

Effect of Macroeconomic Factors on Remittance Inflows into Kenya

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Abstract: There has been increased attention to the determinants and effects of migrant remittances to developing countries due to the substantial growth of the same over the years. Studies carried out in Kenya have established that remittance inflows lead to an increase to economic growth. However, there have been no studies done in Kenya to establish the factors that affect diaspora remittance inflows into Kenya. This study aimed to establish how the real interest rate, the inflation rate, the real exchange rate and the GDP per capita affect diaspora remittance inflows into Kenya. Data on the variables were obtained from the World Bank database. The study was for the period 1971-2016. The data was analysed using a multivariate regression model. The data was subjected to the ADF test to test for stationarity and the Johansen Cointegration test to test for cointegration. Once the data was established to have a long-run relationship, an ECM was done to check for the short-run dynamics of the variables as well as to establish the error correction term. An OLS estimation was then done to establish the long-run relationship between the variables. The study found that the inflation rate and the real interest rate had a negative and insignificant effect on remittance inflows in the short run. The real exchange rate had a positive and insignificant effect in the short-run. The GDP per capita had a positive and significant effect in the long run. The error correction term was found to be at 43.98%. In the long run, all the variables had a positive effect on remittance inflows but the GDP per capita was the only variable that was significant. The study recommended the GOK to do away with the interest rate cap, keep pursuing high economic growth as well as work with the private sector to increase innovation that would enable money to be remitted into Kenya fast, reliably and cheaply.

Keywords: Real Interest Rate, Inflation Rate, Real Exchange Rate, GDP per Capita, Remittances.

1. INTRODUCTION

International migrant remittances into sub-Saharan Africa have experienced a significant increase in the recent years. Remittance is gradually taking center in world research agenda. This is not far-fetched from a recent discovery by financial economists and policy makers that remittance is a resilient source of foreign exchange as evidenced from recent global financial crisis (Atanda & Charles, 2014).

Cross-country analysis and evidence from household surveys suggest that emigration and remittances reduce poverty in the origin communities. Remittances lead to increased investments in health, education, and small businesses and the diaspora of developing countries can be a source of capital, trade, investment, knowledge, and technology transfers (Meyer and Shera, 2013)

In Kenya, remittance inflows into the country have grown significantly from 1971, the earliest recorded remittance inflows into the country, to 2017. Remittance inflows into the country in 1975 was \$7.2 Million while in 2017, \$1,727 million was remitted into the country. The significant increase in remittance inflows into Kenya over the years has an effect in the economy of most households. Given this, understanding the macroeconomic factors that influence remittance inflows into the country is important for purposes of policy determination.

2. METHODOLOGY

The study focused on the Kenyan economy over the period 1971 to 2016. The dependent variable was the annual remittance inflows into Kenya with the independent variables being the exchange rate, the inflation rate, the interest rate and the GDP per capita. Secondary data was used in the research. Data was drawn from the World Bank's website.

The model was specified as:

$$\text{LnRem} = \alpha + \beta_1 \text{LnInt} + \beta_2 \text{LnInf} + \beta_3 \text{LnExch} + \beta_4 \text{LnGDP} + \varepsilon$$

Rem was the remittance inflows into Kenya which is the dependent variable.

α was the constant.

$\beta_1, \beta_2, \beta_3, \beta_4$ were regression coefficients which determine the contribution of the independent variables.

LnInt was the natural logarithm of the interest rate. *LnInf* was the natural logarithm of the inflation rate variable. *LnExch* was the natural logarithm of the real exchange rate. *LnGDP* was the natural logarithm of the GDP per capita variable and was expected to be negatively related with remittance inflows. ε is the error or residual value.

3. FINDINGS AND DISCUSSIONS

When tested for stationarity, all the variables were found to be stationary at first difference. This signified a long run relationship between the variables. An Error Correction Model (ECM) was then estimated to correct the short run disequilibrium as the variable moves toward the static long run equilibrium. The ECM parameters represented the short term relationships between the dependent and independent variables. The coefficient of error correction term (ECT) was -0.227 and is statistically insignificant with a p value of 0.3230. However, the sign conforms to the restriction of negativity and less than one (Gujarati, 2005). The ECT implies that the rate at which the short run disequilibrium is being corrected annually to arrive to the long run equilibrium is 22.71%. The real interest had a negative and insignificant effect on remittance inflows in the short-run. The inflation rate, the real exchange rate and the real GDP per capita had a positive and insignificant effect on remittance inflows in the short-run.

In the long-run model all the variables had a positive effect on remittance inflows into Kenya. However, the real interest rate ($p=0.7738$) and the inflation rate ($p=0.1384$) had an insignificant effect on remittance inflows. The real exchange rate ($p=0.0000$) and the GDP per capita ($p=0.0000$) had a significant effect on remittance inflows into Kenya. The model had an R-squared of 0.8592 which meant that the variables explained 85.92% of remittance inflows into Kenya.

The implications of these results is that an increase in the real exchange rate, which means depreciating of the Kenya shilling against the US dollar leads to an increase in remittance inflows into Kenya. An increase in Kenya's GDP per Capita leads to an increase in remittance inflows into the country.

4. CONCLUSIONS AND RECOMMENDATIONS

The GDP per capita had a positive and insignificant effect on remittance inflows into Kenya the short-run. In the long-run GDP per capita has a positive effect on remittance inflows into Kenya. The Government of Kenya (GOK) should keep pursuing a high and sustainable economic growth rate so as to attract more remittances. GOK should engage in activities that lead to an increase in the country's GDP. GOK should invest in local industries and manufacturing industries with the aim of revolutionizing Kenya from a net-importing country to a net-exporting country. GOK and the private sector should invest in innovation that would help ease the transfer of money across boundaries in a cost effective manner. The positive effect that the exchange rate has on remittance inflows implies that migrants send more money when it is cheaper to do so. Kenya is a world leader in mobile money transfer with M-pesa and more innovation in that area should be done so that money can be sent fast, reliably and cheaply. This would increase remittance inflows into Kenya.

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APPENDIX - A

Table A 1: Data Used in Analysis

	Rem	Int	Inf	Exch	GDP
1971	7260000.229	20.06938634	3.780206125	7.142859998	152.5532193
1972	13859999.66	7.701926986	5.831644743	7.142859999	174.3976141
1973	12539999.96	-1.092377054	9.281194223	7.020383688	199.6944931
1974	18479999.54	-5.643527172	17.80994803	7.134811101	228.7584182
1975	13199999.81	-1.640905655	19.12018401	7.343193332	241.6723212
1976	9899999.619	-7.490083761	11.44903049	8.367144999	248.2400422
1977	18479999.54	-5.902336357	14.82096448	8.276560832	309.353539
1978	26399999.62	6.712201813	16.93178246	7.729383332	351.6367428
1979	19139999.39	4.128561068	7.979352618	7.475309166	398.0367672
1980	27719999.31	0.942589238	13.85818146	7.420187499	446.5744543
1981	78540000.92	1.410506086	11.60305344	9.047498333	405.5509672
1982	67980003.36	2.605412411	20.66671467	10.922325	366.2749507
1983	58080001.83	3.572394451	11.39778274	13.31151667	327.8176449
1984	56759998.32	3.835120318	10.28409821	14.413875	326.9364626
1985	66000000	5.257537652	13.00656642	16.43211667	312.1960254
1986	52139999.39	4.864495047	2.534275989	16.22574167	355.2313447
1987	66000000	8.157389639	8.63767319	16.45449167	377.4184626
1988	76559997.56	8.026232316	12.26496305	17.7471	382.0224053
1989	89099998.47	6.815211935	13.78931728	20.57246667	365.9747535
1990	139259994.5	7.332797069	17.78181443	22.91476667	366.3008909
1991	124080001.8	5.745512647	20.08449558	27.50786667	337.1221889
1992	114839996.3	1.825329186	27.33236445	32.21683333	328.8393137
1993	118139999.4	3.413472407	45.9788813	58.00133333	223.3348006
1994	137279998.8	16.42810989	28.81438943	56.050575	269.2487013
1995	298320007.3	15.80164834	1.554328161	51.42983333	330.8043302
1996	288420013.4	-5.776588542	8.864087416	57.11486667	427.9512673
1997	351779998.8	16.87956849	11.36184505	58.73184167	452.9848068

1998	347820007.3	21.09632603	6.722436508	60.3667	473.4327212
1999	431640014.6	17.45404878	5.742001095	70.32621667	421.4328846
2000	537900024.4	15.32743345	9.980025154	76.17554167	403.9797132
2001	50914426.28	17.81250097	5.738598143	78.563195	401.7763612
2002	57143479.98	17.35814064	1.961308217	78.74914167	395.8493511
2003	65845295.38	9.770510928	9.81569063	75.93556944	436.6875357
2004	375811334.2	5.045257596	11.62403554	79.17387606	458.8843551
2005	424991045.9	7.609987548	10.31277836	75.55410945	519.7999346
2006	570459274	-8.009866973	14.45373421	72.10083502	697.0066385
2007	645207871.4	4.819090789	9.75888023	67.31763812	839.1081117
2008	667317334	-0.984996971	26.23981664	69.17531982	916.8992515
2009	631460883.2	2.837078161	9.234125924	77.3520123	920.0816252
2010	685757272.4	12.025898	3.961388891	79.2331517	967.3400773
2011	934149157.1	3.840675702	14.0215499	88.81076997	987.4453967
2012	1211021406	9.456606853	9.378395851	84.52960176	1155.020582
2013	1304277242	11.54773048	5.71827408	86.1228789	1229.114798
2014	1440846022	7.815634387	6.877498097	87.92216381	1335.06458
2015	1560421047	5.896231852	6.582410917	98.17845333	1349.970144
2016	1727346875	7.899352217	6.297547502		1455.359765