The Influence of Macro-Economic Factors on Foreign Direct Investment Flows in Kenya for The Period Of 2002-2013

George Otieno     Amos Njuguna
United States International University-Africa; Chandaria School of Business.  P.O Box 14634-0800   Nairobi.

Abstract
Foreign Direct Investments (FDI) are imperative for the long-term economic development of global economies as they result to capital creation, technology transfer, competition enhancement and employment creation. Consequently, macroeconomic outcomes resulting from the monetary and fiscal policies are postulated to influence the FDI. This paper investigates the effect of inflation, real interest rate, real exchange rate, and development expenditure on FDI flows in Kenya between 2002 and 2013 using a regression model and correlation analysis. We find a positive relationship between development expenditure and FDI and a negative relationship between the real interest rate, inflation, and the real exchange rate on FDI. The implications of these findings are that policymakers should focus on controlling inflation and interest rates and maintaining stable exchange rates to enhance FDI flows.

1.0 Introduction
Globally, FDI flows increased by 35% between the second and third quarter of 2013 after a decrease of 32% between the first and second quarters as a result of slowed growth in transition economies like China; euro-zone crisis; and fears of financial stability in emerging markets, which resulted to sell-off of currencies (OECD, 2014). In 2014, the flows increased by 8% as a result of the influence of economic uncertainty and geopolitical risks (UNCTAD, 2015).

Inflows to Africa decreased by 3% in 2014 due to political instability in North Africa where the inflows declined by 17% (UNCTAD, 2015). The huge decline in the North was offset by an increase in Southern Africa due to the presence of natural resources, peace and substantial success of economic integration (UNCTAD, 2015). In 2013, FDI in East Africa increased by 15% percent as a result of growing inflows to Kenya and Ethiopia; fuelled by aggressive industrialization and investment policies and the potential for oil and gas exploration and growth of transport, manufacturing and service industries (UNCTAD, 2014).

The World Investment Report (2008) described Kenya as the least favorable destination of FDI in the East African region (UNCTAD, 2008). This was arrived at after the country had enjoyed a US$729 million in FDI about 2.7% of its GDP, in 2007; and then slammed to receiving only about US$96 million, which was about 0.3% of its GDP in 2008 – the decline being attributed to political violence. However, value increased gradually to US$141 million and US$186 million in 2009 and 2010 respectively (World Bank, 2010). In the year 2013, FDI flows into the country stood at about $514 million, up from $259 million in 2012, which is a 98% increment. These flows majorly went to oil and gas, and the manufacturing industries. The country is also perceived by foreign investors as a regional hub for energy, services and manufacturing. However, the country’s share of FDI inflows is still low compared with the whole of East Africa whose flows amounted to $6.2 billion in 2013 (UNCTAD, 2014). The data for these flows is indicated in figure 1.
Scholars have studied the macroeconomic policy and its effect on FDI in many economies and its consequent effect on the society. For instance, Vernon (1966) determined the importance of location as a major determinant in FDI decision making in the 1960s. Vernon, Dunning, and Hymer found that the relationship between FDI and economic development is often complex. From a macro perspective, FDI is regarded as an employment creator, technology spillovers, accelerate competitiveness, and hence increasing productivity. For developing countries; they have been known to promote exports, access to international markets and currencies (Denisia, 2010).

The initial findings and results varied at the onset but started forming a commonality as globalization set in. Sub-Saharan Africa became of interest given that most foreign investments perceived it as a good investment destination. By 1970s, SSA had attracted a bigger share of FDI inflows than Asia and North America but by 2000, the share started declining at a higher margin (Cleeve, E., 2008) a situation that caused most SSA countries to revert to various mechanisms of attracting FDI.

In Ghana, Havi. K. D. E. and Attah-Obeng. P., (2013); investigated the impact of macroeconomic factors on FDI for the period 1980-2012. Other studies find macroeconomic factors having specific effects on FDI inflows to developing, transitioning, and developed economies (Bormann. A. Busse. M. and Neuhaus. S., 2006). Asiedu. E., (2002);Ezeoha. E. A. and Cattaneo. N. (2011) reveals a dearth of studies on the specific aspects of the micro-economic environment that affect FDI in many African countries including Kenya. Mutuku. C. and Koech. E., (2014) studied the influence of monetary and fiscal policy shocks on economic growth of Kenya. This study seeks to contribute to knowledge by reviewing the effect of macro-economic factors on FDI inflows between 2002 and 2013. This period is important for Kenya as it was the third political regime that was characterized by political coalitions that sometimes led to the risk of policy paralysis. Additionally, Kenya experienced unprecedented growth in mobile money transfer and relative stability of the economy and financial services industry compared to the other political regimes.

2.0 Literature Review

2.1. Theoretical Foundation of the Study

The first attempt to explain the FDI was regarded as Ricardo’s theory of comparative advantage. But Hosseini (2005) argued that FDI cannot be explained by this theory; which is based on two countries, two products and a perfect mobility of factors at local level. Alternative theories that explain FDI include; production cycle, monopolistic advantage, internationalization and the eclectic paradigm theories. Each of these theories are discussed in turn.
2.1.1. Production Cycle Theory

The production cycle theory describes how a Multinational Enterprise (MNE) develops a new product and then engages in FDI. It was developed by Raymond Vernon to explain why United States firms in shifted from exporting to FDI. Firms initially gain a monopolistic export advantage through innovations but at the new product stage the production continues to be concentrated in the home country, even though production in some host countries maybe lower. As the product becomes standardized at its growth stage, the firm has an incentive of investing in it abroad to exploit lower production costs. It makes sure that the investments are first made in an industrial country that can support economies of scale through large export sales. At the mature product stage, cost competition intensifies so the firm has the advantage of shifting production from initial host country to another lower-cost country. It then sustains the old subsidiary with new products (Raymond Vernon, 1966). This theory is relevant to firms' initial entries into host countries than to MNEs which have FDI already in place (Raymond Vernon, 1966).

2.1.2. Monopolistic Advantage Theory

Monopolistic advantage theory theory suggests that the MNE possesses monopolistic advantages thus enabling it to operate subsidiaries abroad more profitably than local competing firms. It attributes the sources of competitive advantage to economies of scale (vertical and horizontal economies of scale) and knowledge. Increased production through horizontal investment allows for reduction in unit cost of services and may also have the advantage of allowing the firm to even out the effects of business cycles in various markets by rearranging sales destinations, given that it produces the same product in all its subsidiaries internationally. Through vertical investment, each subsidiary produces parts of the final product for which local production cost is lower; the firm then maximizes on economies of scale. But international integration of production would be difficult through trade (Oded Shenkar, Yadong Luo, 2008). Furthermore, knowledge of a firm entails a lot such as technology, managerial, industrial organization and product knowledge. Firms often sell the knowledge through licensing to foreign markets. It is always challenging to sell it though because most host countries are normally unwilling to pay for its full value because of uncertainties of its utilization. So most firms resort to using subsidiaries in host countries thus being able to sell it directly (Oded Shenkar, Yadong Luo, 2008).

2.1.3. Internalization Theory

The internationalization theory holds that the available external market fails to provide sufficient platform in which the firm can gain profits by using its unique resources like technology. It then tends to produce an internal market through investment in multiple host countries hence creating the needed market to achieve its objective. Theorists have argued that the theory creates contracting through a unified, integrated intra-firm governance structure. It then takes place either because there is no market for the intermediate products needed by the firm or the external market for such products is insufficient. The costs of transactions done in an external market may be higher than transactions within an intra-organizational market (Oded Shenkar, Yadong Luo, 2008) thus making the theory to be morbid. The theory also specifies that the common governance of activities in different locations is likely to result in profits. In many industries, FDIs are no longer able to compete as a collection of nationally independent subsidiaries but is based on the ability to link and integrate subsidiary activities across the globe. Internalization has advantages in that, a firm; can easily avoid costs of violated contracts, search and negotiating costs, government interventions and even capture economies of interdependent activities (Oded Shenkar, Yadong Luo, 2008).

2.1.4. Eclectic Paradigm Theory

This paradigm offers a general framework for explaining international production. It has three variables namely; ownership-specific, location-specific, and internalization. The theory is positioned at the intersection of a macroeconomic theory of international trade and a microeconomic theory of the firm. It is an exercise in resource allocation and organizational economics with the key assertion being that all three the factors are important in determining the extent and pattern of FDI. The paradigm distinguishes between structural and transactional market failure. Structural market failure is an external condition that gives rise to monopoly advantages as a result of entry barriers created by existing firms and governments and therefore discriminates between firms in terms of their ability to gain and sustain control over property rights or to govern geographically dispersed valued-added activities. Transactional market failure is always as a result of
intermediate product markets to transact goods and services at a lower cost than that incurred through internalization (Oded Shenkar, Yadong Luo, 2008). Furthermore, the eclectic paradigm provides a comprehensive perspective on FDI than the other theories. It combines and integrates country-specific, ownership-specific, and internalization factors in presenting the logic and benefits of international production. The theory has its limitations too. First, it does not adequately address how a firm’s ownership-specific advantages should be deployed and exploited. Second, it does not explicitly delineate the ongoing, ever changing process on international production and Lastly, the conventional wisdom seems inadequate in explaining how geographically dispersed international production should be appropriately coordinated and integrated (Oded Shenkar, Yadong Luo, 2008).

2.2. Macroeconomic Effects on Foreign Direct Investment Inflows

2.2.1. Effects of Real Interest Rate on Foreign Direct Investment Inflows

Interest rates play a crucial role in macroeconomic policies of various governments; which then has implication on the monetary policy. The challenge however is that most central banks are constrained in their ability to set interest rates by international capital flows that include FDI. This gets worse for African countries since their financial markets are characterized by high level of information asymmetry and their central banks are not perceived by markets as having credibility, in terms of governance and political interference (Olweny, T., 2011). Additionally, a huge part of their economies are dominated by the informal sector that does not use conventional financial systems. Furthermore, the interest rate in Sub-Saharan Africa (SSA), has always been the highest in developing countries. In developed economies like the US, UK, and Japan; the rates have always been low in order to stimulate economic activity (Afful, K. B. and Asiedu, K. F., 2014). In Kenya; movements in short-term interest rates are usually aligned with the CBR. Commercial bank’s lending rates declined from an annual average of about 19.73% in 2012, to 17.31% in 2013, and around 16.51% in 2014; which is in consistent with the monetary policy stance. But then there remains space for further reductions in lending rates by commercial banks and raise the deposit rates in order to incentivize the mobilization of capital funds for investment (African Development Bank Group., 2014.).

Interest rate margins are of significant importance to any given economy because it largely determines investment activities. Wei and Liu (2001) conducted a study on economic linkages between FDI and the cost of borrowing and found that, if the cost of borrowing in the home country is lower than the host country, the home country firms have a cost advantage over their rivals or subsidiaries in the host country, and are thereby in a better state of entering the host economy as foreign direct investors. However, the higher the cost of borrowing of foreign investors in the host economy relative to their respective home economies, the higher the ability of foreign firms to compete with domestic firms in the host countries as they are have the ease of access to capital funding; thus resulting to a possible increase in inflows in FDI-receiving country.

The fact that lower interest rates in the home country encourages the investor to prospect into foreign investment operations through foreign direct investment in the recipient countries, is based on the assumption that they will raise the needed funds for investment in the home country, and use it to finance their activities in the host country. Moreover, this may be a true case if the investment projects are wholly owned by foreign investors, but it may not be the case when they are jointly owned by a local partners as the former have to partially contribute funds in accordance with the percentage share on equity (Wei, Y and Liu, X., 2001).

Majeed and Ahmad (2008) concur with the Wei and Liu (2001); they actually found out that if the cost of borrowing is higher in the host country, foreign entities can enjoy cost advantage over local domestic firms and thus, are in a better position of entering the host country market by funding their investments from home country. In contrast, if the foreign investors use funds sourced in the host country, this would reduce their cost advantage benefits.

Also, since these foreign firms who move across borders tend to be large, in terms of worth; they may still enjoy a cost advantage over local firms if they desire to borrow from the host country market as the cost of borrowing would be cheaper for them relative to local firms due to their perceived risk (Mengistu, A. and Adhikary, B. K., 2011). Most countries especially in the developing world normally insist on partial ownership in foreign firms by the locals. The percentage of partial ownership depends on different countries economic orientation and
industries. Therefore, factors affecting FDI inflows held constant; the lower the interest rate in the home country relative to that of the host country, the higher the FDI flows into the host economy.

Oladipo (2013), also supports the notion that an increase in lending interest rates determines FDI inflow. After an extensive research on Nigeria, he found out that when lending interest rate increases in Nigeria, domestic investors find it very difficult to invest in the country since income level is marginalized as a result of inability to secure funding from loans. This then gives the foreign investors the opportunity of moving capital from home country in order to maximize rate of returns. However, this has a great adverse effect on the economy.

Other scholars such as, Love, J. H. and Lage-Hidalgo, F., (2000) concurred with this notion but the likes of Onyeiwu and Shrestha (2004); Bevan. A. A. and Estrin. S., (2004), had a different outlook on the above analysis, especially on FDI inflows to Africa and transition economies.

This study therefore hypothesizes a negative relationship between FDI and real interest rates in Kenya between 2002 and 2003.

2.2.2. Effect of Development Expenditure on Foreign Direct Investment Inflows

The onset of structural adjustment programs (SAPs) relayed by the IMF and the World Bank to many developing countries, led to a paradigm shift in the fiscal policies of the affected countries as the SAPs often relied heavily on public investment, and aimed at improving current government cash flow position but at the expense of future economic growth (Ley. E., 2009). Then another factor that stemmed in is the efficiency of government expenditure, which is a key determinant to government size.

The Kenyan government has in the recent years formulated and now undertaking major development projects, especially of infrastructural nature. This required the country to source out for funding because of the high expenditure involved. Building a strong revenue base was necessary so the government needed to deal with the question of improving efficiency in public spending by undertaking cautious austerity measures targeted at containing inflationary pricing and high interest rates among others, in order to allow for the existence and attractiveness of more FDIs in the country (Rono. K. B. et al., 2014).

A main proportion that government normally sets for developmental expenditure would be channeled towards expenditure on economic affairs such as, Agri-business Mining, Education, Health, and Housing among others. All these expenditures are a proportion of the total outlay of the government and they normally lead to creation of physical or financial assets and enhance human capital development. They, therefore directly impact on the FDI flows in the country (Bhasin. N., 2013).

A few studies have reviewed the role of infrastructure on FDI in Africa. For instance, Khadaroo. A. J. and Seetanah. B. (2008) did an intensive analysis over the period of 1980-2000 with the use of number of telephones per 1000 population to measure infrastructural development and controlling for major FDI determinants, they concluded that African countries that improved their infrastructure received a large number of FDI flows.

A study done in Nigeria found that in order to attract and retain FDI in the country; the government should be in a position of improving the standard of infrastructure among other factors (Izuchukwu. O. O. et al., 2014). Moreover, studies on developing countries in Africa suggest that investments by governments in providing efficient physical infrastructural facilities improve the investment climate for FDI by subsidizing the expenses on total investment by those investors and thereby increasing their rates of return on investments. Poor public investments in a number of developing countries in Africa may be the main focus of structural adjustment programs (SAPs) in order to help channel funds to these sectors and help attract FDIs in those countries (Bissoon. O., 2011).

Other scholars such as Sekkat et al (2004), Morisset (2000), and Asiedu (2002); reviewed the significance of infrastructure in stimulating FDI. The authors have argued that the best infrastructure is a necessary condition for foreign investors to operate successfully. Poor infrastructure or just lack of public inputs with regards to government expenditure, increases cost of operation for both public and foreign firms. Infrastructure as part government expenditure contributes to the cost structure of any given company and is normally factored in by multinationals as decision support factor in host countries. It is thus considered to improve the investment
climate for FDI by subsidizing the cost of total investment by foreign investors indirectly (Khadaroo. A. J. and Seetanah. B., 2010). A good location with the best infrastructure is more attractive than the other determinants (Wei et al., 2000).

In addition, Musila and Sigue (2006) and Dupasquier and Osakwe (2006); found out that FDI in Africa are dependent on the infrastructural development of the country. Anyanwu and Erhijakpor (2004), further states that telecommunication infrastructure among other factors; can significantly increase FDI inflows in Africa. Gholami et al (2006) uses data sample of 23 developing and developed countries over a certain period of time and based on ICT data availability. He further shows that in developed countries, existing ICT infrastructure attracts FDI flows.

However, some researchers also argue that, excessive government expenditure has a negative impact on foreign direct investment level. They explained that governance was more significant and that improved political governance does not necessarily subject governments to make large investments in their respective economies (Bissoon. O., 2011).

According to Kariuki (2015), not all studies have found out that infrastructural development is a significant variable in attracting and sustain FDI flows in Africa. After examining 29 countries in Africa, the author found that infrastructural development was insignificant in influencing FDI flows. Studies found out that poor infrastructure may not deter foreign investors because certain factors like natural resource endowment, openness to trade, and other macroeconomic variables may have more significant effects. Asiedu (2002) affirms to this argument by conducting a research and finding out that the level of infrastructural development in Sub-Saharan countries was not significant in influencing FDI inflows into Africa.

In this study, we postulate a positive relationship between government expenditure and FDI inflows between 2002 and 2013 in Kenya.

2.2.3. Effects of Inflation Rate on Foreign Direct Investment Inflows

High inflation rates normally suggest macroeconomic instability and hence a potential risk for foreign investors in a given country. Empirical analysis done by Wadhwa and Reddy (2011); Udoh and Egwaikhide (2008) found a negative relationship between inflation rates and FDI. Central Banks in most Sub-Saharan African countries have found themselves at very tough moments. In the first half of the 21st Century, SSA countries did well in curbing inflationary pressures, by reducing average inflation rates in the region from 15% in 2000 to 6% in 2006. However, in the most recent years, SSA region has been hit by huge external shocks; starting from fuel and food crisis of 2007 to 2008, spillovers from the global financial crises in 2008 to 2009, and large increase in commodity prices. This shocks resulted to negative fluctuations of the inflation rates in the region.

Moreover, Arbatli (2011); suggested that high inflation has a negative impact on FDI flows, but it was not statistically significant at conventional levels in emerging economies as of developing African economies. He further states that the choice of the inflation threshold is somewhat arbitrary and is meant to capture whether having single digit inflation rate has any effects on FDI and also accounts for the conjecture that inflation has non-linear effects on FDI flows to a country.

Furthermore, Asiedu (2002), Yartey and Adjasi (2007); found that inflation rate has a negative effect on the FDI inflows of a country. That is, foreign and domestic investors will be unwilling to invest in an economy of high inflation rate. As found out by Onyiewu and Shrestha (2004); the rate of inflation, in most cases, signals poor economic management.

In contrast, some researchers have rooted for a positive relationship between inflation and FDI especially in developing countries. The argument expounded is that inflation is a pull factor in terms of providing a conducive environment for both foreign and local investments (Lin and Ye, 2009; Mishkin, 2007; Batini and Laxton, 2007). Sayek (2009); found out that increased domestic inflation rates normally increases foreign investment through changes in the international consumption trend of the host country as it may reduce the cost of FDI operations.

All in all, high inflation rate can be a cost of conducting business as foreign investors may enter into long-term contracts in the host country. When the real inflation rate turns different from the projected inflation rate, foreign
investors may lose out as their level of purchasing power tends to reduce. A high inflation rate is then found out to have a negative effect on attracting FDI inflows and sustaining them (Hailu. Z., 2010). Twimukye (2006), also finds that inflation rate has a negative relationship with FDI flows into Africa. Findings from Asiedu (2006) also show that low inflation rates have a positive effect on FDI flows in Sub-Saharan Africa. Onyeiwu and Shrestha (2004), and Naudé (2007); also found out that; inflation is a significant variable that influences foreign investor who prospect to invest in Africa. Nonnemberg and Mendonça (2004); have shown that FDI is correlated to the level of inflation in developing countries. A lower level of inflation is likely to encourage more FDI inflows as it indicates that an economy has stringent macroeconomic policies and therefore conducive for doing business.

In this study, we hypothesize a negative relationship between FDI inflows and inflation rates for Kenya between 2002 and 2013.

2.2.4. Effects of Real Exchange Rate on Foreign Direct Investment Inflows

Many studies have asserted positive correlation between FDI flows and the exchange rates especially in the short-run. In fact, since the 1980s, many studies had indicated that a country tends to receive more FDI inflows when its currency depreciates mainly because it made domestic goods to be cheaper. But most of these studies were based on data collected from the US and developed countries and thereby not giving a full picture of exchange rates on FDI flows on a globalized perspective.Moreover, the level of openness of the economy of a country to foreign investors gives them the advantage of taking economic opportunities that are open to them, and a suitable exchange rate propels them to do so (Oladipo. S. O., 2013) as the value for their foreign currency can accumulate a very significant proportion of the domestic currency. Findings from Ayanwale (2007), and Asiedu (2006), support this result.Even so some economists have constantly disagreed with the findings and overall conclusions made on them (Shi. J., 2014).

In most countries, especially the developing ones; FDI is a significant source of economic growth and development as it promotes growth in labor income and facilitates capital accumulation. In addition, FDI flows are considered as a more favorable type of capital flow as compared to portfolio investments because they are more stable than financial investment flows during currency crises situation (Lipsey. R. E., 2001). Currency crises are normally tagged to the real exchange rate instability in the international financial markets.

Consequently, the exchange rate between countries is normally used by investors to measure the cost of production requirements incurred during the value addition or production processes. Halicioglu (2001), stated that an appreciation of the home country’s currency should by that extent increase the FDI flows as it becomes cheaper to source out for human resources, and other factors of production; with the value of home currency being constant. Conversely, the amount of FDI is deterred when the host country’s exchange rate appreciates.

Exchange rate fluctuations and volatility can pose complicated investment scenes to foreign investors by making unpredictable and uncertain the absolute and relative profitability in the investment environment, as well as making uncertain the cost of new capital goods with high import content. The high degree of exchange rate risk during the few years has not only affected foreign investors’ decisions as to where to produce but also impacted on their net income (Chowdhury. A. R. and Wheeler. M., 2008). Pan (2003), also shows that the exchange rate affects FDI in two major different ways. First, the appreciation of home country’s currency against the host country’s currency translates into an evident increase in investment value only if the worth of the investment is denominated in the host country’s currency. Second, with the appreciation of home country’s currency, the price of home country products become relatively higher. This makes exports from the home country to the host country less competitive and therefore encourages home country firms to relocate their production process to the host country resulting toan increase in FDI inflows to the host country.

Kiyota and Urata (2004) examined the impact of exchange rate on Japan’s FDI flows and concluded that the depreciation of the host country’s currency attracts FDI. Using panel data set for a period of 20 years (1981-2002), Xing (2006) exhibit that competition between China and four other large Asian economies (Thailand, Malaysia, Indonesia, and Philippines) for Japanese foreign direct investments in Asian manufacturing industry was significantly affected by the relative real appreciation of the currencies of these countries against the Japanese yen, and that the redirection of Japan’s FDI from these Asian countries to China was greatly attributed to the depreciation of the Chinese Yuan, particularly in the 80s and early 1990s. Other studies indicate that there is no significant evidence as to the long-term relationship between the exchange rate and FDI inflows in Western

Our study postulates a negative relationship between the exchange rate movements and FDI inflows in Kenya between 2002 and 2013.

3.0 Methodology

The research work focused on implications of macroeconomic policies on foreign direct investment in Kenya and therefore adopted an explanatory research design and explained the relationships by use of regression and correlation analyses as recommended by Cooper and Schindler (2003). Secondary data on FDI inflow to GDP net value, Real Interest Rates, Inflation rates, Development Expenditure (Infrastructure) and Real Exchange Rates was collected from World Bank Database (FDI flows); Kenya National Bureau of Statistics (KNBS), and Monthly reports by the Central Bank of Kenya (CBK).

4.0 Findings and discussion of results

The aggregate data discloses an average of 5.8% for the FDI inflows to GDP in Kenya between 2002 and 2013 with a standard deviation of 5.9% and a median of 3.8% - a situation that depicts significant fluctuations in FDI inflows in the country for the period of study.

4.1. Effects and Analysis of Real Interest Rates on Foreign Direct Investment Inflows

Table 2 shows the results of correlation analysis between FDI inflows and the Interest Rates and places the coefficient of correlation at -0.065. This implies that the correlation between the two variables is negative and hence a unitary change in real interest rates in the country, will have a net effect on the FDI inflows. That is, if the real interest rates was set to increase by a unit, then the FDI Inflows to GDP in the country will decrease by 0.065 in percentage.

Further results indicated in table 3 lead to the formation of a linear regression line; \( Y = 0.833 - 0.017X \) implying that even without real interest rates in the market, the value of FDI inflow to GDP would be at 0.833%. But with the influence of interest rates, then a unit increase in the Real Interest rates, would decrease the value of FDI Inflow to GDP by 0.017%.

### Table 2: Correlation Analysis on FDI inflows and Real Interest Rates in Kenya

<table>
<thead>
<tr>
<th></th>
<th>FDI net inflows of GDP</th>
<th>Real Interest Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FDI net inflows of GDP</strong></td>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>12</td>
</tr>
<tr>
<td><strong>Real Interest Rates</strong></td>
<td>Pearson Correlation</td>
<td>-.065</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.840</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>12</td>
</tr>
</tbody>
</table>
### Table 3: Regression Analysis on FDI inflows and Real Interest Rates in Kenya

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
<th>95.0% Confidence Interval for B</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>.833</td>
<td>1.257</td>
<td>.663</td>
<td>.522</td>
<td>-1.967 to 3.633</td>
</tr>
<tr>
<td>Real Interest Rates</td>
<td>-.017</td>
<td>.082</td>
<td>-.207</td>
<td>.840</td>
<td>-.199 to .165</td>
</tr>
</tbody>
</table>

At the 95% Confidence Interval; with no influence of the real interest rates, then the FDI Inflow to GDP received by the country would be between the ranges of -1.967 to 3.633%. However, with the influence of real interest rates, such that any changes for which will affect the FDI Inflows to GDP by -0.199 to 0.165 per unit change annually (Table 3). Also, based on 0.84 level of significance, the relationship is considered as insignificant.

These results confirm our hypothesis to the effect that a negative but insignificant relationship between FDI inflows and interest rates prevailed in Kenya between 2002 and 2013. The results are in conformance with Nonnemberg and Mendonça (2004) who investigated the determinants of FDI in developing economies and found an insignificant relationship between the cost of borrowing and FDI. Similarly, a study done on FDI flows into Zimbabwe found out that, interest rates do not affect the level of FDI flows into the country significantly. The study used CLRM econometric model and concluded that the model had high explanatory power and adequately predicted the negative relationship between FDI inflows and risk factors. The research also found out that risk factors are the most significant determinant of FDI inflows into Zimbabwe. These are the factors that do suppress the levels of FDI and hence hinders growth and development of the nation’s economy. The research then recommended that the Zimbabwean government should ensure that accountability and transparency on all macroeconomic policy issues among others (Anna. C. et al., 2012.).

Dabla-Norris et al (2010) found out that low income economies as those found in Africa, are very sensitive to interest rate movements or changes in financing conditions from developed economies. They also realize that FDI is increasingly being associated with growth in developing countries during the recent period of globalization. They continue by stating that real interest rate sensitivity of FDI outflows to developing economies could reflect a variety of reasons. That is, they are important because they can influence real prices of mineral resources and other commodities, where most of the FDI flows to developing economies is largely concentrated (Frankel. J., 2008). Therefore, this argument is in line with the nation that financing FDI operations in extractive sector differs with that for equity investment, a mode of sourcing funds in non-extractive economies.

#### 4.2. Effects and Analysis of Development Expenditure on Foreign Direct Investment Inflows

Table 4 shows that the correlation between FDI inflows and the Development expenditure is 0.026. This implies that the correlation between the two variables is positive but weak. Therefore, any unit change in development expenditure in the country, it will have a net positive effect on the FDI inflows. That is, if the development expenditure was set to increase by a unit, then the FDI Inflows to GDP in the country will also increase by 0.166%.
Table 4: Correlation Analysis on FDI inflows and Development Expenditure in Kenya

<table>
<thead>
<tr>
<th></th>
<th>FDI net inflows of GDP</th>
<th>Development Exp of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDI net inflows of GDP</td>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>12</td>
</tr>
<tr>
<td>Development Exp of GDP</td>
<td>Pearson Correlation</td>
<td>.166</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.606</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>12</td>
</tr>
</tbody>
</table>

Further results in table 5 generate the linear regression model of the form 

$$ Y = 0.435 + 0.003X $$

implying that even without development expenditure, the value of FDI inflow to GDP would be 0.435%. But under the influence of infrastructure expenditure, then with a unit increase in the infrastructure expenditure, then the value of FDI Inflow to GDP will be increasing by 0.003 percent.

Table 5: Regression Analysis on FDI inflows and Development Expenditure in Kenya

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
<th>95.0% Confidence Interval for B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td>Lower Bound</td>
</tr>
<tr>
<td>1  (Constant)</td>
<td>.435</td>
<td>.318</td>
<td></td>
<td>1.366</td>
<td>-.274</td>
</tr>
<tr>
<td>Development Exp of GDP</td>
<td>.003</td>
<td>.005</td>
<td>.166</td>
<td>.532</td>
<td>-.009</td>
</tr>
</tbody>
</table>

At the 95% Confidence Interval; with no influence of the development expenditure, then the FDI Inflow to GDP received by the country would be between the ranges of -0.274 to 1.143%. However, with the influence of development expenditure, any changes for which will affect the FDI Inflows to GDP by -0.009 to 0.015 per unit change annually.

With a level of significance at 0.606; the relationship is considered insignificant confirming our hypothesis that a positive relationship between FDI inflows and development expenditure existed in Kenya between 2002 and 2013. Asiedu (2002), supports these findings -their study on determinants of FDI in developing countries, in Africa; found a positive correlation between infrastructure and FDI inflows.Her regression results triangulated the findings.Asiedu (2006), in a study which involved 22 countries in Sub-Saharan Africa (SSA) over the period of 1984 to 2000 found that good infrastructure was one of the factors that promoted foreign direct investment in most African countries. Additionally, Kok and Ersoy (2009), did a study on the best determinants of foreign direct investment in developing countries. Using panel data and cross-section SUR (seemingly unrelated regression) on 24 developing countries over a period of 27 years (1976-2003) they determined that infrastructure had a positive effect on FDI inflows to these countries. Similar conclusions are drawn by Khadaroo and Seetanah (2010) and Ezeoha and Cattaneo (2011).
4.3. Effects of Inflation on Foreign Direct Investment Inflows

Table 6 discloses that the correlation between FDI inflows and the inflation rates is -0.093. Therefore; any unit change in inflation rates in the country, it will have a net negative effect on the FDI inflows, which is not really significant. If the inflation rate was set to increase by a unit, then the FDI Inflows to GDP in the country will also decrease by 0.093 in percentage. Also, with a net reduction of inflation rates per unit, the FDI Inflows to GDP will be set to increase by 0.093%.

Table 6: Correlation Analysis on FDI inflows and Inflation Rates in Kenya 2002-2013

<table>
<thead>
<tr>
<th>FDI net inflows of GDP</th>
<th>Inflation Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.774</td>
</tr>
<tr>
<td>N</td>
<td>12</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>-.093</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.774</td>
</tr>
<tr>
<td>N</td>
<td>12</td>
</tr>
</tbody>
</table>

Linear regression results in table 7 lead to the generation of a linear equation of the form; \( Y = 0.643 - 0.01X \), which means that even without any effects of inflation rates in the market, the value of FDI inflow to GDP would be at 0.643%. But under the influence of inflation rates, then with a unit increase in the rate of inflation, then the value of FDI Inflow to GDP will be decreasing by 0.01%.

Table 7: Regression Analysis on FDI inflows and Inflation Rates in Kenya 2002-2013

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>95.0% Confidence Interval for B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td>Lower Bound</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>.643</td>
<td>.290</td>
<td>2.214</td>
<td>.051</td>
</tr>
<tr>
<td></td>
<td>Inflation Rate</td>
<td>-.010</td>
<td>.035</td>
<td>-.294</td>
<td>.774</td>
</tr>
</tbody>
</table>

At a level of significance (p-value) of 0.774, the relationship is considered as insignificant. Our study confirms the negative relationship between inflation and FDI inflows for Kenya for the period 2002-2013. Arbatli (2011), supports the above findings using data on economic policies and FDI inflows in emerging market economies with the use of autoregressive integrated moving average (ARIMA). The data sample was for 46 countries and the study period was from 1990 to 2009. The author found out that inflation had a mild or insignificant effect on FDI inflows in these market economies.

However, Ezeoha and Cattaneo (2011), found a significantly positive effect between inflation and FDI flows in Sub-Saharan African countries. The positive role of inflation rates could have been because rising inflation rates is sometimes a consequent of hike of economic activities (Sayek. S., 2009). They then suggest from their findings that; removing restrictions like direct inflation and interest rates control practices; would be a better way of encouraging for FDI inflows.
Aw and Tang (2010), did their study in Malaysia on the determinants of inward FDI. They used Engle-Granger test and OLS method and found out that inflation rates have a significant impact on FDI flows in the country. Whereas, Singhania and Gupta (2002); did a study on the determinants of FDI in India using the best fit model to explain this study. The authors tested for various assumptions taken before applying autoregressive integrated moving average (ARIMA) using standard tests and quantified FDI policy changes using dummy variables. They found out that inflation rates among other macroeconomic variables were significant to FDI policy changes and hence their inflows.

4.4. Effects and Analysis of Real Exchange Rates on Foreign Direct Investment Inflows

Table 8, shows a correlation coefficient of 0.183 between the FDI inflows and the real exchange rates. Implying that a unit change in real exchange rates in the country, it will have a net negative effect on the FDI inflows. That is, if the real exchange rates were set to increase by a unit, then the FDI Inflows to GDP in the country will also decrease by 0.183%. Also, with a net reduction of real exchange rates per unit, the FDI Inflows to GDP will be set to increase by 0.183%.

Table 8: Correlation Analysis on FDI inflows and Real Exchange Rates in Kenya 2002-2013

<table>
<thead>
<tr>
<th>FDI net inflows of GDP</th>
<th>Real Exchange Rates (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>-.183</td>
</tr>
<tr>
<td>N</td>
<td>12</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>-.183</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.568</td>
</tr>
<tr>
<td>N</td>
<td>12</td>
</tr>
</tbody>
</table>

The results of linear regression model stated in table 9 gives the model, \( Y = 1.873 - 0.017X \), which implies that even without any effects of real exchange rates in the market, the value of FDI inflow to GDP would be at 1.873%. But under the influence of real exchange rates, then with a unit increase in real exchange rates, then the value of FDI Inflow to GDP will be decreasing by 0.017%. These findings confirm our hypothesis.

Table 8: Regression Analysis on FDI inflows and Real Exchange Rates in Kenya 2002-2013

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>95.0% Confidence Interval for B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td>Lower Bound</td>
</tr>
<tr>
<td>(Constant)</td>
<td>1.873</td>
<td>2.206</td>
<td>.849</td>
<td>.146</td>
<td>-3.042</td>
</tr>
<tr>
<td>Real Exchange Rates (USD)</td>
<td>-.017</td>
<td>.028</td>
<td>-.183</td>
<td>.568</td>
<td>-.080</td>
</tr>
</tbody>
</table>

At the 95% Confidence Interval; with no influence of the real exchange rates, then the FDI Inflow to GDP received by the country would range between -3.042 and 6.787%. However, with the influence of real exchange rates such that any changes for which will affect the FDI Inflows to GDP by -0.080 to 0.046 per unit change.
Also, a level of significance (p-value) of 0.568, the relationship is considered to be insignificant. Arbatli (2011), supports this findings using data from emerging market economies with the use of autoregressive integrated moving average (ARIMA). The data sample was for 46 countries and the study period was from 1990 to 2009. He found out that real exchange rate appreciation has a negative effect on FDI; however, it was also not significant.

Also, Ogun et al (2012), who did a study on real exchange rate and FDI in SSA using Granger causality and simultaneous estimation techniques; found out that there is a dependence on real exchange rate movements and FDI flows being received by countries in SSA. Ogunleye (2008) also had done some study aimed at providing a comprehensive analysis of the exchange rate volatility on FDI in SSA by examining 9 countries in the region. Both country specific time-series and panel model estimation techniques were used. It was then found that exchange rate volatility generally constrains FDI inflows to Sub-Saharan African countries.

5.0 Conclusion

In summary, the implications of real interest rates; may be mild or insignificant on the rate of foreign direct investment inflows being received by the country; but what remains clear from the findings is that the effect is of negative significant. This cannot always be ignored in as much as the relationship is a little bit weak.

Moreover, the finding on the relationship between infrastructure expenditure and foreign direct investment inflows in the country is also mild and weak but bottom line is that the effect is still felt. The former has a positive effect on the later but at a very small impact. Therefore, in Kenya; the relationship seems to be depicting the above argument; that as the rate of expenditure increases; then it is perceived that the level of infrastructure also improves because more funds is being channeled towards that sector. This then means that FDI inflows will increase gradually.

Furthermore, as to whether the inflation rate of the country has implications on the level of foreign direct investments it receives annually; is still doubtful and may seem insignificant subject to the country being studied by any researcher. What really stands out is that, the country’s inflation rate has a weak relationship with the level of FDI flows it receives on an annual basis. However, the prevailing monetary policies governing the regulation of inflation rates in the country have to take considerations on the above results because it has some tangible effect on the economy as a whole. Many authors have also come to conclude that in deed inflation rates have an immense effect on the levels of FDI inflows to a country.

The monetary policy committee of the Central Bank of Kenya has always been very instrumental on issues to do with controlling the real exchange rates of the country in order to avoid instances of the Kenyan Shilling depreciating and thereby affecting the economy. This study has then unearthed the implications that real exchange rate has on the level of foreign direct investment that the country receives. The relationship between the two variables is a bit weak but it depicts the reality of the prevailing situation, that suppose the real exchange rates would keep on being high then the level of FDI inflows will continue reducing significantly. A lot more studies done on various countries and regions have confirmed this finding.

Therefore, real exchange rates, real interest rates, development expenditure, and inflation rates have negative implications on the level of FDI inflows to the country, Kenya but very minimally.

6.0 Limitations of the study and suggestions for further research

FDI is currently viewed as a critical source of revenue towards the economies of many countries, especially in the developing world. Macroeconomic policy being among the policies that determine the rate on inflows of FDI to a given country. The research has then merged the macroeconomic policy and FDI to find out the implications that will arise. But then the research has only covered part of the macroeconomic policy and its implications on FDI inflows. This then grants for further research on the other factors not covered such as the fiscal policy and the overall monetary policy. Further, the study focused on the period 2002-2013 because of its importance in Kenyan history. Further research can compare the variables of interest in different political regimes in Kenya. Lastly, the study has used secondary data to draw its inferences, future researchers can triangulate the findings
by collecting the views of key informants on policy matters by use of focus group discussions and personal interviews.

REFERENCES


