Manufacturing Export, Infrastructure and Institutions: Reflections from ECOWAS

Uchenna R. Efobi and Evans S. Osabuohien

Abstract This study examines the extent of manufacturing export in ECOWAS countries, how it has been affected by the extent of infrastructural development and the distilling role of institutions. In retrospect, we present stylized facts that proves that ECOWAS poor infrastructural development has largely being driven by the poor institutions, which promotes private benefits rather than public good (such as infrastructure). In essence, this has hampered manufacturing export and reduced the extent of competitiveness of these countries.

Keywords ECOWAS • Infrastructural provision • Institutions • Manufacturing export • Manufacturing value added

JEL Classification F13 • F31

1 Introduction

The main focus of this paper is to examine the role of institutions in underscoring the linkage between infrastructures and manufacturing export in countries in the Economic Community of West African States (ECOWAS).

The manufacturing sector plays a vital role in enhancing countries' global competitiveness and the extent of their internationalisation drive. This includes their ability to adequately provide goods and services that are able to compete effectively in the international market, where demand is mostly based on the quality and efficiency of the products being sold. This has brought about the reiteration that countries in Africa should pay more attention to improving the manufacturing sector, unlike the traditional export baskets that include the composition of primary

U.R. Efobi (✉)
Department of Accounting, School of Business, College of Development Studies, Covenant University, KM 10, Idiroko Road, Ota, Ogun State, Nigeria
e-mail: efobi99@yahoo.co.uk; uche.efobi@covenantuniversity.edu.ng

E.S. Osabuohien
Department of Economics and Development Studies, Covenant University, Ota, Nigeria

German Development Institute, Bonn, Germany
e-mail: pecos4eva@gmail.com; stephen.osabuohien@covenantuniversity.edu.ng

D. Seck (ed.), *Accelerated Economic Growth in West Africa*, Advances in African Economic, Social and Political Development, DOI 10.1007/978-3-319-16826-5_8

products like those from the agriculture or natural resource. The address by the World Bank's president in 2014 clearly states that the hope of African countries should focus on developing the light manufacturing sector, which could help in the development of industrialization, export diversification, and job creation (Kim 2014). Kim also stated that recent analysis suggest that the development of this sector could create about seven million new jobs in the continent and the drastic effect on a continent that currently faces unemployment situation, is immeasurable.

The issues relating to the development of the manufacturing sector cannot be discussed in isolation. There are catalysts to this development, called infrastructure. Infrastructure encompasses those physical components or structures that is needed to enhance the operation of a particular process in a society. With regard to the manufacturing sector, infrastructure plays two important roles: the enhancement of the input and the output process in a production system. With regards to the input process, infrastructure enhances the procurement of material input and also in the preservation of these inputs. The output processes involve the use of infrastructure in preserving, securing and transporting the finished products to the potential market.

The cost of poor infrastructural development is seen in the increased cost of trading, in the form of production and transportation cost (Limao and Venables 2001; Abe and Wilson 2009). For instance, the recent industrial migration from Nigeria to neighbouring countries—like Ghana—was attributed to increased cost of production due to poor power supply and port congestions that consequently resulted to increased overhead cost of production of manufacturing companies (Sunday Trust 2013). Likewise, industries in most of these countries (African countries) experience increased trade cost on transportation of raw materials and finished goods, as a result of poor infrastructural facilities (World Bank 2013). Actually, poor infrastructural development in African countries (including ECOWAS countries) is one of the main impediment to trade development. This cannot be denied seeing the Statistics that shows that limited road access in Africa reaches only about 34 % of the rural community, compared to the 90 % for the rest of the world (African Development Bank-ADB 2010a). Likewise, less than 40 % of the region's population have access to electricity and about one-third, living in rural areas, are within 2 km of an all-season road, compared to two-thirds of the population in other regions (ADB 2010b; Obilomo and Ojo 2013).

The World Bank (2013) predicted that for African countries to be effectively competitive in the global sphere, there is the need for an annual investment of about US$93 billion until 2020 for infrastructural development. Noting this prediction, most African countries have resorted to the consideration of increased inflow of Foreign Direct investment (FDI) and Official Development Assistance (ODA) to offset the huge infrastructural deficit. It is no wonder that across Africa, over 70 % of the public funding comes from foreign aid (Moyo 2009); Asiedu (2006) earlier confirmed that the need for African countries to attract FDI in order to fill their resource gap is needed for development projects. The inflow of these forms of capital is not without a cost. Apart from the fact that the continent has experienced increased poverty and institutional breakdown as a result of these funds (Moyo

2009), the uncertainty of these funds is another encumbrance to their reliance for developmental projects (African Economic Outlook 2014).

In the light of these, the quality of institutions and governance structure is considered as a sustainable alternative. In essence, we argue that African countries can begin to play less on depending on foreign resource for financing their infrastructural deficit, by improving their institutional and governance structure to effectively manage funds and reserves to aid this. This argument stems from the fact that African countries experience huge resource leakages from fund outflow that is predicated on poor institutions. For instance, in 2002, the African Union estimated the annual cost of corruption on the continent to be US$150 billion.[1] Putting this in perspective, African countries will experience a windfall from public resources (in the form of channelling these funds to development projects like infrastructural development) if institutions are developed and the governance structure is enhanced.

The theoretical justification for this argumentation is intense, as proponents of institutional economics (e.g. Acemoglu et al. 2001; Blair-Henry and Miller 2008; Acemoglu and Robinson 2012; Osabuohien and Efobi 2013; Efobi 2015), have argued that the distinguishing factors between countries—in the global sphere—is the strength of their institutions and policies. Acemoglu and Robinson (2012) portrays a compelling discuss by noting that institutions are political forces that creates incentives for government and politicians and determines the quality of policies that are put forward by them. Sometimes, these forces are either overt or explicit, but the common peculiarity is that these rules—no matter the form—structure social interactions (Hodgson 2006). Some other contributors to the literature on institutional economics include North (1990, 1991) and a host of others like Osabuohien and Efobi (2013), Asongu (2014). Putting this in perspective, we suspect that the reason why African countries—ECOWAS inclusive—have not recorded much progress in infrastructural development that would have hitherto enhanced growth is because of the poor institutional forces that exist in these countries. Analogically, political actors in these countries would have had incentive to pursue the development of infrastructure for trade facilitation if only the extent of institutional development was emphasised.

Noting this, policy analysts have consistently presented a wake-up call for the strengthening of the institutional framework of African countries to pursue improved infrastructural development. For instance, in the ECOWAS region, the regional community is beginning to emphasise the need for regional actions that will propel member states to put in place policies to enhance infrastructural development. Some of these actions include the Supplementary Act of 2007 that focused on the harmonisation of policies and regulatory framework for the

[1] Considering that African countries' average inflation rate of 7.08 for 2003–2010 (according to the United Nations Statistics, available at http://www.un.org/en/development/desa/policy/wesp/wesp_archive/2012annex_tables.pdf), then the value for US$150 billion in 2010 would be about US$1 trillion, which is over 11 times more than the annual contribution required for infrastructural development.

development of soft (ICT) infrastructure in the sub-region. Article 33 of the Act provides that member states should participate in the modernisation and development of infrastructure in order to provide reliable interconnectedness, both for regional and international communication (ECOWAS 2007). Among the notable achievements of this effort is the declaration for the support of the deployment of submarine cable project that links member countries to Southern Europe (Osabouhien and Efobi 2014).

It is on this note that this study intends to empirically examine the linkage between institutional development and its effect on infrastructure and manufacturing export in African countries—especially ECOWAS countries—to be precise. The main reason for focusing on ECOWAS countries is highlighted in the subsequent section (stylized trend) of this paper. The remainder of the paper is organised as follows: Sect. 2 presents discuss from the empirical literature, while Sect. 3 provides some stylized facts. In Sect. 4 we present some bi (and multivariate) relationships between the three elements of study. Section 5 concludes with policy implications.

2 Insights from Literature

It is advantageous for countries to begin to focus on the improvement of the productivity of their manufacturing sector. This is especially when countries are beginning to think towards enhancing their global competitiveness. In Africa, this cannot be overemphasised due to the fact that there has been an over reliance on primary product by most of the countries in this region. In a policy document by the United Nations Economic Commission of Africa-UNECA (2013), the need for the development of the manufacturing sector of African countries was tied to the fact that the productivity gains that emanates from the linkages (backward and forward) between the manufacturing sectors and other sectors gives rise to increased scope for technology transfer and diffusion, and improved managerial and technological spill-overs. Generally, the manufacturing sector has also been known to be an economic growth enhancer through its functional role in capital accumulation, knowledge and managerial skills transfer, increasing economies of scale and learning by doing effects.[2]

The literature on the relevance of infrastructural development on trade is rather much with reiterating stances cutting across regions. For instance, the Asian's region trade expansion was in turn facilitated and encouraged by the development of supporting infrastructure including physical and institutional infrastructure (Douglas and Jayant 2005). This massive investment in infrastructure for trade facilitation was facilitated by the structural reforms in this region that was targeted

[2] For more discussion on the importance of the manufacturing sector, see Mbate (2014), who examined industrial policy and structural changes in ECOWAS countries.

at improving the environment for investment, production and trade. In essence, countries within the region understood that the duo (infrastructure and trade) are complimentary in themselves, although there is still the need to boost infrastructural provision in this region.

In an earlier study on European countries' trade performance, the conclusion was reached that infrastructural availability drastically affected transport cost of trade (Bougheas et al. 1999). Their theoretical model predicts that for pairs of countries for which investment in infrastructure is optimal, a positive relationship between the level of infrastructure and the volume of trade is predictive. Focusing on Africa, Tomasz and Colin (2009) estimated a standard gravity model with particular reference to Africa: they concluded that trade facilitation—in the form of improved quality of the basic transport and communications infrastructure—improves export performance in Africa. Somewhat similar conclusion was reached on a global perspective by Portugal-Perez and Wilson (2012) that the marginal effect of the transport efficiency on exports appears to be decreasing with per capita income. In contrast, they emphasise that the impact of physical infrastructure on exports appears increasingly important for richer countries.

It is not surprising that infrastructure services plays a significant role in trade costs by reducing distribution margins, lowering prices and raising consumer welfare; more so, infrastructural provisions increases the profitability for exporters—by lowering transaction costs and value addition to the production process—while expanding linkages to the global distribution networks (Douglas 2005, 2008).

Of course, the influence between trade and infrastructure is expected as Nordas and Piermartini (2004) clearly highlights four possible interactions that stems from the relationship. The first is the *direct monetary outlays*, which covers the charges for infrastructural services. As expected, in countries with poor infrastructural service, this outlay becomes higher and even increases the overhead cost for the benefit from such services. *Timeliness* of delivery of goods and services is another outcome that is influenced by infrastructural services. The third is *risk* of damages, losses and higher insurance cost on goods produced, while poor *market access* is the fourth issue caused by poor infrastructure.

Noting the relevance of infrastructure on trade, it is therefore puzzling on why countries do not pay much attention to the development of this social good. In understanding these reasons, it is important to address this issue from the institutional perspective. The reason for this approach is because institutions are supposed to be a form of framework that creates incentives for public officers to consider efficient actions for the overall good of the society (Acemoglu and Robinson 2012; Efobi 2015; Asongu 2014). These actions are in the form of policies that pertains to the overall progress of the society (Blair-Henry and Miller 2008). Therefore, it is prudent to assume that states that do not experience considerable progress in infrastructural development are lacking in the development of efficient institutions to drive these progress. Francois and Manchin (2007) seem to support this suspicion.

Likewise, recent study by Cissokho et al. (2013) further buttress this stance, noting that for West African countries to maximize their agricultural export, they need to engage in investments in better infrastructure and institutional frameworks in the form of faster customs clearance and fewer police payoffs at the borders. Cissokho et al.'s study is the closest to this current study. They emphasized the role of institutions and supplemented their recommendation based on an interview carried out at two borders (Dakar-Kayes and Dakar-Bissau). Their submissions calls for the need for further investigation on the linkage between institutions, infrastructure and trade.

Also, a more compelling literature on the role of institutions on trade is emerging. Proponents of this debate have examined this linkage in diverse perspectives. Some have concluded that there is a strong relationship between investment in productivity (which affects country's trade performance) and the quality of institutions (Knack and Keffer 1995; Mauro 1995; Rodrik 1995; Brunetti and Weder 1998). On another perspective, some authors noted that weak institutional framework actually affects productivity by either reducing aggregate productivity or slowing productivity growth (Hall and Jones 1999; Olson et al 2000). Yet from another perspective, poor institution is accused for a country's poor integration in the international market because poor institutions can hurt a country's capacity to export manufactured goods (Meon and Sekkat 2008; Osabuohien and Efobi 2011).

With these compelling arguments, this current study considers the role of institutions in determining the extent of provision of public infrastructure for enhanced trade. This perspective is germane considering that poor institutional framework creates a disincentive for public officers to act accordingly for state interest. In essence, this is not about creating rules to guide behaviors of economic agents but that the emphasis should be on the rules. Thus, the behaviors of individual are only guided by the rules and not any form of informalities like norms and accepted ways of behaviors prevalent in a particular system (World Bank 1997). Putting this in context, the rising trend of poor institutions in a country will give rise to the erosion of governmental legitimacy and consequently hampers the effective delivery of public goods and services (Lawal 2007). This has been empathetically reemphasized in the case of African countries (e.g. Asiedu 2006; Asiedu and Lien 2011; Fosu 2011; Osabuohien and Efobi 2013; Efobi 2015).

3 Stylized Trends: Manufacturing Sector,[3] Infrastructure and Institutions

To understand the performance of the manufacturing exports of African countries (especially ECOWAS countries), this study first of all observes the performance of the manufacturing sector. The main indicator in achieving this is the manufacturing

[3] Emphasis was on the extent of productivity and export of the manufacturing sector.

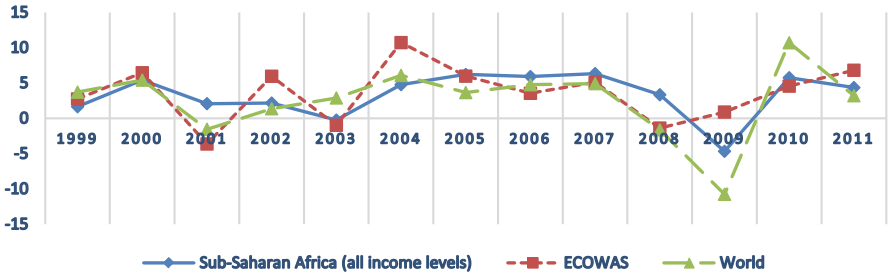

Fig. 1 Manufacturing value added annual growth rate. *Source*: Authors' computation from World Bank (2013)

value added, which explains the net output of industries in a particular country after adding up all outputs and subtracting intermediate inputs (World Bank 2014).

Obviously, the manufacturing sector in many of African countries have experienced an undulating growth rate, as displayed in Fig. 1. However, this direction of flow is not peculiar to African countries, as the trend for world average was not stable as well. However, there is a need to appreciate the manufacturing sector growth rate of African countries, noting that apart from the earlier period prior to the financial crisis and during the crisis, these countries have exhibited a stable rising of the productivity of this sector. For instance, in the ECOWAS region, the manufacturing sector witnessed a consistent rising trend from 2008 onward from −1.38 % to about 6.30 % in 2012. Similar trend was displayed for SSA countries, except that after 2008, the rising trend was not as smooth as that of ECOWAS region.

Noting this seemingly 'success story' for ECOWAS countries, the extent to which the manufacturing sector contribute to the GDP of these countries is still minimal. For the period 1995–2012, the manufacturing sector contributed below 10 % to the GDP and this trend is decreasing by the year, except for 2012 as depicted Table 1. Other African countries in the SSA region also witnessed similar modicum contribution of the manufacturing sector to GDP, at-least when comparing both regions with the average of countries from other regions of the world as displayed in Table 1. For instance, countries in East Asia and Pacific (EAP)—such as China and Malaysia—experienced a whooping contribution of the manufacturing sector to their economy with rates above 20 % for most of the period. Likewise, countries in Europe and Central Asia (ECA), Latin America and the Caribbean (LAC), and South Asia (SA) all had manufacturing sector contributions rate of about 15 % or more in most of the period presented in the table.

The trifling contribution of the manufacturing sector of ECOWAS countries and countries in SSA to the overall economy reflects the performance of these countries in manufacturing export. As displayed in Fig. 2, the manufacturing sector in ECOWAS and SSA countries, are able to account for between 20 and 30 % of the total merchandise export. This rate is far below the global average that was consistently within the range of about 70 %. The manufacturing sector in countries

Table 1 Manufacturing, value added (% of GDP)

	1995–1999	2000–2004	2005–2009	2010	2011	2012
East Asia and Pacific—EAP	24.271	23.203	22.991	22.969	22.370	19.224
Europe and Central Asia—ECA	19.347	17.572	15.959	15.117	15.168	14.824
Latin America and Caribbean—LAC	18.646	18.436	17.349	16.753	16.300	15.228
South Asia—SA	15.862	15.136	15.647	14.852	14.870	14.344
Sub-Saharan Africa—SSA	13.558	13.076	11.695	10.941	10.340	9.835
ECOWAS	9.031	8.040	7.366	7.135	7.090	8.451
World	19.107	17.792	16.697	16.188	16.100	NA

Note: The region—Middle East and North Africa—was not included due to data unavailability for the period considered
Source: Computations from World Bank (2013)

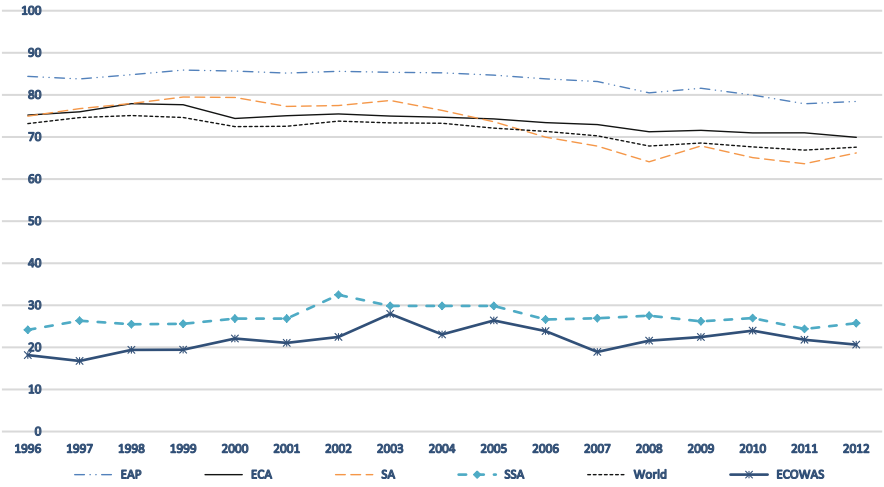

Fig. 2 Manufacturing export as % of total merchandise export. *Note*: *EAP* East Asia and Pacific, *ECA* Europe and Central Asia, *SA* South Asia, *SSA* Sub-Saharan Africa. Latin America and the Caribbean and Middle East and North Africa were not included due to data unavailability for the period. *Source*: Computations from World Bank (2013)

in East Asia and Pacific, Europe and Central Asia and South Asia exported way above 70 % of the total merchandise export.

To be exact, not only have the manufacturing sectors of countries in these regions performed below the world average, they have experienced decreasing trend in terms of percentage of manufacturing export to total merchandise export. For instance, the percentage dropped from 26.39 % in 2005 to 20.64 % in 2012, after it increased from 19.44 in 1999. Of course, the manufacturing export in SSA countries also dropped from 29.84 % in 2005 to 25.75 % in 2012, after it increased from 25.61 % in 1999. No wonder the sea port of countries in this region have

Table 2 Container (20 foot equivalent units) Port Traffic

	1995–1999	2000–2004	2005–2009	2010	2011	2012
EAP	–	50.83	52.00	52.98	53.70	54.12
ECA	–	21.06	19.24	17.44	17.50	17.32
LAC	–	6.55	6.77	7.40	7.15	7.17
MENA	–	0.00	5.32	8.58	8.61	8.55
SA	–	2.35	2.87	3.20	3.09	3.01
ECOWAS	–	0.20	0.07	0.07	0.07	0.08

Note: The region—SSA was not included due to data unavailability for the period considered
Source: Computations from World Bank (2013)

experienced low traffic compared to those in other regions (see Table 2), reflecting the low participation in international trade relative to the shipping activities in the ports. As a matter of fact, much more less than 1 % of the total global flow of containers from land to sea are to or from the sea ports of ECOWAS countries.

The poor infrastructural provision[4] in this region (ECOWAS) cannot be denied as a likely suspect (Table 3). Apart from policy submissions to this effect (e.g. African Development Bank-ADB 2010a, b; World Bank 2013), the statistics of some infrastructural indicators validates these claim. For instance, considering the electric power consumption per capita—presented in the first segment of Table 4—which measures the Kilo Watt per capita of electricity available for public consumption, ECOWAS countries (and SSA at large) had a dismal statistics. For the entire period, countries in these regions had a highest KWh per capita consumption of about 223 (for ECOWAS) and 534 (for SSA). This is many folds less than the global average KWh consumption and those countries in other regions such as EAP, ECA, LAC and MENA.

In the same vein, in Table 4, the average total rail lines in ECOWAS region dropped from 1,572.71 km in the period (1995–1999) to 630.50 km in 2013. Comparably, the statistics for countries in the EAP region presents a dissimilar trend. In the EAP region, the average rail lines increased from 276,655.75 to 374,221.00 km in similar period. The decreasing trend in the rail lines per km is likely traceable to poor maintenance of the rails and in some cases, fund mismanagement that would have been used to maintain the rails. For instance, Nigeria recounts incidences of misappropriation of public fund that would have hitherto improved public infrastructure. Recently, railway staffs of the Nigerian Railway Corporation were indicted for fraud that is worth over US$6 million (PM News 2014).

Likewise, the road and ICT (internet) infrastructure in ECOWAS and other SSA countries is still below the world average. In frantic, compared to other regions of the world such as the EAP, ECA, LAC and MENA, countries in ECOWAS and SSA region are many folds below the average infrastructural development obtainable.

[4] Other measure of infrastructure (Logistic Performance Index) was presented in Table 3.

Table 3 Logistics performance index on quality of trade and transportation and related infrastructure

	2007	2010	2012
Benin	1.89	2.48	2.57
Burkina Faso	1.89	1.89	2.40
Cape Verde	NA	NA	NA
Cote D'Ivoire	2.22	2.37	2.31
Gambia	2.33	2.17	2.19
Ghana	2.25	2.52	2.05
Guinea	2.33	2.10	2.34
Guinea Bissau	2.25	1.56	2.68
Liberia	2.14	2.00	2.41
Mali	1.90	2.00	2.00
Niger	1.40	2.28	2.45
Nigeria	2.23	2.43	2.27
Senegal	2.23	2.43	2.27
Sierra Leone	2.09	2.64	2.31
Togo	1.83	1.61	2.50
ECOWAS	2.07	2.18	2.34
World average	2.58	2.64	2.76

Source: Authors' compilation from World Trade Indicators

However, there is need to emphasise that ECOWAS region records an impressive road network compared to other regions in Africa. From Table 4, we observe that the ECOWAS region had an average paved road network ranging from 19.12 to 35.50 % of the total roads, while those in other SSA countries ranged from 15.61 to 17.96 %.

Not beguiled by the seemingly impressive performance of ECOWAS countries compared to other sub-regions in Africa—in relation to some infrastructural provisions—the poor performance of the manufacturing sector of African countries in general (including ECOWAS countries) raises serious concerns. In this study, the poor institutional development in this region is ascribed as a likely culprit. The statistics for the indicators of institutions—as reported by the World Governance Indicators—and as displayed in Table 5 does not deny this fact. As it is, countries in ECOWAS region and SSA (at large), recorded lower scores for the control of corruption and government effectiveness. Although in regulatory quality measures, the performance of these countries in relation to those in other regions of the world, is kind of murky.

Emphasis is placed on the control of corruption and government effectiveness because of the significant role they play in the improvement of infrastructural facility. Considering the control of corruption, it measures the extent to which public offices are exercised for private gains—including both petty and grand forms of corruption—and other forms of "capture" of the state by elites and private interests (World Bank 2013). It also measures the strength and effectiveness of a country's policy and institutional framework that are put in place to prevent and combat corruption. On the other hand, government effectiveness captures the

Table 4 Infrastructural development

Electric power consumption (kWh per capita)						
	1995–1999	2000–2004	2005–2009	2010	2011	2012
EAP	1,465.55	1,837.81	2,558.37	3,063.47	3,263.54	–
ECA	4,722.48	5,107.15	5,457.38	5,515.09	5,465.18	–
LAC	1,434.98	1,589.24	1,804.44	1,954.67	2,045.50	–
MENA	1,547.43	1,910.07	2,327.01	2,667.04	2,704.73	–
SSA	534.46	524.71	536.85	529.92	534.93	–
World	2,255.15	2,457.13	2,781.32	2,981.61	3,045.01	–
ECOWAS	150.06	158.06	171.85	211.72	223.01	–
Roads, paved (% of total roads)						
EAP	–	41.08	41.57	–	64.97	–
ECA	–	86.00	87.01	–	86.22	–
LAC	–	31.48	32.96	–	25.97	–
MENA	–	78.00	73.51	–	80.39	–
SSA	–	17.96	18.00	–	15.61	–
World	–	46.01	40.76	–	57.01	–
ECOWAS	21.67	19.12	20.88	35.50	20.57	–
Internet users (per 100 people)						
EAP	1.41	9.00	21.36	34.23	37.24	41.15
ECA	4.18	22.67	43.01	56.30	59.29	63.97
LAC	0.86	8.83	23.72	34.71	39.35	43.43
MENA	0.35	4.20	15.44	26.63	30.99	35.92
SSA	0.20	0.96	4.43	10.16	12.74	14.68
World	2.40	10.38	20.62	29.35	32.02	35.58
ECOWAS	0.08	0.86	3.47	7.11	8.46	9.28

Note: The regions presented were based on data availability

Table 5 Institutional quality

	Control of corruption				Government effectiveness				Regulatory quality			
	1996	2000	2005	2008	1996	2000	2005	2008	1996	2000	2005	2008
EAP	−0.43	−0.6	−0.53	−0.57	−0.3	−0.48	−0.46	−0.53	−0.35	−0.61	−0.56	−0.69
ECA	−0.70	−0.62	−0.52	−0.48	−0.58	−0.51	−0.37	−0.31	−0.59	−0.49	−0.32	−0.1
ECOWAS	−0.59	−0.61	−0.70	−0.62	−0.83	−0.76	−0.86	−0.79	−0.73	−0.57	−0.70	−0.64
LAC	−0.35	−0.18	−0.16	−0.12	−0.34	−0.15	−0.14	−0.10	0.22	0.07	−0.07	−0.12
MENA	−0.46	−0.57	−0.55	−0.62	−0.45	−0.63	−0.63	−0.61	−0.64	−0.78	−0.73	−0.63
SSA	−0.63	−0.58	−0.68	−0.62	−0.66	−0.72	−0.78	−0.78	−0.65	−0.64	−0.75	−0.7
World	−0.03	−0.02	−0.02	−0.02	−0.04	−0.01	−0.01	−0.01	−0.05	−0.03	−0.02	−0.01

Notes: The values ranges from −2.5 (worst) to +2.5 (best) i.e. the higher the better. *EAP* East Asia and the Pacific, *ECA* Europe and Central Asia, *MEA* Middle East and North Africa, *LAC* Latin America and Caribbean, *SSA* Sub Saharan Africa. The years reported are those that have values for the regions afterwards the data has been mainly reported for countries not regions

Source: World Governance Indicators as computed by Kaufmann, D., Kraay, A., & Mastruzzi, M. (2010) for the World Bank (2010)

Table 6 Institutional quality of ECOWAS countries

	Control of corruption		Government effectiveness		Rule of law	
2001–2005	2006–2010	2001–2005	2006–2010	2001–2005	2006–2010	
Benin	−0.664	−0.614	−0.393	−0.522	−0.462	−0.625
Burkina Faso	−0.088	−0.354	−0.616	−0.621	−0.598	−0.314
Cape Verde	0.283	0.746	−0.042	0.098	0.309	0.508
Cote D'Ivoire	−0.987	−1.119	−1.089	−1.234	−1.390	−1.379
Gambia	−0.496	−0.677	−0.560	−0.664	−0.167	−0.372
Ghana	−0.236	0.033	−0.121	0.009	−0.044	−0.044
Guinea	−0.774	−1.138	−0.896	−1.194	−1.221	−1.493
Guinea Bissau	−1.026	−1.078	−1.279	−1.079	−1.248	−1.348
Liberia	−3.032	−0.630	−3.954	−1.563	−4.369	−1.289
Mali	−0.527	−0.509	−0.676	−0.815	−0.224	−0.341
Niger	−0.921	−0.731	−0.839	−0.811	−0.779	−0.654
Nigeria	−1.248	−0.970	−0.955	−1.069	−1.380	−1.145
Senegal	−0.006	−0.552	−0.157	−0.366	−0.012	−0.311
Sierra Leone	−0.908	−0.915	−1.333	−1.181	−1.273	−0.980
Togo	−0.810	−0.991	−1.452	−1.469	−0.943	−0.894

Note: The three measures are valued from −2.5 (weak institutions) to +2.5 (strong institutions)
Source: Authors' computations from World Governance Indicators (World Bank 2013)

quality of the public services, the civil service and its independence from political pressures. Likewise, the quality of policy formulation and implementation, and the credibility of the government's commitment to its stated policies, is also indicative of the extent of government effectiveness. These two measures, in some form, are expected to affect the extent of infrastructural development. Pathetically, the performance of countries in ECOWAS and SSA were not impressive (see further description in Table 6).

4 Empirical Strategy

The basic empirical model that underpins this relationship takes its clue from the empirical model Sekkat and Varoudakis (2000) that was applied in Meon and Sekkat (2008), which assumes that the exports of manufacturers are explained by the following relationship:

$$log(X_{it}) = \alpha_{0i} + \alpha_1.log\,(E_{it}) + \alpha_2.RYP_{it} + \alpha_3.log\,(I_{it-1}) + \mu_{it} \quad (1)$$

Where the main explained variable is the ratio of exports to GDP for the relevant year (X_{it}), while the explanatory variables include the real effective exchange rate (E_{it}) that captures the countries' currency appreciation/depreciation. The other

variables include the GDP growth rate of country 'i's' partners (RYP) and the lag of investment in the relevant sector over GDP ($I_{it\text{-}1}$).

Noting that the empirical model of Sekkat and Varoudakis (2000) closely relates to the thesis of this study, we apply this model in this study by including some of their covariates and our main variables of interest. In this study, we are interested in the infrastructural provision and the interactive variable with institutions. The covariates—from Sekkat and Varoudakis' model—that is relevant to this study are the exchange rate and investment. The main reason for the choice of these covariates include the fact that exchange rate will reflect the relevant price for trade as an increase in the exchange rate will mean an appreciation of the exporter's currency and this will have a negative effect on trade. Likewise, the inclusion of investment variable is based on the grounded assumption that investment will improve manufacturing output and consequently, trade (Liu et al. 2001, 2002; Makki and Somwaru 2004).

Therefore, the empirical model for this study is presented as:

$$log(X_{it}) = \alpha_{0i} + \alpha_1.log\,(E_{it}) + \alpha_2.log\,(I_{it-1}) + \alpha_3.Infras_{it} + \alpha_4.Inst_{it} + \alpha_5.Infras \times Inst_{it} + \mu_{it} \quad (2)$$

It is expected that infrastructure '*Infras*' and institution *'Inst'* will have a positive effect on manufacturing export. This—in no gainsay—is expected due to the role of infrastructure and institution on export (Meon and Sekkat 2008; Cissokho et al. 2013). The main focus of this study is the behavior of the interactive variable '$Infras \times Inst_{it}$', which presents the multiplicative between institutions and infrastructural provision. A positive variable connote that the improvement of institution will improve infrastructural provision that affects growth. In essence, the complimentary effect is being portrayed by a positive sign. On the contrary, a negative sign connote that our argument is flawed and the relationship between the variables is substitutive.

4.1 Variable Definition and Source

The variables that was included in the model [Eq. (2)] are defined in Table 7 and the sources were also presented.

4.2 Method of Analysis

To ensure that the estimated results are not spurious, alternative econometric methods was applied in the estimation. The Ordinary Least Square (OLS) regression will be applied in the estimation. Noting the issues—like heteroscedasticity

Table 7 Variables definition and source

Variable	Identifier	Definition	Source
Manufacturing export	X_{it}	Manufacturing export, measured as percentage of merchandise export	WDI
Exchange rate	E_{it}	Real exchange rate	WDI
Investment	$I_{it\text{-}1}$	We applied the growth rate of the manufacturing value added as a proxy for the extent of investment in the manufacturing sector. Gross fixed capital formation as a percentage of GDP would have being used but this is more generic	WDI
Infrastructure	$Infras_{it}$	Measured as the average of internet users per 100 persons, mobile and fixed line telephone subscribers per 100 persons, and telephone users per 100 persons	WDI
Institutions	$Inst_{it}$	*Corruption (CC)* is the extent of corruption and the extent to which public offices are misused for private gains; *Government Effectiveness (GE)* captures the quality of government policies and the commitment of the government to such policies	WGI

Note: The institutional variables are standardized on a scale from −2.5 (weakest institutions) to +2.5 (strongest institutions). *WDI* World Development Indicators, *WGI* World Governance Indicators

and autocorrelations—related with the OLS technique, the Feasible Generalised Least Square (FGLS) technique was also applied because it allows for the presence of heteroscedasticity across the sampled countries and autocorrelation within the panels. This provides for panel-corrected standard errors. These two approaches will be relevant for sensitivity checks. As a matter of importance, the Systems type of GMM estimation technique, which has been favoured by some studies like Asiedu and Lien (2011); Asongu (2014). The uniqueness of the SGMM technique is that it uses internally generated instruments to addresses issues of endogeneity (Blundell and Bond 1998, 2000). For the SGMM technique to be relied upon, it is expected that the test for autocorrelation *AR (2)* and the Sargan test for instrument over-identification must be ≥ 0.05.

The SGMM equation type for Eq. (2) is as follows:

$$\log(X_{it}) = \alpha\log(X_{it-1}) + \alpha_1.\log(E_{it}) + \alpha_2.\log(I_{it-1}) + \alpha_3.Infras_{it} + \alpha_4.Inst_{it} + \alpha_5.Infras \times Inst_{it} + \eta i + \varepsilon_i \quad (3)$$

The other variables are as earlier defined and the lag of the explained variable has 'α' coefficient. The variable 'η' is the unobserved country-specific effects and the error term is 'ε_i'.

4.3 Sample

The 15 ECOWAS countries were included for the period 2000-2012. The sampled countries include: Benin, Burkina Faso, Cape Verde, Cote D'Ivoire, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, and Togo. The period chosen was based on data availability for the chosen variables.

5 Juxtaposing the Relationship: Atleast for ECOWAS

The summary statistics of the main variables for ECOWAS countries are presented in Table 8.

As a first check, the validity of the internal instruments that was used in the SGMM, was considered. The checks are the Sargan and AR (2) test. Considering the statistics of the two tests [Sargan and AR (2)], in all the columns in Table 9, the instruments were valid and were not over-identified. This is following the p-values of the test results. This confirmation renders the result from this study relevant and reliable for inference.

To be concise, focus was only on the interactive variables (Control of Corruption × Infrastructure; Government Effectiveness × Infrastructure) that shows the juxtaposing between institutions, infrastructure and manufacturing export. This results was displayed in the last segments of Table 9. The signs and significant values of these interactive variables show that when considering the development of institutions (i.e. corruption), infrastructure and manufacturing export, we perceive that institutions and infrastructure play a substitutive role. As a matter of fact, infrastructural development will impact less on manufacturing export in countries where the control of corruption is improved. The coefficient of this variable is '−0.761' and it is significant at 1 % level of significance.

This result contradicts the prediction in this paper as we expected that institutions are complimentary factors in the infrastructure-manufacturing export nexus. Put different, infrastructure development was expected to improve manufacturing export in countries where the control of corruption is improved. Likewise, when considering government effectiveness and the role it plays in the infrastructure-manufacturing export nexus, we also perceive that infrastructure impacts less on manufacturing export in countries where the government effectiveness is improved. In essence, institutions play a substitutive role with infrastructure in influencing manufacturing export. The coefficient of this variable is '−0.552' and it is significant at 10 % level of significance.

Faced with this somewhat contradiction, we raise a very important point: despite the fact that institutional development is supposed to enhance the influence of infrastructural development on manufacturing export, the case of ECOWAS is different. Possibly, mere institutional development is not enough to enhance

Table 8 Summary statistics of variables

	Description of variables	Mean	Std. Dev	Min.	Max.
Mafex	Ratio of manufacturing export to total merchandise export	25.85	21.33	0.08	95.68
Magr	Manufacturing value added	8.16	4.73	2.24	21.68
Exch	Real exchange rate	793.09	1,161.88	0.54	6,658.03
Infra	Indicator of infrastructural provision	10.58	10.80	0.08	44.27
CC	Control of corruption (an indicator of institutions)	−0.60	0.48	−1.37	0.80
GE	Government effectiveness (an indicator of institution)	−0.79	0.49	−1.84	0.33

Source: Authors' computation

Table 9 SGMM results (dependent variable: manufacturing exports)

	1	2	3	4
Manufacturing exports (−1)	0.381* (0.000)	0.364* (0.000)	0.373* (0.000)	0.350* (0.000)
Manufacturing value added	0.564** (0.025)	0.453*** (0.073)	0.585** (0.018)	0.544** (0.032)
Real exchange rate	0.245 (0.347)	0.250 (0.337)	0.101 (0.698)	0.1458 (0.549)
Infrastructure	0.103 (0.325)	−0.291*** (0.095)	0.120 (0.252)	−0.190 (0.327)
Control of corruption	1.887 (0.487)	8.971** (0.016)		
Control of corruption × infrastructure		−0.761* (0.005)		
Government effectiveness			−4.124 (0.140)	1.340 (0.741)
Government effectiveness × infrastructure				−0.552*** (0.058)
Constant	9.152 (0.016)	14.465 (0.001)	5.460 (0.148)	9.968 (0.028)
AR (1)	0.005	0.003	0.001	0.001
AR (2)	0.657	0.718	0.639	0.647
Sargan test	0.393	0.568	0.435	0.473

Note: The values in parenthesis are the probability values
*, **, *** are the significant levels of 1, 5 and 10 % levels of significance

infrastructural improvement for manufacturing export. As it is evidence from this study, there are other undertones that affect the expected result. We suspect that the available structures to drive institutions are not readily available and so, institutions are not able to achieve its objective of complementarity. In most developing countries—for which ECOWAS is no exception—institutions are measured by the policies that shows government's objective in reducing corruption and enhancing their effectiveness (see Henry and Miller 2008). Not to forget, the measures of

institutions (control of corruption and Government effectiveness) are based on the perception of some groups, whose opinions are not distant from the public policies that support institutional growth. Like Acemoglu and Robinson (2012) observed in their blog on "Why Nations Fail: The Origins of Power, prosperity and Poverty", institutions should go beyond policies and focus on structures that constraint, enhance and facilitate the application of policies. Most likely, ECOWAS countries are lacking in this regard and that's why the measures of institutions are not in sync with the improvement of infrastructure for enhanced manufacturing export.

Another important undertone is the 'power' of public officers who are supposed to enforce public policies. In African countries and ECOWAS, we find public officers who are very powerful and most times, they use their power to inform the dictates of public policies (Jo-Ansie 2007). In situations like this, it is expected that institutional development will most likely not achieve its objective. In this case, the submission of Acemoglu and Robinson (2012) that institutions should create a structure that drives incentives for the implementation of policies and in the case of Africa, create a cost for non-compliance. The situation in Africa is that: it is not as if cost and incentives are not embedded in the institutional structures, but such structures are not compelling to curtail excessiveness of public officers. Probably, the regional community can begin to play oversight to check public officers' compliance with institutional dictates.

5.1 Sensitivity Checks

The first sensitivity check is to ascertain the consistency of the result when excluding Nigeria from the sample of this study. The main reason for this is due to the economic size of Nigeria in the region. As it is, Nigeria's economic size is more than 57 % of the entire ECOWAS' economy (World Bank 2010) and this imply that their presence in the composition of the sample will likely influence the result. However, the result in Table 10 contradicts this expectation and it was obvious that—irrespective of the inclusion or exclusion of Nigeria, the interactive variable was signed similarly. In the last rows of the table, the behaviour of the interactive variables (Corruption × Infrastructure; Government Effectiveness × Infrastructure) was negative in all the columns. This further validates our earlier findings and submissions.

The second sensitivity check is to confirm whether the interactive variable still maintains its signs—as it is in the earlier Table 10—by checking the effect of alternative estimation technique and measures of investment. The alternative estimation technique is the use of OLS and FGLS; and instead of using the manufacturing value added, the gross fixed capital formation was used. The essence of the Feasible Generalised Least Square (FGLS) technique was applied because it allows for the presence of heteroscedasticity across the sampled countries and autocorrelation within the panels. This provides panel-corrected standard errors estimates.

Table 10 SGMM results excluding Nigeria

	1	2	3	4
Manufacturing exports (−1)	0.376* (0.000)	0.363* (0.000)	0.369* (0.000)	0.343* (0.000)
Manufacturing value added	✓	✓	✓	✓
Exchange rate	✓	✓	✓	✓
Infrastructure	✓	✓	✓	✓
Corruption	✓	✓		
Corruption × Infrastructure		−0.733*** (0.009)		
Government effectiveness			✓	✓
Government effectiveness × infrastructure				−0.514*** (0.083)
Constant	10.274 (0.010)	14.647 (0.001)	6.988 (0.082)	11.102 (0.018)
AR (1)	0.004	0.004	0.011	0.002
AR (2)	0.655	0.714	0.644	0.649
Sargan test	0.471	0.633	0.494	0.555

Note: The values in parenthesis are the probability values. The sign '✓' imply that the variables were included in the estimated model. When this sign is not included, it imply that the variable was not included

*, **, *** are the significant levels of 1, 5 and 10 % levels of significance

The Ordinary Least Square (OLS) regression was included as a complementary estimation technique.

The result from this analysis presents the same sign for the interactive variables. As it is, column 1–4 of Table 11, where the alternative estimation technique was used for the baseline model that was estimated in Table 10, still presents negative signs. In essence, the stance that institutions in ECOWAS countries do not play a complimentary role in the infrastructure-manufacturing export nexus is valid and not informed by the estimation technique applied in reaching such conclusions.

In the same Table 11, the fifth to the eighth Column present a scenario where an alternative measure of investment and estimation technique was used. In these columns, the main variable of interest (Infrastructure × Institution) still maintains its negative sign and significant in all the columns. We can re-emphasise at this point that irrespective of the covariate applied (especially with regards to the measure of investment), the interactive variable still maintains its negative sign.

5.2 Conclusion

The main result from this study is that: contradictorily, institutions in ECOWAS countries do not play a complementary role to infrastructural development for improved manufacturing export. This result is robust, despite the alternative

Table 11 Sensitivity checks (dependent variable: manufacturing exports)

	Control of corruption		Government effectiveness		control of corruption		Government effectiveness	
	OLS	FGLS	OLS	FGLS	OLS	FGLS	OLS	FGLS
Exchange rate	✓	✓	✓	✓	✓	✓	✓	✓
Manufacturing value added	✓	✓	✓	✓				
Gross fixed capital formation (% of GDP)					✓	✓	✓	✓
Infrastructure	✓	✓	✓	✓	✓	✓	✓	✓
Institution	✓	✓	✓	✓	✓	✓	✓	✓
Infrastructure × Institution	−0.139 (0.226)	−0.139 (0.205)	−0.227*** (0.060)	−0.227** (0.047)	−0.117* (0.000)	−0.117* (0.000)	−0.161* (0.009)	−0.161* (0.006)
Constant	2.203 (0.000)	2.203 (0.000)	2.178 (0.000)	2.178 (0.000)	2.805 (0.000)	2.805 (0.000)	2.547 (0.000)	2.547 (0.000)
R^2	0.199		0.241		0.237		0.191	
Wald		20.320		26.040		31.720		24.150
Prob. value	(0.004)	(0.001)	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.002)

Note: The values in parenthesis are the probability values. The sign '✓' imply that the variables were included in the estimated model. When this sign is not included, it implies that the variable was not included

*, **, *** are the significant levels of 1, 5 and 10 % levels of significance

estimations. In the light of this finding, two main issues were identified as possible reasons for this contradictory result: the unavailability of structures that drive institutions may be a possible cause and the powerfulness of public officers who are supposed to enforce public policies.

Based on this finding, it is recommended that ECOWAS—as a regional economic community—can begin to play a supervisory role for countries in the community. By supervisory role, we imply that despite the 'beautiful' policies made by countries to forestall institutional development, there is the need for ECOWAS to ensure that related public officers adhere to the enforcement of such policies. Apart from this, the regional community can begin to develop frameworks that put public officers in member countries to check the applicability of member countries' policies. The reason for this policy recommendation is that; ECOWAS countries are not lacking in the development of policies—that shows institutional development—but the political will to put in place structures that ensures the accomplishment of the policies is probably not sufficient to enhance its effect. Therefore the regional community can act as a monitoring/enforcing body.

Just like it is obtainable in most empirical studies, we identified an area for future studies: that is, future empirical studies can focus on the consistency of our result when other measures of infrastructure are applied in our empirical model. The realisation of such study will be faced with data constraint in terms of macroeconomic data that reflects infrastructural development in African countries. If this constraint is mitigated, then a robust result will be necessary to check the consistency of the findings of this study.

Acknowledgement The authors are grateful to CREPOL and for the grant that made it possible to attend the annual conference on regional integration in Africa (ACGRIA5), organized by CREPOL, July 2014 at Praia, Cape Verde, where the first draft of this paper was presented. All comments from the conference participants are highly appreciated.

References

Abe K, Wison J (2009) Weathering the storm: investing in port infrastructure to lower trade costs in East Asia, World Bank Policy Research Working Paper Nos. 4911. https://openknowledge.worldbank.org/bitstream/handle/10986/4105/WPS4911.pdf?sequence=1. Retrieved Jan 2015

Acemoglu D, Robinson JA (2012) Why nations fail: the origins of power, prosperity and poverty. Crown Publishers, New York

Acemoglu D, Johnson S, Robinson JA (2001) The colonial origins of comparative development: an empirical investigation. Am Econ Rev 91(5):1369–401

African Development Bank (2010a) Infrastructure – African Development Bank. Retrieved November 29, 2010, from http://www.afdb.org/en/topics-sectors/sectors/infrastructure/

African Development Bank (2010b) Infrastructure deficit and opportunities in Africa. African Development Bank's Economic Brief 1(2). Available at http://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/ECON%20Brief_Infrastructure%20Deficit%20and%20Opportunities%20in%20Africa_Vol%201%20Issue%202.pdf

African Economic Outlook (2014) Public resource mobilisation and aid. Available at http://www.africaneconomicoutlook.org/theme/public-resource-mobilisation-and-aid/

Asiedu E (2006) Foreign direct investment in Africa: the role of natural resources, market size, government policy, institutions and political stability. World Econ 29(1):63–72
Asiedu E, Lien D (2011) Democracy, foreign direct investment and natural resources. J Int Econ 84:99–111
Asongu S (2014) On taxation, political accountability and foreign aid: emperics to a celebrated literature. S Afr J Econ. doi:10.1111/saje.12064
Blair-Henry P, Miller C (2008) Institutions vs. policies: a tale of two Islands. NBER Working Paper 14604. National Bureau of Economic Research, Cambridge, MA. http://www.nber.org/papers/w14604. Retrieved Jan 2015
Blundell R, Bond S (1998) Initial conditions and moment restrictions in dynamic panel data models. J Econ 87:115–143
Blundell R, Bond S (2000) GMM estimation with persistent panel data: an application to production functions. Econ Rev 19(3):321–340
Bougheas S, Demetriades PO, Morgenroth ELW (1999) Infrastructure, transport costs and trade. J Int Econ 47:169–189
Brunetti A, Weder B (1998) Investment and institutional uncertainty: a comparative study of different uncertainty measures. Weltwirtschaftliches Arch 134(3):513–533
Cissokho L, Haughton J, Makpayo K, Seck A (2013) Why is agricultural trade within ECOWAS so high? J Afr Econ 22(1):22–51
Douglas H (2005) Trends in Asian trade: implications for transport infrastructure and trade costs. In: Brooks DH, Hummels D (eds) Infrastructure's role in lowering Asia's trade costs: building for trade. Edward Elgar, Northampton, MA
Douglas HB (2008) Infrastructure and Asia's trade costs. Asian Development Bank Institute, Tokyo
Douglas HB, Jayant M (2005) Infrastructure and trade in Asia: an overview. In: Douglas HB, David H (eds) Infrastructure's role in lowering Asia's trade costs: building for trade. Edward Elgar, Northampton, MA
ECOWAS (2007) Supplementary Act A/SA.1/01/07 on the harmonization of policies and of the regulatory framework for the information and communication technology (ICT) sector. ECOWAS Commission, Abuja
Efobi UR (2015) Politicians' attributes and institutional quality in Africa: a focus on corruption. J Econ Issues (Forthcoming September 2015)
Fosu AK (2011) Terms of trade and growth of resource economies; a tale of two countries. UNU-WIDER Working Paper, No 2011/28
Francois JF, Manchin M (2007) Institutions, infrastructure and trade. CEPR Discussion Paper No 6068. Available at http://papers.ssrn.com/soL3/papers.cfm?abstract_id=997338
Hall R, Jones CI (1999) Why do some countries produce so much more output per worker than others? Q J Econ 114(1):83–116
Hodgson GM (2006) What are institutions? J Econ Issues XL(1):1–25
Jo-Ansie VW (2007) Political leaders in Africa: presidents, patrons and profiteers? African Centre for the Constructive Resolution of Disputes (ACCORD), Occasional Paper Series, vol 2, issue 1
Kim JY (2014) Remarks at African growth and opportunity act. World Bank Group, Washington. Available at http://www.worldbank.org/en/news/speech/2014/08/04/world-bank-group-president-jim-yong-kims-remarks-at-agoa-forum
Knack P, Keffer S (1995) Institutions and economic performance: cross country test using alternative institutional measures. Econ Polit 7(3):207–227
Lawal G (2007) Corruption and development in Africa: challenges for political and economic change. Humanit Soc Sci J 2(1):1–7
Limao N, Venables AJ (2001) Infrastructure, geographical disadvantage, transport costs, and trade. World Bank Econ Rev 15(3):451–479
Liu X, Wang C, Wei Y (2001) Causal links between foreign direct investment and trade in China. China Econ Rev 12(2–3):190–202

Liu X, Burridge P, Sinclair JN (2002) Relationships between economic growth, foreign direct investment and trade: evidence from China. Appl Econ 34(11):1433–1440
Makki S, Somwaru A (2004) Impact of foreign direct investment and trade on economic growth: evidence from developing countries. Am J Agric Econ 86(3):795–801
Mauro P (1995) Corruption and growth. Q J Econ 110(3):681–712
Mbate M (2014) Industrial policy and structural change: some policy perspectives. Paper presented at the annual conference on regional integration in Africa (ACRIA5), Praia, July 2014
Meon P, Sekkat K (2008) Institutional quality and trade: Which institutions? Which trade? Econ Inq 46(2):227–240
Moyo D (2009) Why foreign aid is hurting Africa. Wall Street J. Available at http://online.wsj.com/news/articles/SB123758895999200083
PM News (2014) 11 Railway Staffs indicted for N1bn fraud. Available at http://www.pmnewsnigeria.com/2014/04/06/11-railway-staff-indicted-for-n1bn-fraud/. Accessed 19 Aug 2014
Nordas HK, Piermartini R (2004) Infrastructure and trade, World Trade Organisation Staff Working Paper ERSD-2004-04. https://www.wto.org/english/res_e/reser_e/ersd200404_e.doc. Retrieved Mar 2015
North DC (1990) Institutions, institutional change, and economic performance. Cambridge University Press, Cambridge
North DC (1991) Institutions. J Econ Perspect 5(1, Winter):97–112
Obilomo F, Ojo T (2013) Nigeria cement sector report: emerging prominence from a deficit past. Cardinal Stone Partners, Lagos
Olson M, Sarna N, Svamy AV (2000) Governance and growth: a simple hypothesis explaining cross-country differences in productivity growth. Public Choice 102(3–4):341–364
Osabuohien E, Efobi U (2011) Trade outcomes in Africa's regional economic communities and institutional quality: some policy prescriptions. Pet-Gas Univ Ploiesti Econ Sci Series 63 (4):19–32
Osabouhien ES, Efobi UR (2014) Africa's money in Africa: human and physical dimensions. In: Sahoo S, Pattanaik BK (eds) Global diaspora and development: socioeconomic, cultural and policy perspectives. Springer, New Delhi, pp 87–104
Osabuohien ES, Efobi UR (2013) Africa's money in Africa. S Afr J Econ 81(2):292–306
Portugal-Perez A, Wilson JS (2012) Export performance and trade facilitation reform: hard and soft infrastructure. World Dev 40(7):1295–1307
Rodrik D (1995) Getting interventions right: how South Korea and Taiwan grew rich. Econ Policy 20:53–97
Sekkat K, Varoudakis A (2000) Exchange rate management and manufactured exports in Sub-Saharan Africa. J Dev Econ 61(1):237–253
Sunday Trust (2013) Why companies will continue to leave Nigeria for Ghana. Media Trust, Lagos. Available at http://www.dailytrust.com.ng/sunday/index.php/business/703-why-companies-will-continue-to-leave-nigeria-for-ghana
Tomasz I, Colin K (2009) Trade facilitation and manufactured exports: Is Africa different? World Dev 37(6):1039–1050
United Nations Economic Commission for Africa-UNECA (2013) Making the most of Africa's commodities: industrializing for growth, jobs and economic transformation. Economic Commission for Africa, Addis Ababa. http://www.uneca.org/sites/default/files/publications/era2013_eng_fin_low.pdf. Retrieved March 2015
World Bank (1997) Helping countries combat corruption: the role of the World Bank. World Bank, Washington. Available at http://www1.worldbank.org/publicsector/anticorrupt/corruptn/cor02.htm
World Bank (2014) World development indicators. World Bank, Washington. Available at http://databank.worldbank.org/data/home.aspx
World Bank (2010) World development indicators. Washington, World Bank
World Bank (2013) The Africa competitiveness report 2013. Washington, World Bank