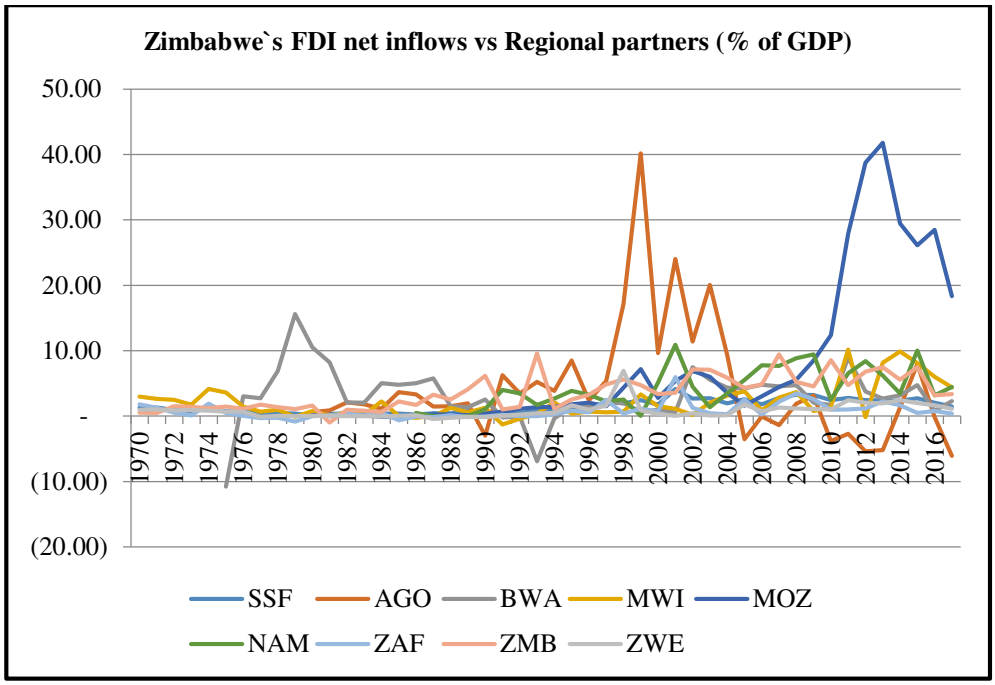

Figure 3. Zimbabwe`s FDI net inflows vs Regional Partners (% of GDP)
Source: World Development Data Indicators (2019)

2.3. Empirical Evidence

FDI has generally been considered as a factor which enhances economic growth, as well as the solution to the economic problems of developing countries (Iqbal, 2010). However, there is no consensus with regard to the direction of causality about FDI and economic growth as measured by GDP. Theoretically there are sound reasons for believing that FDI can ignite economic growth, but the empirical evidence is still divided. Many countries have embraced this idea and have formulated and implemented policies earmarked towards attracting FDI. However, this notion needs to be tested empirically especially in developing countries. Several theories have been used by researchers to evaluate the relationship between FDI and economic growth (Table 1).

Table 1. Empirical Evidence on FDI-led growth

Author(s)	Country(s)	Methods	Findings
Munyayi (2017)	Zimbabwe	ARDL cointegration	FDI has positive effect on economic growth.
Maliwa & Nyambe (2015)	Zambia	Granger causality procedure	FDI does not granger cause economic growth.
Mupfawi & Tambudzai (2015)	Zimbabwe	Multivariate linear regression model (OLS)	FDI has a positive and significant long run effect on economic growth.
Jain et al. (2015)	India	Multiple regression analysis	The results found a significant effect of FDI on GDP.
Dogan (2013)	Turkey	Time series techniques	Post long-run nexus between FDI and economic growth and bi-directional causality.
Barua (2013)	India	Dynamics cointegration	FDI, economic growth & exports are positively correlated.
Saqib et al. (2013)	Pakistan	OLS model	FDI negatively affects economic growth while DI statistically significantly explaining positive changes in economic growth.
Alkhasawneh (2013)	Qatar	Granger causality	The findings confirmed a strong and positive nexus between economic growth and FDI inflows.
Moyo (2013)	Zimbabwe	Regression Analysis	FDI has significant positive impact on economic growth.
Sichei & Kanyondo (2012)	45 African countries	Dynamic panel data estimation techniques	The study shows that Africa-wide environment has become more conducive to FDI.
Mehmood (2012)	Pakistan & Bangladesh	Multiple Regression model	FDI has a positive impact on GDP.
Egbo et al. (2011)	Nigeria	Granger causality test	Positive nexus between FDI & GDP.
Adefabi (2011)	24 sub-Saharan African countries	Fixed effect estimation technique	Existed a weak but positive effect of FDI on economic growth in sub-Saharan Africa.

Srinivasan (2010)	Association of Southeast Asian Nations	Johansen Co-integration	Found a long run nexus between FDI & GDP.
Roy & Van den Berg (2006)	USA	Simultaneous-equation model	Found that FDI had a significant, positive and economically important impact on economic growth in USA.
Hansen (2006)		Granger Causality	Found bi-directional causality between the FDI-to-GDP ratio and the level of GDP.
Hsiao (2006)	Eight East and Southeast Asian economies	Granger Causality	FDI had unidirectional effects on GDP directly and also indirectly through exports.
Yao (2006)	28 Chinese provinces	Adopting Pedroni's panel unit root test and Arellano and Bond's dynamic panel data estimating technique.	It was found that both exports and FDI had a strong and positive effect on economic growth.
Li (2005)	84 countries	Both single equation and simultaneous equation system techniques.	A significant endogenous relationship between FDI and economic growth was identified from the mid-1980s onwards. FDI not only directly promotes economic growth by itself but also indirectly does so via its interaction terms.
Li & Liu (2004)	46 developing countries	Modified production function.	It was found that FDI is more important for economic growth in export-promoting countries than in import substituting countries.
Alfaro (2004)			Shows that FDI alone plays an ambiguous role in contributing to economic growth.
Simeo (2004)	Zambia	Conventional growth model	Found that FDI can have a positive impact on economic growth particularly when the host country has a highly

			educated workforce to exploit FDI spillovers.
Basu (2003)			A long-run co-integrating relationship was found between FDI and GDP after allowing for heterogeneous country effects. The co-integrating vectors revealed bidirectional causality between GDP and FDI for more open economies. For relatively closed economies, long-run causality appeared unidirectional and runs from GDP to FDI, implying that growth and FDI were not mutually reinforcing under restrictive trade and investment regimes.
Elboiashi (2002)	Egypt, Morocco & Tunisia.		The study found that FDI affected negatively the DI and GDP in the short-run and positively in the long-run.

Source: Authors` compilation

While some studies find that FDI contributes positively to economic growth, others have found that FDI has a non-significant or even negative effect on economic growth. The differences in these results show the importance of regional and country specific studies. Given the conflicting theoretical views, many empirical studies have been conducted to examine the relationship between FDI and economic growth in developing countries. Some researchers have preferred country specific investigations while others have carried out investigations on a broad cross-section of countries and their studies have varied in application and approaches.

3. Research Methodology

The research methodology used in the study is broken down into the components detailed below.

FORMULATION OF THE EMPIRICAL RESEARCH MODEL: It can be inferred from the works reviewed in the previous sections that economic growth and development in Zimbabwe is determined by factors at both macro and microeconomic levels. The study at hand was set out to examine the impact of FDI on the growth (GDP) and development of Zimbabwe. A financial regression model was formulated whose explanatory variables were identified through literature and theory drawn from multi-lateral relationships represented by foreign direct investment (FDI), IMF credit (IMF), lending rates (LR) and policy inconsistency as the dummy variable (Dummy). The other explanatory factors not explicitly included in the model were captured by the error term. A multiple linear regression model (MLRM) connecting the above variables was generated to assess the impact of FDI on the economic growth and development of Zimbabwe in the period under review.

3.1. Data sources, period and type: The data set in this article was obtained from Government of Zimbabwe publications, the IMF, the World Bank, the Reserve Bank of Zimbabwe and ZIMSTAT. These were denoted in current United States dollars from 1991-2017 as well as percentages. Data which were used in this study were mainly secondary in nature and is in line with previous studies on the impact of FDI on growth and development of Zimbabwe, as an emerging economy.

MODEL SPECIFICATION: The study adopted and modified the MLRM employed by Chingarande et al. (2012) in their study on the impact of interest rates on FDI in Zimbabwe. The model specified and implicitly applied by Chingarande and others was of the form:

$$\text{FDI}= \beta_0 + \beta_1\text{GDP}+\beta_2\text{IR}+\beta_3\text{INFL}+\beta_4\text{ER}+\beta_5\text{LC}+ \beta_6\text{RF}+\ldots. + E_1 \quad (1)$$

The study at hand removed some variables from the above model namely inflation (INFL) and exchange rates (ER) since they were correlated with the main explanatory variable, that is foreign direct investment (FDI). More so, labour costs (LC) and risk factors (RF) were found to be insignificant in this study. Labour costs in Zimbabwe were found to be mainly below the poverty datum line (PDL). Almost 75% of the government employees were earning very low salaries which were highly taxed, implying that their impact on the economy was insignificant. Thus the study reorganised the above model to suite its main objective and expressed it in the form:

$$\text{GDP}=\beta_0 + \beta_1\text{FDI}+\beta_2\text{IMF}+\beta_3\text{LR}+\beta_4 +D_i +\ldots. + E_1 (2)$$

Where Di = the dummy variable added by the author to represent the major policy inconsistencies in Zimbabwe in the period under review. Therefore Di =Policy inconsistency period =1 and D0 = 0 for Otherwise.

3.2. Justification of variables in the econometric model: This section outlines and justifies the variables drawn into the model used by the study.

THE DEPENDENT VARIABLE: The study used the gross domestic product (GDP – per capita-currencies) as its dependent variable**.** The GDP is the total value of all goods and services produced by a nation over a period of time usually one year, (World Bank, 2014). The study proceeded to use the GDP per capita as proxy for the GDP which was adjusted to inflation GDP per capita accounts for the change in market value, in order to narrow the difference between the output figures from one year to the other. Analysts use this information to determine whether the growth rate of real GDP per capita is positive or negative. A positive growth rate of the GDP meant that the nation's economy is booming, while a negative rate would imply that the economy is in a recession. Hence the use of the GDP as the dependent variable to find out how it was influenced by changes on the explanatory variables selected for the model.

EXPLANATORY VARIABLES: The explanatory variables used in the MLRM are as elaborated below.

Foreign direct investment (Currency, US$): African relations refer to the historical, political, economic, military, social and cultural connections between countries of the world for instance, China and the African continent (Harrison, 2010). Their cooperation is extended to cover education, public health, culture and other fields such as mining and manufacturing. This variable was presented as private capital flows consisting of net foreign direct investment and portfolio investment. Foreign direct investment is net inflows of investment to acquire a lasting management interest (10% or more of voting stock) in an enterprise operating in an economy other than that of the investor, World bank (2016). The study used FDI to represent capital inflow to Zimbabwe, since the country started receiving more private capital flows from China for example under the Look East Policy (LEP) of 2003. This arose after the Zimbabwean economy could not receive more funding from IMF, World Bank and other Western and regional foreign investors. This therefore justifies the inclusion of FDI in the model and was measured in the USD currency.

IMF credit (DOD, US$): The study used IMF credit data related to the operations of the IMF as provided by the IMF Treasurer's Department. It was also noted that special drawing rights (SDR) allocations are recorded as the incurrence of a debt liability of the member receiving them. This is because of the requirement to repay the allocation in certain circumstances, and also because interest accruals (The World Bank, International Debt Statistics, 2016). The IMF credit was included in the model since Zimbabwe did not completely stop receiving funding from IMF and other countries of the world other than China and hence the inclusion of the variable in the mode.

Interest rates (RR-measured as commercial bank lending rates): Lending rates are the proportion at which financial institutions loan money and constitute the base on which the banks then offer money to the final customer. They can also be defined as the amounts paid by the borrowers for the use of money that they borrow from lenders. They are the bank rates that usually meet the short and medium-term financing needs of the private sector, according to Baker & Krugman (2005). These rates are normally differentiated according to the creditworthiness of borrowers and the objectives of financing. The terms and conditions attached to these rates differ with countries, and this limits their comparability. An rise in the lending rate results in the high cost of borrowing which forced most firms and individuals to cut back their borrowing activities leading to slow economic growth. However, in Zimbabwe high interest rates have positive effect on economic growth since they encourage banks to lend money since credit will be profitable Barrow (2009) and the opposite is true for low interest rates.

Dummy variable (Dummy-policy inconsistencies): Policy inconsistency is captured as a dummy variable in the model. In 1980, Zimbabwe got on a program of post-war reconstruction, which was supported by a few foreign donors particularly from China and Russia. The general terms for reconstruction involved policy crafting, adoption and implementations. Challenges arose when one policy failed to work before maturity, as it was then terminated and another policy crafted and implemented by the government. Policy inconsistencies in Zimbabwe resulted in economic meltdown, confusion, bad image to attract FDI and make strategic planning impossible. The challenges caused by policy inconsistencies included hindering economic growth and employment, poor funding of critical sectors such as education and health, which are central to growth of nations towards self-reliance and sustainable development.

The error term (E_i): The error term captured the other explanatory variables that were not deterministic but rather stochastic in nature. It is surrogate for all other variables that are omitted from the model but that collectively affected economic growth and development of the Zimbabwean economy.

The analytical framework: In an attempt to establish the relationship between the variables, the study employed the Ordinary Least Squares technique which is straight forward and simple to conceptualise. It was important in literature for use in testing the relationship between variables. The following variable tests were projected.

Stationarity test (Unit root test for variables): The study tested if the variables were stationary using Augmented Dickey-Fuller test (ADF). Time series data is going to be used in this study. Thus, most OLS regressions that are carried out at levels may not be reliable. Given this knowledge, testing for stationarity of variables to obtain a more reliable result becomes very essential. We usually regret the null

hypothesis when the p-value is less than or equal to specified level often, 0.05 (%), or 0.01 (%) and even 0.1 (10%).

Multicollinearity tests: Multicollinearity is the existence of a perfect or exact linear relationship among some or all explanatory variables of a regression model (Gujarati and Porter, 2009). Multicollinearity exists if the pair wise or zero order correlation coefficient between two regressors is high, say in excess of 0.8 proportion.

Heteroskedasticity: The research study employed a log-transformation to the data to reduce the problem of heteroskedasticity. Log-transformation reduces heteroskedasticity as it compresses the scale in which the variables are measured, thereby reducing a tenfold difference between two variables.

Autocorrelation: Time series data are usually correlated hence preliminary test were done. The study employed the Breusch-Godfrey Serial Correlation LM Test. If the probability is greater than 0.05 then there is no autocorrelation. The Durbin-Watson was not employed as it is biased for autoregressive moving average models, so that autocorrelation is underestimated.

Normality test: Normality tests were done to determine if a data set is well-modelled by a normal distribution. It was also used to compute how likely it was for the random variables underlying the data set to be normally distributed. One can assess normality of data sets numerically or graphically. When the numerical approach is applied, Jargue-Bera and probability should be close to zero and below 0,05 respectively leading to acceptance of the null hypothesis.

USE OF THE ORDINARY LEAST SQUARES (OLS) ESTIMATION: The OLS technique was used to determine the impact of the above explanatory variables on Zimbabwe's GDP in the period under investigation. The main reason for using the OLS estimation technique was because it produced parameter estimates which were BLUE provided that the Gaussian /Standard assumptions held. After running all the data tests as highlighted above and ascertaining that they satisfied all the regression inevitabilities, OLS estimation was carried out to test the significance and degrees of correlation between variables using E-Views 8 Package.

4. Data Presentation, Analysis and Interpretation

The study used an econometric strategy to test the depth of correlation between the variables by applying the regression analysis of the Ordinary Least Squares approach using E-Views 8 software package. The software helps to carryout statistical analysis of the relationships among series to create new series from existing ones, to display and print series, and provides convenient visual ways to enter data series from the keyboard or from disk files.

Descriptive statistics: These are a summary of statistics that quantitatively describe or summarise features of a collection of information. It aims to summarize the sample, rather than use the data to learn about the population that the sample of the data is thought to represent. Descriptive statistics is of great importance as it allows visualize the meaning of given raw data. Table 2 below shows the estimates.

Table 2. Showing Descriptive Statistics with Raw Data (GDP, FDI, IMF, LLR were logged)

Variable	DGDP	DFDI	IMF	DLRC
Mean	4.20E+13	388.1529	-5297418.	2.744640
Median	108416.8	30.30000	-1856.000	2.744293
Maximum	1.47E+15	10600.00	1810028.	3.142702
Minimum	3441.000	7.500000	-1.86E+08	2.352183
Std. Dev.	2.48E+14	1784.717	31498122	0.210145
Skewness	5.659453	5.583105	-5.658415	0.269984
Kurtosis	33.02941	32.45425	33.02185	2.723220
Jargue-Bera	1501.913	1447.012	1501.182	0.536919
Probability	0.000000	0.000000	0.000077	0.000000
Observations	27	27	27	27

Source: E-views 8 Raw Data

The mean and median of the IMF, GDP and FDI were different showing that the data were asymmetric. The study revealed that the median and the mean of LR were the same implying that the data were symmetric in nature. The values of the IMF and GDP variables gave the maximum values, reflecting how the data were spread and the existence of outliers in the data sets. The study realised a case of positive skewness for all the explanatory variables in the model. The kurtosis of variables was not closer to three except for the LR variable. The LR variable was found to be normally distributed. For there to be normality of variable the Jargue-Bera probabilities should be greater than 0.05. The major findings about specific scores in our distribution were given by the standard deviation. The arithmetic mean was 195.875 which depicted that the scores were normally distributed but with very large standard deviations. We found out that the above statement that the estimate was approximately 95% of the scores fell in the range of 4.20E+13-(4.0799) to 2.744640. On the other hand, it can be argued that the assumption of normality is just a procedure which does not affect the regression of a model. The raw data consisted of too large standard deviations which reflected greater variation between actual observations and their means. This justified the reason for introducing natural logarithms and solving for the problems of there being the existence of outliers in the data sets.

DIAGNOSTIC TESTS: The following are the diagnostic tests that were performed by the study on the variables drawn into the model.

STATIONARY TESTS: The study used Augmented-Dickey Fuller test to test for stationarity to see the presents of the unit roots on their variables as well as to identify if the data were given series in a random walk. Augmented-Dickey Fuller is used for a larger and more complicated set of time series models. The use of non-stationarity data led to inaccurate results. From the Augmented Dickey Fuller test the results indicated that LGDP, LRR, LTNC, were non-stationary at 5% level, thus Augmented Dickey Fuller Test was then employed at first difference as shown on the following table.

Table 3. Showing Augmented Dickey-Fuller (ADF) Unit Root Test

Original Variable	Dickey-fuller Tests	Critical Value at 1%	Critical Value at 5%	Critical Value at 10%	Order of Integration
DLGDP	-4.8647	-3.7240	-2.9862	-2.632604	I(1)
DLFDI	-5.49403	-3.7240	-2.9862	-2.63260	I(1)
DLIMF	-25.1669	-3.7240	-2.9862	-2.6326	(0)
DLLR	-4.9807	-3.7240	-2.9862	-2.6362	I(1)

Source: E-views 8 (Raw Data)

The study discovered that a variable was stationary when its Augmented-Dickey Fuller test statistics value exceeded the critical value in absolute terms. The difference is shown by the letter D, when it reached such level it meant that the data variables, LGDP, DLFDI, DLIMF, and DLLR were stationary at 1% level of significance. This revealed that the variables had an integral of order one.

The above findings were translated into a new model of the form:

$$DLGDP = \beta_0 + \beta_1 DLFDI + \beta_2 DLIMF + \beta_3 DLLR + \beta_4 Di + U \quad (3)$$

MULTICOLLINEARITY TEST OF VARIABLES: The multicollinearity test results are shown on the table below:

Table 4. Showing the Correlation Matrix of the Variables

	DLFDI	DLIMF	DLLR	DUMMY
DLFDI	1.000000	0.510399	-0.441952	0.126602
DLIMFC	0.510399	1.000000	0.018243	-0.187039
DLLR	-0.441952	0.018243	1.000000	-0.125650
DUMMY	0.126602	-.0187039	-0.125650	1.000000

Source: E-views 8 (Raw Data)

The findings of the study were that there was no multicollinearity on the variables provided, since all results were less than 0.80. This implied that there were no perfect linear relationships among the explanatory variables in the model.

Heteroscedasticity test results: The results from the Arch test are shown on the table below. The ARCH model captured the serial correlation in summation of $\dot{\varepsilon}_t^2$ using a smaller number of parameters.

Table 5. Showing Heteroscedasticity ARCH Test results

F-Statistic	0.014850	Probability	0.903797
Observed R-Squared	0.015800	Probability	0.899970

Source: E-views 8 (Raw Data)

A probability of 0.90 was found to be above the mark of 0.05. This measure of 0.90 revealed that there was some significant presence of homoscedasticity in the variables in the model.

AUTOCORRELATION TEST RESULTS: The study used Breuch-Godfrey Test to test for autocorrelation among the variables in the model.

Table 6. Showing Autocorrelation that is Breusch Godfrey Serial Correlation LM Test

F-Statistic	0.170240	Probability	0.844361
Observed R-Squared	0.423413	Probability	0.809202

Source: E-views 8 (Raw Data)

The study postulated that there was no correlation between the elements of a series and others from the same series separated from them by a given level of interval. The probability of 0.844 was far much more than 0.05 and hence that there was no autocorrelation in the variables in the model.

NORMALITY TEST RESULTS: Normality of variables included in the model was tested using the Jargue-Bera test. The Jargue-Bera is derived from mathematical observations which were entirely distribution-free and less sensitive to outliers. The data followed a normal distribution with parameters mean,μ and variance, σ^2. The data would be normally distributed if Jargue-Bera probability testis gave values greater than 0.05.

Table 7. Showing Results from the Jargue-Bera Normality Test

Jargue-Bera	1.400692
Probability	0.496413

Source: E-views 8 (Raw Data)

The results of the test revealed that the probability p = 0.4964 was greater than 0.05, and hence the residuals from the variables were normally distributed.

ORDINARY LEAST SQUARES REGRESSION RESULTS: The empirical results on the impact of interest rate fluctuations on economic growth are shown and presented on the table below. The table presents all the variables of the model including the dummy variable.

Table 8. Showing the Regression Results with Dependent Variable DLGDP

Variable	Coefficient	Standard Error	T-Statistic	Probability
Constant	0.99005	0.19051	5.196837	0.000
DLFDI	2.011441	0.172982	11.62801	0.0000
DLIMF	5.02E-09	2.89E-09	1.739294	0.0926
DLLR	-0.46060	1.609326	1.811681	0.0804
Dummy	-1.107744	0.223067	-4.965976	0.0000
R Squared (R^2) = 0.866997		F- Statistic =47.26004		
Adjusted R Squared= 0.848652		Probability of F-Statistic= 0.000000		
Durbin Watson = 2.124639				

Source: E-view 8 (Raw Data)

The above findings were translated into a specific MLRM given by:

$$\text{DLGDP} = 0.990051 + 2.011441\text{DLRR} + 5.02\text{E} - 09\text{NE} + 2.915585\text{DLTNC} - 1.107744\text{Dummy}.$$

INTERPRETING OF THE MLRM RESULTS: The study found out that the coefficient of determination of the data was 0.866997. This measure showed that about 86.70% of the variation in economic growth was accounted for by the explanatory variables. Therefore the remaining 13.3% value of the GDP was caused by the other explanatory variables captured by the error term. The adjusted R^2 value of 0.8486 meant that the model was about 85 per cent in terms of its goodness fit to normality. The F-value of 47.26 was greater than the F critical-value of 0.00. This confirmed that there existed a significant relationship between the dependent variable, GDP and the independent variables. The Durbin-Watson statistic was 2.124639 to signify that the model was significant. The estimated coefficient for interest rates was positive, indicating that they had a positive relationship with GDP. The probability of the F- Statistic was 0.000000. It was less than 0.01 or 0.05 and hence it postulated that the model was correctly specified.

FOREIGN DIRECT INVESTMENT (DLFDI): The primary independent variable, FDI was found to have a positive correlation coefficient with GDP and was statistically significant at all levels. The study depicted that multilateral relationship of FDI had a positive influence on the growth and development of the Zimbabwean economy. Providers of FDI in Zimbabwe had interests to establish subsidiary firms to exploit source of raw materials that were readily available such as crude oil, iron ore/concentrates, and copper which had helped fuel for example China's rapid infrastructure development in the domestic economy. On the other hand, China

represented a major trading partner and investor that provided Zimbabwe with cheap consumer products, bought its natural resources, and helped build its infrastructure but with political motives in mind.

IMF (DLIMF): According to the study the IMF was statistically insignificant at 10% level of importance. The positive coefficient signified that IMF funding had an influence on Zimbabwe's economic growth. The sign attached to the measure reflected that an increase in the IMF funding would result in 5.02% increase in economic growth. The IMF credit assisted the Zimbabwean economy to boost its output and hence be able to export excesses to generate foreign currency.

LENDING RATES (DLRLR): The study discovered that high interest rates encouraged commercial banks to lend. This boosted the domestic investment and attracted FDI and increased the country's economic growth. Lending rates were found to be statistically significant at 10% level. Existence of low interest rates encouraged borrowing for consumption and saving purposes. This finding was in line with the New Classical view that growth required a well-recognized relationship between investment demand and interest rates. The study discovered that a unit increase in interest rates resulted in an increase in the country's economic growth by US2.9 million dollars. Therefore a rise in interest rates attracted foreign direct investors to invest in the domestic country, FDI helped to reduce liquid crunch problems and exerted the much needed competition on poor performing private and government owned firms. Overall FDI was found to be very low in Zimbabwe in the period under review, due to unfavorable policies that scared foreign investors. The significant increase in interest rates in 2008 led to a spontaneous increase in GDP in the same year.

DUMMY VARIABLE: The dummy variable got a value of 0.00 which was attributable to the policy inconsistencies in the period under review. The coefficient attained reflected that there was a negative relationship between policy inconsistencies and economic growth in Zimbabwe. These policies magnified the country and political risks of the domestic economy making it a very unsafe FDI destination and hence its isolation from international groupings such as COMESA. In other words Thus, policy inconsistencies for example the abrupt changes from medium term economic recovery programme (MTERP) or long term (LTERP) to Indigenous and Economic and Empowerment Act (IEEA) or Zimbabwe Agenda for Socio-Sustainable Economic Transformation (ZIMASSET) in Zimbabwe chased away many existing and potential foreign investors and hinders economic planning.

ZIMBABWE-CHINA RELATIONSHIP: China and Zimbabwe bilateral diplomaticrelations dated back to the colonial period where China assisted most African countries including Zimbabwe where they fought against the Smith regime. The relationship has flourished with the passage of time as witnessed with about 128 agreements that are currently running although not much ground has been covered.

There is no mutual equal beneficial out of this bilateral relationship, Zimbabwe have not benefited a lot from this relationship more needs to be done and there is great room for improvement.

MUTUAL BENEFICIATION: Zimbabwe-China relationship failed to produce a win-win situation between these two countries; the relations are skewed to the Chinese side. More and more needs to be done as witnessed in this case there are few companies that have been set out in Zimbabwe that are manufacturing and doing the value addition either upstream or downstream.

MAJOR FINDINGS OF THE STUDY: Based on the above model result analysis and interpretations and views drawn from the corporate world and academia the study came up with the following major findings:

- The study revealed that Zimbabwe's public and private sectors needed more FDI to be able to attain meaningful economic growth and development or acquire assets and grow shareholders' wealth.
- Zimbabwe's main provider of FDI in the period under review was China as the country's relations with USA, UK and other developed countries had constrained funding particularly in the 21st century.
- Zimbabwe's relations with China stretched back to the colonial era and were of late intensified due to China's foreign policy drive on Africa, but should be taken with caution.
- The above Zimbabwe-Sino arrangement has strengthened relations between Africa and China, as China has become one of the leading investors and trade partners for the African continent.
- There are opportunities that have been posed by the Zimbabwe-China relationship in the period under investigation. For example since the turn of the new millennium, China has been more visible in Zimbabwe in respect of trade as compared to other rich nations such as Europe and America.
- Chinese loans and investments have been exploited by Zimbabwe its infrastructure base for example investment in capital projects such as Kariba hydro-electric power (HEP) extension and Hwange thermal power station expansion. However, the motives or benefits attached to the funding of the two major capital projects remain unknown to the general public.
- Some of the Chinese investments were concentrated on resource extraction which signalled that China's renewed interest in Africa and Zimbabwe in particular could be based on its own economic and political interests.
- There could be some long run risks or challenges to be faced by the country, given China's economic involvement in Africa. It was believed that China's continued extraction of resources from Africa and Zimbabwe in particular could lead to continued depletion of such resources rendering access to such endowments by future generations limited.

- Most Chinese companies that won contracts in Africa and Zimbabwe in particular rarely faced competition from African countries if any. This was mainly because the latter were not capable of handling such huge contracts due to lack of experience and technical skills. Moreover, Chinese companies were heavily subsidised, which, in turn, made them superior to African countries and firms.
- There outstanding loans that Zimbabwe held with Bretton Woods Institutions namely the World Bank and IMF impacted significantly on the retardation in growth and development prospects of the economy since the turn of the new millennium.
- The country's domestic debt, balance of payment (BOP) and emergence of the parallel market were behind the dismal performance of the formal banking sector, liquidity crunch, erosion of the purchasing power from households and firms, and serious volatilities in interest and exchange rates that were haunting the livelihoods of the poor and vulnerable citizens of the country.
- The unabated externalisation of foreign currency by those in authority, corruption, nepotism, inconsistent policies, political and country risks were some of the challenges that the country faced in its desire to honour its obligations with financiers and directing its growth towards self-reliance and sustainable development in the foreseeable future.

5. Conclusions and Recommendations

Based on the study objectives given at the commencement of this study, the following are the main conclusions and recommendations extracted from its major findings.

CONCLUSIONS OF THE STUDY: The following are the main conclusions of the study at hand:

Foreign direct investment (DLFDI): The study concluded that Zimbabwe's GDP had a direct relationship with FDI. FDI had a positive influence on the growth and development of the Zimbabwean economy and conditions should be created to boost access to such developmental funds and credit lines. Without access to FDI and loan facilities the country's capacity to direct its economic activity towards sustainable development could remain very difficult, stagnant or repressed.

IMF (DLIMF): It was also concluded that the influence of the IMF on Zimbabwe's GDP was statistically insignificant. Although the coefficient between Zimbabwe's GDP and IMF funding was positive, the impact on economic growth and development was marginal. In other words favourable conditions must be created in the economy to be able to lure significant funding from the IMF and WB as well. Although the IMF credit assisted the Zimbabwean economy to boost its output in the past, the funding has significantly dwindled due to non-performing loans (NPLs)

Zimbabwe got from the Bretton Woods Institutions in the early 1990s and is failing to honour even to this day and hence the country's current reduced foreign currency earning capacity and retarded growth.

LENDING RATES (DLRLR): The study concluded that high interest rates encouraged commercial banks to lend but simultaneously made the cost of borrowing very expensive. High interest rates, the world over, attracted FDI, boosted domestic investment and increased the country's economic growth. However the study concluded that lending rates had a statistically significant impact on Zimbabwe's GDP during the GNU, and was short-lived. The study also concluded that due to liquid crunch problems, interest rates in the economy soured leading to the emergence of the black market which has compounded the financial challenges faced by the government and the financial sector. High interest and exchange rates led to a serious fall in FDI in Zimbabwe in the period under review. The situation was compounded by introduction of a repressed or administered financial system coupled with unfavorable economic policies such as the fast track land reform programme (FTLRP) and IEEA that scared foreign investors.

OTHER SOCIO-ECONOMIC FACTORS: The study concluded that corruption, nepotism, abuse of authority and policy inconsistencies saw the gains achieved by the GNU in the period 2009-13 being short-lived. The revitalization of some private sector firms and zeal for the government to commercialize or privatize its firms were eroded shortly after the end of the life of the GNU. It was concluded that policy inconsistencies and economic growth in Zimbabwe had a negative relationship. Both country and political risks facing the country increased because of nepotism, politicking, corruption, greed and policy inconsistencies. The unpredictable nature of the country's policies made it a very unsafe FDI destination and hence the isolation the country faces lately from western countries leading to lack of access to credit lines and FDI in the period under investigation.

RECOMMENDATIONS OF THE STUDY: There are a number of problems that are posed by Zimbabwe-China FDI relationship over the period under review. It is not a win-win situation and therefore China has lost its popularity with the Zimbabwean people. Based on the conclusions above, the study came up with the following recommendations that can be implemented Zimbabwe to attain economic growth and development.

Public involvement: From the Zimbabwean perspective government should engage both the private and public sector for inputs on the relations and then draw some conclusive concrete ideas from the consultations. This has to be done since most Zimbabwean citizens have a negative perception about the relationship with China which is perceived to be skewed in favour of the elite and China itself.

Politicking and development: Party affiliation and line appointments let alone corruption and nepotism in bilateral relationships have to be abolished. Since this bilateral relationships stretches even to education and skills exchanges the selection even of students to China are done on the party lines and these have to be stopped if we as a country need to derive maximum satisfaction from these exchanges. For a country to derive maximum value from the bilateral relationship the ruling party has to accept criticism and build upon this criticism in order to move the country ahead. Zimbabwe has to be result oriented so as to maximise on the returns on all bilateral relations.

Policy inconsistencies and reviews: While the country's policies towards western countries have been varying over time, labour policies for China and Zimbabwe differ in most respects. Hence due to this variance, there is need for the two countries to harmonise their labour laws to strengthen their bilateral relationships. Minimum wages have to be introduced in all the Chinese companies that are operating in Zimbabwe, together with setting the maximum number of working hours per day or week. There is also need for reviewing the terms of unprocessed goods to China. Therefore there is need for exports of semi or finished goods unlike looting of raw materials to be limited in order to for the government to maintain a certain level of control of the country's economic activities.

Accountability: There is need for accountability on the public officials on all the loans that have been forwarded to the Zimbabwe by world-wide financing institutions including the IMF, WB and China. These have to be audited and there is need for disclosure and public announcement of the loans and advances that have been extended to our country for transparency and accountability purposes. This will go a long way in promoting transparency, accountability and reducing corruption and other forms of illegal activities that have characterised our country particularly backdating to the year 2000.

Liquidity crunch: Zimbabwe is advised not to politicise its currency system if it is to effectively manage its liquidity crunch and development processes. The use of surrogate currencies such as bearer's cheques, bond notes and of late the RTGS dollars have created serious socio-economic challenges which include a 95% unemployment rate, retarded economic growth and development. The challenges caused by use of such currencies are also manifested in the form of erosion of purchasing power from the hands of households and firms and crowding out of private firms and closure of government owned firms such as National Railways of Zimbabwe, Zimbabwe Iron and Steel Company and African Associated Mines (AMM) Limited.

Honouring outstanding loans with WB and IMF: It is recommended that the country must honour its financial obligations with the World Bank and IMF to be able to unlock the much needed credit lines. Rationalization of relations with the WB

and IMF and accessing other credit lines are indispensable if the country is to attain price stability, revive the private sector, commercialize public entities, finance infrastructural projects, education and health and let alone create employment.

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Appendices

Appendix 1.

	GDP_PER_CAPITA_$	FDI	IMF_CREDIT__DOD__$	LENDING_RATES	DUMMY_VARIABLE
1991	827487	2790485.	0	15.500	1
1992	631991	14949899	216149000	19.771	1
1993	601867	27955135	281580000	36.330	1
1994	619835	34648490	37591100	34.860	0
1995	628185	1.18E+08	460812000	34.720	0
1996	742573	80900000	437236000	34.230	0
1997	728401	1.35E+08	385250000	32.500	0
1998	538285	4.49E+08	407172000	43.050	1
1999	568440	59000000	382930000	55.380	1
2000	547389	23200000	293949000	68.200	1
2001	548059	38000000	274770000	38.021	1
2002	507348	25900000	294113000	36.480	0
2003	453351	3800000.	316711000	97.290	0
2004	454361	8700000.	309048000	278.917	0
2005	444761	1.03E+08	125086000	235.670	1
2006	414796	40000000	128124000	496.460	1
2007	396998	68900000	134461000	578.958	1
2008	325679	51600000	129426000	1008.900	1
2009	624272	1.05E+08	542317000	11.900	1
2010	719980	1.23E+08	528729000	10.500	1
2011	840950	3.44E+08	527095000	10.200	1
2012	968164	3.50E+08	520124000	9.990	1
2013	1026388	3.73E+08	519342000	9.740	1
2014	1031105	4.73E+08	486730000	9.470	1
2015	1033416	3.99E+08	463753000	8.540	1
2016	1029072	3.43E+08	444390000	7.110	0
2017	1079608	3.47E+08	439078900	6.000	0

Appendix 2. Descriptive statistics for raw data

	LGDP	LFDI	LIMF	LLR	DUMMY_VARIABLE
Mean	5.808480	7.862786	8.167001	1.571427	0.444444
Median	5.795374	7.907949	8.583119	1.540580	0.000000
Maximum	6.033266	8.674677	8.734253	3.003848	1.000000
Minimum	5.512790	6.445680	0.000000	0.778151	0.000000
Std. Dev.	0.145954	0.628248	1.654558	0.622881	0.506370
Skewness	-0.013182	-0.531763	-4.698439	0.819894	0.223607
Kurtosis	2.085805	2.581403	23.71630	2.736156	1.050000
Jarque-Bera	0.941003	1.469601	582.1500	3.103331	4.502812
Probability	0.624689	0.479601	0.000000	0.211895	0.105251
Sum	156.8290	212.2952	220.5090	42.42853	12.00000
Sum Sq. Dev.	0.553867	10.26207	71.17662	10.08749	6.666667
Observations	27	27	27	27	27

Appendix 3. Stationarity tests

3.1. Unit root test for Gross Domestic Product

Null Hypothesis: D(LGDP) has a unit root				
Exogenous: Constant				
Lag Length: 0 (Automatic - based on SIC, maxlag=6)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-4.864792	0.0007
Test critical values:	1% level		-3.724070	
	5% level		-2.986225	
	10% level		-2.632604	
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(LGDP,2)				
Method: Least Squares				
Date: 08/16/18 Time: 20:29				
Sample (adjusted): 1993 2017				
Included observations: 25 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.

D(LGDP(-1))	-0.958233	0.196973	-4.864792	0.0001
C	0.009144	0.014881	0.614474	0.5449
R-squared	0.507138	Mean dependent var		0.005515
Adjusted R-squared	0.485709	S.D. dependent var		0.103622
S.E. of regression	0.074312	Akaike info criterion		-2.284477
Sum squared resid	0.127011	Schwarz criterion		-2.186967
Log likelihood	30.55596	Hannan-Quinn criter.		-2.257432
F-statistic	23.66620	Durbin-Watson stat		2.049821
Prob(F-statistic)	0.000065			

3.2. Unit root for foreign direct investment

Null Hypothesis: D(LFDI) has a unit root				
Exogenous: Constant				
Lag Length: 0 (Automatic - based on SIC, maxlag=6)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-5.494032	0.0001
Test critical values:	1% level		-3.724070	
	5% level		-2.986225	
	10% level		-2.632604	
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(LFDI,2)				
Method: Least Squares				
Date: 08/16/18 Time: 20:31				
Sample (adjusted): 1993 2017				
Included observations: 25 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LFDI(-1))	-1.086330	0.197729	-5.494032	0.0000
C	0.061822	0.086603	0.713859	0.4825
R-squared	0.567542	Mean dependent var		-0.028979
Adjusted R-squared	0.548740	S.D. dependent var		0.632748
S.E. of regression	0.425054	Akaike info criterion		1.203418
Sum squared resid	4.155435	Schwarz criterion		1.300929
Log likelihood	-13.04273	Hannan-Quinn criter.		1.230464
F-statistic	30.18439	Durbin-Watson stat		2.119635
Prob(F-statistic)	0.000014			

3.3. Unit root test for IMF DOD

Null Hypothesis: D(LIMF) has a unit root				
Exogenous: Constant				
Lag Length: 0 (Automatic - based on SIC, maxlag=6)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-25.16693	0.0001
Test critical values:	1% level		-3.724070	
	5% level		-2.986225	
	10% level		-2.632604	
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(LIMF,2)				
Method: Least Squares				
Date: 08/16/18 Time: 20:33				
Sample (adjusted): 1993 2017				
Included observations: 25 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LIMF(-1))	-1.003434	0.039871	-25.16693	0.0000
C	0.013500	0.067662	0.199516	0.8436
R-squared	0.964959	Mean dependent var		-0.333599
Adjusted R-squared	0.963435	S.D. dependent var		1.732077
S.E. of regression	0.331205	Akaike info criterion		0.704460
Sum squared resid	2.523027	Schwarz criterion		0.801971
Log likelihood	-6.805756	Hannan-Quinn criter.		0.731506
F-statistic	633.3744	Durbin-Watson stat		2.870470
Prob(F-statistic)	0.000000			

3.4. Unit root test for Lending rates

Null Hypothesis: D(LLR) has a unit root				
Exogenous: Constant				
Lag Length: 0 (Automatic - based on SIC, maxlag=6)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-4.980670	0.0005
Test critical values:	1% level		-3.724070	
	5% level		-2.986225	
	10% level		-2.632604	
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(LLR,2)				

Method: Least Squares				
Date: 08/16/18 Time: 20:34				
Sample (adjusted): 1993 2017				
Included observations: 25 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LLR(-1))	-1.036469	0.208098	-4.980670	0.0000
C	-0.021209	0.088045	-0.240887	0.8118
R-squared	0.518900	Mean dependent var		-0.007177
Adjusted R-squared	0.497982	S.D. dependent var		0.621001
S.E. of regression	0.439999	Akaike info criterion		1.272530
Sum squared resid	4.452779	Schwarz criterion		1.370040
Log likelihood	-13.90662	Hannan-Quinn criter.		1.299575
F-statistic	24.80707	Durbin-Watson stat		1.998209
Prob(F-statistic)	0.000049			

3.5. Unit root test for Dummy variable

Null Hypothesis: D(DUMMY_VARIABLE) has a unit root				
Exogenous: Constant				
Lag Length: 3 (Automatic - based on SIC, maxlag=6)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-3.894322	0.0076
Test critical values:	1% level		-3.769597	
	5% level		-3.004861	
	10% level		-2.642242	
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(DUMMY_VARIABLE,2)				
Method: Least Squares				
Date: 08/16/18 Time: 20:35				
Sample (adjusted): 1996 2017				
Included observations: 22 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DUMMY_VARIABLE(-1))	-3.518678	0.903540	-3.894322	0.0012

D(DUMMY_VARIABLE (-1),2)	1.659974	0.761231	2.180645	0.0435
D(DUMMY_VARIABLE (-2),2)	0.690910	0.503199	1.373035	0.1876
D(DUMMY_VARIABLE (-3),2)	0.286963	0.232021	1.236800	0.2330
C	-0.044048	0.117667	-0.374347	0.7128
R-squared	0.849822	Mean dependent var		0.000000
Adjusted R-squared	0.814486	S.D. dependent var		1.272418
S.E. of regression	0.548048	Akaike info criterion		1.831808
Sum squared resid	5.106058	Schwarz criterion		2.079772
Log likelihood	-15.14988	Hannan-Quinn criter.		1.890221
F-statistic	24.04972	Durbin-Watson stat		1.433182
Prob(F-statistic)	0.000001			

Appendix 4. Correlation Matrix

	LFDI	LIMF	LLR	DUMMY_VARIABLE
LFDI	1.000000	0.510399	-0.441952	0.126602
LIMF	0.510399	1.000000	0.018243	-0.187039
LLR	-0.441952	0.018243	1.000000	-0.125650
DUMMY_VARIABLE	0.126602	-0.187039	-0.125650	1.000000

Appendix 5. Heteroskedasticity

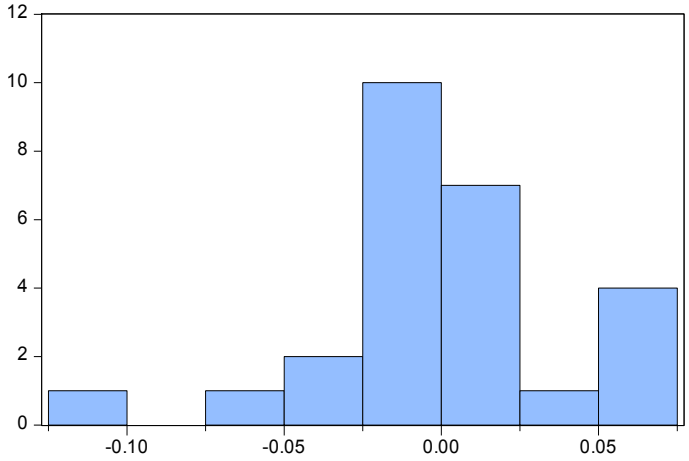
Heteroskedasticity Test: ARCH				
F-statistic	0.614962	Prob. F(1,23)		0.9409
Obs*R-squared	0.651030	Prob. Chi-Square(1)		0.8197
Test Equation:				
Dependent Variable: RESID^2				
Method: Least Squares				
Date: 08/16/18 Time: 20:41				
Sample (adjusted): 1993 2017				
Included observations: 25 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.001878	0.000636	2.950805	0.0072
RESID^2(-1)	-0.161389	0.205802	-0.784195	0.4409

R-squared	0.026041	Mean dependent var	0.001617
Adjusted R-squared	-0.016305	S.D. dependent var	0.002690
S.E. of regression	0.002712	Akaike info criterion	-8.905766
Sum squared resid	0.000169	Schwarz criterion	-8.808256
Log likelihood	113.3221	Hannan-Quinn criter.	-8.878721
F-statistic	0.614962	Durbin-Watson stat	1.984005
Prob(F-statistic)	0.440928		

Appendix 6. Autocorrelation

Breusch-Godfrey Serial Correlation LM Test:				
F-statistic	0.1702405	Prob. F(2,19)		0.84407
Obs*R-squared	0.4234134	Prob. Chi-Square(2)		0.80924
Test Equation:				
Dependent Variable: RESID				
Method: Least Squares				
Date: 08/16/18 Time: 20:44				
Sample: 1992 2017				
Included observations: 26				
Presample missing value lagged residuals set to zero.				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.003233	0.011578	-0.279238	0.7831
D(LFDI)	-0.024969	0.027108	-0.921105	0.3685
D(LIMF)	0.003023	0.005697	0.530694	0.6018
D(LLR)	-0.009763	0.022279	-0.438198	0.6662
DUMMY_VARIABLE	0.010255	0.018897	0.542666	0.5937
RESID(-1)	0.478979	0.275067	1.741319	0.0978
RESID(-2)	-0.277799	0.233940	-1.187482	0.2497
R-squared	0.164786	Mean dependent var		1.05E-18
Adjusted R-squared	-0.098965	S.D. dependent var		0.040216
S.E. of regression	0.042160	Akaike info criterion		-3.269906
Sum squared resid	0.033771	Schwarz criterion		-2.931187
Log likelihood	49.50877	Hannan-Quinn criter.		-3.172367
F-statistic	0.624778	Durbin-Watson stat		1.997979
Prob(F-statistic)	0.708503			

Appendix 7. Normality test



Appendix 8. Ordinary Least Squares Regression Results

Dependent Variable: D(LGDP)				
Method: Least Squares				
Date: 08/16/18 Time: 20:47				
Sample (adjusted): 1992 2017				
Included observations: 26 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.990058	0.190518	5.196838	0.0005
D(LFDI)	2.011445	0.172983	11.628012	0.0009
D(LIMF)	5.02e-09	2.89E-06	1.739295	0.0921
D(LLR)	-0.46060	1.609323	1.811680	0.0000
DUMMY_VARIABLE	-1.107740	0.223065	-4.965972	0.0009
R-squared	0.716472	Mean dependent var		0.004442
Adjusted R-squared	0.662466	S.D. dependent var		0.075528
S.E. of regression	0.043880	Akaike info criterion		-3.243684
Sum squared resid	0.040434	Schwarz criterion		-3.001743
Log likelihood	47.16790	Hannan-Quinn criter.		-3.174014
F-statistic	13.26667	Durbin-Watson stat		1.499935
Prob(F-statistic)	0.000015			

Domestic Debt and Private Sector Credit in Nigeria: An Empirical Investigation

Cordelia Onyinyechi Omodero[1]

Abstract: Government domestic borrowing and private sector access to credit are two complex economic scenarios that require absolute harmonization for an economy to thrive. There is no economy that survives without the private sector operation which also relies on accessibility to funds. This study examines the impact of government domestic debt on private sector credit in Nigeria. Data for the study have been collected from the Central Bank of Nigeria Statistical Bulletin, 2018 edition, Debt Management Office and the World Bank. The variables on which data are sourced include private sector credit, domestic debt, interest rate and the inflation rate. The scope of the study spans from 1988 to 2018 and the data are analyzed using the ordinary least squares multiple regression technique. The study finds that domestic debt has a significant positive impact on private sector credit while the interest rate exerts substantial negative influence on the private sector credit. However, inflation rate is found insignificant in explaining the growth of private sector credit in this study. These findings lead to the recommendation that government domestic borrowing activities should always be done with the interest of the private sector businesses in mind. The study further suggests moderation of interest rates by the relevant authorities in order to boost private sector access to finance and encourage entrepreneurship in the country.

Keywords: Domestic debt; private sector credit; interest rate; inflation rate; economy

JEL Classification: H74; H81; E43; E31; 040

1. Introduction

Private sector credit or business finance is a fundamental part of most productive economies. Finance naturally serves as the livewire of an economy and allows the private sectors to expand their businesses and implement new ideas. Private sectors often attribute their business successes to fund accessibility. Thus private sectors' access to bank credit determines the survival of businesses and entrepreneurships in a nation. In the same manner, government domestic debt in a nation has a complex way of affecting the private sector access to credit and operations. According to Likita (1999) debt is a predetermined commitment of outstanding or accrued borrowing with an undertaking for reimbursement at a future date. Asogwa (2010)

[1] Clifford University, Nigeria, Address: Owerrinta, Abia State, Nigeria, Corresponding author: cordeliaomodero@yahoo.com.

defines domestic debt as debt instrument issued by the federal, state and local governments but is dominated in local currency. Patillo, Poirson, and Luca (2002) posit it that, emerging nations going through financial pressure coupled with the enormous responsibility to provide their citizens with sufficient goods and services, will invariably want to obtain some loans either internally or externally in order to augment the insufficient domestic savings. Usually, developing countries borrow because they lack the capacity to have adequate savings necessary for economic growth investment. This is due to low level of income commonly experienced by emerging nations such as Nigeria. Every evolving country desiring to raise enough capital for its economic advancement will certainly resort to borrowing (Aminu, Aminu & Salihu) due to inadequacy of funds generated through domestic savings in filling the investment gap. Alison (2003) emphasized that government domestic obligation is majorly caused by budget shortfall which has to be funded in order to achieve fiscal stability, another reason is to employ monetary policy instrument of "open market operation" to buy and sell treasury bills and finally to improve the financial sector through the widening of the financial markets. Behind this backdrop, Mba, Yuni and Oburota (2013) noted that government domestic borrowing serves as the yardstick for the insurance of private sector debt security which includes corporate bonds and treasury bills, so as to build investors' confidence that their returns are failsafe and secured.

The growth of government borrowing in Nigeria gained its prominence from the introduction of financial reform by the colonial administration in 1958 which led to the establishment of marketable public securities to fund economic discrepancies. Paragraph 35 of the central Bank of Nigeria ordinance 1958 provides that the apex bank will be charged with the responsibility for the issue and management of federal government debts publicly issued in Nigeria, this is based on terms and conditions agreed between the government and the bank. From table 1 and figure 1 below, domestic debt in Nigeria comprises treasury certificates, treasury bonds, treasury bills, promissory note, Federal Government of Nigeria (FGN) savings bond, FGN bonds, FGN green bond, development stocks and FGN Sukuk included in 2017 (CBN, 2018).

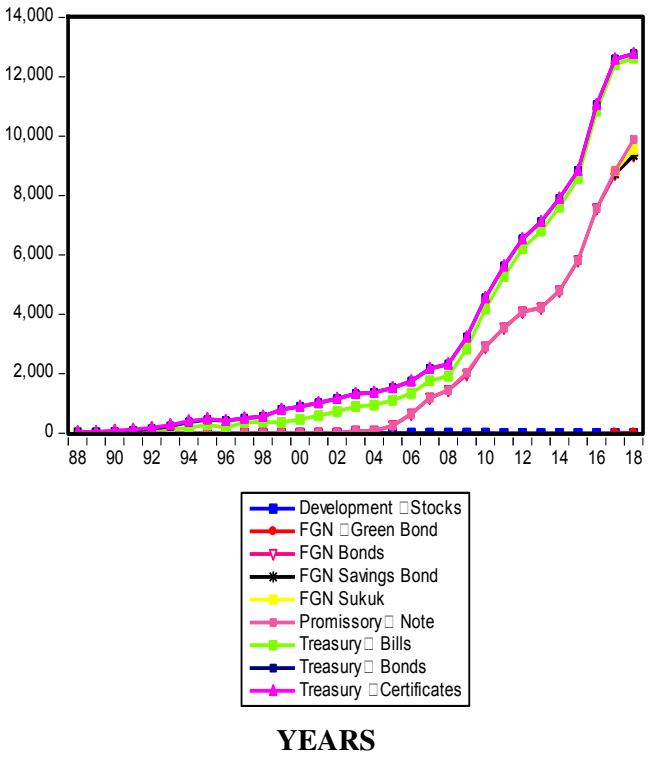


Figure 1. Components and Trend of Domestic Debt in Nigeria from 1988 to 2018

Sources: Central Bank of Nigeria and Debt Management Office

Out of these debt instruments, Treasury bills and development stocks are marketable and negotiable while treasury bonds and other advances are not marketable but are held solely by the Central Bank of Nigeria (Adofu & Abula, 2010). The Central Bank of Nigeria (CBN) as the Apex Bank and financial adviser to the federal government has the duty to manage the domestic public debt (Aminu *et al.* 2013) of the government in Nigeria. Thus, domestic debt represents the money government borrows locally from banks, individuals and companies through sale of government securities such as treasury bills and bond, among others. According to WB and IMF (2001), broad usage of domestic debt can have adverse effects on the economy through crowding out of private investments, this is due to the fact that domestic debt has components that are usually marketable. Abbas and Christensen (2007) posit that reasonable levels of domestic debt could have a favorable consequence on the economy if the debt is saleable. By implication, the marketability of domestic debt could make the money and financial markets stronger, encourage investment and enhance private savings (Bakare, Ogunlana, Adeleye & Mudasiru, 2016).

Domestic debt servicing cost can take major part of government revenues, especially where domestic interest rate is higher than interest rate of foreign loans. The interest cost of domestic borrowing can rise quickly along with increases in the outstanding stock of debt, especially in shallow financial markets. The increase in interest rates may even be more noticeable if the investors' base is relatively constricted, consequently, the government may be held responsible by some group of investors because domestic debt financing has the capacity to crowd-out private investment through hike in the interest rates. When interest rate of banks' credit to private sectors increases, the cost of borrowing rises and private sector investment is negatively affected (Omodero & Mlanga, 2019). According to Igbodika, Jessie and Andabai (2016) "domestic debt reduces macro-economic risk; the absorption of the domestic financial resources by the government brings some question like inefficient credit to the private sector and poor financial development". The exorbitant profile of domestic debt in Nigeria (see Table 1 & Figure 1 below) emanated from the accumulation of government borrowing from different local sources, thus, it is adversely affecting the GDP growth and also crowding out private sector investment (Okonjo-Iweala, 2011; Obademi, 2012). However, Okonjo-Iweala (2011) expressed optimism that if private sector growth could be encouraged, it would lead to multiple job creation in the country.

When issuing domestic debt, governments tap domestic private savings that would otherwise be available to private sector. Subsequently, it results to an increase in domestic interest rates, especially where they are flexible, thereby adversely affecting private investment. However, even when interest rates are controlled, domestic borrowing can lead to credit rationing and crowding-out of private sector investment (Fischer and Easterly, 1990).

2. Literature Review

2.1 Conceptual Clarifications

2.1.1 Domestic Debt

Domestic Debt is debt that originates from within a country (James, Magaji, Ayo & Musa, 2016). Domestic debt refers to debt owed to holders of government securities such as treasury bills and treasury bonds which represent government borrowing through issuance of securities, government bonds and bills (Babu, Kiprop, Kalio & Gisore, 2015). Domestic debt in Nigeria is usually acquired through debt instruments such as treasury bills, treasury certificates, treasury bonds, development stocks, FGN bonds, Promissory notes. The other debt instruments introduced in Nigeria with effect from 2017 include: FGN Sukuk, FGN Green Bond and FGN Savings Bond. According to Babu *et al.* (2015), the two major reasons why governments choose to borrow domestically include: when there is excess projected expenditure over

projected revenue and urgent need to pay off maturing loans or to meet up with an immediate external debt servicing obligation.

2.1.2 Treasury Bills

Treasury bills are short-term sovereign debt securities maturing in one year or less. They are sold at a discount and redeemed at par. These bills are by nature, the most liquid money market securities and are backed by the guarantee of the Federal Government of a nation. The Federal Government of Nigeria, through the Central Bank of Nigeria, issues Nigerian Treasury Bills to provide short-term funding for government budget deficit. The treasury bills are usually issued through a competitive bidding process, quoted and traded on FMDQ's platform (FMDQ, 2019). Treasury bills are debt instruments used by the federal government to borrow funds for short periods of about three months pending the collection of its revenues. Following the Treasury bill Act of 1959, No 11 which took effect from 19th of March 1959, Treasury bill first public issue in Nigeria was made on April 7, 1960. The tremendous achievement made in the process gave a boost that led to the issuance of further monetary debt instrument of this nature (Anyanfo, 1993). At the moment, the allotment of treasury bills are issued via an auction – based system and in multiples of =N=1000.00 per tender, its subscriptions are usually sold through official dealers.

2.1.3 Treasury Certificates

A treasury certificate was a debt security issued by the United States Treasury, with maturities of less than one year and which was sold at par, the certificates were not issued after 1975 (Accounting tools, 2018). Treasury certificates are medium term government securities which have a maturity of between one to two years. It serves as bridge between treasury bills (Short term instruments) and long term government stocks. Treasury certificates were introduced in Nigeria in 1968 and are similar to treasury bills in all respects, except that the tenure is different. Both instruments are eligible for rediscount at the secondary market. Treasury certificates have played a major role in the development of the money market in Nigeria. The instrument has also assisted government in meeting its financial needs, especially during the civil war years and the reconstruction period of the 1970's. Further issues were suspended in 1975 due to excess liquidity in the system occasioned by the oil boom. The TC.s were again introduced in 1976 as a result of pressure on government finances.

2.1.4 Treasury Bonds

Bonds issued though the government are called treasury bonds. These bonds are issued to help the government pay off debts and to fund government activities. Of all the bonds, these have the lowest returns or yields. However, government bonds are exempt from local and state taxes and they are lower in risk if you hold them until they mature (Your Dictionary, 2019). A Treasury bond (T-bond) is a government debt security that earns interest until maturity, at which point the owner

is also paid a par amount equal to the principal. Treasury bonds are part of the larger category of government bonds, a type of bond issued by a national government with a commitment to pay period interest payments known as coupon payments as well as the principal upon maturity (Chen, 2019). T-bonds are known in the market as principally risk-free; they are issued by the government with very little risk of failure to pay (Chen, 2019). T-bonds market began in Nigeria towards the end of 1989 when the monetary authorities of Nigeria decided to convert =N=11.35 billion of maturing treasury bills into 5% denominated treasury bonds with maturity profile in excess of ten years (James *et al.,* 2016). Treasury bonds emerged not as a consequence of issuance of new instruments using the term but as an essential facet of internal debt administration scheme designed to elongate debt repayment period. The implication of this concept is that the instruments are not suitable for trading at the money market and cannot serve as an instrument for open market operations. The major objective of treasury bonds is to provide a cost effective source of deficit financing for the government and to seek to minimize debt service obligations in government debts occasioned by the high level of deficit financing by the government (Nzotta, 2004).

2.1.5 Development Stock

Development stock is fairly long term debt instruments issued by the CBN on behalf of the federal government. Development stock is also known as development loan stock which the long-term, interest-bearing securities of the Federal Government of Nigeria traded on the Stock Exchange (Securities & Exchange Commission Nigeria, 2019). They have fixed rates of return and definite maturity. In an attempt to improve the liquidity and profitability of banks, the central bank classified government development stocks of less than 3 years to maturity as eligible liquid assets for the purpose of computing the liquidity of banks. This move further broadened the scope of activities in the money market. (Nzotta, 2004). FGN Bonds are debt securities (liabilities) of the federal government of Nigeria issued under the authority of Debt Management Office (DMO) and listed on the Nigerian stock exchange. The FGN has an obligation to pay the bondholder the principal and agreed interest as they fall due. A bond holder has simply lent to the federal government for a specified period of time. The FGN bond is considered as the safest of all investments in domestic currency securities market because it is backed by the full faith and credit of the federal government. They have no default risk, meaning that it is virtually certain your interest and principal will be paid as and when due. The income thus earned is exempt from state and local taxes. The minimum subscription of FGN Bond is =N=10,000.00 + multiples of =N=1000.00 thereafter .Most FGN Bonds have fixed interest rates which are paid semi-annually. Tenor of an FGN Bond is for a minimum of two years (Debt Management Office).

2.1.6 Promissory Note

A promissory note is a written agreement to pay a specific amount to specific party at a future date or on demand. In other words, it's a written loan agreement between two parties that requires the borrower to pay the lender on a day in the future. This could be a set date or a date chosen by the lender (My Accounting Course, 2019). Promissory notes are documents stating that a person promises to pay another a specified sum at a certain date (James et al., 2016). Following the Government Promissory Notes Act 1960 No 6, promissory note is another source through which the federal government of Nigeria can borrow locally.

2.1.7 FGN Sukuk

Sukuk is an investment certificate that denotes the ownership interest of the holder in an asset or pool of assets (Debt Management Office, 2019). Sukuk is backed up by the full faith and credit of the Federal Government of Nigeria (FGN) and the certificate entitles the holder to receive income from the use of the asset based on the Sukuk units allotted to him/her (DMO, 2019). The FGN issued Sukuk to fund the construction or rehabilitation of major economic infrastructure projects across Nigeria such as roads, it provides FGN varying funding sources and also offers ethical investors the opportunity to invest in government issued securities (DMO, 2019). Sukuk certificate can be traded on the Secondary Market by licensed dealers on the floor of the Nigerian Stock Exchange and on the Nigeria's foremost debt capital, foreign exchange and derivatives over-the –counter securities exchange (FMDQ OTC).

2.1.8 FGN Green Bond

Green Bonds are any type of bond instrument where the proceeds are exclusively applied to finance or re-finance, in part or in full, new and/or existing eligible green projects that align with the four core components of the Green Bond Principles (GBP) which consist of Process for Project Evaluation and Selection, Reporting of list of eligible green projects, Management of Proceeds and Use of Proceeds (The Nigerian Stock Exchange, 2019).

2.1.9 FGN Savings Bond

Federal Government of Nigeria (FGN) savings bond is a new retail investment programme introduced by The Debt Management Office (DMO) of Nigeria, on behalf of the Federal Government of Nigeria. FGN savings bond has been launched to help enhance the savings culture among Nigerians while providing all citizens irrespective of income level, an opportunity to contribute to National Development; as well as the comparatively favourably returns available in the capital market.FGN Savings Bond is safe and backed by the full faith and credit of the Federal Government of Nigeria, with quarterly coupon payments to bondholders. The features include a

Minimum subscription of N5,000 with additions in multiple of N1,000; subject to a maximum of N50 million. The bond duration ranges from 2 to 3 years while a fixed coupon will be paid quarterly to investors. The issuance is on a monthly basis through an offer for subscription, from the date the offer is announced, it will remain open for 5 days. Investors are only meant to subscribe through the accredited Distribution Agents who are the dealing members of The Nigerian Stock Exchange (NSE) as approved by the Debt Management Office. The coupon/interest of the FGN savings bond is paid to the bondholders on a quarterly basis and it is tax-free. FGN savings bond is liquid asset which can be traded at the NSE Secondary Market, it encourages financial inclusion, and it is also acceptable as collateral for loans while its returns is guaranteed.

2.1.10 Private Sector Credit

Private sector credit refers to financial resources provided to the private sector, such as through loans, purchases of non-equity securities, trade credits and other accounts receivables, which establish a claim for repayment (World Bank, 2018).

2.2 Theoretical Review

2.2.1 Ccrowding Out Theory

Crowding out theory holds that debt servicing could be such a burden that the government revenue may no longer be adequate for provision of public services which complements private investment and boost private sector involvement in the economy. Thus, substantial debt obligation suggests that the government short-term revenue must be used to service the debt, thereby crowding out public investment into the economy (Serieux & Yiagadeesen, 2001). Reduction in public investment can lead to a decrease in private investment since some private investments and public investments are complementary (Diaz-Alejandro, 1981; Taylor, 1983). It has been established that extreme domestic borrowing results in financial precariousness and crowding out of the private sector (Panizza, Sturzenegger & Zettelmeyer, 2010) through high interest rates and reduction of public sector investment occasioned by debt servicing consequences.

2.2.2. Debt Overhang Theory

Krugman (1988) postulated that there is a likelihood that in the near future, a nation's level of accumulated debt might outgrow the repayment capacity of that nation. In other words the expected cost of servicing will begin to dissuade both internal and external investments since efforts towards achieving economic growth through profitable ventures will still lead to increasing loan acquisition. Debt overhang leads to economic growth decline due to the fact that it discourages internal and external investments of private sectors which give boost to economic expansion (Krugman, 1988).

2.3 Empirical Review

2.3.1 Studies Outside Nigeria

Levan, Nguyen-Van, Barbier-Gauchard and Duc-Anh (2019) analyzed the relationship existing among government expenditure, tax on returns to assets, public debt and economic growth; where public debt was assessed using the external debt and the domestic debt components. The study found among others that tax led to explicit increase in the domestic debt, thereby establishing that the effect of high tax rate results to reallocation of public debt in favour of domestic debt.

Kueh, Liew and Yong (2017) investigated the effect of domestic and external debts on economic growth of Malaysia using data that covered a period from 1980 to 2015. The statistical result indicated that domestic debt was approximately 37% of GDP while external debt was only 4% of GDP. The findings also revealed that domestic debt accumulation below the threshold level contributed positively to economic growth which when it exceeded, the economic growth was depressed. Contrarily, the study confirmed that external debt below the threshold level had a negative impact on economic growth but when it exceeded the threshold, it had a positive effect on economic growth. Tawfiq and Shawawreh (2017) assessed the impact of public debt on economic growth of Jordan using data from 2000 to 2015. In order to ascertain the impact of public debt on economic growth, the study employed least squares regression method and the result indicated that public debt had a negative impact on economic growth. The findings further revealed that external debt had a more significant negative impact on economic growth than the domestic debt.

Srinivasa and Lakshmi (2016) used Auto Regressive Distributed Lag (ARDL) technique to assess the impact of domestic debt on India's economic growth for a period covering 1980 to 2014. The study found evidence that domestic debt had a negative impact on India's economic growth. Anning, Ofori and Affum (2016) investigated the impact of both external and domestic debt on economic growth of Ghana from 1990 to 2015. The study was motivated by the fact that Ghana was adjudged as one of the Heavily-Indebted Poor Countries (HIPC) by the IMF and World Bank in 1999 which enabled the country to enjoy debt relief. The study used both primary and secondary data sources as well as building on the study of many other scholars. The findings revealed that both domestic and external debts had negative relationship with Ghana's economic growth. Thus, the study recommended the use of tax reform programmes to increase the revenue base of the country instead of borrowing.

Saifuddin (2016) adopted a two-stage least squares (TSLS) regression technique to study the impact of public debt on economic growth of Bangladesh from 1974 to 2014. The study used government investment and economic growth as the explanatory variables which helped to determine the effect of public debt on economic growth in Bangladesh. The regression results indicated that public debt

had positive relationship with both investment and economic growth. The findings further revealed that public debt had significant positive impact on investment which invariably suggested favorable influence on economic growth. Babu *et al.* (2015) used Levin-Lin-Chu (LLC) test and Hausman specification test to investigate the effect of domestic debt on economic growth of the East African Community (EAC) from 1990 to 2010. The result indicated that domestic debt had a positive significant effect on per capita GDP growth rate in the EAC. The study suggested promotion of sustainable level of domestic borrowing as a way of enhancing economic growth.

Mbate (2014) investigated the impact of domestic debt on economic growth and private sector credit using panel data of 21 Sub-Saharan African (SSA) countries for a period covering 1985 to 2010. The study made use of system-GMM and the result indicated the existence of non-linear relationship between domestic debt and economic growth. The findings also revealed that domestic debt was found to crowd out private sector credit by an elasticity of negative 0.3 percent of GDP, deterring capital accumulation and private sector growth. The study suggested to restrict domestic indebtedness and financial policies to enhance credit availability. Giovanna, Pradelli and Presbitero (2014) also did a panel study of 36 low-income countries from 1971 to 2011 examining the trends and structure of domestic public debt. The study found evidence that there has been an increase in domestic government debt since 1996, and that poor countries were able to increase the share of long-term instruments which also resulted to decrease in the cost of borrowing due to the long period of time involved. The study indicated that commercial and central banks credit to the private sector for investment might be crowded out if the trend in domestic public debt in the 36 low-income countries should continue growing.

Putunoi and Mutuku (2013) considered the implication of domestic debt on economic growth of Kenya using quarterly data that spanned from 2000 to 2010. The study employed Augmented Dickey Fuller Error Correction Model and other statistical tool for analysis. The findings showed that domestic debt had a significant and positive impact on economic growth of Kenya. Following the statistical result, the study suggested that the government should support sustainable domestic borrowing. Njoroge (2013) employed causal research design and quarterly time series data ranging from 2003 to 2013 to evaluate the effect of domestic public debt on economic growth of Kenya. The correlation analysis revealed that GDP had a negative relationship with the public domestic debt and all other explanatory variables. However, the study suggested that government borrowing should be minimized while all forms of domestic borrowing should be focused on economic benefit of the country.

Ahmad, Sheikh and Tariq (2012) examined the impact of domestic debt on inflation in Pakistan from 1972 to 2009. The study found that the effect of domestic debt and

debt servicing on inflation was statistically significant and positive. The study also established that interest rate was one major reason for budget deficit in Pakistan and since then government had depended on various sources of financing caused by the budget deficit that also led to inflation. Atique and Malik (2012) extended the study on Pakistan from 1980 to 2010 by examining the influence of domestic and external debts on economic growth using an ordinary least squares approach to co-integration, unit root and serial correlation testing. The findings revealed that external debt had a more robust and significant negative impact on economic growth of Pakistan than the domestic debt. Although the study found the existence of an inverse relationship between domestic debt and economic growth as well as between external debt and economic growth.

EL-Mandy and Torayeh (2009) studied the effect of domestic debt on economic growth of Egypt following the concerns for the persistent increase in Egypt's public domestic debt. The study covered a period from 1981 to 2006 and the statistical result revealed that public domestic debt in Egypt had a robust and significant negative impact on Egypt's economic growth. Using algebra techniques to test sustainability of debt, the result showed that Egypt's debt was sustained in the recent path of debt followed in the country.

2.3.2 Studies within Nigeria

Ayuba and Khan (2019) examined the long-run relationship between domestic debt and the fiscal policy of economic growth in Nigeria for a period covering 1981 to 2013. The study made use of autoregressive distributed lag approach and the bounds test postulated by Narayan (2005). The findings indicated that domestic debt had adverse effect on the economy but positively affected the cumulative government revenue within the period covered by the study. Ugwu (2017) employed ordinary least squares method to assess the effect of domestic debt on Nigeria's economic growth using data spanning from 2000 to 2016. The findings revealed that domestic debt had significant relationship with the Gross Domestic Product (GDP) of Nigeria.

Bakare *et al.* (2016) used ordinary least squares regression method to investigate the effects of domestic debt on Nigeria's economic growth from 1981 to 2012. The study used GDP as the dependent variable while the predictor variables included domestic debt, private sector credit, interest rate and budget deficit. The study found a positive relationship between domestic debt and economic growth and also confirmed that the level of increase in domestic debt should be in the same proportion with the increase in economic growth. James *et al.* (2016) extended the work on the impacts of domestic debt on economic performance of Nigeria from 1970 to 2013 using multiple regression statistical tool for analysis. The findings indicated that domestic debt had a negative impact on unemployment while the influence on economic growth was not significant. On the contrast, domestic debt impacted on inflation positively and significantly. By implication, the study is suggesting that domestic

debt serves as a fiscal tool to suppress inflation since it allows the government to reduce the money in circulation through selling of treasury bills and other marketable debt instruments.

Onogbosele and Mordecai (2016) made use of the domestic debt components and examined the degree of pressure each had on GDP growth rate. The study covered a period from 1985 to 2014 and the domestic debt elements used as explanatory variable were: treasury bonds, development stocks, federal government bounds and interest. Thus, the study empirically established that the federal government bonds exerted the highest influence on GDP, and it was succeeded by treasury bonds while development stocks and interest rate had the least effect on GDP. Okwu, Obiwuru, Obiakor and Oluwalaiye (2016) employed relevant econometric tools to investigate the effects of domestic debt economic growth in Nigeria from 1980 to 2015. The study used real gross domestic product (RGDP) as proxy for economic growth while the explanatory variables included domestic debt stock, debt servicing expenditure, government expenditure and banks' lending rates. The results showed that domestic debt stock had both short and long term positive significant effect on RGDP while debt servicing expenditure exerted a significant negative impact on RGDP. The study also revealed that bank lending rate and government expenditure were not significant in explaining economic growth variations in Nigeria within the period covered by the study.

Igbodika *et al.* (2014) assessed the relationship between domestic debt and the economic performance in Nigeria using data that covered 1984 to 2014 and the OLS statistical tool for analysis. The study found that domestic debt had a significant positive relationship with GDP in Nigeria. The study therefore recommended that the government should ensure that debt ratio is at equilibrium with the acceptable bank deposit ratio while ensuring that tax revenue is increased to reduce borrowing to finance projects.

Aminu *et al.* (2013) investigated the impact of external debt and domestic debt on the growth of the Nigerian economy. The study covered a period from 1970 to 2010 and ordinary least squares method was used for the impact analysis. The results indicated that the external debt had a negative impact on economic growth of Nigeria while the domestic debt had a positive impact on the Gross Domestic Product (GDP). The study further established that proper management of the country's domestic debt could lead to high level of economic growth. Mba *et al.* (2013) analyzed the implication of domestic debt on economic growth in Nigeria using error correction model and annual time series data covering a period from 1980 to 2011. The data were obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin and Debt Management Office. The findings revealed that domestic debt and credit had a direct significant correlation with economic growth while the debt servicing was inversely

correlated with the GDP. The study also found the existence of an insignificant relationship between economic growth and government expenditure.

Onyeiwu (2012) carried out a study to establish the effect of domestic debt on Nigeria's economic growth using ordinary least squares method (OLS), error correction and parsimonious models to analyze quarterly data covering a period from 1994 to 2008. The result revealed that domestic debt held by the government within the period under study was 114.98 percent which was above the benchmark of 35 percent debt-bank deposit. The result provided evidence that domestic debt could be crowding out private investment if not checked. In other words, the level of domestic debt in Nigeria had a significant negative effect on economic growth. Thus, the study recommended a healthy threshold of debt-bank deposit which must be below 35 percent.

3. Methodology

3.1. Research Design and Sources of data Collection

This study employed causal research design in order to achieve the purpose of the study. According to Kothari (2004) a causal research is used to explore the effect of one variable on another and this is consistent with this study which seeks to establish the effect of domestic debt on economic growth (using private sector credit as proxy). Here, the research adopted the econometric analysis techniques of ordinary least squares (OLS) multiple regression technique. The study made use of secondary form of data spanning from 1988 to 2018. All the data employed in this study were obtained from the Central Bank of Nigeria Statistical Bulletin, 2018 edition, Debt Management Office (DMO) Nigeria and The World Bank. Due to the difference in the values, all the data were expressed in logarithm form for uniformity.

3.2 Model Specification

The functional and econometric relationship between the dependent variable and the independent variables are seen in the equation below:

$$PSC = f(DDT, INT, INF) \quad (1)$$

$$LOGPSC=\beta_0+\beta_1 LOGDDT+\beta_2 LOGINT+\beta_3 LOGINF+\mu \quad (2)$$

Where:

PSC = Public Sector Credit; DDT = Domestic Debt; INF = Inflation Rate;

β_0 = Constant;

β_1-β_3 = Regression coefficients; μ= Error term.

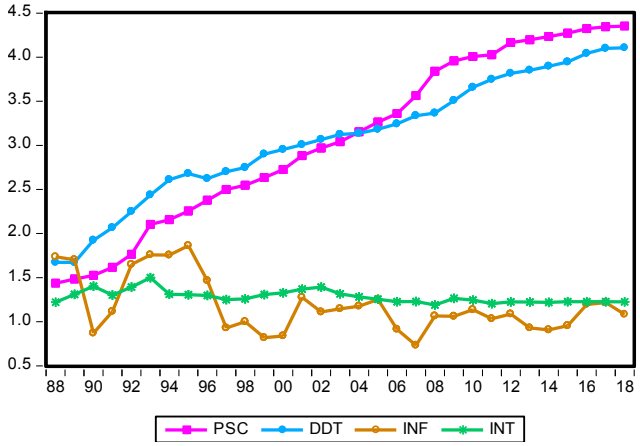
On the a priori, we expect; $\beta_1 > 0$, $\beta_2 > 0$, $\beta_3 > 0$.

4. Analysis of Data and Interpretation

4.1 Trend analysis

TREND OF DATA FOR MODEL 2 FROM 1988 TO 2018

LOG VALUES



YEAR

Figure 2. Sources of Data: Central Bank of Nigeria and Debt Management Office

Figure 3 above, depicts the trend of private sector credit (PSC), domestic debt stock and other predictor variables. It could also be seen clearly that the DDT depressed PSC from 1988 to 2004, but PSC gained strength from 2005 and then started increasing significantly from 2006 to 2018. This shows that if domestic borrowing is done with caution it will boost private sector investment instead of crowding it out. Usually government public investment using the domestic debt supplements private sector investment. The growth of the PSC from 2005 to 2018 is an evidence that private sector investment in the country is no longer being suppressed by the government domestic sourcing of fund.

4.2. Regression Analysis

Dependent variable – PSC. Independent variables – DDT, INT & INF

Table 1. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.989	.979	.977	.149621475	.938

a. Predictors: (Constant), LOGINF, LOGINT, LOGDDT
b. Dependent Variable: LOGPSC

Source: Researcher's computation, 2019

From table 2 above, the correlation (R) value is 98.9% representing a very high association between PSC and the predictors (DDT, INT and INF). The result implies that private sector credit has a robust relationship with domestic borrowing in Nigeria. The conceptual clarifications applied in this study revealed that domestic debt in Nigeria is dominated by saleable securities which help to reinforce the financial markets and also improve the economy through private sector investment. Thus the existence of a strong correlation shown in the result has also established that domestic borrowing through marketable securities aids economic expansion via private sector operations. The R Square value of 97.9% is also very significant. This result implies that domestic borrowing and other predictors explain about 97.9% of the changes in PSC with the exception of 2.1% accountable by other factors which were not included in the model. The Durbin-Watson is within the limit that does not give cause for concern.

Table 2. Anova

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	28.310	3	9.437	421.539	.000
	Residual	.604	27	.022		
	Total	28.915	30			
a. Dependent Variable: LOGPSC						
b. Predictors: (Constant), LOGINF, LOGINT, LOGDDT						

Source: Researcher's computation, 2019

The study has provided an empirical evidence in table 3 above that the predictors (DDT, INT and INF) collectively influence the PSC statistically and significantly. This is evidenced by the F- Statistic result which is 421.54 with the p-value of 0.000 < 0.05, thereby indicating that the model is very fitting for the study and that the independent variables jointly affect the dependent variable positively.

Table 3. Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.994	.695		1.430	.164		
	LOGDDT	1.274	.050	.920	25.267	.000	.585	1.711
	LOGINT	-1.390	.469	-.101	-2.963	.006	.665	1.504
	LOGINF	-.054	.101	-.017	-.540	.594	.737	1.357
a. Dependent Variable: LOGPSC								

Source: Researcher's computation, 2019

The study tested for multicollinearity to establish its non-existence among the independent variables. Multicollinearity exists in a situation where two or more related explanatory variables are used to assess the same element (Gujarati & Porter, 2009). The rule is that the Vector Inflation Factor (VIF) should be below the value of 10 to establish the absence of collinearity among variables, but in a situation where a variables has a VIF value that is above 10, it shows the presence of multicollinearity (Gujarati & Porter, 2009), then the variables will be checked again which will requires removal of some of the variables having the VIF above the benchmark. In this study, the VIF of all the predictor variables are far below 10, thus there is absence of multicollinearity.

The impact analysis is done with the t-statistic to establish the effect of domestic debt and other influential variables on the PSC. DDT t-statistic is 25.267 with the p-value of 0.000 < 0.05 level of significance. This result shows that domestic debt has a robust significant positive impact on the private sector credit of Nigeria. The result confirms the findings of numerous scholars such as (Ahmad et al., 2012; Aminu et al., 2013; Putunoi & Mutuku, 2013; Igbodika et al., 2014; Babu et al., 2015; Bakare et al., 2016; Okwu et al., 2016; Saifuddin, 2016) who also empirically established that domestic debt positively affects economic growth and does not crowd out private investment. However, the result of this study is in discrepancy with the findings of (EL-Mandy & Torayeh, 2009; Onyeiwu, 2012; Njoroge, 2013; Mbate, 2014; Giovanna et al., 2014; Anning et al., 2016; Srinivasa & Lakshmi, 2016; Ayuba & Khan, 2019) whose works found that domestic borrowing causes economic depression and crowds out private sector investment. The t-statistic of INT is -2.963 with the p-value of 0.006 < 0.05 significance level. The implication is that interest rate used by the banks in Nigeria affects private sector investment negatively and significantly. What it means is that private sectors find it difficult to access bank credits and if obtained the interest rate is too high for them to bear. However,

inflation rate (t-statistic -0.540; p-value 0.594 > 0.05) is not significant to explain the growth in the private sector credit in this study.

5. Summary of the Study

The study evaluates the influence of domestic borrowing on private sector credit in Nigeria. The investigation is motivated by the fact that government domestic borrowing is believed to be depressing the economy and crowding out private sector investment. In a nutshell, the study finds that domestic borrowing positively and significantly affects the PSC. This result demonstrates that the domestic borrowing has positive effects on the PSC in Nigeria. The study also finds that interest rate exerts significant negative influence on PSC while inflation rate has insignificant negative impact on PSC. The statistical evidence shows that domestic debt in Nigeria is not crowding out private sector investment as estimated.

Therefore, the study is suggesting that the interest rate should be minimized by the relevant authority in order to encourage more access to private sector credits while ensuring that inflation rate is stabilized to encourage investors because inflation has the tendency to reduce investment by shifting resources to household consumption. The study also recommends that local sourcing of fund by the government should be within the limit that will continue to boost private sector operations. In addition, the borrowed funds should be applied to public expenditures that will equally encourage private sector investments.

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The Implication of Capital Market Development on Manufacturing Sector in Nigeria Within the Framework of Ardl – Bound Testing Approach

Adekunle Oludayo Elijah[1]

Abstract: In order to enhance manufacturing sector productivity, the sector must have access to long term funds in the economy. Previous studies that examine the effect of capital market on manufacturing sector did not capture the short run and long run effect of capital market on manufacturing using dynamic technique of Autoregressive Distributed Lag technique. Premised on this, this study explored the short run and long run effect of capital market on manufacturing output in Nigeria using Bound Test and Autoregressive Distributed Lag technique from 1985 to 2017 base on secondary data obtained Central Bank of Nigeria (CBN) Statistical Bulletin. Evidence of long run relationship was found among manufacturing output, market capitalization, volume of transactions and all share price index as indicated by Bound Test. The result of the ARDL revealed that market capitalization had significant and positive effect on manufacturing output both in the long run and short run. Also, volume of transactions had positive effect on manufacturing sector output in the short run but negative in the long run while all share price index had negative and insignificant effect on manufacturing output both in the short run and long run. The result of the granger causality test indicated that both market capitalization and all shared price index did not granger cause manufacturing sector output while volume of transaction granger cause manufacturing sector output. The implication of this study is that that, capital promote manufacturing sector productivity in the short and not in the long run in Nigeria. The study contributed to previous knowledge by investigating the dynamic relationship between capital market and manufacturing sector using a more robust technique of Autoregressive Distributed Lag technique developed by Pesaran and Shin (1999).

Key words: Capital Market; Manufacturing Sector; ARDL

JEL Classifications: G23, L6, L60

1. Introduction

A well develop capital market plays significant role in the movement of idle funds from economic units with excess financial resources to the economic units with investment opportunities. Capital market ensures adequate circulation of financial

[1] Department of Banking and Finance, Adekunle Ajasin University Akungba-Akoko, Nigeria, Address: Ondo State, Akungba, Nigeria, Tel.: 08100241231, Corresponding author: adekunleoludayo864@yahoo.com.

resources and effective and efficient usage of the resources for productive and investment activities through the creation of medium and long term financial instruments. Capital market which is a subset of the financial market is a market where medium and long term funds can be obtained by real sector through the issue of long term financial instruments. It provides a mechanism for the linkage of different sectors of the economy together in order to ensure the effective and efficient allocation and usage of idle financial resource for economic prosperity and growth (Kwode, 2015).

Capital market plays a highly germane role in the growth and development process of an economy. The market provides a means for obtaining long term funds at low cost to finance long term capital project by industrial sector. The market also enables government to have access to long tern financial resources in order to provide infrastructural facilities which are necessary tools for growth and development (Faloye & Adekunle, 2016). Nwaolisa, Kasie and Francis (2013) assert that capital market plays vital role in the economy through the channeling of financial resources and creating connection between the deficit and surplus sector by providing modern financial assets and structures for the mobilization and distribution of savings among competitive uses which are critical for both foreign and local investment growth.

Akinmulegun and Oluwole (2014) opine that manufacturing sector is one of the major sectors in an economy. Manufacturing sector comprises of firms that involves in the transformation of raw materials into finished or industrial goods. The sector engages in the employment of different factors of production such as land, labour, capital and technologies in the production of consumable or industrial products. Manufacturing sector contributes significantly to an economy in terms of export, employment creation, generation of foreign earnings and acceleration of gross domestic product. Commenting on the role of manufacturing sector in the economy, Omolara and John (2016) opine that the sector accounted for employment of larger percentage of the workforce in the economy in Nigeria. Manufacturing sector has been playing leading role in most developed countries like Germany, United State, Japan and China among others given them hedge in terms of growth, trade capacity and foreign earnings accumulation.

Manufacturing sector being a long term investment sector requires long term financial resources for its activities, thus comes it linkages with capital market. Hayatudeen and Adamamu (2017) assert that a well develop capital market must be able to meet the long term financial needs of the real and manufacturing sector. In order to ensure the development of the manufacturing sector, Okoye, Nwisienyi and Eze (2013) state that the capital market must provide adequate long term financial resources for financing the development or importation of technological know-how and invention required for manufacturing sector expansion and development.

Regulatory authorities have embark on series of capital market reforms in Nigeria to ensure that capital market plays it role of providing long term finance to manufacturing sector. The Nigerian capital market has been witnessing significant growth and expansion in the recent years with respect to market capitalization. Market capitalization rose from ₦10,275.3 billion in 2011 to ₦14,800.9 billion and N19,077.4 billion in 2012 and 2013 respectively before falling to ₦16,875.1 billion in 2014 (CBN, 2017). However, market capitalization rose to ₦17,003.4 billion in 2015 billion before falling to ₦16,185.7 billion in 2016 due to the recession witnessed in the economy which almost crumble activities in the real and financial sector before rising to ₦21,128.9 billion in 2017 (CBN, 2017). In terms of all share price index, the market rose from ₦20,730.6 billion in 2011 to ₦28,078.8 billion and ₦41,329.2 billion respectively in 2012 and 2013 (CBN, 2016). However, the all share price index fell to ₦34,657.2, ₦28,642.3 billion and ₦26,874.6 billion in 2014, 2015 and 2016 before rising to N38,243.2 billion in 2017 (CBN, 2017).

According to Central Bank of Nigeria Statistical Bulletin (2017), the contribution of manufacturing sector output fell from 12.7% in 2009 to 6.7% in 2010 before rising to 7.2% in 2011, 7.8% in 2011, 9% in 2013 and 9.8% in 2014. However, the contribution of the sector to gross domestic product fell to 9.5% and 8.8% in 2015 and 2016. Though, the sector's contribution to gross domestic product is 8.8% in 2017 this is not encouraging when compared with 2005 and 2006 when growth rate was 12.2% and 11.2% respectively (CBN, 2017). From the review of statistics, it is obvious that manufacturing sector's contribution has not improved, hence, there is need to identify major driver of manufacturing sector's productivity in Nigeria.

One of the major factors impeding the manufacturing sector is inadequate financial resources. Hayatudeen and Adamu (2017) state that manufacturing sector depends mainly on short-term financing from commercial banks and money market which is inadequate for financing the long term capital investment of manufacturing firms. Ibi, Joshua, Eja and Olatunbosun (2015) opine that in Nigeria, manufacturing campiness have continued to face challenges such as capacity underutilization, dilapidated infrastructures, technological shortage, escalating production cost, policy non-implementation, general macroeconomic instability and lack of finance to maximize production capacity. However, given the capital shortage being experienced by manufacturing companies especially from commercial banks, there is need for the sector to explore the funding opportunities presented by the capital market.

The choice of Nigeria lies in the fact that the economy has been experiencing diverse challenges in the recent time despite the change in government and several policies initiated to enhance sectoral performance and economic growth. It is believed that the manufacturing sector can play central role in the development of the economy if adequately financed. The sector can contributes to employment generation, foreign

exchange earnings, export promotion and gross domestic product. This study thus examined the effect of capital market development on manufacturing sector in Nigeria. The remaining part of this paper is structured as follow. Part two presented the review of literature in the study area. Part three focused on methodology. Part four present and interpret results while part five concluded the study.

2. Literature Review

The role of capital market on the economy has been a subject of discussions among scholars. Capital market which is one of the major sectors in the financial system plays import role in mobilizing and re-allocating funds in large volume to the real sector. Schumpeter (1932) emphasized the role of financial market in ensuring availability of financial resources needed for real sector activities which is germane for growth and development. Thus, under a regulatory framework, the capital market promotes investment in financial instruments which are used to raise funds by real sector for long term production activates. Bencivenga and Smith (1991), Levine and Zervos (1996) reported that capital market has long run linkage with the development of the real sector by accumulation and allocating savings for productive and real investment which stimulate overall growth in the economy. Thus, the linkage between capital market and manufacturing sector is adequately established in financial development theories and as a result of this, empirical studies have erupted on the relationship between capital market and manufacturing sector in recent years.

Udoh and Ogbuagu (2012) used total production framework and co-integration technique to examine the effect of financial sector development on industrial sector in Nigeria and it was found that both the long run and short run dynamic coefficients of financial sector development variables had negative and significant impact on industrial production. Dalvi and Baghi (2014) investigated the relationship between firms' performance and liquidity of shares using data from 154 companies listed in Tehran Stock Exchange It was revealed that there is a strong and positive correlation between the liquidity and firms performance. Dragota and Oprea (2014) indicated that the there is low level of efficiency in the market in Romania by investigating Romanian stock market's informational efficiency. Also, Chipaumire and Ngirande (2014) examined the impact of stock market on economic growth in South Africa and the result of the regression analysis indicated that stock market liquidity had positive impact on growth in South Africa.

Osamwanyi and Kasimu (2013) assessed the effect of stock market variables such as stock market capitalization, rate of stock turnover ratio, value of traded stock, number of listed securities and stock market index on real gross product in Sub-Saharan African countries using Granger causality test. It was found that there is no

causal relationship between stock market development and economic growth. Aye (2013) investigated the causality between financial deepening, economic growth and poverty in Nigeria from 1960 to 2001. The study adopted Vector Autocorrelation and Vector error correlation model and it was showed that is no evidence of the long run relationship between finance and economic growth. In the same year, Adefeso, Egbetunde and Alley (2013) investigated the long-run and causal link between the stock market and economic growth in Nigeria using data covering the period of 1980 to 2010 which was analyzed using error correction model (VECM) and it was indicated that stock market development and economic development have long run relationship in Nigeria.

By employing unit root test, co-integration test, granger causality test and the error correction mechanism (ECM), Ibi *et al.,* (2015) looked at the relationship between capital market and industrial sector development in Nigeria period from 1980 to 2012. The result of the analysis showed that there exist long run equilibrium relationships among the variables. Kwode (2015) examined the role of the capital market in financing the manufacturing sector in Nigeria from 1970 to 2012 through the adoption of ordinary least square method, co-integration test and error correction method and it was inundated that there is long relationship between capital market and the development of the manufacturing firms in Nigeria while capital market had insignificant impact on the manufacturing sector. Nwolisa and Chijindu (2016) assessed the casual relationship between index of industrial production and Nigeria stock market liquidity from 1981 to 2015. The result of the OLS regression reported that stock market liquidity has not positively influenced index of industrial production. Hayatudeen and Adamu (2017) assessed the impact of stock exchange on the manufacturing sector in Nigeria from 1980 to 2015 by employing Augmented Dickey Fuller (ADF) and Kwiatkowski-Philips-Schmidt-shin (KPSS) unit root test, co-integration test and error correction model (ECM). The study revealed that there is a long term relationship between stock exchange and the development of the manufacturing sector in Nigeria, but the growth in stock exchange activities did not impact significantly on the manufacturing sector during the period under review.

Studies in Nigeria and other countries have largely focused on the relationship between capital market and economic growth in Nigeria. Very few studies focused on the relationship between capital market and manufacturing sector in Nigeria (Kwode 2015; Hayatudeen & Adamu, 2017; Ibi *et al.,* 2015; Nwaolisa & Chijindu, 2016; Ariwa, Ani, Onyele, Okeleme & Okwuchkuw, 2017). There is need to conduct more study given the critical role of manufacturing sector in the economy and the significant challenges being faced by the manufacturing sector. Furthermore, few studies documented the short and long run effect of capital market on manufacturing sector productivity within the framework of Autoregressive Distributed Lag in Nigeria. Assessing the short run and long run implication of capital market on manufacturing sector will enable policy makers to know the most portent policy

framework to adopt in stimulating the sector's performance by effectively positioning the capital market in economy.

3. Methodology

This study employed time series data which spanned through the period of 1985 to 2017. Data were obtained mainly from secondary source particularly from Central Bank of Nigeria (CBN) Statistical Bulletins (2017) and Nigerian Stock Exchange (NSE). The study is based on non-experimental research design to examine the effect of market capitalization, volume of transaction and all share price index on manufacturing sector output in Nigeria.

3.1 Model Specification

This study is anchored upon Irving Fisher's theory of capital and investment and followed the model of Ibi *et al.,* (2015) with little modification. The empirical model for this study is given as:

MOU = *f*(MKAP, VLT, ASPI)

This is econometrically given as:

$$MOU = \Theta_0 + \Theta_1 MKAP_t + \Theta_2 VLT_t + \Theta_3 ASPI_t + \varepsilon_t$$

Where:

MOU = Manufacturing Output, MKAP = Market Capitalization. VLT = Volume of Transaction, ASPI = All Share Price Index. Θ_0 = Constant Term, $\Theta_1 - \Theta_3$ = Parameters, ε = Error Term

3.2. Analytical Framework

The techniques employed in this study include Augmented Dickey Fuller (ADF), Bound Test and Autoregressive Distributed Lag. Before evaluation, the stationary properties of the data employed were investigated because non-stationary data may lead to spurious result. Thus, the study used Augmented Dickey-Fuller (ADF) and Philip-Perron unit root test for unit root testing.

The study employed Autoregressive Distributed Lag technique to examine the short run and long run effect of capitalization, volume of transaction and all share price index on manufacturing sector output While Bound Test technique of the ARDL formwork is adopted to establish the long run co-integration among the variables. The technique is preferred to other co-integration techniques because it suitable for small sample data and also integrates sufficient number lags to capture the data thereby solving the problem of endogeneity and autocorrelation.

The Bound Testing approach to co-integration is given as:

$$\Delta MOU_t = \alpha_{01} + \delta_1 MOU_{t=1} + \delta_2 MKAP_{t-1} + \delta_3 VLT_{t-1} + \delta_4 ASPI_{t-1} + \sum_{i=1}^{q} \beta 1 MOU_{t-1} + \sum_{i=1}^{q} \beta 2 MKAP_{t-1} + \sum_{i=1}^{q} \beta 3 VLT_{t-1} + \sum_{i=1}^{q} \beta 4 ASPI_{t-1} + \varepsilon_{1t}$$

The Bound Test is subject to the testing the Null hypothesis of no co-integration to the Alternate hypothesis of the existence of co-integration among the variables. Thus, if the estimated F bound test is greater than the critical value at 5%, it will be concluded that there is long run relationship among the variables and vice versa.

The generalized *ARDL* model is given below according to Pesaran and Shin (2001) is given as:

$$Y_t = \alpha + \sum_{i=1}^{p} \delta t \, Y_{t-i} + \sum_{i=1}^{q} \beta' X_{t-0} + \varepsilon_t$$

Where Y_t is the endogenous variable, X_t represents the explanatory variables which can either be combination of I(0) and I(1) or purely I(1) according Pesearan and Shin (2001) . α is the constant, δ and β are parameters to be estimated; *p* and *q* are optimal lag orders. Thus, the short run and long run coefficient of the effect of capital market on manufacturing sector is depicted in equations below:

$$MOU_t = \alpha_{01} + \delta_1 MKAP + \delta_2 VLT + \delta_3 ASPI + \varepsilon_t$$

$$MOU_t = \alpha_0 + \sum^{p}_{i=1} \lambda_1 \Delta MOU_{t-1} + \sum^{p}_{i=1} \lambda_2 \Delta MKAP_{t-1} + \sum^{p}_{i=1} \lambda_3 \Delta VLT_{t-1} + \sum^{p}_{i=1} \lambda_4 \Delta ASPI_{t-1} + \phi ECT_{t-1} + \mu_t$$

4. Result and Discussions

Table 1. Pearson Correlation Result

	MOU	MKAP	VLT	ASPI
MOU	1.000000			
MKAP	0.352674	1.000000		
VLT	0.099924	0.472002	1.000000	
ASPI	0.156513	0.886056	0.378658	1.000000

Source: Researcher's Computation, 2019

The result of the correlation analysis among the variables are presented in table 1 and it indicates that the explanatory variables namely market capitalization, volume of transactions and all share price index are not perfectly correlated with manufacturing output with their correlation values being less than 70%. Furthermore, the result indicates that the explanatory variables namely market capitalization, volume of transactions and all share price index are positively and

weakly correlated with manufacturing output which implies increase in market capitalization, volume of transactions and all share price index will lead to increase in manufacturing output.

Table 2. Summary of the Result of Unit Root Tests

ADF			**PP**		
Variables	**T-stat**	**P-value**	**T-stat**	**P-value**	**Order of Int.**
MOU	-4.113108	0.0149	-3.537096	0.0135	**1(I)**
MKAP	-5.412059	0.0001	-5.388974	0.0001	**1(I)**
VLT	-7.911257	0.0000	-12.70844	0.0000	**1(I)**
ASPI	-5.533132	0.0005	-7.708500	0.0000	**1(1)**

Sources: Researcher's Computation, 2019

The stationarity and order of the integration of the time series data employed in the study are checked by applying both ADF and PP techniques. The results of the two tests are reported in table 2. The results show that that manufacturing output, market capitalization, volume of transactions and all share price index are not stationary at first difference. Approximately, all two tests indicate the same results, which confirm the robustness of the variables. This implies that the time series are integrated of the same order, 1(I) which is a pre-condition for the adoption of ARDL technique according to Pesaran and Shin (1999).

Table 3. Bound Co-integration Test Result

Test Statistic	**Value**	**K**
F-statistic	**9.879324**	**3**
Critical Value Bounds		
Significance	**I0 Bound**	**I1 Bound**
10%	3.47	4.45
5%	4.01	5.07
2.5%	4.52	5.62
1%	5.17	6.36

Sources: Researcher's Computation, 2019

(Akaike info Criterion Indicated Lag 2)

In order to ascertain the long run relationship among the variables, the study employed Bound Co-integration technique as presented in table 3. The result indicates that there is long run relationship among the variables with F-statistics given as 9.879324 which is greater than both the lower bound and upper bound of 4.01 and 5.07 values of the Critical Value at 5% significance level. In this regard, the null hypothesis of no long run relationship among that manufacturing output, market capitalization, volume of transactions and all share price index is rejected.

Autoregressive Distributed Lag

Table 4. Short Run Co-integrating Form

Selected Model: ARDL(1, 2, 2, 0)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
D(MKAP)	0.199045	0.026772	7.434723	0.0000
D(MKAP(-1))	0.108615	0.041273	2.631618	0.0156
D(VLT)	0.000534	0.000204	2.613371	0.0162
D(VLT(-1))	0.000247	0.000149	1.653737	0.1131
D(ASPI)	-0.048180	0.007758	-6.210284	0.0000
CointEq(-1)	-0.592092	0.081103	-3.135491	0.0090

Sources: Researcher's Computation, 2019

The short run co-integrating form of the Autoregressive Distributed Lag is presented in table 4. The result reveals that market capitalization has positive and significant effect on manufacturing output in Nigeria. Also, the first period lag of market capitalization produced positive and significant effect on manufacturing output in the short run. This implies that one unit increase in market capitalization will lead to increase in manufacturing output in Nigeria.

The result of the short run relationship shows that both at current period and first period lag, volume of transactions has positive and significant effect on manufacturing output but significant at first period lag. The implication of this is that a unit increase in volume of transactions both at current period and first period lag will lead to increase in manufacturing output in Nigeria.

The result further shows that all share price index has negative and significant effect on manufacturing output in Nigeria which implies that a unit increase in all share price index will lead to fall in manufacturing output in Nigeria in the short run. Finally, the result indicates that the co-integrating equation has the expected sign with a coefficient of -0.592092 and probability of 0.0090 which is significant at 5%. This implies that any disequilibrium in the model will be adjusted at a speed of 59% annually.

Table 5. Long Run Coefficient

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
MKAP	1.209664	0.471059	2.567968	0.0179
VLT	-0.016262	0.010647	-1.527300	0.1416
ASPI	-0.523174	0.434213	-1.204879	0.2417
C	9.768616	2.545017	1.057140	0.3025

Sources: Researcher's Computation, 2019

The long run coefficient of the Autoregressive Distributed Lag is depicted in table 5. The result shows that market capitalization stimulate manufacturing output with a coefficient of 1.209664 which is significant at 5% given a p-value of 0.0179 which implies that a unit increase in market capitalization will lead to 1.209664 increase in manufacturing output which is in line with the a priori expectation.

Contrarily, the result of the long run coefficient indicates that volume of transactions negatively influenced manufacturing output in Nigeria with a coefficient of -0.016262 and probability value of -1.527300 which is greater than 5% significance level which suggested that manufacturing output will decrease by 0.523174 as volume of transactions increase by a unit.

Finally, all share price index has negative and insignificant relationship with manufacturing output with a coefficient of -0.523174 and its corresponding probability value of 0.2417 indicating that a unit increase in all share price index will lead to fall in manufacturing output by 0.523174.

Table 6. Pairwise Causality Test Result

Null Hypothesis:	Obs	F-Stat.	Prob.	Result
MKAP does not Granger Cause MOU		2.68614	0.0870	No
MOU does not Granger Cause MKAP	31	2.25741	0.1247	Causality
VLT does not Granger Cause MOU		4.45328	0.0217	One Way
MOU does not Granger Cause VLT	31	2.59880	0.0936	Causality
ASPI does not Granger Cause MOU		0.85314	0.4377	No
MOU does not Granger Cause ASPI	31	0.92642	0.4086	Causality

Source: Researcher's Computation, 2019

The result of the Pairwise Causality test is indicated in table 7. The result shows that there is independent relationship between market capitalization and manufacturing output and hence it is concluded that market capitalization does not granger manufacturing output. However, unidirectional relationship is established between volume of transactions and manufacturing output with causality running from volume of transactions to manufacturing output which implies that volume of transactions causes manufacturing output. Finally, independent relationship is found between all share price index and manufacturing output which implies that all share price index does not granger caused manufacturing output.

5. Conclusion

This study examined the effect of capital market on manufacturing sector output in Nigeria. The study adopted modern econometric techniques such as Phillip-Perron and Augmented Dickey-Fuller unit root test to determined the order of integration of the variables, Bound Co-integration test for ascertaining long run relationship among the variables, ARDL to estimate the short and long run effect of the independent variables on the dependent variables and Pairwise granger causality test for establishing the direction of causality among the variables.

The study concluded that, capital market stimulate manufacturing sector productivity in the short run rather than in the long run. It was recommended that policy should be formulated to increase entering into the market by small, medium and large manufacturing companies to increase the rate of market capitalization in the market which attracts investable funds from idle sector of the economy. Also, there is need for the development and introduction of new and advanced financial instruments like fixed income securities, hedging instrument, such as futures, forward and other derivatives, securities lending and collectives' investment schemes to increase the inflow of funds into the market and expand the volume of transactions in contributing positively to the manufacturing sector output.

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Households Characteristics that Determine Perceptions on Girl Education in Malawi

Hannah Mayamiko Dunga[1], Steven Henry Dunga[2]

Abstract: The link between illiteracy and poverty and its counterpart link between education and earnings has well-established foundations in both theories of human capital and poverty. There is also a consensus in terms of the disparity in educational achievement that exists between males and females, emanating from education biases between boys and girls. Boys are considered to be more important in many sections of societies in Africa. In order to deal with the unequal distribution in incomes between males and females, females have to be on a par with males in terms of the prerequisite requirements of the consequential occupations that are linked with education levels. Equality can therefore only be achieved if the derived demand of education is not skewed towards boys but remains equally available to both sexes. The fact that the preferences between boys and girls exist calls for an investigation into why anyone, especially a parent of a girl and a boy, would ever prefer one child over another based on their gender. There are a number of reasons that may influence the perception of a parent or a head of household to be biased toward a particular gender. The study uses data collected from the South Eastern Region of Malawi, among rural and urban heads of households on the determinants of the perception of girl education. A number of questions were asked regarding the head of household's perceptions toward girls' education. Cross-tabulations were conducted with chi-square tests on the household characteristics in order to ascertain the characteristics that are associated with people's perception of girl education. The results indicated a difference between male and female-headed households and between rural and urban areas, with the urban households showing no preference between a boy child and a girl child. Male, rural heads of households were found to be against girl education.

Keywords: Perceptions; girl education; determinants; head of household; Likert scale

JEl Classification: I24

1. Introduction

The fight against poverty needs to take recognition of the complications associated with poverty itself. Poverty can only be dealt with if some of the biases and injustices that have existed in many societies are dealt with. The chauvinistic tendencies in

[1] Vaal University of Technology, Vanderbijlpark Campus, South Africa, Address: Andries Potgieter Blvd, Vanderbijlpark, 1900, South Africa, Corresponding author: hannahd@vut.ac.za.
[2] North West University, Vaal Triangle Campus,Vanderbijlpark, Address: 1174 Hendrick Van Eck Boulevard, Vanderbijlpark, 1900, South Africa, E-mail: steve.dunga@nwu.ac.za.

most societies are rooted in cultures across the globe and tend to have regressive policies or practices that perpetuate poverty among the suppressed groups in the society. It is an accepted fact that some sections of society and categories of people are more exposed to the risks of poverty than others. This exposure is a result of disparities in access to productive means in society. Unequal access to education, land, exposure, amongst other avenues, tend to limit the ability of those rejected to rescue themselves from the fangs of poverty. The fact that women and children are more vulnerable to poverty cannot be disputed. The most recent statistics of global poverty by the World Bank (2016) indicate that of the 767 million who are still living in poverty, based on the $1.90 per day measure, more than half are 14 years and younger (World Bank, 2016). The incidences of poverty, especially for women and girls, need a concerted effort with all partners to acknowledge that an equal focus will uplift all categories and sections of society by the same margin, thereby taking with them age-old disparities. One way of making sure that these different sections of society are on a par before the final goal of no poverty is achieved is by dealing with the sources of the inequality and the roots that propagate the existence of such differences in the first place.

In developing countries, especially rural areas of sub-Saharan Africa, a male child has a better advantage and is preferred to a female child. Hence, boys are given a priority in education and any aspect that assists in the development of skills for a better life in the future. Studies in Malawi on education, especially for the lower grades, have shown that there are also school and social obstacles for girls (Bisika, Ntata, & Konyani, 2009; Chimombo, 2009). The idea that girls are disadvantaged may seem absurd to a person sitting in a developed society where such prejudices are non-existent or are, at least, not common. However, the fact that the culture exists cannot be overemphasised and the evidence in the literature is ubiquitous (Chimombo et al., 2000; Davison & Kanyuka, 1990; Smits & Hoşgör, 2006). The aim of this paper is, therefore, to investigate and understand, from the head of household's point of view, the perceptions of educating a girl child, whether or not they perceive a girl child's education as of equal importance as that of boys. If they do not feel there is a difference, then what determines those perceptions? Equally, the study investigated the determinants of the perceptions of those that hold the view that girl education is not important and, hence, treat the education of a girl child as less important. The remainder of the paper is organised as follows: section two presents the literature review, section three is the methodology and the data collection, with the results and discussion presented in section four, the conclusion in section five.

2. Literature Review on the Perceptions of Girl Education

The link between illiteracy and poverty and its counterpart link of education and earnings has well-established foundations in both theories of human capital and those of poverty (Blaug, 1976; Butcher & Anne, 1994; World Bank, 2016). There is also a consensus in terms of the disparity in educational achievement that exists between males and females especially in developing countries, emanating from education biases between boys and girls (Tsui, 2016; Smits & Hoşgör, 2006; Chimombo et al. 2000). Boys are considered to be more important in many sections of societies in Africa. In order to deal with the unequal distribution in incomes between males and females, females have to be on a par with males in terms of the prerequisite skills and requirements of the consequential occupations that are consummate with the respective education levels. The equality can therefore only be achieved if the derived demand of education is not skewed towards boys but remains equally available to both sexes. The fact that the preferences between boys and girls exist calls for an investigation into why anyone, especially a parent of a girl and a boy, would ever prefer one child over another based on their gender. There are a number of reasons that may influence the perception of a parent or a head of household to have a bias between boys and girls. Most of the biases are rooted in cultural practices that have always considered the girl child as secondary to the boy child (Arnold & Huo, 2017). Studies that also show inconclusive results showing girls being preferred to boys also exist in the literature (Andersson, Hank, & Vikat, 2006; Hank, 2007; Fuse, 2010). The focus of this paper, however, does not have preference in general of a boy or a girl, but towards who should get educated and hence receive the support first in cases of inadequate resources. It is common in the rural areas of Malawi that households give the boy child preference in terms of educational support (Bisika et al., 2009).

2.1. Parental Perceptions Towards Girls' Education

Parental attitude and perception towards girl education have been seen to be another factor limiting girl education. Chimombo et al. (2000:16) argue that the responsibility of sending children to school lies in the hands of the parents. Some may argue that such a mandate is surely the responsibility of the government, but the government can only work up to a certain level (for example, the government can build schools and make education affordable). The onus then rests on parents as to whether they send their children to school or not. When it comes to gender and education, matters of who is best to acquire the highest level of education is also the responsibility of the parents. Therefore, the perceptions of the parents on education influences the extent to which the parent will get involved, especially for the girl child (Raina, 2012). These perceptions also appear in children as they observe their parents' behaviour. This is observed even in developed countries (Miller & Budd, 1999).

There are many things that influence the perception of girls' education. Among the main ones are cultural practices and the religion of the parents. Sometimes it's the extent of poverty which requires that children be involved in providing for the household, and girls fall victim to such cases. Jain (2008:17) points out that women have for centuries been considered as mothers and wives and not necessarily breadwinners and, hence, girls need not concentrate much in education as that has little to do with their motherly expectations. These perceptions have been changing over time, although they still persist in some societies, especially in the developing world. These biases have also been reported in the education system where female students are either given lower treatment or face disapproval (Lovell, 1988; Raina, 2012). In other cases, the education of the child has depended on the education of the parents. The perception that the education of the child is not important would usually be associated with uneducated mothers and fathers (Chimombo, 2009:19). That is the reason why, in areas where levels of illiteracy are high, there is a high chance of girl dropouts; and the way to improve the situation, Chimombo (2009) argues, is not by building more schools, but by changing these perceptions.

MANA (2015:1), in their report on Malawi, reported that girls were still dropping out of school even in areas where they have bursary projects, and where they have projects of providing food and clothing to the girl child. It was also reported that, even in these areas, the main problem was the perception of parents towards girl education. It was indicated that parents in these areas still felt that girl education was not important. Some parents were even sending their girls for initiations other than going to school.

3. Research Methodology and Data Collection

The paper used primary data that were collected in a survey conducted in 2016 amongst households in Malawi. In total, a sample of 327 households was involved in the data collection. A random sampling technique was used to identify the households and only the head of household or their spouse were involved in the survey upon securing their consent. A number of statements were used in collecting the perceptions of the head of the household regarding girl education. It was important to establish the reasons why some parents considered girl education of less importance and knowing that would go a long way in changing people's behaviour and practices.

The questionnaire included statements to which the head of household was supposed to agree or disagree on a five-point Likert scale. The scale was as follows: strongly disagree as 1, disagree as 2, neither agree nor disagree as 3, agree as 4 and strongly agree as 5. The statements used were the following:

Table 1. Questions Used in the Calculation of the Scale

Question	Statement
1	Would you say that girl education is important?
2	If you had a boy and girl would you prefer the boy getting a better education than the girl?
3	Would you accept your daughter to drop out of school to get married?
4	If your daughter told you she wants to drop out of school to get a job would you allow her?
5	If your daughter fell pregnant would you chase her out to get married to the person who got her pregnant?
6	Do you desire that your daughter attains the highest education?
7	Would you say girls are getting married at a young age in your area?
8	Would you say that girl's education is equally important as boy's education?
9	If a man with a lot of money asked to marry your 15-year-old girl would you allow him?

The heads of households were given these statements to see if they agree or disagree. Further, cross tabulation with a chi-Square test was conducted to assess who among the heads of households agrees with the statements that undermine girl education, thus, considering gender, and also comparing between rural and urban heads of households. The paper also employs correlations and a regression analysis using the Girl Education Perception Index (GEPI), which was calculated based on the statements used in the perceptions.

4. Results and Discussion

The analysis of the paper, although not sophisticated, deals with a very crucial issue in gender dynamics, especially among the low-income households which need understanding before delving deep into what are the intrinsic causes of such perceptions. The results first present the demographics of the sample in terms of gender, marital status, and employment status of the head of households involved in the survey. From Table 2 it is clear that the majority of the heads of household were males, and they were mostly head of the households with a spouse. The male respondents represented 77% of the sample and only 23% as a female-headed household. This is not an indication of fewer women but as a result of the fact that the survey was for the head of households, and in married households, and the husband is taken as the head of household. Table 2 also shows that 76% of the respondents were married, hence a large number of male respondents.

Table 2. Demographics of the Sample

Gender	Males 77% Female	77% 23%
Marital status	Married Single	76% 24%
Employment Status	Employed Informal activity Unemployed	34% 58% 8%
Location	Rural Urban	64% 36%

Table 2 also shows the distribution of employment status, with 58% of the respondents in informal activities and 8% unemployed. With such levels of unemployment and informal activity, the poverty levels would likely be higher.

Table 3 presents the statements which the respondents were supposed to agree or disagree on the questions related to their perceptions towards girl education. The responses have been summarised into two categories, those that agreed or strongly agreed have all been combined into agreeing, and those that disagreed or strongly disagreed have been combined into disagreeing.

Table 3. Statements of Perceptions About Girl Education

Statement	**Agree**	**Disagree**
1) Would you say that girl education is important?	80.5%	19.5%
2) If you had a boy and girl would you prefer the boy getting better education than the girl?	22.4%	77.6%
3) Would you accept your daughter to drop out of school to get married?	22.6%	77.4%
4) If your daughter told you she wants to drop out of school to get a job would you allow her?	19.8%	80.2%
5) If your daughter fell pregnant would you chase her out to get married to the person who got her pregnant?	23%	77%
6) Do you desire that your daughter attains the highest education?	79.2%	20.8%
7) Would you say girls are getting married at a young age in your area?	45.3%	54.7%
8) Would you say that girls' education is equally important as boys' education?	66.4%	33.6%
9) If a man with a lot of money asked to marry your 15- year old girl would you allow him?	28.1%	71.9%

The results in Table 3 show that the majority of the respondents, up to 70% on average, responded in an expected way, like disagreeing with misogynistic statements and agreeing with reasonable statements. However, there is up to 30% on average that are of the view that a girl's education is not as important as that of a boy child. For example, statement 8 that asks if they consider girl education as equally important as boy education, 33.6% of the respondents, responded in the negative. Although the majority responded in the affirmative, 33.6% is such a large number of head of household to consider girl education as not important. These are the people then that accepted that they can let their 15-year-old girl get married to a rich man or can accept their daughter to drop out of school to get married. Table 4 presents the response to statement 1, which asks about the perception of the importance of education. It is analysed by location.

Table 4. The Importance of Girl Education by Location

	Rural	**Urban**	**Total**	**% within rural**	**% within urban**	**%Total**
strongly agree	70	88	158	33.50%	74.60%	48.30%
Agree	49	30	79	23.40%	25.40%	24.20%
neither agree nor disagree	11	0	11	5.30%	0%	3.40%
Disagree	65	0	65	31.10%	0%	19.90%
strongly disagree	14	0	14	6.70%	0%	4.30%
Total	209	118	327	100.00%	100	100.00%

The statement of the importance of girl education analysed by location shows a worrying picture of the perception of the rural people. The results in Table 4 shows that all those in Table 3 that indicated that girl education is not important were actually from the rural areas. Approximately 74% of the total population within the urban strongly agreed with the notion of girl education against only 34%of the population within the rural areas. None from the urban areas disagreed with the notion, but 31% from the rural disagreed and some 6.70% actually strongly disagreed with the fact that girl education is important. We can conclude that not all parents from the rural areas consider girl education as important, hence why most girls from rural areas either repeat classes or even drop out of school. The other reason could probably be because of a lack of parental support.

Table 5 presents the statement of whether the parent would allow their daughter to drop out of school to get a job. The majority of the households disagreed with that idea. There was a small percentage of parents, mostly from the rural areas, that agreed with the statement that they would allow their daughter to drop out of school in order for her to get a job.

Table 5. If Your Daughter Told You She Wants to Drop out of School to get a Job Would You Allow Her

	Rural	Urban	Total	%within rural	% within urban	% total
Strongly agree	8	1	9	3.80%	0.8%	2.80%
Agree	33	5	38	15.80%	4.2%	11.60%
Neither agree nor disagree	3	0	3	1.40%	0%	0.90%
Disagree	73	57	131	34.90%	49.20%	40.10%
Strongly disagree	92	54	146	44.00%	45.80%	44.60%
Total	209	118	327	100.00%	100.00%	100.00%

The people from the rural areas who say girl education is not as important as boy education can further be analysed by gender. Table 6 present a cross-tabulation of the statement by gender. The numbers in Table 6, although small, show that there are more males that disagree with the importance of girl education. It is therefore clear that females realise the importance of girl education. The males that feel girl education is not important are those that still have traditional thinking that girls are not at the same level as males. The chi-square test, however, shows that there is no significant difference between males and females overall.

Table 6. Cross Tabulation with Gender

		Would you say that girl education is important					
		Strongly agree	agree	neither agree nor disagree	disagree	strongly disagree	Total
Male	Count	144	57	8	29	13	251
	% within Gender HH	57.4%	22.7%	3.2%	11.6%	5.2%	100.0%
	Within response	78.3%	72.2%	72.7%	74.4%	92.9%	76.8%
	% of Total	44.0%	17.4%	2.4%	8.9%	4.0%	76.8%
Female	Count	40	22	3	10	1	76
	% within Gender HH	52.6%	28.9%	3.9%	13.2%	1.3%	100.0%
	Within response	21.7%	27.8%	27.3%	25.6%	7.1%	23.2%
	% of Total	12.2%	6.7%	0.9%	3.1%	0.3%	23.2%
	Count	184	79	11	39	14	327
	% within Gender HH	56.3%	24.2%	3.4%	11.9%	4.3%	100.0%
	Within response	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	% of Total	56.3%	24.2%	3.4%	11.9%	4.3%	100.0%
The Chi Square test has a p-Value of 0.488							

The results from all the questions have a similar result of a few groups of people who feel girl education is not as important and these are mostly male heads of household in the rural areas.

To further narrow down the characteristics of the parents that indicated girl education to be of less importance than that of boys, an index on the girl education perceptions, the Girl Education Perceptions Index (GEPI) was calculated. Based on the nine statements, the responses were 1 for strongly disagree and 6 for strongly agree, hence the higher the score, the more likely the head was to agree that girl education is not important; and the lower the score, the more likely the perception on supporting girl education. Results in Table 7 present the descriptive statistics of the GEPI.

Table 7. Descriptive Statistics of GEPI

	N	Minimum	Maximum	Mean	Std. Deviation
Girl education perception index (GEPI)	327	14.00	39.00	28.6024	3.47485

Source: Calculations from the Survey Data

Since the lowest score per question is 1 and a maximum score per question is 5, and there are 9 questions, the minimum score expected would be 9 and the maximum score would be 45. The descriptive statistics in Table 7 show that the minimum was 14 and the maximum was 39. The standard deviation of 3.47 also indicates that there was some variation in the responses across the head of households.

Using this GEPI, further analysis was done to assess the income level of those that thought girl education was not as important as boy education. Using the household total income and the GEPI, a bivariate correlation was conducted and the results reported in Table 8.

Table 8. Correlations of Total Income and GEPI

		Total income	Girl education perception index (GEPI)
Total income	Pearson Correlation	1	-.189**
	Sig. (2-tailed)		.001
	N	326	326
Girl education perception index (GEPI)	Pearson Correlation	-.189**	1
	Sig. (2-tailed)	.001	
	N	326	327
**. Correlation is significant at the 0.01 level (2-tailed).			

The results in Table 8 show that there is a negative correlation between total household income and the GEPI. The correlation is significant at 1% significance level with a p-value of 0.001. Since the higher the score on the GEPI indicates agreeing with the statements that consider girl education as less important, the negative correlation implies that people with higher income hold the opposing view. However, people with lower income are the ones that are likely to consider girl education as less important and hence have their daughters drop out to get married.

Thus, one can conclude that these perceptions are a poverty issue and a cultural issue. A similar correlation was also done on the GEPI and years of schooling of the head of household. The results in Table 9 also confirm the same result.

Table 9. Correlation Between Education and GEPI

		Girl education perception index (GEPI)	Years of schooling of head of household
Girl education perception index	Pearson Correlation	1	-.121*
	Sig. (2-tailed)		.028
	N	327	327
Years of schooling of head of household	Pearson Correlation	-.121*	1
	Sig. (2-tailed)	.028	
	N	327	327
Correlation is significant at the 0.05 level (2-tailed			

The negative correlation coefficient, which is significant at 5% level of significance, implies that the educated head of household perceives girl education to be important, whilst those with lower levels of education perceive girl education of less importance.

Finally, to clearly show the relationship of these household characteristics of the heads of household in relation to the GEPI, an ordinary least squares regression was estimated with GEPI as a dependent variable and household total income, gender of head of household, age and education level as independent variables. The results of the multiple regression are reported in Table 10.

The model ANOVA results had an F-statistic of 4.496 with a p-value of 0.002, which was significant at 1% significance level, indicating that the model as a whole was a significant predictor of perceptions of girl education. The coefficients in Table 10 show that holding all the other factors constant or equal to zero, on average the score on the households would be 38.278 depicted by the constant. However, the most important results are the coefficients on the independent variables. Household total income was transformed to natural log so as to have sensible coefficients since logs would have lower figures than the raw income. The coefficient for log total income was found in the correlation results in Table 8. This means that the higher the income, the lower the score on the GEPI. A percentage change (being logs) in total income will lead to a 0.922 reduction in the GEPI score. The p-value for log total income was 0.000 which is significant at 1% significance level. Years of schooling for the head of household, which represented the level of education was also negative with

a coefficient of -0.6472 and significant at 10 % (p-value 0.06). The other variables were not significant explanatory variables of the variation in the GEPI.

Table 10. Regression Results

Variables	Unstandardised Coefficients		Standardised Coefficients		Sig
	B	Std. Error	B	t	
(Constant)	38.278	2.916		13.128	.000
Gender	.931	.998	.057	.932	.352
Age father	.006	.020	.017	.280	.780
Years of schooling of head of household	-6.472	3.503	-.113	-1.848	.066
Log total income	-.922	.259	-.217	-3.552	.000
a. Dependent Variable: Girl Education perception Index (GEPI)					

The regression results, therefore, show that besides the broader categorisation considered in the cross-tabulation of the chi-square tests, it also found that education level and income level of households have an influence on the perceptions of girl education. Head of household with lower education levels and lower incomes scored higher on the GEPI while those with higher levels of education and higher incomes had a lower score.

6. Conclusion and Recommendations

The paper intended to look at the perceptions of the head of households in terms of what they think about girl education. The premise was on the basis that there still remains tendencies in communities that indicate the lack of support for girl education. Such issues of early marriage among girls, and usually by older men, the high levels of girl drop-out and other ills, continue to be found in the communities. The paper was, therefore, intended to find out what head of households think about girl education, and which categories of heads of household can be identified to be holding such perceptions. The way forward in improving the plight of the girls is by targeting the parents that hold these backward views and hence put in place mitigating processes that can change the situation. The paper makes the following observations: based on the cross-tabulations and the chi-square test, the people in the rural areas are the only ones that feel that girl education is not important. Among those, it is mostly the males. The correlation and the regression analysis revealed that further down in the household, those with lower income and lower education levels were also inclined to considered girl education as a waste of time as opposed to those with higher levels of both income and education. The implication is that

girls that are in households with lower incomes, and with parents that are not educated are at a disadvantage since they will receive less support or even discouragement in their educational pursuits. There is, therefore, a need to establish support for girl education beyond the household. Schools should have a support structure in place for girls that have no support at home. Also, it could be that those parents that do not think girl education to be important do so out of ignorance and lack of information. Hence, there is a need for civic education on the importance of girl education, especially in the rural areas where information is not commonly available.

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Understanding Muslim Woman Travel Behaviour: A Theoretical Perspective

Rafa Haddad[1]

Abstract: There is dearth in research about woman and tourism from an Islamic perspective. Previous research explored Islam and tourism and shed light on different types of tourism such as Islamic and Halal tourism (Kamali 2012; Akyol and Kilinc 2014; Aziz et al., 2016; Harahsheh et al., 2019). Meanwhile, debate about the position of Islam regarding tourism is popular (Jaafari and Scott 2014). Some scholars stated that Islam and tourism are contradictory, and tourism was described as a religious spiritual process only that aims at visiting the holy places in Makkah and Madinah and Al Aqsa Mosque. However, other scholars clarified that Islam is expansive in its meanings and interpretations. Accordingly, these scholars provided a different proof that tourism and Islam are not opposing, on the contrary Islam promoted tourism and travel (Saghayi and Abdar Esfahani 2016). They proofed their position by the saying of God: *"Travel through the land and observe how He began creation. Then Allah will produce the final creation. Indeed Allah, over all things, is competent"* (Holy Qora: Surat Al Ankabut 20). Nevertheless, research regarding Muslim women and tourism in Islam or how these women are perceived and viewed by Islam is almost scarce. Thus, the aim of this research is to clarify how woman and tourism are perceived from an Islamic point of view. The study adopted a conceptual research design to build better understanding of a Muslim woman travel behaviour. The paper answers the question why a Muslim woman cannot perform tourism independently? There is huge chunk of data and debate from different point of views. Accordingly, this paper explores how sociocultural and religious factors may or may not influence Muslim women and decision to travel. Thus, the focus is on religion and particularly Islam and its influence on shaping Muslim woman's ability to travel and visiting tourism destinations. In addition, the paper will contribute potential Halal destinations in organising Halal package tours for Muslim women. Other issues in Islam is woman's work in general and particularly in the tourism sector and how Islam deal with this issue.

Keywords: Religion; Islam; tourism; women travel and employment; Halal tourism

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Introduction

Islam does not give females the permission to travel alone; it stresses that women should be accompanied by a male partner or *Mahram* (a husband or a man who is

[1] PhD**,** Department of Hotel & Tourism Management, Philadelphia University, Amman, Jordan, Address: Located 20-KM out of Amman,Amman Jordan, Tel.: +962 6 4799000, Corresponding author: rafakhaddad@gmail.com.

forbidden to marry her, e.g. father, brother, grandfather, uncle, father in-law, son, grandson, nephew, foster brother (Pohl, 2010; Shakona et al., 2014). Such prohibition is clear in the following *Hadith*[1]. *"The Prophet Mohammad (peace and blessings of Allah be upon him) said: 'No woman should travel except with a mahram, and no man should enter upon her unless a mahram of hers is present"*. Reasons behind this ban will be illustrated comprehensively in this paper and how Islam may influence Muslim woman ability to visit tourism destinations.

Previous research regarding Islam and tourism has been reviewed and expanded on, to clarify and correct the view of tourism from an Islamic perspective (Jafari and Scott, 2014). Meanwhile, the position of Muslim woman and tourism is not a popular research topic, thus the aim of this paper is to illuminate how Islam shaped and influenced the Muslim women ability to travel and perform tourism.

Muslim's life is based on Islamic law, i.e. Sharia, which highlighted and explained every detail and aspect of Muslims' life from birth to death and in simple words from A to Z. Accordingly, Islam elucidated its sight about the topic of tourism. However, the debate between scholars was pro and contra. As stated previously, some moderate Muslim scholars had the proof that Islam did not forbid tourism, additionally it did not limit travel to religious purposes only (Saghayi and Abdar Esfahani, 2016). Whereas, other scholars present a more extremist point, which views that tourism should be devoted for spiritual and religious purposes no more no less. In addition, these scholars added that any type of tourism is completely refused and unaccepted in Islam.

Islam did not really limit the role of women, on the contrary woman in the beginning of Islam played a significant social, economic and political role. For example, Khadijah the wife of prophet Mohamed was business efficacious woman, while Aisha was perceived as a specialist in relating Hadith. In politics women in Islam were also engaged in politics and the proof is that a group from Al- Madinah of sixty-two men and two women was sent to Bani Khazraj to ask their political commitment and fidelity. Such action illustrates how woman's role was significant and essential in Islam. The question that is still need an elaboration, it is what about woman and tourism in Islam? What is the position of Islam towards Muslim women's right to travel and move freely?

[1] Hadith is a narrative record of the sayings or customs of Prophet Muhammad (Armstrong 2000).

Literature Review

Islam and Tourism

Understanding Islam and tourism relationship and their mutual influence is mainly based on understanding the holy Quran and its meaningful interpretation. So, the start will be by exploring two main concepts Islam and tourism.

Islam is a monotheistic peaceful religion (Gillum 2010). Islam in Arabic '*Al Islam'* is described as submitting and surrendering to God almighty. However, it is important to differentiate between Islam and Salam in Arabic. *"Islam"* mean surrender and *"Salaam"* means peace and the two words are totally different. The cornerstone of Islam is the Holy Quran, which include the recitation of God's words through Gabriel to Prophet Mohammad (PUH). Prophet Mohammad is considered as one of the most significant individuals in history (Hart 1989). Prophet Mohammad played a political, social and religious-spiritual role in the history of Islam, that influenced Muslims lifestyle up to date. Based on Quran, Muslim built their life's rules, social relations, political life, financial principles, and permitted and rejected issues on the teachings of Islam (Quran), which is known also as the Islamic Sharia (Adil 2002).

Muslims form nowadays 2.18 billion of the world population and according to the Guardian (2017), the Muslim population will exceed other religions since third of new-born babies between 2010-2015 were Muslims. Such figure rings an alarm to all sectors to look for potential services that will serve this large segment, because Muslims have special requirements and needs that should adhere to Islamic Sharia.

Simply tourism is defined by the United Nations World Tourism Organisation (UNWTO, 1991) as *"the activities of persons traveling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes" (Tourism Satellite 2001). However, this is a general definition and is not specific forms of tourism since there are different types such as inbound, outbound and domestic tourism. Meanwhile, there are many purposes to perform tourism and these can be summarised as, leisure, visiting friends and relatives, adventure, religious, medical, cultural, event, meetings and conferences, eco and nature, sport, social, shopping, space, mediation, beach, special needs, religious and finally Halal tourism, which is an emerging form of tourism (Marvell, 2006; Harahsheh et al., 2019).*

Tourism in Islam is not a new concept, regardless that the definition of tourism was different, but simply tourism is moving from one place to another. However, the main motivations behind tourism in the early era of Islam were trade and religious motives. The two holy cities Mecca and Al Madinah were located on the main trade routes and the journey of Summer and winter were acknowledged and recited in the holy Quran, God said: 'For the covenants (of security and safeguard enjoyed) by the

Quraish, their covenants (covering) journeys by winter and summer, let them adore the Lord of this House, who provides them with food against hunger, and with security against fear (of danger)' (Surat Quraish).

According to Muslim scholars, there are two main views of tourism; extreme and moderate. The first is extreme and illustrates that tourism is forbidden due to different reasons related to culture, ethics and environment (Sanad et al. 2010). Those believe that tourism is meant to perform the rituals of Hajj and Umrah (Islamic Help. 2017) in Saudi Arabic and *is attached to religious and spiritual practices only (Sanad 2008; al-Qurashi, 2017). Nevertheless, eventually in the current time this could be described as religious tourism, which was defined by Vukonic (1996) as different types of spiritual sites such as shrines and pilgrimage locations that are visited by tourists for religious or non-religious reasons. In fact, Muslim who performed or still performing Hajj or Umrah, were mainly motivated by religious motives but as well as they traded and had the intention to purchase different types of products. al-Qurashi (2017) described it as commodification of Hajj. This explanation go hand in hand with hybrid tourism which at conducting two types of tourism in the same time (Religious and business tourism (trade)).*

The other view is moderate and considers that tourism is accepted in Islam (Sanad et al. 2010). They perceived that God created people to adore him and enjoy life while fulfilling their responsibilities. God said: *'Go about on the earth and see how God originated creation' (Surat al-Ankabout: 20). This is a direct invitation from God, He asks people to move and meditate and admire the creation and this involve nature, and everything created by God. Moreover, God said; 'It is He who made the earth tame for you - so walk among its slopes and eat of His provision - and to Him is the resurr*ection."

To conclude, Islam did not forbid tourism, on the contrary it promoted it for different reasons and motivations such as performing Hajj and Umrah, commerce, gain knowledge and admire what God created. Any Muslim a male or a female can perform any type of tourism mentioned in Table 1, in condition that their motivation, aim and behaviour do not contradict with Islamic Sharia and at the end of the day this falls under the concept of Halal tourism. Harahsheh et al. (2019) conducted a research on the implication of marketing Jordan as a Halal tourism destination and examined the motives of Muslim tourists to travel to Halal destinations. They listed that 24 factors that influence Muslim tourists to choose a Halal destination.

Halal tourism is a contemporary concept in tourism that is directed towards Muslim tourists who want to comply with Islamic Sharia and seeking services accordingly (Harahsheh et al., 2019). Battour and Ismail, 2015, p.2) defined Halal tourism as *'any tourism object or action which is permissible according to Islamic teachings to use or engage by Muslims in tourism Industry'* (Battour and Ismail 2015, p. 2). Table 1 below summarises what Muslim scholars' view about tourism typology opposed

to the contemporary conceptualisation. *These can be summarised in Table 1 below as follows according to the new definitions employed in tourism research:*

Table 1. Islamic Conceptualisation vs Contemporary Conceptualisation of Tourism (Developed By The Author)

Islamic conceptualisation	Contemporary conceptualisation
Hajj and Umrah (worship)	*Religious tourism*
Science and knowledge	*Educational tourism*
Admiring God's creation	*Leisure tourism*
Commerce	*Business tourism*
Calling for God's way	*Missionary tourism*
Mindfulness and meditation	*Spiritual tourism*

Source: Developed by the author.

Woman and Islam

Misinterpretation of Islam and its perception and position towards woman is largely debated (Shadid and Van Koningsveld 2002; Khimish 2014). However, before moving on, it is noteworthy highlighting the following statement from the holy Quran: God said *"The believers, men and women, are protecting friends (Awliya) of one another; they join the ma'ruf (that which Allah commands) and forbid people form munkar (that which Allah prohibits); they perform salat, and give the zakat, and obey Allah and His Messenger. Allah will have mercy on them. Surely Allah is All mighty, All wise"* [TMQ At Taubah: 71]. This verse provides a clear identification of Muslim males and females rights in Islam. It is interesting highlighting that they do not have equal rights, but their rights are equalled. For example, on some occasions Islam privileged males when God said: *"Men oversee women by [right of] what Allah has given one over the other...."* [Surat al-Nissa (4:34). And on other occasions females were privileged in the Hadith: *"Paradise* lies *under* the *feet* of *your mother". Ultimately,* this means that males and females in Islam complement each other's (Islamic FAQ 2017).

The following section provides a brief discussion about the influence of Islam on Muslim women's life. Muslim women were given the right to study, to work, to choose their future spouse and finally ability to move freely and perform tourism. It is hard to separate any Muslim's life from the Islamic Sharia since it draws the borders for his/her life from different perspectives such as faith, work, marriage, inheritance and freedom of movement. Islam treated Muslims regardless of gender similarly in terms of many rights and duties; Prophet Mohammad (peace upon him (PUH)) said: *"Women are the twin halves of men".*

Some scholars stated that Muslim women do not have the right to education and their place is in their houses as responsible of children and bearer of household responsibility (McDonnell 2017). Those scholars either misinterpreted Islam or fall

into the trap of norms and traditions that damaged the real image of Islam. To clarify, Islam urged education, called for it and considered it as a duty. It was narrated that Prophet Mohammad (PUH) said: *"Seeking knowledge is obligatory for every Muslim"* (Sahih Al Jami Al Albani 3914). This is a clear message and was not limited only to males, so it is also compulsory for women to be educated. Likewise, Muslim women were not deprived of the right to be active economically or to earn income. Islamic teachings were very clear regarding the work of woman, God said: *"Say, work, God will see your work and His Messenger and believers"* (Surat Al Tawba 105). God did not ask only men to work, on the contrary God addressed all Muslims regardless of their gender. Another proof is that Prophet Mohammad's (PUH) wife was a businesswoman and Rufaida Al-Aslamia was the first female nurse who treated injured soldiers and accompanied them during battles, established the first nursing school and the first code of ethics (Jan 1996; Rassool 2014). Given the above facts about women right to study and work, Islam put forward some obligatory conditions and teachings that women should obey and adhere to. Women are expected to wear the head cover and the Islamic modest cloth style that does not show any features of her body. In addition, women mingling with males is restricted and no women is expected to be alone with a non-family[1] male member. Prophet Mohammad (PUH) said: *"No man is privately alone with a woman; but their third is Satan"* [Reported by At-Tirmidhi and authenticated by Al-Albani].

In fact, inheritance is a major issue for Muslim women, since some Muslim male family members deprive females from this right regardless the fact that it is compulsory in Islam. Their perception is built on the fact that the woman is married, and she should not get the money of the family and enjoy it with a stranger, and these were pre-Islamic thoughts that are still dominant in many Muslim societies. God said: *"For men there is share in what their parents and relatives have left behind*, *and for women there is share* in *what their parents and relatives have left behind*, *be the bequest little or be it much, it is a share estimated, determined"* (Surat al-Nisaa 7).

Like many other rights, Islam gave the Muslim woman the right to choose her future husband. No woman should be compelled someone that she does not want to. This was obvious when Prophet Mohammad (PUH) said: *"A non-virgin woman may not be married without her command, and a virgin may not be married without her permission; and it is permission enough for her to remain silent (because of her natural shyness)"* (Al-Bukhari, Muslim & Others:6455).

Thus, Muslim women choices are wide and broad, however, it is the mixture between norms and traditions with Islamic teachings that created a negative image of Muslim

[1] Muslim women can be with a Mahram, which is an Arabic word that means a male family member that she cannot get married to. These are described as father, father in law, brother, spouse, son, stepfather, half son, uncle and nephew and foster brother.

woman's life. From the above examples, it can be said that the position of woman in Islam is not as negative as seen by many scholars (Armstrong 2002). However, the misinterpretation of Islam's teaching by some scholars' lead to a blurred image of Muslim woman and provided an unclear and fake understanding of Muslim women around the world. In addition, the power of patriarchal communities over women minimised their rights and underestimated their real role in life.

Woman and Tourism in Islam

Islam perceives that individuals have the right to move freely from one place to another without restrictions, but when it comes to Muslim women teachings and Sharia instructions differ. Accordingly, what applies on Muslim males applies on Muslim females with some condition. In fact, according to the discussion in the previous section about Islam and tourism, it was obvious that Muslims can perform different types of tourism that does not contradict with the Islamic Sharia. These were identified as religious tourism, business tourism, educational tourism, leisure tourism and Halal tourism.

Woman in Islam as explained previously have many rights, but in the same time they have many duties and should adhere to Islamic Sharia instructions. The Islamic Sharia is based on Halal (permissible) and Haram(prohibited). So Muslim woman's life is attached to these two-concepts Halal and Haram. Accordingly, the Hanbalii and Hanafii[1] scholars agreed that women do not have the right to travel or move alone even if for religious purposes. On the other hand, the Shafii and Maliki scholars believe that movement of Muslim woman, is not totally restricted (Al Sharif 2003). In some cases, it is permissible for a woman to travel without a mahram, on condition that she is safe in her travel, staying and returning, and she is sure she will not be harassed in her person or religion.

Thus, what is expected from Muslim women when they travel either with or without a mahram to perform any type of tourism is linked to woman's cloth, appearance and behaviour. Muslim women should adhere to Islamic Sharia's when they travel and to Halal procedures that stems from the Sharia and provide a protection to Muslim woman from any external harassment.

Muslim women should wear the head cover known as 'Hijab' and modest cloth. Kulenovi (2006) clarified that the head cover is a symbol and a message to show the Muslim identity. Boulanouar (2006) sated that Muslim woman modesty implies covering all her body expect her face and hands. Women should wear long and loose dress that covers the whole body from neck to ankle. Additionally, Islam forbids any type of prettification, such as wearing perfumes or using accessories. It is considered

[1] There are four Sunni Islamic schools of *Fiqh* (thoughts) (*Hanafi*, *Maliki*, Shafi'i, Hanbali)

as *'Haram'* to do any of these actions in public. Modesty covers other aspect such as the way of speaking and communicating with others (Al-Qaradawi, 1992).

It is noteworthy that socio-cultural values such as norms, traditions and the power of male authority play also a significant role in shaping Muslim woman's life. Shadid and van Koningsveld (2002) argue that is not only Islam women are restricted by authority given to males over them and to the load of local society norms and traditions. Thus, women are fighting more the burden of socio-cultural factors rather than Islamic teachings. Wilson and Little (2005) found that not only Muslim women face problems travelling alone but also European women travelling alone to Muslim countries were not really welcomes. This reflects how the social and cultural structure influence not only Muslim female residents but as well as female non-Muslim tourists. Accordingly, Islamic feminist theory could be a real indicator that there is a clear blend between Islamic teachings and tribal thoughts, or at least tribal thought influenced sharply the explanation of the Qur'anic texts.

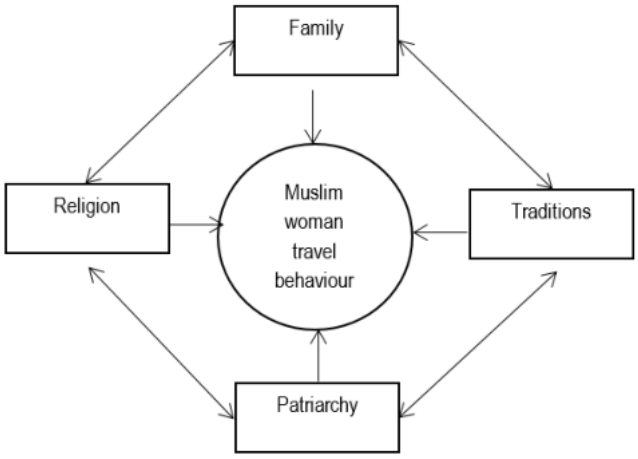

Figure 2. Factors Influencing a Muslim Woman Travel Behaviour

The above figure shows the power of each factor on Muslim women ability to travel and perform tourism is not really restricted by Islamic teaching, since Muslim women who adhere to Sharia instructions, the cloth style, modest behaviour and the accompany of a mahram may perform some types of tourism such as religious, shopping, education and Halal tourism. However, there is a need to conduct an empirical research since there is a need for a new and a broader understanding the real factors behind Muslim woman's ability to travel and perform tourism alone, are these socio-cultural factors or Islamic teachings or both together.

Islamic Feminist Theory

Feminist theories were put forward in the 1970s and are mainly based-on inequality between genders. These theories perceive that women are underestimated by the power and the authority societies gave to men (Mirkin, 1984). Islamic feminism aims at regaining the quality between genders by re-reading the Holy Quran to put things in the right place and separate the interpretation of Quran from tribal and cultural explanations and understanding. Islamic feminism believes that males and females are equal, but the explanation was largely influenced by males since the Quran revelation was in a tribal male society. However, Badran (2002) clarifies that Islam is clear in its teachings and instructions and the problem is to separate the interpretation from the patriarchal thoughts. Thus, any explanation should be based on: The Holy Qur'an, the Sunnah (Armstrong, 2000, p. 378) and ijtihad (Armstrong, 2000, p. 374) to spread real equality in the Muslim world. Islamic feminist theory underpins this paper and clarifies how inequality due to socio-cultural factors influenced and shaped women potentials to perform tourism.

Methodology

The study adopted a conceptual research design to build better understanding of women and tourism in Islam. It is a theoretical significant paper because it focused on understanding different concepts and clarifying any misunderstanding related to the influence of Islam on woman's ability to perform tourism. It elucidated how woman and tourism are perceived from an Islamic point of view?

An extensive review of the literature was conducted to cover all dimensions related to the topic such as extremist thoughts and moderate thoughts of different Islamic schools to highlight the real power of Islam on woman's ability to perform tourism. The author believed and supported her thoughts that Islam did not really prohibits tourism, on the contrary Islam promoted it but withy consideration to specific conditions.

The research adopted Islamic feminist theory to highlight that the interpretation of Islam was really conducted by males and influenced by patriarchal thoughts rather than logical, equal interpretation based on the Quran, Sunna and Ijtihad. Applying Islamic theory is a significant contribution to the literature regarding woman, Islam and tourism. As a result, there is not enough research studies available on Islamic feminism, tourism and Islam. This study is significant, for its desired outcomes that may spread awareness about women rights in Islam not only in Muslim countries but as well as in westernized countries.

Conclusion

To conclude Islam plays an important role in shaping and regulating Muslim woman's life. Muslim countries were excluded from this review since culture differs between countries because culture is shaped by different factors and the surrounding environment. Tourism is simply moving from one place to another. However, women performance of tourism is influenced by many religious and socio-cultural factors.

Literature proved that there is a huge gap between theory and practice, between what is really written and what is explained by scholars and authors. The Holy Quran and its teachings are genuine, and Islam is innocent from many interpretations and charges. For example, Islam did not prohibit woman from travelling or performing tourism, it is mainly the misinterpretation of Sharia and the cultural values that hindered women from many rights in addition to performing tourism.

The foremost concern of this paper is to reveal the vagueness of, and extent to which socio-cultural values influenced Muslim women and their choices when it comes to tourism and how Islam was perceived negatively when it is not. Islamic feminist theory was reviewed and used to explain the ambiguity attached to Islam and how Islamic teachings interpretations should be explained based on Quran, Sunnah and Ijtihad only. Halal tourism is of potential to be marketed and prompted amongst Muslim tourists who want to comply with Islamic Sharia.

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Modelling Exchange Rate Pass-through: The Oil Prices – Asymmetries Prices Perspectives

Johnson Ojo Adelakun[1]

Abstract: The literature on exchange rate pass-through appears to have shifted from the question of whether the pass-through is complete or incomplete to whether it is sufficient to assume that the pass-through is exogenous despite the vulnerability of exchange rates to shocks due to other external prices. Motivated by the increasing evidence of significant response of exchange rate to changes in oil prices, the present study hypothesized that changes in oil prices matter for the degree and direction of exchange rate pass-through in the context of oil-importing and oil-exporting dichotomy. Using a macro panel dataset, we explore the Salisu and Isah (2017) newly formulated nonlinear Panel ARDL model to account for asymmetries in our assessment of the role of oil prices in the degree and direction of pass-through of the exchange rate. Given the data under consideration, our empirical finding gives credence to the school of thought challenging the widely held assertion that the declining pass-through of the exchange rate is mainly developed markets phenomenon. We find that accounting for asymmetries in the pass-through matter for the extent to which changes in oil prices accelerate the degree of the pass-through.

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1. Introduction

The world over, price stability remains the primary objective of the monetary authority, but the task of achieving low inflation is quite challenging partially due to the vulnerability of domestic prices to factors that are beyond the control of monetary policy. Prominent among such root cause of domestic inflation is the pass-through

[1] Lecturer & PhD Research Student, Department of Economics, School Accounting, Economics & Finance,College of Law and Management Studies, University of KwaZulu-Natal, Durban, South Africa, Tel.: +27(0) 636788672, +234(0) 8069019949, Corresponding author: adelakunO@ukzn.ac.za.

of exchange rate fluctuations. Being the value of a country's currency for international trade in goods and services, the exchange rate is arguably the most important price in an open economy and thus has both direct and indirect effects on other macroeconomic fundamentals, namely: imports, exports, external reserves, interest rates and inflation. More importantly, fluctuations in exchange rates could be transmitted into domestic inflation, through increases in import prices of final goods (the direct channel), and prices of imported intermediate inputs (the indirect channel). The transmission mechanism through which a change in domestic prices (import and consumer prices) is due to changes in exchange rate movements is known as "exchange rate pass-through (ERPT)". Thus, the ability of central banks to mitigate the pass-through effect of exchange rate fluctuations, depend, among others, on the proper evaluation of the extent or the degree and timing of ERPT. For many years, several efforts have been geared to explore the transmission of exchange rate movements into domestic prices with different methods of analyses yielding different results (see for example, Karagoz et al., 2016; Donayre and Panovska, 2016; Mohammed et al., 2015; Mirdala, 2014; Choudhria and Hakura, 2014; Uddin et al., 2014; Jimborean, 2013; Jiang and Kim, 2013; Ghosh, 2013; Brun-Aguerre et al., 2012; Marazzi and Sheets, 2007; Barhoumi, 2006; Choudhrin and Hakura, 2006).

Notwithstanding the vastness of empirical literature on exchange rate pass-through, a number of the extant studies have continued to ignore some key insights in their specification and empirical evaluation of exchange rate pass-through. First, the extent to which changes in exchange rates accelerate or slow down domestic inflation cannot be in isolation of underlying shocks that cause the fluctuations in exchange rate movement. Secondly, there has been an ongoing debate on whether symmetric or asymmetric nature of changes in exchange rate matters for the degree, timing and direction of its pass-through. Not only is the non-consideration for shocks dependent and asymmetric characteristics of exchange rates tends towards introducing biases in the measure of its pass-through, but it can also undermine the efficiency of monetary authorities in predicting future inflation. To bridge this gap, this study is premising on the increasing evidence of significant impact of changes in oil price on exchange rate (see Park and Ratti, 2008; Le and Chang, 2011; Roberodo, 2012; Ahmad and Hernandez, 2013; Aloui et al., 2013; Turhan et al., 2014; Fowowe, 2014; Bal and Rath, 2015; Chou and Tseng, 2015; Atems et al., 2015; Bouoiyour et al., 2015; Chen, 2016; Jiang and Gu, 2016; Yang et al., 2017), to control for the role of oil price in the pass-through of exchange rate fluctuations to domestic prices within the context oil-export and oil-import economies. We further account for the nonlinearity feature of the exchange rate movements using Salisu and Isah (2017) newly proposed nonlinear Panel ARDL. The essence is to determine the extent to which asymmetries matter for the role oil prices in the pass-through.

The rest of this paper is structured as follows: Section 2 provides the model specification on exchange rate pass-through. Section 3 discusses the data and renders some preliminary analyses, while the econometric method and estimation procedures are discussed in Section 4. Section five presents the findings, while the conclusion and policy recommendation is in five.

2. The Model

The basic approach to estimating exchange rate pass-through, particularly at the macroeconomic level has been to regressed changes in some measure of domestic prices on the past and present changes in the exchange rate and additional control variables. Following Campa and Goldberg (2005), Burstein and Gopinath (2014) and Cheikh and Rault (2015) approach to modelling exchange rate pass-through, our baseline model is as given below, where all the variables are expressed in log form.

$$p_{it}^{m} = \beta_0 + \beta_1 e_{it} + \beta_2 w_{it}^{*} + \beta_i' x_{it} + \varepsilon_{i,t}, \quad (1)$$

where p_{it}^{m} is the domestic currency import prices, e_{it} is the exchange rate, w_{it}^{*} denotes variable representing export costs, while x_{it} is vector including demand condition and competitor prices in the importing country among other control variables. The ε_{it} in equation (1) is white noise, subscript *i* represent the number of countries under consideration and *t* number of periods. However, one weakness of the pass-through model in equation (1) as pointed out by Barhoumi (2006) is that the pass-through of exchange rate (e_{it}) and export costs (w_{it}^{*}) into import price (p_{it}^{m}) are the same, hence; there is tendency of biases in the estimate of the pass-through coefficient if the costs or proxies for markup are correlated with exchange rates (see Campa and Goldberg, 2002).

The aforementioned though, Athukorola and Menon (1995) have provided purely economic reasons to justify that such coefficient restrictions may not hold, particularly given the likely incompatibility of price proxies attributable to differences in aggregation levels and methods of data collection. Further justifying why such restriction may not hold is the argument put forth by Bache (2002), that exchange rates are more variables than costs, and a reasonable conjecture is that exporters will be more willing to absorb into their markup changes rates than changes in the costs, which are likely to be permanent. It is in this light therefore, that the present study is proposing to relax such restriction and consider the following as its baseline empirical model for evaluation of the pass-through of exchange rate fluctuations to domestic prices.

$$p_{it}^{m} = \beta_0 + \beta_1 e_{it} + \beta_2 w_{it}^{*} + \beta_3 y_{it} + \beta_4 cp_{it} + \beta_5 op_{it} + \varepsilon_{it} \quad (2)$$

While all the variables remained as earlier defined, the x_{it}, which is a vector in equation (1) has now been expanded to reflects the demand condition, competitor prices and the changes in the world oil prices. The inclusion of oil prices in our pass-through model specification is to reflect the peculiarity of the investigated economies (net oil-exporting and oil-importing countries) and to examine whether changes in oil prices influence the degree of the pass-through. Furthermore, it is a fact that changes in the exchange rate also influence import prices indirectly through their effects on commodity prices. Thus, considering such a channel as a robust test also justify our inclusion of oil price in the pass-through specification as additional control variables. More importantly, a number of the extant studies have rather assumes the exchange rate as exogenous in their pass-through specification. To this end, they often neglect the underlying shocks that cause the fluctuations in the exchange rate in the first place, which may lead to biased and inconsistent in the estimates of the pass-through. To bridge this gap, we further propose an extension to the baseline pass-through model specification in equation (2) to include an interaction term denoting the responsiveness of exchange rate to changes in oil price.

$$p_{it}^{m} = \beta_0 + \beta_1 e_{it} + \beta_2 w_{it}^{*} + \beta_3 y_{it} + \beta_4 cp_{it} + \beta_5 op_{it} + \beta_6 (e_{it} * op_{it}) + \varepsilon_{it} \quad (3)$$

Consequently, our primary concern in this study is, therefore, on the pass-through elasticity corresponding to coefficients on the exchange rate, namely; β_1 β_6 and in the baseline and extended models, respectively. If $\beta_1 < \beta_6$ then, the responsiveness of exchange rate to changes in oil price is likely to accelerate the degree of exchange rate pass-through to domestic prices and the reverse is likely the case if $\beta_1 > \beta_6$. Another concern in the literature of pass-through has been whether the pass-through of exchange rate fluctuation to domestic prices is linear (symmetric) or nonlinear (asymmetric). For robustness purpose, therefore, we further reflect the exchange rate (*e*) in equation (2) in a nonlinear to capture the probable asymmetric effect of the pass-through as shown below:

$$p_{it}^{m} = \beta_0 + \beta_1 (e_{it}^{+} + e_{it}^{-}) + \beta_2 w_{it}^{*} + \beta_3 y_{it} + \beta_4 cp_{it} + \beta_5 op_{it} + \varepsilon_{it} \quad (4)$$

Equation (4) is the nonlinear (asymmetry) version of the study baseline model with the exchange rate decomposes into negative (depreciation) and positive (appreciation). While this has been the standard approach for capturing asymmetries in the specification of exchange rate pass-through, the novelty of our study in this context centred on whether such asymmetries matter for the role of oil price as a

potential accelerator of the degree of the pass-through. To achieve this, we again relax the exogenous assumption of the standard nonlinear (asymmetry) pass-through specification in equation (4) to capture the probable nonlinear responses of the exchange rate to oil price shocks (see equation 5).

$$p_{it}^{m} = \beta_0 + \beta_1(e_{it}^{+} + e_{it}^{-}) + \beta_2 w_{it}^{*} + \beta_3 y_{it} + \beta_4 cp_{it} + \beta_5(e_{it}^{+} * op_{it} + e_{it}^{-} op_{it}) + \varepsilon_{it} \quad (5)$$

Thus, the extended interaction term $(e_{it}^{+} * op_{it} + e_{it}^{-} op_{it})$ in equation (5) not only captured the asymmetric pass-through, but it also accounts for the probable role of oil price shocks as the source of fluctuations in the exchange rate movement.

3. Data and Preliminary Analysis

3.1. Data Source and Measurement

All the variables used in this study are mainly sourced from International Financial Statistics (IFS) and OECD online database ranging from the first quarter of 1990 to the third quarter of 2017. The dependent variable import domestic prices (p^{m}) is calculated as the log of the import price index. Concerning the independent variables, the log of the nominal effective exchange rate calculated as the trade-weighted average of the respective country's exchange rate against other currencies was chosen as a proxy for our exchange rate measure. The appropriateness of this measure for representing the pass-through of the exchange rate (e) as against the bilateral exchange rate measure hinges on the fact countries often engages in trade with more than one country. On the foreign export costs variable, the marginal costs of foreign producers are often difficult to measure and that is because they are not directly observable. Therefore, we would be using the same proxy adopted by Campa and Goldberg (2005) and Bailliu and Fujii (2004) calculated as:

$$W_{it}^{*} = Q_{it} \times \frac{\bar{P}_{it}}{E_{it}},$$

where E_{it} is the nominal effective exchange rate, $\dot{P}_{it}$ is the wholesale price index (due to data availability for some countries, we would be using the Consumer Price Index) and Q_{it} is the real effective exchange rate effective exchange rate. Taking the logarithm of each variable, we obtain the following expression $w_{it}^{*} = e_{it} - q_{it} + \dot{p}_{it}$. For demand condition variable (y), the log of industrial production index is considered. Following Olivei (2002) and Bussie`re (2013), our domestic

competitor's price (cp) is measured as the log of Producer Price Index (PPI), while the log of Brent international crude oil prices is used as a proxy for changes in oil price. Thus, the choice of the selected oil-importing (Belgium, Germany, Italy, Japan, Netherlands, Spain, UK, US) and oil-exporting (Algeria, Canada, Nigeria, Norway and Russia) is mainly informed by the availability of data.

3.2. Preliminary Analysis

As a pre-test condition for dealing with panel data with large time series (T) dimension, we subject each of the variables under consideration to stationarity test. The first categories of panel unit root tests consider involves panel unit root with the null hypothesis of unit root with a common process (Harris and Tzavalis, 1999; Breitung, 2000; Levin et al., 2002 tests). The second category including Im et al. (2003), Maddala and Wu (1999) assumes unit root with individual unit root process, while the third also assumes unit root in the null hypothesis but in the presence of cross-section dependence (Pesaran, 2007). The fourth category, however, tests the null hypothesis of no unit root with common unit root process (Hadri, 2000 Lagrange Multiplier test). Based on their hypotheses and test regressions, these tests have been categorized into stationary (the fourth type) and nonstationary (first, second and third) tests in the literature. Besides, the Pesaran (2007) unit root test is particularly important in this study as it can also be used to test whether the various cross-sections in each group are homogenous or heterogeneous. The null hypothesis for the test assumes homogeneous non-stationary as against the alternative hypothesis of possible heterogeneous alternatives.

Starting with the two main variables of interest names, import prices and exchange rates. The unit root test results indicate the import price indexes as integrated of order one [I(1)] across the two economies with the only exception being the Levin et al. (2002) test in the case of oil-importing economies and Hadri (2000) test in the case of net oil-exporting economies. In a similar development, the Pesaran test results indicate that the import prices are heterogenous stationary of order one [I(1)] for the net oil-exporting group and of order zero [I(0)] for the net oil-importing group. However, the cross-sections seem heterogenous irrespective of the economy group under consideration. The unit root test results for exchange rates are hugely mixed except for the Pesaran test whose results consistently predict exchange rates as heterogenous stationary irrespective of the economy group under consideration. For other macro-economic factors included in ERPT specifications, the unit root test results as documented in Table 1(A&B) shows that their stationarity status hovered around I(0) and I(1) thus validating the choice of panel-ARDL model as the preferred estimation framework in the context of this study.

Table 1. Panel Unit Root Test Results

Panel(A): Oil Importing Group						
Test Method	p_{it}^{m}	e_{it}	w_{it}^{*}	y_{it}	CP_{it}	op_{it}
Null Hypothesis: unit root with common process						
*Levin, Lin & Chu t**	-2.125**[a]	-6.574***[a]	-8.317***[a]	-3.314***[a]	-2.759***[a]	-2.524***[a]
Breitung t-stat.	-14.077***[b]	-11.103***[b]	-12.035***[b]	-19.645***[b]	-12.486***[b]	-1.909**[a]
Harris-Tzavalis rho	-56.821***[b]	-78.951***[b]	0.055***[b]	-2.961***[a]	-64.035***[b]	0.159***[b]
Null Hypothesis: unit root with the individual unit root process						
Im, Pesaran & Shin W Stat	-15.993***[b]	-3.199***[a]	-5.651***[a]	-5.171***[a]	-15.331***[b]	-20.169***[b]
ADF Fisher Chi-square	146.178***[b]	52.9389***[a]	141.314***[b]	214.132***[b]	144.594***[b]	165.736***[b]
Pesaran CD test	-7.592***[b]	-6.448***[b]	-7.936***[b]	-6.739***[b]	-1.688**[a]	-
Null Hypothesis: no unit root with the common unit root process						
Hadri Z-stat.	211.581***[a]	142.887***[a]	4.719***[a]	201.681***[a]	218.876***[a]	180.347***[a]
Panel(B): Oil Importing Group						
Test Method	p_{it}^{m}	e_{it}	w_{it}^{*}	y_{it}	CP_{it}	op_{it}
Null Hypothesis: unit root with common process						
*Levin, Lin & Chu t**	-8.469***[b]	-3.910***[a]	-6.661***[a]	-1.858**[a]	-4.869***[a]	-1.785**[a]

Breitung t-stat.	-10.319***b	-13.589***b	-7.194***b	-13.921***b	-9.488***b	-1.349*a
Harris-Tzavalis rho	0.522***b	0.117***b	0.198***b	-0.240***b	0.304***b	0.159***b
Null Hypothesis: unit root with the individual unit root process						
Im, Pesaran & Shin W Stat	-9.571***b	-1.995**a	-7.969***a	-2.368***a	-2.826***a	-14.262***b
ADF Fisher Chi-square	54.679***b	76.984***b	18.657**a	74.452***b	18.026*a	82.868***b
Pesaran CD test	-2.745***a	-4.790***b	-3.103***b	-5.117***b	-4.825***b	-
Null Hypothesis: no unit root with the common unit root process						
Hadri Z-stat.	147.447***a	132.238***a	99.111***b	103.516***a	139.797***a	127.525***b

Note: a and b denote stationarity at the level and first difference respectively, while ***, **, * indicate statistical significance at 1%, 5% and 10% respectively. All the variables here are expressed in natural logs. 2 Note that the Pesaran CD test is not conducted for the oil price series since it is considered to be homogenous as it is cross-section invariant.

4. Econometric Method and Estimation Procedures

Some previous empirical studies tried to estimate pass-through elasticities as specified in equations (2&3) in first differences (see, for example, Campa and Gonzàlez, 2006; Campa and Goldberg, 2004; Bailliu and Eiji, 2004). There is no disputing that this type of specification allows acquiring an estimation of short-run and long-run exchange rate pass-through. That said, however, our empirical approach in the context of the present paper would require that we use a technique that is suitable for dynamic panel data, and the essence is to take into consideration the most likely non-stationarity of the variables and cointegration relationship. As a consequence, and to better illustrate our point, this paper will explore the mean-group (MG) and pooled mean-group (PMG) estimators for its non-stationary dynamic panels in which the parameters will be assumed heterogeneous across groups to estimate symmetric pass-through of exchange rate fluctuations to domestic prices in the net oil-exporting and oil-importing economies.

The suitability of this technique for modelling panel date with large cross-section dimension (numbers of countries in our case (N)) and large time series (T) dimensions makes them the more appropriate in the context of this study. As pointed out by Blackburne and Frank (2007), the asymptotics of large N and large T dynamic panels are different from the asymptotics of traditional large N and small T dynamic panels. For example, estimators for Small T panel estimation such as fixed - and random-effects estimators and generalized method-of-moments estimator usually require pooling individual groups and allowing only the intercepts to differ across the groups with the slope coefficients assumed to be homogenous. On the contrary, however, Pesaran et al. (1997, 1999), among others, have, demonstrated that the assumption of homogeneity of slope parameters is often inappropriate when dealing with large N and large T. Besides, more worrisome is the fact that ignoring the slope parameter heterogeneity when in fact it exists may produce inconsistent and potentially misleading results.

Thus, the MG estimator of Pesaran and Smith (1995) and the PMG estimator of Pesaran et al. (1997, 1999) have been developed to capture any inherent slope heterogeneity in the panel data model and any potential bias that may result from using the traditional methods. Essentially, the MG involves estimating N time-series regressions and averaging the coefficients, whereas the PMG estimator requires a combination of pooling and averaging of coefficients (see Pesaran and Smith, 1995; and Pesaran et al., 1997, 1999 for details on the computational procedures). As a starting pointing, therefore, we begin our analysis by assuming a linear (symmetric) exchange pass-through to be estimated via the following panel autoregressive distributive lag (ARDL) framework:

$$\Delta p_{it}^{m} = \alpha_{0i} + \beta_{1i} p_{i,t-1}^{m} + \beta_{2i} e_{t-1} + \beta_{i}' x_{t-1} + \sum_{j=1}^{N1} \lambda_{ij} \Delta p_{i,t-j}^{m} + \sum_{j=0}^{N2} \gamma_{ij} \Delta e_{t-j} + \sum_{j=0}^{Ni} \delta_{ij}' \Delta x_{t-j} + \mu_i + \varepsilon_{it}, \quad (6)$$

$$i = 1, 2, ..., N; \qquad t = 1, 2, ..., T$$

where p_{it}^{m} denoting domestic prices is the log import price index for each country or unit *i* over a period of time *t* and e_{it} is the log of nominal effective exchange rate for each country over a period of time, while x_{it} in the vector of other explanatory variables that include also measure in log form and such include; foreign export costs (w_{it}^{*}), demand condition (y_{it}), competitor prices (cp_{it}), and the interaction term ($e_{it} * op_{it}$) reflects the probable endogeneity effect of exchange rate. The μ_i y represent the group-specific effect and *i* is the sampled units, while *t* is the number of periods. For each cross-section, the long-run slope (elasticity) coefficient,

particularly for exchange rate pass-through will be computed $-\frac{\beta_{2i}}{\beta_{1i}}$. However, since in the long run, it is assumed that $\Delta p^{m}_{i,t-j}=0$ and $\Delta e_{t-j}=0$, the elasticity for the short run pass-through can then, be expressed as γ_{ij}. More so, equation (6) can be re-specified to include an error correction term as follows:

$$\Delta p^{m}_{it}=\psi_i \upsilon_{i,t-1}+\sum_{j=1}^{N1}\lambda_{ij}\Delta p^{m}_{i,t-j}+\sum_{j=0}^{N2}\gamma_{ij}\Delta e_{t-j}+\sum_{j=0}^{Ni}\delta'_{ij}\Delta x_{t-j}+\mu_i+\varepsilon_{it} \quad (7)$$

where $\upsilon_{i,t-1}=p^{m}_{i,t-1}-\varphi_{0i}-\varphi_{1i}e_{t-1}-\varphi_{2i}x_{t-1}$ the linear error correction term is for each unit, the parameter ψ_i is the error-correcting speed of adjustment term for each unit, which is also equivalent to β_{1i}. The parameters φ_{0i}, φ_{1i} and φ_{2i} are calculated as $-\frac{\beta_{0i}}{\beta_{1i}}, -\frac{\beta_{2i}}{\beta_{1i}}$ and $-\frac{\beta_{3i}}{\beta_{2i}}$, respectively.

Although, our primary concern is to determine the elasticity of exchange rate pass-through, however, the approach for obtaining it as demonstrated above is the same for other explanatory variables in the various pass-through model specified. Thus, it quite instructive that we would be exploring similar procedure to equally determine in particularly, the slope coefficient of the interaction term to ascertain whether the responsiveness of exchange rate to changes in oil price matter for the degree of the pass-through.

4.1. The Nonlinear (Asymmetric) Approach to Exchange Rate Pass-Through

Looking back at equation (6 & 7), we will observe that there are no decompositions of exchange rate into positive (appreciations) and negative (depreciation); hence, the assumption of symmetric pass-through of the exchange rate to domestic prices. In this section, however, we would be relaxing this symmetric assumption to enable us to accommodate probable asymmetric pass-through of the exchange rate, where positive (appreciations) and negative (depreciation) of exchange rates are not expected to have the identical degree of pass-through to domestic inflation. Thus, adopting a nonlinear panel data representation of the Shin et al. (2014), the asymmetric version of equation (6) is expressed as below:

$$\begin{aligned}\Delta p^{m}_{it}=\alpha_{0i}+\beta_{1i}p^{m}_{i,t-1}+\beta^{+}_{2i}e^{+}_{t-1}+\beta^{-}_{2i}e^{-}_{t-1}+\beta'_i x_{t-1}+\sum_{j=1}^{N1}\lambda_{ij}\Delta p^{m}_{i,t-j}+\\ \sum_{j=0}^{N2}(\gamma^{+}_{ij}\Delta e^{+}_{t-j}+\gamma^{-}_{ij}\Delta e^{+}_{t-j})+\sum_{j=0}^{Ni}\delta_{ij}\Delta x_{t-j}+\mu_i+\varepsilon_{it},\end{aligned} \quad (8)$$

where e_t^+ and e_t^- denote the positive (exchange rate appreciations) and negative (exchange rate depreciation), respectively. The long-run (elasticity) coefficients for the pass-through due to positive and negative exchange rate fluctuations (i.e. e_t^+ and e_t^-) will be calculated as: $-\frac{\beta_{2i}^+}{\beta_{1i}}$ and $-\frac{\beta_{2i}^-}{\beta_{1i}}$. This nonlinear pass-through of the exchange rate will be computed as positive and negative partial sum decomposition of exchange rate fluctuations as defined below:

$$e_t^+ = \sum_{k=1}^{t} \Delta e_{ik}^+ = \sum_{k=1}^{t} \max(\Delta e_{ik}, 0) \quad (8a)$$

$$e_t^- = \sum_{k=1}^{t} \Delta e_{ik}^- = \sum_{k=1}^{t} \min(\Delta e_{ik}, 0) \quad (8b)$$

Again, the aforementioned procedure for computing long run (elasticity) coefficient for the asymmetric pass-through will also be observed when the exchange rate is endogenously represented by interacting each of the decompose exchange rate fluctuations with changes in oil prices. Similar to the symmetric pass-through modelling approach, the error correction version of equation (8) can be represented as follows:

$$\Delta p_{it}^m = \tau_i \xi_{i,t-1} + \sum_{j=1}^{N1} \lambda_{ij} \Delta p_{i,t-j}^m + \sum_{j=0}^{N2} (\gamma_{ij}^+ \Delta e_{t-j}^+ + \gamma_{ij}^- \Delta e_{t-j}^-) + \sum_{j=0}^{Ni} \delta_{ij}' \Delta x_{t-j} + \mu_i + \varepsilon_{it} \quad (9)$$

The error correction term ($\xi_{i,t-1}$) in equation (9) capture the long-run equilibrium in the asymmetric panel ARDL specification, while its associated parameter (τ_i) is the speed of adjustment term that will measures how long it will take the system to revert to its long-run equilibrium in the presence of a shock.

5. Empirical Results and Discussion

5.1. Results from the baseline ERPT model

Starting with the baseline or traditional approach to modelling exchange rate pass-through, the estimation results from the implementation of the ERPT model specified in equation 6 are summarized in Table 2 below. Starting with the Hausman test results, the non-rejection of the null hypothesis indicates PMG as the more adequate and efficient estimator for the estimation of the specified ERPT model. The estimation results in particular shows that the coefficients of the key variable of interest (i.e. changes in the exchange rate (Δe_{it})) are statistically significant, but the

level of the significance and the degree of the pass-through tend to vary for the short and long run situations and across the two different economy groups under consideration. For instance, the estimated ERPT coefficients as reported in Table 2 shows that the long-run ERPT elasticities are significant in both the net oil-importing and oil-exporting nations and bounded between 0.30% for the former and 0.22% for the latter. In the short-run, however, not only is the degree of the ERPT at 0.17% and 0.13 for the respective economy groups is relatively lower compared to the long-run ERPT, the significance of the pass-through is equally weak and only evident in the oil-exporting economies.

Although, the pass-through seem obviously incomplete irrespective of the short or long-run dynamics of the response of import prices to changes in exchange rate, however, the indication of the slightly higher magnitude of the long-run coefficient of the ERPT as against the short-run may not be unconnected to the lagged adjustment of import prices to changes in exchange rate. Also quite an interesting finding is the fact that, despite the reasonable number of the net oil-importing economy group mainly developed countries namely, USA, UK, Japan, France, Germany, among others, and otherwise for the case of net oil-exporting group, the degree of the pass-through even though not significantly differ across the two economies, is yet relatively higher for net oil-importing economies compared to the ERPT for the net oil-exporting economies. While this puzzling results have further lent credence to views that have challenged the widely-held position in the literature that the declining pass-through is mainly developed markets phenomenon, also find virtually all the included macro factors in the ERPT model namely, foreign factor price, domestic economic condition, competitor price, and changes are significant for explaining domestic import prices with the exception being the domestic condition factor that appears insignificant for explaining domestic prices in net oil-exporting economies.

Table 2. ERPT Panel Regression Results (Symmetric Model without Interaction Term)

Short-Run	**Net Oil-Importing Economies**		**Net Oil-Exporting Economies**	
	MG	***PMG***	***MG***	***PMG***
Constant	0.069(0.295)	-0.142(0.094)	-0.589(0.432)	-0.006(0.014)
$\Delta\log(e_{it})$	-0.233(0.184)	-0.170(0.135)	-0.0179(0.0796)	0.125*(0.066)
$\Delta\log(w_{it}^{*})$	0.05000.137)	0.059(0.110)	0.0819(0.565)	0.218(0.239)
$\Delta\log(y_{it})$	0.040(0.0677)	0.086(0.062)	-0.115(0.118)	-0.058(0.079)
$\Delta\log(cp_{it})$	0.910***(0.145)	0.927***(0.168)	0.558**(0.233)	0.337***(0.118)
$\Delta\log(op_{it})$	0.010(0.013)	0.024*(0.014)	-0.0142(0.0167)	0.031**(0.013)
ECT	-0.143***(0.035)	-0.053*(0.032)	-0.196**(0.0867)	-0.062**(0.029)
Long-Run				
$\log(e_{it})$	-0.838(0.667)	-0.303***(0.047)	1.014**(0.480)	0.223**(0.094)
$\log(w_{it}^{*})$	1.579**(0.773)	0.185***(0.051)	1.554(1.460)	0.185***(0.039)
$\log(y_{it})$	1.118**(0.464)	0.412***(0.102)	-0.191(0.500)	0.167(0.172)
$\log(cp_{it})$	-0.815(0.798)	1.197***(0.185)	-0.042(0.755)	0.396***(0.087)
$\log(op_{it})$	0.219**(0.092)	0.166***(0.016)	0.532***(0.191)	0.135***(0.019)
Hausman Test (χ_k^2)	2.280 (0.809)		8.430 (0.134)	
No. of cross sections	10		5	
No. of Observation	1100		550	
Log likelihood	2906.715		1140.497	

Note: The values in parentheses () are standard errors for the estimated coefficients, but chi-square for the hausman test, while *** p<0.01, ** p<0.05, * p<0.1 denote significance at 1%, 5% and 10%.

5.2. Results from the extended ERPT model including the role of oil prices

The fact that the ERPT coefficients are negative for the oil-importing countries is an indication that the pass-through has the potential of lowering domestic import inflation. For oil-exporting economies, the evidence of positive ERPT means the pass-through tend accelerates import inflation in the case of oil-exporting economies. It is in this light, that we further extend the traditional approach to modelling ERPT to include the role of changes in the oil price (see Table 3). Similar to our earlier finding, the Hausman test results in Table 3 also fail to reject the null hypothesis that the long-run elasticities are equal across the panel. Thus, the PMG yet again appears the more adequate and efficient estimator for modelling ERPT. However, the

estimated ERPT is rather insignificant in this case; nonetheless, the oil-importing or oil-exporting peculiarities of economies group under investigation.

Table 3. ERPT Panel Regression Results (Symmetric Model with Interaction Term)

Short-Run	**Net Oil-Importing Economies**		**Net Oil-Exporting Economies**	
	MG	***PMG***	***MG***	***PMG***
Constant	0.741(0.750)	-0.129(0.089)	-0.448(0.622)	-0.124(0.089)
$\Delta\log(e_{it})$	-0.441(0.306)	-0.338(0.213)	-0.239(0.247)	-0.180(0.286)
$\Delta\log(e_{it} * op_{it})$	0.035(0.027)	0.049(0.030)	0.056(0.053)	0.069(0.066)
$\Delta\log(w_{it}^{*})$	0.062(0.138)	0.064(0.106)	-0.001(0.558)	0.097(0.296)
$\Delta\log(y_{it})$	0.027(0.077)	0.086(0.063)	-0.102(0.103)	-0.052(0.062)
$\Delta\log(cp_{it})$	0.923***(0.146)	0.916***(0.191)	0.546**(0.220)	0.291***(0.108)
$\Delta\log(op_{it})$	-0.155(0.120)	-0.200(0.128)	-0.255(0.240)	-0.255(0.310)
ECT	-0.150***(0.036)	-0.054(0.034)	-0.205**(0.0920	-0.027(0.019)
Long-Run				
$\log(e_{it})$	-1.975(1.289)	-0.345*(0.189)	1.021**(0.489)	0.616(0.425)
$\log(e_{it} * op_{it})$	0.427(0.326)	0.011(0.053)	-0.042(0.106)	0.032(0.126)
$\log(w_{it}^{*})$	1.381*(0.800)	0.202***(0.049)	1.494(1.391)	0.113(0.112)
$\log(y_{it})$	1.138**(0.514)	0.390***(0.103)	-0.137(0.473)	0.620*(0.338)
$\log(cp_{it})$	-1.081(0.743)	1.173***(0.181)	-0.043(0.708)	0.633***(0.105)
$\log(op_{it})$	-1.734(1.451)	0.116(0.243)	0.737(0.548)	0.029(0.610)
Hausman Test (χ_k^2)	9.500 (0.147)		1.800 (0.937)	
No. of cross-sections	10		5	
No. of Observation	1100		550	
Log-likelihood	2915.163		1144.555	

Note: The values in parentheses () are standard errors for the estimated coefficients, but chi-square for the Hausman test, while *** p<0.01, ** p<0.05, * p<0.1 denote significance at 1%, 5% and 10%.

5.3. Results from the Traditional Asymmetric ERPT Model

There is no gainsaying that our finding of insignificant role of oil price in the pass-through of exchange rate fluctuations to domestic prices as revealed in the immediately preceding section seems unusual, particularly in the context of the investigated economies. More so, it contradicts the existing hypothesis that that

relationship between exchange rates and prices depend on the shocks which cause the exchange rate to fluctuate as earlier established in a number of previous studies (Forbes et al., 2016; Nakibullah and Bahrain, 2016; Kirby and Meaning, 2014; Mirdala, 2014). Thus, unlike our earlier findings, the asymmetry panel ERPT regression results in Table 4 below shows that asymmetries matter in the pass-through of the exchange rate to domestic prices. While the degree of the pass-through is quite alarming in the long run across the two economies, the significance of the pass-through is rather evident in the net oil-exporting economies, where a positive shock to exchange rate is completely pass-through into the domestic import prices at 1.23% (more than 100%). Also, more than 50% of the negative shocks to the exchange rate have been significantly pass-through to the import prices of the selected net oil-exporting group for the periods under consideration. The fact that the magnitude and/or degree of the pass-through is higher for positive than negative exchange rate changes is an indication that asymmetries matter for the degree of pass-through, particularly in the net oil-exporting nations. In the case of the oil-importing group, however, the pass-through is though incomplete, but the significance of the pass-through p is only evident when the shock to exchange rate is negative, particularly in the short run. Overall, accounting for asymmetries in the pass-through of exchange is crucial when evaluating the extent to which fluctuations in the exchange rate is being transmitted to domestic import prices in net oil-importing and oil-exporting nations.

Table 4. ERPT Panel Regression Results (Asymmetric Model without Interaction Term)

Short-Run	**Net Oil-Importing Economies**		**Net Oil-Exporting Economies**	
	MG	***PMG***	***MG***	***PMG***
Constant	0.172(0.580)	-0.298(0.214)	0.167(0.677)	-0.298(0.214)
$\Delta\log(e_{it}^{+})$	-0.303**(0.130)	-0.244*(0.148)	-0.040(0.179)	0.091(0.119)
$\Delta\log(e_{it}^{-})$	-0.494(0.475)	-0.504(0.501)	-0.0002(0.066)	-0.002(0.043)
$\Delta\log(w_{it}^{*})$	0.117(0.187)	0.0850(0.106)	-0.071(0.540)	0.211(0.321)
$\Delta\log(y_{it})$	0.026(0.055)	0.091(0.068)	-0.100(0.103)	-0.123(0.107)
$\Delta\log(cp_{it})$	0.930***(0.150)	0.945***(0.168)	0.488**(0.208)	0.370**(0.185)
$\Delta\log(op_{it})$	-0.0004(0.014)	0.022(0.016)	-0.017(0.022)	0.002(0.0211)
ECT	-0.174***(0.042)	-0.060(0.042)	-0.189**(0.083)	-0.057(0.039)
Long-Run				
$\log(e_{it}^{+})$	1.008(1.419)	-0.357***(0.042)	0.035(1.701)	1.230***(0.474)
$\log(e_{it}^{-})$	5.614(6.002)	-0.255***(0.041)	1.148**(0.468)	0.533**(0.208)
$\log(w_{it}^{*})$	-0.358(0.677)	0.425***(0.082)	1.163(0.877)	-0.255(0.172)

$\log(y_{it})$	0.868**(0.430)	0.261***(0.086)	-0.339(0.330)	1.313**(0.630)
$\log(cp_{it})$	-0.785(1.116)	1.353***(0.150)	1.353(2.047)	-0.0119(0.153)
$\log(op_{it})$	0.199**(0.095)	0.159***(0.012)	0.518***(0.181)	1.052***(0.088)
Hausman Test (χ_k^2)	20.500 (0.002)		5.930 (0.431)	
No. of cross sections	10		5	
No. of Observation	1090		545	
Log likelihood	2891.938		1149.116	

Note: The values in parentheses () are standard errors for the estimated coefficients, but chi-square for the Haussmann test, while *** p<0.01, ** p<0.05, * p<0.1 denote significance at 1%, 5% and 10%.

5.4. Results from the Asymmetric ERPT Model Including the Role of Oil Prices

Having shown that asymmetries matter for the extent to which fluctuations in exchange is pass-through to domestic import prices, particularly in short-run for oil-importing economies and in the long run for the oil-exporting group. We then proceed on to empirically evaluate our hypothesis that the role of oil price changes as an accelerator of ERPT matters more when we capture asymmetries in the pass-through modelling framework. Similar to the asymmetric ERPT without the role of changes in oil prices, the Hausman test results reaffirm MG estimator as the more efficient in the case of net oil-exporting economies and PMG in the case of net oil-exporting. Contrary to our earlier finding where the responsiveness of exchange rate to changes in oil price exhibits no significant pass-through irrespective of which of the two economy groups is under consideration, the empirical results in Table 5, rather suggests that the role of changes in oil price as potential accelerator of ERPT matter more when the pass-through is captured asymmetrically.

Table 5. ERPT Panel Regression Results (Asymmetric Model with Interaction Term)

Short-Run	**Net Oil-Importing Economies**		**Net Oil-Exporting Economies**	
	MG	***PMG***	***MG***	***PMG***
Constant	1.600*(0.894)	-0.352(0.343)	0.517(1.282)	-0.173(0.125)
$\Delta\log(e_{it}^{+} * op_{it})$	-0.049**(0.019)	-0.002(0.028)	0.033(0.031)	0.059***(0.018)
$\Delta\log(e_{it}^{-} * op_{it})$	-0.176(0.194)	-0.184(0.179)	-0.036*(0.022)	-0.030**(0.013)
$\Delta\log(w_{it}^{*})$	0.119(0.241)	0.122(0.082)	-0.079(0.507)	0.209(0.296)
$\Delta\log(y_{it})$	-0.024(0.036)	0.112(0.075)	-0.108(0.092)	-0.088(0.087)
$\Delta\log(cp_{it})$	0.912***(0.162)	0.891***(0.211)	0.465***(0.167)	0.329*(0.179)
$\Delta\log(op_{it})$	0.019(0.015)	0.022**(0.010)	-0.059(0.052)	-0.049(0.044)

ECT	-0.179***(0.044)	-0.0501(0.048)	-0.207**(0.096)	-0.048(0.035)
Long-Run				
$\log(e_{it}^{+} * op_{it})$	0.936*(0.493)	-0.098***(0.010)	0.096(0.729)	0.243(0.168)
$\log(e_{it}^{-} * op_{it})$	1.638(1.687)	-0.058***(0.011)	0.047(0.450)	0.140*(0.080)
$\log(w_{it}^{*})$	-0.622(0.637)	0.524***(0.068)	0.461(0.299)	-0.101(0.189)
$\log(y_{it})$	1.117**(0.52)	0.116(0.082)	-0.015(0.211)	1.020(0.814)
$\log(cp_{it})$	-1.859(1.219)	1.780***(0.149)	0.335(1.199)	0.169(0.159)
$\log(op_{it})$	-0.111(0.145)	0.243***(0.017)	0.083(0.567)	1.334***(0.237)
Hausman Test (χ_k^2)	33.490 (0.000)		8.180 (0.226)	
No. of cross sections	10		5	
No. of Observation	1090		545	
Log likelihood	2895.14		1146.859	

Note: The values in parentheses () are standard errors for the estimated coefficients, but chi-square for the hausman test, while *** p<0.01, ** p<0.05, * p<0.1 denote significance at 1%, 5% and 10%.

6. Conclusion and Recommendation

This study has proposed an approach that should improve our understanding and ability to capture the responsiveness of exchange rate to other external price shocks and how such influences the degree of ERPT to domestic prices. Based on our empirical finding, we thus infer that taken exchange rate movement as mainly exogenous in the pass-through specification as often demonstrated in a number empirical studies tend to constitute biases in the estimate of the pass-through. Again, understanding whether the pass-through is symmetric or asymmetric for a particular economy is essential in the evaluation of the responsiveness of the exchange rate to shocks due to other external prices.

The findings of this study offer some avenues that can be helpful on the likely inflationary implication of exchange rate pass-through to domestic prices in both oil-exporting and oil-importing economies. First, there is no gainsaying that exchange rate stability has long been identified as a policy choice for many oil-exporting and oil-importing economies. However, our finding indicating pass-through as shock-dependent when explicitly modelled in nonlinear form can help our understanding

of the dynamics of the pass-through in several dimensions. Based on our finding of the significant role of changes in oil prices in the pass-through of the exchange rate to domestic import prices, particularly when the latter is expressed in nonlinear to capture asymmetries. This study, therefore, recommends that a pre –evidence-based policy options should form the core of monetary policy design to mitigate the pass-through of the exchange rate to domestic inflation. In the case of the investigated economies including net oil-importing and oil-exporting groups, we recommend that such evidence-based monetary policy option takes cognizance of which direction of currency movements (positive or negative changes in the exchange rate) seems more vulnerable to changes in oil prices to avoid being erroneous in their policy choice.

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