AFRICA'S MONEY IN AFRICA

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Abstract

Workers' remittance and compensation of employees received in Sub-Sahara Africa (SSA) increased from USD 1.398 billion in 1980 to USD 4.834 billion in 2000 and soared to USD 21.101 billion in 2010. The impact of remittance on recipient economy requires further empirical investigation as there has not been consensus on whether remittance induces "financial prodigality" or investment in Africa. Differing from extant studies, this study employed rule of law, regulatory quality and government effectiveness as indicators of institutional quality. This is with a view to exploring how institutional quality and financial depth interact with remittance to influence investment in 44 African countries (1995-2010). The major finding from the study, *inter alia*, is that institutional quality and financial depth play complimentary role in influencing remittance for investment in Africa. This study concludes that the impact of *Africa's money in Africa* will be enhanced in the presence of reliable institutional quality and viable financial sector. Thus, the side effect of "financial prodigality" that might be associated with remittance can be ameliorated.

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Keywords: Diasporas, financial depth, institutional quality, investment, GMM, remittance

1. INTRODUCTION

Remittance is becoming an important source of development finance for developing countries. In Africa, remittance has been observed to be the second highest source of foreign financial inflow, next to foreign direct investment (FDI). In some parts of the continent, especially poor and landlocked countries that are less attractive to foreign investors, remittance is the major source of foreign financial inflow. Added to this is that remittance is relatively more stable during financial crisis compared to other sources of foreign financial inflow like official development assistance/aids (World Bank, 2012).

In Africa, the volume of remittance flow has increased considerably over the last few decades. For example, workers' remittance and compensation of employees, received in

Sub-Sahara Africa (SSA) increased from USD 1.398 billion in 1980 to USD 4.834 billion in 2000 and more than quadrupled to a value of USD 21.101 billion in 2010. With regards to its contribution, as at 1980, remittance contributed 0.61% to the gross domestic products (GDP), which soared to 1.55% and 2.21% in 2000 and 2010, respectively (World Bank, 2012).

The resultant effect of remittance on recipient country has been observed from the literature to be in two broad folds. On the positive side, Catrinescu *et al.* (2009) noted that remittance contributes to the alleviation of poverty and macroeconomic growth by increasing disposable income. Commenting on this, Bjuggren *et al.* (2010) opined that remittance enhances growth and development in recipient economies through channelling the inflow to investments such as the development of small-scale businesses and education, *inter alia*. On the negative side, it has been reported that remittance can induce a "Dutch disease syndrome" in the recipient country, "fuel" inflation, reduce labour market participation and cause disincentive for implementing desirable macroeconomic policies (Chami *et al.*, 2005; Bourdet and Falck 2006).

Despite the increasing contentions on the impact of remittance on recipient country, this study observes that not much empirical work has been done with focus on African countries. This study bases its discussion on the role institutional quality and financial depth can play in determining the nature of impact that remittance percolates on investment in African countries. The study opines that African countries may not have control over the inflow of remittance but can influence the end usage of such remittances. This is because Africans in Diaspora, out of altruism, repayment and acquisition of assets, send remittance to their relations (Africans in Africa). Mechanisms such as strong institutional quality and deepened financial sector can influence the utilisation of remittance for investment. This supposition is based on the understanding that the quality of institutions in a given society has a bearing on the behaviours of economic agents and economic outcomes (North, 1991; La Porta *et al.*, 1999; Williamson, 2000; Acemoglu *et al.*, 2001; Osabuohien and Efobi, 2011). Put differently, the quality of institutions in a country can influence how remittance impacts on macroeconomic variables (*e.g.* investment), which is a precursor for economic development, *ceteris paribus*.

The study draws some insight from Bjuggren *et al.* (2010) who investigated the impact of remittance on investment for 79 developing countries (1995-2005). This study differs in its contribution by focussing on a sample of 44 African countries (1995-2010). The rest of the study is organised as follows: the next section presents some background facts followed by literature review and analytical framework. The empirical model and estimation technique are in section 4, while section 5 reports the empirical results and discussions. The last section concludes with some recommendations.

2. SOME BACKGROUND FACTS

Remittance, apart from FDI, is Africa's largest source of foreign financial inflow (Ratha *et al.* 2011). As evidenced in Table 1, remittance contributes the second highest to economies of SSA countries. The value of remittance as a percentage of GDP in 2010 was 2.2%, which closely follow FDI that has the value of 2.3%. In 1990, it was many folds more than the value of portfolio investment and bilateral aid in 1990 and even slightly more than FDI. In 2000, the contribution of remittance to GDP was 1.6% and

Table 1. Remittance and other foreign inflows to SSA as percentage of GDP (1990-2010)

Resource inflow	1990	1995	2000	2005	2007	2008	2009	2010
Remittance	0.692	1.081	1.554	1.645	2.490	2.341	2.507	2.213
Bilateral aid	0.044	0.038	0.028	0.040	0.030	0.029	0.032	0.029
FDI	0.427	1.397	1.974	3.019	3.351	3.668	3.645	2.291
Portfolio investment	−0.005	0.008	0.012	0.012	0.012	−0.006	0.011	0.007

Notes: Remittance is workers' remittances and compensation of employees paid; Bilateral aid is net bilateral aid flows from donors; FDI is foreign direct investment net inflows; Portfolio investment is portfolio equity net inflows.
Source: Authors' computation from World Bank (2012).
FDI: foreign direct investment; GDP, gross domestic product; SSA: Sub-Sahara Africa.

Table 2. Remittance in some regions of the world (1980-2009)

Region	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2009
Remittance as a % of GDP						
East Asia & Pacific	0.1990	Na	0.128	0.2394	0.4202	0.6782
Europe & Central Asia	0.6054	0.4976	0.4495	0.4887	0.5531	0.6355
Latin America & Caribbean	0.3386	0.4651	0.6454	0.8295	1.5686	1.6908
Africa	0.6323	0.6414	0.7935	1.2882	1.5299	2.1163
South Asia	2.2681	1.7215	1.7807	2.4582	3.3638	3.9346

Source: Same as Table 1.

consistently increased to 1.7%, 2.5% and 2.5% in 2005, 2007 and 2009, respectively. In effect, the value of remittance to GDP was 76 times more than the value of bilateral aid and about 316 times more than that of portfolio investment in 2010.

Table 1 also reveals that the categories of foreign financial inflow experienced some degree of decline between 2009 and 2010, which might have been one of the aftermaths of 2007/2008 global financial crisis. Whereas the inflows of FDI and portfolio investment decreased by 37.2% and 36.4%, respectively; remittance had a decline of 11.7%. This suggests that remittance was relatively stable in the face of global financial turbulence compared to other foreign financial inflows in Africa.

To advance the discussion, Table 2 presents some stylised facts on remittance in Africa in comparison with some other regions of the world. It can be observed that Africa and South Asia experienced the highest value of remittance contribution to GDP, which has increased substantially and consistently all through the period presented. For example, the average value for Africa increased from 0.63% in 1980-1984 to 2.13% in 2005-2009, while that of South Asia increased from 2.27% in 1980-1984 to 3.95% in 2005-2009. Their values for the period 2005-2009 were more than three times higher than those of East Asia and the Pacific and Europe and Central Asia. The reason for this may be that Africa and South Asia have more nationals in Diaspora who are committed to the act of remitting.

With a view to giving a cursory insight on the possible relationship between remittance and investment, Fig. 1 reports the trends in investment and remittance inflow in SSA from 1990 to 2010.

From the Fig. 1, the trends in investment and remittance inflow in SSA exhibit a similar pattern especially from 2001 to 2010. For instance, between 2002 and 2010, the value of remittance inflow increased by about 300% while that of investment increased by 298%. This observation suggests a possible link between remittance and investment, which is empirically examined in this study by exploring the mechanisms through which remittance can be transmitted to investment.
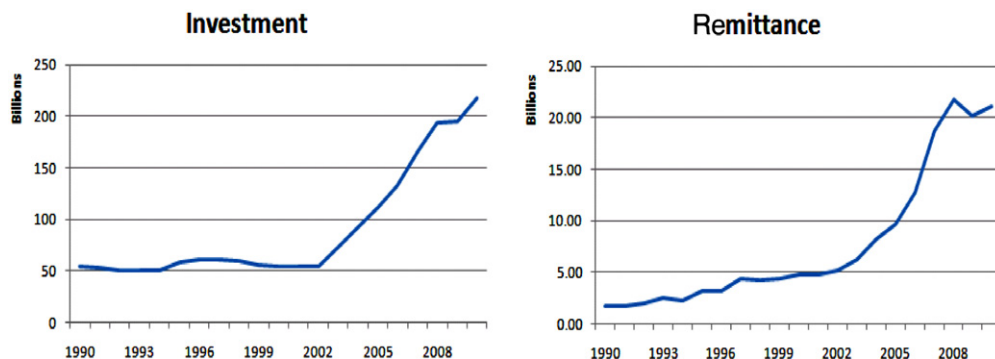
Figure 1. Trends in Investment and Remittance in SSA (1995-2010)
Source: Same as Table 1.

3. LITERATURE REVIEW AND ANALYTICAL FRAMEWORK

Some studies have argued that remittance is one of the fastest growing sources of external funds for developing countries especially in Africa (Ratha, 2003; Gupta *et al.*, 2007; Ratha *et al.*, 2011). This argument can be "balkanised" into three aspects: funds from remittance are *fungible* and are spent at the margin as normal income of the recipient. Hence, a dollar from remittance is treated like a dollar from the regular wage of the recipient. The second aspect is that remittance can cause adverse behavioural change in the recipient, thereby *gliding* the recipient towards a change in lifestyle, which makes remittance to be spent on *status oriented* consumption goods more than investment goods. The last category of the argument appears most popular, and it advocates that remittance spent on investment can translate to economic growth (Pradhan *et al.*, 2008; Adams and Cuecuecha, 2010; Ariff, 2010).

Remittance can sustain economic growth through its countercyclical effect in periods of adverse economic shock (Ratha *et al.*, 2011). In an earlier study, Ratha (2007) noted that increase in remittance played an important role in sustaining the economies of Mexico, Indonesia and Thailand during their times of financial crisis. Ratha *et al.* (2011) also observed that the countercyclical nature of remittance can be associated with the fact that most remittance inflow involves members of the same household. This implies that they are less driven by profit-seeking motives but for the support of their households who may be facing financial challenges.

In terms of remittance utilisation, Edwards and Ureta (2003) noted that recipients, households in El Salvador, channel such funds to finance their education. Likewise, Elbadawi and Roushdy (2009) observed that in Egypt, children of remittance receiving households are likely to enrol in the university than non-recipient households. Similar finding has been made in Ghana, Haiti and Mexico that households receiving remittance invest more in education (Lopez-Cordova, 2005; Adams *et al.*, 2008; Bredl, 2011). In Guatemala, Adams and Cuecuecha (2010) reiterated that households receiving remittance spend more on education and housing compared to consumption goods.

Remittance inflow can lead to exchange rate appreciation (Dutch Disease) because high inflow of foreign currency can increase the demand for local currency (Bourdet and Falck, 2006; Acosta *et al.*, 2009; Vargas-Silva, 2009). Some studies (*e.g.*

Amuedo-Dorantes and Pozo, 2004; Rajan and Subramanian, 2005) observe that remittance inflow can result to the circulation of excess funds and resource reallocation towards non-tradable. Focusing on labour productivity, Ariff (2010) noted that remittance receiving households in Pakistan experienced decline in their active involvement in agriculture. The issue of disincentive to work has also been mentioned to be associated with the inflow of remittance (Chami *et al.*, 2005). Acosta *et al.* (2009) underscored this stance with evidence from El Salvador where they noted that remittance increases households' *appetite* for leisure thereby increasing their reservation wage, which reduces their labour supply. Acosta (2006) earlier observed that in such situations, the cost of labour becomes higher and in turn increases per unit cost of production of goods. This can increase the prices of goods and services in the long run.

The role of institutions cannot be neglected in cushioning the possible adverse effects from remittance as they can have influence on how economic agents act in a society. Institutions can be broadly categorised into formal and informal. The formal institutions include rules and framework, documented by specific authorities in the society, to regulate the behaviour of economic agents (North, 1991; Greif, 1998; Osabuohien and Efobi, 2011). The informal institutions include customs, beliefs, norms and culture that can inform behaviours of economic agents. They are usually not written down (North, 2005). This study focuses on the formal institutions as there are available data that report different aspects of institutional quality in a country.

Enhancing the role of institutions in the remittance process can create incentives for investment and productive utilisation of funds from remittance. This is because a well-developed institution can effectively intermediate between remittance inflow and investment as well as control adverse effects of remittance (Acosta *et al.*, 2009; Demirguc-Kunt *et al.*, 2010). In Guatemala, International Organisation for Migration (2010) observed from the survey of 312,000 remittance receiving households that remittance can enhance productive investment when there are strong institutions. Catrinescu *et al.* (2009) from a sample of 162 countries concludes that sound institutions help in efficiently channelling remittance towards investment purposes for meaningful impact in the recipient country. Although Kapur (2004) expresses scepticism towards the role of institutions in enhancing economic impact of remittance, Bettin and Zazzaro (2011) maintained that institutions can enhance efficient utilisation of remittance through policies that deepen the financial sector and its efficiency in credit allocation. This can occur by offering incentives to encourage remittance recipients to invest the funds, encourage saving culture remittance recipients and ensure reduction of transaction cost (Bettin and Zazzaro).

Some of the issues reviewed above can be depicted in Fig. 2 focussing mainly on how institutional quality and financial depth can influence remittance utilisation for investment.

In Fig. 2, scenario A can be termed the "ideal state," where there is the existence of high level of financial development coupled with strong institutional quality. This results in the channelling of a greater proportion of remittance to investment. Strong institutions can create incentives to develop investment capabilities and with the availability of financial infrastructures, remittance recipients are encouraged to invest.[1]

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[1] Psychological/cultural disposition of remittance recipients can exert some influence on remittance utilisation; however, emphasis is on formal institutions.
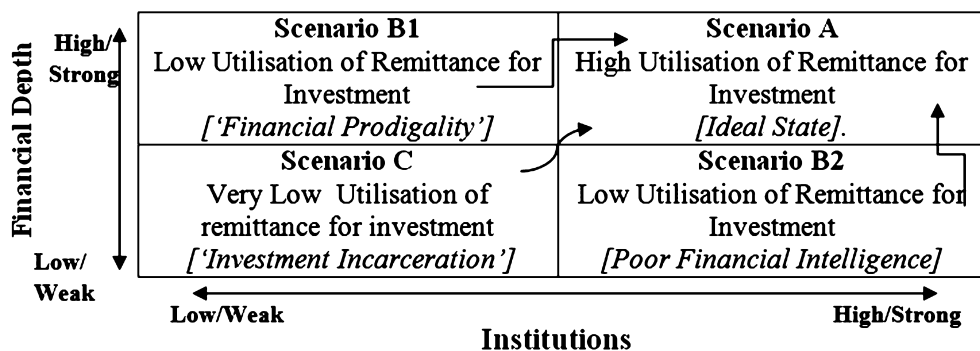
Figure 2. Remittance utilisation
Source: Authors'.

On the other hand, when there is low financial depth and weak institutions as depicted in scenario C, there will be very weak utilisation of investment, which can be christened "investment incarceration." This is because in the face of weak institutions, potential investors become risk averse as they "shy away" from possible moral hazards and adverse selection that can be associated with the behaviours of economic agents. Also, weak mechanisms such as regulatory framework and legal structure will make the process of seeking redress from recusants' actions difficult and thus reducing propensity to invest. Similarly, when there is a low financial depth, the ability of the financial institutions to carry out their intermediary role of channelling financial resources from surplus segments (*e.g.* remittances) to deficit units (for investment) becomes bleak.

Scenarios B1 and B2 are *oppositely similar*. Scenario B1, characterised by weak institutions and high level of financial depth will give rise to weak utilisation of remittance for investment, termed *financial prodigality*. This is because the funds from remittance would be channelled more into consumption expenditure as institutions that would spur a propensity to invest are not sufficiently available. For scenario B2, there are strong institutions but not backed up by resilient financial depth. In this case, even potential investors that may be willing to use their remittance for investment may not have adequate support from the financial sector to spark-off their investment propensity. It can also arise from inadequate financial and investment intelligence, which the financial sector is supposed to provide. Thus, there will be weak financial intelligence to carry out investment and consequently low transmission of remittance into investment.

The nexus nuanced above is being brought to bear in the empirical model, by incorporating the interaction variables to underscore how the navigation from scenarios C, B1 and B2 to A can be made possible.[2] This is one of the areas where the study differed markedly.

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[2] As indicated by the "two-sided arrows" on both axes, it is also possible for deterioration from scenario A to others when the complimentary roles of institutions and financial depth are weakened.

4. METHODOLOGY

The study utilised descriptive and econometric techniques. The descriptive analysis was carried out using some summary statistics such as the mean, minimum, maximum and standard deviation for the entire sample. It also examines the variables across the sampled countries with a view to giving information on the behaviours of the variables in the respective countries. The econometric analysis involves the formulation of an empirical model, which was estimated using generalised method of moments

4.1 Empirical Model and Data

The econometric model developed for this study, draws from Bjuggren *et al.* (2010) and Bettin and Zazzaro (2011). These studies covered developing countries across the world with few countries in Africa. In addition, Bjuggren *et al.* (2010) used countries' political risk as a measure of institutions, while Bettin and Zazzaro (2011) focussed on how financial development influences remittance for economic growth. This present study differs by examining 44 African countries with more recent data. It engages data on the rule of law, regulatory quality and government effectiveness as reported in World Governance Indicators (WGI; Kaufmann, *et al.*, 2010) as measures for institutional quality.

The baseline model for this study is presented as:

$$inv_{it} = \beta_0 + \beta_1 remit_{it} + \beta_2 fdepth_{it} + \beta_3 insti^{j}_{it} + \mu_{it} \tag{1}$$

Taking into consideration the possible role of institutional quality and financial depth can have in influencing the utilisation of remittance for investment; this study introduced an interaction variable *(interact^k)*. Thus, equation (1) can be modified in an explicit form as:

$$inv_{it} = \beta_0 + \beta_1 remit_{it} + \beta_2 fdepth_{it} + \beta_3 insti^{j}_{it} + \beta_4 interact^{k} + \mu_{it} \tag{2}$$

Where:

inv: – investment proxied as gross fixed capital formation as percentage of GDP. As defined in World Bank (2012), it includes investments in land improvements; plant, machinery and equipment purchases; construction of roads, railways, schools, offices, hospitals, private residential dwellings, commercial and industrial buildings; and net acquisitions of valuables.

remit: – remittance as percentage of GDP. It is defined as the current USD of workers' remittances and compensation of employees received such as: private transfers from migrant workers resident abroad for more than a year; the net worth of migrants transferred from one country to another at time of migration and the income of migrants who have lived abroad for less than a year (World Bank, 2012).

fdepth: – financial depth computed as credit to private sector (by deposit and other financial institutions) as percentage of GDP. It includes financial resources provided to the private sector such as loans, purchases of non-equity securities, trade credits and other accounts receivables (World Bank, 2012).

insti^{j}: – institutional quality proxied using three indicators. They include: rule of law (*rl*), regulatory quality (*rq*) and government effectiveness (*ge*) as computed by Kaufmann *et al.* (2010) [*i.e.* j = 1-3]. *rl* shows the extent to which economic agents have

confidence in and abide by the rules of a society, and in particular the quality of contract enforcement, property rights, the police and the courts. *rq* measures the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. While *ge* reflects the quality of public services, civil service, quality of policy formulation and implementation and the commitment of the government to such policies. The three indicators have values ranging from –2.5 (weakest) to +2.5 (strongest).

interact^k: interaction variables. These include the interaction between indicators of institutional quality and remittance (*rl_remit*, *rq_remit* and *ge_remit*) as well as financial depth and remittance (*fdepth_remit*). These variables are included to investigate how financial depth and institutional quality interact with remittance to influence investment.

μ: – the error term.

it: – country "*i*" and time "*t*" identifiers.

The *a priori* is such that: $\beta_{1-3} > 0$, which implies that the respective increase in *remit*, *fdepth* and *insti* can improve the level of investment, *ceteris paribus*. The sign of β_4 cannot be inferred *a priori* as it will depend on the nature of the respective interaction. In this regard, if $\beta_4 > 0$, it implies that remittance will enhance investment when there is better institutional quality/financial depth. Thus, institutional quality/financial depth has a complimentary role on remittance to influence investment. However, the opposite holds if $\beta_4 < 0$, *i.e.* institutional quality/financial depth has a substitutive influence on remittance, which impacts on investment.

Data for estimation are sourced from World Development Indicators (WDI; World Bank, 2012) and World Governance Indicators (WGI; Kaufmann *et al.*, 2010) for institutional quality. A sample of 44 African countries across Central, East, North, Southern and West Africa are selected based on the availability of data for the period 1995-2010. The sampled countries include: Algeria, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Congo (Republic), Cote d'Ivoire, Djibouti, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau and Kenya. Others include: Lesotho, Libya. Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Seychelles, Sierra Leone, South Africa, Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda and Zambia.

4.2 Estimation Technique

The study focused on the dynamic panel data estimation technique using the System Generalised Method of Moments (SGMM). As informed by Arellano and Bover (1995) and Arellano (2003), the SGMM was used because the shock on current investment may not be entirely attributed to a particular period, since previous investment can influence its current value. Bjuggren *et al.* (2010) noted that innovations/changes in investment variable decays with time. Thus, a dynamic relationship is expected in the model. Put differently, the lagged value of the investment variable, *invest*(−1), will be included as an explanatory variable. Furthermore, it has been observed (*e.g.* Cavalcanti *et al.,* (2008) that the problem of endogeneity occurs in most econometric models. This is because the explanatory variables can be influenced by other variables not included in the model (*i.e.* the explanatory variables may be correlated with variables in the error term). In this situation, the econometric model cannot be adequately relied on for inference.

To overcome these challenges, the Two Stage Least Squares technique (2SLS) may be appropriate (Leyaro and Morrissey, 2010). The 2SLS approach involves the identification of appropriate instruments that are expected to be orthogonal with inv_{it} and μ_{it} but highly correlated with the explanatory variable *(inst)*. However, this study employed the SGMM technique because the SGMM is a more efficient tool for dealing with issues of dynamic econometric relationship and the problem of endogeneity in an econometric model (Arellano and Bover, 1995; Blundell and Bond, 1998; Arellano, 2003). Furthermore, the SGMM does not require external instruments as it generates internal instruments by using the lagged values for levels and differenced equations between two periods, as instruments for the current values of endogenous explanatory variables. This is usually performed by an estimation process that involves systems of equation for both levels as well as first difference, in order to eliminate country-specific effects and other country-specific time invariant factors that can influence investment. Therefore, the dynamic model for this study takes the form:

$$\text{inv}_{it} = \beta_0 + \beta_0\text{inv}_{i,t-1} + \beta_2\text{remit}_{it} + \beta_3\text{fdepth}_{it} + \beta_4\text{insti}^j_{it} + \beta_5\text{interact}^k + \sum_{j=1}^{N} \delta_1\gamma_t + \pi_i + \mu_{it}$$

(3)

Where the lagged dependent (inv_{it-1}), summation of the exogenous period-specific (γ_t) and country-specific effects (π_i) variables were included. The model was estimated using STATA 11.1 and GRETL econometric softwares (StataCorp LP, College Station, TX, USA).

5. RESULTS AND DISCUSSIONS

5.1 Descriptive Analysis

The descriptive statistics comprising of the mean, minimum, maximum and standard deviation of the variables in the model are reported in Table 3.

From Table 3, the inflow of remittance as a percentage of GDP (*remit*) in Africa had the mean value of 3.9. During the period, the maximum value was 64.1, while the minimum value was 0.001. This implies that contribution of remittance to GDP in Africa varied across the sampled countries, which may not be unconnected with the peculiarities of their economies.

To provide some insights on this, descriptive statistics using mainly the mean for the respective sampled countries is reported in Table 4. In the Table, the average value of remittance was highest in Lesotho (46.3), distantly followed by Cape Verde and Gambia, with values of 13.6 and 12.2. It was lowest in Libya followed by Malawi with the values of 0.03 and 0.04, respectively. About 57% of the sampled countries had the value of

Table 3. Descriptive statistics of variables

Variables	Inv	Remit	Fdepth	Rl	rq	Ge
Mean	21.523	3.894	21.992	−0.551	−0.586	−0.590
Minimum	3.480	0.001	0.825	−2.061	−2.262	−1.727
Maximum	113.578	64.101	161.982	1.023	0.847	0.859
SD	10.235	7.811	23.664	0.589	0.571	0.566
observations	44 countries (1995-2010)					

Source: Authors' computation.

Table 4. Mean value across the sampled countries

Country	Inv	Remit	Fdepth	Insti	Country	Inv	Remit	Fdepth	Insti
Algeria	25.68	1.85	9.76	−0.72	Madagascar	19.94	0.33	9.81	−0.87
Benin	18.81	3.60	13.97	−0.40	Malawi	18.09	0.04	8.43	−0.41
Botswana	24.83	0.80	16.81	0.54	Mali	19.10	3.92	16.92	−0.52
Burkina Faso	21.49	1.84	13.49	−0.43	Mauritania	24.22	0.26	24.03	−0.50
Burundi	7.01	0.60	10.23	−0.69	Mauritius	23.74	3.51	65.82	0.69
Cameroon	16.85	0.48	9.06	−0.93	Morocco	26.43	6.90	48.52	−0.11
Cape Verde	40.41	13.60	41.15	0.14	Mozambique	20.96	1.30	14.41	−0.52
Congo, Rep.	31.53	0.23	5.22	−1.26	Namibia	20.71	0.24	45.94	0.18
Cote d'Ivoire	10.86	1.04	15.77	−1.01	Niger	19.56	1.66	8.86	−0.74
Djibouti	16.98	2.85	29.92	−0.79	Nigeria	8.39	3.67	17.29	−1.06
Egypt	18.10	4.26	45.93	−0.24	Rwanda	15.21	0.83	9.53	−0.72
Equatorial Guinea	57.48	0.06	3.96	−1.41	Senegal	23.22	6.90	19.71	−0.22
Eritrea	22.79	0.47	28.01	−1.19	Seychelles	29.95	0.66	25.95	−0.05
Ethiopia	21.04	0.75	17.11	−0.63	Sierra Leone	6.81	2.03	4.39	−1.19
Gabon	21.37	0.10	9.48	−0.49	South Africa	17.32	0.24	133.98	0.42
Gambia, The	16.57	12.20	14.09	−0.42	Sudan	15.70	4.67	6.51	−1.33
Ghana	18.04	0.57	12.05	−0.12	Swaziland	15.50	3.85	17.11	−0.66
Guinea	25.49	1.08	4.35	−1.12	Tanzania	22.22	0.11	8.78	−0.42
Guinea-Bissau	13.32	8.22	9.84	−1.24	Togo	14.65	6.38	17.45	−0.99
Kenya	17.53	4.07	28.12	−0.59	Tunisia	23.57	4.10	61.11	0.17
Lesotho	38.66	46.32	14.32	−0.33	Uganda	19.32	4.65	8.52	−0.37
Libya	10.77	0.03	17.18	−1.11	Zambia	19.53	0.57	9.07	−0.62

Note: Insti was computed as the average of the three indicators of institutional quality (rl, rq and ge) for brevity.
Source: Authors' computation.

remittance as percentage of GDP that was greater than one, while 43% of them had values less than one.

With regards to investment, the values in Table 3 indicate that the mean value of investment as percentage of GDP (*Inv*) for the entire sample was 21.5. During the period, one of the countries had a value peaked at 113.6%, while another country had a nadir value of 3.5%. Further investigation from Table 4 reveals that on the average, most of the countries had their investment values, above 10%. Only Burundi (7.01%), Nigeria (8.4%) and Sierra Leone (6.8%) had values less than 10%. Equatorial Guinea had the highest average value of 57.5% followed by Cape Verde (40.4%).

Other important variables to be highlighted in Tables 3 and 4 are institutional quality (*rl, rq* and *ge*) and financial depth (*fdepth*). For financial depth, the mean value for African countries in the sample was 21.9%. Ranking the countries according to proportion, South Africa had the highest value (133.98%) followed by Mauritius and Tunisia with the average values of 65.8% and 61.1%, respectively. Equatorial Guinea had the lowest value of 3.9%, with Guinea and Sierra Leone closely following, with the respective values of 4.4% and 4.4%, respectively. Focussing on institutional quality (rule of law – *rl*, regulatory quality – *rq* and government effectiveness – *ge*), the mean values for the entire sample was –0.551, –0.586 and –0.590, respectively. These values were less than the general average value of zero (as the values range from –2.5 to +2.5). On the average, the sampled countries had different levels of institutional quality as can be inferred from Table 4.

Table 4 reports that Mauritius (0.69), Botswana (0.54), South Africa (0.42), Namibia (0.18), Tunisia (0.17) and Cape Verde (0.14) had positive values, denoting that, on the average, they had better institutional quality. This tends to support the observations made by Acemoglu *et al.* (2001), Parsons and Robinson (2006) and Fosu (2011) that countries like Botswana depicts Africa's success story in institutional development. On the contrary, Equatorial Guinea, Sudan, Congo Republic, Guinea Bissau, Eritrea, Sierra

Table 5. Correlation analysis

	Inv	Remit	Fdepth	rl	rq	ge
Inv	1.0000					
Remit	0.4087	1.0000				
Fdepth	0.0314	0.0145	1.0000			
rl	0.2342	0.1656	0.5161	1.0000		
rq	0.0833	0.0376	0.5190	0.7370	1.0000	
ge	0.1543	0.0653	0.6255	0.8689	0.7977	1.0000

Source: Authors' computation.

Leone, Guinea, Libya, Nigeria and Cote d'Ivoire had weak institutional quality ranging from ranging from –1.41 to –1.01. This is not out-of-place as instances of political turmoil in some of these countries attest to this observation.

The main finding that can be surmised from the descriptive analysis is that countries (*e.g.* Botswana, Cape Verde and Morocco) with higher remittance inflow, better financial depth and institutional quality tend to have higher levels of investment. Thus, it can be said that financial development, remittance inflow and institutional quality have direct influence on the level of investment in the selected African countries. This is easily brought to light when one takes a quick look at the correlation matrix among the variables reported in Table 5.

Table 5 reveals that remittance had the highest positive association with investment compared to other explanatory variables, which is followed by indicators of institutional quality (*rl*, *ge* and *rq*).

This finding suggests that remittance and institutional quality are likely to have an impact on investment in the selected African countries. The Table also underscores that there was no issue of multi-collinearity among the explanatory variables. The indicators of institutional quality exhibited a strong positive correlation among themselves, which is expected as they are related. Since they represent different aspects of institutional quality, they were included in the econometric estimation in different regressions as reported in the next subsection.

5.2 Econometric Results

The result presented in Table 6 was estimated using the SGMM. This is with a view to handling possible issues of endogeneity. The overall efficiency of the model was initially appraised using statistics reported in the lower segment of the Table. The Sargan statistics and the test for first and second order serial correlation of the residuals [(*AR*(*1*) and *AR*(*2*)] in the differenced equation were examined. The model is correctly specified if the instruments are uncorrelated with the idiosyncratic component of the error term. This was established by the probability values of the *AR*(*2*) and Sargan tests that were greater than 0.05. The *AR*(*2*) statistics also reveals that there was no second-order serial correlation. The probability values of the Sargan Test revealed that the instruments were not over-identified. Thus, the estimates can be relied upon.[3]

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[3] The study also engaged external instruments using Two Stage Least Squares (2SLS) technique. As suggested in some studies (*e.g.* La Porta *et al.*, 1999; Posner, 2004; Acemoglu and Johnson, 2005; Osabuohien, 2011; etc.), ethnolinguistic fractionalisation, legal origin and formalism and settler mortality were used as instrumental variables for institutional quality. This was because legal formalism and ethnolinguistic fractionalisation will have direct correlation with institutional quality but not with investment, which satisfies the orthogonality criterion (Papaioannou, 2009;

Table 6. Econometric results using SGMM (dependent variable: investment as % GDP – invest)

Variables	1	2	3	4	5	6	7
inv(−1)	0.6186[a]	0.6629[a]	0.6235[a]	0.4345[a]	0.6387[a]	0.6397[a]	0.6170[a]
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Remit	0.0796[a]	0.0952[a]	0.1079[a]	0.1766[a]	0.1802[a]	0.3182[a]	0.1658[a]
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Fdepth	0.0103	0.0132	0.0008	0.0028	0.0196[c]	0.0246[b]	0.0095
	(0.1599)	(0.1925)	(0.1456)	(0.1148)	(0.0723)	(0.0369)	(0.1336)
Rl	2.4037[a]				2.2243[a]		
	(0.0000)				(0.0001)		
Rq		0.6195				0.5916	
		(0.2959)				(0.3802)	
Ge			1.4007[b]				1.6109[a]
			(0.0104)				(0.0063)
fdepth_ remit				0.0178[a]			
				(0.0000)			
rl_ remit					0.0797[c]		
					(0.0638)		
rq_ remit						0.4380[a]	
						(0.0000)	
ge_ remit							0.2243[a]
							(0.0000)
AR(1)	−3.3745[a]	−3.3213[a]	−3.2891[a]	−2.9870[a]	−3.3734[a]	−3.2301[a]	−3.2215[a]
	(0.0007)	(0.0009)	(0.0010)	(0.0028)	(0.0007)	(0.0012)	(0.0013)
AR(2)	−0.7787	−0.9389	−1.0711	0.5068	−0.7623	−0.8638	−0.8649
	(0.4361)	(0.3478)	(0.2841)	(0.6123)	(0.4459)	(0.3877)	(0.3871)
Sargan Test	(0.2295)	(0.215)	(0.304)	(0.157)	(0.2345)	(0.231)	(0.219)
Wald Test	(0.0000)[a]	(0.0000)[a]	(0.0000)[a]	(0.0000)[a]	(0.0000)[a]	(0.0000)[a]	(0.0000)[a]

Note: The probability values are in parenthesis. Superscripts a, b and c denote significant at 1%, 5% and 10%, respectively. The constant term was included in all the regressions but not reported.
Source: Authors' computation.

In Table 6, the first row indicates that the past value of investment exerts positive and significant influence on its current level. Furthermore, in all the columns, investment was significant at 1%. This was expected as past investment outlay may have a direct bearing on its current value. This is because investors gain more knowledge from past experiences, which can inform the current values of their investment.

Taking the regression results in columns 1-3 as the baseline, since they do not contain the interactions, one can apparently observe that the impact of remittances on investment improved considerably in the rest of the regressions in columns 4-7. In essence, the impact of remittance was positive and significant at 1% in all the regressions. When remittance was interacted with institutional quality (*rl* and *ge*), it is observed that the impact of remittance on investment more than doubled when comparing its coefficients in column 6 with the value in column 3. This was also applicable to other measures of institutional qualities. This result was consistent with the observation made by Catrinescu *et al.* (2009), that institutions improve the impact of remittance on the economy.

In a similar vein, the interaction between financial depth and remittance also resulted in an improved coefficient. This is evidenced when one compares the results in column 4 with those of the baseline. Examining the interaction variables, columns 4-7 report that

Du, 2010). The results from 2SLS (not reported) indicate that the *F*-statistics in the First Stage regression ranged between 35 and 62 and is significant at 1%. This was more than the benchmark of 10. In addition, the probability values of the Sargan and Basmann Statistics of over-identification ranged between 0.2142 and 0.4150, which again confirm that the result does not suffer from instruments over-identification.

the interaction between institutional quality and remittance (*rl_rem* and *ge_rem*) had positive signs and significant at 1%. This suggests that the impact of remittance on investment will improve when there are strong institutional qualities such as the rule of law and government effectiveness.

Still on the same line of thought, the impact of the interaction between financial depth and remittance (*fdepth_rem*) was positively signed and significant at 1%. This connotes that remittance will have a positive impact on investment in African countries when there are developed financial institutions that support credit. This shows the complimentary role that financial sector plays in the remittance–investment nexus. The implication of this is that institutional quality and financial deepening can have a significant influence on how remittance is utilised for investment in Africa. Bettin and Zazzaro (2011) found similar results. The finding of this study contradicts the submission of Bjuggren *et al.* (2010) who noted that institutions and financial development interact inversely with remittance to impact on investment. This variation may be as a result of the different indicators used for measuring institutional quality.

As pointed out from the conceptual framework, the level of remittance utilisation can be significantly enhanced when there is a complimentary role of improved institutional quality *vis-a-vis* financial deepening. Thus, the reliability of financial development coupled with dependable institutional quality, can act as "supportive pillars" in a country as it will engender curtailing financial *prodigality* and *fund incarceration.* This can promote the level of utilisation of remittance funds for investment. This will engender the movement from scenarios C, B1 and B2 to the *Ideal State* in scenario A (see Fig. 2). The implication of the above finding epitomises the need for strengthening institutional quality with emphasis on the rule of law and government effectiveness, on one hand, and the supportive role of the financial sector, on the other.

The above findings can be related to those of Mehlum *et al.* (2006) and Fosu (2011) that African countries require good institutional quality to engender improved macroeconomic performance and not mere reliance on financial resources. This can be justified based on the fact that remittance receiving households will only be willing to carry out investment plans when they are sure of the returns on their investments and their rights are relatively protected. Also, the level at which funds are channelled into investment depends on the depth of financial intermediation. In other words, credit from the financial sector can boost funds from remittance to enhance investment in Africa.

Taking investment as a core macroeconomic variable; an improvement in institutional quality in Africa that is supported by a resilient financial sector is crucial in the quest for African countries to move upwards in the economic development pyramid. This is fundamental as the continent is a major recipient of remittance, and remittance inflow is one of her most stable foreign financial resources. Thus, having a framework that can engender and enhance the utilisation of remittance for investment will be pivotal in Africa's quest for development.

6. CONCLUSION

Remittance and its impact on macroeconomic outcomes have received some contestations. Some studies opine that remittance can create a disincentive to work and "undue" appreciation of recipient country's currency. Others maintained that remittance can increase economic growth and instigate an improvement in educational attainment of

recipients' households. However, there is limited research work on the mechanism through which remittances impact on macroeconomic variable-like investment, especially in Africa. Thus, this study explored how institutional quality and financial depth interacts with remittance to influence investment. Differing from extant studies, this study employed the rule of law, regulatory quality and government effectiveness as indicators of institutional quality, focussing on 44 African countries for the period 1995 to 2010.

From the econometric analysis, some of the main findings are briefly surmised. The current investment is directly and significantly influenced by its previous value. This suggests the need to improve the future level of investment by enhancing the current level. Institutional quality (rule of law and government effectiveness) exerts direct and significant impact on investment. This implies that strong institutions are fundamental for improving investment in Africa. It was also established that the inflow of remittance has a positive and significant impact on the extent of investment in the selected African countries. More importantly, the study underscored that the magnitude of influence, remittance has on investment, relatively increases when it is interacted with the indicators of institutional quality and financial depth. The meaning of this is that there is a complimentary role that institutional quality and financial depth can play in improving the impact of remittance on investment in Africa.

This study concludes that the impact of Africa's money in Africa (remittance) will be enhanced in the presence of reliable institutional quality and a viable financial sector. This means that the possibility of channelling inflow of remittance into investment will increase by the collaborative role of better institutional quality and deepened financial sector. Thus, the side effect of *financial prodigality* that might be associated with remittance can be ameliorated. It is therefore recommended that the tenacious and frantic strengthening of institutional quality in Africa and the supportive role of the financial sector are essential in utilising remittance inflow from Africans in Diaspora (Africa's money).

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