

**EFFECTS OF FOREIGN EXCHANGE RATE DETERMINANTS ON THE  
PROFITABILITY OF FOREX BUREAUS IN KENYA**

BY

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## DECLARATION

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## **DEDICATION**

I dedicate this research report to my dear son Timoen for being the motivating factor behind it.

## **ABSTRACT**

The aim of this study was to establish the effects of foreign exchange rate determinants on the profitability of forex bureaus. The exchange rates in Kenya have been fluctuating over the last few years with a rising trend. According to data from the Central Bank of Kenya, the exchange rate for US dollar was 79.4 in 2002, 76.5 in 2004, 69.9 in 2006, 78.0 in 2008, 80.6 in 2010 and 86.6 in 2012. This shows a weakening shilling from 2002 to 2012 and shows that the exchange rate has fluctuated over the same period. These fluctuations may be caused by a number of factors such as interest rates, inflation rates, terms of trade and public debt. This study adopted a descriptive design and secondary data was used. The results showed that external debt had positive and significant effects on the profitability of forex bureaus. Interest rates, inflation rates and public debt had a negative and significant effect on the profitability of forex bureaus. The study concluded that the higher the import-export ratio the higher the profitability of forex bureaus. It further concluded that the higher the inflation rate, interest rate and public debt the lower the profitability of forex bureaus.

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## ABBREVIATIONS

- ADB – Authorized Dealer Bank
- CBD – Central Business District
- CBK – The Central Bank of Kenya
- CBR – Central Bank Rate
- FX – Foreign Exchange
- IFE – International Fisher Effect
- IFS – International Financial Statistics
- IMF – International Monetary Fund
- IRP – Interest Rate Parity
- KFBA – Kenya Forex Bureau Association
- KNBS – Kenya National Bureau of Statistics
- MBA – Masters in Business Administration
- MM – Modigliani Miller
- OTC – Over The Counter Transaction
- PPP – Purchasing Power Parity
- SPSS – Statistical Package for Social Science
- USD – United State Dollar

## CHAPTER ONE: INTRODUCTION

### 1.1 Background of the Study

Forex bureaus have been opening up worldwide and they are supervised and regulated by the central banks of the respective countries. The Foreign Exchange market, often referred to in short simply as Forex, has become a crucial commercial segment in the world of financial business. As the world gradually shrinks to a global village, the demand for forex services is becoming all the more important especially since most of the Forex bureaus offer better rates compared to those of commercial banks. Butcher (2011) expounds on the evolution of the FX market place from direct phone dealing to electronic trading has also caused intense discussion about whether or not the entire market will eventually transform into an exchange model. Traditional sell-side participants naturally resist these developments. But if buy-side customers are no longer willing to pay away a spread to execute their business, nor need trade advice, what becomes of the traditional spot dealer's value proposition?

According to the Patterson (1995) influence in the traditional OTC dealer-customer relationship is shifting to the buy-side, led by hedge funds and other money managers. A fundamental paradigm shift is occurring in the FX market as a result of electronic trading, concerns regarding financial surety and the need to contain trading costs activity; but even with this shift, still more forex bureaus are opening and embracing the new technology. There are many different methods for Foreign exchange currency trading. Martinez (2007) notes that before one starts trading, one must not only select trading strategy and a currency pair but also a market in which to trade.

According to Martinez (2007) in the 1930s there was tremendous growth in the forex market in England. Active foreign exchange market began forming during the 1970s after three decades of government restrictions on foreign exchange transactions (the Bretton Woods system of monetary management established the rules for commercial and financial relations among the world's major industrial states after World War II), when countries gradually switched to floating exchange rates from the previous exchange rate regime, which remained fixed as per the Bretton Woods system. Due to the ultimate ineffectiveness of the Bretton Woods Accord and the European Joint Float the forex markets were forced to close sometime during 1972 and March 1973. 1973 marks the point to which nation-state, banking trade and controlled foreign exchange ended and complete floating; relatively free conditions of a market characteristic of the situation in contemporary times began.

The lack of restrictions in the forex trading has led to adverse consequences of exchange rate volatilities on various parts of countries' economies and this has now been well documented in numerous research work. In particular, a rise in exchange rate volatilities have found to have negative consequences on the trade sector (Siregar & Rajan 2004). Chou (2000) states that monetary authority needs to intervene and manage the fluctuation of the local currencies in order to achieve its desired level of inflation target.

The forex managers have taken advantage of the volatility in the determinants of the foreign exchange rates and optimized their profitability. Handling of currency fluctuation is befitting in today's enormous size of the forex market of speed and liquidity unlike other markets. Losses exist, but profits are even higher. But just like any other speculative trade, enlarged risks come along with probability for a higher profit/loss (Bradley & Mole 2002).

This study aimed to build on previous studies on foreign exchange by quantitatively measuring the determinants of foreign exchange rates and their effect on the profitability of forex bureaus in Kenya.

### **1.1.1 Foreign Exchange Rates**

Exchange rate is the charge for exchanging currency of one country for currency of another. The shift from a fixed to a flexible exchange rate regime has been one that many developing countries in recent years have been adopting. According to Were, Ndungu, Geda & Karinga (2001), exchange rate regimes determine the ability of an economy to effectively respond and adjust to exogenous shocks. In developed countries the shift in exchange rate regimes occurred in the 1970's after the collapse of the Bretton Woods System which had been in existence since the end of World War II.

According to Pollin and Heintz (2007) one of the objectives of the Bretton Woods System was to maintain a fixed exchange rate. This was essential at the time as there was an urgent need to take care of the international payments system that was vital for world trade and commerce. The United States being the dominating power at the time and the biggest trader of gold resulted in most of the currencies maintaining a fixed parity with the US dollar. As Europe began to gain competitive strength in the late 1960's, the dollar began to be perceived as overvalued. This was coupled with a surge in inflation levels around the world, which resulted in a rising outflow of gold from the United States as gold was perceived to be relatively cheap at the price it was being maintained at. In order to prevent this massive outflow, the Bretton Wood System collapsed and the floating era began.

According to Were, Ndungu, Geda & Karinga (2001), although the Bretton Wood System collapsed, most developing countries continued to peg their exchange rates to either a key single currency, especially the United States or the French Francs or to a basket of currencies such as the International Monetary Fund (IMF) special drawing rights. Developing countries only started explicitly shifting to flexible regimes around the 1980's.

In Kenya, the exchange rate regimes have evolved along general macroeconomic policies that have been put in place since the country gained its independence in 1964. According to Ndung'u (2000), since independence to 1974, the exchange rate for the Kenya shilling was pegged to the US dollar, but after discrete devaluations the peg was changed to the special drawing rate. However, during the period of 1974 and 1981 the movement of the nominal exchange rate relative to the dollar was very volatile. This resulted in the shilling depreciating even further when the shilling was devalued again in 1982. However according to Pollin and Heintz (2007) the exchange rate regime was changed to a crawling peg in real terms at the end of 1982. This regime was in place until 1990 when a dual exchange rate system was implemented. This lasted until October 1993, when, after further devaluations, the official exchange rate was merged with the market rate and the shilling was allowed to float.

They further state that following the years after the liberalization of the shilling, the real exchange rate, has gone through several phases, most of which have been depreciations due to a number of factors. During the period between January 1995 to October 1999 the shilling real exchange rate depreciated by 21.0 percent. The Shilling declined even further due to the major drought in 1999 to

2000 coupled by increases in the cost of fuel products. There was also an increased demand for foreign currency to cover the rising import bill, brought about by the increased oil price and food imports to mitigate the supply shortage caused by drought. According to CBK Annual Report (2000) the NEER declined by 16.1 percent in 1999 and 3.5 percent in 2000.

Exchange rates in Kenya have been fluctuating over the last few years with a rising trend. According to the data from the Central Bank of Kenya, the exchange rate for the US dollar was 63.3 in 2007, 78.0 in 2008, 75.4 in 2009, 80.6 in 2010 and 80.6 in December 2011. This shows a weakening shilling from 2007-2011 and also shows that the exchange rate has fluctuated over the same period. In year 2012, the US Dollar touched the highest mark in the history of the country. These fluctuations may be caused by a number of factors such as interest rates, inflation rates, terms of trade, and public debt.

### **1.1.2 Determinants of Exchange rates**

In floating exchange rate systems, the market exchange rates are determined by the demand for and supply of a currency. Most currency dealing is speculative but trade and investment decisions also have a role to play. Trade balances of countries that have strong trade and current account surpluses tend (*ceteris paribus*) to see their currencies appreciate as money flows in from exports and investment income. This increases the demand for a currency and brings about an appreciation in its value (Zhou 1997).

Another determinant is the Interest rate. When a country's interest rates are higher than rates on offer in other countries then *ceteris paribus* it is expected that an inflow of currency into banks and

other financial institutions will occur. The higher the interest rate differential, the greater is the incentive for funds to flow across international boundaries and into the economy with the higher interest rates. Countries offering high interest rates can expect to see 'hot money' flowing across the currency markets and causing an appreciation of the exchange rate. Interest rates and exchange rates are highly correlated. This would be more exchange business for the forex bureaus translating into profitability (MCKenzie 1999).

High inflation rates increases the foreign exchange rates and hence weakens the local currency. This in turn reduces the purchasing power of a country whose ripple effect can only worsen the situation. It is true that sometimes the relationship between inflation and forex may be inverse, which is caused by speculation from both the buy-side and sell-side participants in the market Zhao (1985).

The inflation rate of a country affects the rate of foreign exchange in a number of direct and indirect ways: Changes in the prices of imported goods and services has a direct effect on the consumer price index. Changes in the growth of exports affect the exchange rates. A higher exchange rate makes it harder to sell overseas because of a rise in relative prices. If exports slowdown (price elasticity of demand is important in determining the scale of any change in demand), then exporters may choose to cut their prices, reduce output and cut-back employment levels. Piet & Raman (1995) explain that as a general rule, a country with consistently lower inflation rate exhibits a rising currency value.

Another determinant to consider is the public debt or external debt. Piet & Raman (1995) state that countries that engage in large-scale deficit financing to pay for public sector projects and government domestic economy are less attractive to foreign and local investors leading to high inflation and thus loss in the value of local currency. A country's debt rating as impact on the exchange rate levels of that country, this is due to the fact that large debt encourages inflation, and if inflation is high, the debt will be serviced and ultimately paid off with cheaper real dollars in the future. For the forex bureaus this would translate to low demand for their services and hence leading to low profitability.

According to Solnik (2000) the balance of payments approach was the first approach for economic modeling of the exchange rate. The balance of payments approach tracks all of the financial flows across a country's borders during a given period. All financial transactions are treated as a credit and the final balance must be zero. Types of international transactions include: international trade, payment for service, income received, foreign direct investment, portfolio investments, short- and long-term capital flows, and the sale of currency reserves by the central bank. A ratio comparing export prices to import prices, the terms of trade is related to current accounts and the balance of payments. If the price of a country's exports rises by a greater rate than that of its imports, its terms of trade have favorably improved. Increasing terms of trade, shows greater demand for the country's exports. This, in turn, results in rising revenues from exports, which provides increased demand for the country's currency (and an increase in the currency's value). If the price of exports rises by a smaller rate than that of its imports, the currency's value will decrease in relation to its trading partners (Solnik 2000).

Chou (2000) indicates that foreign direct investment (FDI) is where an economy attracts high net inflows of capital investment from overseas will see an increase in currency demand and a rising exchange rate. Thus the import and export trade play a role in the determination of a country foreign exchange rate.

### **1.1.3 Growth of Forex Bureaus**

Butcher (2011) looks at the growth of forex bureau, which started in the ancient times. There were people helping others to change money and charging a fee in the Biblical times. These people used city-stalls to trade; which would equivalent to forex bureaus today. Money changers were also in more recent ancient time's goldsmiths. During the 4<sup>th</sup> century, the Byzantium government kept a monopoly on forexes. In the 17<sup>th</sup> century in Amsterdam there was an active forex market. Forex trading took place between agents acting in the interest of nations of England and Holland. In 1880, Santo de Silva applied for permission to engage in forex business. This is believed to the beginning of modern foreign exchange business.

According to Martinez (2007) in the 1930s there was tremendous growth in the forex market in England. Active foreign exchange market began forming during the 1970s after three decades of government restrictions on foreign exchange transactions (the Bretton Woods system of monetary management established the rules for commercial and financial relations among the world's major industrial states after World War II), when countries gradually switched to floating exchange rates from the previous exchange rate regime, which remained fixed as per the Bretton Woods system. Due to the ultimate ineffectiveness of the Bretton Woods Accord and the European Joint Float the forex markets were forced to close sometime during 1972 and March 1973. 1973 marks the point to

which nation-state, banking trade and controlled foreign exchange ended and complete floating; relatively free conditions of a market characteristic of the situation in contemporary times began.

He further explains on 1 January 1981, the Bank of China allowed certain domestic "enterprises" to participate in foreign exchange trading. Also in 1981 the South Korean government ended forex controls and allowed free trade to occur for the first time. 1988 the countries government accepted the IMF quota for international trade. Intervention by European banks especially the Bundesbank influenced the forex market, on February the 27th 1985 particularly. The greatest proportion of all trades world-wide during 1987 were within the United Kingdom, slightly over one quarter, with the U.S. of America the nation with the second most places involved in trading.

According to data from CBK monthly review 2009, foreign exchange trading increased by 20% between April 2007 and April 2010 and has more than doubled since 2004. The increase in turnover is due to a number of factors: the growing importance of foreign exchange as an asset class, the increased trading activity of high-frequency traders, and the emergence of retail investors as an important market segment. The growth of electronic execution and the diverse selection of execution venues has lowered transaction costs, increased market liquidity, and attracted greater participation from many customer types. In particular, electronic trading via online portals has made it easier for retail traders to trade in the foreign exchange market. By 2012, retail trading is estimated to account for up to 10% of spot turnover, or \$150 billion per day.

#### 1.1.4 Effects of Foreign Exchange Rate Determinants on Growth of Forex Bureaus

Piet & Raman (1995) identify terms of trade, interest rate, inflation rate and public debt as the macro economic factors influencing the foreign exchange rates in most economies. Further to this, the adverse consequences of exchange rate volatilities on various parts of the domestic economy are easily identifiable. Rise in exchange rate volatilities has been found to have negative consequences on trade (export and imports) of the local economy (McKenzie 1999). Chou (2000) shows that the monetary authority needs to intervene and manage the fluctuation of the local currency in order to achieve its desired level of inflation target. Thus the export and import will determine the exchange rates volatility which in return influences the margins of the forex bureaus. The law of supply and demand will be adhered to, as the traders import the demand is high forcing the rates to go high and when exporting the rates will go down as over supply of foreign currency.

Corsetti, Pesenti, & Roubini, (1999) argued that external borrowing, particularly by private commercial banks and firms is among the key factors responsible for the severity of East Asian financial and currency crises during the late 1990s. Cavallo (2005) further argues that the exposure to foreign currency liabilities magnify the cost of exchange rate depreciation. Devereaux & Lane (2001) underline the need to extend the list of variable important for understanding bilateral exchange rate volatility beyond those suggested by optimal currency area theory. Their study shows that for developing countries, in particular, volatility in their bilateral exchange rates is strongly and negatively affected by the stock of external debt.

Kirt (2008) states that an interest rate is a price established by interaction of the supply of and the demand for, future claims on resources. It is the price one pays for the getting a service from money

or the price one receives for providing a money service, usually expressed as a percentage of the money per annum. Interest rate determines exchange rate of a currency. The CBK is currently pursuing a low interest rate policy with an objective of encouraging investments. Earlier the market forces of supply and demand were left to determine the appropriate interest rate levels (Kandie 2002). This has been favourable for the forex bureaus growth as more investors are coming in and there is need for forex exchange which has led to booming business.

Calvo & Reinhart (2000) argue that changes in commodity prices are a frequent source of disturbances in emerging economies, requiring an adjustment in exchange rates. The price changes cause inflation, and therefore if this adjustment occurs, then one can notice a similar degree of volatility in commodity prices. Hence, their value in domestic currency should be relatively stable (a devaluation would reduce commodity prices). However, if there is fear of floating, exchange rates do not adjust and commodity prices in local currency also fall. Their results show that those prices in local currency are more volatile than exchange rates, especially for emerging economies. Thus forex bureaus are then in the business of adjusting their rates immediately to ensure they either off load or buy their currency to maximize on their profits.

#### **1.1.5 Forex Bureaus in Kenya**

According to Central bank (n.d) Forex Bureaus web. 26<sup>th</sup> June 2013, forex bureaus were first licensed in January 1995 to foster competition in the foreign exchange market and to narrow the exchange rate spread through this micro-structure of the market this according to central bank of Kenya monthly review edition for April 2009. In Kenya, forex bureau use the currency pairing in their trading. The forex bureau sub sector has experienced rapid growth since it was first established

with the number of operating bureaus having increased from 48 in 1998 to 124 as at December 2012. This rapid growth has to do with units in the market and also the volume of their trading. But this has also come with challenges. According the CBK monthly review magazine, March 2011 Edition it was quoted that despite the fact that the initial objectives of forex bureaus have largely been met, it has become necessary to take stock of achievements and challenges so far the last few years, the Central Bank has carried out comprehensive on-site and off-site review of the operations of forex bureaus. The review exercises have revealed major weaknesses in the operations of some of the bureaus that include; Engaging in unauthorized business activities; Non-compliance with the legal and regulatory requirements such as the Central Bank of Kenya Act and the laws that govern taxation; limited understanding of regulations and weak capacity in management of the bureaus and money laundering.

Following the repeal of the Exchange control Act in 1995 and licensing of foreign exchange bureaus, there has been some vibrancy in foreign market (Kurgat 1995). Kenya is currently pursuing a floating exchange rate regime, in which the market forces of demand and supply interplay to determine the exchange value of currencies. Indeed, as proposed by Friedman (1953) because speculators buy low and sell high, their activities ensure that the exchange rates reflect the fundamental determinants of currency values.

According to publication by CBK on performance of forex bureaus in Kenya, the profitability of forex bureaus as been observed to be higher when the interest rates go up, import-export has picked up due to good climatic conditions and inflation rate is regulated. The global financial crisis 2012

played a significant role in reducing the export value which in return had impact on the foreign exchange rates.

## **1.2 Research Problem**

The numerous forex bureaus in Kenya have continued to experience routine fluctuation in annual financial performance despite their increasing number. The global crisis has had a big impact on the rates of currencies and this has attributed to profits and losses in some business. The forex annual report (2009) revealed low multi-currency spreads and limited capital. The first half of 2010 had low sales volumes and profitability levels which threatens financial distress on business existences and expansion of forex bureaus.

A study in Uganda by Mbire & Atingi (1997) found that an appreciation in real exchange rate would worsen the debt-export ratio. Previous studies have examined the exchange rate arbitrage opportunities in the forex exchange market in Kenya. Kurgat (1998) carried out an empirical study on the spot markets efficiency of Kenyan foreign market due to existence of arbitrage opportunities. He showed that there was an opportunity to make risk free profits through locational arbitrage. The study established that foreign exchange markets in Kenya are not efficient.

Muhoro (2005) carried out a similar study and used secondary data from central bank publications. He established that forex market was inefficient due to arbitrage opportunities in the market. He concluded that higher profits could be made carrying out a triangular arbitrage transaction that a locational arbitrage in both banks and forex bureau. It therefore appeared that currencies are not efficiently priced against each other.

In Kenya, most studies have been on arbitrage, few have been on exchange rates. Nyamute (1998) on inflation rate, treasury bills rate and exchange rate, Nyachio (2008) on exchange rates and volume of horticultural exports. Thus it suffices to conclude that no study has looked at the effects of exchange rate determinants on the profitability of forex bureaus in Kenya. This is the gap the present study sought to bridge. The study posed the question: what are the effects of exchange rate determinants on the profitability of forex bureau in Kenya?

### **1.3 Objective of the Study**

The main objective of the study was to determine the influence of exchange rate determinants on the profitability of forex bureaus in Kenya

- i. To determine how interest rates as determinant of foreign exchange rates affects the profitability of forex bureaus in Kenya.
- ii. To determine how external debt as determinant of foreign exchange rates affects the profitability of forex bureaus in Kenya.
- iii. To determine how inflation rates as a determinant of exchange rates affects the profitability of forex bureaus in Kenya.
- iv. To find out how exports and imports as a determinant of exchange rates affects the profitability of forex bureaus in Kenya.

### **1.4 Value of the Study**

The study will be a contributor to the research done on the forex bureaus in Kenya and provide future researchers with a literature for study. It will also contribute the financial markets studies and

help the students in this field to appreciate the operations and growth of forex bureaus in Kenya. It will also contribute to the research work done on financial markets and more specifically on forex bureaus where little literature is available thus give researchers additional knowledge which can be further researched on.

The study will be beneficial to forex bureau operators as it will help them better understand the determinant factors of exchange rate and their effects on their bureaus' profitability. This study will also guide policy makers in the forex bureau industry especially CBK in coming up with policies which will manage the exchange rates and spur growth and profitability in this sector.

## CHAPTER TWO: LITERATURE REVIEW

### 2.1 Introduction

Several views on exchange rate determination have over the year evolved to determine the factors responsible for exchange rate movements in the world (Pantzalis, Simkins & Laux 2001). Foreign exchange market is one of the largest markets across the world. Securities and currencies worth more than 3.2 trillion dollars are traded daily. It is easy to access the foreign exchange market across the globe. In Kenya, there are three avenues of exchange currency that is through Forex bureaus, commercial banks and investment banks. Forex bureaus exchange small amounts of cash currency to another currency. If an organization or individual has a large amount of currency to exchange and in a form other than cash, it is unable to be transferred through a forex bureau (Pantzalis, Simkins & Laux 2001). In Kenya, forex bureaus are restricted in the amount of money they are able to exchange. Additionally, forex bureaus only handle cash based transactions so those needing wired exchanges must use a bank. The determinants of foreign exchange rates globally have had an impact on the profitability of forex bureaus in Kenya

### 2.2 Theoretical Review

Interest rates, inflation and exchange rates are all highly correlated. By manipulating interest rates, central banks exert influence over both inflation and exchange rates and changing interest rates impact inflation and currency values. Forex Bureaus dealing in multiple currencies face a risk (an unanticipated gain/loss) on account of unanticipated changes in exchange rates (Bergen 2010).

### 2.2.1 Purchasing Power Parity Theory

The main economic theories found in the foreign exchange deal with parity conditions. A parity condition is an economic explanation of the price at which two currencies should be exchanged, based on factors such as inflation and interest rates. The economic theories suggest that when the parity condition does not hold, an arbitrage opportunity exists for market participants (Pantzalis, Simkins & Laux 2001). However, arbitrage opportunities, as in many other markets, are quickly discovered and eliminated before even giving the individual investor an opportunity to capitalize on them.

The starting point of exchange rate theory is purchasing power parity (PPP), which is also called the inflation theory of exchange rates. PPP can be traced back to sixteen-century Spain and early seventeen century England, but Swedish economist Cassel (1918) was the first to name the theory PPP. Cassel once argued that without it, there would be no meaningful way to discuss over-or-under valuation of a currency. Absolute PPP theory was first presented to deal with the price relationship of goods with the value of different currencies. The theory requires very strong preconditions. Generally, Absolute PPP holds in an integrated, competitive product market with the implicit assumption of a risk-neutral world, in which the goods can be traded freely without transportation costs, tariffs, export quotas, and so on. However, it is unrealistic in a real society to assume that no costs are needed to transport goods from one place to another. In the real world, each economy produces and consumes tens of thousands of commodities and services, many of which have different prices from country to country because of transport costs, tariffs, and other trade barriers (Kanamori & Zhao, 2006).

Absolute PPP is generally viewed as a condition of goods market equilibrium. Under absolute PPP, both the home and foreign market are integrated into a single market. Since it does not deal with money markets and the balance of international payments, we consider it to be only a partial equilibrium theory, not the general one. Perhaps because absolute PPP require many strong impractical preconditions, it fails in explaining practical phenomenon, and signs of large persistent deviations from Absolute PPP have been documented (Kanamori & Zhao, 2006).

### **2.2.2 Balance of Payment Theory**

The balance of payments theory of exchange rate is also named as General equilibrium theory of exchange. According to this theory, the exchange rate of the currency of the country depends upon the demand and supply of foreign exchange. If the demand foreign exchange is higher than its supply, the price of foreign currency will go up and vis a vis (Kanamori & Zhao, 2006). The demand and supply of foreign exchange arises from the debit and credit items respectively in the balance of payments. The forex bureaus take advantage of the demand to increase the price and capitalize on the margins.

### **2.2.3 Interest Rate Parity**

The concept of Interest Rate Parity (IRP) is similar to PPP, in that it suggests that for there to be no arbitrage opportunities, two assets in two different countries should have similar interest rates, as long as the risk for each is the same McDermott(2000). The basis for this parity is also the law of one price, in that the purchase of one investment asset in one country should yield the same return as the exact same asset in another country otherwise exchange rates would have to adjust to make up for the difference. With the adjustment of the exchange rates the forex bureaus would either

make a profit or loss and this would affect the growth as it affects their profitability and sale volumes.

Interest rates, inflation and exchange rates are all highly correlated. By manipulating interest rates, central banks exert influence over both inflation and exchange rates, and changing interest rates impact inflation and currency values. Higher interest rates offer lenders in an economy a higher return relative to other countries. Therefore, higher interest rates attract foreign capital and cause the exchange rate to rise. The impact of higher interest rates is mitigated, however, if inflation in the country is much higher than in others, or if additional factors serve to drive the currency down. The opposite relationship exists for decreasing interest rates, that is, lower interest rates tend to decrease exchange rates (Bergen, 2010).

#### **2.2.4 Hedging Theory**

Two main imperfections prevent the individual investor from being an efficient hedger when compared to the firm. These are entry barriers and information gaps according to Dufey & Srinivasulu (1983). Entry barriers are in the form of size and structural barriers. Minimum size requirements in financial and commodity markets tend to be too large for individual investors. They cannot, as a result, enter and efficiently operate in these markets. Moreover, internal hedging techniques are firm-structured. They are tailored along operations of a firm and are hardly available to individual investors. Structurally, the individual investor is limited in making use of these hedging avenues. Specifically, investors themselves can hedge corporate exchange exposure by taking out forward contracts in accordance with their ownership in a firm. Managers do not serve them by second-guessing what risks shareholders want to hedge.

### 2.3 Empirical Findings

Various studies, particularly, in the developed and middle-income countries, have also explored the impact of exchange rate and associated uncertainty on trade, investment, and economic growth. Majority of these studies have found that exchange rate can affect trade directly, through uncertainty and adjustment costs, and indirectly through its effect on the structure of output and investment (Cavallo 2005). In spite of the abundant literature on the effects of exchange rate on macroeconomic variables such as economic growth, studies that specifically focus on Kenyan economy are scanty. The few studies that have been undertaken in Kenya on the subject of exchange rate behavior have mainly focused on explaining the determinants of exchange rate behavior, with emphasis on the role of macroeconomic variables such as monetary policy shocks. For instance, Were et. al., (2001). analyzed factors that have influenced the exchange rate movements since the foreign exchange market was liberalized in 1993. A related study by Ndung'u (1999) assessed whether the exchange rates in Kenya were affected by monetary policy, and whether these effects were permanent or transitory. The study by Kiptoo (2007) focused on the real exchange rate, volatility, and misalignment, and its impact on the Kenya's international trade, and investment. Sifunjo, (2011) focused on chaos and non-linear dynamical approaches to predicting exchange rates in Kenya. Even then, these studies including Ndung'u (1995), Ndung'u (2001), Kiptoo (2007), and Sifunjo, 2011 did not deal with the impact of exchange rate volatility on the Kenya's economic growth.

Baron-Adesi & Yeung (1990) use descriptive statistics of developed countries between 1961 and 1984 and simple OLS regressions between real and nominal exchange rates and output. Their results show the positive correlations between the exchange rate and the average inflation.

A number of studies have been conducted on exchange rates. However, fewer still are those that even consider the determination of foreign exchange rates, perhaps due to lack of generally accepted model of exchange rate determination. Jebuni, Sowa & Tutu (1991) looked at the effects of real exchange rate on output, exports and imports. The study found that the real exchange rate as a significant explanatory variable for output with appreciation in the rate causing a decline in output. Similarly, they found that depreciation of the real exchange rate had a positive effect on the exports and negative effect on imports.

Chibber & Shafik (1991) in their study on Ghana, discovered that the black market and inflation premium was determined by the real effective official exchange rate, with devaluation of the latter reducing the premium. Interest rate differential between Ghana and the rest of the world were also significant, with widening differential causing an increase in the premium. Uncertainty about future exchange rates with expectation of official devaluation also a decrease of the premium.

Karfakis & Kim (1995) using Australian exchange rate data found that unexpected current account deficit is associated with exchange rate depreciation, and a rise in interest rates. Evidence is found that current account deficits diminishes domestic wealth, and may lead to overshooting of exchange rates. There has also been a surge and collapse in international capital flows into developing countries in the recent decades. Sudden outflow of capital is another major concern when it is drastic.

An empirical study by Kurgat (1998) on spot market efficiency on Kenya's Foreign Exchange bureau, he found out that Foreign Exchange Bureaus market is inefficient as evidenced by the number of arbitrage opportunities that existed like black market and foreign exchange risk. He concluded that these problems would be solved by regulation by the Central Bank. He used secondary data obtained from Central bank of Kenya and analyzed using chi-square distribution, F-distribution and line reports. The study showed the existence of foreign exchange impact in the bureaus and it affects profitability of the bureaus. There is need for more research and this study will look to establish if the determinants of foreign exchange rates have any impact on the profitability/efficiency of forex bureaus in Kenya.

Rogoff (2001) points out that, in the macroeconomic chaos of the 1970s, there was a perspective that the calmness in exchange rate markets would follow inflation stabilization since, even in the weak version of PPP, price instability is incompatible with exchange rate stability. The belief was strengthened by Dornbusch's overshooting model, where exchange rate has a disproportionate adjustment to monetary shocks in the short run. Therefore, monetary instability would lead to even higher exchange rate instability. However, the evidence in the following decades showed that the latter is, at most, part of the former, since the volatilities of the world's main currencies remained at high levels. This volatility has costs over exports and imports, in addition to hedging costs. However, one should not analyze the effects of volatility by looking at the exchange rate regime – since volatility is always higher under floating exchange rates – but rather ask if that volatility makes product, investment and consumption more volatile. Nonetheless, the author points out that the empirical issue is not solved, as the differences in effects may be due to microeconomic distortion of the models.

Zhang (2002) reviewed China's foreign exchange reforms and analyzed their impact on the balance of trade and inflation. They used both primary and secondary data. The regression analysis showed a positive correlation between the foreign exchange reforms and the balance of trade and inflation. The conclusion was that the exchange rates have a strong impact on the balance of trade and inflation. There is need to further investigate if the same scenario is applicable in Kenya.

Ndunda (2002) tested whether forward exchange rate are predictors of future spot rates in Kenya using the Hansen & Hodrick (1980) model. In her study, she focused on the foreign exchange market under floating exchange rate. The tests of regression model used were based on joint hypothesis that coefficient in the regression are equal to zero. The findings of the study established that interest rates have been relatively high while the change in the foreign exchange rates has not been at the same rate. This study will go further to fill the gap by establishing if the exchange rates are now high and their effects on the profitability of forex bureaus.

Adam & Tweneboah (2008) studied the impact of macroeconomic variables on exchange rates. They used Databank stock index to represent the stock market and inward direct investment, the treasury bill rate (as measure of interest rate), the consumer price index (as measure of inflation) and average crude oil. This study found out there is co-integration between the macro economic factors and exchange rate though in some scenario like with the crude oil the exchange rate showed weak influence.

A study by Muga (2012) led to several conclusions. The findings reflected that arbitrage opportunities existed. This was consistent with earlier studies by Mule (2004), Muhoro (2005) and Wekesa (2006) and most literature on arbitrage opportunities in the forex market. These arbitrages were occasioned by market inefficiencies. These findings also violated the law of one price and the pure form of the efficient market hypothesis. Of particular note, however, were the significant declines in arbitrage opportunities as depicted by comparative descriptive statistics. According to the results of this study, remarkable declines were registered on both the size and frequencies for both exchange rate arbitrages over the past few years. These studies sought to examine not only whether exchange rate arbitrage existed, but also comparative trends if indeed they existed in the context of gains in information efficiencies, information cost economies and enhanced market vibrancy. The literature predicts that under the above environment, arbitrage opportunities should decline or be eliminated away altogether under perfect conditions. This study therefore lends support to those predictions. It also emerged that triangular arbitrage presented larger arbitrage opportunities than locational arbitrage. This meant that exchange rates were more efficiently priced than cross rates. The exchange rate arbitrages could still exist and affecting the profitability of forex bureaus.

## 2.4 Summary

From the findings of the previous study, it is apparent that there is a gap to fill. There is need to investigate further whether the previous studies findings are still valid. Most of the studies having been looking at arbitrage in the forex market. Forex exchange rates affect the performance of forex bureaus in Kenya and thus it is important to analyze the factors that determine the exchange rate as this in the long run affects the profitability of the forex bureaus.

Previous studies have not focused much on the macroeconomic factors that affect the exchange rates but more on the monetary approach. Thus, with this study this gap will be bridged and give researchers an avenue for further research.

## CHAPTER THREE: RESEARCH METHODOLOGY

### 3.1 Introduction

This chapter provided a detailed conduct of the study. It covered research design, study population, sample size, sampling procedures, data source and collection instruments.

### 3.2 Research Design

A research design was a plan, structure and strategy of investigation so conceived as to obtain answers to research problems and questions. The dependent variable of performance was measured using financial measures of profitability (Gopinathan 2009). Profitability is a good indicator of performance in business firms. The independent variable of inflation rates, interest rates, export and import and external debt were measured in financial terms (Evans, Taylor & Holzmann 1985).

### 3.3 Population

The target population under study was forex bureaus in Kenya which are currently 104 but the unit of observation was a sample of 30 forex bureaus in Nairobi. (See Appendix 2). The study period will be January 2002 to December 2010. The 10 years period will provide 40 data points per independent variable.

### 3.4 Data Collection

The method of data collection was both primary and secondary research. The primary collection was used for the dependent variable and secondary collection was used for independent variables which essentially involve reviewing data sources that have been collected for some other purpose

than the study at hand. The main sources of the data will be from local institutions as follows: The Statistical Bulletins and the Monthly Economic Reviews of the Central Bank of Kenya (CBK), the Economic Surveys of the Kenya National Bureau of Statistics (KNBS), the Budget Outturns of the Ministry of Finance. The main sources of international data were the International Financial Statistics and the Directorate of Trade Statistics. The publications from World Bank Group, and the IMF, were also used as source of data from international sources. United Nations data base on social indicators were extensively reliable source of information.

The primary data was collected from a sample of 30 forex bureaus in Nairobi where a questionnaire was administered. 80% of the respondent responded while 20% did not citing confidentiality of the information requested for.

### **3.5 Data Analysis**

Data was entered into Statistical Package for Social Sciences (SPSS) and analyzed using descriptive, correlation and regression analyses (Borg & Gall 1989). The correlation coefficient from regression showed the effect (whether negative or positive) of the independent variables on the dependent variable. T-tests was be used to show the significance of the relationship between the determinant factors and exchange rate. Significance of the relationships will be tested at 95% confidence model. In statistics, regression analysis is a statistical process for estimating the relationships among variables. It included many techniques for modeling and analyzing several variables, when the focus is on the relationship between a dependent variable and one or more independent variables.

### 3.5.1 Research Analytical Model

The linear regression model for the study was :-

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_n X_n + \dots \epsilon$$

Where Y = measured by the profitability of the forex bureaus

X1= is external debt defined as the total annual debt stock.

X2= the inflation rate defined as the annual inflation rate.

X3- is the interest rate defined as the average annual lending interest.

X4- is the exports and imports measured as the ratio of export to import prices

$\alpha$  - is the constant or intercept

$\beta$  – is the Beta factor

$\epsilon$  -is the error term

The Pearson Correlation Analysis was used to analysis the significance of the data. According to study objective in chapter one, the coefficients of Pearson correlation was test conceptual relationships between independent variable (effects foreign exchange rate determinants) and the dependent profitability. The null hypothesis is that  $\mu_1 - \mu_2 = 0$  where  $\mu_1$  is the effects of foreign exchange rates determinants and  $\mu_2$  is the profitability of forex bureaus in Kenya. The alternative hypothesis (for a two –tailed test would be  $\mu_1 \neq \mu_2$ . Expected relationship on all the variables that they were to have a negative effect on the profitability.

The data was entered into the Statistical Package for Social Sciences (SPSS) and analysed using descriptive, correlation and regression analyses. The correlation coefficients from the regression shows the effect (whether positive or negative) of the independent variables on the dependent

variable. T-tests were used to show the significance of the relationship between the determinant factors and exchange rate. Significance of the relationships was tested at 95% confidence level. These processed data were presented in tables, graphs and explanation given in prose. Qualitative data obtained from the questionnaire questions were analyzed using content analysis and the data presented in prose (Mugenda & Mugenda 2003).

## CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSIONS

### 4.1 Introduction

This chapter provides a summary of the data analysis, results of the study and the discussion on the findings of the study. The chapter is organized as follows: section 4.2 describes the data analysis and the results of the study and section 4.3 discusses the implication of the findings of the study.

### 4.2 Data analysis and results

The correlation analysis was done for all the independent variables and the dependent variable in the study. The dependent variable was profitability (ROA) while the independent variables were interest rate, inflation rate, external debt, and imports and exports. This analysis was carried out in order to determine whether there were serial correlations between the independent variables as serial correlations are a problem when performing regression analysis, this preliminary test was carried out first.

#### 4.2.1 Correlation Matrix of Independent Variables

|                |                                | Performance | Interest Rate | Inflation Rate | External Debt | Export and Import |
|----------------|--------------------------------|-------------|---------------|----------------|---------------|-------------------|
| Performance    | Pearson Correlation (2-tailed) | 1           | 0.346         | -0.230         | -0.401        | 0.641             |
| Interest Rate  | Pearson Correlation (2 tailed) |             | 1             | 0.612          | 0.354         | -0.447            |
| Inflation Rate | Pearson Correlation            |             |               | 1              | 0.658         | -0.646            |

|                     |                                |  |  |  |       |                 |
|---------------------|--------------------------------|--|--|--|-------|-----------------|
|                     | (2 tailed)                     |  |  |  | 0.139 | 0.064           |
| External Debt       | Pearson Correlation (2 tailed) |  |  |  | 1     | -0.695<br>0.018 |
| Exports and Imports | Pearson Correlation (2 tailed) |  |  |  |       | 1               |

The results show that there were low correlation between the independent variables and therefore no serial correlations between the variables. None of the correlations between the independent variables was significant. On the other hand, the independent variables all had significant effects on profitability as measured by ROA. Inflation rate and external debt had negative correlations with profitability while interest rate and exports & imports had positive correlations on profitability.

#### 4.2.2 Tests for Rational Expectations

|                     | R     | $\alpha = 0$ | Decision                   |
|---------------------|-------|--------------|----------------------------|
| Interest Rate       | -0.33 | 0.05         | Accept the null hypothesis |
| Inflation Rate      | 0.007 | 0.05         | Accept the null hypothesis |
| External Debt       | -0.91 | 0.001        | Accept the null hypothesis |
| Exports and Imports | 0.39  | 0.05         | Reject the null hypothesis |

The research hypothesis was that the determinants of foreign exchange rates had a negative effect on the profitability of foreign exchange bureaus in Kenya. Pearson's correlation supported the research hypothesis that interest rates had a negative effect on the profitability, as the higher the interest rates the lower the profitability of forex bureaus,  $r = -0.33$ ,  $p < 0.05$ .

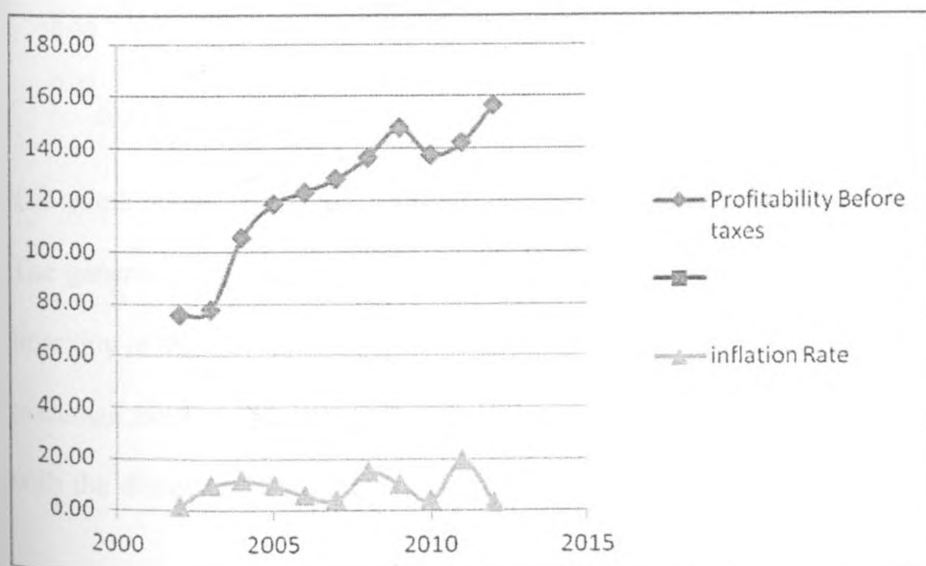
Pearson's correlation supported the research hypothesis that inflation rate had a negative effect on the profitability of forex bureaus, as the higher the inflation rate the lower the profitability of bureaus,  $r = 0.007$ ,  $p < 0.05$ .

Further, Pearson's correlation supported the research hypothesis that public debt had a negative effect on the profitability of forex bureaus, as the higher the public debt the lower the profitability of forex bureaus,  $r = -0.91$ ,  $p < 0.001$ .

Contrary to the research hypothesis the import-export volumes showed a positive effect on the profitability of forex bureaus, as the higher the volume of import-export the higher the profitability of forex bureaus,  $r = 0.39$ ,  $p > 0.05$ .

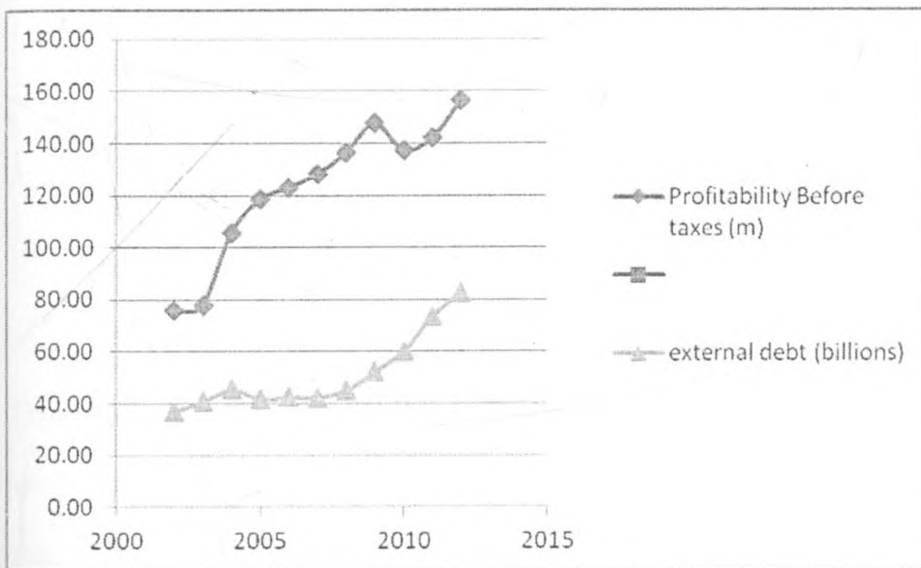
#### 4.2.3 Relationship between Independent and Dependant Variables graphically

Inflation Rate in Relation to Profitability



The graph above shows that when inflation rate is high, the profits of forex bureaus are low. This could be due to the high cost of living thus making investors concentrate on consumer goods and less on investments hence the need for foreign exchange currency conversion is low leading to low margins for forex bureaus. Also foreign investors are not keen to invest in the country due to loss in value of the local currency and lack of business opportunities as inflation leads to high prices and most consumers will concentrate on purchase of basic commodities and not luxuries.

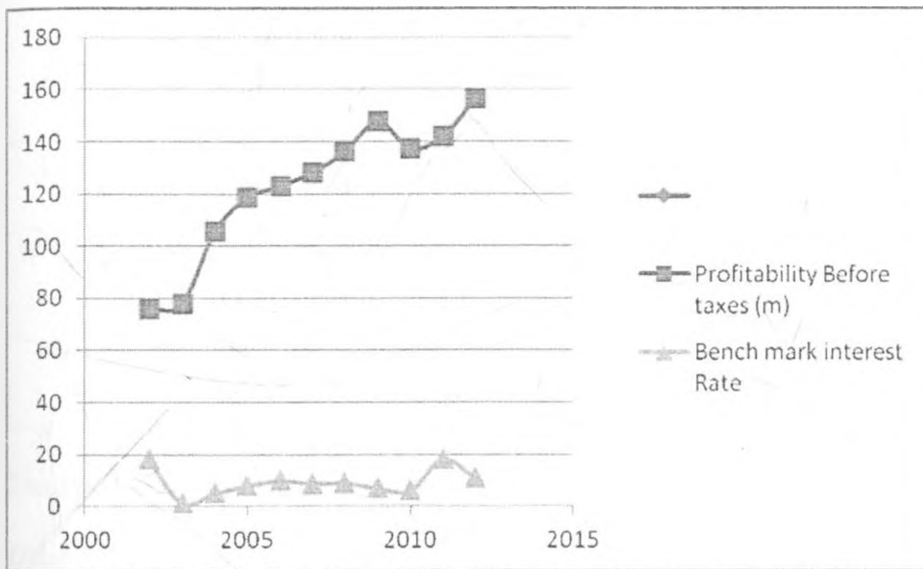
### Public Debt in Relation to Profitability



The graph above shows that with the fall of public debts the profits margin of forex bureaus rise. The general public debt has been falling and this has attracted foreign investors coming in and investing in the country. This has led to the demand for services of forex bureaus as there is need to exchange from one currency to the local currency to do business. This trend is expected to continue with the discovery of minerals and oil in Kenya, lowering the need for the Kenyan government to

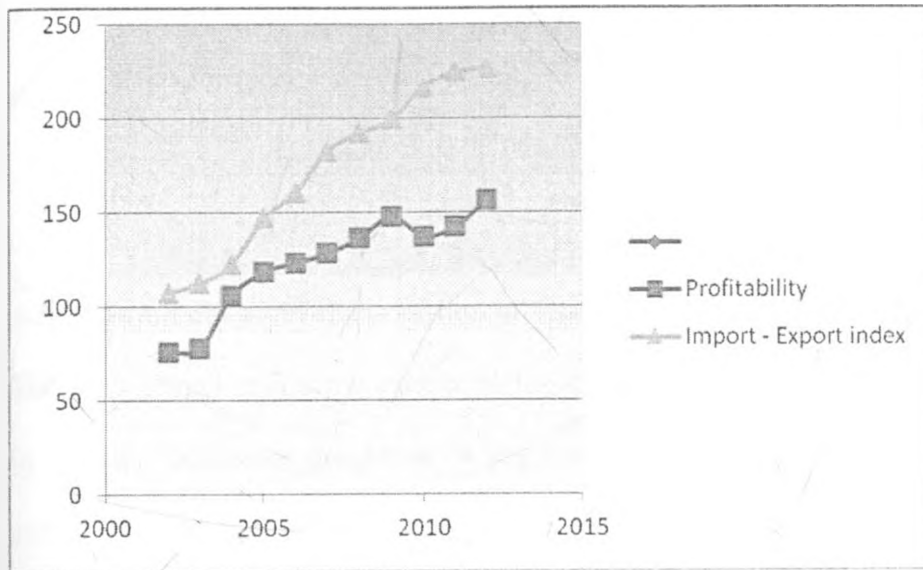
look for funds outside hence attracting even more foreign investors and creating more opportunities for the forex bureaus.

### Real interest Rate in Relation to Profitability



From the graph when the interest go down the profits margin for forex bureau go up. This can be explained as the CBK having in the recent past lowered the CBR and maintained it at an affordable rate. This has trickled down to the commercial bank as they can borrow at cheaper rate from CBK. This has further then trickled down to commercial banks' customers who are thus able to access loans at reasonable rates from CBK. The accessibility to affordable loans have led to forex bureaus taking advantage to increase their capital base hence able to speculate more on the currencies and take advantage of fluctuations in prices hencemaximise on their profits.

## Export-Import in Relation to Profitability of Forex Bureaus



The graph above shows that as volume of trade increase so does the profitability of forex bureaus. There is demand for services of forex bureaus in exchange from one currency to another depending on the nature of trade which in end means that the forex bureaus are able to capitalise on the investors either buying foreign currencies in order to import or selling foreign currencies that they have obtained through payment of exports.

### 4.2.4 Correlation Analysis

#### Effects of Exchange Rate Determinants on forex bureaus profitability

|                | Return on Equity | Significance level |
|----------------|------------------|--------------------|
| Constant       | 3.192            |                    |
| Interest Rate  | -1.427           | .05                |
| Inflation Rate | -1.664           | .05                |

|                     |        |      |
|---------------------|--------|------|
| External Debt       | -1.924 | .05  |
| Exports and Imports | 0.748  | .05  |
| R                   | .936   |      |
| R2                  | .876   |      |
| F                   | 2.676  | .001 |

### 4.3 Summary and Interpretation of Findings

The study sought to determine the relationship between interest rate and forex bureaus' profitability in Kenya. The results show interest rate had a negative and significant effect on forex bureaus profitability ( $\beta = -1.427$ ). This effect was significant at 5% level of confidence. This means is that higher levels of interest rate lead to lower profitability in forex bureaus. The operators of forex bureaus are able to capitalize on cheap loans to expand their capital base and thus take advantage of currencies price fluctuations hence increase their profitability. However, with high interest rates, this is not possible as the operators will steer off from the loans to as they may not be able to service them which in return will result to low profitability.

The study sought to determine the relationship between inflation rate and forex bureaus' profitability in Kenya. The study found that inflation rate had a negative and significant effect on forex bureaus profitability ( $\beta = -1.664$ ). This effect was significant at 5% level of confidence. These results mean that higher levels of inflation rate result in lower forex bureaus' profitability. This is consistent with Bergen (2010) who noted that countries with higher inflation typical see depreciation in their currency in relation the currencies of their trading partners. High inflation rate

results in low profits as there will be less investors willing to trade across the borders and this would result to less demand for the foreign currency as investors divert their money to fulfill basic needs. Inflation leads to high consumer prices.

The study sought to determine the relationship between external debt and forex bureau profitability in Kenya. The regression analysis, shows that external debt had a negative and significant effect on the forex bureau profitability ( $\beta = -1.924$ ). This effect was significant at 5% level of confidence. These results mean that higher levels of external debt result in lower forex bureau profitability. This is consistent with the findings of Bergen (2010) who concluded that nation with large public deficits and debts are less attractive to foreign investors. This would thus mean low profitability as there is no much entry of foreign currency thus the need to provide the service to change it to local currency deny forex bureaus an opportunity to do business.

The study sought to determine the relationship between exports & imports and forex bureau profitability in Kenya. The results show that exports and imports had a positive and significant effect on forex bureau profitability ( $\beta = 0.748$ ). This effect was significant at 5% level of confidence. What this means is that higher levels of exports and imports lead to higher profitability in forex bureaus. This is consistent with Solnik (2000) who noted that if the price of exports rises by a smaller rate than that of its imports, the currency's value will decrease in relation to its trading partners.

The study found that the independent variables had a very high correlation with ROA ( $R = 0.936$ ). The results also show that the variables accounted for 87.6% of the variance in ROA ( $R^2 = 0.876$ ).

ANOVA results show that the F statistic was significant at 1% level. Therefore, the model was fit to explain the relationships.

The model established would therefore be as follows:

$$Y = 3.192 - 1.427X_1 - 1.664X_2 - 1.924X_3 + 0.748X_4 + \dots$$

The study thus found out the expected relationship between the foreign exchange determinants and the profitability of forex bureau to be negative apart from the import and export volumes where the relationship was positive.

## CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

### 5.1 Introduction

This study was conducted with the aim of achieving the finding the effects of foreign exchange rate determinants; inflation rate, interest rate, external debt and import-export volumes on the profitability of forex bureaus. To achieve these objectives, a regression analysis was set out between the dependant variable and the independent variables.

This study adopted a descriptive design and both primary and secondary data was used. The results showed that import – export ratio had positive and significant effect on the profitability of forex bureaus. Interest rates, inflation rates and public debt had a negative and significant effect on the profitability of forex bureaus. The study concluded that the higher the import-export ratio the higher the profitability of forex bureaus. It further concluded that the higher the inflation rate, interest rate and public debt the lower the profitability of forex bureaus.

The study recommends that the Central Bank of Kenya should set lending rates that can help the bank profitable while at the same time not punitive to the borrowers. Secondly, the study recommends that inflation rate should be contained through sound policy ensures as high inflation rate may hurt the performance of financial institutions and more foreign exchange bureaus. Thirdly, the study recommends that it is important the government addresses the issue of burgeoning external debt as higher external debt hurt performance of foreign exchange bureaus in Kenya. Finally, the study recommends that the government should put up more increase exports as this will also lead to profitability of forex bureaus as investors bring in foreign currencies for exchange.

## 5.2 Conclusion

The study found that interest rate had a negative effect on forex bureaus' profitability in Kenya. The study therefore concludes that higher levels of interest rate lead to lower profitability in forex bureaus in Kenya. The study found that inflation rate had a negative effect on firm performance in Kenya. It is therefore concluded that higher levels of inflation rate result in lower forex bureaus profitability in Kenya. The study therefore concludes that higher levels of external debt result in lower forex bureaus profitability in Kenya. The study found that exports and imports had a positive effect on forex bureaus profitability in Kenya. The study therefore concludes that higher levels of exports and imports lead to higher profitability in foreign exchange bureaus.

## 5.3 Recommendations

The study recommends that the Central Bank of Kenya should set base lending rates that can help the banks profitable while at the same time not punitive to the borrowers and thus create an enabling environment for investors allowing them to invest hence engaging in the foreign exchange business by exchanging foreign currencies as they invest as there is accessibility to funds. This will help grow the credit market in Kenya and trickle down to investors in the country engaging in more business which may be local or internationally thus calling on the services of forex bureaus. The central banks should apply stringent regulations on interest rates charged by banks so as to regulate their interest rate spread.

Secondly, the study recommends that inflation rate should be contained through sound policy measures as high inflation rates may hurt the performance of financial institutions and also lead to

low business for foreign exchange bureaus in the long run in Kenya. There is need for the government to bring down government spending by putting in place monetary and fiscal policies

Thirdly, the study recommends that it is important that the Government addresses the issue of burgeoning external debt as higher external debts hurt the performance of financial institutions and also not attractive for foreign investment thus hindering flow of business for forex bureaus in Kenya. There is need for the government to bring down government spending by putting in place monetary and fiscal policies.

Last but not least, the study recommends that the Government should put up more measures to increase the country's exports as this will go a long way in improving the performance of forex bureaus in Kenya. Exports bring in foreign currencies and thus need for investors to exchange to local currency hence giving foreign exchange bureaus an opportunity to serve them and thus the more the exports the more foreign earnings and the more the margins of bureaus.

#### **5.4 Limitations of the Study**

The study considered only inflation rate, interest rate, public debt and import and export as only determinants of exchange rates, other internal and external factors not included as variables in this study could also contribute to the determination of the exchange rate.

The study used quarterly data, monthly or weekly figures could also be used to compare the effects of the independent variables on the dependant variable. The figures would however not be readily

available as the bodies that collect this data such as CBK and KNBS only compile and document the monthly data and not weekly.

Most of the large-scale forex bureaus operators were unwilling to share the margins with the researcher due to fear of the information being used for other purposes other than the study. Also it was not possible to interview the operators at the airport as accessibility to the lounges was not possible due to security issues. The airport operators are believed to be amongst the most profitable in the sector.

### **5.5 Suggestions For Further Research**

A study on determinants of foreign exchange rates on the profitability of other financial institutions such as commercial banks can be carried out. This would give a comparison to the present study as both institutions deal with the exchange of foreign currencies and be able to establish if the determinants of foreign exchange rates had same effect in the banking industry as in the forex bureau industry.

Secondly research could be conducted on other factors that would affect the profitability of forex bureaus such as regulations by CBK which is the regulatory body for all forex bureaus in Kenya.

This would show the influence of CBK in the running of the forex industry and give CBK a clear picture of the effects of its regulations on the industry thus able to know where to improve in order to grow the industry.

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There would also be need to investigate factors influencing growth of foreign exchange bureaus in Kenya. This is as a result of the increase in number of the bureaus in Kenya. There would be need to know the motivating factor behind this growth and its impact on the Kenyan economy. In the recent past the number of forex bureau in Nairobi has increased tremendously and more so in the CBD of Nairobi. Therefore, a study to further investigate the findings of Gichuru (2011) on location and growth of foreign exchange bureaus would be important.

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## APPENDIX 1 - QUESTIONNAIRE

### EFFECTS OF FOREIGN EXCHANGE RATE DETERMINANTS ON PROFITABILITY OF FOREX BUREAUS IN KENYA

I am a postgraduate student of the University of Nairobi, School of Business. In order to fulfill the degree requirement I am undertaking a project survey of the growth of Forex bureaus in Kenya.

You have been selected to participate in this study. I kindly request you to give the necessary assistance in data collection by filling out this questionnaire.

The information which you are going to provide will be used exclusively for academic purposes and will be treated with strict confidence.

Your cooperation will be highly appreciated

Thank you in advance

Yours faithfully

Charity Macharia

MBA Student

School of Business

University of Nairobi

1. What is the name of your bureau and where is it located?

Name:.....Location:.....

2. When was the bureau established?

.....

3. How many employees does the bureau have?

-----

4. What is your annual profitability range in the following years?

|      | 0-0.5m | 0.5-1.0m | 1.0m-1.5m | 1.5m-2.0m | 2.0m-2.5m | 2.5m-3.0m | 3.0m-3.5m | 3.5m-4.0m | 4.0m-4.5m | 4.5m-5.0m |
|------|--------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 2002 |        |          |           |           |           |           |           |           |           |           |
| 2003 |        |          |           |           |           |           |           |           |           |           |
| 2004 |        |          |           |           |           |           |           |           |           |           |
| 2005 |        |          |           |           |           |           |           |           |           |           |
| 2006 |        |          |           |           |           |           |           |           |           |           |
| 2007 |        |          |           |           |           |           |           |           |           |           |
| 2008 |        |          |           |           |           |           |           |           |           |           |
| 2009 |        |          |           |           |           |           |           |           |           |           |
| 2010 |        |          |           |           |           |           |           |           |           |           |
| 2011 |        |          |           |           |           |           |           |           |           |           |
| 2012 |        |          |           |           |           |           |           |           |           |           |

Thank you for your participation.

## APPENDIX 2 LIST OF FOREX BUREAUS IN KENYA

- 1 AAR Credit Service
- 2 ABC Place Forex Bureau Ltd
- 3 Alok Bureaud De Change Ltd
- 4 Amal Express Bureau Ltd
- 5 Amana Forex Bureau Ltd
- 6 Amazon Forex Bureau Ltd
- 7 Amex Forex Bureau Ltd
- 8 Arcade Forex Bureau Ltd
- 9 Aristocrats Forex Bureau Ltd
- 10 Avenue Forex Bureau Ltd
- 11 Bakaaal Express Forex bureau Ltd
- 12 Bamburi Forex Bureau Ltd
- 13 Bay Forex Bureau Ltd
- 14 Bogani Forex Bureau Ltd
- 15 Cannon Forex Bureau Ltd
- 16 Capital Forex Bureau Ltd
- 17 Capital Hill Forex Bureau Ltd
- 18 Cashline Forex Bureau Ltd
- 19 CBD Forex Bureau Ltd
- 20 Central Forex Bureau Ltd
- 21 Chase Bureau De Change Ltd
- 22 City Centre Forex Bureau Ltd
- 23 Classic Forex Bureau Ltd
- 24 Coast Forex Bureau Ltd
- 25 Commercial Forex Bureau Ltd
- 26 Conference Forex Bureau Ltd
- 27 Connection Forex Bureau Ltd
- 28 Continental Forex Bureau Ltd
- 29 Cosmos Forex Bureau Ltd
- 30 Crater Forex Bureau Ltd
- 31 Crossroads Forex bureau Ltd
- 32 Crown Bureau De Change Ltd
- 33 Dahab Shil Forex Bureau Ltd
- 35 Dalmar Exchange Bureau Ltd
- 36 Dollar Forex Bureau Ltd
- 37 Downtown Cambio Forex Bureau Ltd
- 38 Euro Dollar Bureau De Change Ltd

|    |                                   |
|----|-----------------------------------|
| 39 | Fairdeal Forex Ltd                |
| 40 | Finerate Forex Bureau Ltd         |
| 41 | Forex Bureau Afro Ltd             |
| 42 | Fort Jesus Forex Bureau Ltd       |
| 43 | Fulus Bureau De Change Ltd        |
| 44 | Gateway Forex Bureau Ltd          |
| 45 | Giant Forex Bureau De Change Ltd  |
| 46 | Gigiri Forex Bureau Ltd           |
| 47 | Give and Take Forex Bureau Ltd    |
| 48 | Global Forex Bureau Ltd           |
| 49 | Glory Forex Bureau Ltd            |
| 50 | GNK Forex Bureau Ltd              |
| 51 | Goldfield Forex Bureau Ltd        |
| 52 | Green Exchange Forex Bureau Ltd   |
| 53 | Hodan Global Forex Bureau Ltd     |
| 54 | Hurlingham Forex Bureau Ltd       |
| 55 | Industrial Area Forex Bureau Ltd  |
| 56 | Island Forex Bureau Ltd           |
| 57 | Junction Forex Bureau Ltd         |
| 58 | Kaah Forex Bureau Ltd             |
| 58 | Karen Bureau De Change Ltd        |
| 60 | Kenza Exchange Bureau Ltd         |
| 61 | Laache Forex Bureau Ltd           |
| 62 | Lavington Forex Bureau            |
| 63 | Leo Forex Bureau Ltd              |
| 64 | Link Forex Bureau Ltd             |
| 65 | Loki Forex Bureau Ltd             |
| 66 | Magnum Forex Bureau De Change Ltd |
| 67 | Maritime Forex Bureau Ltd         |
| 68 | Maxfair Forex Bureau Ltd          |
| 69 | Metropolitan Bureau De Change Ltd |
| 70 | Middletown Forex Bureau Ltd       |
| 71 | Mombasa Forex Bureau Ltd          |
| 72 | Mona Forex Bureau Ltd             |
| 73 | Moneypoint Forex Bureau Ltd       |
| 74 | Morgan Forex Bureau De Change Ltd |
| 75 | Mustaqbal Forex Bureau Ltd        |
| 76 | Muthaiga Forex Bureau Ltd         |
| 77 | Nairobi Forex Bureau Ltd          |
| 78 | Nairobi Bureau De Change Ltd      |
| 79 | Namanga Forex Bureau Ltd          |

|     |                               |
|-----|-------------------------------|
| 80  | Nature Forex Bureau Ltd       |
| 81  | Nawal Forex Bureau Ltd        |
| 82  | Net Forex Bureau Ltd          |
| 83  | Offshore Forex Bureau Ltd     |
| 84  | Overseas Forex Bureau Ltd     |
| 85  | Pacific Forex Bureau Ltd      |
| 86  | Peaktop Forex Bureau Ltd      |
| 87  | Pearl Forex Bureau Ltd        |
| 88  | Pel Forex Bureau Ltd          |
| 89  | Penguin Forex Bureau Ltd      |
| 90  | Pinnacle Forex Bureau Ltd     |
| 91  | Princess Forex Bureau Ltd     |
| 92  | Pwani Forex Bureau Ltd        |
| 93  | Rainbow Forex Bureau Ltd      |
| 94  | Real Value Forex Bureau Ltd   |
| 95  | Regional Forex Bureau Ltd     |
| 96  | RiftValley Forex Bureau Ltd   |
| 97  | Safari Forex Bureau Ltd       |
| 98  | Satellite Forex Bureau Ltd    |
| 99  | Securex Agencies (K) Ltd      |
| 100 | Shepherds Forex Bureau Ltd    |
| 101 | Simba Forex Bureau Ltd        |
| 102 | Sky Forex Bureau Ltd          |
| 103 | Solid Exchange Bureau Ltd     |
| 104 | Speedy Forex Bureau Ltd       |
| 105 | Sterling Forex Bureau Ltd     |
| 106 | Sunny Forex Bureau Ltd        |
| 107 | Sunshine Forex Bureau Ltd     |
| 108 | Taipan Forex Bureau Ltd       |
| 109 | Tawakal Forex Bureau Ltd      |
| 110 | Tellite Forex Bureau Ltd      |
| 111 | Trade Bureau De Change Ltd    |
| 112 | Travel Point Forex Bureau Ltd |
| 113 | Traveller Forex Bureau Ltd    |
| 114 | Ukay Centre Forex Bureau Ltd  |
| 115 | Union Forex Bureau Ltd        |
| 116 | Victoria Forex Bureau Ltd     |
| 117 | Village Market Forex Bureau   |
| 118 | Wallstreet Bureau De Change   |
| 119 | Wanati Forex Bureau Ltd       |
| 120 | Warwick Forex Bureau Ltd      |

- 121 Westlands Forex Bureau Ltd
- 122 Yaya Centre Exchange Bureau Ltd

### APPENDIX 3 DEPENDENT VARIABLES

| YEAR | Quarter | inflation | Interest rate<br>(Real rate) | external<br>debt(millions) | import-export<br>volumes(millions) |
|------|---------|-----------|------------------------------|----------------------------|------------------------------------|
|      |         | X1        | X2                           | X3                         | X4                                 |
| 2002 | Q1      |           | 10.61                        | 381.5                      | 29210                              |
|      | Q2      |           | 9.04                         | 378.50                     | 36717                              |
|      | Q3      |           | 8.34                         | 376.87                     | 32554                              |
|      | Q4      | 1.9       | 8.30                         | 371.33                     | 35008                              |
| 2003 | Q1      |           | 7.77                         | 367.04                     | 40310                              |
|      | Q2      |           | 5.84                         | 361.73                     | 37901                              |
|      | Q3      |           | 1.18                         | 397.99                     | 34572                              |
|      | Q4      | 9.8       | 1.28                         | 406.09                     | 37094                              |
| 2004 | Q1      | 9.3       | 1.57                         | 407.12                     | 41118                              |
|      | Q2      | 8.5       | 2.87                         | 408.55                     | 44232                              |
|      | Q3      | 9.0       | 2.27                         | 444.46                     | 51050                              |
|      | Q4      | 9.0       | 5.06                         | 454.66                     | 94146                              |
| 2005 | Q1      | 13.94     | 8.59                         | 445.54                     | 49413                              |
|      | Q2      | 7.00      | 8.66                         | 423.48                     | 59776                              |
|      | Q3      | 6.96      | 8.66                         | 434.85                     | 66292                              |
|      | Q4      | 6.04      | 7.84                         | 417.90                     | 54708                              |
| 2006 | Q1      | 18.87     | 8.02                         | 407.30                     | 56582                              |
|      | Q2      | 13.09     | 9.75                         | 406.49                     | 63834                              |
|      | Q3      | 11.50     | 10                           | 431.10                     | 73190                              |
|      | Q4      | 14.60     | 10                           | 424.93                     | 72004                              |
| 2007 | Q1      | 6.81      | 10                           | 416.10                     | 81134                              |
|      | Q2      | 6.30      | 10                           | 419.74                     | 76543                              |
|      | Q3      | 12.40     | 8.5                          | 409.07                     | 76495                              |
|      | Q4      | 11.80     | 8.75                         | 424.24                     | 83806                              |
| 2008 | Q1      | 19.10     | 8.75                         | 425.98                     | 90378                              |
|      | Q2      | 31.50     | 8.75                         | 429.64                     | 82617                              |
|      | Q3      | 27.58     | 9                            | 433.67                     | 102398                             |
|      | Q4      | 29.37     | 9                            | 450.35                     | 97447                              |
| 2009 | Q1      | 14.60     | 8.5                          | 514.64                     | 89239                              |
|      | Q2      | 9.60      | 8                            | 517.93                     | 84478                              |
|      | Q3      | 7.36      | 7.75                         | 530.08                     | 87814                              |
|      | Q4      | 5.00      | 7                            | 521.23                     | 99027                              |

|      |    |       |      |        |        |
|------|----|-------|------|--------|--------|
|      |    |       |      |        |        |
|      | Q1 | 5.20  | 7    | 525.37 | 94355  |
| 2010 | Q2 | 3.90  | 6.25 | 541.98 | 113242 |
|      | Q3 | 3.22  | 6    | 566.98 | 103310 |
|      | Q4 | 3.84  | 6    | 599.25 | 141282 |
|      |    |       |      |        |        |
|      | Q1 | 9.20  | 5.75 | 602.37 | 122784 |
| 2011 | Q2 | 14.50 | 6.25 | 640.19 | 158775 |
|      | Q3 | 17.30 | 6.25 | 769.01 | 184271 |
|      | Q4 | 18.90 | 18   | 731.91 | 174529 |
|      |    |       |      |        |        |
|      | Q1 | 15.60 | 18   | 662.81 | 146081 |
| 2012 | Q2 | 10.10 | 18   | 721.04 | 170367 |
|      | Q3 | 5.30  | 16.5 | 771.76 | 160884 |
|      | Q4 | 9.20  | 11   | 824.58 | 176058 |

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### APPENDIX 4 PROFITABILITY

| Forex Bureau | Location   | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|--------------|------------|------|------|------|------|------|------|------|------|------|------|------|
| Arcade       | Ngong road |      | 1.5M | 1.5M | 2.0M | 3.0M | 3.0M | 3.0M | 3.5M | 3.5M | 3.0M | 3.5M |
| Cosmos       | CBD        | 1.5M | 2.0M | 2.5M | 2.0M | 2.0M | 1.5M | 1.5M | 2.0M | 2.0M | 2.0M | 2.0M |
| Midtown      | CBD        | 2.0M | 2.0M | 1.5M | 1.5M | 2.0M | 2.0M | 1.5M | 1.5M | 1.5M | 1.0M | 1.5M |
| Satellite    | CBD        | 1.0M | 1.0M | 1.0M | 1.0M | 1.0M | 0.5M | 0.5M | 0.5M | 0.5M | 0.5M | 0.5M |
| Namanga      | Namanga    |      |      |      | 2.5M | 2.5M | 2.0M | 1.5M | 2.0M | 2.0M | 1.5M | 2.0M |
| Hurlingham   | Hurlingham | 1.5M | 1.5M | 1.5M | 2.0M | 2.0M | 2.0M | 2.0M | 2.5M | 2.0M | 3.0M | 3.0M |
| Link         | CBD        | 1.0M | 1.0M | 1.0M | 1.5M | 1.0M | 1.5M | 0.5M | 1.5M | 1.0M | 0.5M | 1.5M |
| Nairobi      | CBD        | 2.5M | 3.0M | 3.0M | 2.5M | 3.0M | 2.5M | 3.0M | 3.5M | 2.5M | 3.5M | 4.0M |
| Pacific      | CBD        |      |      |      | 0.5M | 1.0M | 0.5M | 1.0M | 1.0M | 1.5M | 1.0M | 1.0M |
| Princess     | CBD        |      |      |      |      |      |      |      | 1.5M | 1.5M | 1.0M | 1.0M |
| Sky          | CBD        |      |      |      |      |      | 1.5M | 1.5M | 1.5M | 1.5M | 1.0M | 1.5M |
| Global       | CBD        | 1.5M | 2.0M | 2.0M | 2.5M | 2.0M | 2.5M | 2.0M | 2.5M | 2.5M | 2.0M | 1.5M |
| ifin         | EASTLEIGH  |      |      |      |      |      |      |      |      |      |      | 1.5M |
| Kaah         | EASTLEIGH  | 1.0M | 1.5M | 2.0M | 2.0M | 2.0M | 1.5M | 1.5M | 1.5M | 1.5M | 2.0M | 1.5M |
| Mustaqbad    | EASTLEIGH  |      |      | 2.0M | 2.0M | 2.0M | 1.5M | 1.5M | 1.5M | 1.5M | 2.0M | 2.0M |
| Glory        | CBD        | 2.5M | 3.0M | 2.5M | 2.5M | 2.0M | 2.5M | 2.0M | 2.0M | 2.5M | 3.0M | 3.0M |
| Continental  | CBD        | 2.5M | 3.0M | 3.0M | 2.5M | 2.0M | 2.5M | 2.0M | 2.5M | 2.5M | 3.0M | 3.0M |
| Amama        | CBD        | 2.5M | 2.0M | 2.0M | 2.5M | 2.0M | 2.5M | 2.0M | 2.5M | 2.5M | 2.5M | 3.0M |
| Sunshine     | CBD        |      |      |      | 2.5M | 2.0M | 2.0M | 2.0M | 1.5M | 1.5M | 1.5M | 1.5M |
| Bay          | CBD        | 2.5M | 2.0M | 2.0M | 2.5M | 3.0M | 2.5M | 2.0M | 2.5M | 2.5M | 3.0M | 3.0M |
| Capital      | CBD        | 1.5M | 2.0M | 2.0M | 2.5M | 2.0M | 2.5M | 2.5M | 2.5M | 2.5M | 2.5M | 2.0M |
| Central      | CBD        | 2.5M | 3.0M | 3.0M | 2.5M | 3.0M | 2.5M | 3.0M | 3.5M | 2.5M | 2.5M | 3.0M |
| Brown        | CBD        | 2.5M | 2.5M | 3.0M | 2.5M | 3.0M | 2.5M | 3.0M | 3.0M | 2.5M | 2.5M | 2.0M |
| Forex Bureau | CBD        | 1.5M | 2.5M | 3.0M | 2.5M | 2.0M | 2.5M | 2.0M | 2.0M | 2.5M | 2.5M | 2.5M |
| Yaya         | YAYA       | 2.5M | 3.0M | 3.0M | 2.5M | 2.0M | 2.5M | 2.0M | 2.5M | 2.5M | 2.0M | 3.0M |
| Ala          | CBD        | 2.5M | 3.0M | 3.0M | 2.5M | 2.0M | 2.0M | 1.5M | 2.0M | 2.5M | 2.0M | 2.0M |