

Diaspora Remittances and Stock Market Development at Nairobi Securities Exchange, Kenya

Cliff Osoro¹ Eddie Simiyu PhD² Job Omagwa PhD²

1.PhD Student, Kenyatta University, School of Business, P O Box 43844-00100 Nairobi, Kenya

2.Kenyatta University, School of Business, P O Box 43844-00100 Nairobi, Kenya

Abstract

Diaspora remittances, unlike other external sources of financing, tend to be more stable making remittances a reliable source of financing for emerging economies. Despite the consistent upward trend in diaspora remittances, emerging capital markets are typically characterized by a small number of listing and very high volatility. This study therefore sought to establish the effect of diaspora remittances on stock market development at the Nairobi Securities Exchange, Kenya. The study covered the period 2008-2018 and quarterly time series data was analysed using correlation analysis and the Autoregressive Distributed Lag Model. The study findings document a significant positive effect of diaspora remittances on stock market development in the short run as evidenced by the negative and significant coefficient of the Error Correction Term (ECT). Equally, diaspora remittances had a significant positive effect on stock market development in the long run. In view of the foregoing findings, the study recommends that the Kenya government should create a department of economic relations located at all Kenyan foreign embassies abroad to educate Kenyans abroad on the available investment opportunities at the Nairobi Securities Exchange and the importance of investing back at home.

Keywords: Diaspora Remittances, Political Risk, Foreign Investor Participation, Stock Market Development and Nairobi Securities Exchange (NSE).

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I. Introduction and Background

The Kenyan economic blue print of vision 2030 aims at transforming the country into a newly industrialized middle income country that provides high quality life to its citizens. Moreover, the vision 2030 envisions an efficient and transparent stock market. This huge milestone is to be achieved through the deepening of the financial markets by expanding the bond, equity markets and leveraging on remittances and other long term foreign capital inflows (Republic of Kenya, 2007). Notably, the Nairobi Securities Exchange is however characterized by very small size and high volatility. The growth in the number of listed firms and the market liquidity is very low with the market turnover averaging at less than 10 percent of the overall market capitalization. The annual trend in key equity market indicators at the Nairobi Securities Exchange market for the period 2008-2018 are summarized in Table.1.

Table 1: Key Equity Market Indicators (2008-2018)

Market indicator	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Market capitalization (Bn)	853.8	834.17	1167	868.2	1272	1920	2316	2054	1931	2521.8	2102
Equity Turnover (Bn)	97.52	38.16	110.3	78.06	86.79	115.8	215.7	209.4	147.2	171.6	175.6
NSE 20 Share Index	3521	3247	4432	3205	4133	4927	5113	4041	3186	3732	2834
Listed Firms	55	55	55	58	61	61	64	64	66	67	67

Source: CMA quarterly statistical bulletins (2008-2018)

Table 1 indicates that Market capitalization declined from Kshs. 853.1 Billion in 2008 to Kshs. 834.1 Billion in the year 2009 representing a loss of Kshs. 20 Billion while market turnover declined sharply from Kshs. 97.52 Billion to Kshs. 38.16 Billion over the same period. This can be attributed to the lagged aftermath effects of the global financial crisis and the post-election violence as foreign investors moved away their investments from the domestic market (Kibaara, 2008). The market recovered from the effects of the global financial crisis and the post-election violence in the year 2010 experiencing a steady bullish run till 2015 when the market capitalization decelerated from Kshs.2,316 Billion in the year 2014 to Kshs.2,054 Billion in the year 2015 representing a loss of Kshs. 262 Billion in a single financial year (CMA, 2016). The decline can be attributed to the re-introduction of the capital gains tax by the treasury that led to massive capital outflow and the subsequent replacement with a one off transaction fee of 0.3% on the value of the transaction (Gachanja & Kosimbei, 2018). The market capitalization picked a growth momentum in the year 2016-2017. However the worst decline throughout the period was experienced in the year 2018 attributed to the aftermath effects of the prolonged election period of 2017-2018. During this period the market capitalization dropped by over Kshs.400 Billion from Kshs. 2521 Billion in 2017 to Kshs. 2102 Billion in 2018 (NSE, 2018). The Market liquidity was very low throughout the period with market

turnover increasing marginally from Kshs. 97.52 Billion in 2007 to Kshs. 175 Billion in 2018 (CMA, 2018).

Diaspora Remittances include all the monetary transfers that are received by the residents from the non-residents and also include the compensation given to resident employees working abroad for short periods that are usually less than a year (IMF, 2005). Diaspora remittances are not only became important source of revenue to any country but are also a very important source of income to its residents and families for consumption (Bayar, 2016). However, not all the diaspora remittances are consumed; but rather part of the consumption of remittances is delayed through savings and investment. Unlike other sources of external finance, diaspora remittances tend to be more stable making remittances a reliable source of financing for developing countries (Ratha & Mohapatra, 2007). This is attributed to the fact remittances are directly sent to the recipient from the sender and are therefore not subject to the government bureaucratic bottlenecks affecting other foreign financial inflows such as foreign direct investment.

Stock market development is the process through which the stock market increases in size, liquidity, price stability, linkage with other markets, and variety of instruments, improved technology and market concentration (Wassal, 2013). From the foregoing stock market development is therefore a multi-faceted, long-term and complex process that is measured by several factors. However, recent studies conducted globally and in the emerging markets of Sub-Saharan Africa indicate that a lot of emphasis has been placed on Market capitalization ignoring other indicators of stock market development (Oziengbe & Ovuefyen, 2013; Soumare & Tchana, 2011; Idenyi *et al.*, 2016; Mohanty, 2016; Raza & Jawaid, 2014 and Nyangoro, 2013). This can be attributed to the fact that foreign financial flows into and out of the domestic market leads to increased fluctuation in the value of stocks and liquidity of the market. Market size is measured using the number of listed firms or the value of market capitalization (Nwiado & Deekor, 2013). Market capitalization is however preferred due to its direct relationship with the firms' ability to mobilize capital and its future growth prospects (Rajan & Zangles, 2003). Moreover, market capitalization and liquidity are able to capture the high frequency changes in the stock market. In view of the foregoing the study measured stock market development using market capitalization, market turnover and NSE All Share index.

II. Problem Statement

Despite the stock markets' pivotal role towards economic growth, stock market development in Kenya and its contribution to economic growth is still an issue of great concern (Republic of Kenya, 2016). Emerging capital markets are typically characterized by a small number of listing, high volatility, lack sophisticated infrastructure and have a narrow range of tradable instruments (Hearn & Pearse, 2006). According to Nyangoro (2013), the Nairobi Securities Exchange market is characterized by small size and very low liquidity. Further, the stock market demonstrates significant structural and regulatory weaknesses (Ngugi, Amanja & Amana, 2013). During the study period 2008-2018, the NSE 20 share index moved from 4843 basis points in the first quarter of the year 2008 to 3521.18 points by the end of the fourth quarter of 2008 and further dropped to 3247.44 points by the end of 2009. This decline is far below the NSE 20 share index psychological mark of 4000 basis points. In 2010 the index registered steady increase to 4432.6 points but further declined to 3224.18 points in the year 2011. The index increased steadily to reach 5212.11 basis points in 2014 but further declined to 4040.75 in 2015. The index further registered an increase to 3186 points before increasing by 17% to close at 3712 points in 2017 (NSE, 2017). However the worst decline is registered in the year 2018 when the market index declined by 24% to close the year at 2834 points (NSE, 2018). Moreover, the liquidity of the NSE is very low throughout the period 2008-2018 with market turnover increasing marginally from a minimum value of Kshs. 97.52 Billion in 2008 to a maximum value of Kshs. 175 Billion in 2018 (CMA, 2018). Despite the substantial returns generated in emerging markets, the cyclical nature of the markets makes it impossible for the existing and potential investors to accurately predict market returns. Excessive volatility affects the smooth operations of the market and consequently the reduce returns on investment (Barnor, 2014).

Worth noting, unlike other foreign financial inflows that fluctuate with uncertainty in the political environment, diaspora remittances demonstrate a consistent upward trend over the years. Diaspora remittances from developed economies have increased rapidly in recent years even exceeding the amount of foreign direct investment in most developing countries (Raza & Jawaid, 2012). Diaspora remittances have become such an important source of foreign capital inflows to the developing countries and its contribution towards stock market development cannot be under estimated. The amount of remittances invested in the stock market largely depending on the returns generated from other money market instrument (Kalim & Shahbaz, 2013). Whenever the returns generated from other money market instrument is low relative to stock market returns, diaspora remittances can be directed to the stock market through the purchase of equity instruments in listed companies. According to Njoroge (2014), increased awareness by the Kenyans in the diaspora on the availability of investment opportunities and the high returns in the stocks market has led to increased amount of remittances investment in the Nairobi Securities Exchange market. This has the effect of increasing stock market size, liquidity and price stability hence leading to development of the market. Despite the wavering trends on the development of the NSE, there remains

little empirical evidence on the effect of diaspora remittances on stock market development in Kenya. Hence, the study sought to establish the effect of Diaspora remittances on Stock market development at NSE, Kenya. Equally, in view of the foregoing the study measured stock market development using market capitalization as a proxy of market size, market turnover as a proxy of market liquidity and NSE All Share index as a measure of market volatility.

III. Literature Review

These sections provide a review of relevant theories that support the relationship between diaspora remittance and development of stock markets. Hence, the following theories were applied to explain the study relationship: Pure Self- Interest Theory and Base Broadening Theory. These theories are discussed in detail in this section.

The Pure Self Interest Theory was triggered by Lukas and Stark (1985). According to the Pure Self Interest Theory an emigrant sends remittances with the aspiration to inherit or makes investments for the future with the intention to return home in future and derive benefits from such investments. Emigrants send money home because they expect to return home and can expect to receive family gratitude for having sent remittance (Vargas & Huang, 2006). The main goal of remitting income from the foreign country to the domestic country is for investments that are expected to earn returns in future when the remitter eventually come back at home. Thus remittances act as a strategy of investment for future returns (Docquier & Rappoport, 2005). Such investments are placed under the care of family members who serve as care takers or agents acting on behalf of the diaspora emigrant. The Kenyan government through the foreign investment policy takes note of the immense contribution and untapped potential of the Kenyan living in the diaspora (Republic of Kenya, 2014). The diaspora diplomacy pillar aims at tapping into the skills, knowledge, expertise and resources of the Kenyans in the diaspora to facilitate their integration into the national development agenda.

The Base Broadening theory was proposed by Merton (1987). The theory contends that expanding the number of investors, through the liberalization of the financial markets, to include investors from foreign countries would lead to increased diversification. Increased diversification leads to lower risk and consequently lowering the required risk premium. This has the effect of increasing capital availability in the stock market, liquidity and price stability hence leading to development of the stock market (Galindo *et al.*, 2007). The liberalization of the financial markets, leads to increased market efficiency and better allocation of resources to the most optimum users in the domestic capital markets (Yartey & Adjasi, 2008). According to the theory, the assumed factors barring foreigners' investments from holding fully diversified portfolios are informational in that; investors will fail to invest in stocks if they are not fully informed about the returns available in the capital markets. Therefore according to Base Broadening theory, if both the domestic and foreign investors from the diaspora share the same information sets they will invest equivalently (Merton, 1987).

Empirical studies conducted on the relationship between diaspora remittances and stock market development have either focused on either long term or short term effects of remittances on stock market development in isolation. This creates the need to test both the long run and short run dynamics simultaneously using a lagged model such as the Autoregressive Distributed Lag model (ARDL). Secondly, the studies have equally taken a restricted view that stock market development is measured using a single indicator (Njoroge, 2014; Raza & Jawaid, 2014; Githaiga & Kabiru, 2014). However of importance to note stock market development is a multi-faceted complex process that is measured using various indicators. These studies are further discussed in greater detail below.

Njoroge (2014), sought to determine the effect of Diaspora remittances on stock market performance using evidence from the Nairobi Securities Exchange. Stock market performance was measured by The Nairobi Securities Exchange All Share Price Index (NASI). Inflation, interest rates and exchange rates were used as control variables. Time series monthly data for seven years from February 2008-May 2015 was obtained from the Nairobi Securities Exchange and the Kenya Central Bank was used for the purpose of meeting the study objectives. The study applied both descriptive analysis and multiple regression analysis. The study findings indicated that Diaspora remittance had strong and significant positive effect on stock market performance. The current study however analyses the relationship between diaspora remittances and stock market development using autoregressive distributed lag model.

Raza and Jawaid (2014) studied the effect of remittances on stock market development in 18 Asian countries. The study covered the period 2000-2010 and time series data was analyzed using ARDL cointegration and Toda and Yamamoto causality tests. The findings indicated remittances had significant effect on stock market development. Toda Yamamoto causality test indicated a bi-directional causal relationship. Notably, this study is conducted beyond the context of the emerging African stock markets. Therefore the markets regulations and the other factors influencing foreign financial inflows in these markets are obviously different from the Kenyan market context. This creates the need to test the relationship in the context of the emerging African markets such as the Nairobi Securities Exchange Market.

Githaiga and Kabiru (2014) sought to examine the impact of remittances on financial sector development.

The study covered 31 countries in the period 1980 - 2012. The data was analyzed using the General Moment Method (GMM). The findings from the study indicated that remittances had a negative adverse effect on domestic private sector credit while remittances effect on bank deposit was statistically insignificant. This study considered effect of remittance on the stock market development. Equally data was analyzed using GMM therefore there is need to consider both the long term and short term effects of remittances on the stock market using a lagged model such as the ARDL model.

IV. Research Methodology

The study adopted a positivism philosophy and a causal research design. The positivist philosophy is a controlled and structural approach of conducting research that involve identification of a clear research topic, construction of hypotheses and adoption of an appropriate research methodology (Carson *et al.*, 2001). Positivism philosophy was appropriate since the study sought to test the hypothesis that diaspora remittances have a significant effect on stock market development at The Nairobi Securities Exchange using a structured scientific approach that involves identification of a researchable area of study, construction of hypothesis and testing of the hypothesis using suitable methodology. Moreover the positivism philosophy leaves very little room for subjectivity as the findings of the study are independent of the researchers' personal opinion (Brymanes & Bell, 2011). Moreover, the causal research design was appropriate for this study since the study assumes the existence of a statistically significant causal relationship between diaspora remittance and stock market development at The Nairobi Securities Exchange, Kenya.

The study adopted a census design including all firms listed in the Nairobi securities exchange and involved in the computation of the overall market capitalization, market turnover and NSE All Share index. A census design involves a complete enumeration all the units in a given population during data collection (Saunders *et al.*, 2009). Quarterly time series data for the period 2008-2018 relating to stock market capitalization, market turnover, and NASI and diaspora remittances were obtained from the Capital Markets Authority, Kenyan Central Bank and the political risk international website. The models were then estimated using the hierarchical regression analysis procedure (Mogaka, 2016). According to the hierarchical regression analysis procedure, the direct effects were first estimated using the Modified least Squares model (Newey & West, 1987). Subsequently, the short run and long run cointegration effects are estimated using the autoregressive distributed lag model (Pesaran & Shin, 1995; Pesaran *et al.*, 2001).

V. Correlation Analysis Test Results

The Karl Pearson correlation matrix is applied to test the relationship between the independent variables and the dependent variables of the study. Table 2 below is a presentation of the findings from correlation analysis.

Table 2: Karl Pearson Correlation Analysis Results

	lnMCAP	lnMTNR	lnNASI	lnREM
LnMCAP	1			
LnMTNR	0.875* (0.000)	1		
LnNASI	0.974* (0.000)	0.886* (0.000)	1	
LnREM	0.851* (0.000)	0.593* (0.000)	0.774* (0.000)	1

Source: Study Data (2019)

Table 2. Above indicates a high positive significant correlation between Diaspora Remittances (REM) and stock market development as measured using market capitalization, market turnover and the NSE All Share index. According to Njoroge (2014), the increased awareness about the returns in the market, has led to increased amounts of remittances investment in the stock market. Unlike other sources of external finance, diaspora remittances are directly sent to the recipient from the sender. Thus tend to be more stable making diaspora remittances a reliable source of financing for developing countries (Ratha & Mohapatra, 2007).

VI. Cointegration Test Results

The Autoregressive Distributed Lag (ARDL) bound test proposed by Pesaran and Shin (1999) and Pesaran *et*

al., (2001) was applied by the study to test for the existence long run cointegration. Unlike other methods of cointegration such as Engle and Granger (1987) and the Johansen test (1991), ARDL is appropriate when the variables are intergrated of order I(0) or intergrated of order I(1) but not intergrated of order I(2). Table 3: presents the ARDL Bound Cointegration Test Results with Market Capitalization, Market Turnover and NSE All Share index as the dependent variables.

Table 3: Summary of ARDL Cointegration Test Results

Table 4.30a ARDL-ECM Coefficients (Dependent Variable: Market Capitalization)				
Variable	Short Run Coefficients		Long Run Coefficients	
	Coefficient	Prob	Coefficient	Prob.
lnREM	3.9857	0.0032<0.05(significant)	0.7326	0.0056<0.05(significant)
ECT	-0.7203	0.0001<0.05(significant)		
Table 4.30b ARDL-ECM Coefficients (Dependent Variable: Market Turnover)				
Variable	Coefficients		Prob.*	
	Coefficient	Prob	Coefficient	Prob.*
lnREM	0.8955	0.0416<0.05(significant)	3.7697	0.0002<0.05(significant)
ECT	-0.6168	0.0005<0.05(significant)		
Table 4.30c ARDL-ECM Coefficients (Dependent Variable: NSE All Share Index)				
Variable	Coefficients		Prob.*	
	Coefficient	Std. Error	Coefficient	Prob.*
lnREM	0.9301	0.0003<0.05(significant)	0.7076	0.0174<0.05(significant)
ECT	-0.6030	0.0006<0.05(significant)		

Source: Study Data (2019)

The coefficient of the Error Correction Term (ECT) indicates the speed at which the model adjusts to long run equilibrium while the sign of the ECT indicates the direction of adjustment to equilibrium (Pesaran *et al.*, 2001). According to Shahbaz *et al.*, (2013) the coefficient of the error correction term should be negative and significant. A highly significant negative coefficient of the error correction term is an indication of stable long run equilibrium of the model (Bannerjee, Dolado & Mestre, 1998). The findings presented on Table 3 above indicates that diaspora remittances have a significant short run effect on market capitalization as a measure of stock market development as evidenced by the negative and significant coefficient of the error correction term. The error correction term has a coefficient of -0.7203 with a 0.0001 probability value less than 0.05. This implies that model adjusts back to long run equilibrium quarterly at a speed of 72.04 percent. This further demonstrates a long run equilibrium running causality running from diaspora remittances to market capitalization as a measure of stock market development.

Further, Table 3 above indicates that diaspora remittances have a significant effect on market turnover as evidenced by the negative and significant coefficient of the error correction term. The error correction term has a coefficient of -0.6168 with a 0.0005 probability value less than 0.05. This implies that the system corrects itself back to equilibrium quarterly after a market shock a speed of 61.69 percent. This further demonstrates a long run equilibrium running causality running from diaspora remittances to market turnover as a measure of stock market development. Equally, diaspora remittances have a significant short run effect on the NSE All Share index as a measure of stock market development as evidenced by the negative and significant coefficient of the error correction term. The error correction term has a coefficient of -0.603007 with a 0.0006 probability value less than 0.05. This implies that model adjusts back to long run equilibrium quarterly at a speed of 60.30 percent. Further, confirming that all the variables are cointegrated.

Finally, the findings support the existence of a significant positive long run relationship between diaspora remittance and market capitalization as a measure of stock market development. Diaspora remittance had a coefficient 0.732624 with a P-value of 0.0056. Since 0.0056 is less than 0.05 the study rejects the null hypothesis and finds that diaspora remittances have a significant long run effect on stock market development as measured using market capitalization. Equally, diaspora remittances had a coefficient of 3.7697 with a P-value of 0.0002 less than 0.05 with market turnover. Hence the null hypothesis is rejected and the study finds that diaspora remittances have a significant positive long run effect on stock market development as measured using market turnover. Moreover, the findings support the existence of a significant positive long run relationship between diaspora remittance and the NSE All Share index as a measure of stock market development. Diaspora remittance had a coefficient 0.7076 with a P-value of 0.0174. Since 0.0174 is less than 0.05 the study rejects the null hypothesis and finds that diaspora remittances have a significant long run effect on stock market development as measured using the NSE All Share index. These findings are support the findings by Njoroge (2014) indicating that diaspora remittance had strong and significant positive effect on stock market performance in Kenya.

VII. Conclusions, Policy Implications and Recommendations

In view of the above results the study the study finds that diaspora remittances had a positive and significant long run effect on market capitalization, market turnover and the NSE All Share index as indicators of stock market

development. Equally, diaspora remittances had a positive and significant short run effect on market capitalization, market turnover and the NSE All Share index as indicators of stock market development. Since diaspora remittances had a significant positive effect on market capitalization, market turnover and the NSE All Share index the study concludes that an increase in diaspora remittances will result in enhanced market value, liquidity and price stability. The study therefore makes the following recommendations in view of the above findings.

First, the Kenyan government thorough the ministry of foreign affairs and other government agencies need to reconsider the Kenya foreign investment policy and the effectiveness of each foreign inflow with the sole objective being to attract productive foreign financial inflows such as diaspora remittances. The foreign investment policy should only target those inflows that have a productive effect on the stock market and other sectors of the economy. More emphasis should be placed on foreign inflows such as diaspora remittances that have a high significant positive effect on stock market development. Secondly, the government needs to devise measures that would boost investor confidence and thus attract increased Diaspora remittances.

The government should institute aggressive campaigns targeting the Kenyans living in the diaspora to educate them on the importance of investing back at home. The Kenya government should create a department of economic relations to be located at all Kenyan foreign embassies abroad. The department will be charged with the role of sensitizing the Kenyans in the diaspora on the available investment opportunities at the Nairobi Securities Exchange. Thirdly, the national assembly therefore needs to provide a conducive environment for diaspora investors through formulation of favorable investment policies, ensuring political stability, minimizing bureaucracy and managing corruption.

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