

Natural Resource, Value added and Economic Growth: Empirical Analysis from Selected African Countries

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ABSTRACT Africa is considered to have a large proportion of the world's natural resources, yet its balance of trade remains in deficit if compared with other trading partners. Nevertheless, this trend poses a challenge to the economic growth and development of Africa. The present research paper provides analysis on economic growth based on World Bank indices such as export of goods and services, industry value added, gross capital formation, and agriculture value added vis-à-vis gross domestic product (GDP) over a period of 9 years on selected African countries (Algeria, Angola, Botswana, Egypt, Ethiopia, Gabon, Ghana, Kenya, Namibia, Nigeria, Senegal, South Africa, Tanzania, Uganda and Zimbabwe) and provided explanations on their impact on economic value added in relation to economic growth and development. The paper concludes that rather than place a great deal of emphasis about the desirability of export earnings, one way to achieve economic growth and development is in terms of adding value to Africa's natural resources itself by transforming them into the final product.

INTRODUCTION

Until now, the mentioning of national income for most African countries connotes earnings from exports of natural resources. Beyond the mentioning of export earnings within these economies, there is little from the manufacturing sectors that add significant economic value contributions across the continent. Change to world economy in the last few years has been phenomenal, thus pointing to the need for individual countries to ensure their self-sufficiency and sustenance. While it would be easy to get swept along with the tide of enthusiasm on the part of governments that economic growth in this continent is due to the efficient investment of export earnings, much of the economic growth being branded are yet to translate into real economic development. Few years ago, many pundits had bemoaned the lack of shift in world economic growth from the West to developing nations. Now, this has changed but has yet to transform the way African countries conduct their business. There are few aspects of this economic growth in which value added concern is explicitly recognised as important. The question then is: Should these economies be bothered about issues of value added or should their attention be focused on reaping the reward of continued export earnings for economic growth now and deal with its under-development conse-

quences later? The answers are laden with uncertainties. The main focus of this paper is to offer a cautionary explanation lest, in the euphoria of economic vibrancy and emancipation, issues surrounding real economic growth and development are overlooked. Although, there has been increasing research on the subject of Africa's natural resources and the effect on economic growth and development, a critical appraisal of potential challenges to sustainable economic development issues vis-à-vis adding value to resource usage for economic development, needs to be resolved before Africa can claim unqualified economic success (May 2008; Vijayakumar et al. 2010; Ninga and Tucker 2011).

The concern in the present paper is that the bulk of economic growth and development research on African economies is not strictly about value added, but it is rather driven by interest in the extent to which export earnings are and can be reflected in national income (Armijo 2007; Tamazian et al. 2009; Pao 2010). Whilst economic growth and development as well as value added issues may well be at extreme positions, they are critically important to the success of Africa as a continent. This means that it is reasonable to assume that countries that consider value added issues are motivated by a concern for real economic growth and development, and therefore have the desire to improve the condition of their natural resources or, in the least, to reduce

the rate of export and damage caused to its natural environment. It is uncertain that such an outcome will result if value added is accorded importance in the face of the well-established conventional export business practices in this continent. Besides, there is no evidence to suggest that current conventional export business practices may well have been misplaced. This is because the efficacy of conventional export business practices to promote economic growth and development, through efficient management of earnings, is unreliable due to factors such as embezzlement and corruption. If conventional export business practices in these countries continue to encourage desecration of the natural environment, then it is necessary to conclude that current conventional export business practices in these African countries could, perhaps, end up doing more harm than good to the economic growth of this continent. This is the thesis that this paper sought to explore. The present paper works with the premise that (a) African governments typically adopt the conventional approach of exporting natural resources as its major income earner to achieve desired economic growth and development; and (b) the use of conventional natural resources export approach are in fundamental conflict with value added approach to economic growth and development. If these thoughts are true, then income earned from the conventional export of natural resources in Africa will be contributing to reduction in value added thereby threatening the fundamental principles of economic growth and development in the long term. This study provides an analysis on economic growth based on World Bank indices such as export of goods and services, industry value added, gross capital formation, and agriculture value added vis-à-vis gross domestic product (GDP) over a period of 9 years on selected African countries and provided explanations on their impact on economic value added in relation to economic growth and development.

The paper seeks to explore the research in three sections. The first section discusses natural resource exports and economic growth. The second section provides a review of value added and economic growth. The final section involves an empirical analysis of selected African countries economic growth in relation to the value added indices on resource usage to create final product. This is intended to act as an illus-

tration of the dangers of assuming that conventional export business approaches can deliver economic growth and development. Although, the links between African countries' levels of adding value to natural resources, conventional export business practices and economic development is a complex issue, the explanations on this set of relationships and their implications are provided later in the paper. The paper assumes that it would be ill-advised to state that adding value to a country's natural resources was safe in the hands of economic policy-makers.

Literature Review

Economic Growth Framework

In fact, economic growth is central to economic development because when a country's national income grows, the people benefit (World Bank 2014). Although there is yet to be a standardize formula to stimulate economic growth, data relating to economic growth measures such as gross domestic products (GDP), gross national income (GNI), employment, capital stock, investment, savings, consumption, government spending, exports and imports can help policy-makers understand their countries' economic situation (Anand and Sen 2000). Economic growth implies that citizens of a particular country's living condition and standard are improving. This is strengthened by good economic policies and circumstances but bad economic policies cripple long-term economic growth. Specifically, two factors that promote economic growth are efficiency of labour and capital intensity (Takahashi et al. 2012; Deakin et al. 2014). Efficiency of labour relates to how technology is deployed and used by an organization to increase the amount of output a worker can produce, even with the same amount of capital. Capital intensity is how large a multiple of current productions has been set aside in the form of useful machines, buildings and infrastructure, to boost productivity of workers, even with the same technology and organization. Although, economists have argue that investments that boost capital intensity play a major role in generating economic growth (Takahashi et al. 2012; Hasan et al. 2013; Teixeira and Tavares-Lehmann 2014), even more important and crucial to eco-

conomic growth are those factors that affect the efficiency of labour (Deakin et al. 2014).

Natural Resource Exports and Economic Growth

Incidentally, economic growth is often associated with increased business activities within the various economic sectors in an economy that makes the use of available natural resources (De Clercq et al. 2010). These business activities are guided by underlying business conventions of converting natural resources into usable products. Apparently, the objective of conventional business approach is to increase the return attributable to its shareholders through value creation. While it is the responsibility of the managers of these organisations to increase the required return to its stakeholders by creating value, their actions are shaped within prevailing economic circumstances and government regulations that have largely focused on conventional export business practices in Africa to achieve sustainable economic growth and development goals.

Indeed, conventional export business practices negate global sustainable economic development agenda in terms of the pursuit of different goals to a nation's prosperity. Although a country might claim to operate within a definite economic agenda merely by implementing government regulations and policies relating to economic development practices, yet such policies and regulations might still be contributing negatively to the economic equation by promoting business strategies that might endanger both economic growth and societal advancement in the long run. Since value added on resources have become increasingly significant to countries' economic survival, and as stakeholders within these economies take increasing interest in the risks and opportunities posed by the activities of conventional export business practices, it has therefore become inevitable that countries, especially within the African economic region, focus more on the implications of their individual actions.

Value Added and Economic Growth

The current challenge to African countries is to adopt value-added approaches that will turn their natural resources into economic opportu-

nity to limit the continued extraction of natural resources to create usable products. African countries need to embrace new economic approaches as they search for opportunities to respond to both societal economic demands while attempting to fulfil their economic responsibility to their international partners (Richardson 2011). In responding to societal economic demands, African countries need to design economic policies that would allow innovative industrial approaches that focus on the fundamental economic purpose of adding value to their natural resource to increase their countries' productivity curve through sustainable economic production.

Essentially, a successful country will both create value and ensure its economic policies are designed in a more friendly and responsible way. In effect, the objective of any country that seeks to conduct its economic business in a sustainable way has to do with more than just generating short-term economic value (Porter and Krame 2011). The long-term objective should structure an effective economic policy that ensures the economic survival and development of the country, such as reduction in export-oriented practices by maintaining a safe environment that promotes the creating of value to business. It is essential because belief in African countries to fulfil their value added economic obligations is at its lowest ebb. Hence, it is high time for African countries to demonstrate not only that they understand and share societal concerns, but that they are actually doing something about it.

African countries need to submit evidences that they are tackling their negative balance of trade concerns by pointing to specific value added activities as evidence that they are economically responsible as part of the economic growth and development strategy even if it is demanding. By engaging in such activities, a country gains increased economic benefit and significant national income benefits to the society as well as recognition for being an economically evolving and responsible country. Consequently, dealing with such value added issues makes good economic sense. Invariably, African governments need to accept that part of their economic bargain, is the endeavour to engage in finding solutions to societal value creation challenges rather than dismissing such as that of the society.

Making countries' economy viable implies making necessary economic policy changes to achieve sustainable value added which provides opportunities to create value for the society. This tests the ability of policy-makers to manage its natural resource issues through value added and at the same time offering economic benefits both in the short and long term. In the short-term, countries can focus on both internal and external revenue drives and reduction in natural resource export earnings; while in the long-term such economic drive will be to reduce its economic policy and regulatory risks throughout its economy.

Value Creation through Industrialization

The UNECA Southern Africa Office Expert Group Meeting Report (2013) listed some developmental gaps in Sub-Saharan Africa to include Africa's high dependence on primary products; low value addition to commodities before exports; high infrastructure deficit; high exposure to commodity price volatility; limited linkage of the commodities sector to the local economy; poorly developed private sector, which is highly undercapitalized; limited commitment to implement industrial policies; limited investment, science, innovation and technology; low intra-Africa trade; and slow progress towards strengthening regional integration. To address these gaps, African governments have designed industrialization policies. However, it appears that these policies have only yielded pockets of economic growth in the industrialization drive (World Bank 2013). As a result, African governments need to emulate the pattern in advanced economies where economic development was characterized by a shift in the focus of economic activity from agriculture to manufacturing and then to services. The industrial and geographic patterns of value-added trade are very different from one region to another (Daudin et al. 2011). Further, value-added trade is more important in regional trade since there is a huge difference between Africa and the rest of the world (World Bank 2013). In addition, the share of manufacturing value-added in the GDP of African economies is very low as compared to other emerging market peer economies (Kaplinsky and Morris 2008).

METHODOLOGY

Using relevant data from the World Bank, the present paper highlights experiences of 15 selected African countries economic growth based on indices such as export of goods and services, industry value added, gross capital formation, and agriculture value added vis-à-vis gross domestic product (GDP) over a period of 9 years and provided explanations on their impact on economic value added in relation to economic growth and development. These data were analysed based on the mean percentages of the selected indices and countries for the periods from 2004 to 2012. In fact, it was cardinal to adopt an explanatory analysis since the data obtained from the World Bank databank had already been subjected to various statistical analyses. Consequently, relying on a secondary data as such allow the study to make inference and draw conclusions. These data give a number of important information from which conclusions are drawn.

RESULTS AND DISCUSSION

Although, GDP growth percentage is a conventionally accepted approach to determine the economic growth of a country, statistics from the World Bank from 2004 to 2012 suggests that annual growth rate among African countries differ greatly. GDP is the sum of gross value added by all resident producers in the economy, plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources with annual percentage growth rate of GDP at market prices based on constant local currency (World Bank 2014). The GDP growth rates among selected African countries from 2004-2012 indicate a steady growth in average GDP rates for Ethiopia 47%, Ghana 31%, Nigeria and Tanzania 30%, Kenya 26%, Uganda 25% while Gabon 5%, Botswana 3% and South Africa 3% are experience a decline in average GDP rates of comparable period.

Despite that some African countries have experienced an increase in economic growth as shown in the GDP rates in recent years this is yet to translate to substantial economic development. And forasmuch as sub-Saharan Africa's economic growth and development is un-

derpinned by increasing export growth, much of Africa's export growth has been driven by natural resources (World Bank 2013). In effect, the average export of goods and services percentage to GDP among the selected African countries is on the rise in Ethiopia with 48%, Ghana 31%, Nigeria and Tanzania at 30%, Kenya 28%, Uganda 25%, Zimbabwe 19%, a decline in average export of goods and services in Senegal with 15%, Algeria and Angola 4%, Gabon 3% with Botswana and South Africa at 2%.

Exports of goods and services represent the value of all goods and other market services provided to the rest of the world. They include the value of merchandise, freight, insurance, transport, travel, royalties, license fees, and other services such as communication, construction, financial, information, business, personal, and government services. They exclude compensation of employees and investment income or factor services and transfer payments.

It appears that while some countries such as Ethiopia, Ghana, Kenya, Nigeria, Tanzania, Uganda and Zimbabwe's GDP is enormously influenced by export of goods and services, others like Botswana, Gabon, and South Africa export percentage falls below 10 per cent. This trend could be attributed to the availability of natural resources in large or little proportions among these countries. As a consequence, diversifying the African economy and broadening the export base towards high growth and employment sectors is critical for future development and poverty alleviation. Nevertheless, the IMF World Outlook 2013 projected a broad-based acceleration in economic growth in Sub-Saharan Africa, to around 5.5 per cent in 2013-2014, based on a reflection of robust domestic demand and increased investment in export-oriented sectors as the main economic drivers (UNEP United Nations Environment Programme 2013).

While the value added by a country is seen to be the combined efforts of capital, management, and employees; the statement need to show how the value added to natural resources has been distributed to each of these factors to indicate changes in the fortune of a country. Consequently, one can posit that substantial investment is required in areas such as engineering education, entrepreneurial development, and massive infrastructural enhancement that have been estimated at US\$93 billion over the

next 10 years (NEPAD-OECD 2011). Further, to convert natural resource to semi-goods or finished goods, the local industries need to be active. Industry value added includes manufacturing and comprises value added from mining, construction, electricity, water, and gas. The average industry value added as a percentage of GDP among the selected African countries, as shown by the World Bank review, indicates a 47% average for Ethiopia, Ghana 31%, Nigeria and Tanzania 20%, Kenya 28%, Uganda 25%, Zimbabwe 19% and Senegal 15%. However, on a declining rate are Algeria and Angola 4%, Gabon 3% and Botswana and South Africa at 2%.

The ratio of industry value added reflects contributions from industry related earnings to a country's GDP. The World Bank statistics reveals that Ethiopia is in the lead among the selected African countries that have improved its industrial earnings with Ghana, Kenya, Nigeria, Tanzania and Uganda raising their industry-related GDP contributions above 15 per cent during the period under review. The value added by a country determines the wealth created by that country which then translates to economic development through rewards and compensations derived by its citizens in form of reward to entrepreneurs or management; benefits to employees of that country engaged in conversion activities; taxation to government for its economic policies; compensation in form of interest to providers of capital such as financial institutions and individuals; and savings which can be used for expansion and economic growth. At the end of each fiscal year, governments should be able to evaluate the value added by comparing the gains or losses made to previous years.

It can be argued that adding value in Africa for economic growth and development is not only about the abundance of natural resources if consideration is to be given to industrialized countries that have fewer resources compared to African countries. If this argument is true, it means that the concept of value added as being promoted by African governments is flawed. In any case, an allusion can be made that adding value to achieve economic growth and development does not entirely depend on the vast amount of natural resources available in a country but beyond natural endowments. An analysis of the average gross capital formations as a percentage of GDP revealed a contrasting scenario among the selected African countries. At

the forefront of average gross capital formations as a percentage of GDP is Ethiopia with 48%, Ghana 31%, Nigeria 30%, Tanzania 29% and Uganda at 25%. On the decline in average capital formations as a percentage of GDP in the period under review are Algeria, Angola and Namibia 4%, Gabon 2.5% and Botswana and South Africa at 2%.

Gross capital formation consists of the percentage of outlays on additions to the fixed assets of the economy which also include net changes in the level of inventories. Fixed assets include improvements to land such as drains, fences, ditches and so on; plant, machinery, and equipment purchases; and the construction of roads, railways, seaports, airports, schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings. Inventories are stocks of goods held by firms to meet temporary or unexpected fluctuations in production or sales, and work in progress (World Bank 2014). Capital formations or gross domestic investment (GDI) demonstrates the level of growth in investments aimed at raising the industrialization potential of a country. This in-turn creates value domestically to enhance economic growth. The World Bank statistics indicates that countries such as Ethiopia, Ghana, Kenya, Nigeria, Tanzania, Uganda, and Zimbabwe have been investing in this area, a trend that correlates to similar contributions to GDP from their industry value added. Similarly, to achieve increased industry value added through consistent investment in capital formations, a country need to increase its agriculture value added since it serves as a supply chain for industrial inventories. With regard to this, analysis indicates the average contributions from agriculture value added to GDPs in the selected African countries to be divergent in comparison. Based on previous economic trend analysis, Ethiopia's average agricultural value added as a percentage of GDP during the period under review indicate an average of 47%, Ghana 31%, Nigeria and Tanzania 30%, Kenya 28%, Uganda 28%, Zimbabwe 19% with Algeria and Namibia on a low average of 4%, Gabon 3% and Botswana and South Africa as low as 2%.

Agriculture value added includes forestry, hunting and fishing, as well as cultivation of crops and livestock production. The value added is the net output of agricultural activities after adding up all outputs and subtracting intermediate inputs. It is calculated without making

deductions for depreciation of fabricated assets or depletion and degradation of natural resources. The origin of the value added is determined by the International Standard Industrial Classification (ISIC) (World Bank 2014). The World Bank statistics presents clearly the different commitment by each of the selected African countries at promoting agriculture's contribution to their GDPs. Again, Ethiopia leads in terms of GDP contributions from agriculture value added. This could mean that Ethiopia will have the majority of its youth engaged in adding value to the country's GDP through agriculture and hence economic growth. Ghana, Kenya, Nigeria and Tanzania are very active in this sector as well. However, South Africa's contribution from this sector appears to be constant at an average of 3 per cent during the period under review. It implies that South Africa is probably importing most of its agricultural needs. This raises concern about the economic policy within these economies since agriculture generates employment and sustains industrial growth through the supply of raw materials needed in production.

There is a strong link between government policies and strategy, economic growth and sustainable development; and countries are required to align their economic strategy and development with consistent value added in its resource utilisation, and increase in national income. In Africa, while more and more countries are realising the importance of managing natural resources and taking economic responsibilities of their regulations by having to include value-added issues on their strategic agenda, developing an all-embracing value-added approach that cuts across the entire sectors of the economy is a sure way to limit negative economic impact.

CONCLUSION

African countries need to take measures to compete industrially with other parts of the world since many of the developed countries are low in natural resources yet fully industrialized. While the greatest resource available to any country is its people, African governments need to add value not only to its natural resources to compete industrially, but should add value to its human resources through industrial-related training and education. The power to industrialize is embedded in knowledge management and good governance. With the vast majority of Af-

rican scholars engaged outside Africa, they will only add value to the economies that they have since adopted as their own.

For the concept of value added to be achieved by countries within the African economies, it has to be fully integrated into their economic development policies. Such value added and sustainable economic development issues that require integration include capital compensation, resource conversion through industrial policies, efficient supply chain system within these economies, strong financial institutions lending, reduction in resource export, and foreign direct investments, because most of these activities affect cross-border business interests. Similarly, it is important that government economic policies and regulations within this economic bloc are designed to be fair and proportionate one that stimulate value-added initiatives rather than stifle industrial innovations.

RECOMMENDATIONS

The study suggests that, to improve industrialization and economic growth within the African continent, a radical shift from the bureaucratic policy that delays the licensing of company formation due to corrupt lading systems need to adopt a more contingent approach that enables such bottlenecks to be dealt with as they occur to speed up approvals for the development of industrial sites.

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