

**THE RELATIONSHIP BETWEEN FOREIGN INVESTMENT ACTIVITY AND  
MARKET RETURN AT THE NAIROBI SECURITIES EXCHANGE**

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## DECLARATION

I hereby declare that this is my original work and has not been presented for a degree award at this or any other University.

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This research project has been submitted with my approval as the University supervisor.

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## **DEDICATION**

I dedicate this research project to my parents Robinson and Philomena Kariguh for their vision, inspiration, encouragement and support throughout my studies.

To my siblings Kuria, Kahoro and Gatheru for their love, support and encouragement.

## **ABSTRACT**

Foreign investment activity in the stock markets have been encouraged through liberalization with the main aim of improving market activity and access to foreign capital. A good understanding of the effect of foreign investor's activity on stock market performance is therefore important in assessing the role that it plays in the domestic stock market given the concern that such activities may destabilize the fragile markets especially at times of crisis (Pavabutr & Yan, 2003).

This study used a descriptive research design since the study was seeking to determine the relationship between foreign investment activity and market returns at the NSE. The foreign investment activity was measured by the monthly foreign investor trade turnover for the period 2008-2013. In this research a dynamic econometric model was employed to assess the relationship between foreign investment activity and market return at NSE.

The study found that increased foreign investor participation in the stock market is likely to push up share prices and result in increased returns. The NASI Index to foreign investor's turnover is positively correlated to the market return. An increase in foreign investor turnover shows that foreign investors have a reasonable level of confidence in the domestic market and this pushes market return up.

Whether and how foreign investors activity impacts a stock market is important for local investors, regulators, and decision makers, as foreign investors have always been major players in markets, especially in emerging markets. The results on the relationship between foreign investor activity and market returns at the NSE show that stock market return is driven up by the amount of foreign investment in the market and hence affects the performance of the market. The implication is that foreign investor activities push stock prices up when they come in which may be due to increased demand.

The presence of positive and significant relationship between foreign investor's activity and stock market returns depicts existence of positive feedback trading and correlation between foreign investor's activity and returns.

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## **LIST OF ABBREVIATIONS**

APT: Arbitrage Pricing Theory

CAPM: Capital Asset Pricing Model

CMA: Capital Markets Authority

FI: Foreign Investor's

GDP: Gross Domestic Product

GFCI: Global Financial Centre Index

MSCI: Morgan Stanley Capital International

NASI: NSE All Share Index

NSE: Nairobi Stock Exchange

UK: United Kingdom

US: United States

# **CHAPTER ONE: INTRODUCTION**

## **1.1 Background of the Study**

The development path of stock markets in both the emerging and developed world indicates an evolutionary process where changes in institutional infrastructure and the policy environment are witnessed as efforts are made to facilitate the growth of the stock market. The stock market plays a key role in the development of emerging market economies. It is a major channel through which the savings of the surplus unit is transformed into medium and long term investments in the deficit unit of the economy (Adenuga, 2010). The stock market provides the platform for short term investors (speculators) to grow their wealth (financial asset or net worth) by taking advantage of the facilities it offers to speculate on stocks of quoted companies (depending on their liquidity level), just as it offers value (or long term) investors the facility to build up, store and preserve the value of their wealth against inflationary trends. It also provides the platform for publicly quoted corporations to raise additional funds to finance their businesses, through issuances of shares via public offers rights issue, and issuance of corporate bonds.

An internationally integrated stock market provides the channel through which investors (local and foreign) diversify their investment portfolios in a bid to minimize the risk inherent in asset investments. The government (particularly states and federal) also derives some benefits from the stock market as the stock market offers the facility for secondary transactions on already issued government debt instruments such as treasury bills and bonds (Adenuga, 2010).

Theoretically, a positive relationship exists between stock market development and economic development. Evidence from several empirical researches strongly supports the theory although very few empirical researches have also found significant relationships between foreign investment activity and market returns (Alajekwu, 2012). Apart from internal factors, external factors also affect the development of the stock market, prominent among which is foreign investors stock market activity as well as the inflow of other financial resources such as public external debt, personal remittances from abroad and official development assistance and aid (Howells & Solimano, 2004).

Foreign investment activity in the stock markets have been encouraged through liberalization with the main aim of improving market activity and access to foreign capital. The motivation for the foreign investors has been to diversify investments, hedge against risk and earn higher returns in new and emerging markets given the low correlation of emerging markets with developed ones (Allen, 2011; Conover 2002). Market liberalization allows for risk mitigation among foreign and domestic investors and thus reduces the risk premium in the market and also leads to stock price appreciation when the cost of capital falls (Henry, 2000).

### **1.1.1 The Foreign Investment Activity**

Foreign investment refers to the investments made by residents or institutions of one country in financial assets of another country. Foreign investors can invest in their own funds or invest on behalf of their overseas clients (Priyanka, 2012). Foreign investors enter emerging markets for diversification and also to maximize returns which are mostly inclusive of a higher risk premium compared to stocks listed in the developed stock markets.

In the era of globalization, foreign investors are a major source of capital inflow in most of developing economies where they aid in bridging the gap of capital, technology, managerial skill, human capital formation and more competitive business environment. The role of foreign investors in economic development is found mixed in economic literature. An internationally integrated stock market enhances foreign investment activities which lead to higher liquidity and stock order flows especially in developing markets. In Kenya the average participation by foreign investment activity has increased to over 50 per cent of total equity turnover in 2013. In such a case, foreign investment activity is important as a determinant of market returns and any variation or sudden reversal of foreign activity highly affects these markets. A good understanding of the effect of foreign investor's activity on stock market performance is therefore important in assessing the role that it plays in the domestic stock market given the concern that such activities may destabilize the fragile markets especially at times of crisis (Pavabutr & Yan, 2003).

The NSE foreign investment activity is measured by the daily transactional activities during trading periods which can be measured by the total purchases and sales on different counters at the securities exchange.

### **1.1.2 Market Returns**

The main measures of market returns includes; stock market indexing, market capitalization and stock turnover. Stock market indexing is one of the most widely used measures of stock performance. Investors hold portfolios of many assets but it is cumbersome to follow progress on each security in the portfolio. Thus it is prudent to observe the entire market under the notion that their portfolio moved in the same

direction as the aggregate market. The market index such as the NSE All Share Index is used to observe total returns for an aggregate market and these computed returns are to judge performance of individual portfolios. According to Simiyu (1992) as cited in Kithinji and Ngugi (2009), the assumption is that randomly selecting a large number of stocks from the total market should enable the investor to generate a rate of return comparable to the market.

Odera (2005) defined stock market indices as an aggregate measure that provides information to investors on the market performance by characterizing the development of global markets and specified market segments. Odera (2005) further stated that Index numbers are applied in the measurement of movements at the stock market. An Index number effectively summarizes hundreds of price movements. There are both price and volume index. Influential global financial indices such as the Global DOW and the National Association of Securities Dealers Automated Quotations System, (NASDAQ) Composite track the performance of selected large and powerful companies in order to evaluate and predict economic trends.

The stock composite index is found to be significant in explaining markets price movements, which are also affected by inflation rate and hot money inflows (Zhang, 2009). Quan and Titman (1999) argue that a number of earlier researchers have utilized stock price indices in determining the return of the stock market assets.

### **1.1.3 Relationship Between Foreign Investment Activity and Market Return**

Foreign investment activity has long been a controversial issue for the beneficial and adverse effects that it may bring about. Two main aspects are concerned when it comes to

FI activity, destabilization and demonstration effects. Destabilization effect deals with the issue on whether foreign investor activity increases or decreases the volatility of stock prices while demonstration effect indicates whether the fundamental factors on stock markets would change. Foreign investors enter emerging markets for diversification and also to maximize returns. Financial market theory suggests that, over the long run, higher returns should compensate for the higher risks of emerging markets (Tokat, 2004).

Large corporations have made considerable use of the stock market. For example, the Indian stock market has more than 8,000 listed firms, one of the highest in the World. Financing pattern in emerging markets indicate that, contrary to expectation, emerging market corporations rely heavily on external finance and new equity issues to finance long term investment.

A study done by Senbet and Otchere (2010) noted that though integration of African stock markets with the rest of the world has increased following periods of reforms, these markets remain thin and illiquid, causing a barrier to financial globalization despite the high returns they record. The major challenges affecting stock markets in Africa are that only few stocks are traded and such stocks form a larger proportion of total market capitalization. The study also noted that there is inadequate supervision by regulatory authorities. Another focus was on the impact foreign investment activity has on returns. The argument is that foreign investors increase prices when they come in and decrease them when they leave thereby making prices more volatile (Stulz, 1999).

Hence, foreign investment activity have an impact on valuations only if they are undertaken because of information that foreign investors have that is not yet incorporated

in prices. This introduces the information asymmetry that exists between foreign and domestic investors, which may be due to the fact that foreign investors are less informed about a country and its firms and thus process information differently due to intellectual or emotional biases (Brennan & Cao, 1997; Dahlquist & Robertsson, 2001).

#### **1.1.4 Nairobi Stock Market (Nairobi Securities Exchange)**

The Nairobi Securities Exchange (NSE) has a long history that can be traced to the 1920's when it started trading in shares while Kenya was still a British colony (IFC/CBK, 2004). The NSE was constituted in 1954 as a voluntary association of stockbrokers registered under the Societies Act (NSE, 1997). The newly established stock exchange was charged with the responsibility of developing the stock market and regulating trading activities. NSE is a model emerging market in view of its high returns, vibrancy and well developed market structure (Ogum et al, 2000). It is among the most vibrant African Bourse, and is the most developed security market in Eastern Africa.

The presence and dominance of foreign investors in the market declined after independence when the country adopted the Kenyanization policy, however, protection of foreign investor interest was still given prominence and thus the Foreign Investment Protection Act (1964) was passed.

Recently the Capital Markets Authority (CMA) has been looking into reviewing the cap at which foreign investors can own shares on a particular counter from 75 per cent to 100 per cent. The 75 per cent cap was put to reserve ownership of listed firms for local investors as a way of encouraging Kenyans to buy shares at the stock market. CMA reckons that the current 75 per cent ceiling has an impact on liquidity of certain stocks,

which is likely to be exacerbated as foreign investors continue to increase their investment in the Kenyan market. This blueprint sets out a path to achieving the MSCI Emerging Market status for Kenya by 2016, upgrading from frontier market status, and for Nairobi to enter the Global Financial Centre Index (GFCI) ranking. Market accessibility is one of the key criteria for reclassification of a market by the MCSI, which requires significant access to foreign investors to markets wishing to be classified as emerging (Business Daily Africa, 2014).

The total foreign turnover has been on an upward trend over time from a low of Kshs.695 million in 1996 to as high as KShs.23,023 million in May 2014. Foreign investors participation as a proportion of total equity turnover stood at 54 per cent in the first six months of the year 2014 compared to 48.6 per cent in 2013 and 8.2% in 1996. The general trend of the NSE All Share Index also shows that the proportion of foreign activity and the stock market index moved almost in the same pattern with the index being at 98.6 in 2008 and increasing to 150.2 in May 2014 (NSE Market Statistics, 2014).

However there were periods when the Index did not move in tandem with the increased foreign investor activity, this is the case when foreign investors record higher turnover in sales than purchases reflecting a pull of foreign investors from the stock market. In the year 2008, the market recorded net inflows (excess of purchase over sales) of negative Kshs. 8,189 million due to a combination of two effects the world crisis and the post election violence in Kenya which led to a decrease of -25.6% from the previous year in the NASI Index to 73.7. In general the opening of the NSE to foreign investors has led to improvement in trading volumes, enhanced levels of service to stockbrokers and increased volume of capital raised [www.nse.co.ke](http://www.nse.co.ke).



## **1.2 Research Problem**

The rapid development of stock markets in emerging market has hence taken considerable attention from foreign investors who inject foreign currencies into the markets. While opening up emerging markets is expected to enhance liquidity and order flow, the result is that a higher proportion of market capitalization is from foreign investors unlike in the developed economies. This state of facts has been evident in Kenya of late where average participation by foreign investors increased to over 50 per cent of total equity turnover in 2011. In such a case, foreign investment activity is important as a determinant of market returns and any variation or sudden reversal of foreign investment highly affects these markets (Owen, 2013).

A study done on the effects of foreign ownership and market volatility on the Stock Exchange of Thailand by Haithaipat and Chaiyuth (2013) found out that large foreign investors play a stabilizing role in stock markets and one of the possible explanations given in this study was the theory of asymmetric information. Foreign investors as block holders have access to meetings with senior management of listed companies and thus gain superior knowledge about the firm. The study established that because of this informational advantage compared with domestic investors, foreign investors may take actions that help stabilize stock prices especially when prices deviate from fundamental values. The results added to previous findings by looking at industrial sectors. After adding selected control variables and considering a potential multi-collinearity problem, the negative and significant large foreign ownership-market return volatility relationship was found to be still present in all industry sectors. The study showed that foreign

investors with a controlling stake and are non-financial entities demonstrate the most evident stabilizing effect.

A study done on the Korean market by Gab-Je (2002) to identify whether foreigners trading behavior contribute to price return volatility on the domestic equity market implied that if foreigners are better informed than domestic investors, foreigners may be buying (selling) undervalued (overvalued) stocks, and thus may contribute to stabilizing the market. The study also showed that it is quite possible that their trades can result from irrational psychological factors and cause temporary price bubbles or fads. The study found that the volatility of returns was declining over time and returns were more volatile in the pre-2002 period when there was very low foreign investor activity than in the post-2002 period which suggested that an increasing foreign ownership did not necessarily lead to an increase in the volatility.

Foreign investor activity influence on the volatility in the Korean stock market was minimal, and it did not support the claim that foreign investment activity contributed significantly to the Korean market volatility. The high volatility after the Asian financial crisis was associated with domestic selling, as foreign investors are net buyers, and thus liquidity providers, during the sample period. This study however only concentrated on trade volumes rather than the dependent control variables like information and other macro-economic variables such as interest rates and exchange rates.

According to Bekaert and Harvey (2000) foreign investor inflows lower the cost of capital in emerging markets and help in financing their growth. However, the change in investor composition affects equity prices when foreign investors buy shares to lower risk

premium and by foreign investors offering domestic investors an inducement to sell. This compensation only affects prices in the short-run and its size depends on the liquidity of the market. Foreign investor portfolios are however reversible and tend to leave as fast as they come in an economy. Due to this, foreign flows may have a drastic impact on the economy and on the value of shares of companies in which foreign investors offload their holdings and hence may cause short term instability of the stock market in general.

These studies show that a good understanding on the relationship and effects of foreign investor activity on the stock market performance is important in assessing the role that it plays in the domestic market given the concern that such investor flows may destabilize the fragile emerging markets especially in times of economic crisis.

Very few studies have been done on developing markets especially in Africa to show how foreign investor's activities are affecting the returns on the listed stocks. This gap together with the identified gaps in the above studies, are the motivation factors towards studying the relationship between foreign investment activity and market return at the Nairobi Securities Exchange.

### **1.3 Research Objectives**

To determine the relationship between Foreign Investment activity and market returns at the Nairobi Securities Exchange.

### **1.4 Value of The Study**

This study intends to identify the relationship between foreign investment activity and market returns at the Nairobi Securities Exchange (NSE), to scholars, practitioners, investors and NSE. The NSE management is hoped to be the key beneficiary of this study

owing to the major role that they play in the overall running of the organization and their regulatory decisions, this study is hoped to provide adequate knowledge on how foreign investment activity and market returns relate to each other.

The study will aim at contributing to the existing knowledge base / literature in Kenya especially in the stock exchange. The study will seek to provide a basis for further studies on the effects of foreign investment activity on market returns at Nairobi Securities Exchange.

The study will also be of good help to policy makers as they will obtain knowledge of the relationship between foreign investment activity and market returns at Nairobi Securities Exchange. They will therefore obtain guidance from this study in developing appropriate policies that will regulate the segment.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

Foreign investors enter emerging markets for diversification and also to maximize returns. Financial market theory suggests that, over the long run, higher returns should compensate for the higher risks of emerging markets (Tokat, 2004). For foreign investors, return depends on the price of the stock at the beginning and end of the period and on exchange rate, thus returns is approximately equal to the sum of domestic return on security and return on foreign currency (Sharpe et al, 2003).

Literature on foreign participation has focused on the choice of market for investment and the impact of market liberalization on emerging markets. On the microstructure characteristics of the market, studies have looked at liquidity-return relationship, liquidity and price discovery, volatility, and market efficiency (Coppejans & Ian Domowitz, 2000).

### **2.2 Theoretical Review**

The theoretical section of this paper will try to uncover whether or not existing theories suggest that there exists a relationship between foreign investment activity and market returns. There are three theories that try to explain the correlation between foreign investment activity and market returns; the base-broadening hypothesis, price pressure hypothesis and modern portfolio theory.

#### **2.2.1 Base-Broadening Theory**

The base-broadening theory suggests that foreign investment activity causes the emerging markets returns to rise. By broadening the investor base, diversification and risk sharing

is increased thereby lowering the risk premium. Merton (1987) provides an intuitive and tractable model for illustrating how broadening the investor base for a given stock and by extension for an emerging equity market may raise the market returns through risk pooling.

Merton characterizes the assumed barriers that prevent investors from holding fully diversified portfolios as informational i.e investors only invest in stocks about which they are informed. This theory implies that if domestic and informed foreign investors have the same information sets they will allocate their portfolios equivalently. Net purchases of foreigners creates substantial shocks to net investor demand as foreign inflows may be based on foreign investors' perception that the shares are undervalued or that there are other portfolio benefits that may be derived by investing in emerging markets (Richards, 2004).

A study on the Kenyan market by Owen (2013), on the effect of portfolio flows on stock market performance show that stock market return is affected by lagged unexpected flows and not by its contemporaneous value. The price pressure hypothesis is supported but only weakly, with security prices revised downwards with a lag in unexpected flows. The base-broadening hypothesis also holds (as the coefficients of expected flows are positive), hence, the amount of foreign investment in the market drives up returns and hence performance of the market. The implication is that foreign portfolio flows push stock prices up when they come in which may be due to increased demand. Prices also respond more to previous periods expected flows.

### **2.2.2 Price Pressure Hypothesis**

The price pressure hypothesis suggests that rise in prices associated with high trading activity surges are due to temporary illiquidity meant to absorb demand from foreign entry. Thus activity induced price increases would be reversed subsequently. Hence, prices initially increase based on expectations and information asymmetry, and due to learning process, the prices revert to their original level. Here, entry of foreign investors in the market gives an indication of good performance and new information.

According to Warther (1995), investor activity may move security prices due to information revelation and price pressure, and market response to information revelation will make prices move in the same direction as investor's activity, hence investor activity flows will be positively correlated with security returns. Bekaert et al. (2002) find investor activities to increase after liberalization and argue that this is due to portfolio rebalancing. Their study supports price pressure hypothesis with investor's activity shocks initially increasing returns.

Pavabutr and Yan (2003) show that exposure to foreign investors is associated with a reduction in risk premium, which diminishes among stocks favored by foreign investors and decreases over time as the market becomes more liberalized. Warther (1995) on the other hand found no evidence that returns are negatively related to past investor activity, but found a positive relation between investors activity and subsequent returns and a negative relation between returns and subsequent activity, which is inconsistent with price pressure hypothesis.

### **2.2.3 Modern Portfolio Theory**

Modern portfolio theory claims that risk, which can be diversified, cannot be justified to be managed at a cost seen from the investors' point of view (Jorion, 1990). Stock markets returns tend to incorporate all available information related to both the international markets and the domestic markets which form the basis on the factors of demand and supply which are both market drivers and are largely formed by macroeconomic indicators. Twerefou and Nimo, (2005) noted that the change in prices determines the return on securities, which aggregately determine the market return. Hence, to capture how macroeconomic indicators affect prices (and hence returns) a pricing model that incorporates the macroeconomic factors is necessary. A multifactor model allows for incorporation of a number of factors in estimating returns, and allows for inclusion of macroeconomic variables as determinants of returns. Asset-pricing models are based on two central concepts; no arbitrage principle which states that market forces tend to align prices so as to eliminate arbitrage opportunities, and financial market equilibrium where investor's desired holdings of financial assets is based on optimization principle (Ferson, 2003). Both concepts have a feature that expected asset returns are determined by a linear combination of their covariance with variables representing the risk factors.

There are two asset pricing models that can be used to show the relationship between foreign investment activity and market returns; Capital Asset Pricing Model (CAPM) and Arbitrage Pricing Theory (APT). APT specifies a relationship between expected return and risk and depends on the assumption that a rational equilibrium in capital markets precludes arbitrage opportunities (Bodie et al., 2002). APT is a model of security pricing that generates the pricing relation in CAPM and also builds on the intuition of the



separating distributions (Dybvig & Ross, 2003; Obere, 2009). It is based on the law of one price and requires that the returns on any stock be linearly related to a set of indexes (Elton et al., 2011).

Studies of APT on emerging markets have not come up with uniform factors that may affect returns; however there are factors which tend to be common in most of the studies. Fifield et al. (2002) find that, for emerging stock markets, domestic variables can be summarized by GDP, inflation, money supply and short-term interest rates, while global variables can be described by world industrial production and world inflation. Twerefou and Nimo (2005) find short-term interest rate risk, inflation risk and the term structure of interest rate as the main factors determining industrial asset prices in Ghana. As Fifield et al. (2002) argue, international factors will influence returns as long as they have an impact on the domestic economy, even when financial markets are segmented. This emphasizes the need to include international or global factors in the specification of APT. Based on these studies, and on the background information which has shown the performance of the economy and the stock market, the variables we include in the indices are short-term interest rates, exchange rates, market capitalization, and stock price volatility. Hence, though the market returns may be determined by economic performance, the relationship is not direct.

### **2.3 Determinants of Market Returns**

Market returns are generally considered to be the reflector of financial and economic conditions of a country. A number of factors have been found to explain the correlation between foreign purchases and stock returns depending on how foreign investment activities affect domestic stock prices. According to Warther (1995), investor activities

may move security prices due to information revelation and price pressure, and market response to information revelation will make prices move in the same direction as foreign activity, hence investor activity will be positively correlated with security returns.

### **2.3.1 Investment Activity**

Bekaert et al. (2002) find investor activity to increase after liberalization and argue that this is due to portfolio rebalancing. Their study supports price pressure hypothesis with investor activity shocks initially increasing returns. Pavabutr and Yan (2003) show that exposure to foreign investment segments is associated with a reduction in risk premium, which diminishes among stocks favored by foreign investors and decreases over time as the market becomes more liberalized. Warther (1995) on the other hand found no evidence that returns are negatively related to past flows, but found a positive relation between investor activity and subsequent returns and a negative relation between returns and subsequent investment activity, which is inconsistent with price pressure hypothesis.

### **2.3.2 Market Information**

The positive feedback or informational factor argues that there is a significant correlation between inflows and contemporaneous returns and a positive price response to capital market liberalization would hold if foreign investors are positive feedback traders (Choe et al, 1999; Narag, 2000; Bohl & Sikolos, 2008), and since the trades of foreign investors are highly correlated, they buy and sell as a herd. Positive feedback trading may lead to prices exhibiting momentum such that prices will keep on falling as foreign investors sell but rising as they buy. Positive feedback trading may, however, not be destabilizing as trading may be due to information about fundamentals (Choe et al., 1999). However, Bohl and Sikolos (2008) hold the opposing view that feedback traders do not base their

asset decisions on fundamental values but react to stock price changes. If this is the case, then trading by positive feedback traders will be destabilizing. Evidence on positive feedback hypothesis has been found to hold in Korea (Choe et al., 1999), by foreign institutional investors in India (Batra, 2003), and in six Asian emerging markets which is argued to be due to behavioral factors or foreigners extracting information from returns rather than portfolio-rebalancing effects (Richards, 2004).

### **2.3.3 Exchange Rates and Interest Rates**

Some empirical attempts provided a positive relationship between exchange rates, interest rates and stock prices. Asprem (2009) argues that such a positive relationship is present in small and illiquid financial markets. Shiller and Beltratti (2002) also favor such a positive relationship, and add that changes in interest rates could carry information about certain changes in future fundamentals, such as dividends.

Barsky (2009) explains the positive relationship between exchange rates and stock prices in terms of a change in risk premium. A change in interest rates could be the result of increased risk or/and precautionary saving as investors substitute away from risky assets. Bailey and Chung (2005) analyzed the systematic influence for exchange rate fluctuations and political risk on stock returns in Mexico. Their findings are consistent with time-varying equity market premium for exposure to the changes in free market dollar premium.

### **2.3.4 Market Capitalization**

Otuke (2006) examined that market capitalization as another measure of stock market return. This indicator is used to measure market movements by measuring the total value

of stock in a particular stock market and aggregating the market value of the quoted stocks.

Changes in market capitalization occur due to fluctuations in share prices or issuance of new share prices or issuance of new shares and bonus issues. This implies that high activity at the stock market may signal more investments in the stock markets. Market turnover indicates inflows and outflows in the stock market and is based on the actively traded shares. A change occurs due to the actively traded shares and to fluctuations in share prices or number of shares traded in a given day.

## **2.4 Empirical Literature**

Literature on foreign participation has focused on the choice of market for investment and the impact of market liberalization on emerging markets. On the microstructure characteristics of the market, studies have looked at liquidity-return relationship, liquidity and price discovery, volatility, and market efficiency (Coppejans & Ian Domowitz, 2000). The general consensus in the literature is that the local price of risk (the variance) exceeds the global price of risk (the covariance) hence the equity premium is expected to fall when an emerging country liberalizes its stock market resulting into permanent fall in the aggregate cost of equity capital and an increase of the aggregate equity price index (Henry, 2000). However, prices rise and expected returns decrease if a country moves from segmented to integrated market (Bekaert & Harvey, 2002).

One of the focuses on integrated market is on the impact foreign investment activity has on returns. The argument is that foreign investor's activity increase prices when they come in and decrease them when they leave thereby making prices more volatile (Stulz,

1999). Hence, foreign investor's activity has an impact on valuations only if they are undertaken because of information that foreign investors have that is not yet incorporated in prices. This literature introduces the information asymmetry that exists between foreign and domestic investors, which may be due to the fact that foreign investors are less informed about a country and its firms and thus process information differently due to intellectual or emotional biases, and hence may create aversion towards international investments (Brennan & Cao, 1997; Dahlquist & Robertsson, 2001).

In cases where domestic investors are well informed than foreign investors, they hold more domestic shares on average as they know more about the firms, while foreign investors discount share prices relative to domestic investors whose actions depends on adverse information they hold but not factored in asset prices (Stulz, 1999). On the other hand, investors prefer firms that have high past returns as this is an indicator of performance, and overweight firms with relatively high risk (Dahlquist & Robertsson, 2001). They argue that the preference among foreign investors for large firms can be seen as a proxy for firm recognition and information asymmetries. However, foreign investors will only hold domestic assets if returns on these assets are attractive compared with those abroad (Dornbusch, 1988). This is because investors are concerned about inherent risks such as macroeconomic and political instability, depreciation and wide fluctuations in currency values, and crisis of international confidence, war, famine, corruption, etc (Senbet & Otchere, 2010). Realization of benefits from foreign investment activity can therefore be affected by global financial market volatility and international exchange rate fluctuations which may lead to large and unfavorable swings in capital flows (Senbet & Otchere, 2010).

Twerefou and Nimo, (2005) argued that if foreign entry results to a reduction in the risk premium, the discount rate will fall and the price of the asset will rise. Viewing the market as consisting of a portfolio of assets, then the stock market index gives the price for this portfolio. This is emphasized by the fact that stock price is the main indicator of risk in emerging markets as investors are more concerned about share price movements. Hence the risk premium on this portfolio of assets gives the risk premium of the market as a whole. Foreign entry therefore will have an impact on market return through its effect on the portfolio risk premium. But based on efficient markets hypothesis, security prices should respond to the unexpected information since the expected part of the information should already be embedded in stock prices (Pearce & Roley, 2004). This argument is supported by other studies, such as Warther (1995), who note that it is the unpredictable component of investment activity that has an impact on returns. Hence, to estimate the impact of new information due to foreign entry on stock prices, both the expected and unexpected components of foreign flows are included.

Gazioglu (2008), in a study of the effects of investor inflows and outflows on real exchange rates and the real stock market returns before and after the financial crisis in Turkey, finds an asymmetric impact of foreign investment activity on exchange rate and stock market returns. In a study on the relation between aggregate stock market returns and cash flows (net purchase of equity) from an array of investor groups, Boyer and Zheng (2009) find quarterly flows to be auto correlated for each of the different investor groups and a significant and positive contemporaneous relation between market returns and investor activity of Mutual Funds and Foreign Investors in U.S. They find that

investors are driven by unexpected flows component rather than expected flows; however, they find little evidence that investor flows follow past stock market returns.

Kim and Yang (2009) investigate the effect of investor activity on domestic asset prices in Korea from January 1999 to September 2007. Investor's activity might result in increased asset prices either by directly affecting the demand for assets, through money supply and liquidity which in turn might boost asset prices and by generating economic booms in capital receiving economies leading to increase in asset prices (Kim & Yang, 2009). However, other factors such as improved economic performance, monetary expansion and low interest rates could also affect asset prices in emerging markets. In investigating the effect of investor inflows on domestic asset prices in Korea, Kim and Yang (2009) find the influence of investor activity shocks to be more significant on the stock market but limited in other parts of the economy.

Senbet and Otchere (2010) notes that there are possibilities that the benefits derived from integrated market vary depending on the policies embraced in domestic markets and the level of stock market development. Though integration of African stock markets with the rest of the world has increased following periods of reforms, these markets remain thin and illiquid, causing a barrier to financial globalization despite the high returns they record. The major challenges affecting stock markets in Africa are that only few stocks are traded and such stocks form a larger proportion of total market capitalization. In addition there is inadequate supervision by regulatory authorities (Senbet & Otchere, 2010).

## **2.5 Summary of Literature Review**

The literature review indicated that if foreign entry results to a reduction in the risk premium, the discount rate will fall and the price of the asset will rise. Viewing the market as consisting of a portfolio of assets, then the stock market index gives the price for this portfolio. Some empirical attempts provided a positive relationship between exchange rates, interest rates and stock prices. Aspren (2009) argues that such a positive relationship is present in small and illiquid financial markets.

The literature review conclusively highlights that foreign investment activity increase prices when they come in and decrease them when they leave thereby making prices more volatile. This therefore means that investor activity have a correlation with market returns due to a number of factors such as exchange rate and price pressure.

Previous research has also brought to light that stock valuations are volatile only if they are undertaken because of information that foreign investors have that is not yet incorporated in prices. This literature introduces the information asymmetry that exists between foreign and domestic investors, which may be due to the fact that foreign investors are less informed about a country and its firms and thus process information differently due to intellectual or emotional biases. The previous studies have not addressed the relationship between foreign investment activity and market returns at NSE, hence the need to undertake the study.



## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter presents the blue-print to that was used in carrying out the study. It describes the research design, research instruments used, the pilot study, data collection and data analysis techniques.

### **3.2 Research Design**

This study used a descriptive research design since the study was seeking to determine the relationship between foreign investment activity and market returns at the NSE. Descriptive research design is a scientific method which involves observing and describing the behavior of a subject without influencing it in any way. According to Kothari (2004) descriptive study is concerned with finding out the what, where and how of a phenomenon.

### **3.3 Data Collection Techniques**

The study used secondary data collected from the Nairobi Securities Exchange. The use of secondary data is justified on the basis that some of these sources have information that is very pivotal to this study and has been vetted and accepted.

### **3.4 Data Analysis**

The researcher collected data on the monthly foreign investment trade turnover from 2008 to 2013. The foreign investment activity was measured by the monthly foreign investor trade turnover.

In this research a dynamic econometric model was employed to assess the joint relationship between foreign investment activity and market return at NSE.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon$$

Where Y = Market Return

X<sub>1</sub> = Foreign Investor turnover

X<sub>2</sub> and X<sub>3</sub> are the research control variables and represent:

X<sub>2</sub> = Exchange Rate; X<sub>3</sub> = Market Capitalization

β<sub>0</sub>, β<sub>1</sub>, β<sub>2</sub>, β<sub>3</sub> = Constants while ε = is the error term.

$$\text{Market Return} = \frac{\text{NASI}_t - \text{NASI}_0}{\text{NASI}_0}$$

NASI<sub>0</sub> = NSE All Share Index for period 0

NASI<sub>t</sub> = NSE All Share Index for period t

$$\text{Foreign Investor Turnover} = \frac{\text{Foreign Trades Turnover (KShs.)}}{\text{Equity Market Turnover (KShs.)}}$$

$$\text{Exchange Rate} = \frac{\text{Rate}_t - \text{Rate}_0}{\text{Rate}_0}$$

Rate<sub>0</sub> = CBK Mean rate KSHS/USD for period 0

Rate<sub>t</sub> = CBK Mean rate KSHS/USD for period t

$$\text{Market Capitalization} = \frac{\text{Market Cap}_t - \text{Market Cap}_0}{\text{Market Cap}_0}$$

Market Cap<sub>0</sub> = Market Capitalization (Kshs.) for period 0

Market Cap<sub>t</sub> = Market Capitalization (Kshs.) for period t

The test of significance for the econometric model was based on the null hypothesis H<sub>0</sub>: Market return is Y(0) and Foreign Investor Turnover is X<sub>1</sub>(0)

H<sub>0</sub>: Y = X<sub>1</sub> = 0

H<sub>1</sub>: Y ≠ X<sub>1</sub> ≠ 0

## CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

### 4.1 Introduction

This chapter presents results of the relationship between foreign investment activity and the NSE market return for the period 2008-2013. The results are obtained from an analysis of foreign investor's turnover and the NSE market return at the end of each month resulting in seventy two observations. Analysis was mainly centered on obtaining statistics for linear regression, covariance and correlation tests.

### 4.2 Descriptive Statistics

The descriptive statistics are presented in Table 4.2. The mean of the variables are positive and the variables are not very highly dispersed from the mean, as seen from the standard deviation, with the highest dispersion being that of foreign investor's turnover of 0.136 compared to those of other variables.

**Table 4.2 Descriptive Statistics**

	<i>NASI Index</i>	<i>Exchange Rate</i>	<i>Market Cap</i>	<i>F.I Turnover</i>
Mean	0.000824884	0.002916841	0.016718617	0.05082955
Standard Error	0.007734247	0.003327728	0.009469459	0.016120923
Median	0.013331857	0.001189361	0.016539336	0.076299365
Standard Deviation	0.065627263	0.028236707	0.080351022	0.136790565
Sample Variance	0.004306938	0.000797312	0.006456287	0.018711659
Kurtosis	2.021745728	3.948100152	4.108223267	7.647743796
Skewness	-0.7577567	-0.450143357	0.370487476	-1.405285375
Range	0.38131918	0.188670591	0.555858663	1.093603603
Minimum	-0.226374691	-0.10079847	-0.213504823	-0.601021056
Maximum	0.154944489	0.08787212	0.342353839	0.492582547
Sum	0.059391669	0.210012566	1.203740413	3.659727625
Count	72	72	72	72
Confidence Level (95.0%)	0.015421651	0.006635301	0.018881564	0.032144207

Most of the variables are negatively skewed except Market Cap which is positively skewed. However, all the variables have relatively peaked distributions as shown by the positive kurtosis, though the lowest peaked distributions are evident for the NASI Index. The study found that foreign investor turnover had with a mean of 5.08% and a standard deviation of 13.6%. The return of the securities exchange as measured by the NASI Index was 0.08% with market cap at 1.67% and exchange rate at 0.29%.

### 4.3 Correlation Analysis

From the correlation statistics as shown in Table 4.3 below, the NASI Index is positively correlated to foreign investor turnover and market capitalization and negatively correlated with the exchange rate as expected.

**Table 4.3: Correlation of the Variables**

<i>Correlation</i>	<i>NASI Index</i>	<i>Exchange Rate</i>	<i>Market Cap</i>	<i>F.I Turnover</i>
NASI Index	1			
Exchange Rate	-0.167308189	1		
Market Cap	0.748781846	-0.143070575	1	
F.I Turnover	0.160486107	-0.202327859	0.039033438	1

Increased foreign investor participation in the stock market is likely to push up share prices and result in increased returns hence the positive correlation. An increase in growth of market capitalization implies that the market is expanding and is more active, hence returns are likely to increase in such an environment. However when the Kenyan shilling depreciates against the USD the stock market return appreciates due to increased foreign investor interest in the securities exchange.

The NASI Index to foreign investor's turnover is positively correlated to the market return. An increase in foreign investor turnover shows that foreign investors have a

reasonable level of confidence in the domestic market and this pushes market return up. No high correlation exists between any of the explanatory variables hence the problem of multicollinearity is not likely to be experienced.

#### 4.4 Regression Analysis

A regression analysis test was carried out to evaluate the statistical properties of the model and the conclusion from the test show that the models are well specified and the variables explain close well over 57.9 per cent of the dependent variable in the models as indicated by the  $R^2$  in table 4.4 below.

**Table 4.4 Regression Analysis**

<i>Regression Statistics</i>	
Multiple R	0.761039476
R Square	0.579181085
Adjusted R Square	0.560615544
Standard Error	0.043501741
Observations	72

##### 4.4.1 Model Summary

The model summary looks at the Adjusted R Square statistic as in table 4.4 to determine how strong the relationship between foreign investor's activity and the equity market return is. Its value is 0.579, which indicates that about 58% of the equity market is determined by foreign investor turnover, exchange rate and market cap showing that about 42% is determined by other factors such as domestic investor's participation, this shows that 58% of the variance was explained. On the other hand the coefficient of determination which is denoted by R square is at 0.579181 meaning that 58% of the

variability in equity market is explained by foreign investors, exchange rate and market cap.

#### 4.4.2 Analysis of Variance

The table 4.4.2 below provides information on the confidence with which the research analysis supports its estimate, this is shown in the P-value which shows a value of 0.0019 which is less than alpha 0.05, this leads to assumption that the estimates are asserted as true with a 95% level of confidence.

**Table 4.4.2 Anova Table**

ANOVA						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>Significance F</i>
Regression	3	0.168618007	0.056206002	28.26201345	0.001931146	5.57713E-12
Residual	69	0.137223562	0.001988747			
Total	72	0.305841568				

#### 4.4.3 Model Coefficients

Based on the empirical results, the coefficient foreign investor turnover is positive indicating that as foreign investment activity increase, the market return is adjusted upwards by the value of this coefficient that is for every one unit increase in foreign investor turnover the NASI Index goes up by 2.9%. The coefficient for market capitalization is positive as well showing that for every 1 unit increase in the market capitalization the NASI index goes up by 61%. This indicates a support for the base-broadening hypothesis that as the size of the investor base broadens, market returns increase. The exchange rate is also a significant determinant in the movement of the NASI Index showing that for every 1 unit increase in the exchange rate the NASI index drops by 56.1%. Depreciation of the currency is expected to attract more foreign

investors as local assets become cheaper for foreign investors. However, expected depreciation reduces the market dollar value of domestic assets and erodes investors' wealth at the stock market, thereby resulting to a fall in stock returns.

**Table 4.4.3 Regression of Returns on Variables**

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
<b>Intercept</b>	-0.01204549	0.005670164	-2.124364027	0.03727847	-0.023360129	-0.00073086
<b>Exchange Rate</b>	-0.08477833	0.188505105	-0.449740215	0.654328155	-0.460934403	0.29137775
<b>Market Cap</b>	0.603348536	0.064923291	9.293252535	1.00028E-13	0.473796128	0.732900944
<b>F.I Turnover</b>	0.059621005	0.038540839	1.546956588	0.126515408	-0.017286041	0.136528052

$$Y = -0.01204549 + 0.603348536X_2 + \epsilon$$

#### **4.5 Discussion of Findings**

Whether and how foreign investors activity impacts a stock market is important for local investors, regulators, and decision makers, as foreign investors have always been major players in markets, especially in emerging markets. The results on the relationship between foreign investor activity and market returns at the NSE show that stock market return is driven up by the amount of foreign investment in the market and hence affects the performance of the market. The implication is that foreign investor activities push stock prices up when they come in which may be due to increased demand. The results support a positive relationship between foreign investor's activity and stock market returns as found in studies by for instance, Brennan and Cao (1997) and Kim and Yang (2009). Investor's activity might result in increased asset prices either by directly affecting the demand for assets, through money supply and liquidity which in turn might boost asset prices and by generating economic booms in capital receiving economies leading to increase in asset prices (Kim & Yang, 2009).

Activity by internal investors is also important in determining stock market returns as purchases by local investors push prices up. Hence, active participation of local investors is necessary to drive liquidity as it has a positive impact on returns. It also reflects confidence in the market in situations where information asymmetry exists between local and foreign investors.

Macroeconomic factors such as exchange rate are also very significant in determining stock market performance. The exchange rate may create uncertainty in the market as the value of assets is eroded due to depreciations. Stability of exchange rate is therefore important for ensuring stability in the stock market. The study found a negative and significant relationship between exchange rate and stock prices. This suggests that depreciation of our local currency will cause the stock price to fall. This finding contradicts Barsky, (2009) whose results showed a weak relationship between the market and exchange rates. Barsky (2009) explains the positive relationship between exchange rates and stock prices in terms of a change in risk premium. Abraham, (2010) also reports a positive but not significant relationship between stock market returns and exchange rates in short run, while in the long run, the relationship was not significant. The empirical evidence presented here is in contrast to most studies undertaken in the developing countries.



## **CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS**

### **5.1 Introduction**

This chapter addresses the findings of the Study in relation to the objectives outlined in chapter one. It also highlights the limitations of the work and suggestions for further research.

### **5.2 Summary of Findings**

The study examined the relationship between foreign investment activity and the NSE market return in Kenya for the period between 2008 and 2013. A regression model was used with the dependent variable being the NSE market return and the independent variable was the foreign investor activity. The study also had control variables exchange rate and market cap as they were estimated to also have an effect on the securities market return.

The descriptive statistics show that the mean of the control variables are positive as well as that of the dependent variable. The variables are not very highly dispersed from the mean, as seen from the standard deviation, with the highest dispersion being that of foreign investor's turnover of 0.317 compared to those of other variables. Most of the variables are negatively skewed except for market cap which are positively skewed.

From the correlation statistics, the NASI Index is positively correlated to market cap and foreign investor turnover. Increased foreign investor participation in the stock market is likely to push up share prices and result in increased returns. An increase in growth of

market capitalization implies that the market is expanding and is more active, hence returns are likely to increase in such an environment. Change in exchange rate, however, has a negative and significant coefficient. Depreciation of the currency is expected to attract more foreign investor activity as local securities become cheaper for foreign investors. However, expected depreciation reduces the market dollar value of domestic assets and erodes investors' wealth at the stock market, thereby resulting to a fall in stock returns.

The implication is that foreign investor activities push stock prices up when they come in which may be due to increased demand. Flows by internal investors are important in determining stock market returns as purchases by local investors push prices up. Macroeconomic factors such as the exchange rate are significant in determining stock market performance. The exchange rate may create uncertainty in the market as the value of assets is eroded due to depreciation.

### **5.3 Conclusion and Recommendations**

Kenya still has low levels of investor activities compared to other markets in developing countries but this has been growing over time. Hence, it is important to consider the likely effect of such investor activities on the economy. Despite the role of foreign capital in the domestic economy, consideration should also be given to improving local investment and ensuring macroeconomic stability as these will improve market confidence by reducing uncertainty and drive stock market growth. Given that the stock market is liberalized, it is necessary to be cognizant of the implications of this on the stock market performance.

Trading activities by internal investors are important in determining stock market returns as purchases by local investors push prices up. Hence, active participation of local investors is necessary to drive liquidity as it has a positive impact on returns. It also reflects confidence in the market in situations where information asymmetry exists between local and foreign investors.

From the analysis the results suggest that despite the role of investor activity in lowering the cost of capital and financing growth, promoting local investment and macroeconomic stability is also important in improving performance of the stock market.

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

There were no limitations as far as data collection and analysis is concerned. However, the study was limited to average monthly data as opposed to more frequent data observations such as daily or weekly which may have an impact on the findings.

The research mainly relied on the use of secondary sources which at times lacks the real control over data quality, which necessitates the careful evaluation on such data sources. This is because not all quantitative data compiled by public institutions and government organizations are error free.

The study was not able to measure the information asymmetry that exists between foreign investors and domestic investors due to lack of measurable data that could be used to analyze its effect on the stock returns.

## **5.5 Suggestions for Further Studies**

This research considered only three variables; foreign investor turnover, exchange rate and market cap. Another study may be done using additional global variables such as the world treasury bill rate, the world stock market index such as the MSCI. This will aid in capturing the behavior of foreign investors as a response to financial crisis in their home countries or financial shocks from global financial markets mainly due to globalization of the financial sector.

In addition, some other domestic macroeconomic variables such as inflation and treasury bills would provide more information about the stock market returns. The inclusion of other macroeconomic variables in the model provides an avenue for future research.

The foreign activity may also be studied in a broken down fashion by having two variables representing foreign activity by showing the inflows (buys) and outflows (sells) by foreign investors instead of considering the net inflow as a measure for foreign trade turnover. This will enable the researcher determine which of the two variables has a stronger effect on the returns at the stock market.

We, also suggest that the significance of our results could possibly be improved upon by applying daily or weekly data. The use of more frequent observations may better capture the dynamics of stock prices and foreign investor activity interrelationships.

The researcher recommends that further studies should be done on the effect of foreign investor activity and stock market returns in Kenya. Very few studies have been done and it is very important that policy makers, investors and financial institutions understand the implications that foreign investment activity has on the overall stock market performance.

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## APPENDICES

### Appendix I: Change in NASI Index, Exchange rate, Market Cap and Foreign Investment Activity

	NASI Index	Change	Exchange Rate-USD	Change	Market Cap (Billions)	Change	Foreign participation to Market Turnover
Dec-07	62		62.47		734.60		
Jan-08	71	14%	70.56	13%	777.10	6%	2%
Feb-08	99	38%	68.98	-2%	830.60	7%	10%
Mar-08	95	-4%	62.93	-9%	781.70	-6%	9%
Apr-08	108	14%	62.14	-1%	908.20	16%	1%
May-08	109	1%	62.03	0%	916.80	1%	8%
Jun-08	112	3%	64.69	4%	1230.67	34%	-14%
Jul-08	102	-9%	67.32	4%	1122.22	-9%	-1%
Aug-08	98	-4%	68.72	2%	1102.00	-2%	0%
Sep-08	88	-10%	73.22	7%	972.30	-12%	-4%
Oct-08	64	-27%	79.65	9%	765.00	-21%	-24%
Nov-08	72	13%	77.88	-2%	791.40	3%	-19%
Dec-08	73	1%	77.71	0%	853.70	8%	-60%
Jan-09	71	-4%	79.54	2%	777.50	-9%	-5%
Feb-09	61	-14%	79.69	0%	611.50	-21%	0%
Mar-09	55	-10%	80.43	1%	688.70	13%	4%
Apr-09	58	7%	78.66	-2%	683.00	-1%	1%

May-09	59	2%	78.35	0%	693.40	2%	9%
Jun-09	71	19%	77.16	-2%	821.80	19%	4%
Jul-09	71	1%	76.61	-1%	826.00	1%	5%
Aug-09	68	-5%	76.23	0%	785.00	-5%	12%
Sep-09	67	-2%	75.00	-2%	771.00	-2%	15%
Oct-09	68	1%	75.24	0%	783.00	2%	26%
Nov-09	71	5%	74.91	0%	825.00	5%	49%
Dec-09	72	0%	75.82	1%	834.00	1%	7%
Jan-10	78	9%	75.89	0%	910.00	9%	20%
Feb-10	79	1%	76.90	1%	922.00	1%	6%
Mar-10	84	7%	77.33	1%	962.00	4%	12%
Apr-10	90	7%	77.27	0%	1062.00	10%	1%
May-10	92	2%	79.75	3%	1073.00	1%	-2%
Jun-10	95	3%	81.92	3%	1109.00	3%	6%
Jul-10	98	3%	80.23	-2%	1143.00	3%	5%
Aug-10	100	2%	81.07	1%	1136.00	-1%	1%
Sep-10	99	-1%	80.78	0%	1174.00	3%	8%
Oct-10	101	2%	80.79	0%	1222.00	4%	10%
Nov-10	101	0%	80.97	0%	1169.00	-4%	14%
Dec-10	98	-3%	80.75	0%	1167.00	0%	10%

Jan-11	99	1%	81.27	1%	1192.00	2%	10%
Feb-11	97	-2%	82.36	1%	1177.00	-1%	5%
Mar-11	90	-7%	82.99	1%	1090.00	-7%	10%
Apr-11	94	5%	83.42	1%	1155.00	6%	-19%
May-11	93	-1%	85.70	3%	1144.00	-1%	-20%
Jun-11	91	-2%	89.86	5%	1121.00	-2%	-11%
Jul-11	84	-8%	91.10	1%	1050.00	-6%	8%
Aug-11	76	-10%	93.62	3%	950.00	-10%	5%
Sep-11	69	-9%	99.83	7%	885.00	-7%	5%
Oct-11	73	5%	99.78	0%	927.00	5%	8%
Nov-11	66	-9%	89.72	-10%	855.00	-8%	0%
Dec-11	68	3%	85.07	-5%	868.00	2%	12%
Jan-12	69	1%	84.59	-1%	880.00	1%	-11%
Feb-12	72	5%	82.97	-2%	920.00	5%	11%
Mar-12	73	2%	83.06	0%	941.00	2%	21%
Apr-12	77	5%	83.22	0%	985.00	5%	12%
May-12	78	2%	86.83	4%	1001.00	2%	6%
Jun-12	81	3%	84.23	-3%	1049.00	5%	13%
Jul-12	83	3%	84.21	0%	1098.90	5%	7%
Aug-12	85	2%	84.32	0%	1117.40	2%	9%

Sep-12	87	3%	85.28	1%	1147.30	3%	17%
Oct-12	92	5%	85.18	0%	1117.00	-3%	13%
Nov-12	92	1%	85.93	1%	1250.00	12%	21%
Dec-12	95	3%	86.03	0%	1272.00	2%	14%
Jan-13	104	9%	87.61	2%	1388.00	9%	13%
Feb-13	107	3%	86.24	-2%	1451.00	5%	-13%
Mar-13	118	10%	85.64	-1%	1600.00	10%	8%
Apr-13	118	0%	83.82	-2%	1601.90	0%	15%
May-13	127	7%	85.12	2%	1720.40	7%	11%
Jun-13	116	-8%	86.01	1%	1618.30	-6%	10%
Jul-13	123	6%	87.28	1%	1727.38	7%	7%
Aug-13	120	-2%	87.58	0%	1686.64	-2%	24%
Sep-13	127	6%	86.65	-1%	1790.85	6%	10%
Oct-13	133	5%	85.15	-2%	1842.99	3%	9%
Nov-13	141	6%	86.99	2%	1983.91	8%	3%
Dec-13	137	-3%	86.31	-1%	1919.53	-3%	-3%