

**THE EFFECT OF FOREIGN PORTFOLIO INVESTMENTS ON STOCK RETURNS  
IN KENYA: EVIDENCE FROM NSE LISTED FINANCIAL INSTITUTIONS**

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**A Research Thesis submitted to Institute of Postgraduate Studies and Research in  
Partial Fulfilment of the Requirements for the award of the Doctor of Philosophy  
Degree in Business Administration (Finance) of Kabarak University**

**KABARAK UNIVERSITY**

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## **DECLARATION**

The research thesis is my own original work and to the best of my knowledge it has not been presented for the award of a degree, diploma or certificate in any other university or institution.

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## RECOMMENDATION

To the institute of Postgraduate Studies:

The Thesis entitled “The effect of foreign portfolio investments on stock returns in Kenya: evidence from NSE listed financial institutions” and written by Loice Jepkurgat Koskei is presented to the Institute of Postgraduate Studies of Kabarak University. We have reviewed the research Thesis and recommend it to be accepted in partial fulfilment for the **Degree of Doctor of Philosophy in Finance.**

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## ABSTRACT

The study focused on the effect of foreign portfolio investments on stock returns of listed financial institutions in Kenya. Reversals of FPIs due to a shift in investor risk appetite may have a drastic impact on the value of shares of financial institutions hence the effect on stock returns. FPI instability complicates the financial performance of financial institutions hence its stock returns. Uncertainties in the flow of FPI may result in unpredictable behaviour of stock returns in Kenya's economy and also at the firm level. These inflows can also cause domestic currency appreciation if they are significant enough and thereby causing a mismatch in assets and liabilities of financial institutions. The net effect of this is the possibility of financial loss suffered by the financial institutions. The returns and general financial performance of financial institutions are affected if bank loans were used to finance foreign transactions. The objective of this study was to investigate the effect of foreign portfolio investments on stock returns of listed financial institutions in Kenya. The target population of the study was 21 financial institutions listed on the Nairobi Securities Exchange Limited. The study used purposive sampling technique and concentrated on 14 financial institutions listed on the Nairobi Securities Exchange Limited. Secondary data was obtained from Central Bank of Kenya, Nairobi Securities Exchange Limited and Capital Markets Authority. The study focused on monthly datasets of foreign portfolio equity sales, foreign portfolio equity purchases, foreign portfolio equity turnover, exchange rate changes and stock returns undertaken by foreign investors in Kenya's listed financial institutions since January 2008 to December 2014. This study adopted a causal research design as it seeks to tests for the existence of cause-and-effect relationships among variables. The study adopted a panel data regression using the Ordinary Least Squares (OLS) method where the data included time series and cross-sectional data that is pooled into a panel data set and estimated using panel data regression. Hausman test was carried out to determine whether to use random effects or fixed effects regression model and findings indicated that random effects model was preferable for this study. Results from panel estimation showed that exchange rate risk affect stock returns of listed financial institutions in Kenya. The findings from the study would be useful to the policy makers and regulators in making informed decisions and formulating policies that would indeed contribute to effective management of foreign portfolio investments in Kenya. The study concluded that financial institutions should device ways of attracting foreign portfolio equity inflows as they improve the liquidity position of these firms and hence increasing the returns. The study recommended that policies that would attract foreign portfolio investment should be pursued in order to enhance stock returns and that the government through Capital Markets Authority should enhance development of corporate bond market.

**Keywords: Foreign portfolio investments, financial institutions, stock returns, exchange rate risk, Nairobi stock exchange.**

## **DEDICATION**

This proposal is dedicated with love to my dear:

Dad: Reuben Samoei Koskei and Mum: Esther Jerobon Koskei

Brothers: Dan, Sam, Haron, and Sisters: Maggy, Naum, Emmy and Stella

Husband: Emmanuel Sawe and Daughter: Blessing Jemutai

*You are my Heroes and the Rock stars in my life.*

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## ABBREVIATIONS AND ACRONYMS

<b>APEC</b>	Asia-Pacific Economic Cooperation
<b>APT</b>	Arbitrage pricing theory
<b>CAPM</b>	Capital asset pricing model
<b>CBK</b>	Central Bank of Kenya
<b>CDS</b>	Central developing system
<b>CEE</b>	Central and eastern European
<b>CMA</b>	Capital markets
<b>EAC</b>	East African community
<b>EMEs</b>	Emerging market economies
<b>ERR</b>	Exchange rate risk
<b>FPE</b>	Foreign portfolio equity
<b>FPEP</b>	Foreign portfolio equity purchases
<b>FPES</b>	Foreign portfolio equity sales
<b>FPET</b>	Foreign portfolio equity turnover
<b>FDI</b>	Foreign direct investment
<b>FPIs</b>	Foreign portfolio investments
<b>FII</b>	Foreign institutional investment
<b>IAPT</b>	International arbitrage pricing theory
<b>IFC</b>	International Finance Corporation
<b>IMF</b>	International Monetary fund
<b>INF</b>	Inflation
<b>IPOs</b>	Initial public offer
<b>LDC</b>	Less developing countries
<b>MKTCAP</b>	Market capitalization
<b>MICs</b>	Middle income countries
<b>MF</b>	Mutual fund
<b>MPT</b>	Modern portfolio theory
<b>NSE</b>	Nairobi stock exchange
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>OFI</b>	Other foreign investment
<b>OLS</b>	Ordinary Least Square
<b>P/E</b>	Price earnings ratio
<b>RER</b>	Real exchange rate

<b>SACCOS</b>	Savings and credit cooperatives societies
<b>SSA</b>	Sub-Saharan Africa
<b>SR</b>	Stock return
<b>TBIL</b>	Treasury bill rate
<b>VAR</b>	Vector Autoregressive

## **OPERATIONAL DEFINITION OF TERMS**

### **Foreign investor**

Foreign investor refers to an individual, institution or investment fund that is from or registered in a country outside of the one in which it is currently investing (Priyanka, 2012).

### **Foreign portfolio investment**

Foreign portfolio investment comprises of foreign bond flows and foreign equity flows. Bond flows represent flows from abroad to Kenyan bond markets for portfolio reasons (OECD, 2002). Similarly, the equity flows used in this study represent flows from foreign investors (non- Kenyans) to the Nairobi Securities Exchange Limited for portfolio reasons (representing less than 10% ownership stakes).

### **Foreign direct investment**

FDI is the direct or indirect ownership or control of at least ten percent of the voting securities of an incorporated foreign business firm or the equivalent in an incorporated enterprise. FDI is a long term investment which is linked with investment in capital assets that a parent company makes in a foreign country which eventually leads to creation of employment. Foreign direct investment cannot be easily converted to cash and are often only liquidated in the worst case scenario (OECD, 2002).

### **Foreign portfolio equity sales**

Foreign portfolio equity sales occur when foreign investors sell their equity in the secondary securities market. An increase in foreign outflows often results in the volatility of domestic asset prices and may create uncertainty and ultimately be very damaging to an economy (Nguyen and Nhung, 2013).

### **Foreign portfolio equity purchases**

Foreign portfolio equity purchases refer to the equity acquired by foreigners directly in the domestic equity market. Foreign portfolio equity purchases contribute to the financing of domestic enterprises and allow risk sharing between foreign and domestic investors (World Bank, 2003).

### **Foreign portfolio equity turnover**

Foreign portfolio equity turnover refers to the volume of shares bought and sold by foreign investors in the domestic market. Foreign portfolio equity turnover indicates the level of foreign trading activity relative to the overall trading activity in a market (CMA, 2013).

### **Exchange rate risk**

Exchange rate risk refers to fluctuations of exchange rate over a given period of time. The study used the bilateral nominal rate of exchange of the Kenyan shilling against one unit of a foreign currency which in this case is the U.S. Dollar. The U.S. Dollar was used because it is the most dominating currency used for trading and investment in Kenya (Landon and Constance, 2009).

### **Stock returns**

Stock return is the increase in the value of an investment over a period of time, expressed as a percentage of the value of the investment at the start of the period. The main measures of stock returns include: stock market indexing, market capitalization and stock turnover (Obere, 2009). Stock return in this study will be computed as:

$$SR_{it} = \left[ \frac{P_{it} - P_{i(t-1)}}{P_{i(t-1)}} \right] \times 100$$

Where;

$SR_{it}$  = the return of the stock of financial institution  $i$ , in time  $t$ .

$P_{it}$  = the quoted stock price of financial institution  $i$ , in month  $t$ ,

$P_{i(t-1)}$  = the quoted stock price of financial institution  $i$ , in month  $t-1$ ,

### **Financial institution**

Financial institutions are those organizations that facilitate the flow of funds from investors to firms and are also involved in providing various types of financial services to their customers. Financial institutions in Kenya are commercial banks, mutual funds, security firms, insurance companies and pension funds. The financial institutions are regulated, controlled and supervised by the Central Bank of Kenya (CBK, 2012).



### **Nairobi Securities Exchange Limited**

This is a leading securities exchange in East Africa trading in both shares and bonds. Nairobi Securities Exchange is open to domestic and foreign investors interested buying and selling securities (NSE, 2015).

### **Market capitalization**

Market capitalization is a measure of the value of companies which is an on-going market valuation of a public firm whose shares are publicly traded on a stock exchange. It is computed by multiplying the number of outstanding shares held by the shareholders with the per share market price at a given time. A market capitalization calculation is a critical part of any stock valuation formula as it represents the total market value of all the company's outstanding shares. This represents the value the market has placed on the value of a company's equity (Gitman, 2004).

## CHAPTER ONE

This chapter presents the background, the statement of the problem, objectives, hypotheses and delimitation of the study as well as the significance of the study.

### 1.1 Background of the study

An important development in international financial markets over the last decade has been the growing role of foreign portfolio investment as a channel for international capital flows to developing countries. The increased flow of securities investment from industrialized countries to emerging markets was made possible by a number of developments in all the countries involved (Somoncu & Karan, 2006). Major sources for foreign portfolio investment in developing countries were the predominantly United States (US) based emerging markets mutual funds which contributed to the surge in investments in emerging markets equities. Some of these funds were interested in investing in countries where macroeconomic variables were far out of line with sustainable values, so that when changes in asset prices occurred, they would be attractively large. However, the financial crises driven from the reverse in capital inflows lead to the discussion on the role of market players. Bouts of turbulences in international financial markets in recent years have drawn attention to the role played by institutional investors, especially hedge funds. Following the crisis in Asia, Russia and Turkey, it was suggested that hedge fund investments precipitated major developments in asset prices either directly through their own transactions or indirectly via the tendency of other market participants to follow their lead (Conover, Jensen & Robert, 2002).

The large net capital flows of the 1990s and the concomitant increase in the role of international investors in developing countries led many to reconsider the benefits and costs of net portfolio inflows with some urgency. The Mexico crisis has been an important cause of this reconsideration. It led many to worry about the stability of portfolio investments. Contrasting the Mexico crisis to the debt crisis of the early 1980s highlights why sudden changes in portfolio flows might be a source of concerns. There were few key players in developed countries during the debt crisis, their claims were illiquid, and consequently had strong incentives to negotiate solutions with the developed countries. Coordination among portfolio investors was impossible during the Mexico crisis. Even though collectively investors might have been better off in committing funding to the Mexican government to resolve the crisis, individually each investor was better off by selling out and could do so quickly because the investor was holding liquid securities. Some economists have therefore

argued that financing a country's growth through portfolio investment can expose countries to sudden inflows and outflows that can destabilize sound economies, force them into dramatic macroeconomic adjustments, and cause havoc in their securities markets (Ren, 1997).

Asian currency crisis brought tremendous effects and changes to the financial landscapes in the region and other economies. It officially originated from the meltdown of Thai baht in July 1997 and the effects spread across to most South-East Asian countries. The values of most currencies declined to unbearable levels. Property market slumped. Some economies had basically become stagnant. Social problems escalated. Asian stock values dropped dramatically and eventually the impacts were felt by other countries around the world, even by global economic power houses. With lower expected returns and higher returns volatility (or uncertainty) of international financial assets, like stocks and bonds, after the Asian currency crisis, international portfolio diversification and management become critical issues. International investors wished to diversify their investments at such bad times because if one market is not performing well, it can be compensated by the positive performances from other markets (Hui, Kurniawan & Cheng, 2007). Hence, the presence of potential benefits of international diversification becomes an important factor for global investment strategy during global economic recession.

Foreign portfolio investment may be beneficial to receiving countries as they gain access to cheaper sources of financing. At the same time, they increase a country's vulnerability to international financial crises which occurs during spontaneous reversals in international capital flows. The financial crisis of the 1980s, Latin America and East Asia in the 1990s and Argentina in 2001-02, are examples of the disruptive effects of fluctuations in international capital flows (Chen & Quang, 2012). Although the financial turmoil in the United States of America (U.S.A.) and some parts of the Euro Zone may have been triggered by various issues such as bank failures, property bubbles and government fiscal deficit, the crises have been transmitted to other countries through financial channels. The crises in these supposed- resilient advanced economies have exposed the vulnerability of emerging economies that depend on foreign inflows and the global financial system as a whole.

According to Tokat (2004), foreign portfolio investment (FPI) became an increasingly significant part of the world economy and an important source of funds to support investment not only in developed but also developing countries. Foreign investors entered emerging markets for diversification and also to maximize returns. Financial market theory suggested that, over the long run, higher returns should compensate for the higher risks of emerging

market. 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, Gordon & Jeffery, 2003). This means that the rate of return of a country's currency has an impact on the pricing of equities in the domestic market.

In Kenya, participation of foreign investors in the Nairobi Securities Exchange (NSE) can be traced back to 1954 when trade in shares was confined to the resident European community. The presence and dominance of foreign investors in the market declined after independence. However, protection of foreign investor interest was still given prominence and thus the Foreign Investment Protection Act (1964) was passed. The Act focused on foreign direct investors and allowed repatriation of earnings and capital by foreign firms (Ngugi, 2003).

Financial liberalization in Kenya in 1990's was accompanied by stock market liberalization. This resulted in the opening of the domestic stock market to foreign investors .This was driven by the need to integrate and make the market more vibrant leading to increased foreign portfolio inflows. The level of foreign trade picked up in Kenya after restrictions on inward portfolio investments were lifted in January 1995. Overall, the total foreign turnover increased over time from a low of Ksh. 695 million in 1996 to the highest of Ksh. 160,213 million by the end of 2013 (CMA, 2013).

According to Bekaert, Harvey and Lumsdaine (2002), foreign portfolio investments (FPI) are reversible and tend to leave as fast as they come in an economy. Due to this, portfolio flows may have a drastic impact on Kenya's economy and on the value of shares of companies in which foreign investors offload their holdings, hence the stability of the market in general. An increase in FPI leads to changes in information flow, efficiency and liquidity thereby affecting stock market returns. Volatility or rapid reversal of foreign portfolio flow increases risk and uncertainty in the stock market, leading to high macroeconomic instability. Thus, it affects the value of the firm by pushing stock prices up when they come in, but down when they offload. FPI also affects the net foreign assets in form of foreign currency, hence undermining competitiveness. Sudden and large inflows of FPI lead to exchange rate appreciation and widening current account deficits.

A good understanding of the effect of foreign portfolio investments on stock returns of Kenya's financial institutions is therefore important in assessing the role that foreign portfolio investments play in the economy and how they influence the performance of financial institutions at large.

### **1.1.1 An overview of foreign investor activity in the Nairobi Securities Exchange**

In Kenya, dealing in shares and stocks started in the 1920s when the country was still a British colony. There was, however, no formal market, nor rules or regulations to govern stockbroking activities. Trading took place on gentleman's agreement, in which standard commissions were charged with clients being obligated to honour their contractual commitments of making good delivery and settling relevant costs. At that time, stockbroking was a side-line business conducted by accountants, auctioneers, estate agents and lawyers, who met to exchange prices over a cup of coffee. Because these firms were engaged in other areas of specialisation, the need for association did not arise (NSE, 1996).

The Nairobi Securities Exchange (NSE) was constituted in 1954 as a voluntary association of stockbrokers registered under the Societies Act. This was made possible after clearance was obtained from the London Stock Exchange which recognized the NSE as an Overseas Stock Exchange. This was important because an exchange not recognized by the leading stock exchange was of little value and credibility. The business of dealing in shares was then confined to the resident European community, since Africans and Asians were not permitted to trade in securities until after the attainment of independence in 1963. This partly explains why it was difficult to convince the local people, who had hitherto been barred from holding Quoted Shares purely on racial grounds, that this institution was a vital vehicle for handing over economic power from foreign dominance to local control (NSE, 1996).

At the dawn of independence, stock market activity slumped due to uncertainty about the future of independent Kenya. However, after three years of calm and economic growth, confidence in the market was rekindled and the exchange handled a number of highly over-subscribed public issues. The growth was, however, halted when the oil crisis of 1972 introduced inflationary pressures on the economy which depressed share prices. A 35% capital gains tax introduced in 1975 (suspended since 1985) inflicted further losses to the exchange. At the same time it lost its regional character following the nationalisations, exchange controls and other inter-territorial restrictions introduced in neighbouring Tanzania and Uganda. For instance, in 1976 Uganda compulsorily acquired a number of companies which were either quoted, or were subsidiaries of companies quoted on the Nairobi Stock Exchange (Ngugi, Amanja & Maana, 2010).

In the 1980s, the Kenya Government realized the need to design and implement policy reforms to foster sustainable economic development with an efficient and stable financial system. In particular, it set out to enhance the role of the private sector in the economy, reduce the demands of public enterprises on the exchequer, rationalise the

operations of the public enterprise sector to broaden the base of ownership and enhance capital market development. In 1984 an IFC/CBK study, Development of Money and Capital Markets in Kenya, became a blueprint for structural reforms in the financial markets, culminating in the formation of a regulatory body "The Capital Markets Authority (CMA) in 1989, to assist in the creation of an environment conducive to the growth and development of the country's capital markets (NSE, 1996).

In 1991, the NSE was registered under the Companies Act and phased out the "Call Over" trading system in favour of the floor-based "Open Outcry System". Subsequently the stock exchange embarked on an extensive modernization exercise, including relocation to more spacious premises at the Nation Centre in July 1994. The facilities include a modern Information Centre. Computerization has also been enhanced, and with increasing trading volumes electronic trading has become feasible. The number of stockbrokers has grown steadily to 20 from the original six (one of whom still survives) at its inception in 1954. Commission rates, which were once among the highest, have also come down considerably, from 2.5% to between 2% and 1% on a sliding scale for equities and 0.05% for all fixed interest securities for every Shilling (NSE, 1996).

The Nairobi Securities Exchange is poised to play an increasingly important role in the Kenyan economy, especially in the privatization of state-owned enterprises. In the last ten years, nine public enterprises have been successfully privatized through the NSE where the government has raised about Ksh 5 billion. The privatisation process started in 1988 when the government floated 7.5-million shares (20% equity) of the Kenya Commercial Bank. The issue was over-subscribed 2.3 times. Subsequent issues have also proved highly popular, with subscription rates as high as 400%. In the privatization of Kenya Airways, for example, the stock exchange enabled more than 110,000 shareholders to acquire a stake in the airline.

The complete liberalization of offshore borrowing was implemented in May 1994, while some restrictions on inward portfolio investment were lifted in January 1995, therefore allowing participation of foreign investors in the Nairobi Securities Exchange trading under guided policy. Foreign investors were permitted up to 20% of equity for inward portfolio investment that is aggregate of each stock and a 2.5% limit for individual investors. This was revised upwards in July 1995 so that the individual investor limit was increased to 5% while the aggregate was set at 40%. On 26 July 2002, new foreign investor regulations were established where a 25% minimum reserve of the issued share capital was for locals while the balance of the 75% was a free float for all classes of investors. The 25% minimum reserve

applies during initial public offerings (IPOs) and Government of Kenya privatizations (Ngugi, 2003).

Foreign investors' trading recorded a peak of 52.5% of the total market trading in December 1996 while a consistent downward trend was recorded from June 1997. Initially, when foreign investors were allowed to trade in January 1995, a slow growth in foreign trading was recorded. However, inflow of foreign trade increased tremendously with the increased limit of foreign participation in July 1995. There was tremendous growth in foreign investors' activities, increasing from 3% in 1995 to 44% in June 1997, with a peak in December 1996 of 52.5%. It is therefore tempting to conclude that market performance during the 1996-1997 periods was to a large extent controlled by foreign operations. The remarkable performance of foreign trade was short-lived as the ratio to total trade declined to 2% in August 1997 before recording a net-outflow of 42% in September 1998. Across the sectors, the agricultural sector lost foreign trading, especially in 1998, and this was coupled with a decline in performance of the sector. The financial sector seemed to take the remnant of the foreign trading although growth of the sector took a downward trend. Distribution of shareholders between locals and foreigners indicated that the majority of shareholders were locals (in a sample of 38% of the listed companies). The skewed distribution in shareholding was indicated across the listed companies where the top 20 shareholders, representing 6% of the total shareholders, held more than 50% of the shares that is from a sample of 57% of the listed companies analysed (CMA,1998).

The trading volume results show that the activities of the secondary market were however dominated by the minority shareholders. For example, the average number of shares per deal was estimated at 2,452 shares in 1998, a drop from 3,293 in 1997, while the average value of the deals was Ksh. 162,385 in 1998 and Ksh. 195,551 in 1997. It would therefore seem that the top shareholders controlling over 50% of company shares are inactive in the secondary market, showing preference for dividend income to capital gains. This may explain the low liquidity in the secondary market and low supply of securities for trading (CMA, 1999).

Foreign ownership of shares at the NSE increased in the year 2011 totalling nearly a quarter of market value, reflecting renewed international investors' confidence in Kenya's economic prospects. New stock market data shows foreign investors were holding 22.4 per cent shares as at the end of September, a level close to the 2006 peak of 25.6 per cent. Foreign investors' stock ownership at the Nairobi Securities Exchange dropped sharply to a low of 7.9 per cent in 2008 following the post-election violence but has since steadily

climbed to the present levels. The most dramatic increase in the seven-year period was in 2011, shortly after Kenya registered a 5.8 per cent economic growth rate. In 2010, international investors controlled 12.6 per cent of the bourse, climbing to 19.44 per cent in 2011 - a jump of nearly seven percentage points (CMA, 2011).

Demand for Kenyan companies' stocks, considered a frontier market by big western investors, involved multi-billion dollar deals, rose consistently as investment options elsewhere around the world narrowed. Compared to the early 2013, the all-stock index (NASI) had risen by over 40 per cent, while the 20-share index has climbed by just over 20 per cent. The NSE-listed companies whose foreign shareholding is highest include Total Kenya with 94.18 per cent, British American Tobacco with 77.21 per cent, CFC Stanbic with 75.07 per cent, Standard Chartered Bank with 74.97 per cent and BOC Kenya with 73.99 per cent. These represent the oil, banking and manufacturing sectors in Kenya. The amount of cash that has been flowing to NSE this year has been growing almost by the month. The latest NSE data showed that a net of Sh2.8 billion flowed into the stock market in October 2013, an increase from Sh2.1 billion in September 2013. The amount of new cash entering the market to trade in October is due to a higher level of purchases compared to sales. In October 2013, foreigners bought shares worth Sh10.2 billion while they sold holdings of Sh7.4 billion. In September 2013, overseas buyers bought shares valued at Sh6.6 billion, but sold Sh4.6 billion worth, resulting in a net cash flow into the economy of just over Sh2 billion (CMA, 2013).

Foreign investors emerged as net sellers accounting for 53.5% of market purchases, 54.9% of sales and 54.2% of turnover in the six months to June 2014. Foreign investor participation remained strong due to a stable shilling and strong growth in corporate earnings (CMA, 2014). Foreign portfolio activity continued to be significant in the second quarter of 2015 but biased towards the sell side during the review period (CMA, 2015).

### **1.1.2 Importance of foreign portfolio investments in financial institutions**

Foreign portfolio investment increases the liquidity of financial institutions and domestic capital markets, and can help develop market efficiency as well. As markets become more liquid, as they become deeper and broader, a wider range of investments can be financed. New enterprises, for example, have a greater chance of receiving start-up financing. Savers have more opportunity to invest with the assurance that they will be able to manage their portfolio, or sell their financial securities quickly if they need access to their savings. In this way, liquid markets can also make longer-term investment more attractive. Foreign portfolio investment can also bring discipline and know-how into the financial institutions. In



a deeper, broader market, investors will have greater incentives to expend resources in researching new or emerging investment opportunities. As enterprises compete for financing, they will face demands for better information, both in terms of quantity and quality. This press for fuller disclosure will promote transparency, which can have positive spill-over into other economic sectors (APEC, 2000).

Foreign portfolio investors, without the advantage of an insider's knowledge of the investment opportunities, are especially likely to demand a higher level of information disclosure and accounting standards, and bring with them experience utilizing these standards and a knowledge of how they function. Foreign portfolio investment can also help to promote development of equity markets and the shareholders' voice in corporate governance. As companies compete for finance the market will reward better performance, better prospects for future performance, and better corporate governance. As the market's liquidity and functionality improves, equity prices will increasingly reflect the underlying values of the firms, enhancing the more efficient allocation of capital flows. Well-functioning equity markets will also facilitate takeovers, a point where portfolio and direct investment overlap. Takeovers can turn a poorly functioning firm into an efficient and more profitable firm, strengthening the firm, the financial return to its investors, and the domestic economy (OECD, 2002).

Foreign portfolio investors may also help the financial institutions by introducing more sophisticated instruments and technology for managing portfolios. For instance, they may bring with them a facility in using futures, options, swaps and other hedging instruments to manage portfolio risk. Increased demand for these instruments would be conducive to developing this function in domestic markets, improving risk management opportunities for both foreign and domestic investors. In the various ways outlined above, foreign portfolio investment can help to strengthen domestic capital markets and improve their functioning. This will lead to a better allocation of capital and resources in the domestic economy, and thus a healthier economy. Open capital markets also contribute to worldwide economic development by improving the worldwide allocation of savings and resources. Open markets give foreign investors the opportunity to diversify their portfolios, improving risk management and possibly fostering a higher level of savings and investment (Humanicki & Kelm, 2003).

FPI also has the virtue of stimulating the development of the domestic stock market. The catalyst for this development is competition from foreign financial institutions. This competition necessitates the importation of more sophisticated financial technology,

adaptation of the technology to local environment and greater investment in information processing and financial services. The results are greater efficiencies in allocating capital, risk sharing and monitoring the issue of capital. This enhancement of efficiency due to internationalization makes the market more liquid, which leads to a lower cost of capital. The cost of foreign capital also tends to be lower, because the foreign portfolio can be more diversified across the national boundaries and therefore be more efficient in reducing country-specific risks, resulting in a lower risk premium (Pal, 2006).

### **1.1.3 Financial institutions in Kenya**

The financial system of East African Community (EAC) countries is dominated by the banking sector, where the share of public interest is rather low and foreign banks account for a relatively large share of total banking sector assets, deposits and loans. In addition, there are many players in the market, which may call for some consolidation in the near future. Yet, the banking sector exhibits a relatively high concentration level. However, the development and sophistication level of the banking sector varies significantly across the region, with Kenya having one of the most dynamic and largest banking sectors in sub-Saharan Africa, and a significant presence in the other EAC countries (Allen, Otchere & Senbet, 2011).

The banking sectors of the other four countries are concentrated on their local markets. The sophistication of capital markets in EAC differs across the region, but in general, they remain underdeveloped. There are important cross-country differences, with some markets at an early stage of development, while Kenya's market is reasonably well-developed in sub-Saharan African context. The less developed domestic debt markets are shallow and narrow. They are characterized by short-term maturities, limited investor base, and illiquid secondary markets, among others, and are dominated by government securities. Stock markets also remain underdeveloped, with secondary markets either illiquid or non-existent (Africa Development Bank, 2012).

In general, EAC capital markets have not played a major role in resource mobilization and long-term financing of their economies. They are yet to be developed to a level that could make them a significant complement and/or an important alternative to banking intermediation. Similarly, insurance companies and pension funds in the EAC region remain underdeveloped and offer only a limited array of financial instruments to a limited set of clients. Thus, there is potential for these business lines to be developed further to better serve the needs of the individuals/enterprises and their economies in general. In addition, as they

grow and become more and more interlinked with banks, insurance companies and pension funds are increasingly contributing to the potential risks to the stability of the financial systems (Sanya & Gaertner, 2012).

Kenya's banking sector is the fourth largest in sub-Saharan Africa, behind South Africa, Nigeria and Mauritius. There are 43 commercial banks, of which 13 are foreign, and have set up 1,161 branches across the country. Microfinance has played a significant role in the evolution of Kenya's financial services, with four banks (including two large and one medium) having roots in microfinance. In addition, six deposit-taking microfinance institutions have been licensed by the central bank and present a healthy competition to commercial banks in the lower, microfinance segment (CBK, 2012).

## **1.2 Statement of the problem**

The surge in foreign portfolio flows to emerging markets in 2009 and 2010 renewed the debate on the implications of these flows in recipient economies on the optimal policy responses (IMF 2011). FPI increases the liquidity and the volume of finance available for financial institutions. At the same time, as FPIs finance in part the capital requirements of local companies, it can also increase the competitiveness of these companies. FPIs can also serve as complementary to foreign debt finance and thus increase the quality and quantity of international borrowing in financial institutions. FPIs help in inducing an active and deepened stock market thereby enhancing the liquidity of shares for listed companies in Kenya. They also bring to the economy the required foreign exchange.

It is clear that foreign portfolio investments have had many beneficial effects on the financial sector and economies of various countries. However, foreign portfolio investments are reversible, highly volatile and tend to leave as fast as they came into an economy (Bekaert *et al.* 2002). Reversals of FPIs due to a shift in investor risk appetite may have a drastic negative impact on the value of shares of financial institutions and stock returns. Uncertainties in the flow of FPI result in unpredictable behaviour of stock returns in Kenya's economy and also at the firm level. A huge surge of the inflows, for instance, can be very inflationary because this will force the Central Bank of Kenya to expand the country's monetary base by releasing counterpart domestic currency which eventually feeds into the inflationary process (Nyang'oro, 2013). These inflows can also cause domestic currency appreciation if they are significant enough and thereby causing a mismatch in assets and liabilities of financial institutions. The net effect of this is the possibility of financial loss suffered by the financial institutions. The returns and general financial performance of FI

institutions are affected if bank loans were used to finance foreign transactions. Fluctuations or rapid reversal of FPI increases risk and uncertainty in financial institutions leading to high instability. Thus, it affects the value of the firm by pushing share prices up when they come in, but down when they offload.

Empirical evidence concerning the relationship between FPI and stock returns of Kenya's financial institution is scanty and limited. Nyang'oro, (2013) focused on the effect of portfolio flows on macroeconomic prices and monetary policy in Kenya. The scope of his study was country level. Kodongo and Ojah, (2012) studied the dynamic relation between foreign exchange rates and international portfolio flows in seven African markets. They found out that the dynamic relationship between the real exchange rates and net portfolio flows is both country dependant and time varying. These studies in Kenya have concentrated on macro-level perspective.

There are numerous strongly held views of FPIs in emerging markets, but there is surprisingly little information on the effect of FPI on stock returns, particularly in Kenya's listed financial institutions. FPIs represent an important opportunity and a tough challenge for developing countries in general and Kenya in particular. This study therefore seeks to establish the effect of FPI on stock returns of firms at sector or industry level.

### **1.3 Objectives of the study**

#### **1.3.1 General objective**

To establish the effect of foreign portfolio investment on stock returns in Kenya's listed financial institutions.

#### **1.3.2 Specific objectives**

- i. To determine the effect of foreign portfolio equity sales on stock returns in Kenya's listed financial institutions
- ii. To assess the effect of foreign portfolio equity purchases on stock returns in Kenya's listed financial institutions
- iii. To identify the effect of foreign portfolio equity turnover on stock returns in Kenya's listed financial institutions
- iv. To establish the effect of exchange rate risk on stock returns in Kenya's listed financial institutions.

- v. To compare the effect of foreign portfolio equity (sales, purchases and turnover) and exchange rate risk on stock returns of listed banking and non- banking institutions in Kenya.

#### **1.4 Research hypothesis**

##### **Hypothesis 1**

**H<sub>0</sub>:** Foreign portfolio equity sales do not significantly affect stock returns in Kenya's listed financial institutions.

##### **Hypothesis 2**

**H<sub>0</sub>:** Foreign portfolio equity purchases do not significantly affect stock returns in Kenya's listed financial institutions.

##### **Hypothesis 3**

**H<sub>0</sub>:** Foreign portfolio equity turnover do not significantly affect stock returns in Kenya's listed financial institutions.

##### **Hypothesis 4**

**H<sub>0</sub>:** Exchange rate risks do not significantly affect stock returns of Kenya's listed financial institutions.

##### **Hypothesis 5**

**H<sub>0</sub>:** There is no significant difference between the effect of foreign portfolio equity (sales, purchases and turnover) and exchange rate risk on stock returns of listed banking and non-banking institutions in Kenya.

#### **1.5 Significance/ Justification of the study**

Foreign portfolio flows to African countries has been growing over time. Financial liberalization, for example, stock market liberalization and the reduction of capital controls, in the last two decades in emerging markets has attracted more foreign investments; (Bacchetta & Wincoop, 1998).

Foreign portfolio flows have consequences. In less financially integrated economies, increasing capital flows raise the probability of systemic sudden stops, i.e. large unexpected falls in capital inflows that could be accompanied by current account reversals. This could

lead to a rapid increase in foreign currency-denominated debt, liquidity crises and credit rationing in the host country. However, increasing financial development and integration beyond a certain threshold level seems to decrease the likelihood of sudden stops and capital flow reversals, thus contributing to financial stability and market liquidity; (Calvo, Izquierdo & Mejia, 2008).

At the stock market, an increase in foreign portfolio flows lead to changes in information flow, efficiency and liquidity, thereby affecting stock market returns. The change in stock returns may, however, not be reflected at the firm level. Volatility or rapid reversal of foreign portfolio flow increases risk and uncertainty in the stock market, leading to high macroeconomic instability. Thus, it affects the value of the firm by pushing share prices up when they come in, but down when they offload. The effect on share prices when offloading depends on the ability of domestic investors to buy back the equity held by foreign investors. It is therefore important to determine the effect of foreign portfolio flows on stock returns as this will assist in establishing the impact of foreign investors in the market.

Financial liberalisation of stock markets in East African Countries has been advocated for as a way of improving their performance and financing investment through foreign capital. The effect of foreign portfolio flows to Kenya has been given less attention despite the growing volume of such flows. The broad purpose of this research was to understand the effect of foreign portfolio investment on stock returns in Kenya's financial institutions. It is often argued that foreign equity flows lead to price overreaction, and when withdrawn contagion. An alternative efficient markets view is that equity flows are merely one of the processes by which information is incorporated into asset prices.

The understanding of foreign portfolio flows is important for policy makers, forecasters and researchers alike, and this is particularly the case for emerging markets. Foreign portfolio flows make up an important part of the balance of payments, and the large fluctuations in such flows have, among emerging economies, ignited a number of balance-of-payment crises over the past two decades. The sharp reduction in foreign investment inflows was, indeed, the main reason for the Mexican crisis of 1994 and 1995, and it played an important part in most of the emerging market crises that was to follow. Foreign portfolio flows not only constitute one of the main ingredients in the balance of payments, but also one of the most volatile. Understanding foreign portfolio investment flows is, therefore, crucial in any balance-of-payments analysis. The discussion of the results could inform the improvement of structural policies with the objective of reducing the likelihood and intensity

of adverse effects of foreign portfolio investments and increasing their benefits for the Kenyan economy.

The results from this research shall be of benefits to the stockbrokers who will use the information generated for marketing strategies to the foreign fund managers, and foreign institutional and individual investors on the prospects of the Nairobi Securities Exchange. The research results shall also benefit the capital and money market regulators in understanding the portfolio inflow inducing factors and the effect FPIs have on the stock market returns. Researchers and academics will benefit from the findings of the study as they may form part of their reference material.

There has been a very large information gap for investors and analysts on the effect of foreign portfolio flows on stock returns. The study may help to reduce the information gap by adding to the existing body of knowledge. Investors also need information on the behaviour of foreign portfolio flows, especially in their short-term and long-term financing decisions, earning assessments, and also for capital budgeting decisions.

## **1.6 Scope and Limitations of the study**

The study covered foreign participation in local equities of listed financial institutions in Kenya and their effect on stock returns. The study focused mainly on the financial market transactions of foreign or non-resident investors in the secondary market in Kenya. Foreign or non-resident investors comprise, corporations, institutions, funds, financial institutions or juristic persons located outside Kenya; entities of foreign governments located outside Kenya; branches and agents of domestic juristic persons located outside Kenya ; and natural persons not of Kenya nationalities who do not have alien identity or residence permits.

The study covered only 14 listed financial institutions in Kenya whose monthly foreign data was available for the period January 2008 to December 2014 from NSE and CMA. Secondary monthly data for the period January 2008 to December 2014 were employed in this study. The period starting from January 2008 to December 2014 was chosen on account of availability of monthly foreign data for listed financial institutions from NSE. Data was obtained from the Nairobi Securities Exchange Limited, Capital Markets Authority, Central Bank of Kenya and the Kenya Bureau of Statistics surveys.

The study was limited to monthly data as opposed to more frequent observations such as daily and weekly which may have an impact on findings.

The study was to cover the effect of foreign corporate bonds on stock returns as one of the objectives. This became impossible due to unavailability of foreign corporate bonds

data from NSE. The corporate bond market in Kenya is inactive and there are only a few financial institutions which have issued corporate bonds. Data on foreign participation in the domestic corporate bond market of financial institutions are unfortunately insufficient to precisely calculate the proportion held by foreign investors. Lack of foreign corporate data is an indication of undeveloped private debt market in Kenya because the bond market is dominated by Treasury issues.

The scope of the study was limited to seven years (January 2008 to December 2014). The study would have covered a ten year period starting from January 2005 to December 2014 but data on foreign portfolio equity was unavailable from NSE from January 2005 to December 2007. NSE attributed and blamed computer system failure to this and that foreign data for the three years could not be retrieved because the system crashed and foreign portfolio equity data had neither been backed up nor archived.

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

## **1.7 Structure of the thesis**

This thesis is structured into five chapters, starting from the introductory chapter, then specific empirical chapters. Chapter two presents empirical evidence on the effect of foreign portfolio flows on stock returns of listed financial institutions in Kenya. Chapter three gives a summary of the methodology employed by the study. Chapter four presents the analysis of data as stipulated in the research methodology and the findings of the study as set out in the research objectives. Chapter five presents the summary of findings of the study in relation to the objectives stated in chapter one. It also highlights the conclusion and recommendation, limitations of the study and suggestion for further studies.



## CHAPTER TWO

### 2.0 LITERATURE REVIEW

#### 2.1 Introduction

This chapter reviews theories, the empirical aspect of each specific objective, the conceptual framework and the research gap.

#### 2.2 Review of theories

##### 2.2.1 The arbitrage pricing theory

Ross (1976) developed the Arbitrage Pricing Theory (APT), whose starting premises are that markets are competitive and that individuals homogeneously believe that the return of all assets in the economy are driven by a linear structure of  $k$  risk factors.

The APT model represented an answer to criticism suffered by the popular Capital Asset Pricing Model (CAPM), of Sharpe (1964) and Lintner (1965). CAPM establishes a linear relation between the excess assets' return and a single risk factor – the excess return on the market portfolio. It assumes that all assets can be held by an individual investor. Although it can be considered a particular case of APT, the theoretical construction of CAPM requires normality of returns or quadratic utility function, what isn't always easy to justify. Besides, it can be proved that any mean-variance portfolio satisfies exactly the CAPM equation. So, testing the CAPM is equivalent to testing the mean-variance efficiency of the market portfolio. However, the true set of all investment opportunities would include everything with worth. There are some assets, human capital, for example, that are non-tradable. Nevertheless, transaction costs and market frictions can preclude individuals from owning the portfolio of all marketable assets. Those facts originated from the famous Roll's critique (Roll 1977), which states that CAPM isn't empirically testable as the true market portfolio can't be observed and is substituted by its proxy. The market portfolio proxy isn't necessarily mean-variance efficient, even if the real market is and the contrary is also true.

In opposition to CAPM, APT allows for multiple risk factors, accounting for various sources of non-diversifiable risks. The market portfolio doesn't have any special importance and can be or not included as a risk factor. It's not necessary to assume any hypothesis related to the returns' distribution or the individuals' utility function. However, the model proposed by Ross does not specify the risk factors. Several empirical works focused on the attempt to determine them through two different strands: using pre-specified observed macroeconomic factors or assuming that, a priori, the factors were unknown (Ross, 1976).

The APT model was also expanded to an international framework. Solnik (1983) provides an analysis of the model developed by Ross (1976) when investors from different countries are considered. International Arbitrage Pricing Theory (IAPT) is an alternative, since it isn't based in any hypothesis about the utility function and only requires perfect capital market.

The APT exploits the notion that in a large capital market it is possible to construct arbitrage portfolios that do not have any systematic or unsystematic risk in the sense of a factor structure. In other words, the cross section of assets is assumed to be large enough to permit diversification of idiosyncratic risk. In fact, pricing in the framework of the APT critically relies on the existence of such riskless arbitrage portfolios. In the international framework, the fluctuation of exchange rates adds additional risk to an internationally diversified portfolio. In accordance with Ikeda (1991), this might also affect the arbitrage activities in the capital markets. Hence, an extension of the APT to an international setting is not a trivial exercise. The IAPT basically requires the following conditions to hold: the risk stemming from exchange rate shifts must be diversifiable like any other unsystematic risk, an arbitrage portfolio that is riskless in any given currency must be riskless in any other currency, and the factor structure must be invariant to the choice of a currency. Whereas the first two conditions are somewhat technical prerequisites, the last condition must be satisfied for the IAPT to be a viable theory. APT in the study explains that returns of a given security or portfolios are affected by many factors including but not limited to exchange rate risk.

### **2.2.2 Price pressure hypothesis**

The price pressure hypothesis asserts that the demand curve for stocks in the market is not perfectly elastic. The hypothesis predicts that temporary buying or selling pressure by naive investors in the stock market leads to positive or negative abnormal returns following the buy or sell suggestions disseminated as second hand information. Price pressure effects are said to be short-lived as the abnormal returns will reverse as temporary buying pressure disappears (Trahan & Bolster, 1997).

The price pressure hypothesis argues that individual investors must be compensated for transaction costs and portfolio risks when they rely on public information to buy or sell stocks as this causes temporary stock price fluctuations (Kerl & Walter, 2007). Previous studies have established evidence of price pressure hypothesis. Ben-Rephael, Kandel and Wohl (2011) examined Israel's stock mutual funds and discovered that fund flows and

current market returns have a significant negative correlation which supports the price pressure hypothesis.

Ulku and Weber (2013) studied the relevance between Korean stock flows and market returns dividing stocks into three major investment groups, namely domestic individuals, domestic institutions, and foreign investors. The empirical results indicated that, of the three major investment groups, only the domestic stocks group supported the price pressure hypothesis.

Menkveld and Hendershott (2010) in their study of price pressures stated that stock market return is positively related to contemporaneous mutual fund flow but negatively related with lagged mutual fund flow. Menkveld and Hendershott defined price pressure in the stock market as the temporary deviations of stock prices from fundamental level due to a risk-averse intermediary supplying liquidity to asynchronously new investors with idiosyncratic hedging values. The theory provided another explanation for interactive relationship between fund flow and market return. When demand for stocks is not completely elastic and there is a large scale of net flow into stock mutual funds, the price pressure is then created by mutual fund flows. The stock prices are pushed up and are deviated from their fundamental value. The stock prices return to the level of fundamental value once the temporary price pressure has passed.

Sias, Starks and Titman (2006) stated that the relation between changes in institutional ownership and measured over the same period is due to price effects associated with institutional trading. Sias *et al.* (2006) utilized a covariance decomposition method to estimate the relation between changes in quarterly ownership and daily returns, and concluded that institutional price pressure is the predominant explanation. There are three potential explanations for price changes associated with aggregate institutional trading: short-term liquidity effects, imperfect substitution and information revealed through institutional trading.

Elliot, Ness, Walker and Warr (2006) suggested that index changes are associated with demand shocks that temporarily drive up or down the share prices as large order flows from index-tracking investors are fulfilled. Excess demand from indexing drains the existing market liquidity. Buying (selling) pressure causes the prices of stocks to deviate from its equilibrium level. The effect of excess demand is quickly mitigated as stock price rise (drop) to attract sellers (buyers), providing immediate liquidity. They further pointed out that when faced with large order flows, market makers incurred higher costs to maintain sufficient inventory. These costs are reflected in a security's bid-ask spread as market makers revise

prices in accordance with perceived change in the riskiness of their inventory. The security prices returned to an equilibrium level when the demand shock was outweighed. Therefore, the price pressure hypothesis predicted a short-run increase or decrease in share prices of added or eliminated stocks.

Lynch and Mendenhall (1997) also confirmed the price pressure hypothesis. In post October 1989 period, they found significant price reversal following the effective day for both the deleted and added stocks. The result of significant negative excess return indicated that the price effect emanating from the announcement was transitory and most of the initial gains or losses were reversed over several trading sessions. Lynch and Mendenhall contended that the temporary price effect was linked to index fund transactions, tracking the index composition changes. Once the index-tracking investors completed their portfolio rebalancing, the demand shock dissipated and stock prices returned to the pre-announcement levels.

A temporary price increase could be due to price pressure (Warther, 1995). However, if the price increase is permanent, it may reflect reduction in the cost of capital due to increased liquidity, better market integration and risk sharing advantages of liberalization. Price pressure hypothesis is relevant to this study as it brings out the relation between the foreign portfolio equity and stock returns in the Kenyan listed financial institutions.

### **2.2.3 Base broadening hypothesis**

Base broadening hypothesis suggested that the expansion of the investors' base by including foreign investors would lead to increased diversification followed by reduced risk and thereafter lowering the required risk premium. The participation of foreign investors in the market brings about a demand shift and hence a permanent price change. Therefore, there is a permanent increase in the equity share price through risk pooling which is the signal of higher returns (Bodla & Garg, 2007).

The theory was developed from the work of Merton (1987) who asserted that increasing the investor base for a given stock market could raise stock prices through risk pooling. Merton further suggested that investors only invest in stocks which they are well informed, meaning that if the local and informed foreign investors have the same information, they would be able to have the same selection of portfolios.

Okuyan and Erbaykal (2011) in their study, emerging from base broadening hypothesis, investigated whether the foreign transactions had an effect on the security returns in Instabul Stock Exchange. The cointegration relationship between two variables was

analysed by the bounds testing approach and ARDL models using the monthly data of 1997-2009. As a result, a positive relationship was detected between the foreign transactions and returns of shares in the long run. The findings were interpreted as the validity of base broadening hypothesis in long term in Instabul Securities Exchange.

Henry (2000) examined stock market liberalization, economic reforms, and emerging market equity prices. Henry pointed out that a sudden change in investors' composition due to liberalization in emerging stock markets could influence the pricing of stocks. As a result of increased risk sharing and higher liquidity, prices would increase as a result of decrease in expected returns. To add up, as the securities of a given country are exposed to a larger number of investors, the required return for these securities decline leading to an increase in price.

Bekaert and Harvey (2000) analysed the effects of foreign investors trading in 20 emerging markets after market liberalization. They found permanent price which they claim to be evidence for the base broadening hypothesis. More specifically, they document that the cost of capital is reduced after markets are opened up to foreign investors. For the Turkish market, Adabag and Omelas (2004) found strong persistence in foreign flows, which suggests foreign investors change their market positions slowly enough to avoid sudden swings in prices, or excess volatility.

Clark and Berko (1997) studied foreign investment fluctuations and emerging market stock returns in Mexico and noted the beneficial effects of allowing foreigners to trade in stock markets by outlining the base-broadening hypothesis. Clark and Berko explained that the perceived advantages of base-broadening arise from an increase in the investor base and the consequent reduction in risk premium due to risk sharing.

Warther (1995) found evidence in favour of base-broadening hypothesis in the study on the relation between aggregate mutual fund flows in the U.S and security returns. The theory is important to the study as it tries to emphasize the effect of influx of foreign investors in the Kenyan domestic market and how they influence stock returns.

#### **2.2.4 Positive feedback hypothesis**

The positive feedback-trader hypothesis asserts that foreign investors put money in a market in response to increasing returns at the market, that is, the flow must lag returns. Positive feedback trading occurs when investors buy securities after prices increases and sell after prices decline. On the other hand, negative feedback trading posits that investors buy when prices are low and sell when prices increase. Investors who base their portfolio

decisions on the expectations, which are in turn based on past returns, are termed as momentum or feedback traders (Abreu & Brunnermeier, 2003).

Shleifer and Summers (1990), in recognizing the effect of mob psychology on movements in the prices of the aggregate stock market divided investors into two groups: arbitrageurs also called “smart money” and ordinary investors also called noise/liquidity traders. Arbitrageurs make their investment decisions based on the present value of expected future cash flows generated from assets. Noise traders are trend chasers and they base their investment decisions on past price and return information. Arbitrageurs and ordinary investors are two different types of investors with different demand functions in the stock market.

Previous studies found evidence of positive feedback trading behaviours. Koutmos and Saidi (2001) considered positive feedback trading behaviours in developed countries such as Australia, Belgium, Germany, Italy, Japan and the UK as well as in the emerging countries including Malaysia, Phillipines, Hong Kong, Singapore, Taiwan and Thailand. Koutmos and Saidi discovered that positive feedback trading activities existed differently in emerging markets compared to developed markets. The findings of Koutmos and Saidi show that, unlike developed markets, the presence of positive feedback trading activities in emerging markets is asymmetric in up and down markets. In developed markets, they documented strong evidence of positive feedback trading during market downturns but little evidence of positive feedback trading during market upturns. They concluded that feedback trading plays an important role in determining short term movements in stock returns.

Kaniel, Saar and Titman (2008) examined the dynamic relations between individual investors’ trading behaviour and stock returns in the United States and established that individual investors tend to buy stocks after prices decline and sell stocks after stock prices increase. The results supported the existence of negative feedback trading behaviour in the US markets, in which institutional investors are major market participants and individuals make investments in mutual funds.

According to Li and Wang (2008), institutional investors stabilised Chinese stock market and found that these investors engage in herding but not in momentum trading. Li & Wang datasets only covered the classes of the Shanghai 180 index and couldn’t differentiate between transactions of foreign and domestic institutions. Kling and Lei (2008) construct an index of Chinese institutional investors’ sentiment. Kling & Lei presented evidence that domestic institutional investors’ sentiment was driven by previous market returns, implying a positive feedback process. Finally, the study by Chen, Kenneth, Nofsinger and Rui (2005)

looking at individual brokerage accounts found out that account holders buy stocks in response to short-term trends but ignore long-term past performance. Foreign institutions were thought to follow rational long-term investment strategies dampening speculative activity. Antoniou, Koutmos and Pericli (2005) utilized the model to analyse feedback trading in stock markets before and after the introduction of future markets, arguing that feedback trading on spot markets is significantly lower after the inception of future trading.

Brunnermeier and Pedersen (2005) concluded that markets participants' assets demand was generated by two feedback rules at high frequency. First, according to positive feedback, investors buy or sell the risky asset if its return over the last trading interval was positive or negative. The trend following resulted in intensified price fluctuation in either direction leading to self-reinforcement in models with boundedly rational traders and short horizons. Second, following risk feedback, investors sell more or less of the risky asset if its return in the last trading interval was high or low. Risk feedback trading induced net selling pressure and its absolute contribution to net order flow rise or declined during volatile and tranquil periods.

Consistent with this theory, Shu (2007) found that positive feedback trading by institutional investors intensified momentum in stock returns and reduced price efficiency as they pushed prices away from fundamental values.

Bange (2000) and Sias (2007) indicated that changes in portfolio holdings of individual and institutional investors observed at monthly, quarterly and annual intervals were driven partly by positive feedback trading.

Cohen and Shin (2003) found evidence of positive feedback trading using tick by tick data for the U.S. Treasury market. The trading activity appeared to increase on more volatile days.

According to Kaur and Dhillon (2015), foreign institutional investors participated in positive feedback or momentum trading since bidirectional causality was detected. Positive feedback trading strategies by foreign institutional investors indicated that these investors invested in Indian stock market when stock prices were rising. On the other hand, positive feedback practices caused Indian stock market prices to rise further and hence pushing prices away from their fundamental value. Also, it signalled foreign investors to withdraw when stock prices began to fall causing the stock market to destabilize.

Positive feedback trading supports the market saying that one should not attempt to "catch a falling axe" meaning that investors should not trade against a strong trade. Positive feedback hypothesis in this study highlights the behaviour of foreign investors while trading

securities in the Kenyan domestic market that is buying stocks when their prices rise and selling when prices fall.

## **2.3 Empirical studies**

### **2.3.1 Foreign portfolio equity sales and stock returns**

Using Korean data, Bae and Min (2007) studied trading behaviour and performance of foreigners, local institutions, and individual investors and showed that foreign investors tend to buy stocks that have outperformed and sell stocks that have underperformed suggesting that foreigners tend to be momentum traders. In a study of the daily flows in the Korean market on whether foreign investors destabilize stock markets, Choe *et al.* (1999) found strong evidence that foreign investors buy following a positive market and sell following a negative market return before the Korean economic crisis.

Grinblatt and Keloharju (2000) examined the investment behaviour and performance of various investor types. Grinblatt and Keloharju measured the performance of foreign versus domestic investors by comparing groups' tendency to buy future winning stocks and sell future losing stocks. Future winning or losing stocks were those with six month returns that fell in the top or bottom quartile. The tendency to buy winners and sell losers was computed as the difference between the foreign shares in buy volume of winning stocks minus the foreign share in buy volume of losing stocks. The measure of performance was intuitive but required judgment as to the horizon at which returns were measured and the thresholds for classifying winners and losers.

Odean (1998) investigated whether investors are reluctant to realize their losses and concluded that individual investors tend to sell past winners and hold on to past losers.

Barber and Odean (2000) in their study on trading is hazardous to your wealth: the common stock investment performance of individual investors reported that individual investors are anti- momentum investors in the U.S.

Griffin, Harris, and Topaloglu (2003) on the dynamics of institutional and individual trading, showed that individual investors tend to be contrarian traders in that they sell stocks with positive returns in prior trading days.

Chiyachantana, Jain, Jiang and Wood (2004) on international evidence on institutional trading behaviour and price impact found that it is the symmetry between institutional buy and sell orders that determine price impact.

Meurer (2006) in a description of the behaviour shown by international investors in the Brazilian stock market found that portfolio flows are higher when the index is low, and



the outflows are higher when the index is high. This showed that portfolio investors are trying to operate in the opposite way with respect to the market, buying stocks when prices are low and selling when prices are high, chasing profitable opportunities.

Froot, O'Connell and Seasholes (2001) explored further herding or trend-following behaviour using daily international portfolio flows into and out of countries from 1994 to 1998. They confirmed that flows are strongly influenced by past returns, a finding consistent with positive feedback trading by international investors.

Froot and Ramadorai (2001) studied the information content of international portfolio flows and suggested that the cross-border flows do keep a measure of fundamentals in mind, and when mean-reverting discounts get unusually large, international investors sell underlying assets, only to buy them more aggressively when discounts are small.

Grinblatt, Titman and Werners (1995) studied momentum investment strategies, portfolio performance and herding of mutual funds and recommended that international portfolio investors should engage in positive feedback trading. They also established that offshore funds may be more prone to this kind of trading pattern than their onshore counterparts, either due to the nature of their investment styles or due to lower regulatory constraints they face at home.

Kaminsky, Lyons and Schmukler (2000) in a study of mutual funds strategies in emerging markets examined the trading behaviour of the mutual funds that invest in Latin America. Kaminsky *et al.* (2000) found evidence of positive feedback trading indicating that investors sold shares when prices were declining.

Goldstein and Hui (2007) in a study of systematic liquidity and the composition of foreign investment argued that the key prediction of their model is that countries that have a high probability of an aggregate liquidity crisis will be the source of more FPI and less FDI. The intuition is that as the probability of an aggregate liquidity shock increases, agents know that they are more likely to need to sell the investment early, in which case, if they hold FDI, they would get a low price since buyers do not know whether they sell because of an individual liquidity need or because of adverse information on the productivity of the investment. As a result, the attractiveness of FDI decreases, and the ratio of FPI to FDI increases.

Li *et al.* (2003) studied the benefits of diversification for U.S. investors investing in developed and emerging world markets considering restrictions on short selling of securities in some of these markets. They concluded that benefits of investing in developed markets are undersized initially and become non-existent when short sales were restricted. Further, they

established that investments in emerging markets offer significant diversification benefits even under strict restrictions on short sales. Their findings showed that the integration of emerging markets with other world markets reduced the diversification benefits of investing in them.

Sevil and Mustafa (2012) in their study of foreign investors and noise trader in Instabul Stock Exchange found out that foreign investors do not seem to act according to the information they gather from the changes in index return. They might be noise trading when they are selling, implying the reason they sell may result from the expectations and sentiments of foreign investors.

Abhijeet (2012) examined the cause and effect between foreign institutional investors trading behaviour and stock market returns in India. Abhijeet asserted that foreign investors were involved in positive feedback trading at aggregate level, where they sell securities after prices declined. Foreign investors also exhibited the tendency of herding in a sense that they all acted or reacted in a similar manner. Abhijeet assumed that the existence of positive feedback trading caused the price impact of shocks in trade order flow to be larger than when feedback trading is ignored.

Gordon and Gupta (2003) examined portfolio flows into India using monthly data over the period 1993 to 2000 and found out that foreign institutional investors' flows were negatively related to lag market returns, indicating negative feedback trading and that there was a causation running from foreign institutional investors to return. Gordon and Gupta further suggested that foreign institutional investors act as market makers and book profits by investing when prices were low and selling when they were high.

### **2.3.2 Foreign portfolio equity purchases and stock returns**

A number of hypotheses have been advanced to explain the correlation between foreign purchases and stock returns depending on how foreign portfolio flows affect domestic stock prices. The base-broadening hypothesis suggests that foreign inflows cause emerging equity market prices to rise. By broadening the investor base, diversification and risk sharing is increased thereby lowering the required risk premium.

Samarakoon (2009) investigated the relationship between equity flows and stock returns in Sri Lanka. The study examined not only the effect of foreign investor transactions but also the effect of local investor transactions on stock market was also established. According to empirical results, domestic institutional and foreign individual purchases lead to

higher future returns whereas domestic individual purchases lead to lower future returns. Foreign institutional purchases were found to have no impact on future returns.

In a study of foreign investment fluctuations and emerging market stock returns, the resultant influx of new investors can lower the perceived liquidity risk of stocks (Clark & Berko, 1997 & Narag, 2000).

Stocks with narrow investor bases exhibit higher expected returns because for the holders of these shares the variance of the returns on the stocks is more systematic than it appears from the perspective of the market as a whole. 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).

The price pressure hypothesis suggested that rise in prices associated with inflow surges are due to temporary illiquidity meant to absorb demand from foreign entry. Thus inflow 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), aggregate mutual fund flows and security returns, flows 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 flows, hence flows will be positively correlated with security returns. Bekaert *et al.* (2002) found equity flows to increase after liberalization and argue that this is due to portfolio rebalancing. Their study supports price pressure hypothesis with equity flow shocks initially increasing returns. Pavabutr and Yan (2003) showed that exposure to foreign flows is associated with a reduction in risk premium, which diminishes among stocks favoured 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 flows and subsequent returns and a negative relation between returns and subsequent flows, which is inconsistent with price pressure hypothesis.

The positive feedback hypothesis 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 (Bohl & Siklos, 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. However, Bohl and Siklos 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 was also found to hold by foreign institutional investors in India (Batra, 2003), and in six Asian emerging markets which is argued to be due to behavioural factors or foreigners extracting information from returns rather than portfolio-rebalancing effects. Positive feedback trading has also been found to hold by (Bohl & Siklos 2008) in a sample of developed and emerging markets.

Kim and Yang (2009) investigated the effect of capital inflows on domestic asset prices in Korea from January 1999 to September 2007. Capital inflows 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. 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 capital inflows on domestic asset prices in Korea, Kim and Yang found the influence of capital inflow shocks to be more significant on the stock market but limited in other parts of the economy.

Chakrabarti (2001) analysed foreign institutional investors Flows to India and concluded that since the beginning of liberalization, foreign institutional investors' flows to India have steadily grown in importance. The author analysed these flows and their relationship with other variables.

In a study on the relationship between aggregate stock market returns and purchase of foreign equity from an array of investor groups, Boyer and Zheng (2009) found quarterly flows to be auto-correlated for each of the different investor groups and a significant and positive contemporaneous relation between stock market returns and flows of Mutual Funds and foreign investors in U.S. They found that investors are driven by unexpected flows component rather than expected flows, but little evidence that investor flows followed past stock market returns.

Twerefou and Nimo (2005) observed that, in emerging markets, stock price is the main indicator of risk as investors are more concerned about stock price movements. Hence, foreign entry affects market return through its effect on the portfolio risk premium. However

according to the efficient markets hypothesis, since the expected part of the announcement is already embedded in stock prices then the security prices should respond to the unexpected announcement.

While examining the dynamics of the relationship between institutional investment flow and stock returns for India using daily data over the period of 2002 to 2012, Pramod and Puja (2014), concluded that foreign institutional investors (FIIs) inflow do not have any significant impact on market returns but the flows are significantly affected by their own lags and lagged returns, implying that they follow their own past strategy as well as the recent market behaviour.

Sehgal and Tripathi (2009) compared the investment behaviour of mutual funds and foreign institutional investors and found that the stock market returns cause both foreign institutional investors' flows and mutual fund flows, thereby acknowledging positive feedback trading strategy.

Thiripalraju and Acharya (2011) investigated the interaction between institutional investment and market return in Indian stock market using daily net investment data of Foreign Institutional Investors (FIIs) and Mutual Funds (MFs) from January 2000 to December 2009. They found bidirectional causality between FIIs investment and stock market returns and that FIIs investment is positively related to lag market return.

Luciana, Meurer and Silva (2010) examined the relationship between stock returns and foreign investment in Brazil. They concluded that the inflows of foreign investment boosted the returns from 1995 to 2005. There was a strong contemporaneous correlation, although not Granger causality. The returns Granger-caused foreign presence, but the reverse causality was not found. This suggested that positive feedback trading played a role, and that the market promptly assimilated the relevant new information that arrived.

Tesar and Werner (1994, 1995) discovered that international prices tend to rise when international investors purchase. Froot, O'Connell and Seasholes (2001) used measures of daily international investor flows across a wide number of countries, and found evidence that suggested that at least a portion of the price increase occurred subsequent to internationals' purchases. These studies reveal that international investors have more information than the domestic investors and they may use this information to anticipate domestic-market equity returns.

Dornbusch and Park (1995) in their study of financial opening and policy lessons for Korea claimed that since the foreign investors' transactions are affected by previous

performances, they tend to purchase shares when the prices of shares are increasing and sell when the prices decreasing.

Mukherjee, Bose and Coondoo (2002) studied the cause-and-effect relationship between foreign institutional investors' flows and returns on the Indian equity market. They found that foreign institutional investors flows to and from the Indian market tend to be caused by returns in the domestic equity market and not the other way round.

Christoffersen, Chung and Errunza (2006) on their study of the impact of financial liberalization on firms argued that on liberalization, the increase in the stock prices from capital flows may be temporary (price pressure) or permanent (lowering the cost of capital). However, as suggested by Bekaert, Harvey and Lumsdaine (2002), higher stock returns after capital inflows cannot be merely price pressure because effects are somewhat permanent. The mechanisms that drive the equity market reduction had two main forces behind. The first and the most relevant is the reduction in the relative risk of a market's equity assets after liberalization and integration into the global equity market (Henry, 2003). The second reason had to do with the supply and demand of financial resources and the sources of capital that a firm can rely to invest in their stocks were more restricted. After liberalization, there were more investors willing to lend capital through equity purchases leading to an increase in the aggregate amount of funds available, creating competition among suppliers of funds, which in turn, reduces transaction costs, thus lowering the cost of capital (Stulz, 1999). Following the model by Henry (2003), there are two components to a country's cost of capital, which are the risk free rate and the equity premium. Henry argued that following large inflows of portfolio capitals, both elements should fall. The main assumptions of the model are that the equity market of a given small country is completely segmented from the world's equity market and that investors of world market have a constant relative risk aversion and that they are only concerned about expected returns and variance of their portfolios.

### **2.3.3 Foreign portfolio equity turnover and stock returns**

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). This means that the rate of return of a country's currency has an impact on the pricing of equities in the domestic market.

Liberalizing a country's stock market changes the relevant source of systematic risk for pricing stocks from the local stock market index to a world stock market index.

Forbes and Chinn (2004) in a study of decomposition of global linkages in financial markets over time, for instance, found that returns in two countries could co-move when shocks to one country are transmitted to other countries through cross-country linkages, due to effects of global shocks in both countries, or due to effects of sectorial shocks that simultaneously affect all countries. Consequently, expected returns should also change when countries liberalize (Chari & Henry 2004).

The argument is that foreign flows increase prices when they come in and decrease them when they leave thereby making prices more volatile (Stulz, 1999). Hence, capital flows 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 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).

If 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. 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 argued 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. 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 e.t.c. Realization of benefits from capital flows can therefore be affected by global financial market volatility and international exchange rate fluctuations which may lead to large and unfavourable swings in capital flows (Senbet & Otchere, 2010).

Kang and Stulz (1997) examined foreign investors' aggregate holdings of individual firm's stocks. They found out that foreign investors are cautious in their choice of assets and predominantly hold the equities of large firms in manufacturing industries as well as the equities of firms with good accounting performance. Kang and Stulz further found out that

foreign investment in Japanese equities is concentrated in the largest firms, which is consistent with foreign investors having relatively less information about small firms than local investors.

Bohn and Tesar (1996) identified the main determinants of foreign equity investment. In general, net purchases of foreign equity in a particular market were found to be positively related to the expected equity returns in that market. In other words, U.S. investors tend to buy equity in a particular market if the signals about that market suggest that future returns will be high. This suggests that U.S. equity investment is not driven by short term trends, but that U.S. investors are responsive to local market conditions.

Badhani (2005) studied the dynamic relationship among stock prices, exchange rate and net foreign institutional investors' investment flows in India. Badhani analyzed monthly data from April, 1993 to March, 2004 and observed that: long-run bi-directional causality exists between foreign institutional investors' investment and stock prices; no long-term causality exists between exchange rate and stock prices; uni-directional long-run causality runs from exchange rate to stock prices.

Roger and Warner (2000) researched on the high frequency relationship between aggregate mutual fund flow and market return using U.S. daily data from 1998 to 1999. The result showed that the simultaneous daily relationship between the two variables was positive and the relation reflected that flows could affect market returns, and they argued that the positive relation cannot be necessarily interpreted as the price influence without additional test because the market returns may drive fund flow instead of flow driving market returns. Therefore, they included the lead-lag flow-return regressions and empirical evidence indicated that flows positively respond to market returns, which is supportive of the feedback trading hypothesis.

Puneet and Raman (2009) explored the flow-return relationship using quarterly data in U.S. market from 1951 to 2007 with Vector Auto-regression model. They hold the opinion that the positive relationship between stock mutual fund flow and stock market return cannot necessarily be independent and endogenous. Puneet and Raman asserted that there might be a third factor that is positively correlated with both mutual fund flow and stock market return. Consequently, they included the main macroeconomic variables and return predictive variables as control variables to investigate whether the positive correlation between mutual fund flow and stock market return could be affected by these variables. In other words, with controlling for this series of variables, they tested whether the stock market return was still influenced by fund flow. Their research evidence firstly confirmed the positive flow-return



relationship and then the examination results implied that this relation is endogenous and highly independent of the macroeconomics variables and return predictive variables.

Natalie and Parwada (2007) analyzed the relationships between stock mutual fund flow and stock market return in Korean market. The Korean market had experienced a similar development with that in Chinese market. The empirical result shows that the two variables are significantly and positively correlated and mutual fund investors are negative feedback traders of stock market.

Cha and Kim (2005) examined both the long-run and short-run dynamic relationships between mutual fund flows and security returns using macro approach in US market. In their research, a system methodology that combined the information in the stock market and the information in bond market was applied to test the interactive relationship further. Their evidence supported the high positive correlation between the two variables in stock market. The positive short-term effect was the reason that the preceding changes of stock market return caused the fund flow to move in the same direction.

Bhattacharya and Mukherjee (2005) analysed the stock market in the light of capital inflows and exchange rate movement. Bhattacharya and Mukherjee determined lead and lag interlink-ages between Indian stock market, net foreign institutional investment and exchange rate. The study concluded that: a bi-directional causality exists between stock prices and net foreign institutional investment; uni-directional causality runs from exchange rate to stock market returns; no causal relationship is detected between exchange rate and net investment by foreign institutional investors.

Swanson and Lin (2003) examined the relationship between international equity flows and returns in eight emerging markets tested for feedback trading hypothesis and also information hypothesis. At the end of the study information content of flows with resulting effects on returns was found to be stronger than feedback trading hypothesis.

Bekaert, Harvey and Lumsdaine (2002) explored the dynamics, causes and consequences of capital flows in 20 emerging markets and found evidence that unexpected equity flows are associated with strong short-lived increases in returns as well as a permanent impact.

Froot and Ramadorai (2008) analysed inward and outward portfolio investments of 28 developing and 16 developed economies between 1994 and 1999. Their results are as follows: the importance of regional factors affecting the direction of portfolio investments are increased, portfolio flows may be considered as stationary but they are more permanent than stock returns, portfolio flows are highly affected by past returns, foreign portfolio

investments coming to developing countries have the positive estimation power of future stock returns, the sentiment of domestic stock prices to inward foreign portfolio investments is positive and high, and lastly, stock prices are consistent with persistence of portfolio investments.

Nam (2004) analysed the relationship between foreign investors' trading volume and stock returns in Korean market between 1992 and 1998. As a result it was found that foreign traders are not buying or selling securities according to noise, they trade according to information. At the same time they do not cause noise in Korean market. Therefore, foreign traders do not directly affect the riskiness of security prices.

Griffin, Nadari and Stulz (2004) tried to model the net buying of foreign investors in Indonesia, Korea, Phillipines, Taiwan, Thailand, India, Sri Lanka, Slovenia and South Africa and they found that net buying of foreign investors in those countries increases when the stock market return increases. At the same time, buying of foreign investors in smaller countries increases when the return in bigger countries increases as well. The reaction is fast but the duration of reaction is short. Griffin, Nardari and Stulz further using daily data on equity flows for nine emerging market countries found out that equity flows were positively related to host country stock returns as well as market performance abroad.

The causality between corporate foreign investments and stock returns in India was analysed by Inoue (2009) in two periods: before and after May 2003. Cross correlation approach was used to daily data and it is found that for the first period, there is causality from stock returns to net cumulative buying of corporate foreign investors both in mean and in variance but there is no causality in the opposite direction. However for the second period, casual relationship was determined in both directions. It was found that the causality from net cumulative buying of corporate foreign investors to stock returns took longer time because of macroeconomic variables.

Kim, Landi and Yoo (2009) searched on the effects of foreign investors on Korean market. VAR analysis was applied to daily data in 1955-2006 separately for the domestic and foreign investor groups. As a result, it was found that net buying of foreign investors does not affect the stock market return. At the same time net buying of foreign investors reacts immediately to positive changes in return. GARCH-M analysis was resulted that net buying of foreign investors has no significant effect on volatility in the market. Finally, it was found that after the increase in net buying of foreign investors, Won appreciates across U.S.D.

Rhee and Wang (2009) analysed how the liquidity of Indonesian stock market been affected by foreign investors who have 41% of market capitalization. The results of the study

which covers the years 2002-2007 are as follows: foreign investors have negative effects on liquidity of the stock market, and the stated reason was that corporate investors increase the information asymmetry, foreign corporate investors' big amount of buying or selling increase the volatility, dominant foreign investors decrease the competition in the market, or foreign corporate investors use passive portfolio management strategies.

Barniv (2009) analysed the information demand of foreign investors in China stock market. Regression analysis was conducted for the data of 1991-2001 and it was found that foreign investors have less information than domestic investors and therefore they demand more. At the same time, because foreign analysts try harder to have information, their forecasts are found to be more accurate than forecasts of domestic counterparts.

Aydin (2011) theoretically emphasized the importance of investigating how investors actually behave in financial markets. He specified the key points of efficient market hypothesis and market anomalies for the Turkish market. He introduced the concept of intrinsic bubbles for explaining the anomalies. As a result he asserted that the field of behavioural finance should be studied as a main branch instead of supplementary branch and it should be empirically studied more in the Turkish financial market.

Gazioglu (2008) in a study of the effects of capital inflows and outflows on real exchange rates and the real stock market returns before and after the financial crisis in Turkey found an asymmetric impact of capital on exchange rate and stock market returns.

The study done by Folkerts, Landau and Ito (1995) in a study of International capital markets on volatility of emerging markets in periods that differ in their intensity of portfolio flows generated mixed results with Mexican stock prices being least volatile when flows are most volatile and vice versa for Hong Kong.

Griffin *et al.*, (2007) did a research to find out whether investors trade more when stocks performed well by investigating the dynamic relation between market-wide trading activity and returns in 46 markets. Griffin *et al.* discovered that many stock markets exhibited strong positive relation between turnover and past returns. These findings stood in the face of various controls for volatility, alternative definitions of turnover, differing sample periods, and were present at both the weekly and daily frequency. The relation was more statistically and economically significant in countries with high levels of corruption, with short-sale restrictions, and in which market volatility was high.

Nilsson (2002) studied financial liberalization and the changing characteristics of stock returns among the Nordic Countries and reported excess volatility following the process of liberalisation using the Markov regime-switching model. Nilsson found out evidence of

higher expected return, higher volatility and stronger links with international stock markets characteristic of the deregulated period in all Nordic Countries stock markets.

Anand and Pasricha (2009) studied the impact of market opening to FIIs on Indian stock market behaviour. They empirically analysed the change of market return and volatility after the entry of FIIs to Indian capital market and found that there is no significant change in the Indian stock market average returns; volatility is significantly reduced after India unlocked its stock market to foreign investors.

According to Nyang'oro (2013) the contribution of foreign investor turnover to total market turnover increased from 8.2 per cent in 1996 to 13.5 per cent in 1997 before declining by almost half the following year to 7.9 per cent in Kenya. Though with variability, the proportion of foreign investor to total turnover rose to the highest of 51.9 per cent in 2011. The proportion of foreign turnover to total turnover declined from 1990s after stock market liberalization, with the lowest values recorded in 2004 and 2006. The falling values of foreign portfolio flows were attributable to the fact that investors came into the market assuming superior information thereby pushing up prices by demanding more, but later after the market had factored in the information held by these investors, prices self-correct forcing them to move out of the market. However, since 2006, the proportion of foreign flows has been increasing in Kenya

Siamwalla et al (1999) in their study of foreign capital flows to Thailand suggested that relatively low yields in industrial countries together with impressive economic growth and attractive returns in developing economies motivated foreign investors to relocate their funds to money and capital markets to developing countries. Siamwalla argued that the increase in international flow of portfolio investment corresponded well with the trend towards trade globalization, international financial linkages, and expansion of production bases overseas.

Grabel, (1998) examined portfolio investments and reported that there had been a dramatic increase in the magnitude of international flows of portfolio investment, especially from countries in the North to emerging market economies across the South. Grabel posited that North-South PI flows had been heralded as a relatively safe, efficient means of transferring capital to those countries where it is needed most. This view had been challenged by the series of financial crises across the South, from Mexico in 1994 to Southeast Asia in 1997-98. Thus, many economists argued that these crises are anomalous, reflecting exceptional circumstances. But a closer look reveals that the unregulated international flow of PI, especially into emerging market economies, is fraught with deep structural problems.

Errunza (2005) studied foreign portfolio equity investments, financial liberalization and economic development. Errunza argued that the reform of local capital markets and relaxation of capital controls to attract foreign portfolio investments (FPIs) has become an integral part of development strategy. The proximity of market openings and large, sudden shifts in international capital flows gave credence to the notion that the liberalization was the primary culprit that precipitated the Asian crisis. Hence, Errunza reassessed the benefits and costs of FPIs from the perspective of the recipients. Specifically, Errunza discussed the various FPI contributions and presents empirical evidence regarding the relationship between FPIs and market development, degree of capital market integration, cost of capital, cross-market correlation and market volatility. It is clear that the evidence on the benefits of FPIs is strong, whereas the policy concerns regarding resource mobilization, market co-movements, contagion, and volatility are largely unwarranted. Errunza made some policy suggestions regarding preconditions for capital market openings, market regulation, and liberalization sequencing.

Grieg-Gran, Westbrook, Mansley and Robins (1998) in their study of foreign portfolio investments and sustainable development examined the issues involved in harnessing a particular type of capital flow, namely portfolio equity, to achieve sustainable development objectives. They review recent thinking on this issue, drawing on a case study of the forest products industry with particular focus on companies registered in Malaysia. Their case study tracked the magnitude and sources of portfolio equity flows to the forest products sector in Malaysia, discussing whether any links can be made between such flows and environmental and social performance in the sector. They considered the justification for, and practicalities of, using portfolio investment as a form of leverage to promote best practice in the forest products sector and to discourage operations with adverse social and environmental impact.

According to Sethi and Patnaik (2005) on the impact of international capital flows on India's economic growth, international capital flow such as direct and portfolio flows has huge contribution to influence the economic behaviour of the countries where they are present, positively. Countries with well-developed financial markets gain significantly from Foreign Direct Investment (FDI). Given the huge volume of capital flows and their influence on the domestic financial markets, understanding the behaviour of the flows becomes very important especially at the time of liberalizing the capital account. The study attempted to examine the impact of international capital flows on India's financial markets and economic growth. The study also examined trends and composition of capital inflows, changing pattern

of financial markets in view of globalization, and tries to ascertain the impact of domestic financial policy variables on international capital flows and thus suggest policy implication thereof. By using monthly time series data, they found that Foreign Direct Investment (FDI) is positively affecting the economic growth direct contribution, while Foreign Institutional Investment (FII) is negatively affecting the growth. The empirical analysis using the time series data starting April 1995 to December 2004 showed that FDI plays unambiguous role in contributing to economic growth.

Bordo and Meissner (2007) explored the association between foreign capital and economic growth. In standard growth regressions, the study found mixed evidence of any association between economic growth and foreign capital inflows. If there is an impact, it comes with a long lag and it is transitory having no impact on either the steady state or the short run growth rate. This suggested a view that there were long gestation lags of large fixed investments and it is also consistent with a neoclassical growth model. The study also argued for a negative indirect channel via financial crises. These followed on the heels of large inflows and sudden stops of capital inflows often erasing the equivalent of several years of growth. They then took a balance sheet perspective on crises and explore other determinants of debt crises and currency crises including the currency composition of debt, debt intolerance and the role of political institutions. Bordo and Meissner further argued that the set of countries that gained the least from capital flows in terms of growth outcomes in this period were those that had currency crises, foreign currency exposure on their national balance sheets, poorly developed financial markets and presidential political systems. Countries with credible commitments and sound fiscal and financial policies avoid major financial crises and achieve higher per capita incomes by the end of the period despite the potential of facing sudden stops of capital inflows, major current account reversals and currency crises that accompanied international capital markets free of capital controls.

Prasand, Rajan and Subramanian (2007) documented the recent phenomenon of "uphill" flows of capital from non-industrial to industrial countries and analysed whether this pattern of capital flows has hurt growth in non-industrial economies that export capital. Surprisingly, the study found a positive correlation between current account balances and growth among nonindustrial countries, implying that a reduced reliance on foreign capital is associated with higher growth. The study found a weaker result using panel data rather than cross-sectional averages over long periods of time. In no case however, did they find any evidence that an increase in foreign capital inflows directly boosts growth. This puzzled them as to what can explain these results, which were contrary to the predictions of conventional

theoretical models. They provided some evidence that even successful developing countries have limited absorptive capacity for foreign resources, either because their financial markets are underdeveloped, or because their economies are prone to overvaluation caused by rapid capital inflows.

Durham (2003) examined the effects of foreign portfolio investment (FPI) and other foreign investment (OFI) on economic growth using data on 88 countries from 1977 through 2000. Most measures suggested that FPI had no effect, and some results indicated that OFI had a negative impact on growth that is somewhat mitigated by initial financial and/or legal development. Durham posited that these results were questionable due to possible simultaneity bias. The empirical analyses also examined whether these foreign investment affects growth indirectly. FPI did not correlate positively with macroeconomic volatility, but the results indicated that the negative indirect effect of OFI through macroeconomic volatility comprises a substantial portion of the gross negative effect of OFI on growth.

Aggarwal, Klapper and Wysocki (2003) in their study of portfolio preferences of foreign institutional investors, examined the investment allocation choices of actively-managed U.S. mutual funds in emerging markets after the Asian financial crisis. They analysed both country- and firm-level governance and disclosure policies that influence these investment allocation decisions. At the country-level, they found out that U.S. funds invest more in open emerging markets with stronger shareholder rights, legal frameworks and accounting standards. After controlling for country characteristics, U.S. funds are found to invest more in firms that adopt policies resulting in greater transparency and accounting disclosures in addition to characteristics such as size, visibility, and high analyst following. The impact of stronger disclosure and transparency was most pronounced in countries with weaker investor protection. Their results suggested that steps can be taken both at the country and the firm level to create an environment conducive to foreign institutional investment.

Rai and Bhanumurthy (2007) tried to examine the motivators of foreign institutional investments (FII) in India, which crossed almost US\$ 12 billion by the end of 2002. Given the huge volume of these flows and its impact on the other domestic financial markets understanding the behaviour of these flows becomes very important at the time of liberalizing capital account. In this study, by using monthly data, Rai and Bhanumurthy found that foreign institutional investments inflow depends on stock market returns, inflation rate (both domestic and foreign) and ex-ante risk. In terms of magnitude, the impact of stock market returns and the ex-ante risk turned out to be major determinants of foreign institutional investments inflow. This study did not find any causation running from foreign institutional

investments inflow to stock returns as it was found by some studies. Stabilizing the stock market volatility and minimizing the ex-ante risk would help in attracting more foreign institutional investments inflow that had positive impact on the real economy.

Lee (2007) studied the factors influencing foreign portfolio investments in the United States. The study suggested that in the past years there had been a substantial theoretical advancement in the understanding of the factors determining international portfolio capital movements. From the mechanistic flow theory, progress had been made to the portfolio-adjustment theory which rested on a firmer microeconomic foundation. However, because of the multifarious functions of the United States in the world economy the portfolio-adjustment theory was not quite adequate in explaining the foreign portfolio investments in the United States. There were other motives such as maintaining working balances and compensatory balances in addition to the expected utility maximization. In some studies, ad hoc assumptions were introduced to account for these motives for holding U.S. liabilities. Given some statistically successful results, there was much to be desired in the simple portfolio approach modified with ad hoc assumptions. Despite the theoretical weakness Lee asserted that there would have been more empirical research in the area if data on wealth for foreign countries were available. Furthermore, the few existing studies were carried out by doing away with the wealth variable without any convincing justification. Given the constraint of data a more persuasive argument will have to be presented in favour of deleting the wealth variable or using an alternative variable. It seemed that a proper use of estimates of permanent income, which can be approximated empirically, may be successful in empirical estimations of capital flows.

Baharumshah and Thanoon (2006) examined foreign capital and economic growth in East Asian countries and provided a quantitative assessment of the effect of various types of capital flows on the growth process of the East Asian countries, including China. The empirical analysis was based on dynamic panel data and they found; first, that domestic savings contributed positively to long-term economic growth. Second, they confirmed that foreign direct investment (FDI) is growth enhancing and that its impact was felt both in the short and long run. Additionally, FDI influence on growth was much higher than domestic savings. Third, short-term capital inflow had adverse effect on the long-term as well as short-term growth prospects and it appeared to be sensitive to long-term capital inflows. Fourth, long-term debt had positive effect on growth but its effect does somewhat disappear in the long-term. By and large, the observed positive contribution of FDI in the growth process of East Asian economies is a robust finding. From policy perspective, the evidence convincingly



suggested that countries that are successful in attracting FDI can finance more investments and grow faster than those that deter FDI.

Dahlquist and Robertsson,(2004) in a study of a note on foreigners' trading and price effects across firms, examined the behaviour of foreign investors in association with an equity market liberalization and found a strong link between foreigners' trading and local market returns. In the period following the liberalisation, net purchases by foreign investors induced a permanent increase in stock prices, implying that local firms reduced their cost of equity capital. Dahlquist and Robertsson found a strong link between firm's fraction of foreign ownership and the magnitude of the cost reduction. Foreigner investors preferred large and well – known firms, and these firms realized the largest reduction in capital cost. Further, their analysis suggested that foreigners increased their net holding in firms that performed well.

Demeritte (2000) studied foreign portfolio investment and capital development and asserted that when the removal of capital controls, foreign listings and market reforms lead to full integration among international markets, the increased opportunity set and active foreign participation allowed foreign investors to hold well-diversified global portfolio. Therefore, the welfare of investors increased following integration. Since FPI increased market integration they also increased co-movements between markets. A shift in one market affected another emerging market regardless of fundamentals. In a fully integrated global market in which the global risk premia are determined internationally, foreign events are expected to have some minimal and rational impact on a domestic market and lead to co-movement Therefore, when one market gets in a crisis it may have a contagion effect on other markets. Demeritte also stated that under segmentation, local investors hold all local securities and hence cannot achieve an optimal global portfolio.

#### **2.3.4 Exchange rate risk and stock returns**

During the past three decades, the relationship between firms' stock returns and foreign exchange rates have been empirically analysed. Theory explained that a change in the exchange rates would affect a firm's foreign operation and overall profits which would, in turn, affect its stock prices, depending on the multinational characteristics of the firm. Conversely, a general downward movement of the stock market will motivate investors to seek for better returns elsewhere. This decreases the demand for money, pushing interest rates down, causing further outflow of funds and hence depreciating the currency. While the theoretical explanation was clear, empirical evidence was mixed.

Previous literature on the behaviour of banks' stock returns has been explained primarily by a two-factor model, using the market index and interest rate index as factors. Kwan (1993) is among the researchers who have quantified this relationship. Increased globalization over the past years, coupled with greater integration among world economies, advocate that market and interest factors may not be sufficient in explaining the risks banks face today. International competition, multinational firms' growth financing, and more integrated capital markets are among the sources of an increasing number of international activities now present in commercial banks. As a result, banks today are faced with increased international risks, such as exchange rate risk.

Martin and Mauer (2001) used a cash flow-based framework to examine the exchange rate exposure of 105 individual US banks over the period 1988-1998. Their study focused on the exposure faced by domestic banks compared to international banks as well as a comparison based on their relative sizes. Finally, they examined the effect of long-term compared to short term exposures. Their analyses showed that 72% of internationally orientated and 88% of domestically orientated banks in their sample faced considerable exposure to at least one of five currency pairs. Lastly, they found out that longer-term exposures are more prevalent than short-term exposures in this sample, thus confirming their belief that longer-term exposures are harder to identify, measure and hedge.

De Wet (2004) used an augmented market model to determine whether South Africa's four major commercial banks are exposed to exchange rate changes. Their model reveals that all four major banks face substantial foreign exchange risk.

Chi, Tripe and Young (2007) are among the very few researchers in this field who have indicated that there is no any significant relationship between the stock returns of their sample banks to foreign exchange rate movements. Their study explored the relationship of four major Australian banks, which have significant operations outside of Australia, with five regional banks in Australia which do not participate in any foreign business. They used the Capital Market Method to quantify this relationship over the period 1997 to 2007.

Jorion (1991) investigated the sensitivity of the stock prices of US MNC to changes in dollar exchange rates. Jorion findings showed that industries such and Chemical and Machinery, which export a significant proportion of their production or have significant foreign operations, benefit from the depreciation of the dollar and suffer from the dollar's appreciation. On the other hand, other industries such as Textiles, Apparel, and Department stores, which import a significant proportion of their input, suffer from the decrease in the value of the dollar and vice versa. However, the sensitivity of the stock prices to changes in

exchange rate is not significant at any accepted level significance. Hence, Jorion concluded that active hedging policies by financial managers cannot affect the cost of capital, and other reasons must explain why firms decide to hedge.

Najang and Seifert (1992) employing GARCH framework for daily data from the U.S, Canada, the UK, Germany and Japan, showed that absolute differences in stock returns have positive effects on exchange rate volatility.

Ajayi and Mougoue (1996) picked daily data from 1985 to 1991 for eight advance economic countries; employed error correction model and causality test and eventually discovered that increase in aggregate domestic stock price has a negative short-run effect and a positive long-run effect on domestic currency value. On the other hand, currency depreciation has both negative short-run and long-run effect on the stock market.

Theoretical arguments seem to agree on giving some kind of risk factor to exchange rate risk, combined with the increasing use of foreign currency derivatives and other hedging instruments (Moffett, Stonehill and Eiteman, 2005). This suggested a strong relation between firm value and exchange rate exposure. However empirical work has found the correlation somewhat ambiguous.

To investigate the influence of exchange rate and interest rate changes on stock returns was an important contribution towards capital market research as Joseph (2002) studied the effect of foreign exchange and interest rate changes on UK firms in the chemical, electrical, engineering and pharmaceutical industries for the period of 1988 to 2000. The study employed two different measures of foreign exchange rate, along with a measure of interest rate changes. The results revealed that industry returns were more negatively affected by interest rate changes than by foreign exchange rate changes. The negative effects of interest rate changes and foreign exchange rate changes appeared more evident for the electrical and engineering sectors whereas these effects were positive for the pharmaceutical industry. Additionally, the results at the portfolio-level were generally similar with those based on the firm-level analysis, except that the short term foreign exchange rate impact was very weak at the portfolio level. Overall, the results at the individual firm level implied that the impact of foreign exchange rate and interest rate changes had adverse effects on stock returns.

Maysami and Koh (2000) examined the impacts of the interest rate and exchange rate on the stock returns and showed that the exchange rate and interest rate are the determinants in the stock prices.

A notable contribution in financial markets literature was made by Simpson and Evans (2003) who explored the relationships between Australian banking stock returns and major economic variables of monetary policy like exchange rate and short and long-term interest rates. They used the monthly data for the stock returns, exchange rates and interest rates for the period of January 1994 to February 2002. The study found no evidence that Australia's bank stock market returns form a co integrating relationship with short term and long-term interest rates and exchange rates over the period of study and therefore conclusions might not be drawn relating to long-term rational expectations in the Australian banking market.

Muller and Verschoor (2006) found, by using European data, that European firms seemed well hedged against short-term currency fluctuations. While around 65 % of the 817 firms used in the analysis were affected by exchange rate fluctuations in the longer run.

He and Ng (1998) made a similar study of 171 Japanese firms. They found that almost 25% of their sample was significantly exposed to exchange rate movements over a period of 14 years since 1979 to 1993.

Williamson (2000) and Allayannis, Ihrig and Weston (2001) both did industry specific studies finding divergent results. Their studies showed some companies being significantly exposed to exchange rate fluctuations, while others did not indicate significant exposure. Their research furthermore implied significant cross sectional differences across firms and industries.

Arratibel, furceri, Martin and Zdzienicka (2009) discovered that lower exchange rate volatility is associated with higher growth, higher stocks of FDI, higher current account deficits, and higher excess credit.

Mishra (2004) identified that there is no Granger's causality between the exchange rate and stock return. The study indicated that stock return, exchange rate, the demand for money and interest rate are related to each other though no consistent relationship exists between them. Mishra further illustrated that forecast error variance decomposition evidenced that exchange rate return affects the demand for money; interest rate causes exchange rate to change; exchange rate affects the stock return; demand for money affects stock return; interest rate affects the stock return, and demand for money affects the interest rate. Even though, Pan, Fok and Liu (2007) showed that there is no co-integration between the exchange rate and the Malaysian stock market in the long run, their pair wise causality analysis reveals that a unidirectional causality exists from the exchange rate to the stock market in the short run.

Joseph and Vezos (2006) investigated the impact of interest rates and foreign exchange rates changes on US bank's stock returns. The study employed an EGARCH model to account for the ARCH effects in daily returns instead of standard OLS estimation methods with the result that the presence of ARCH effects would have affected estimation efficiency. The results suggested that the market return accounted for most of the variation in stock returns at both the individual bank and portfolio levels; and the degree of the sensitivity of the stock returns to interest rate and exchange rate changes was not very pronounced despite the use of high frequency data. The study contributed to existing knowledge in the area by showing that ARCH effects had an impact on measures of sensitivity.

Currency depreciation will lead to stock market depression in United States and United Kingdom (Dimitrova, 2005). The study showed that when exchange rate declines by one percent, the stock market will react with less than one percent decline. The study proposed that US should implement policy to strengthen the US dollar. Since there is a negative relationship between exchange rate and stock market index, the policy will help the stock market. However, Dimitrova also found insignificant results in his attempt to show that exchange rate will depreciate during the booming of the stock market. Thus, multinational companies which use exchange rate forecasting can consider to use stock market as a forecasting indicator as a proxy. The currency is expected to depreciate during periods of bullish sentiments in the stock market.

Kyereboah and Agyire (2008) showed that exchange rate has negative impact on the stock market index in Ghana. Investors in Ghana benefit from the exchange rate losses as the domestic currency depreciated.

The appreciation of exchange rate has positive impact on the United Kingdom non-financial firms' stocks return. Two reasons were given. First, U.K. international trade is greatly involved in trading with Europe and U.S. and Japan. Second, the basket of foreign currencies is used in the portfolio. Thus, the exposure of the exchange rate risk in the portfolio is lower (Ahmed and Omneya, 2007).

Atindehou and Gueyie's (2001) study involves determining whether Canadian banks' stock returns react differently to changes (both positive and negative) in the exchange rate by using sensitivity analysis. They use a three-factor pricing model of banks' stock returns, with market, interest rate, and exchange rate indices as factors over the period 1988-1995. Their results show that Canadian banks' stock returns are influenced by movements in the exchange rate, especially to the USD. They examine further that investors react more to a re-evaluation of their portfolio after losses, than to an appreciation after successive gains.

Ocran (2010) examined the empirical relationship between the rand and the USD exchange rate and the stock prices of South Africa and the US. The study was undertaken with the aid of the Johansen cointegration technique, the Granger causality test, generalised impulse response function and forecasting error variance decompositions. Monthly data of the three variables from January 1986 to November 2005 were used in the estimations. The Johansen cointegration test could not identify a long-run relationship between the variables of interest.

Adjasi and Biekpe (2005) investigated the relationship between stock market returns and exchange rate movements in seven African countries. Cointegration tests showed that in the long-run exchange depreciation leads to increases in stock market prices in some of the countries, and in the short-run exchange rate depreciations reduce stock market returns.

Patro, Wald and Wu (2002) estimated a time-varying two-factor international asset pricing model for weekly equity index returns of 16 OECD countries. A trade-weighted basket of exchange rates and the MSCI world market index are used as risk factors. They found significant currency risk exposures in country equity index returns and explained these currency betas using several country-specific macroeconomic variables with a panel approach. Further, they found that imports, exports, credit ratings, and tax revenues significantly affect currency risks in a way that is consistent with some economic hypotheses and drew similar conclusion by using lagged explanatory variables, and thus these macroeconomic variables may be useful as predictors of currency risk exposures.

Bartram (2007) estimated the foreign exchange rate exposure of 6917 U.S. nonfinancial firms on the basis of stock prices and corporate cash flows. Bartram showed that several firms are significantly exposed to at least one of the foreign exchange rates including Canadian Dollar, Japanese Yen and Euro, and significant exposures are more frequent at longer horizons. The percentage of firms for which stock price and earnings exposures are significantly different is relatively low, though it increases with time horizon. Overall, the impact of exchange rate risk on stock prices and cash flows is similar and determined by a related set of economic factors.

Hsin, Shiah and Chang (2007) investigated the absence of prevailing evidence on the significant exposure of US stocks to exchange rate risk by considering a firm's pre-hedging currency exposure, its expected hedging activity and the delayed reaction of its stocks to currency movements. They demonstrate the importance of lagged exposure relative to contemporaneous exposure and include the lagged effect in the exposure measurement that fails to raise the significance of the exchange rate risk with regard to the pricing for the

overall sample of stocks. They further demonstrated that the weak evidence on priced currency risk is at least partly attributable to hedging activity, particularly for large firms and also provided support for the asymmetric hedging hypothesis, in that asymmetric hedging is found to be responsible for reshaping the relationship between a firm's characteristics and its currency exposure.

Muller and Verschoor (2009) examined the relationship between financial crisis, exchange rate variability and equity return volatility for US multinationals. They performed empirical analysis of the major financial crises of the last decades that reveals the stock return variability increases significantly in the aftermath of a crisis, even relative to the increase in stock return volatility for other firms belonging to the same industry and market capitalization class. They also found that in conjunction with this increase in total volatility, there is also an increase in stock market risk for multinational firms and suggested that trade and service oriented industries appear to be particularly sensitive to these changing exchange rate conditions.

Huffman, Makar and Beyer (2010) investigated the likelihood of extreme foreign exchange-rate exposure, conditioning upon key firm factors and an expanded view of hedging. They incorporated the Fama and French (1993) three-factor (FF three-factor) model terms in reconciling equity returns and exchange-rate exposure. They suggested that consistent with effective hedging, non-hedging firms tend to have greater foreign exchange-rate exposure than hedging firms. They also found all key factors that explain the likelihood of high foreign exchange-rate exposure are economically and statistically significant using the more complete FF three-factor model and concluded that firm size is important in explaining foreign exchange-rate exposure and more foreign exchange-rate exposure coefficients that are significant using the FF three-factor model compared to the traditional market model.

Bali and Liuren (2010) investigated the significance of an inter-temporal relation between expected returns on countries' stock market portfolios and their risk exposures to the world market portfolio. Their study found that inter temporal risk–return relation differs significantly under different currency denominations. Further, their study found that the slope coefficient is the largest at around seven when the returns are denominated in Japanese yen, moderate at about five when the returns are denominated in the Canadian or US dollars, and the smallest at around three when the returns are denominated in pound or euro and its predecessors. They found the ranking of the risk–return coefficients across different currency denominations remains the same when the study replace country equity indices with global

industry portfolios in estimating the inter-temporal relations, when they changed the return frequency from monthly to daily, and when they considered different specifications for the conditional covariance process.

Dominguez and Tesar (2006) estimated the exchange rate exposure of listed firms and eight industrialized and emerging markets and found out that exchange rate movements do matter for a significant fraction of firms, although, which firms are affected and the direction of exposure depend on the specific exchange rate and vary over time. They argued that firms dynamically adjust their behaviour in response to exchange rate risk and exposure is more prevalent in small- rather than large- and medium-sized firms. They also discovered a link between a firm's exposure and its multinational status, foreign sales, international assets, and degree of industry-level competitiveness and trade. The stock prices of firms in the emerging markets might be affected by the exchange rate movements in a relatively stronger level as compared to those in advanced markets due to high volatility, low market volume and economic instability. An important distinction between firms operating in emerging and advanced economies is the weakness of the firms in emerging markets formerly to find finance from abroad in their local currency. Due to foreign currency debt, they are more sensitive to the exchange rate movements.

Doukas, Hall and Lang (2003) examined the relation between Japanese stock returns and unanticipated exchange-rate changes for 1079 firms traded on the Tokyo stock exchange over the 1975-1995 period. They found that the exposure effect on multinationals and high-exporting firms is greater in comparison to low-exporting and domestic firms. What is more, lagged-exchange rate changes on firm value are statistically insignificant implying that investors assess the impact of exchange-rate changes on firm value with no significant delay.

Although it is well-known that unexpected changes in interest rates induce risk, market and interest rate risks are not the only risks faced by banks. They may also be affected by exchange rate risk, which increases as their international activities, and those of their clients, increase. Notwithstanding the increasing volume of banks' international activities, few studies have attempted to consider the exchange rate as a determinant of banks' stock returns (Choi, Elayasiyani and Kopecky, 1992; Chamberlain, Howe and Popper, 1997).

For non-financial firms, several authors have analysed the relationship between stock returns and exchange rate risk (Jorion, 1990; Booth and Rotenberg, 1990; Bodnar and Gentry, 1993). They showed that exchange rate changes may affect firms' profitability and value. Exchange rate changes can impact the level of competitiveness of firms that are exposed to exchange rate risk, or affect the value of net assets denominated in foreign currencies. This



may indirectly affect the portfolio value of banks or financial institutions that finance or insure these firms. An additional source of risk is the exchange rate risk associated with currency activities, predominantly to the unhedged positions held by these institutions in investment and financing activities on international capital markets. For instance, Wetmore and Brick (1994) empirically tested the theoretical model of Choi *et al.* (1992), and confirmed that US commercial banks are exposed to exchange rate risk resulting from their increasingly uncovered foreign loans.

Chamberlain *et al.* (1997) found that one-third of US large banks are sensitive to exchange rate risk, while such is the case for only a few Japanese banks. Ownership structure, regulation and hedging activities are among factors explaining the difference between US and Japanese banks in sensitivity to exchange rate risk.

Jong, Ligterink and Macrae (2002) concluded that over 50 percent of Dutch firms over 1994 to 1998 are significantly exposed to exchange rate risk and this result confirms that firms in an open economy exhibit far more exchange rate exposure than firms in less open economies. In general, these previous empirical studies mainly focus on these developed and industrialized countries and areas. During the Asian financial crisis, the volatile exchange rate movement has led global investors to re-evaluate the importance of currency exposures in Asian stock markets.

Chang (2001) found out that the change of exchange rate has a significant effect on the returns of most export-oriented industries in Taiwan's stock market around the Asian financial crisis. The most of export-oriented industries are positively affected by the depreciation of the New Taiwan Dollars (NTD) against the US Dollars (USD).

On a macro level, Mahmood and Dinniah (2007) focused on the relationship between stock price and two more macroeconomics variables which consist of inflation and output of six countries in Asian-Pacific region – Malaysia, Korea, Thailand, Hong Kong, Japan and Australia. The data spanned from January 1993 to December 2002. There is evidence that only Hong Kong shows relationship between exchange rate and stock price.

Muller and Verschoor (2007) also examined the relationship between individual Asian firm's stock returns and fluctuations in foreign exchange rates. Using the same sample period they drew a different conclusion from Mahmood and Dinniah's. Among 3634 firms from Hong Kong, Indonesia, South Korea, Malaysia, Philippine, Singapore and Thailand, 25 percent experienced economically significant exposure effects to the US dollar, and 22.5 percent to the Japanese yen for the period of January 1993 to January 2003. Reviewing the

empirical literature, previous researchers investigate the effect of both contemporaneous and lagged exchange rate changes on current stock returns.

However, Bartov and Bodnar (1994) found that the lagged exchange rate changes in U.S. Dollar can explain firms' current stock returns. That meant that the effect of lagged exchange rate should be considered in examining this relationship. They suggested that the lagged market response to changes in exchange rate may be largely due to the delayed releasing of financial information to the public. The outcome of the finding supports the evidence of the market inefficiencies.

In US, Jorion (1990) and Makar and Huffman (2000), all failed to find a significant contemporaneous firm value/ exchange rate relationship for U.S. firms, while their studies report a lagged firm value/exchange rate relationship. For example, Amihud (1994) focused on the 32 largest U.S. exporters in terms of exports to total foreign sales over the period of 1982 to 1989. Amihud found an insignificant firm value effect of changes in contemporaneous exchange rate, but found a weak impact to lagged exchange rate changes on firm value.

Barsky (2010) 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 savings as investors substitute away from risky assets.

Makar and Huffman (2000) found a significant firm value/exchange rate relationship for the one-month, two-month, and three-month lagged periods and their findings confirmed prior conclusions of Amihud (1994) and Bartov and Bodnar (1994). However, in Japan, He and Ng (1998) examined the relation between exchange rate and stock return by using both contemporaneous and lagged exchange rate changes. Their findings indicated that about 25 percent of the firms experienced economically significant positive exposure effects for period of January 1979 to December 1993 using a sample of 171 Japanese multinationals.

Similarly, in a small open economy like Sweden, Nydahl (1999) studied the relation between firm value (defined as stock returns) and the movement in exchange rate by using a sample in a small open economy like Sweden, over the period of December 1992 to February 1997. Nydahl found that a substantially larger percentage of firms are exposed to contemporaneous exchange rate changes compared to results from studies using US data. Investigating a possibly lagged effect, little evidence was shown in the study that exchange rates affect firm values with a lag. These results were similar to findings for Japan.

Furthermore, in UK, both a contemporaneous and a lagged firm value/exchange rate relationships are founded for UK companies. EI-Masry (2003) studied the effect of

contemporaneous and lagged exchange rate exposure of UK nonfinancial companies at the industry level on the value of the firm or the industry. The analyses were conducted over the period from 1981 to 2001 which consists of three sub-periods, pre-ERM, in-ERM, and post-ERM. The findings showed that a higher percentage of UK industries are exposed to contemporaneous exchange rate changes than previous researches. Moreover, there is also evidence of significant lagged exchange rate exposure, which goes in line with the finding of previous studies. The sensitivities of UK industries' stock returns to exchange rate fluctuations are most evident in pre-ERM and post-ERM period. Donnelly and Sheehy (1996) researched the relationship between changes in trade-weighted nominal exchange rate and the monthly abnormal returns of portfolio of the UK's 39 largest exporting firms with foreign sales at least 40% during the period 1978 to 1992. They found a contemporaneous relation between the foreign exchange rate and the market value of large exporters and a weak lagged firm value/exchange rate relationship for the three-month lagged exchange rate changes.

Rasheed and Muhammad (2002) did a study for south Asian countries i.e. Pakistan, India, Bangladesh and Sri Lanka, to find the impact of exchange rates on the stock returns. The study examined the relation between exchange rate and stock returns for all the countries in long and short run fluctuations in exchange rates using monthly data for six years. The study found no relation for both long and short run between stock returns and exchange rates for India and Pakistan, also the same results were found for Bangladesh and Sri Lanka. Being no relationship between stock returns and exchange rates, the study concluded that there is no need of using information of taking advantage and benefiting from stock return due to fluctuation in exchange rate from one market to predict behaviour in the other market. The study made recommendations for further research in this particular area by using weekly or even daily information in order to find more concrete evidence about stock returns and fluctuations in exchange rates.

Srikanth and Kishore (2012) examined the net foreign institutional into India and argued that foreign investors are lured by the economic stability of the host country, projections of its growth opportunities, and constructive policies of the host government towards promoting foreign investment, privatization and favourable taxation. The study further stated that foreign portfolio flows are drawn to countries with higher domestic interest rates relative to external rates of interest, coupled with stability in the exchange rates. External factors, such as group or 'herd' mentality in international capital markets, lower foreign interest rates, recessions, economic crises offshore, a dwindling in the existing

profitable investment opportunities, also play a vital role in attracting foreign portfolio investment flows.

Aggarwal (2006) studied the determinants of foreign portfolio investment (FPI) and its impact on the national economy in six developing Asian countries. Regression results show that inflation rate, real exchange rate, index of economic activity and the share of domestic capital market in the world stock market capitalization are four statistically significant determinants of FPI. The first variable had a negative coefficient while the last three variables possessed positive coefficients. Foreign direct investment, total foreign trade and current account deficit variables were found to be statistically insignificant. Regarding the impact of FPI on the national economies, it is found that the index of economic activities and inflation rate showed an upward trend. Volatility in portfolio flows had not increased overtime. Ratio of foreign debt and debt-servicing to GDP had declined. But the rule of thumb regarding the issue of sustainability of FPI suggested that India and Indonesia have crossed the upper bounds of permissible debt ratios.

### **2.3.5 Comparative studies on foreign portfolio equity and stock returns**

Hamao and Mei (2001) examined the impact of foreign and domestic trading on market volatility for Japan and revealed that there is no systematic evidence that foreign trading tends to increase market volatility more than trading by domestic groups. The period of time study mainly relates to the time period during which the foreign portfolio investment in Japan was rather small

Using daily or intraday data that include prices and trades by foreign and domestic investor groups, Choe, Kho and Stulz (2001) investigated positive feedback trading and herding by foreign investors before and during the Korean crisis in 1997. The authors calculated the proportion of foreign investors buying a stock on a given day among all foreign investors trading that stock on that day. Using this proportion they estimated a daily herding measure for each stock in their sample. Their herding measures indicated that foreign investors herd before the Korean crisis. In order to check if foreign investors engage in positive feedback trading, the authors examined the trading patterns of foreign investors following positive and negative market returns. They reported findings indicating that foreign investors buy following a positive market return and sell following a negative market return. They concluded that foreign investors engage in positive feedback trading before the Korean crisis. However, they also reported much weaker evidence of positive feedback trading and some evidence of herding being less important during the period of crisis.

Choe, Kho and Stulz (1999) further examined whether the foreign investor activity destabilizes prices in the Korean stock market. They found out that destabilizing effect of foreign trading exists if large foreign trades are followed by additional price movements in the same direction as the price impact of the trades. Thus, they examined price changes following large buy and sell transactions by foreign investors in the Korean market. They found out that large buy and sell trades are accompanied by significantly positive and negative returns, respectively; in the periods these trades occur. However, neither significant positive returns are observed in the periods following large buy trades nor significant negative returns are observed in the periods following large sell trades. Based on these findings, the authors concluded that foreign investor activity does not have a destabilizing effect on the Korean stock market.

Choe, *et al.* (2005) in a study of whether domestic investors had an edge in Korea, they examined whether foreign investors pay more than domestic investors when they bought shares and received less when they sold shares. Choe, *et al.* found out that foreign investors do so controlling for firm characteristics and market conditions and more so compared to domestic institutions than to domestic individual investors and only for medium and large trades. The round trip difference was of the order of 37 basis points when they compared foreign money managers to domestic money managers. The round trip difference was roughly equivalent to half of the difference in Jensen's monthly alpha between the top and the bottom decile of mutual funds in the U.S. from 1962 through 1993. They investigated whether the difference could be traced to greater impatience of foreign investors through an analysis of the price impact of the intensive trading periods. They found out that greater impatience could not account for the disadvantage of foreign investors relative to domestic institutions. They also found no evidence that foreign investors were better informed. The critical difference between foreign investors and domestic investors was that prices tend to move more against foreign investors before they traded intensively. The difference was consistent with foreign investors trading more on intra-day momentum signals than domestic investors and paying a price for doing so.

Kim and Wei (2002) examined foreign investors' trading patterns. The authors argued that heterogeneity among foreign investors should be taken into account and that lumping all foreign investors together to investigate their trading patterns can lead to misleading conclusions. Due to the characteristics of their data, Kim and Wei were able to categorize foreign investors into four different groups (resident institutional investors such as branches/subsidiaries of foreign institutions, non-resident institutional investors, resident

individual investors and non-resident individual investors) and studied each group's trading pattern in comparison to others. The study indicated that resident institutional and individual investors are less likely to engage in positive feedback trading and herding than their non-resident counterparts. The herding patterns confirm the informational asymmetry hypothesis suggesting that parties with more difficult access to information herd more. Therefore, foreign investors who have informational disadvantage relative to domestic investors might move together and bring in or take out large amounts of money at the same time, thereby affecting the prices in the domestic market.

Yilmaz and Yilmaz (1999) compared the foreign share in the total transaction volume of stocks included in the ISE-30 index and the foreign share in the total transaction volume of stocks not included in the ISE-30 index. They demonstrated that the average percentage share of the foreign investors' transactions in the total transaction volume is higher for stocks in the ISE-30 index than for all stocks in the market. Due to this, the authors suggest that foreign activity might be able to affect both the level and the volatility of the ISE-30 index.

Nguyen and Nhung (2013) studied the impact of foreign portfolio flows on stock market volatility in Vietnam. Their findings revealed several interesting facts. First, almost significant relationship between foreign flows and market volatility are short lived. Second, past foreign flows relate to volatility stronger in the bull market as compared to the bear one: foreign gross purchases, foreign gross sales and foreign net purchases have significant links with volatility and all cause market volatility in the bull market. Third, it is shown that market volatility respond positively to a random shock to all three flows in the first period even though there were individually negative reactions in some days. Finally, opposite to the bull market, an increase in foreign net purchases reduced market volatility in the bear market indicating that domestic investors are more prudent in trading and react to changes in foreign net purchases more slowly.

Cumby and Glen (1990) studied the Evaluating of the Performance of International Mutual Funds. The performance of 15 U. S.-based internationally diversified funds was compared to the Morgan Stanley Index for the U. S., the Morgan Stanley World Index, and to a benchmark combining the world index and Eurocurrency deposits. The time period analysed was 1982 to 1988. Both the Jensen index and the methodology developed by Grinblatt and Titman (1989) were employed to measure portfolio performance. Cumby and Glen concluded the funds did not outperform the international equity index; however, there was some evidence of the funds outperforming the U.S. index. Eun, Kolodny, and Resnick (1991) in their study of U.S. based international mutual funds reported similar findings. The

benchmarks used in their study were the Standard and Poor's 500 Index, the Morgan Stanley Capital International World Index, and a self-constructed index of U.S. multinational firms. For the period 1977 to 1986, the majority of international funds outperformed the U. S. market, however, most failed to outperform the world index. The sample consisted of 19 U. S.-based international funds, and the Sharpe measure was used to assess excess returns.

Droms and Walker (1994) examined investment performance of international mutual funds and used a cross-sectional/time series regression methodology. Four funds were examined over 20 years (1971-1990), and 30 funds were analysed for a six-year period (1985-1990). The funds were compared to the Standard and Poor's 500 Index, the Morgan Stanley Europe, Australia, and Far East Index (EAFE) which proxies non-US stock markets, and the World Index. Applying the Jensen, Sharpe, and Treynor indices of performance, they found that international funds have generally underperformed the US market and the international market. Additionally, their results indicated that portfolio turnover, expense ratios, asset size, load status and fund size are unrelated to fund performance.

Arnold, Gullett and Manakyan (2000) studied the performance of global and international mutual funds and examined the risk-adjusted returns of international mutual funds over three time periods: 1985 through 1994, 1985 through 1989, and 1990 through 1994. Sharpe's Index, Treynor's Index, and Jensen's Alpha were computed for five portfolios of global mutual funds: world, foreign, Europe, Pacific, and international. The performance of the five portfolios was compared to that of a proxy for the stock market (the Vanguard Index 500 mutual fund) and a portfolio composed of mutual funds that invest in U.S. issued stocks (domestic mutual funds). During the 1985 through 1994 period, the portfolios of global funds generally earned risk-adjusted returns superior to that of the U.S. stock market and the portfolio of domestic mutual funds under the Sharpe' and Treynor's indices. The exception is the Europe portfolio of funds which had a Sharpe's Index below that of both the domestic fund portfolio and the U.S. stock market. The Jensen's Alphas were generally positive (domestic portfolio of funds was negative), but were not significantly different from zero during 1985-1994. The R squared for the Jensen regressions were generally below 60% indicating that excess returns in the U. S. stock market explained a small proportion of the excess returns of the global portfolios of funds. Consequently, there is the potential for benefits through diversification for investors by adding global mutual funds to their portfolios. The authors found out that there are potential diversification benefits to adding global funds to portfolios of domestic mutual funds. Mutual funds that invest solely in foreign securities or in combinations of U. S. stocks outperformed the U. S. market over the

past ten years. A portfolio of funds investing in Pacific Rim issued stocks tended to have greater risk-adjusted returns compared to a portfolio of funds investing in European stocks and only a small relationship to returns in the U.S. stock market. It is also interesting to note that the relative risk-adjusted performance of U.S. and international equity funds may differ substantially depending on the period examined.

Jo (2002) examined the effect of equity investment by foreign investors on Korean stock market volatility as well as relative reversibility of foreign equity investment during the financial crisis. The results indicated that it is meaningful to distinguish between portfolio investments by foreigners and investment by residents. The author found evidence that during the financial crisis, foreign equity investors were not the primary net sellers even though foreign investors were leaders rather than followers at the early stage of the crisis. Consequently, it is hard to say that foreign portfolio investment is more reversible than residents' investments in the wake of the financial crisis.

Huang and Yang (2000) examined ten developing countries to examine if market liberalization leads to more volatile local stock markets. Their results show the stock price becomes more volatile in South Korea, Mexico, and Turkey but less volatile in Argentina, Chile, Malaysia, and the Philippines. There is no significant pattern for the other markets including Taiwan, Thailand, and Brazil.

Law and Ngah (2008) also find supporting evidence for the fall in Malaysian stock market volatility after liberalization. The authors investigated the effect of equity market liberalization on volatility in Malaysian stock market from 1985 to 2006 using the EGARCH model. Law and Ngah divided their full sample into four sub-ones corresponding to different time periods: pre liberalization, post liberalization but before the 1997-98 financial crisis, post liberalization during the crisis, and post-liberalization after capital controls periods to analyse and compare different effects in different periods.

Pavabutr and Yan (2007) examined the effects of both predictable and unpredictable foreign flows in daily and weekly stock return volatility in Thai market from 1995 to 2002. The unpredictable flows were found to have a significant impact on stock return volatility (both daily and weekly). The influence of the predictable flows was however negligible.

On the other hand, Nguyen and Bellalah (2008) conducted research on seven emerging markets ( Argentina, Brazil, Chile, Colombia, Mexico, Malaysia and Thailand) from January 1985 to January 2003 and reported an insignificant impact of market liberalization on return volatility (on average). It should be noted that stock return volatility is



however lowered when the participation of the US investors became effective and important on emerging markets, and when emerging markets increased in size.

Dhingra (2004) examined equity market vis a vis capital account liberalization; a comparison of growth effects of liberalization policies in developing countries. Dhingra studied the comparative advantages of alternate economy liberalization strategies that developing countries could implement to improve their economic performance. The author tested the impact of different categories of capital flows, that is, equity flow and debt flow on output growth of a country.

Morgan (2002) examined that foreign institutional investors played a very important role in building up India's forex reserves, which enabled a host of economic reforms. The study noted that foreign institutional investors strongly influenced short term market movements during bear markets. However, the correlation between returns and flows reduced during bull markets as other market participants raised their involvement reducing the influences of foreign institutional investors. The study found out that the correlation between foreign inflows and market returns was high during bear and weakened with strengthening equity prices due to increased participation by other players.

Archarya, Ravi and Kumar (2014) employed a unique database that provided data on foreign institutional investor (FII) flows at the individual stock level and examined the impact of foreign institutional investors flow innovations on stock returns in India. They found out that stocks with high innovations are associated with a coincident price increase that is permanent, whereas stocks with low innovations are associated with a coincident price decline that is in part transient, reversing itself within days. The results were consistent with price pressure on stock returns induced by foreign institutional investors' sales, as well as information being revealed through foreign institutional investors' purchases and foreign institutional investors' sales. The study indicated that while foreign institutional investors outflows contributed to transient volatility for stocks experiencing outflows, trading by foreign institutional investors also generated new information. Interestingly, price pressure effects increased in the magnitude of innovations but were largely unrelated to firm characteristics. The asymmetric response for the high and low innovation portfolios were similar to the findings in the empirical studies of block transactions, e.g., Chan and Lakonishok (1993), Keim and Madhavan (1996) and Saar (2001). The prevalent explanation was that block buys were motivated by information whereas block sales were motivated by portfolio rebalancing concerns.

Tiago (2012) examined the effects of portfolio investment flows in firms' capital structure. The main purpose of this study was to evaluate whether firms exposed to portfolio investment flows following prior studies, reduced the cost of equity of firms by reducing the expected return on their stocks by introducing a risk sharing between domestic and international investors, implemented capital structure adjustments to respond to this marginal equity cost reduction. The idea was to bring a firm-level analysis to the area of research of portfolio investment flows, and also to combine it with corporate capital structure research, since portfolio investments are important in financing funds available to firms in countries that are growing and hence receiving large waves of international capital flows. The results provided evidence that portfolio investment flows have a negative marginal effect on the debt-to-assets ratio of firms in the sample (which included firms from the cyclical consumption sector, retail and textile sub-sectors, as per the chosen classification criteria) after controlling for firm size, liquidity, growth opportunities and cash holdings. Because other sources of funds become marginally cheaper than debt following portfolio investment flows, firms did marginal trading between debt and equity funding. Firms from the retail sector exhibited a marginal decrease in leverage due to portfolio flows almost two times larger than firms from the textile sector, likely because the sector captured a larger fraction of the consumption-based growth cycle that the Brazilian economy was experiencing since the last decade, and hence portfolio investors were more attracted to buy stocks of retail companies. Larger firms and firms with higher growth opportunities also had stronger adjustments in their leverage ratios following portfolio investment flows, signalling that firm specific characteristics can mediate the equity cost reduction. Because smaller firms in Brazil were more exposed to credit constraints, it were possible that they had lower growth opportunities, attracting less portfolio investments and hence benefiting less from equity cost reduction and finally implementing weaker adjustments in their debt ratios.

Falkenstein (1996) demonstrated that foreign investors have a considerable bias towards large firm stocks in Japan. Dividing Japanese firms each year into five groups according to firm size, they found out that foreign ownership in the smallest firms is 1.8 percent on average from 1975 to 1991 in contrast, ownership in the largest firms is 7.66 percent. This large difference in ownership between small and large firms was not completely attributable to the decrease in the information advantage of local investors as firm size increases. Most international investment is done by institutional investors as they have preference for shares of large firms. These shares have lower transaction costs, are more liquid, and enable investors to make larger trades without affecting share prices. The overall

preference of foreign investors for large firms suggested that they would see large firms having a lower cost of capital.

Frankel and Schmukler (1996) investigated the returns of Mexican closed-end funds that traded in the U.S. A closed-end fund typically traded at a price that differed from the value of the portfolio that it represented. The value of the underlying portfolio was called the Net Asset Value (NAV) of the fund. Frankel and Schmukler argued that the price of a fund moved because of its U.S. investors whereas the NAV moved because of Mexican investors since the underlying portfolio was a portfolio of Mexican stocks that traded in Mexico City. Their results indicated that the NAV moved before the price of the fund and caused changes in the price of the fund. Their interpretation is that Mexico City moved Wall Street's assessment of Mexican stocks rather than the reverse.

Brennan and Cao (1997) provided supporting evidence that if foreign investors were less well-informed than domestic investors, they would be more sensitive than domestic investors to public announcements. First, public announcements were less likely to be news for domestic investors because they were insiders. Second, since foreign investors were less well-informed, their assessment of a country was less precise and hence could be altered more by public information. This made capital flows sensitive to news.

Claessens, Dooley and Warner (1993) analysed the volatility of foreign direct investment, portfolio equity flows, long-term flows, and short-term flows for five developed economies and five developing countries. They also classified flows by Tran's actors, namely foreign direct investors, banks, governments, and the private sector. The developing countries in their sample were Mexico, the Republic of Korea, Indonesia, Argentina, and Brazil. In all cases, they focused mainly on net flows. Their results were surprising in light of the comments about fickle equity flows. They found no support for the notion that equity flows are somehow less stable than direct investment or official flows. They found that the label of flows provided no information about how they behaved over time. They concluded that if presented with one time-series (statistics) only, one would likely be unable to tell the label of the flow.

Ahmad, Yang, and Muhammad (2015) explored the causal relationship of foreign portfolio investment and gross domestic product growth of China and India. The results of Granger Causality test illustrated that there was no direct causal relationship between both variables. These findings were similar with Durham (2003), and Duasa and Kassim (2009). However, it is interesting to note that there is indirect causal relationship between gross domestic product growth and foreign portfolio investment inflows of China and India i.e.

gross domestic product granger caused foreign direct investment and the latter caused foreign portfolio investment. This study had definite clue towards indirect causal relationship between gross domestic product growth and foreign portfolio investment, which showed that China and India needed sustainable economic growth in the future in order to attract the portfolio inflows. The policymakers must devise such strategies that would ensure the growth of both economies in the years to come.

Rajan and Zingales (1995) in their study of capital structure internationally argued that larger firms were likely to have lower growth opportunities. Following this line of reasoning, smaller firms, instead, which had higher growth opportunities could benefit more from portfolio inflows, having a higher equity cost reduction when compared to large firms, if investors value growth, as suggested by Patro and Wald (2005). However, because in Brazil the cost of capital is higher when compared to countries with more developed capital markets, firms suffered from credit constraints (Terra, 2003). Thus, larger firms, with privileged access to financing funds, whether debt, equity or internal funds, can share the characteristics of being large and still have higher growth opportunities with respect to smaller firms. This could be the reason why firms that are larger and that also have higher growth opportunities had stronger negative effects from portfolio flows to their leverage level.

Girma and Holger (2007) evaluated foreign ownership wage premium using difference in differences matching approach and discovered for U.S. firms substantial growths rates immediately after their acquisition by a non-American investor.

Greenaway, Guariglia and Yu (2009) in a study of foreign ownership and corporate performance in China using a sample of 21,582 Chinese firms during 2000-2005 concluded that the most profitable companies are joint venture companies, compared with firms that had full Chinese capital or with firms that had full foreign capital. In essence the study suggested that a minimum domestic capital was required to ensure local optimum performance.

Douma, Kabir and Rejie (2006) investigated the impact of foreign institutional investment on the performance of emerging markets firms and found that there was a positive effect of foreign ownership on firm performance. They also found impact of foreign investment on the business group affiliation of firms.

In a transnational study, conducted in three countries, Bulgaria, Romania and Poland, Konings (2001) investigated whether financial performance of companies with foreign capital was better than financial performance of companies with domestic capital. The results obtained by Konings for Romania and Bulgaria suggested that foreign firms do not have

better performance than domestically-owned firms. In contrast, for Poland, the results showed a positive and significant impact of foreign capital. The main implications for the result were delays in carrying out reforms in Romania and Bulgaria. Konings explained that time was required for positive effects of foreign capital to be realized.

Munday, Peel and Taylor (2003) conducted an analysis on panel data covering the period 1994 to 1998 to compare the productivity of companies with domestic capital with productivity of foreign affiliates in the UK. Results showed relatively poor performance of foreign affiliates in manufacturing industries, Japanese firms having the weakest performance.

Barbosa and Lourie (2005) in a comparative study conducted in Greece and Portugal did not find significant difference between multinationals and domestically-owned firms in terms of economic profitability. They demonstrated that the performance of companies in Portugal was not affected by the existence of foreign capital after controlling for firm and industry characteristics.

Sarkar and Li (2002) investigated the benefits of diversification for the U.S. investors investing in developed and emerging world taking into account the restriction on short selling in some markets. The study found out that benefits of investing in developed countries' were small to begin with and disappeared when short sales were banned, while investments in emerging market stocks continued to offer important diversification benefits even under a ban on short sales. The study further found that the integration of emerging markets with the world markets did not decrease or completely eliminated the diversification benefits of investing in emerging markets.

Kiyamaz (2001) examined the various types of stock markets rumours including rumours about foreign purchases on stock prices. For all rumours, Kiyamaz found positive significant abnormal returns in each of the four days prior to the publication date and negative insignificant abnormal returns after the publication of thirty rumours. The author argued that the results suggested dissemination of information prior to the publication. In order to analyse the difference in stock price reactions with respect to the contents of rumours, the author classified rumours into subgroups and documented that rumours about purchases by foreign investors and earning expectations generated greater impact on stock prices than other rumours. The positive significant abnormal returns related to purchase by foreign investors might be a direct effect of purchases by foreign investors. However, this abnormal return might also be partly due to domestic investors following the information related to the transactions by foreign investors and buying stocks purchased by foreigners.

Mukherjee (2002) in a study of taking stock of foreign institutional investors examined the various probable determinants of foreign institutional investors. Mukherjee concluded that: foreign investment flows to the Indian markets tend to be caused by return in the domestic equity market; returns in the Indian equity market is an important factor that has an impact on foreign institutional investors flows; whereas foreign institutional investors sale and foreign institutional investors net inflow are significantly affected by the performance of the Indian equity market, foreign institutional investors purchase showed no such effect to this market performance; foreign institutional investors did not probably use Indian equity market for the purpose of diversification of their investment; returns from the exchange rate variation and the fundamentals of the economy had an impact on foreign institutional investors decisions, but such influence did not prove to be strong enough.

Pal (2004) examined foreign institutional investment in India and found out that foreign institutional investors were the major players in the Indian stock market and their impact on the domestic market was increasing. Trading activities of foreign institutional investors and the domestic stock market turnover indicated that foreign institutional investors were becoming more important at the margin as an increasing higher share of stock market turnover for foreign institutional investors trading in India.

According to Dahlquist, Pinkowitz, Stulz and Williamson (2003) in a study of corporate governance and home bias in the Swedish market realized that foreigners are more inclined to large firms, firms paying low dividends and in firms with large cash holdings. They emphasized that firm size was driven by liquidity and international presence was gauged by foreign listings and export sales and reiterated that foreigners underestimated firms with dominant owners.

Covrig and Vicentiu (2007) did a research to find out if domestic and foreign fund managers had similar preferences for stock characteristics and concluded that foreign fund managers had less information about the domestic stocks than the domestic fund managers. They also realized that ownership by foreign funds was related to size of foreign sales, index memberships and stocks with foreign listing.

Jeong and Li (2004) examined foreign equity ownership and information asymmetry in Japan and realized that foreign investors tend to avoid stocks with high cross corporate holdings. They suggested that foreign institutional investors were likely to be efficient processors of public information and were attracted to Japanese firms with low information asymmetry.

Prasanna (2008) studied foreign institutional investors and investment preference in India and empirically observed that the foreign investment was more in companies with higher volume of publicly held shares. The promoters' holding and the foreign investments were inversely related. Foreign investors invested in the companies where family shareholding of promoters was not substantial. The share returns and earnings per share were among the financial performance variables which were more influencing on their investment decision.

Sivakumar (2003) studied foreign institutional investors to find out if they exhibited bane or boon in the stock market. Sivakumar examined the net flows of foreign institution investment over a period of time and documented evidence on how much the Indian stock market was stabilized or destabilized due the inflows and outflows of foreign institutional investments.

Seasholes (2000), in looking at smart foreigners in emerging markets combined three approaches. First, Seasholes assessed net foreign buying prior to positive and negative earnings surprises. The advantage of the event study was its simplicity and ease of interpretation. The disadvantage was that it utilized only a subset of the data. Second Seasholes calculated daily returns on a representative foreign portfolio. The return was a weighted average return across securities where the weights were portfolio shares. Portfolio shares were in turn calculated based on initial holding levels and daily net purchases of securities by foreigners. The estimated constant was positive and statistically significant, indicating that foreigners earned above market-risk adjusted returns. This assumed that the relevant market portfolio for foreigners was the Taiwanese market. Finally, Seasholes utilized a bivariate VAR of market returns and aggregate flows to find out whether foreign net inflows predicted returns. Seasholes interpreted the predictive power of flows as an information advantage on the part of foreign investors. However, foreign flows could also predict returns due to the price pressure of foreign purchases.

Somoncu and Karan (2006) examined the impacts of international portfolio investments. The study aimed to investigate the role of international investors during the financial crisis in 2001. The impacts of two basic investment strategies of international investors on Istanbul Stock Exchange had been analysed during the crisis and after crisis period that started in 2001 to 2004. These investment strategies were positive feedback trading and herding. The findings revealed that foreign investors engaged in negative feedback trading activity that stabilized the financial market during the crisis, whereas domestic investors caused the instability in markets by engaging in positive feedback trading.

The second outcome of the study was related with the herding behaviour of investors. Somoncu and Karan found that both of the investor groups engaged in herding behaviours in the market not only in the peak period of the crisis but also during the post crises periods.

Dvorak (2005) investigated whether foreign or domestic investors have an information advantage in the Indonesian stock market. While the results showed that domestic investors do have an information advantage, they also supported the argument that foreign institutions have better information because of their expertise and experience. Clients of global brokerages had higher long-run profits than clients of either local brokerage. The results also showed that domestic investors do better than foreign investors. This was found to be true when the two groups in aggregate were considered, and in particular when the domestic and foreign clients of global brokerages were compared. Domestic clients of global brokerages performed better than their foreign clients. Foreign clients of both global and Asian brokerages performed worse than domestic clients of local brokerages, especially in the medium and short terms. It appeared that domestic investors who utilised global brokerage were able to combine their local origin and the expertise of the brokerage to produce superior performance.

## **2.4 Conceptual Framework**

A conceptual framework is a collection of inter related group of ideas that are broad based on theories. That is, a set of prepositions, which are derived from and supported by data or evidence taken from fields of inquiry that are relevant, (Smith, 2004). The conceptual framework forms the basis for developing the method for data collection for this research. It is the basis for developing the necessary econometric and financial mathematical models to be employed in this study consistent with the theoretical and empirical literature of the study.

This study hypothesizes that foreign portfolio equity sales do not influence stock returns using gross foreign equity sales as a measure of foreign portfolio equity sales and changes in stock prices as a measure of stock returns.

Due to divergent theoretical perspectives, the study hypothesized that foreign portfolio equity purchases has no significant effect on stock returns. This study will use gross foreign equity purchases as a measure of foreign portfolio equity purchases while changes in stock prices as a measure of stock returns.

The study hypothesized that foreign portfolio equity turnover do not have any significant effect on stock returns. Foreign portfolio equity turnover is measured as foreign



equity turnover divided by average equity turnover while changes in stock prices as a measure of stock return.

Theory explained that a change in the exchange rates would affect a firm's foreign operation and overall profits which would, in turn, affect its stock prices, depending on the multinational characteristics of the firm. Changes in exchange rates create uncertainty in the market about the stability of the economy. Uncertainty tend to dampen confidence in the market, thus asset prices will fall as foreign investors withdraw their holdings on the domestic market. Therefore, changes in exchange rate are expected to influence stock returns. This study hypothesized that exchange rate risk has no significant effect on stock returns. The study used changes in exchange rates as a measure of exchange rate risk while changes in stock prices as a measure of stock return.

Besides foreign portfolio equity sales, foreign portfolio equity purchases, foreign portfolio equity turnover and exchange rate risk, there are other variables that could affect stock returns. These variables were included in the regression model as control variables and they include Treasury bills rate, inflation rate and market capitalization. Control variables are likely to influence the results and should be controlled by including them in the model.

Theory suggested that changes in interest rates could carry information about changes in future fundamentals such as dividends. Treasury bills rate was expected to have a negative relationship with stock returns.

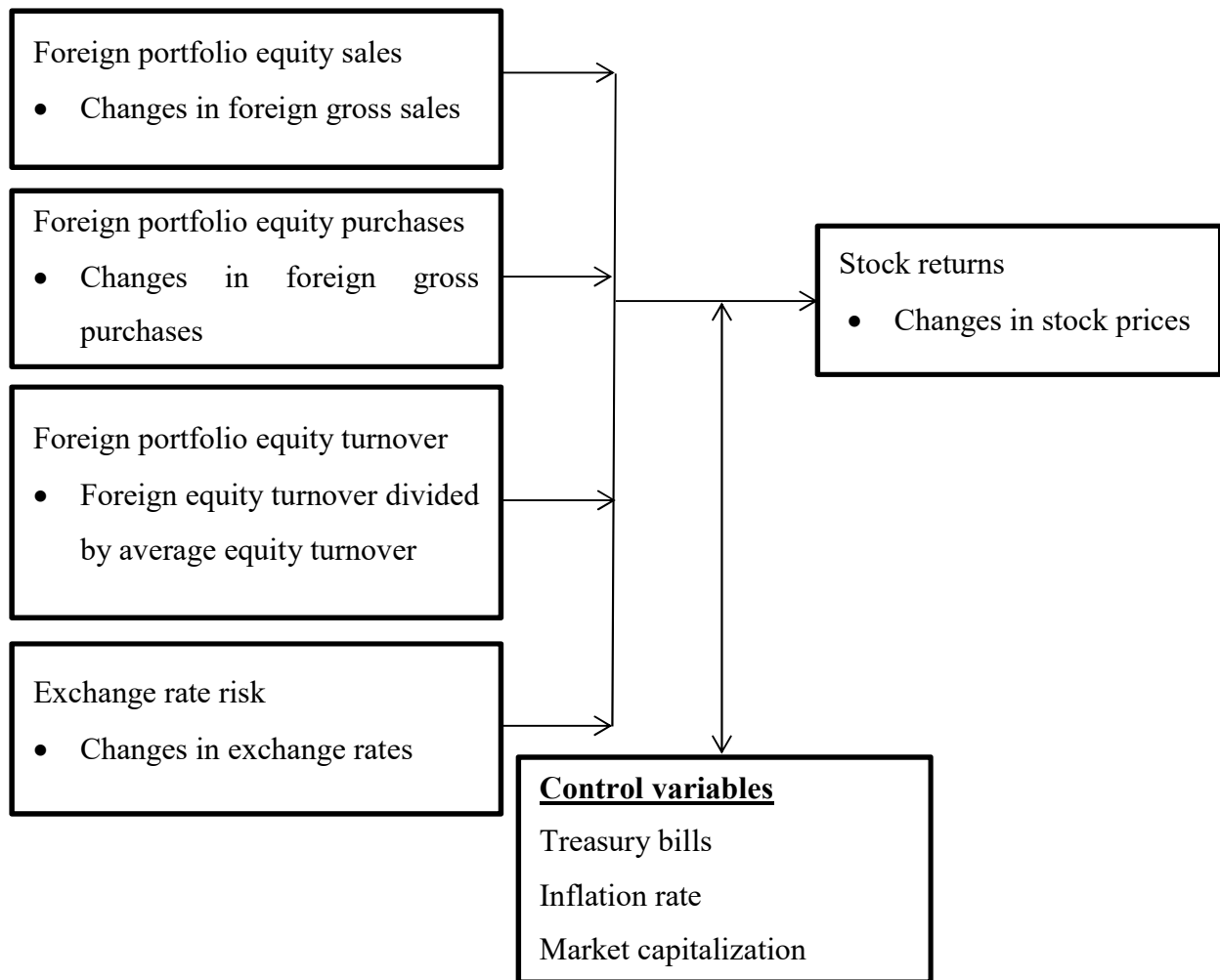
Inflation affects the real value of money and hence the value per share. High inflation means that the investors' wealth is eaten up by the generally increasing level in prices. Inflation was expected to have a negative relationship with stock returns.

Changes in market capitalization occur due to fluctuations in share prices or issuance of new shares and bonus issue. This implied that high activity at the stock market may signal more investments in the stock markets. Market capitalization measures the size of financial institutions with higher market capitalization showing a bigger size. Higher returns are therefore anticipated in highly capitalized market

The conceptual framework of the hypothesized relationship is explained in the diagram below;

## Independent variables

## Dependent variable



**Fig 1: Conceptualized relationship between foreign portfolio investments and stock returns**

**Source: Author's conceptualization February, 2015**

## 2.5 Research Gap

Empirical evidence concerning the effect of FPI on stock returns of Kenya's financial institution is scanty and limited. Nyang'oro, (2013), focused on the effect of portfolio flows on macroeconomic prices and monetary policy in Kenya. The scope of his study was country level.

Kodongo and Ojah (2012) studied the dynamic relation between foreign exchange rates and international portfolio flows in seven African markets. They found out that the dynamic relationship between the real exchange rates and net portfolio flows is both country dependant and time varying. These studies in Kenya have concentrated on macro-level perspective.

Sevil and Mustafa (2012) examined foreign investors and noise traders in Instabul stock exchange. They found out that foreign investors do not seem to act according to the information they gather from the changes in index return. They might be noise trading when they are buying or selling, implying the reason to buy or sell securities may result from the expectations and sentiments.

Nguyen and Nhung (2013) studied the impact of foreign portfolio flows on stock market volatility in Vietnam. Their findings revealed several interesting facts. First, almost significant relationship between foreign flows and market volatility are short lived. Second, past foreign flows relate to volatility stronger in the bull market as compared to the bear one: foreign gross purchases, foreign gross sales and foreign net purchases have significant links with volatility and all cause market volatility in the bull market. Third, it is shown that market volatility respond positively to a random shock to all three flows in the first period even though there were individually negative reactions in some days. Finally, opposite to the bull market, an increase in foreign net purchases reduced market volatility in the bear market indicating that domestic investors are more prudent in trading and react to changes in foreign net purchases more slowly.

While there are numerous strongly held views of FPIs in emerging markets, there is surprisingly little information on the effect of FPI on stock returns, particularly in Kenya's financial institutions. FPIs represent an important opportunity and a tough challenge for developing countries in general and Kenya in particular. It is therefore necessary that this study establishes the effect of foreign portfolio investments on stock returns of Kenya's listed financial institution.

## CHAPTER THREE

### 3.0 METHODOLOGY

#### 3.1 Introduction

This chapter presented the model, methods, data and estimation techniques used in the study to investigate the effect of foreign portfolio investment on stock returns.

#### 3.2 Research Philosophy

Research philosophy is described as the foundation of knowledge on which underlying predispositions of any study are based. The two main philosophical perspectives used in academic research are positivism and phenomenology (Saunders, *et al.*, 2009). Positivism has been described as an approach under which knowledge is based on verification from a scientific underpinning by way of using research methods with clear operational definitions, objectivity, hypothesis testing, causality and replicability (Anderson, 1983). Under this paradigm researchers are seen as independent of the research they are conducting. On the other hand, the phenomenological approach is qualitative, focuses on immediate experience and describes things as they are (Saunders, *et al.*, 2009). This study adopted a positivist approach, as it seeks to establish the influence of foreign portfolio investments on stock returns using research methods with clear operational definitions, objectives and hypothesis testing.

#### 3.3 Research design

The design of the study was causal as it seeks to test for the existence of cause-and-effect relationships among variables (Cooper & Schindler, 2004). This design is suitable in studies which aim to determine whether a group of variables together influence a given dependent variable (Saunders *et al.*, 2009). The design was suitable for this study as it aimed to establish the effect of foreign portfolio investments on stock returns.

#### 3.4 Target Population

The study focused on a population of 21 listed financial institutions in Kenya, i.e. commercial banks, insurance companies and investment companies as shown in table 1. The 21 listed financial institutions trade the securities in NSE.

**Table 1: Listed financial institutions at NSE**

<b>NO.</b>	<b>BANKING</b>	<b>INSURANCE</b>	<b>INVESTMENT</b>
1.	Barclays Bank	1. British American Investments	1. Centum Investment
2.	CFC Stanbic of Kenya Holdings	2. CIC insurance Group	2. Olympia Capital Holdings
3.	Co-operative Bank of Kenya	3. Jubilee Holdings	3. City Trust Ltd
4.	Diamond Trust Bank	4. Kenya Re Insurance Corporation	4. Trans Century
5.	Equity Bank	5. Liberty Kenya Holdings	
6.	Housing Finance	6. Pan Africa Insurance	
7.	I&M Holdings Ltd		
8.	Kenya Commercial Bank		
9.	National Bank of Kenya		
10.	NIC Bank		
11.	Standard Chartered Bank		
<b>Total</b>	<b>11</b>	<b>6</b>	<b>4</b>

**Source: NSE website**

### **3.5 Sample and sampling procedure**

The sample size for this study was 14 listed financial institutions. Purposive sampling was used to select 14 listed financial institutions whose monthly foreign data was available at NSE since January 2008 to December 2014. The sample size of 14 listed financial institutions and the period starting from January 2008 to December 2014 had been chosen on account of availability of monthly foreign data from NSE. The sample size is as shown in table 2.

**Table 2: sample size of Listed Financial institutions at NSE**

<b>NO.</b>	<b>BANKING</b>	<b>INSURANCE</b>	<b>INVESTMENT</b>
1.	Barclays Bank	1. Jubilee Holdings	1. Centum Investment
2.	CFC Stanbic of Kenya Holdings	2. Kenya Re Insurance Corporation	2. Olympia Capital Holdings
3.	Co-operative Bank of Kenya		
4.	Diamond Trust Bank		
5.	Equity Bank		
6.	Housing Finance		
7.	Kenya Commercial Bank		
8.	National Bank of Kenya		
9.	NIC Bank		
10.	Standard Chartered Bank		
<b>Total</b>	<b>10</b>	<b>2</b>	<b>2</b>

**Source: NSE website**

### **3.6 Data collection**

The study used panel (a combination of time series and cross section data) financial data over the seven year period (January 2008 to December 2014) to examine the effects of foreign portfolio equity sales, foreign portfolio equity purchases, foreign portfolio equity turnover and Exchange rate risk on Stock returns in Kenya. Regression coefficients were interpreted using the E-views software output. To ensure that enough degrees of freedom in the models to be estimated are available, monthly data covering the entire study period was collected resulting to 9408 observations. The method of data collection was secondary research, which essentially involved reviewing data sources that were collected for some other purpose than the study at hand. Thus, all the relevant data for this study were available in secondary form. The main sources of data were: Central Bank of Kenya, Capital Markets Authority, Nairobi Securities Exchange Limited and Kenya Bureau of Statistics.

### 3.7 Measurement of variables

#### Stock returns (SR)

Stock return is defined as the increase in the value of an investment over a period of time, expressed as a percentage of the value of the investment at the start of the period. Stock return in this study was computed as:

$$SR_{it} = \left[ \frac{P_{it} - P_{i(t-1)}}{P_{i(t-1)}} \right] \times 100$$

It is measured by changes in share prices.

#### Foreign portfolio equity sales (FPES)

FPES is measured as changes in total monthly gross foreign equity sales. When foreign investors liquidate or sell their shares in the domestic market, there are outflows of foreign portfolios resulting to an anticipated decrease in stock returns. A negative relationship is expected between foreign portfolio equity sales and stock returns.

#### Foreign portfolio equity purchases (FPEP)

FPEP is measured as changes in total monthly gross foreign equity purchases. When there is an increase in foreign portfolio equity purchases, the stock return is expected to go up according to positive feedback and price pressure hypothesis; hence a positive relationship is expected between foreign portfolio equity purchases and stock returns.

#### Foreign portfolio equity turnover (FPET)

FPET is measured as total value of foreign shares traded during the month divided by average equity turnover for that given month. It was computed as;

$$\text{Foreign portfolio equity turnover} = \frac{\text{Foreign equity turnover}}{\text{Average equity turnover}}$$

#### Exchange rate risk (ERR)

ERR is measured as the change in monthly exchange rate to the US dollar. Changes in exchange rate create uncertainty in the market about the stability of macroeconomic policy.

Exchange rate risk reduces confidence in the market and hence affect share prices either because of uncertain future returns or because investors will be pulling out of the market. Change in exchange rate is expected to be negatively related to stock returns.

### **Treasury bills rate (TBIL)**

The study used 91- days' of Treasury bill rate. Treasury bill rate captures the risk free rate and thus a higher Treasury bill rate is expected to increase returns. A positive relationship is expected between Treasury bill rate and stock returns.

### **Inflation rate (INFL)**

INFL is measured as the monthly change in consumer price index. High inflation erodes the real value of money and thus the value per share declines. This results in a decrease in stock returns. Inflation leads to increase in commodity prices which may in turn lead to investors liquidating their positions in the market thereby pushing share prices down. A negative relationship is expected between inflation and stock returns.

### **Market capitalization (MCAP)**

MCAP is measured as the change in monthly stock market capitalization. Market capitalization measures the size of financial institution. Higher market capitalization is an indication of a big financial institution. Higher returns are anticipated in a highly capitalized market and this indirectly reflects the level of investor participation and thus the activity within that market.

## **3.8 Data analysis**

This study adopted a panel data regression using the Ordinary Least Squares (OLS) method in which the data included time series and cross-sectional data that was pooled into a panel data set and estimated using panel data regression.

Studies that have used panel data methodology in the field of investment include (Syed & Jawaid, 2012), (Ahmed & Zlate, 2013) and (Debbiche & Rahmouni, 2015).

Syed and Jawaid, (2012) investigated the impact of foreign capital inflows and economic growth on stock market capitalization in 18 Asian countries by using the panel data from the period of 2000- 2010. Results indicated that foreign capital flows have significant positive relationship with the stock market capitalization.



Ahmed and Slate (2013) modelled net private inflows to major EMEs in the emerging Asia and Latin America using quarterly panel data since 2002:Q1 to 2012:Q2. The results indicated that there is no statistically significant positive effect of unconventional U.S. monetary expansion on total net EME inflows.

Debbiche and Rahmouni (2015) examined the impact of capital inflows on growth by dividing inflows into portfolio equity flows, foreign direct investment flows and debt flows and on the other hand to study if the composition of capital inflows had an importance. The work was done by estimating a standard growth model using dynamic panel data approach. The findings indicated that capital inflows improve economic growth.

### **3.8.1 Justification for use of Panel Data Approach**

Panel data is also called pooled or combined data since there are elements of both time series and cross section data. According to Damodar and Sangeetha (2007), panel data has a number of advantages. First, since panel data relate to individuals e.g. firms over time, there is bound to be heterogeneity in these units. The technique of panel data estimation takes such heterogeneity explicitly into account by allowing for individual specific variables. Secondly, by combining time series of cross section observations, panel data give more informative data, more variability, less collinearity among variables, more degrees of freedom and more efficiency. Thirdly, by making data available for several units, panel data can minimise the bias that might result if the study aggregate individuals into broad aggregates. These advantages enrich panel data empirical analysis in ways that may not be possible if only cross-section or time series data is used, hence the use of panel data in this study.

### **3.8.2 Descriptive Statistics**

Descriptive statistics was essential in determining the statistical properties of the model so as to select the proper functional form of the estimable model. Therefore the study sought to determine the spread of the data which included calculating for the mean, standard deviation, standard errors, maximum and minimum values of the variables overtime. This also involved finding correlation matrix so as to check which variables were highly correlated so as to avoid the problem of multi-collinearity which is a common problem in time series data.

### 3.8.3 Model specification, estimation and rationale of variables

The study hypotheses were measured using one panel data regression equation. The equation had Stock returns (SR) as the dependent variable and Foreign portfolio equity sales (FPES), Foreign portfolio equity purchases (FPEP), Foreign portfolio equity turnover (FPET) and Exchange rate risk (ERR) as independent variables. Treasury bill rate (TBIL), Inflation rate (INFL) and Market capitalization (MCAP) as the control variables in the study. The regression analysis used E-views 7 data analysis software.

The hypotheses were tested using the following regression model;

$$SR_{it} = \alpha + \beta_1 FPES_{it} + \beta_2 FPEP_{it} + \beta_3 FPET_{it} + \beta_4 ERR_{it} + \beta_5 TBIL_{it} + \beta_6 INFL_{it} + \beta_7 MCAP_{it} + \mu_{it}$$

Where;

$SR_{it}$  = Stock returns at time  $t$

$FPES_{it}$  = Foreign portfolio equity sales at time  $t$

$FPEP_{it}$  = Foreign portfolio equity purchases at time  $t$

$FPET_{it}$  = Foreign portfolio equity turnover at time  $t$

$ERR_{it}$  = Exchange rate risk at time  $t$

$TBIL_{it}$  = Treasury bill rate at time  $t$

$INFL_{it}$  = Inflation rate at time  $t$

$MCAP_{it}$  = Market capitalization at time  $t$

$\alpha$  = The intercept

$\beta_i$  = The parameter of explanatory variables of FPES, FPEP, FPET, ERR, TBIL, INFL and MCAP

$\mu_i$  = The disturbance term

#### 3.8.3.1 Unit root tests

A unit root test was carried in this study to examine stationarity of variables because it used panel data which combined both cross-sectional and time series information. A variable is said to be stationary if it displays mean-reverting behaviour implying that its mean remains constant over time (Hlouska & Wagner, 2005). Any regression with non-stationary variables is invalid and hence, any time series application must start with testing stationarity of the data

(Charito, 2010). This study used Levin, Lin and Chu unit root test to examine stationarity. Levin, Lin and Chu suggested the following hypothesis:

$H_0$  = each time series contains a unit root

$H_1$  = each time series is stationary

### **3.8. 4 Choice of Model: Testing for the Validity of the Fixed Effects Model**

Panel data analysis has three more-or-less independent approaches: Pooled panels; assumes that there are no unique attributes of individuals within the measurement set, and no universal effects across time. Fixed effects models; assumes that there are unique attributes of individuals that are not the results of random variation and that do not vary across time. It assumes differences in intercepts across groups or time periods. Random effects models; assumes there are unique, time constant attributes of individuals that are the results of random variation and do not correlate with the individual regressors. This model is adequate if the study want to draw inferences about the whole population, not only the examined sample.

The choice of the appropriate model depends upon the objective of the analysis, and the problems concerning the exogeneity of the explanatory variables. The last two models were considered in this analysis since pooled regression model assumes that all the financial institutions are the same which is not the case. The Pooled regression model assumes that the coefficients (including the intercepts) are the same for all the financial institutions. The fixed and random effects models cater for heterogeneity or individuality among the financial institutions by allowing each financial institution to have its own intercept value which is time invariant. As to which model between the fixed and random is appropriate, the study used the Hausman test.

#### **3.8.4.1 Hausman Test**

A common assumption in panel data designs is that each entity has its own individual characteristics that may or may not influence the independent variables and there are two regression models designed to control individual effects (Park, 2011). The distinction between the two models is whether the unobserved individual effect are correlated with the independent variables in the model (Bruderl, 2005). Under Fixed Effect model the assumption is that the individual specific effect is correlated with the independent variable and therefore, the outcome variable (Y) is assumed to be influenced by explanatory variables which are not observable but correlated with the observed explanatory variables

(Schmidheiny, 2013; Park, 2011). Also, under Fixed Effect models it is assumed that specific characteristics do not change over time and therefore the entity's error term and the constant captures individual characteristics. Bruderl (2005) argued that the Fixed Effect model is designed to remove the effect of those individual characteristics from the predictor(X) variables so that a researcher can assess the predictors' net effect on the Y variable. In contrast, it is assumed under the Random Effects models that characteristics from individual entities, group or time-specific variations, might be uncorrelated with the independent variables (Bruderl, 2005).The variation across entities is assumed to be random and uncorrelated with the independent variables included in the model.

Given the two options of models applicable in analysing panel data the researcher has to choose which model (Fixed Effect or Random Effect) is more relevant and significant. The appropriate approach of choosing between Fixed Effect and Random Effect is running a Hausman specification test to determine the more efficient model (Borensteina *et al.*, 2010; Koskinen, 2012). The procedure involves running both the Fixed Effect and the Random Effect regression models, saving the estimates, and testing whether the error term ( $\epsilon_i$ ) is correlated with the independent variables. Under the test, the null hypothesis is that there is no significant correlation between the individual effects and the independent variables. A rejection of the null hypothesis confirms the argument in favour of the Fixed Effect against the Random Effect model.

A Hausman test was carried out to determine whether to use the Fixed Effect or Random Effect model to address the objectives of this study. Hausman test results indicated that Random Effects model was appropriate for this study.

The fixed effect model specification can be defined as:

$$Y_{it} = \beta_i X_{it} + \alpha_i + \epsilon_{it}$$

Where,  $\alpha_i = (i = 1 \dots n)$  the unknown intercept for each entity (n entity-specific intercepts)

$Y_{it}$  = The dependent variable where i = entity and t = time

$X_{it}$  = Represents a vector of independent variables

$\beta_i$  = Vector of coefficients to be estimated

$\epsilon_{it}$  = Error term

The random effect model specification can be defined as:

$$Y_{it} = \beta_i X_{it} + \alpha_i + \mu_{it} + \varepsilon_{it}$$

Where;

$Y_{it}$  = The dependent variable where  $i$  = entity and  $t$  = time

$X_{it}$  = Represents a vector of independent variables

$\beta_i$  = Vector of coefficients to be estimated

$\alpha_i$  = intercept

$\mu_{it}$  = Between entity error term

$\varepsilon_{it}$  = Within entity error

## CHAPTER FOUR

### 4.0 DATA ANALYSIS, FINDINGS AND DISCUSSIONS

#### 4.1 Introduction

This chapter presents the analysis of data as stipulated in the research methodology and the findings of the study as set out in the research objectives. Analysis was mainly centred on obtaining statistics for correlation, descriptive statistics, unit root tests and panel regression.

#### 4.2 Correlation matrix

Table 3 presents the correlation results. Exchange rate risk, Foreign portfolio equity sales, Foreign portfolio equity turnover, Inflation and Treasury bills had correlation coefficients of -0.1123, -0.0187, -0.0227, -0.0864 and -0.0072 respectively indicating a weak negative correlation with Stock returns. Foreign portfolio equity purchases and market capitalization had correlation coefficients of 0.00005 and 0.0317 respectively indicating no correlations with stock returns. All variables have a coefficient of less than 0.8 hence there exist no multicollinearity between them.

**Table 3: Results for correlation**

	SR	ERR	FPEP	FPES	FPET	INFL	MKTCAP	TBIL
SR	1.000000	-0.112340	0.0000585	-0.018749	-0.022736	-0.086402	0.031703	-0.007254
ERR	-0.112340	1.000000	-0.027548	-0.011439	-0.047305	0.147806	0.039723	-0.246422
FPEP	0.0000585	-0.027548	1.000000	0.014468	-0.010287	-0.005791	-0.006912	0.013711
FPES	-0.018749	-0.011439	0.014468	1.000000	0.086433	-0.012357	-0.015138	-0.015804
FPET	-0.022736	-0.047305	-0.010287	0.086433	1.000000	-0.059813	0.016046	0.207902
INFL	-0.086402	0.147806	-0.005791	-0.012357	-0.059813	1.000000	0.000339	-0.066905
MKTCAP	0.031703	0.039723	-0.006912	-0.015138	0.016046	0.000339	1.000000	0.001098
TBIL	-0.007254	-0.246422	0.013711	-0.015804	0.207902	-0.066905	0.001098	1.000000

#### Key:

- SR:** Stock returns  
**ERR:** Exchange rate risk  
**FPEP:** Foreign portfolio equity purchases  
**FPES:** Foreign portfolio equity sales  
**FPET:** Foreign portfolio equity turnover  
**INF:** Inflation rate  
**MKTCAP:** Market capitalization  
**TBIL:** Treasury bills rate

### 4.3 Descriptive statistics

Table 4 presents descriptive statistics analysis results. The dependent variable had a mean of 1.0936 and a standard deviation of 16.8742. For the independent variables, exchange rate risk had a mean of 0.4699 and a standard deviation of 2.5126, foreign portfolio equity purchases had a mean of 10.7693 and a standard deviation of 112.20, foreign portfolio equity sales had a mean of 17.58 and a standard deviation of 145.81, foreign portfolio equity turnover had a mean of 0.2473 and a standard deviation of 0.3955, inflation had a mean of 0.7115 and a standard deviation of 0.8673, market capitalization had a mean of 7.3104 and a standard deviation of 85.38 and treasury bills rate had a mean of 8.2882 and a standard deviation of 3.7430. A reasonable level of consistency is observed between the mean and the standard deviation for stock returns, exchange rate risk, foreign portfolio equity turnover, inflation and treasury bills. There is a greater deviation from the mean for foreign portfolio equity purchases, foreign portfolio equity sales and market capitalization.

**Table 4: Results for Descriptive statistics**

	SR	ERR	FPEP	FPES	FPET	INFL	MKTCAP	TBIL
<b>Mean</b>	1.093611	0.469930	10.76932	17.58135	0.247316	0.711501	7.310405	8.288214
<b>Median</b>	0.384064	0.475289	0.000000	0.000000	0.065579	0.529685	0.847458	8.185000
<b>Maximum</b>	263.6172	7.547826	3430.500	2634.752	4.658402	4.644044	1656.688	20.56000
<b>Minimum</b>	-91.35867	-7.903995	-0.999922	-0.999870	0.000000	-0.856756	-94.60131	1.630000
<b>Std. Dev.</b>	16.87420	2.512670	112.2023	145.8109	0.395549	0.867331	85.38968	3.743043
<b>Observations</b>	1176	1176	1176	1176	1176	1176	1176	1176

**Key:**

- SR:** Stock returns
- ERR:** Exchange rate risk
- FPEP:** Foreign portfolio equity purchases
- FPES:** Foreign portfolio equity sales
- FPET:** Foreign portfolio equity turnover
- INF:** Inflation rate
- MKTCAP:** Market capitalization
- TBIL:** Treasury bills rate

### 4.4 Unit root tests

Unit root tests were conducted using the Levin, Lin and Chu unit root test method to ensure that the variables had no unit roots. All the variables were found to be stationary at

intercept and level I (0). The Levin, Lin and Chu statistic for all the variables were significant at 1 percent level of significance therefore the null hypothesis that the variables have a unit root is rejected. The results are presented in table 5.

**Table 5: Results for stationarity test**

<b>VARIABLES</b>	<b>Levin, Lin and Chu Statistic (Intercept)</b>	<b>Level of Integration</b>
SR	-39.3470 (0.0000)***	I(0)
ERR	-22.2523 (0.0000)***	I(0)
FPEP	-37.4225 (0.0000)***	I(0)
FPES	-30.5492 (0.0000)***	I(0)
FPET	-20.5634 (0.0000)***	I(0)
INFL	-21.2828 (0.0000)***	I(0)
MKTCAP	-43.3661 (0.0000)***	I(0)
TBIL	-3.03863 (0.0012)***	I(0)

\*\*Probabilities for Levin, Lin and Chu tests assume asymptotic normality.

\*\*\* Significant at 1% level of significance

\*\* Significant at 5% level of significance

\* Significant at 10% level of significance

**Key:**

- SR:** Stock returns
- ERR:** Exchange rate risk
- FPEP:** Foreign portfolio equity purchases
- FPES:** Foreign portfolio equity sales
- FPET:** Foreign portfolio equity turnover
- INF:** Inflation rate
- MKTCAP:** Market capitalization
- TBIL:** Treasury bills rate

**4.5 Panel estimation results**

There are three approaches to Panel data; Pooled, Fixed and Random Effects model. This study employed the use of the Hausman test to determine the most suitable model. The



null hypothesis is that both the fixed effect and Random effect estimation methods are suitable and should yield similar coefficients while the alternative hypothesis is that one of the estimation methods is suitable. A significant Hausman statistic would indicate a difference in the coefficients of both the estimation methods so the null hypothesis is rejected that both the models are suitable and the fixed effect model is considered suitable in this case. Consequently an insignificant Hausman statistic would also imply a rejection of the null hypothesis that both the estimation methods are suitable and in this case the Random effects estimation method is suitable. Table 6 presents the results from the Hausman test. The Chi-square test statistic is 0.000000 with an insignificant probability of 1.0000 at all levels of significance which means that the null hypothesis is rejected in favour of the Random effects model. Therefore, the random effects model is accepted as suitable for this study.

**Table 6: Results for Hausman test**

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	7	1.0000

Random effect model was found to be favourable for this study and the results from the panel estimation output are presented in table 7.

**Table 7: Results from the panel estimation output**

<b>VARIABLE</b>	<b>POOLED MODEL</b>	<b>RANDOM EFFECTS MODEL</b>
	<b>Coefficient (P-Value)</b>	<b>Coefficient (P-Value)</b>
ERR	-0.758983 (0.0002)***	-0.758983 (0.0002)***
FPEP	-0.000409 (0.9251)	-0.000409 (0.9254)
FPES	-0.002180 (0.5173)	-0.002180 (0.5188)
FPET	-1.029565 (0.4175)	-1.029565 (0.4191)
INFL	-1.435119 (0.0120)**	-1.435119 (0.0123)**
MKTCAP	0.007181 (0.2101)	0.007181 (0.2116)
TBIL	-0.159235 (0.2475)	-0.159235 (0.2492)
C	4.036005 (0.0023)	4.036005 (0.0024)
R- Squared	0.021380	0.021380
Prob (F-Statistic)	0.000672	0.000672
Durbin-Watson Statistic	2.375566	2.375566
N×t	1176	1176

\*\*\* Significant at 1% level of significance

\*\* Significant at 5% level of significance

\* Significant at 10% level of significance

**Key:**

- SR:** Stock returns
- ERR:** Exchange rate risk
- FPEP:** Foreign portfolio equity purchases
- FPES:** Foreign portfolio equity sales
- FPET:** Foreign portfolio equity turnover

**INF:** Inflation rate  
**MKTCAP:** Market capitalization  
**TBIL:** Treasury bills rate

#### **4.5.1 The effect of foreign portfolio equity sales on stock returns**

The results indicated that foreign portfolio equity sales had a negative coefficient of -0.002180 with an insignificant P- value of 0.5188. The results were insignificant implying that the negative effect is minimal and that foreign portfolio equity sales do not affect stock returns. This could mean that selling by foreign investors does not affect stock returns because investors selling decision might be affected mainly by some other factors such as behavioural differences, sentiments or reacting to false signals. The results are contrary to the studies done by Choei et al. (1999) and Dornbusch and Park (1995). Choei et al. (1999) found out that foreign investors sold following a negative market return before the Korean economic crisis. Dornbusch and Park (1995) claimed that since the foreign investors' transactions are affected by previous performances, they tend to purchase shares when the prices of shares are increasing and sell when the prices decreasing.

The null hypothesis stating that foreign portfolio equity sales do not significantly affect stock returns in Kenya's listed financial institutions is therefore accepted.

#### **4.5.2 The effect of foreign portfolio equity purchases on stock returns**

The panel estimation output results indicated that foreign portfolio equity purchases had a coefficient of -0.000409 with an insignificant P- value of 0.9254. The results therefore means that foreign portfolio equity purchases do not affect stock returns. The study contradicted with the work of Merton (1987) who analysed market segmentation theories and concluded that there are two main factors that can explain the increase in share prices when there is an increase in foreign participation. Firstly, by increasing the investors' base, diversification and risk sharing would increase. Secondly, the liquidity risk may be lowered by the flow of new investors. Merton's market segmentation model showed that the equity prices could rise as a result of wider investor base for a given stock. This model can be applied to the emerging market case to illustrate how the prices would be affected when the investor base is broadened by the inclusion of foreign investors. The findings tend to relate to the work of Brennan and Cao (1997) who developed a model of international equity portfolio investment flows based on differences in informational endowments between foreign and domestic investors. They argued that when domestic investors' possess cumulative

information advantage over foreign investors about their domestic market, investors tend to purchase foreign assets in periods when the return on foreign assets is high and to sell when the return is low.

Therefore, the null hypothesis stating that foreign portfolio equity purchases do not significantly affect stock returns in Kenya's listed financial institutions fail to be rejected.

#### **4.5.3 The effect of foreign portfolio equity turnover on stock returns**

Foreign portfolio equity turnover had a negative coefficient of  $-1.029565$  with an insignificant P- value of  $0.4191$ . The panel results indicated that foreign portfolio equity turnover do not affect stock returns. The results support the work of Choi *et al.* (1999) who studied the Asian crisis and found no evidence that foreign investors could destabilize stock prices. Similarly, Hamao and Mei (2001) report no systematic evidence for foreign investors causing higher market volatility and influencing stock returns than domestic investors do. The results are also consistent with the work of Boyer and Zheng (2009) who examined the relation between aggregate stock market returns and foreign portfolio equity turnover from an array of investor groups, and found quarterly flows to be auto- correlated for each of the different investor groups, and a significant and positive contemporaneous relation between stock market returns and flows of Mutual Funds and Foreign Investors in U.S. They found out that investors are driven by unexpected flows component rather than expected flows; however, they found little evidence that investor flows follow past stock market returns.

On the contrary, Froot *et al.* (2008) and Clarke and Berko (1996) found out that an increase in foreign equity flow raises stock market prices, however the studies disagree on whether the price increase is temporary or permanent.

The null hypothesis stating that foreign portfolio equity turnover do not significantly affect stock returns in Kenya's listed financial institutions is therefore accepted.

#### **4.5.4 The effect of exchange rate risk on stock returns**

Exchange rate risk had a negative coefficient of  $-0.758983$  with a significant P- value of  $0.0002$ . The panel results indicated that the estimated coefficient capturing the effect of exchange rate risk on stock returns are significant at 1% level of significance. This means that exchange rate risk affects stock returns. The results support the work of Patro, Wald and Wu (2002) who estimated a time-varying two-factor international asset pricing model for weekly equity index returns of 16 OECD countries. A trade-weighted basket of exchange rates and the MSCI world market index were used as risk factors. They found significant currency risk

exposures in country equity index returns and explained these currency betas using several country-specific macroeconomic variables with a panel approach.

These findings are not in line with the work of Jorion (1991) who investigated the sensitivity of the stock prices of US MNC to changes in dollar exchange rates. Jorion concluded that the sensitivity of the stock prices to changes in exchange rate is not significant at any accepted level significance. Similarly, these findings do not support the results of previous studies (e.g. Kanas, 2000; Yang and Doong, 2004) which suggested that fluctuations in exchange rates did not have strong effects on the dynamics of stock market returns. For example, Kanas (2000) examined the volatility spill over between exchange rate and stock markets for developed countries and documents that the volatility transmission from foreign exchange markets to the stock markets is insignificant for all sample countries.

Yang and Doong (2004) had differing results for the 67 countries as they showed that changes in exchange rate have less direct effect on future changes of stock prices. Further, this study contradicted with the work of Chi et al. (2007) who indicated that there is no any significant relationship between the stock returns of their sample banks to foreign exchange rate movements. Their study explored the relationship of four major Australian banks, which have significant operations outside of Australia, with five regional banks in Australia which do not participate in any foreign business. They used the Capital Market Method to quantify this relationship over the period 1997 to 2007. The strong impact of exchange rate risk on stock returns of listed financial institutions in Kenya could be explained by unstable exchange rates in the market.

The null hypothesis that exchange rate risks do not affect stock returns in Kenya's listed financial institutions is therefore rejected in this study.

#### **4.6 Comparative analysis results between banking and non- banking institutions**

The study used panel estimation model to find out if there is any comparison between the effect of foreign portfolio equity (sale, purchases and turnover) and exchange rate risk on stock returns of banking and non- banking institutions. Independent panel analysis tests were carried out differently for banking and non- banking institutions. The results are discussed below.

##### **4.6.1 Banking institutions**

The sample size of the study was 14 listed financial institutions out of which 10 were banks. An in-depth analysis was carried out differently for banking institutions in order to

find out if the effect of foreign equity on stock returns is different from non-banking institutions.

#### 4.6.1.1 Correlation matrix

Data was subjected to correlation analysis to ensure there were no highly correlated variables so as to avoid the problem of multi-collinearity in the model. Table 8 presents the correlation results for banking institutions. The correlation results indicate that there is a no correlation between foreign portfolio equity sales, foreign portfolio equity purchases, foreign portfolio equity turnover, exchange rate risk, inflation, market capitalization with stock returns as depicted by correlation coefficients of -0.0220, -0.0158, -0.0271, -0.1077, -0.0912, 0.0247 and -0.0151 respectively.

**Table 8: Results for correlation for banking institutions**

	SR	ERR	FPEP	FPES	FPET	INFL	MKTCAP	TBIL
SR	1.000000	-0.107703	-0.015892	-0.022002	-0.027197	-0.091294	0.024799	-0.015131
ERR	-0.107703	1.000000	-0.100289	-0.008790	-0.048483	0.147806	0.042688	-0.246422
FPEP	-0.015892	-0.100289	1.000000	0.046054	-0.008572	-0.034629	-0.016101	0.060045
FPES	-0.022002	-0.008790	0.046054	1.000000	0.091411	-0.011045	-0.017545	-0.025978
FPET	-0.027197	-0.048483	-0.008572	0.091411	1.000000	-0.069992	0.026194	0.191526
INFL	-0.091294	0.147806	-0.034629	-0.011045	-0.069992	1.000000	-0.005129	-0.066905
MKTCAP	0.024799	0.042688	-0.016101	-0.017545	0.026194	-0.005129	1.000000	-0.002822
TBIL	-0.015131	-0.246422	0.060045	-0.025978	0.191526	-0.066905	-0.002822	1.000000

#### Key:

- SR:** Stock returns
- ERR:** Exchange rate risk
- FPEP:** Foreign portfolio equity purchases
- FPES:** Foreign portfolio equity sales
- FPET:** Foreign portfolio equity turnover
- INF:** Inflation rate
- MKTCAP:** Market capitalization
- TBIL:** Treasury bills rate

#### 4.6.1.2 Descriptive statistics

Table 9 presents descriptive statistics analysis results on banking institutions. The dependent variable had a mean of 1.2695 and a standard deviation of 18.88. For the

independent variables, exchange rate risk had a mean of 0.4699 and a standard deviation of 2.5130 foreign portfolio equity purchases had a mean of 7.090 and a standard deviation of 51.7458, foreign portfolio equity sales had a mean of 22.2217 and a standard deviation of 170.44, foreign portfolio equity turnover of had a mean of 0.2604 and a standard deviation of 0.4189, inflation had a mean of 0.7115 and a standard deviation of 0.8674, market capitalization had a mean of 8.5928 and a standard deviation of 93.23 and treasury bills rate had a mean of 8.2882 and a standard deviation of 3.7436. A reasonable level of consistency is observed between the mean and the standard deviation for exchange rate risk, foreign portfolio equity turnover, inflation and treasury bills rate in the banking institutions. Stock returns, foreign portfolio equity purchases, foreign portfolio equity sales and market capitalization had standard deviation whose variation from the mean is large.

**Table 9: Results for Descriptive statistics for banking institutions**

	SR	ERR	FPEP	FPES	FPET	INFL	MKTCAP	TBIL
<b>Mean</b>	1.269582	0.469930	7.090658	22.22174	0.260400	0.711501	8.592861	8.288214
<b>Median</b>	0.481500	0.475289	0.000000	0.000000	0.063004	0.529685	0.948059	8.185000
<b>Maximum</b>	263.6172	7.547826	1255.000	2634.752	4.658402	4.644044	1656.688	20.56000
<b>Minimum</b>	-91.35867	-7.903995	-0.998351	-0.999870	0.000000	-0.856756	-94.60131	1.630000
<b>Std. Dev.</b>	18.88148	2.513097	51.74580	170.4478	0.418967	0.867479	93.23552	3.743680
<b>Observations</b>	840	840	840	840	840	840	840	840

**Key:**

- SR:** Stock returns
- ERR:** Exchange rate risk
- FPEP:** Foreign portfolio equity purchases
- FPES:** Foreign portfolio equity sales
- FPET:** Foreign portfolio equity turnover
- INF:** Inflation rate
- MKTCAP:** Market capitalization
- TBIL:** Treasury bills rate

#### 4.6.2 Non- banking institutions

The non-banking institutions comprised of two insurance and two investment companies respectively. Their results are discussed below.

##### 4.6.2.1 Correlation matrix

Table 10 presents results for correlation analysis for non- banking institutions. The results showed that no correlation existed between exchange rate risk, foreign portfolio equity purchases, foreign portfolio equity sales, foreign portfolio equity turnover, inflation, market capitalization and treasury bills with stock returns. The results had correlation coefficients of -0.1511, 0.02264, 0.0202, -0.0040,-0.0773, 0.0773 and 0.0278 respectively.

**Table 10: Results for correlation for non-banking institutions**

	SR	ERR	FPEP	FPES	FPET	INFL	MKTCAP	TBIL
SR	1.000000	-0.151182	0.022646	0.020239	-0.004044	-0.077378	0.077328	0.027839
ERR	-0.151182	1.000000	0.011156	-0.052030	-0.044903	0.147806	0.031281	-0.246422
FPEP	0.022646	0.011156	1.000000	-0.004794	-0.011255	0.011424	0.000310	-0.012342
FPES	0.020239	-0.052030	-0.004794	1.000000	0.045652	-0.039799	-0.006043	0.074651
FPET	-0.004044	-0.044903	-0.011255	0.045652	1.000000	-0.029010	-0.040055	0.266204
INFL	-0.077378	0.147806	0.011424	-0.039799	-0.029010	1.000000	0.021088	-0.066905
MKTCAP	0.077328	0.031281	0.000310	-0.006043	-0.040055	0.021088	1.000000	0.016033
TBIL	0.027839	-0.246422	-0.012342	0.074651	0.266204	-0.066905	0.016033	1.000000

#### Key:

- SR:** Stock returns
- ERR:** Exchange rate risk
- FPEP:** Foreign portfolio equity purchases
- FPES:** Foreign portfolio equity sales
- FPET:** Foreign portfolio equity turnover
- INF:** Inflation rate
- MKTCAP:** Market capitalization
- TBIL:** Treasury bills rate

##### 4.6.2.2 Descriptive statistics

Table 11 presents descriptive statistics analysis results for non-banking institutions. The dependent variable had a mean of 0.65368 and a standard deviation of 10.27 For the independent variables, exchange rate risk had a mean of 0.4699 and a standard deviation of



2.5153, foreign portfolio equity purchases had a mean of 19.96 and a standard deviation of 193.2145, foreign portfolio equity sales had a mean of 5.980 and a standard deviation of 40.2653, foreign portfolio equity turnover of had a mean of 0.2146 and a standard deviation of 0.3281, inflation had a mean of 0.7115 and a standard deviation of 0.8682, market capitalization had a mean of 4.1042 and a standard deviation of 61.5531 and treasury bills rate had a mean of 8.2882 and a standard deviation of 3.7470. A reasonable level of consistency is observed between the mean and the standard deviation for stock returns, exchange rate risk, foreign portfolio equity turnover, inflation and treasury bills rate in the non-banking institutions. Foreign portfolio equity purchases, foreign portfolio equity sales and market capitalization had standard deviation whose variation from the mean is large.

**Table 11: Results for descriptive statistics for non- banking institutions**

	SR	ERR	FPEP	FPES	FPET	INFL	MKTCAP	TBIL
<b>Mean</b>	0.653682	0.469930	19.96598	5.980374	0.214608	0.711501	4.104267	8.288214
<b>Median</b>	0.206142	0.475289	0.021093	-0.044497	0.070789	0.529685	0.354771	8.185000
<b>Maximum</b>	56.88976	7.547826	3430.500	665.6765	2.817397	4.644044	1106.556	20.56000
<b>Minimum</b>	-34.78261	-7.903995	-0.999922	-0.998447	0.000000	-0.856756	-91.91786	1.630000
<b>Std. Dev.</b>	10.27460	2.515347	193.2145	40.26533	0.328103	0.868255	61.55316	3.747031
<b>Observations</b>	336	336	336	336	336	336	336	336

**Key:**

- SR:** Stock returns
- ERR:** Exchange rate risk
- FPEP:** Foreign portfolio equity purchases
- FPES:** Foreign portfolio equity sales
- FPET:** Foreign portfolio equity turnover
- INF:** Inflation rate
- MKTCAP:** Market capitalization
- TBIL:** Treasury bills rate

**4.6.3 Panel estimation results (Banking and non-banking institutions)**

Separate panel equations were run for banking and non-banking institutions to have an in depth analysis of the results. In the case of banking institutions the Hausman test had a

chi square statistic of 0.000000 with an insignificant probability value of 1.0000 meaning that the study should reject the fixed effect model in favour of the random effects model as presented in table 12. In Non-banking institutions, Hausman test had an insignificant probability value of 0.8293 indicating also that the study should reject the fixed effect model in favour of the random effects model as presented in table 13.

**Table 12: Hausman test (Banking institutions)**

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	7	1.0000

**Table 13: Hausman test (Non-Banking institutions)**

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	1.484702	4	0.8293

Table 14 presents the panel estimation results for banking and non-banking institutions.

**Table 14: Results from the panel estimation output for banking and non-banking institutions**

Variable	Banking institutions		Non-banking institutions	
	Pooled model	Random effects model	Pooled model	Random effects model
	Coefficient	Coefficient	Coefficient	Coefficient
	(P-Value)	(P-Value)	(P-Value)	(P-Value)
ERR	-0.837116 (0.0020)***	-0.837116 (0.0020)***	-0.605813 (0.0092)***	-0.602355 (0.0673)**
FPEP	-0.009568 (0.4479)	-0.009568 (0.4495)	0.001317 (0.6485)	0.001447 (0.5820)
FPES	-0.002275 (0.5520)	-0.002275 (0.5534)	0.003080 (0.8249)	0.000640 (0.9596)
FPET	-1.327508 (0.4027)	-1.327508 (0.4043)	-0.184036 (0.9171)	-0.555928 (0.7274)
INFL	-1.755014 (0.0206)**	-1.755014 (0.0210)**	-0.686962 (0.2915)	-0.687515 (0.4569)
MKTCAP	0.005876 (0.3983)	0.005876 (0.4000)	0.013893 (0.1269)	0.009702 (0.2426)
TBIL	-0.207882 (0.2535)	-0.207882 (0.2552)	-0.035529 (0.8240)	-0.023153 (0.9169)
C	5.048217 (0.0041)	5.048217 (0.0043)	1.659376 (0.2697)	1.664582 (0.4351)
R- Squared	0.022374	0.022374	0.033818	0.018793
Prob (F- Statistic)	0.008562	0.008562	0.123284	0.508605
Durbin- Watson Statistic	2.427628	2.427628	1.964748	2.095134
N×t	840	840	336	336

\*\*\*Significance at 1% level of significance

\*\* Significance at 5% level of significance

\* Significance at 10% level of significance

**Key:**

<b>SR:</b>	Stock returns
<b>ERR:</b>	Exchange rate risk
<b>FPEP:</b>	Foreign portfolio equity purchases
<b>FPES:</b>	Foreign portfolio equity sales
<b>FPET:</b>	Foreign portfolio equity turnover
<b>INF:</b>	Inflation rate
<b>MKTCAP:</b>	Market capitalization
<b>TBIL:</b>	Treasury bills rate

**4.6.3.1 A comparison of the effect of foreign portfolio equity and exchange rate risk on stock returns of banking and non-banking institutions**

For banking institutions the random effects model indicated that foreign portfolio equity purchases had a coefficient of -0.0095 and an insignificant probability value of 0.4495. For non-banking institutions, foreign portfolio equity purchases had a coefficient of 0.0014 with an insignificant probability value of 0.5820. This therefore meant that foreign portfolio equity purchases do not affect stock returns of banking institutions. The results are not consistent with base-broadening hypothesis which suggested that foreign inflows cause emerging equity market prices to rise. By broadening the investor base, diversification and risk sharing is increased thereby lowering the required risk premium.

Foreign portfolio equity sales had a coefficient -0.0022 and an insignificant probability value of 0.5534 for banking institutions and a coefficient of 0.0006 with an insignificant probability value of 0.9596 for non-banking institutions meaning that foreign portfolio equity sales do not have an effect on stock returns. This is not in line with the work of Odean (1998) and Griffin, Harris, and Topaloglu (2003). Odean (1998) showed that individual investors tend to sell past winners and hold on to past losers. Griffin, Harris, and Topaloglu (2003) on the dynamics of institutional and individual trading, showed that individual investors tend to be contrarian traders in that they sell stocks with positive returns in prior trading days.

Foreign portfolio equity turnover had a coefficient of -1.327 and a probability value of 0.4043 for banking institutions and a coefficient of -0.5559 with a probability value of 0.7274 for non-banking institutions. The results are statistically insignificant indicating that foreign portfolio equity turnover do not affect stock returns. The results are not consistent with the work of Stulz (1999) who argued that foreign flows increase prices when they come in and

decrease them when they leave thereby making prices more volatile. Hence, capital flows have an impact on valuations only if they are undertaken because of information that foreign investors have that is not yet incorporated in prices.

Exchange rate risk had a significant negative coefficient of -0.8371 with a P- value of 0.0020 for banking institution and negative coefficient of -0.6023 with a significant P- Value of 0.0673 for non- banking institutions. The results are statistically significant at one percent level of significance and five percent level of significance for banking and non-banking institutions respectively. The banks' exposure to exchange rate risk has grown in importance due to the continuing expansion of foreign currency business, greater variability of exchange rates, and increase in foreign exchange deposits and foreign borrowing in Kenyan banking sector. Exchange rates affect most directly those banking institutions with foreign currency transactions and foreign operations. Even without such activities, exchange rates can affect banking institutions indirectly through their influence on the extent of foreign competition, the demand for loans, and other aspects of banking conditions. The results are in line with the work of Maysami and Koh (2000) who examined the impacts of the exchange rate on the stock returns and showed that the exchange rate is the determinant in the stock prices.

The results are not consistent with the work of Bartov and bodnar (1994) and Chi *et al.* (2007). Bartov and bodnar (1994) found no significant correlation between stock returns of US firms with large foreign currency dealings and contemporaneous changes on the dollar over the period 1978 to 1989. Chi *et al.* (2007) indicated that there isn't any significant relationship between stock returns of their sample banks to foreign exchange rate movements. Their study explored the relationship of four major Australian banks, which have significant operations outside of Australia, with five regional banks in Australian banks which do not participate in any foreign business. They used the capital market method to quantify this relationship over the period 1997-2007.

The null hypothesis stating that there is no significant comparative difference between the effect of foreign portfolio equity (sales, purchases and turnover) and exchange rate risk on stock returns of listed banking and non- banking institutions in Kenya is rejected.

#### **4.7 Discussion of findings**

Foreign investors play an important role in the development of stock market as they have been major players especially in emerging markets. The results presented varying findings as per the objectives of the study.

The results indicated that foreign portfolio equity sales had a negative coefficient of -0.0022 with an insignificant P- value of 0.5188. The results were insignificant implying that foreign portfolio equity sales do not affect stock returns. The results are in support with the work of Sevil and Mustafa (2012) who found out that foreign investors do not seem to act according to the information they gather from the changes in index return. They might be noise trading when they are selling, implying the reason they sell may result from the expectations and sentiments of foreign investors. The results are inconsistent with the work of (Stulz, 1999; Kaminsky, Lyons and Schmukler, 2000; Abhijeet, 2012 and Gordon and Gupta, 2003).

Stulz, (1999) argued that foreign flows increase prices when they come in and decrease them when they leave thereby making prices more volatile.

Kaminsky, Lyons and Schmukler (2000) in a study of mutual funds strategies in emerging markets examined the trading behaviour of the mutual funds that invest in Latin America. Kaminsky *et al.* (2000) found evidence of positive feedback trading indicating that investors sold share when prices were declining both among the managers of the mutual funds and among the ultimate investors in the mutual funds.

Abhijeet (2012) examined the cause and effect between foreign institutional investors trading behaviour and stock market returns in India. Abhijeet asserted that foreign investors were involved in positive feedback trading at aggregate level, where they sell securities after prices declined. Foreign investors also exhibited the tendency of herding in a sense that they all acted or reacted in a similar manner. Abhijeet assumed that the existence of positive feedback trading caused the price impact of shocks in trade order flow to be larger than when feedback trading is ignored

Gordon and Gupta (2003) examined portfolio flows into India using monthly data over the period 1993 to 2000 and found that foreign institutional investors' flows were negatively related to lag market returns, indicating negative feedback trading and that there was a causation running from foreign institutional investors to return. Gordon and Gupta further suggested that foreign institutional investors act as market makers and book profits by investing when prices were low and selling when they were high.

The panel estimation output results indicated that foreign portfolio equity purchases had a coefficient of -0.0004 and insignificant P- Value of 0.9254. This indicated that foreign portfolio equity purchases do not affect stock returns. The results are consistent with the work of Nam (2004) who analyzed the relationship between foreign investors trading volume and stock returns in Korea market between 1992 and 1998. As a result it was found that foreign

traders are not buying or selling securities according to noise, they trade according to information. Therefore, foreign traders do not directly affect the riskiness of security prices. The results also support the work done by Kim, Landi and Yoo (2009) and Pramod and Puja (2014). Kim, Landi and Yoo (2009) searched the effects of foreign investors on Korean market. VAR analysis was applied to daily data in 1955-2006 separately for the domestic and foreign investor groups. As a result, it was found that net buying of foreign investors does not affect the stock market return. At the same time net buying of foreign investors reacted immediately to positive changes in return. Further, Kim *et al.* (2009) using GARCH-M analysis found that net buying of foreign investors has no significant effect on volatility in the market. Finally, it was found that after the increase in net buying of foreign investors, Won appreciates across U.S.D.

While examining the dynamics of the relationship between institutional investment flow and stock returns for India using daily data over the period of 2002 to 2012, Pramod and Puja (2014), concluded that foreign institutional investors (FIIs) inflow do not have any significant impact on market returns but the flows are significantly affected by their own lags and lagged returns, implying that they follow their own past strategy as well as the recent market behaviour.

The results are inconsistent with studies done by (Choi *et.al.*, 1999); (Kaniel, Saar & Titman, 2008); (Kaur & Dhillon, 2015); (Samarakoon, 2009); (Kim and Yang, 2009) and (Twerefou & Nimo 2005) who found out strong evidence suggesting that foreign investors buy following a positive market return.

Kaniel, Saar and Titman (2008) examined the dynamic relation between individual investors' trading behaviour and stock returns in the United States and showed that individual investors tend to buy stocks after prices decline and sell stocks after stock prices increase. The results supported the existence of negative feedback trading behaviour in the US markets, in which institutional investors are major market participants and individuals make investments in mutual funds.

According to Kaur and Dhillon (2015), foreign institutional investors participated in positive feedback or momentum trading since bidirectional causality was detected. Positive feedback trading strategies by foreign institutional investors indicated that these investors invested in Indian stock market when stock prices were rising. On the other hand, positive feedback practices caused Indian stock market prices to rise further and hence pushing prices away from their fundamental value.

Samarakoon (2009) investigated the relationship between equity flows and stock returns in Sri Lanka. The study examined not only the effect of foreign investor transactions but also the effect of local investor transactions on stock market was also established. According to empirical results, domestic institutional and foreign individual purchases lead to higher future returns whereas domestic individual purchases lead to lower future returns. Foreign institutional purchases were found to have no impact on future returns.

Kim and Yang (2009) investigated the effect of capital inflows on domestic asset prices in Korea from January 1999 to September 2007. Capital inflows 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. 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 capital inflows on domestic asset prices in Korea, Kim and Yang found the influence of capital inflow shocks to be more significant on the stock market but limited in other parts of the economy.

Foreign portfolio equity turnover had a negative coefficient of -1.0295 with an insignificant P- value of 0.4191. The panel results indicated that foreign portfolio equity turnover do not affect stock returns. The results support the work of Choi *et al.* (1999) who studied the Asian crisis and found no evidence that foreign investors could destabilize stock prices. The results are inconsistent with the studies of (Griffin, Nardari & Stulz, 2004); (Ben-Rephael *et al.*, 2011); (Okuyan & Erbaykal, 2011); (Roger & Warner 2000); (Puneet & Raman, 2009); (Cha & Kim, 2005) and (Rai & Bhanumurthy, 2007). Griffin, Nardari and Stulz, (2004) found out that equity flows are positively related to host country stock returns as well as market performance abroad. An increase in foreign portfolio equity turnover could indicate that foreign investors have reasonable level of confidence in the domestic market and this pushes the stock returns up.

Ben-Rephael *et al.* (2011) examined Israel's stock mutual funds and discovered that fund flows and current market returns have a significant negative correlation which supports the price pressure hypothesis.

Okuyan and Erbaykal, (2011) in their study, emerging from base broadening hypothesis, investigated whether the foreign transactions had an effect on the security returns in Instabul Stock Exchange. The cointegration relationship between two variables was analysed by the bounds testing approach and ARDL models using the monthly data of 1997-



2009. As a result, a positive relationship was detected between the foreign transactions and returns of shares in the long run. The findings were interpreted as the validity of base broadening hypothesis in long term in Instabul Securities Exchange.

Roger and Warner (2000) researched on the high frequency relationship between aggregate mutual fund flow and market return using U.S. daily data from 1998 to 1999. The result showed that the simultaneous daily relationship between the two variables was positive and the relation reflected that flows could affect market returns, and they argued that the positive relation cannot be necessarily interpreted as the price influence without additional test because the market returns may drive fund flow instead of flow driving market returns. Therefore, they included the lead-lag flow-return regressions and empirical evidence indicated that flows positively respond to market returns, which is supportive of the feedback trading hypothesis.

Puneet and Raman (2009) explored the flow-return relationship using quarterly data in U.S. market from 1951 to 2007 with Vector Auto-regression model. They hold the opinion that the positive relationship between stock mutual fund flow and stock market return cannot necessarily be independent and endogenous. Puneet and Raman asserted that there might be a third factor that is positively correlated with both mutual fund flow and stock market return. Consequently, they included the main macroeconomic variables and return predictive variables as control variables to investigate whether the positive correlation between mutual fund flow and stock market return could be affected by these variables. In other words, with controlling for this series of variables, they tested whether the stock market return was still influenced by fund flow. Their research evidence firstly confirmed the positive flow-return relationship and then the examination results implied that this relation is endogenous and highly independent of the macroeconomics variables and return predictive variables.

Cha and Kim (2005) examined both the long-run and short-run dynamic relationships between mutual fund flows and security returns using macro approach in US market. In their research, a system methodology that combined the information in the stock market and the information in bond market was applied to test the interactive relationship further. Their evidence supported the high positive correlation between the two variables in stock market. The positive short-term effect was the reason that the preceding changes of stock market return caused the fund flow to move in the same direction.

Rai and Bhanumurthy (2007) tried to examine the motivators of foreign institutional investments (FII) in India, which crossed almost US\$ 12 billion by the end of 2002. Given the huge volume of these flows and its impact on the other domestic financial markets

understanding the behaviour of these flows becomes very important at the time of liberalizing capital account. In this study, by using monthly data, Rai and Bhanumurthy found that foreign institutional investments inflow depends on stock market returns, inflation rate (both domestic and foreign) and ex-ante risk. In terms of magnitude, the impact of stock market returns and the ex-ante risk turned out to be major determinants of foreign institutional investments inflow. This study did not find any causation running from foreign institutional investments inflow to stock returns as it was found by some studies. Stabilizing the stock market volatility and minimizing the ex-ante risk would help in attracting more foreign institutional investments inflow that had positive impact on the real economy.

Exchange rate risk had a coefficient of -0.7589 with a significant P- value of 0.0002. The results are significant at 1% level of significance meaning that exchange rate risks affect stock returns. Foreign investors convert their returns on stock into their own currency. Foreign investors get affected when local currencies get stronger and converted into weaker currency. Exchange rate was expected to have a negative relationship with stock prices. Stock prices decrease when exchange rate increases and decrease in exchange rate positively impact on stock returns. The results are in line with the findings of (Kasman *et al.*, 2011); (Tai, 2005); (Tabak, 2006); (Dimitrova, 2005), (Ahmed & Omneya, 2007); (Atindehou & Gueyie's 2001) and (Adjasi & Biekpe, 2005) who proved that exchange rate risk affected stock returns and appreciation of the dollar would harm the performance of banks. Kasman *et al.* indicated that numerous financial analysts as well as economist agree that costs, profitability and revenues of banks are directly affected by the unexpected changes in exchange rate.

Currency depreciation led to stock market depression in United States and United Kingdom (Dimitrova, 2005). The study showed that when exchange rate declines by one percent, the stock market reacted with less than one percent decline. The study proposed that US should implement policy to strengthen the US dollar. Since there was a negative relationship between exchange rate and stock market index, the policy helped the stock market. However, Dimitrova also found insignificant results in the attempt to show that exchange rate depreciated during the booming of the stock market. Thus, multinational companies which used exchange rate forecasting could consider using the stock market as a forecasting indicator as a proxy. The currency was expected to depreciate during periods of bullish sentiments in the stock market.

The appreciation of exchange rate had positive impact on the United Kingdom non-financial firms' stocks return. Two reasons were given. First, U.K. international trade was greatly involved in trading with Europe and U.S. and Japan. Second, the basket of foreign

currencies was used in the portfolio. Thus, the exposure of the exchange rate risk in the portfolio was lower (Ahmed and Omneya, 2007).

Atindehou and Gueyie's (2001) study involved determining whether Canadian banks' stock returns reacted differently to changes (both positive and negative) in the exchange rate by using sensitivity analysis. They used a three-factor pricing model of banks' stock returns, with market, interest rate, and exchange rate indices as factors over the period 1988-1995. Their results showed that Canadian banks' stock returns were influenced by movements in the exchange rate, especially to the USD. They examined further that investors reacted more to a re-evaluation of their portfolio after losses, than to an appreciation after successive gains.

Adjasi and Biekpe (2005) investigated the relationship between stock market returns and exchange rate movements in seven African countries. Cointegration tests showed that in the long-run exchange depreciation leads to increases in stock market prices in some of the countries, and in the short-run exchange rate depreciations reduce stock market returns.

The study fails to support the work of Ocran (2010) examined the empirical relationship between the rand and the USD exchange rate and the stock prices of South Africa and the US. The study was undertaken with the aid of the Johansen cointegration technique, the Granger causality test, generalised impulse response function and forecasting error variance decompositions. Monthly data of the three variables from January 1986 to November 2005 were used in the estimations. The Johansen cointegration test could not identify a long-run relationship between the variables of interest.

The study also does not support the work of Rasheed (2002) who did a study for south Asian countries i.e. Pakistan, India, Bangladesh and Sri Lanka, to find the impact of exchange rates on the stock returns. The study examined the relation between exchange rate and stock returns for all the countries in long and short run fluctuations in exchange rates using monthly data for six years. The study found no relation for both long and short run between stock returns and exchange rates for India and Pakistan, also the same results were found for Bangladesh and Sri Lanka. Being no relationship between stock returns and exchange rates, the study concluded that there is no need of using information of taking advantage and benefiting from stock return due to fluctuation in exchange rate from one market to predict behaviour in the other market. The study made recommendations for further research in this particular area by using weekly or even daily information in order to find more concrete evidence about stock returns and fluctuations in exchange rates.

The panel estimation results indicated that inflation had a coefficient of -1.4351 with a significant P-value of 0.0123. Inflation rate showed a negative but significant coefficient

suggesting that a decrease in inflation lead to a one percent increase in stock returns in Kenya's NSE listed financial institutions. It is expected that a rapid increase in inflation affects negatively the performance of the stock market. Growing inflation is considered as bad news by the investors because it depicts bad economic conditions in the country and investors feel insecure about their investment in the stock market. In case of decreasing inflation rate, it depicts good economic conditions and attracts investors to invest in the stock market. This is similar with theory postulates suggesting that high rate of inflation increases the cost of living and a shift of investment to consumption. This leads to a fall in demand for securities and subsequently to a reduction in volume of stock traded and stock returns. The results support studies conducted by Al- Albadi and Al- Sabbagh (2006) and Li *et al.* (2010) reported negative relationship between inflation and stock returns.

The study contradicted with the studies done by Rano and Bayero, (2010) who studied volatility of stock returns and the impact of inflation. They used Generalized Heteroscedasticity Model to investigate the relationship for the market of Nigeria and Ghana. Test of the normality of data under descriptive statistics showed that average stock returns were positive but more volatile for the markets of Nigeria and Ghana. The results from the model indicated that volatility of returns for Nigeria market was significant but insignificant the Ghana market. Market volatility was affected by inflation in both of the countries. A decrease in inflation caused an increase in market volatility but it was insignificant for the market of Ghana.

Treasury bills rate had a coefficient of -0.1592 with an insignificant P- value of 0.2492 meaning that treasury bills rate do not affect stock returns. It was expected that interest rate would have a negative relationship with stock prices. Increase in interest rate causes a decrease in stock prices because the required rate of return on stocks rises resulting to a decrease in stock prices hence stock returns. Actions of monetary authorities have a significant impact on stock prices and fluctuations of interest rates signals good or bad information to investors. The results contradict with work done by Butt *et al.* (2010), Kasman *et al.* (2011) and Muneer *et al.* (2011) which revealed that there is a positive relationship between bank stock returns and interest rates. The study failed to support the work done by Lobo, (2000) who studied the effect of interest rate changes on stock prices. He examined the behaviour of stock prices after treasury rate announcements and found that before announcements of increase in treasury rate the asymmetry in price adjustments were narrow. Lobo also found that stock prices responded quicker to the news of overpricing than news of

under-pricing. Lobo concluded that treasury rate announcement had significant impact on stock prices and convey new information to stock market.

Market capitalization was found to have a coefficient of 0.0071 with an insignificant at 0.2116. The results showed that market capitalization do not affect stock returns. The results do not support the work of Adjasi (2007) which found out that changes in market capitalization occur due to fluctuations in 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. A change occurs due to the actively traded shares and to fluctuations in share prices or number of shares traded in a given day. Higher returns are anticipated in a highly capitalized market. This further supports the base-broadening hypothesis that as size of the investor/ firm base broadens, stock returns increases.

The R-squared value is 2.14 meaning that foreign portfolio investment explains stock returns in Kenya's NSE listed financial institutions by up to 2 percent.

The F- Statistic measures the overall fit of the model and the coefficient of determination (R-squared). The probability (F- Statistic) is 0.000672 which implies that the joint effect of the independent variables on the stock return is significant, despite the fact that coefficient of some independent variables are insignificant. The probability F- statistic further shows that the model adopted in the study is acceptable i.e. a stable model.

#### **4.7.1 Discussion of findings for comparative results of banking and non- banking institutions**

The comparative results for banking and non-banking sector when tested independently showed varying findings. Foreign portfolio equity sales had a coefficient - 0.0022 and an insignificant probability value of 0.5534 for banking institutions and a coefficient of 0.0006 with an insignificant probability value of 0.9596 for non-banking institutions. The results showed that foreign portfolio equity sales do not affect stock returns. The results are in support the work of Meurer (2006) who studied the behaviour shown by international investors in the Brazilian stock market. Meurer found out that portfolio flows are higher when the index is low, and the outflows are higher when the index is high, showing that portfolio investors are trying to operate in the opposite way with respect to the market, buying stocks when prices are low and selling when prices are high, chasing profitable opportunities. Odean (1998) showed that individual investors tend to sell past winners and hold on to past losers.

Foreign portfolio equity purchases had a coefficient of -0.0095 and an insignificant probability value of 0.4495 while for non-banking institutions, foreign portfolio equity purchases had a coefficient of 0.0014 with an insignificant probability value of 0.5820. The results are statistically insignificant meaning that foreign portfolio equity purchases for banking and non-banking institutions do not affect stock returns. The results contradicted with the work of Luciana, Meurer and Silva (2010) who examined the relationship between stock returns and foreign investment in Brazil. They concluded that the inflows of foreign investment boosted the returns from 1995 to 2005. This suggested that positive feedback trading played a role, and that the market promptly assimilated the relevant new information that arrived.

Foreign portfolio equity turnover had a coefficient of -1.327 and a probability value of 0.4043 for banking institutions and a coefficient of -0.5559 with a probability value of 0.7274 for non-banking institutions which are statistically insignificant. Therefore, foreign portfolio equity turnover do not affect stock returns of both banking and non-banking institutions. The results were not consistent with the work of Griffin, Nardari and Stulz (2004) who used daily data on equity flows for nine emerging market countries and found that equity flows are positively related to host country stock returns as well as market performance abroad.

The results are in line with the work done by (Choe, Kho and Stulz (2001); Yilmaz and Yilmaz (1999); Nguyen and Nhung (2013); Pavabutr and Yan (2007) and Archarya, Ravi and Kumar (2014). Using daily or intraday data that include prices and trades by foreign and domestic investor groups, Choe, Kho and Stulz (2001) investigated positive feedback trading and herding by foreign investors before and during the Korean crisis in 1997. The authors calculated the proportion of foreign investors buying a stock on a given day among all foreign investors trading that stock on that day. Using this proportion they estimated a daily herding measure for each stock in their sample. Their herding measures indicated that foreign investors herd before the Korean crisis. In order to check if foreign investors engage in positive feedback trading, the authors examined the trading patterns of foreign investors following positive and negative market returns. They reported findings indicating that foreign investors buy following a positive market return and sell following a negative market return.

Yilmaz and Yilmaz (1999) compared the foreign share in the total transaction volume of stocks included in the ISE-30 index and the foreign share in the total transaction volume of stocks not included in the ISE-30 index. They demonstrated that the average percentage share of the foreign investors' transactions in the total transaction volume is higher for stocks in the

ISE-30 index than for all stocks in the market. Due to this, the authors suggest that foreign activity might be able to affect both the level and the volatility of the ISE- 30 index.

Nguyen and Nhung (2013) studied the impact of foreign portfolio flows on stock market volatility in Vietnam. Their findings revealed several interesting facts. First, almost significant relationship between foreign flows and market volatility are short lived. Second, past foreign flows relate to volatility stronger in the bull market as compared to the bear one: foreign gross purchases, foreign gross sales and foreign net purchases have significant links with volatility and all cause market volatility in the bull market. Third, it is shown that market volatility respond positively to a random shock to all three flows in the first period even though there were individually negative reactions in some days. Finally, opposite to the bull market, an increase in foreign net purchases reduced market volatility in the bear market indicating that domestic investors are more prudent in trading and react to changes in foreign net purchases more slowly.

Pavabutr and Yan (2007) examined the effects of both predictable and unpredictable foreign flows in daily and weekly stock return volatility in Thai market from 1995 to 2002. The unpredictable flows were found to have a significant impact on stock return volatility (both daily and weekly). The influence of the predictable flows was however negligible.

Archarya, Ravi and Kumar (2014) employed a unique database that provided data on foreign institutional investor (FII) flows at the individual stock level and examined the impact of foreign institutional investors flow innovations on stock returns in India. They found out that stocks with high innovations are associated with a coincident price increase that is permanent, whereas stocks with low innovations are associated with a coincident price decline that is in part transient, reversing itself within days. The results were consistent with price pressure on stock returns induced by foreign institutional investors' sales, as well as information being revealed through foreign institutional investors' purchases and foreign institutional investors' sales. The study indicated that while foreign institutional investors outflows contributed to transient volatility for stocks experiencing outflows, trading by foreign institutional investors also generated new information.

Exchange rate risk had a significant negative coefficient of -0.8371 with a P- value of 0.0020 for banking institution and negative coefficient of -0.6023 with a significant P- Value of 0.0673 for non- banking institutions. The results are statistically significant at one percent level of significance and five percent level of significance for banking and non-banking institutions respectively. The banks' exposure to exchange rate risk has grown in importance due to the continuing expansion of foreign currency business, greater variability of exchange

rates, and increase in foreign exchange deposits and foreign borrowing in the Kenyan banking sector. The findings in the study are inconsistent with the work of Hsin, Shiah and Chang (2007) who investigated the absence of prevailing evidence on the significant exposure of US stocks to exchange rate risk by considering a firm's pre-hedging currency exposure, its expected hedging activity and the delayed reaction of its stocks to currency movements. They demonstrated the importance of lagged exposure relative to contemporaneous exposure and included the lagged effect in the exposure measurement that failed to raise the significance of the exchange rate risk with regard to the pricing for the overall sample of stocks. They further demonstrated that the weak evidence on priced currency risk is at least partly attributable to hedging activity, particularly for large firms and also provided support for the asymmetric hedging hypothesis, in that asymmetric hedging is found to be responsible for reshaping the relationship between a firm's characteristics and its currency exposure.

The findings are in line with the work done by Muller and Verschoor (2007) and Nydahl (1999). Muller and Verschoor (2007) also examined the relationship between individual Asian firm's stock returns and fluctuations in foreign exchange rates. Using the same sample period they drew a different conclusion from Mahmood and Dinniah's. Among 3634 firms from Hong Kong, Indonesia, South Korea, Malaysia, Philippine, Singapore and Thailand, 25 percent experienced economically significant exposure effects to the US dollar, and 22.5 percent to the Japanese yen for the period of January 1993 to January 2003. Reviewing the empirical literature, previous researchers investigated the effect of both contemporaneous and lagged exchange rate changes on current stock returns.

Nydahl (1999) studied the relation between firm value (defined as stock returns) and the movement in exchange rate by using a sample in a small open economy like Sweden, over the period of December 1992 to February 1997. Nydahl found that a substantially larger percentage of firms are exposed to contemporaneous exchange rate changes compared to results from studies using US data. Investigating a possibly lagged effect, little evidence was shown in the study that exchange rates affect firm values with a lag. These results were similar to findings for Japan.

Inflation had significant negative coefficient of -1.7550 with a P- value of 0.0210 in relation to stock returns for banking institutions and an insignificant negative coefficient of -0.6875 with a P- value of 0.4569 for non-banking institutions. The results indicate that the stock returns of banking institutions are affected by inflation while inflation has no effect on non- banking stock returns. The results supported prior expectation that an increase in



inflation erodes the value of shares resulting to decrease in stock returns of banking institutions.

Treasury bills rate had insignificant negative coefficient of -0.2078 with a P-value of 0.2552 in relation to stock returns for banking institutions while non-banking institutions treasury bills rate had insignificant negative coefficient of -0.0231 with a P-value of 0.9169 indicating that treasury bills rate do not affect the stock returns of banking institutions and non-banking institutions. The findings support the work done by Joseph and Vezos (2006) who investigated the impact of interest rates changes on US bank's stock returns. Joseph and Vezos study employed an Exponential Generalised Autoregressive Conditional Heteroscedastic model to account for the Autoregressive Conditional Heteroscedastic (ARCH) effects in daily returns instead of standard ordinary Least Square estimation methods with the result that the presence of ARCH effects would had affected estimation efficiency. The results suggested that the market return accounted for most of the variation in stock returns at both the individual bank and portfolio levels; and the degree of the sensitivity of the stock returns to interest rate changes was not very pronounced despite the use of high frequency data.

Market capitalization had insignificant positive coefficient of 0.00587 with a P-value of 0.4000 for banking institutions while non-banking institutions had insignificant positive coefficient of 0.0097 with a P-value of 0.2426 in relation to stock returns indicating that market capitalization do not affect the stock returns of banking and non-banking institutions. This is not in line with prior expectations which believed that large firms as measured by higher market capitalization are expected to have higher returns.

The probability F-statistic is 0.008 for banking institution meaning that the model is stable and significant at one percent level of significance. The probability F-statistic for non-banking institutions is 0.5086.

There is a difference in the results for banking and non-banking institutions. This could have been contributed by the fact that there were only four sampled non-banking institutions with very few observations. Another reason for differences in results could be because these non-banking institutions are small in size hence attracting a few foreign investors as indicated by the volume of inflows of foreign equity.

The other reasons for varied results between banking and non-banking institutions are first, non-banking institutions provide such services as hire purchase, leasing, asset management, venture capital services, insurance etc. which sometimes are not appealing to

foreign investors as compared to services provided by banking institutions like foreign exchange financing.

Second, banking institutions have gone international by expanding their branch networks globally especially through cross listing as compared to non- banking institutions which may not be cross listed in other stock exchanges. Cross listing allows shares of these banks to be traded in other securities exchange hence the ability to attract foreign investors.

Third, most banking institutions have embraced financial globalization as compared to non- banking institutions. Financial globalization is encompassed by two main aspects: free flow of capital into and out of the domestic economy and high participation in domestic financial system. Financial globalization can be measured by capital mobility i.e. holdings of cross-border financial assets and liabilities, magnitude of cross-border flows into and out of the financial system and foreign participation i.e. foreign share of domestic banking assets and liabilities, ease of entry for foreign financial institutions into domestic market.

Fourth, banking institutions can also raise funds at no cost as no interest is payable on demand deposits and therefore they have the potential to grow and improve their financial performance hence a possibility of attracting foreign investors as compared to non-banking institutions who have to pay higher and higher interest to attract more funds.

## CHAPTER FIVE

### 5.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Introduction

This chapter presents the summary of findings of the study in relation to the objectives stated in chapter one. It also highlights the conclusion, recommendation and suggestion for further studies.

#### 5.2 Summary of the findings

The study sought to find out the effect of foreign portfolio investment on stock returns of NSE listed financial institutions in Kenya. The independent variables were foreign portfolio equity sales, foreign portfolio equity purchases, foreign portfolio equity turnover and exchange rate risk while stock return was the dependent variable. The control variables in the study were Treasury bills rate, inflation rate and market capitalization. Monthly data was collected over the period 2008 to 2014. This study adopted a panel data regression using the Ordinary Least Squares (OLS) method where the data included time series and cross-sectional data that was pooled into a panel data set and estimated using panel data regression.

##### 5.2.1 The effect of foreign portfolio equity sales on stock returns

The results indicated that foreign portfolio equity sales had a negative coefficient of -0.002180 with an insignificant P- value of 0.5188. The results were insignificant implying that the negative effect is minimal and that foreign portfolio equity sales do not affect stock returns. The null hypothesis stating that foreign portfolio equity sales do not significantly affect stock returns in Kenya's listed financial institutions fail to be rejected.

##### 5.2.2 The effect of foreign portfolio equity purchases on stock returns

The panel estimation output results indicated that foreign portfolio equity purchases had a coefficient of -0.0004 and insignificant P-value of 0.9254. This indicated that foreign portfolio equity purchases do not affect stock returns. Therefore, the null hypothesis stating that foreign portfolio equity purchases do not significantly affect stock returns in Kenya's listed financial institutions fail to be rejected.

##### 5.2.3 The effect of foreign portfolio equity turnover on stock returns

Foreign portfolio equity turnover had a negative coefficient of -1.0295 with an insignificant P- value of 0.4191. The panel results indicated that foreign portfolio equity

turnover do not affect stock returns. The null hypothesis stating that foreign portfolio equity turnover does not significantly affect stock returns in Kenya's listed financial institutions fail to be rejected.

#### **5.2.4 The effect of exchange rate risk on stock returns**

Exchange rate risk had a negative coefficient of -0.7589 with a significant P- value of 0.0002. The panel results indicated that the estimated coefficient capturing the effect of exchange rate risk on stock returns are significant at one percent level of significance. This meant that exchange rate risk affect stock returns of Kenya's listed financial institutions. The null hypothesis that exchange rate risks do not affect stock returns in Kenya's listed financial institutions fails to be accepted and the alternate hypothesis fails to be rejected in this study.

#### **5.2.5 A comparison of the effect of FPE on SR of banking and non- banking institutions.**

The comparative results for banking and non-banking sector when tested independently showed varying findings. The panel estimation output results for banking and non-banking institutions indicated the following;

Foreign portfolio equity sales for banking institutions had a coefficient -0.0022 and an insignificant probability value of 0.5534 while non-banking institutions had a coefficient of 0.00064 with an insignificant P-value of 0.9596 meaning that foreign portfolio equity sales do not affect stock returns of banking and non-banking institutions. Foreign portfolio equity purchases had a coefficient of -0.0095 and an insignificant probability value of 0.4495 for banking institutions while non-banking institutions had a coefficient of 0.00144 with an insignificant P-value of 0.5820. Foreign portfolio equity turnover had a coefficient of -1.3275 and a probability value of 0.4043 and a coefficient of -0.5559 with a P- value of 0.7274 for banking and non-banking institutions respectively. Exchange rate risk had a negative coefficient of -0.8371 with a statistically significant P- value of 0.0020 for banking institutions and negative coefficient of -0.6023 with a P- value of 0.0673 indicating that exchange rate do have significant effect on stock returns of banking institutions and non-banking institutions at one percent and five percent level of significance respectively.

The null hypothesis stating that there is no significant comparative difference between the effect of foreign portfolio equity (sales, purchases and turnover) and exchange rate risk on stock returns of listed banking and non- banking institutions in Kenya fail to be accepted.

### 5.3 Conclusion

Foreign portfolio investments have been growing in developing countries, though the levels of foreign flows are still lower. The situation is the same in Kenya, particularly financial institutions. It is important for Capital markets authority/stock market regulators to think and prepare for the likely effects of FPIs to the economy. Foreign capital is necessary for provision of capital and financing growth of firms such as commercial banks, insurance and investment companies in Kenya because they reduce the cost of capital and make it available to most firms.

On the effect of foreign portfolio equity sales on stock returns, the study found out that foreign portfolio equity sales do not have an effect on stock returns. The study concluded that foreign portfolio investment should be encouraged through proper policies so that the market is not affected much when there are foreign outflows.

On the effect of foreign portfolio equity purchases on stock returns, the study found out that foreign portfolio equity purchases do not have an effect on stock returns. The study concluded that financial institutions should device ways of attracting foreign portfolio equity inflows as they improve the liquidity position of this firms although they don't affect stock returns.

The results showed that foreign portfolio equity turnover do not have an effect on stock returns. The study concluded that foreign portfolio equity turnover is important in knowing the ratio of foreign trades to total trades in the stock market but do not determine stock returns as stock returns are affected by the amount of domestic and foreign investment in the market. Participation of foreign investors and local investors is therefore necessary in driving liquidity of these firms.

The study further found that exchange rate risks do have an effect on stock returns. The exchange rate may create uncertainty in the market as the value of assets is eroded due to depreciation, thereby resulting to a fall in stock returns. The study concluded that stability of exchange rate is important in instilling confidence in the economy.

The study found that there is a comparison between the effect of foreign portfolio equity (sales, purchases and turnover) and exchange rate risk on stock returns of banking and non- banking institutions. The study found out that foreign portfolio equity sales, foreign portfolio equity purchases and foreign portfolio equity turnover do not affect stock returns of banking institutions and non- banking institutions. Exchange rate risk affect stock returns of banking and non-banking institutions at one percent and five percent level of significance respectively. The study concluded that banking institutions engaged more in forex transaction

and most of these banks are multinational banks hence the ease to attract foreign investors to buy the shares of their companies. Non-banking institutions on the other hand are limited by their nature, that is, they are small in size hence attracting a few foreign investors as indicated by the volume of inflows of foreign equity.

#### **5.4 Recommendation**

Based on the findings of the study, the following recommendations are made:

Foreign investors liquidate their positions due to so many factors including but not limited to the expectations and sentiments of foreign investors, terrorism, political instability, sovereign risk e.t.c. The study recommends that the government should put in place measures that discourage foreign outflows.

Although foreign portfolio equity purchases have no effect on stock returns in NSE listed financial institutions in Kenya, policies that attract foreign portfolio inflows should be pursued in order to increase liquidity and enhance the stability of stock returns.

Foreign portfolio flows have been encouraged with the main aim of improving market activity and access to foreign capital. The proportion of foreign turnover to total turnover keeps fluctuating in Kenya. Though, foreign portfolio equity turnover had no effect on stock returns, the study recommended that policies that encourage participation of foreign investors should be pursued as they are sources of foreign capital.

The study recommended management of foreign equity flows in Kenya's financial sector through some non-radical interventions such as building of reserves by commercial banks to guard against reversals.

The government of Kenya should enhance stability of macroeconomic factors such as foreign exchange rate through monetary policy as they affect the performance of securities exchange hence stock returns.

This study recommends that the government should wisely apply both monetary and fiscal policies to avoid building inflationary expectations which end up negatively affecting the overall stock prices and hurting investors as well. It should ensure that macroeconomic stability prevails in interest rates as this will reduce uncertainty among investors and instill confidence in the market.

Competition is driving the growth of many sectors in the economy and financial institutions are not left behind. The prices of shares in the market and the number of outstanding shares determine market capitalization and the overall performance of a given financial institution. The study recommends that financial institutions should device

strategies that will make them attractive and a hub for investment from both domestic and foreign investors as this will improve the market value of their shares and leading to higher market capitalization.

The Capital markets Authority should enhance local investor education in order to improve and increase their participation at the stock market. Active participation of local investors is necessary in order to drive liquidity and bring confidence to the market so as to withstand the shock of foreign portfolio investment termed as hot money.

Corporate bond market is still undeveloped in Kenya. The development of bond market is inextricably linked to the direction and management of fiscal policy. The study recommends that the government through Capital Markets Authority should enhance development of bond market. This is because domestic corporate bond market helps corporations' reduce their financing through disintermediation and by structuring their asset and liability profiles in such a way as to reduce maturity risk and currency mismatch in the books of accounts.

The Kenyan government should strengthen supervisory and regulatory bodies in the financial system for the safety of investment and harmonizing monetary and fiscal policies to assist in economic growth of the country.

### **5.5 Suggestions for further studies**

The study provided findings that were within the objective set out. There are many possible research extensions to this study. They include but not limited to the following:

First, this study concentrated on listed financial institutions only, future study can look at other sectors of the economy independently like telecommunication, agriculture, commercial and services, industrial and allied and alternative investment market segment. This is because foreign investors may be pulled to different sectors depending on return, growth opportunities available, stability in share prices e.t.c.

Second, future study can also look at effect of FPI on stock returns of East African countries as this study concentrated only on Kenya.

Third, this study narrowed down to monthly data. Future study can use daily or weekly data as more frequent observations may better capture the effect of FPI's on stock returns.

Fourth, future study can also look at the bond market as this study was limited by availability of foreign corporate bond data due to poor bond market development in Kenya.

Fifth, future study can do an in depth analysis on the effect of foreign portfolio investment on stock returns of listed commercial banks in Kenya in order to broaden the work done by this study.

Last but not least, this study can be broadened in future by looking at the effect of FPI on stock market volatility and employing models such as EGARCH



## REFERENCES

- Abhijeet, C. (2012). Cause and effect relationship between foreign institutional investors trading behaviour and stock market returns. *Journal of Indian Business Research*, 4 (4), 286 -300.
- Abreu, D., & Brunnermeier, M. (2003). Bubbles and Crashes. *Journal of Econometrics*, 71, 173-204.
- Adabag, M.C. & Ornelas, J.H. (2004). Behaviour and effects of foreign investors on Instabul stock exchange. Working paper, SSRN.
- Adjasi, C.K., & Biekpe, B.N. (2005). Stock Market Returns and Exchange Rate Dynamics in Selected African Countries: A bivariate analysis. *The African Finance Journal*, July, Cape Town, South Africa.
- Adjasi, C.K. (2007). Stock Market Development in Sub-Saharan Africa: Critical Issues and Challenges. *International Monetary Fund*, 11 (4), 97-99.
- African Development Bank, (2012). *African Economic Outlook 2012: Promoting Youth Employment*, OECD Publishing.
- Ajayi, R. A., & Mougoue, M. (1996). On the dynamic relation between stock prices and Exchange Rates. *The journal of financial research*, 19, 193- 207.
- Ahmed, S. & Zlate, A. (2013). *Capital Flows to Emerging Market Economies: A Brave New World?* International Finance Discussion Papers 1081, Washington: Board of Governors of the Federal Reserve System.
- Ahmed, E., & Omneya A. (2007). Exchange rate exposure: do size and foreign operations matter? *Managerial Finance*, 33 (9), 741-765.
- Ahmad, F., Yang, S., & Muhammad, U. (2015). Causality between foreign portfolio inflows and economic growth, evidence from China and India.
- Aggarwal, R. Klapper, & L. Wysocki, P.D. (2003). Portfolio Preferences of Foreign Institutional Investors. The World Bank.
- Aggarwal, R. N. (2006). Foreign Portfolio Investment in Some Developing Countries: A Study of Determinants and Macroeconomic Impact. Institute of Economic Growth.
- Al- Abadi, M. I., & Al- Sabbagh, O. W. (2006). Interest rate sensitivity, market risk, inflation and banks' stock returns. *Journal of Accounting, Business and Management*, 13, 25-38.
- Allayannis, G., Ihrig, J., & Weston, J.P. (2001). Exchange rate hedging: financial versus operating strategies. *American Economic Review Papers and Proceedings* 91, 391.

- Allen, F., Otchere, I., & Senbet L. (2011). African financial systems: *A review of development finance*, 1, 79-113.
- Amihud, Y. (1994). Exchange rates and the valuation of equity shares. *In Exchange Rates and Corporate Performance*, eds. Illinois: Business One Irwin, 49-59.
- Anand B. & Pasricha, J.S. (2009), Foreign Institutional Investors Impact On Stock Prices in India. *Journal of Academics Research in Economics*, 1(2), 181-189.
- Anderson, P.F (1983). Marketing Scientific Progress and Scientific Method. *Journal of marketing*, 47, 18-31.
- Antoniou, A., Koutmos, G., & Pericli, A. (2005). Index futures and positive feedback trading evidence from major stock exchanges, *Journal of Empirical Finance*, 12, 219 – 238.
- Archarya, V. Ravi, A. & Kumar, K. (2014). Foreign fund flows and stock returns: evidence from india. India institute of management Bangalore, India.
- Arnold, L.R., Gullett, N.S. & Manakyan, H. (2000). The performance of global and international mutual funds, *Journal of financial and strategic decisions*, 13, 1.
- Arratibel, O., Martin, R., & Zdienicka, A. (2011). The effect of nominal exchange rate volatility on real macroeconomic performance in the CEE countries. *Economic Systems* 35, 261 –77.
- Asia-Pacific Economic Cooperation, (2000). *Voluntary Action Plan for Promoting Freer and More Stable Capital Flows*, report presented to APEC finance ministers.
- Atindehou, R. B., & Gueyie, J.P. (2001). Canadian chartered banks' stock returns and exchange rate risk. *Management Decision*. 39(4), 285-295.
- Aydin, S. (2011). Noise Traders in financial markets. *Journal of finance*. 26 (304), 9-36.
- Bae, S.C., & Min, J.H., (2007). *Trading behaviour and performance of foreigners, local institutions, and individual investors: Evidence from the Korean stock market*. Working paper, Bowling Green State University.
- Bacchetta, P., & Wincoop, E.V. (1998). *Capital Flows to Emerging Markets: Liberalization, Overshooting and Volatility*. NBER Working Paper No. 6530, National Bureau of Economic Research, Cambridge, Massachusetts.
- Badhani, K. N. (2005). Dynamic Relationship among Stock Prices, Exchange Rate and Net FII Investment Flow in India. Retrieved on 18<sup>th</sup> April 2016 from <http://www.iiml.ac.in/conference/>
- Baharumshah, A.Z. & Thanoon, M. (2006). Foreign capital flows and Economic growth in East Asian countries. *China Economic Review Volume* 17(1), 70-83

- Bali T., & Liuren, W. (2010). The role of exchange rates in Intertemporal Risk- Return relations. *Journal of international money and finance*, 29 (8), 1670 – 1686.
- Bange, M.M. (2000). Do the portfolios of small investors reflect positive feedback trading? *Journal of finance and quantitative analysis*, 35, 239-255.
- Barber, B.M., & Odean, T., (2000). Trading is hazardous to your wealth: the common stock investment performance of individual investors. *Journal of Finance* 55, 773-806.
- Barbosa, N. & Lourie, H. (2005). Corporate Performance: Does Ownership Matter? A Comparison of Foreign and Domestic-Owned Firms in Greece and Portugal. *Review of Industrial Organization*, 27, (1) 73–102;
- Barniv, R. (2009). Does foreign investor demand for information Affect forecast accuracy? Evidence from the Chinese stock markets. *Journal of international accounting, auditing and taxation*, 18,101-118.
- Barsky, R., & Sims, E. (2010). *News Shocks and Business Cycles*. Working Paper, University of Michigan and University of Notre Dame.
- Bartov, E., & Bodnar, G. M. (1994). Firm Valuation, Earnings Expectations, and the Exchange-Rate Exposure Effect. *Journal of Finance*, 49, 1755-1785.
- Bartram, S. M. (2007). Corporate cash flow and stock price exposures to foreign exchange rate risk. *Journal of Corporate Finance*. 13, 981 – 994.
- Batra, A. (2003). *The Dynamics of Foreign Portfolio Inflows and Equity Returns in India*. ICRIER Working Paper No.109, India.
- Bekaert, G. & Harvey, C.R. (2002). Foreign speculators and emerging equity markets. *Journal of finance*, 55, 565-613.
- Bekaert, G., Harvey, C.R., & Lumsdaine, R. L. (2002). “The Dynamics of Emerging Market Equity Flows,” *Journal of International Money and Finance*, 21, 295-350.
- Ben-Rephael, A., Kandel, S., & Wohl, A. (2011). The Price Pressure of Aggregate Mutual Fund Flows. *Journal of Financial and Quantitative Analysis*, 46, 585-603
- Bhattacharya, P. & Mukherjee, J. (2005). An Analysis of Stock Market in the Light of Capital Inflows and Exchange Rate Movement: Retrieved on 18<sup>th</sup> April 2016 from <http://www.igidr.ac.in/~money/mfc>
- Bodla, B. & Garg, A. (2007). The impact of foreign institutional investors on underlying stock market. *Journal of finance*, 4,(1), 56-63
- Bodnar, G. & Gentry, W. (1993). Exchange rate exposure and industry characteristics: evidence from Canada, Japan and the USA. *Journal of International Money and Finance*, 12, 29-45.

- Bohl, M. T. & Siklos P. L. (2008). Empirical Evidence on Feedback Trading in Mature and Emerging Stock Markets. *Applied Financial Economics*, 18 (17), 1379-1389.
- Bohn, H., & Tesar, L. (1996). US equity investment in foreign markets: portfolio rebalancing or return chasing? *American Economic Review*, 86, 77-81.
- Booth, L. & Rotenberg, W. (1990). Assessing foreign exchange exposure: theory and applications using Canadian firms. *Journal of International Financial Management and Accounting*, 2, 1-22.
- Bordo, M.D. & Meissner, C.M. (2007). Foreign Capital and Economic Growth in the First Era of Globalization. NBER Working Paper No. 13577
- Borensteina, M., Hedges, L.B., Julian P.T., Higgins, S. C., & Rothstein H. (2010). *A basic introduction to fixed-effect and random-effects models for meta-analysis*. Retrieved March 13, 2015 from wileyonlinelibrary.com.
- Boyer, B., & Zheng, L. (2009). Investor Flows and Stock Market Returns. *Journal of Empirical Finance*, 16, 87–100.
- Brennan, M., & Cao, H. (1997). International Portfolio Investment Flows. *Journal of Finance*, 52(5), 1851-1880.
- Bruderl, J. (2005). Panel Data Analysis. University of Mannheim, Retrieved on March 15, 2015 from <http://www2.sowi.unimannheim.de/lssm/veranst/Panelanalyse.pdf>
- Brunnermeier, M., & Pedersen, L. (2005). Predatory trading. *Journal of Finance* 60, 1825-1863
- Burger, J., & Warnock, F. (2006). *Local currency bond markets*. IMF Staff Papers, 53, 133–146.
- Butt, B. Z., Rehman. K. U., Khan. M. A. & Safwan, N. (2010). Do economic factors influence stock returns? A firm and industry level analysis. *African Journal of Business Management*, 4(5), 583-593.
- Calvo, G.A., Izquierdo A., & Mejia, L.F. (2008). *Systematic sudden stops: the relevance of balance sheet effects and financial integration*, NBER Working Paper, No. 14026.
- Capital Markets Authority (2011). *Quarterly statistical bulletins*. Nairobi.
- Capital Markets Authority (2013). *Quarterly statistical bulletins*. Nairobi.
- Capital Markets Authority (2014). *Quarterly statistical bulletins*. Nairobi.
- Capital Markets Authority (2015). *Quarterly statistical bulletins*. Nairobi.
- Capital Markets Authority (1998). *Annual reports*. Nairobi.
- Capital Markets Authority (1999). *Annual reports*. Nairobi.
- Capital Markets Authority (2013). *Annual reports*. Nairobi.

- Central Bank of Kenya (2012). *Annual reports*. Nairobi.
- Cha, H., & Kim, J. (2006). Stock prices and equity mutual fund flows: A macro approach, Working Paper.
- Chakrabarti, R. (2001). Foreign Institutional Investors Flows to India: Nature and Causes. *Money and Finance*, 2, (7).
- Chamberlain, S., Howe, S. & Popper, H. (1997). The exchange rate exposure of U.S. and Japanese banking institutions. *Journal of Banking and Finance*. 21, 871-892.
- Chan, L. & Lakonishok, J. (1993). Institutional trades and intra-day stock price behaviour. *Journal of Financial Economics*, 33(2), 173-199.
- Chang, Y. (2001). The Pricing of Foreign Exchange Risk around The Asian Financial Crisis: Evidence from Taiwan's Stock Market. *Journal of Multinational Financial Management*, 12, 223-238.
- Chari, A., & Henry B. (2004). Risk Sharing and Asset Prices: Evidence from a Natural Experiment. *Journal of Finance*, 59(3), 1295-1324.
- Charito B. J (2010). The evolution of corporate governance in an emerging market: Evidence from Philippine initial public offerings (IPO) Discussion Papers, No. 1002.
- Chen, G., Kenneth, A., Nofsinger, R., & Rui, M. (2005). Behaviour and performance of emerging market investors: Evidence from China, Working paper.
- Chen, J. & Quang, T. (2012). *International Financial Integration and Economic Growth: New Evidence on Threshold Effects*. Paris School of Economics, 48 Boulevard Jourdan, 75014 Paris, France.
- Chi, J., Tripe, D. & Young, M. (2007). *Do exchange rate affect the stock performance of Australian banks?* 12<sup>th</sup> Finsia-Melbourne Centre for financial Studies, Banking and Finance Conference, Melbourne.
- Chiyachantana, C.N., Jain, P.K., Jiang, C.X. & Wood, R.A. (2004). International Evidence on Institutional Trading Behaviour and Price Impact. *Journal of Finance*, 59, 869-898.
- Christoffersen, P., Chung, H., & Errunza, V. (2006) Size matters: the impact of financial liberalization on individual firms. *Journal of International Money and Finance*, 25, (8), 1296-1318.
- Choe, K., Kho, B., & Stulz, R. (1999). Do Foreign Investors Destabilize Stock Markets? The Korean Experience in 1997. *Journal of Financial Economics*, 54, 227-264.
- Choe, H., Kho, C.B., & Stulz, R.M. (2001). Do domestic investors have more valuable information about individual stocks than foreign investors? NBER working paper no. 8073.

- Choe, H., Kho, C.B., & Stulz, R.M. (2005). Do domestic investors have an edge? The Trading Experience of Foreign Investors in Korea. *The Review of Financial Studies*, 18 (3), 796-828.
- Choi, J.J., Elyasiani, E., & Kopecky, K.J. (1992). The sensitivity of bank stock returns to market, interest and exchange rate risks. *Journal of Banking and Finance*, 16, 983-1004.
- Clark, J. & Berko, E. (1997). Foreign Investment Fluctuations and Emerging Market Stock returns. *Staff Reports* No.24, Reserve Bank of New York.
- Claessens, S., Dooley, M. & Warner, A. (1993). Portfolio capital flows: Hot or cool? *Journal of financial economics*, 18-44.
- Cohen, B.H. & Shin, H.S. (2003). Positive feedback trading under stress: Evidence from the U.S. Treasury security market. *Working paper*, London School of Economics.
- Conover, C. M., Jensen, G.R., & Robert R. J. (2002). Emerging Markets: When Are They Worth It? *Financial Analysts Journal*, 58(2) 86-95.
- Cooper, R.D. & Schindler, P.S. (2004). *Business Research Methods*. Eight Edition. Tata McGraw-Hill. New Delhi, India.
- Covrig, L. K., & Vicentiu L. S. (2007). Do domestic and foreign fund managers have similar preferences for stock characteristics? A cross country analysis. *Journal of International Business Studies*, Forth coming Issue.
- Cumby, R.E., & Glen, J.D. (1990). Evaluating the Performance of International Mutual Funds. *Journal of Finance*, 45, 497-521.
- Dahlquist, M., & Robertsson, G. (2001). Direct Foreign Ownership, Institutional Investors, and Firm Characteristics. *Journal of Financial Economics*, 59, 413-440.
- Dahlquist, M., Pinkowitz, L., Stulz, R. M. & Williamson, R. (2003). Corporate Governance and Home Bias. *Journal of Financial and Quantitative Analysis*, 38, (1), 87-110.
- Dahlquist, M., & Robertsson, G. (2004). A note on foreigners' trading and price effects across firms, *Journal of Banking and Finance*, 28, 615-632
- Damodar N., & Sangeetha, (2007). *Basic Econometrics*. Fourth Edition, Tata McGraw-Hill Publishing Company Limited in New Delhi in India.
- Debiche, I. & Rahmouni, O. (2015). Does foreign capital enhance economic growth in emerging economies: flow decomposition approach? *The Journal of applied Business Research*, 31(1), 221- 230.
- Demeritte, K. (2000). Capital Market development and foreign portfolio investment in the Bahamas. The Central Bank of the Bahamas.

- De Wet, W.A., & Gebreselasie, T.G. (2004). The exchange rate exposure of major commercial banks in South Africa. *The African Finance Journal*, 6 (2), 21-53.
- Dhingra, S. (2004). Equity market vs capital account liberalization: A Comparison of Growth Effects of Liberalization Policies in Developing Countries. Rutgers University USA.
- Dimitrova, D. (2005). The Relationship between Exchange Rates and Stock Prices: Studies in a Multivariate Model. *Issues in Political Economy*, 14, 1-25.
- Dominguez, K.M., & Tesar, L.L. (2006). Exchange rate exposure. *Journal of International Economics*, 68, 188-218.
- Donnelly, R., & Sheehy, E. (1996). The share price reaction of U.K. exporters to exchange rate movements: An empirical study. *Journal of International Business Studies*, 27,157-165.
- Dornbusch, R & Park, Y.C. (1995). *Financial Opening: Policy Lessons for Korea*. Korea Institute of Finance, International Centre for Economic Growth.
- Doukas, J.A., Hall, P.H. & Lang L.H.P. (2003). Exchange rate Exposure at the Firm and Industry Level. *Journal of Financial Markets, Institutions and Instruments*, 12 (5), 291-346.
- Douma, S., Rejie, G., & Kabir, R. (2006). Foreign and Domestic Ownership, Business Group and Firm Performance: Evidences from a large emerging market. *Strategic Management Journal*, Volume 27, (7), 637–657.
- Droms, W.G. & Walker, D.A. (1994). Investment Performance of International Mutual Funds, *Journal of Financial Research* 17, 1-14.
- Duasa, J., & H. Kassim, S. (2009). Foreign portfolio investment and economic growth in Malaysia. *The Pakistan Development Review*, 109-123. Retrieved November 21, 2015 from <http://www.jstor.org/stable/41260915>
- Dvorak, T., (2005). Do Domestic investors have an information advantage? Evidence from Indonesia. *Journal of finance*, 60, 817-839.
- Durham, J. B. (2003). *Foreign Portfolio Investment, Foreign Bank Lending, and Economic Growth*. Washington, DC: Federal Reserve System.
- Elliott, W. B., Ness, B.V., Walker, D. & Warr, S. (2006). What drives the S&P 500 inclusion effect? An analytical survey, *Financial Management*, 35, 31-48.
- EI-Masry, A. A. (2003). *The Exchange Rate Exposure of UK Nonfinancial Companies: Industry-Level Analysis*. Working Paper, 1- 41.
- Errunza, V.R. (2005). Foreign portfolio equity investment, financial liberalization and economic development. McGill University, Canada.

- Eun, C.S., Kolodny, R. & Resnick, B.G. (1991). U.S. Based International Mutual Funds: A Performance Evaluation. *The Journal of Portfolio Management* 17, 88-94.
- Falkenstein, E. G. (1996). Preferences for stock characteristics as revealed by mutual fund portfolio holdings. *Journal of Finance*, 51, 111-135.
- Fama E.F. & French K.R. (1993). Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics*, 33, 3–56.
- Folkerts, L. D., & Ito, T. (1995). International Capital markets: Developments, Prospects and Policy Issues. International Monetary Fund.
- Forbes, K J., & Chinn, M. D. (2004). A Decomposition of global linkages in financial markets over time. *Review of Economic and Statistics*, 86(3), 705-722.
- Frankel, J.A. & Schmukler, S.L. (1996). Country fund discounts, asymmetric information and the Mexican crisis of 1994: Did local residents turn pessimistic before international investors? NBER Working Paper 5714, Cambridge, MA.
- Froot, K. A., & Ramadorai, T. (2001). *The information content of international portfolio flows*, NBER working paper no.8472.
- Froot, K., & Ramadorai, T. (2008). Institutional portfolio flows and international investments. *Review of Financial Studies*, 21, 937-971.
- Froot, K. A., O’Connell, P. G., & Seasholes, M. S. (2001). The portfolio flows of international investors. *Journal of Financial Economics*, 59, 151-193.
- Gazioglu, S. (2008). Stock Market Returns in an Emerging Financial Market: Turkish Case Study. *Applied Economics*, 40(11), 1363-1372.
- Girma, S., & Holger, G., (2007). Evaluating the foreign ownership wage premium using a difference-in-differences matching approach. *Journal of International Economics*, 72 (1), 97–112.
- Goldstein, I., A., & Hui T. (2007). Systemic Liquidity and the Composition of Foreign Investment: Theory and Empirical Evidence.
- Gordon, J. & Gupta, P. (2003). Portfolio Flows into India: Do Domestic Fundamentals Matter? IMF Working Paper, no. WP/03/02.
- Gabel,I (1998). Portfolio investment and foreign policy in focus. *InterHemispheric Resource Centre and Institute for Policy Studies*, 3, 13.
- Greenaway, D., Guariglia, A. & Yu, Z., (2009). *The More the Better? Foreign Ownership and Corporate Performance in China*, Research paper series - China and the World Economy, University of Nottingham.



- Grieg-Gran, M., Westbrook, M., Mansley, S.B. & Robins, N. (1998). Foreign portfolio investment and sustainable development. A study of the forest products sector in emerging and markets. International Institute for Environment and Development.
- Griffin, J.M., Harris, J.H., & Topaloglu, S. (2003). The dynamics of institutional and individual trading. *Journal of Finance* 58, 2285-2320.
- Griffin, J. M., Nardari, F., & Stulz, R. M. (2004). Are daily cross-border equity flows pushed or pulled? *Review of Economics and Statistics*, 86, 641-657.
- Griffin, J. M., Nardari, F., & Stulz, R. M. (2007). Do investors trade more when stocks have performed well? Evidence from 46 countries. *Review of Financial Studies*, 20, 905-951.
- Grinblatt, M. & Titman, S. (1989b). Portfolio Performance Evaluation: Old Issues and New Insights, *Review of Financial Studies* 2, 393-421.
- Grinblatt, M., Titman, S. & Wermers, R. (1995). Momentum Investment Strategies, Portfolio Performance and Herding: A Study of Mutual Fund Behaviour. *American Economic Review*, 85, 1088-1105.
- Grinblatt, M., & Keloharju, M., (2000). The investment behaviour and performance of various investor types: a study of Finland's unique data set. *Journal of Financial Economics* 55, 43- 67.
- Hamao, Y. & J. Mei (2001). Living with the 'enemy': An analysis of foreign investment in the Japanese equity market. *Journal of International Money and Finance*, 20(5), 715-735.
- He, J., & Ng, L. (1998). The foreign exchange exposure of Japanese multinational corporations. *Journal of Finance* 53, 733-753.
- Henry, P. B. (2000). Stock market liberalization, economic reforms, and emerging market equity prices. *Journal of Finance*, 55(2), 529-564.
- Henry, P.B. (2003). Capital account liberalization, the cost of capital, and economic growth. NBER Working Paper, No. 9488.
- Hlouska, J & Wagner, M, 2005). The performance of panel unit root and stationarity tests: results from large scale simulation study. European Economic Institute. Working paper, No 5.
- Hsin, C., Shiah, S., & Chang, F., (2007). Stock return exposure to exchange rate risk: A perspective from delayed reactions and hedging effects. *Journal of Multinational Financial Management*. 17(5), 384-400.

- Huang, B.N., & Yang, C.W. (2000). The impact of financial liberalization on stock price. Volatility in emerging markets. *Journal of Comparative Economics*, 28, 321-339.
- Huffman, S. P., Makar, S. D., & Beyer, S. B. (2010). A three-factor model investigation of foreign exchange rate exposure. *Global Finance Journal*, 1-12.
- Humanicki M., R. & Kelm, K. O. (2013). *Foreign Direct Investment and Foreign Portfolio Investment in the contemporary globalized world: should they be still treated separately?* NBP Working paper no. 167.
- Hui, T.K., Kurniawan, R. & Cheng, H. (2007). The impact of Asian crisis on international portfolio diversification. *The Open Operational Research Journal* 1, 1-8.
- Ikeda, S. (1991). Asset pricing under exchange rate risk. *Journal of finance*, 46, 1, 447-1455.
- International Monetary Fund (2011). Recent experiences in managing capital inflows- cross cutting themes and possible framework. IMF policy paper.
- Inoue, T. (2009). The causal relationships in mean and variance between stock returns and foreign institutional investment in India. *The Journal of applied Economic research*, 3 (4), 319-337.
- Jeong-Bon, K.V. & Li, J. (2004). Foreign Equity Ownership and Information Asymmetry: Evidence from Japan. *Journal of International Financial Management and Accounting*, 15, (3), 185-211.
- Jo, G. (2002). *Foreign portfolio equity investment in Korea*. Presentation for the association of the Korean economic studies.
- Jong, A., Ligterink, J., & Macrae, V. (2002). *A Firm-specific analysis of the exchange-rate exposure of Dutch Firms*. Working paper, 1-28.
- Joseph, N.L., & Vezos, P. (2006). The sensitivity of US banks' stock returns to interest and exchange rate changes. *Managerial finance*, 32 (2), 182-199.
- Joseph, N. L., (2002). Modelling the impacts of interest rate and exchange rate changes on UK stock returns. *Journal of Business Finance & Accounting*, 17 (3), 441-449.
- Jorion, P. (1990). The exchange rate exposure of US multinationals. *Journal of Business*, 63, 331-455
- Jorion, P. (1991). The pricing of exchange rate risk in the stock market, *Journal of finance and quantitative analysis*, 26, 363-376
- Kaminsky, G., Lyons, R. & Schmukler, S. (2000). *Managers, Investors, and Crises: Mutual Fund Strategies in Emerging Markets*. NBER Working Paper, 7855.
- Kanas, A. (2000). Volatility spillover between stock returns and exchange rate changes: International evidence, *Journal of Business Finance & Accounting*, 27 (4), 447- 467.

- Kang, J. K., & Stulz, R. M. (1997). Why is there a home bias? An analysis of foreign portfolio equity ownership in Japan. *Journal of Financial Economics*, 46(1), 3-28.
- Kaniel, R., Saar, G., & Titman, S. (2008). Individual Investor Trading and Stock Returns. *Journal of Finance*, 63 (1), 273-310.
- Kasman, S., Vardar.G., & Tunc, G. (2011). The impact of interest rate and exchange rate volatility on banks' stock returns and volatility: Evidence from Turkey. *Economic Modelling Journal*, 28, 1328-1334.
- Kaur, M., & Dhillon, S. (2015). Impact of foreign institutional investment in India on Indian financial and macroeconomic system. *International journal of Business and management invention*, 4 (7), 54-61
- Keim, D.B. & Madhavan, A., (1996). The upstairs market for large-block transactions: Analysis and measurement of price effects. *Review of Financial Studies*, 9(1), 1-36.
- Kerl, A. G., & Walter, A. (2007). Market responses to buy recommendations issued by Personal Finance Magazines: effects of information, price-pressure, and company characteristics. *Review of Finance*, 11(1), 117-141.
- Kim, W., & Wei, S. J. (2002). Foreign portfolio investors before and during a crisis. *Journal of International Economic*, 56, 77-96.
- Kim, J., Landi, J., & Yang, S. (2009). Inter- Temporal Examination of the trading activities of foreign investors in the Korean Stock Market. *Pacific Basin Finance Journal*, 17, 243-256.
- Kiyamaz H. (2001). The effects of stock market rumours on stock prices: evidence from an emerging market. *Journal of Multinational Financial Management*, 11, 105-115
- Kling, G., & Lei, G. (2008). Chinese institutional investors' sentiment. *Journal of International Financial Markets, Institutions and Money* 18, 374 – 387.
- Kodongo, O., & Ojah, K., (2012). The dynamic relation between foreign exchange rates and international portfolio flows: evidence from Africa's capital markets. *International Review of Economics and Finance*, 24, 71-87.
- Konings, J., (2001). The Effects of Foreign Direct Investment on Domestic Firms: Evidence from Firm Level Panel Data in Emerging Economies. *Economics of Transition*, 9, 3.
- Koskinen, .J. (2012).Longitudinal data analysis: How to apply fixed-effects Models to panel data using stata. Retrieved March 13, 2015 from <http://www.ccsr.ac.uk/staff/jk.htm>
- Koutmos, G., & Saidi, R. (2001). Positive Feedback Trading in Emerging Capital Markets. *Journal of Applied Financial Economics*, 11, 291- 297

- Kwan, S. (1993). Re-examination of interest rate sensitivity of commercial bank stock returns using a random coefficient model. *Journal of financial services research*, 5, 61-76.
- Kyereboah, C.A. & Agyire, K.F. (2008). Impact of macroeconomic indicators on stock market performance. The case of the Ghana stock exchange. *The Journal of Risk Finance*, 9(4), 365-378.
- Landon, S., & Constance E. S. (2009). Investment and the Exchange Rate: Short Run and Long Run Aggregate and Sector-Level Estimates. *Journal of International Money and Finance* 28: 813–835.
- Law, S., & Ngah, S.R. (2008). Does stock market liberalization cause higher volatility in Malaysia? *International Journal of Business and Society*, 9 (1), 19-36.
- Levy, H. & Lerman, Z. (1988). The Benefits of International Diversification in Bonds. *Financial Analysts Journal*, 44(5), 56-64.
- Lee, C.H. (2007). A survey of the literature on the determinants of foreign portfolio investments in the United States. *Journal Review of World Economics Springer*, 113,3.
- Li, K., Sarkar, A. & Wang Z. (2003). Diversification benefits of emerging markets subject to portfolio constraints. *Journal of empirical finance*, 10 (1), 57-80.
- Li, L., Narayan, P. K., & Zheng, X. (2010). An analysis of inflation and stock return for the UK. *Journal of International Financial Market, Institution & Money*, 20, 519-532.
- Li, W., & Wang, S. (2008). Do institutional trades stabilize the retail investor dominated market? Working paper, Hong Kong Polytechnic University.
- Litner, J. (1965). The valuation of risky assets and selection of risky investments in stock portfolios and capital budgets. *Review of economics and statistics*, 47, 13-37.
- Lobo, B.J. (2000). Asymmetric effects of interest rate changes on stock prices. *The financial review Journal*, 35, 125-144.
- Luciana, R., Roberto, M. & Sergio, D. (2010). Stock returns and foreign investment in Brazil, *Applied Financial Economics*, 20(17), 1351-1361
- Lynch, A.W., & Mendenhall, R. (1997). New evidence on stock price effects associated with changes in the S&P 500 index, *Journal of Finance*, 70, 351-383
- Mahmood, W. M. & Dinniah, M.N (2007). Stock Returns and Macroeconomic Influences: Evidence from the Six Asian-Pacific Countries. *Financial Economics and Futures Market Research Paper*, 1-21.
- Makar, S. D., & Huffman, S. P. (2000). Foreign exchange derivatives, exchange rate changes, and the value of the firm: U.S. multinationals' use of short-term financial instruments to manage currency risk. *Journal of Economics and Business*, 53, 421-437.

- Martin, A.D. & Mauer, L.J. (2001), Exchange rate exposure of US banks: a cash flow based methodology. *Journal of Business and Finance*, 27, 851-865.
- Maysami, R. C. & Koh, T. S. (2000). A Vector Error Correction Model of the Singapore stock market. *International Review of Economics and Finance*, 9, 79-96.
- Menkveld, J. & Hendershott, T. (2010). Price Pressures'. Western Finance Association papers
- Merton, R. C. (1987). A Simple Model of Capital Market Equilibrium with Incomplete Information. *Journal of Finance*, 42, 483-510.
- Meurer, R. (2006). The behaviour shown by international investors in the Brazilian stock market. *Brazil Journal of Finance*, 4 (1), 345-361.
- Mishra, K.A. (2004). Stock Market and Foreign Exchange market in India: Are they related? *South Asia Economic Journal*, 5, 2, Sage Publications, New Delhi.
- Moffett, M., Stonehill, A., & Eiteman, D. (2005) *Fundamentals of Multinational Finance*. Second Edition. Pearson.
- Morgan, S. (2002). Foreign Institutional Investment influence on Stock Market. *Journal of financial economics Publisher*, Emerald Group Publishing Limited.
- Mukherjee, P. (2002). Taking Stock of Foreign Institutional Investors. *Economic and Political Weekly*.
- Mukherjee, P., Suchismita, B., & Dipankar, C. (2002). Foreign Institutional Investment in the Indian Equity Market. *Journal of Money and Finance* 2, 54–83.
- Muller, A., & Verschoor, F. C. (2006). European Foreign Exchange Risk Exposure. *European Financial Management*, 12 (2), 195-220.
- Muller, A., & Verschoor, F. C. (2007). Asian Foreign Exchange Risk Exposure. *Journal of the Japanese and International Economies*, 21 (1), 16-37.
- Muller, A., & Verschoor, F. C. (2009). The effect of exchange rate variability on US shareholder wealth. *Journal of Banking and Finance*, 33, 1963-1972.
- Munday, M., Peel, M. J., & Taylor, K. (2003). The performance of the foreign-owned sector of UK manufacturing: Some evidence and implications for UK inward investment policy. *Fiscal Studies*, 24, 501-521.
- Muneer, S., Butt, B. Z., & Rehman, K. (2011). A multifactor model of banking industry stock returns: An emerging market perspective. *Information Management and Business Review*, 2(6), 267-275.
- Najang, & Seifert, B. (1992). Volatility of exchange rates, interest rates, and stock returns. *Journal of Multinational Financial Management*, 2, 1-19.

- Nam, D. (2004). Do foreign investors cause noise in an Emerging stock market? *Journal of Emerging market finance*, 3,(1),21-36.
- Nairobi Securities Exchange (various years). *Stock market data*. Nairobi.
- Nairobi Securities Exchange (1996). *Annual reports*. Nairobi.
- Narag, R. (2000). Implications of Foreign Portfolio Flows for an Emerging Economy: The Case of India and Mexico,” Delhi School of Economics, *Mimeo*.
- Natalie, Y. O., & Parwada, J.T. (2007). Relations between mutual fund flows and stock market returns in Korea. *Journal of International Financial Markets, Institutions and Money*, 17, 140-151.
- Ngugi, R. W., Amanja, D., & Maana, I. (2010). “The Capital Market and Economic Growth in Kenya,” in Adam, Christopher S., Paul Collier and Njuguna S. Ndung’u, eds., *Kenya: Policies for Prosperity*, Oxford University Press, New York.
- Ngugi, R. W. (2003). Development of the Nairobi Stock Exchange: A historical perspective (Discussion paper No. 27). Nairobi: Kenya Institute for Public Policy Research and Analysis.
- Nguyen, D.K., & Bellalah, M. (2008). Stock market liberalization, structural breaks and dynamic changes in emerging market volatility. *Review of Accounting and Finance*, 7 (4), 396 – 411.
- Nguyen, L. & Nhung, L. (2013). Impact of foreign portfolio flows on stock market volatility. *Journal of emerging issues in economics, finance and banking*. 2 (5), 236 – 367.
- Nilsson, B. (2002). Financial Liberalization and the changing characteristics of Nordic stock returns. Working Papers 4, Lund University, Department of Economics.
- Nyang`oro, O. (2013). Foreign portfolio flows and stock market performance In Kenya: Case of Nairobi Securities Exchange. School of Economics, University of Nairobi, Kenya.
- Nydahl, S., & Friberg,R. (1999). Openness and the exchange rate exposure of National stock markets. *International Journal of Finance and Economics*. 4 (1), 55 -62.
- Obere, J.A (2009). Essays on an emerging stock market: The case of Nairobi Stock Exchange. Unpublished PhD Thesis, University of Nairobi.
- Ocran, M.K. (2010). South African and US Stock prices and the Rand/US dollar Exchange rate. *South African Journal of Economic and Management Science*, 13, 3.
- Odean, T. (1998). Are investors reluctant to realize their losses? *Journal of Finance* 53, 1775-1798.

- Okuyan, H. A., & Erbaykal, E. (2011). The relationship between foreign investment and stock returns in Instabul Stock Exchange. *Journal of International Finance*, 12 (2), 256-264.
- Organisation for Economic Co-operation and Development, (2002). *Foreign Direct Investment for Development: Maximising Benefits, Minimising Costs*, Paris.
- Pal, P. (2006). *Foreign Portfolio Investment, Stock Market and Economic Development in India*, Sao Paulo, Brazil.
- Pal, P. (2004). Foreign Institutional Investment in India. Empirical Research on Indian Stock Volatility return. Publisher: Emerald Group Publishing Limited.
- Pan, M., Fok, R.C., & Liu, Y.A. (2007). Dynamic Linkages between Exchange Rates and Stock Prices: Evidence from East Asian Markets. *International Review of Economics and Finance*. 16, 503-520.
- Park, H.M. (2011). Practical Guides to Panel Data Modeling: A Step by Step Analysis Using Stata. Retrieved March 16, 2015 from <http://www.iuj.ac.jp/faculty/>
- Patro, D. K., Wald, J. K. & Wu, Y. (2002). Explaining exchange rate risk in world stock markets: A panel approach. *Journal of Banking & Finance* 26 (10), 1951—1972.
- Patro, D.K., & Wald, J.K. (2005). Firm characteristics and the impact of emerging market liberalizations. *Journal of Banking and Finance*, 29 (7), 1671-1695.
- Pavabutr, P., & Yan, H. (2003). *Foreign Portfolio Flows and Emerging Market Returns: Evidence from Thailand*, University of Texas at Austin, Mimeo.
- Pavabutr, P., & Yan, H. (2007). The Impact of Foreign Portfolio Flows on Emerging Market Volatility: Evidence from Thailand. *Australian Journal of Management*, 32 (2), 345-368.
- Pramod, K. N. & Puja, P. (2014). An Empirical Evidence of Dynamic Interaction between institutional fund flows and Stock Market Returns. *Munich Personal Archive*. Retrieved November 19, 2015 from; <http://mpra.ub.uni-muenchen.de/57723/>
- Prasad, E.S., Rajan, R.G., & Subramanian (2007). Foreign capital and economic growth. National Bureau of Economic Research, *Working paper* No.13619.
- Prasanna, P. K. (2008). Foreign Institutional Investors: Investment Preferences in India, *Journal of Administration and Governance*, 3, (2).
- Priyanka, L.M. & Mathur, T.N. (2012). Impact of foreign institutional investment on stock market with special reference to BSE. A study of last one decade. *Asian Journal of Research in Banking and Finance*.

- Puneet, J. & Raman, K. (2009). A closer look at the aggregate fund flows and market returns relationship in Mimeo, Department of Finance, Pamplin College of Business, Virginia Tech, USA.
- Rai, K., & Bhanumurthy, N.R. (2004). Determinants of foreign institutional investment in India: *The Developing economies*, 4, 479- 493.
- Rajan, R.G., & Zingales, L. (1995). What do we know about capital structure? Some evidence from international data. *Journal of Finance*, 50, (5), 1421-1460.
- Rano, S.U., & Bayero, A. (2010). Does inflation has an impact on stock returns and volatility? Evidence from Nigeria and Ghana. *Journal of Economic review*, 1-17.
- Rasheed, A., & Muhammad, N. (2002). Stock prices and exchange rates: are they related? Evidence from South Asian countries.
- Ren M. (1997), International portfolio flows and security markets, Harvard Business School.
- Richards, A. J. (2004). Big fish in small ponds: the momentum investing and price impact of foreign investors in Asian emerging equity markets. *Journal of Financial and Quantitative Analysis*, 40, 1-27.
- Roger, M. E., & Warner, J.B. (2000). Aggregate price effects of institutional trading: a study of mutual fund flow and market returns. *Journal of Financial Economics* 59, 195-220.
- Roll, R. (1977). A Critique of the Asset Pricing Theory's Tests. Part I: On Past and Potential Testability of the Theory. *Journal of Financial Economics* 4:129-176.
- Ross, S.A. (1976). Arbitrage pricing theory of capital asset pricing. *Journal of economic theory*, 13, 341-360.
- Rhee, S.G. & Wang, J. (2009). Foreign institutional Ownership and Stock market liquidity: Evidence from Indonesia. *Journal of Banking and Finance*, 33, 1312-1324.
- Saar, G. (2001). Price impact asymmetry of block trades: An institutional trading explanation. *Review of Financial Studies*, 14 (4), 1153-1181.
- Samarakoon, L.P. (2009). The Relation between Trades of Domestic and Foreign Investors and Stock Returns in Sri Lanka. *Journal of international financial markets and money*, 19, 850-861.
- Sanya, S., & Gaertner, M. (2012). *Assessing bank competition within the East African Community*, IMF Working Paper, 12, 32.
- Sarkar A. & Li K. (2002). Should U.S. investors hold foreign stocks? *Current Issues in Economics and Finance*, 3, 1-6.
- Saunders, M., Lewis. P, & Thornhill, A. (2009). *Research Methods for Business Students.* 5<sup>th</sup> Edition. Prentice Hall.



- Schmidheiny, K (2013). Panel Data: Fixed and Random Effects: Retrieved March 16, 2015 from <http://www.schmidheiny.name/teaching/panel2up.pdf>
- Seasholes, M. S. (2000). Smart foreign traders in emerging markets, Working paper, University of California at Berkeley.
- Sehgal, S. & Tripathi, N. (2009). An Examination of Home Advantage (Bias) Argument in the Indian Financial Markets: Domestic Financial Institutional Investors (DFIIs) Vis-à-Vis Foreign Institutional Investors (FIIs). *Asian Journal of Finance and Accounting*, 1(2), 163-174.
- Senbet, L. W., & Otchere, I. (2010). African Stock Markets – Opportunities and Issues, *African Finance in the 21st Century*, Palgrave Macmillan, International Monetary Fund.
- Sethi, N., & Patnaik, K.U. (2005). Impact of international capital flows on India's Economic Growth. Unpublished Thesis, Department of Economics, University of Hyderabad.
- Sevil, G., & Mustafa, O. (2012). Foreign investors and Noise traders in Instabul stock exchange. *International Journal of Business and Social Sciences*, 3, 4.
- Sharpe, W. F., Gordon J. A., & Jeffery V. B. (2003), *Investments*, 6 ed., Prentice Hall of India Private Limited, New Delhi.
- Sharpe, W.F. (1964). Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk. *Journal of Finance* 19, 425-442.
- Shleifer, A. & Summers, L. (1990). The Noise Trader Approach to Finance. *Journal of Economic perspectives* 4 (2), 19-23.
- Shu, T. (2007). Does positive feedback trading by institutions contribute to stock return momentum? *Working paper*, University of Texas at Austin.
- Siamwalla, A., Vajragupta, Y., & Vichyanond, P. (1999). Foreign Capital Flows to Thailand: Determinants and Impact. Thailand Development Research Institute.
- Sias, R. W. (2007). Reconcilliable differences: Momentum treading by institutions. *The Financial Review*, 42, 1-22.
- Sias, R. W., Starks, L. T., & Titman, S. (2006). Changes in Institutional Ownership and Stock Returns: Assessment and Methodology. *Journal of Business*, 79 (6), 2869- 2910.
- Simpson, J. & Evans, J. (2003). Banking stock returns and their relationship to interest rates and exchange rates: Evidence from Australian. *Journal of Social Science Research Network*, 1-35.
- Sivakumar, S. (2003). Foreign Institutional Investors: Bane or Boon? *Journal of stock market volatility*, 34.

- Smith, R. (2004). Exploring the usefulness of a conceptual framework as a research tool: A researcher's reflections. *Issues in Educational Research*, 14(2), 167-180.
- Solnik, B. (1983). International arbitrage pricing theory. *Journal of finance*, 38 (2), 449-457.
- Somoncu, K. & Karan, M.B. (2006). The impacts of international portfolio investments. *International journal of Finance*, 77, 149-167.
- Srikanth, M. & Kishore, B. (2012). Net foreign institutional investors flows into India: A cause and effect; *ASCI Journal of management*, 41(2), 107-120.
- Stulz, R. M. (1999). International Portfolio Flows and Security Markets. *Unpublished Working Paper*, Ohio State University, Columbus, Ohio.
- Swanson, P.E., & Lin, A.Y. (2003). The Role of U.S. investors in international equity market inflows, outflows, and net flows for selected Emerging Asian Markets. *Journal of Economics and Finance*, 27(3), 300-320.
- Syed, A.R., & Jawaid, S.T. (2012). Foreign capital inflows, Economics growth and stock market capitalization in Asian countries. *Springer*. 48, 375 – 385.
- Tabak, B. M. (2006). *The dynamic relationship between stock price and exchange rates: Evidence for Brazil*. Central Bank of Brazil Working Paper, 124.
- Tai, C. S. (2005). Asymmetric currency exposure of US banks' stock returns. *Journal of Multinational Financial Management*, 15, 455- 472.
- Terra, M.C. (2003). Credit constraints in Brazilian firms: Evidence from panel data. *Journal of Brazilian economy*, 57, (2), 443-464
- Tesar, L. L., & Werner, I.M. (1994). International Equity Transactions and US. Portfolio Choice," in Jeff Frankel (ed.): *The Internationalization of Equity Markets*, *University of Chicago Press*, 185-220.
- Tesar, L. L., & Werner, I.M. (1995). US. Equity Investment in Emerging Stock Markets," *World Bank Economic Review*, 9(1), 109-130.
- Thiripalraju, M., & Acharya R. (2011). *Dynamic Interaction between Institutional Investment and Stock Returns in India: A case of foreign institutional investors and mutual Funds*. Indian Institute of Capital Markets.
- Tiago, L. (2012). The effects of portfolio investment flows in firms' capital structure: a study of Brazilian firms from retail to textile sectors. *Journal of financial economics*, 12, (2), 7-31.
- Tokat, Y. (2004). *International Equity Investing: Investing in Emerging Markets*. Investment Counseling and Research, the Vanguard group.

- Trahan, E.A., & Bolster, P.J. (1995). The impact of Baron's Recommendation on stock prices. *Quarterly Journal of Business and Economics*, 34, 3-15
- Twerefou, D. K., & Nimo, M. K. (2005). The impact of macroeconomic risk on prices of assets. *African Development Bank*, 168-192.
- Ulku, N. & E. Weber (2013). Identifying the Interaction between Stock Market Returns and Trading Flows of Investor Types: Looking into the Day Using Daily Data. *Journal of Banking and Finance*, 37, 2733-2749
- Warther, V. A. (1995). Aggregate Mutual Fund Flows and Security Returns. *Journal of Financial Economics*, 39:209-235.
- Wetmore, J. L. & Brick, J. R. (1994). Commercial Bank Risk: Market, Interest Rate, and Foreign Exchange. *Journal of Financial Research*, 17 (4), 585–596.
- Williamson, J. (2000). *Exchange Rate Regimes for Emerging Markets: Reviving the Intermediate Option*. Washington: Institute for International Economics.
- World Bank (2003). *Global Economic Prospects and the Developing Countries*. Washington D.C: World Bank.
- Yang, S.Y., & Doong, S.C., (2004). Price and volatility spillovers between stock prices and exchange rates: empirical evidence from the G-7 countries. *International Journal of Business and Economics* 3, 139-153.
- Yilmaz, M.K. & Yilmaz, A. (1999). Market Development and Efficiency in Emerging Stock Markets, *Journal of Finance*, 1, 9-19.

## APPENDICES

### Appendix 1: Foreign investor net cash inflow Activity (Ksh. Millions)

<b>Month/Year</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
January	143	(342)	2,517	1,987	(812)	2,133
February	779	66	489	622	795	(3,927)
March	624	329	1998	1,552	2,651	1,810
April	45	49	151	(3,024)	1,771	3,026
May	570	496	(325)	(3,334)	1,099	3,475
June	(3076)	884	1,601	(1,597)	1,639	2,602
July	(121)	791	1,159	1,173	828	1,625
August	3	861	471	621	1,048	9,839
September	(283)	937	1,206	535	3,286	2,063
October	(879)	2,425	2,147	719	2,965	2,723
November	(692)	1,528	2,526	31	4,335	884
December	(2775)	300	1,186	935	2,129	(690)
<b>Net cash inflow</b>	<b>(5662)</b>	<b>8,324</b>	<b>15,126</b>	<b>220</b>	<b>21,734</b>	<b>25,563</b>

Source: NSE

**Appendix 2: Trends in Foreign Investor participation at the NSE**

<b>Month/Year</b>	<b>Foreign Purchases</b>	<b>Foreign sales</b>	<b>Equity turnover</b>	<b>Participation of foreign investors (%)</b>
<b>2011</b>				
January	4,948	2,961	9,462	41.79
February	2,408	1,788	6,216	33.74
March	3,226	1,674	7,984	30.69
April	3,160	6,184	7,883	59.26
May	2,909	6,243	8,406	54.44
June	3,527	5,124	7,047	61.38
July	4,487	3,314	7,132	54.69
August	3,410	2,789	6,109	50.74
September	2,646	2,111	5,453	43.62
October	3,242	2,523	4,466	64.54
November	2,820	2,789	3,928	71.40
December	2,709	1,774	3,973	56.42
<b>2012</b>				
January	1,118	1,930	3,544	43.00
February	1,999	1,204	3,493	45.85
March	3,860	1,209	6,386	39.69
April	4,912	3,141	7,640	52.70
May	5,141	4,042	8,815	52.09
June	3,880	2,241	6,214	49.25
July	3,134	2,306	6,038	45.05
August	3,327	2,279	5,681	49.34
September	6,717	3,431	9,781	51.88
October	7,603	4,638	11,082	55.23
November	7,062	2,727	10,537	46.45
December	5,579	3,450	7,582	59.54
<b>2013</b>				
January	4,999	2,866	8,464	46.46
February	6,278	10,205	14,463	56.09
March	6,254	4,444	11,183	47.83

April	5,719	2,693	9,856	42.67
May	8,553	5,078	16,070	42.41
June	8,611	6,009	13,021	56.14
July	7,382	5,757	11,205	58.63
August	15,574	5,915	20,797	52.10
September	6,630	4,567	10,062	55.64
October	10,244	7,521	15,937	55.74
November	6,329	5,445	13,129	44.84
December	6,225	6,915	11,329	57.99

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**Source: NSE**

**Appendix 3: Exchange rate data**

<b>Exchange rate (US Dollar/KSH)</b>							
<b>Month/Year</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
<b>Jan</b>	68.081	78.95	75.786	81.029	86.343	86.9	86.214
<b>Feb</b>	70.496	79.533	76.73	81.473	83.176	86.9	86.278
<b>March</b>	64.924	80.261	76.947	84.206	82.897	87.446	86.489
<b>April</b>	62.256	79.626	77.254	83.89	83.188	84.189	86.716
<b>May</b>	61.899	77.861	78.541	85.433	84.384	84.146	87.412
<b>June</b>	63.783	77.851	81.018	89.049	84.789	85.488	87.612
<b>July</b>	66.704	76.751	81.426	89.898	84.14	86.86	87.769
<b>Aug</b>	67.699	76.372	80.44	92.786	84.075	87.493	88.106
<b>Sept</b>	71.409	76.605	80.912	96.357	84.613	87.413	88.836
<b>Oct</b>	76.657	75.244	80.714	101.27	85.112	85.31	89.227
<b>Nov</b>	78.176	75.739	80.46	93.676	85.629	86.103	89.963
<b>Dec</b>	78.04	75.431	80.568	86.663	85.994	86.309	90.444

**Source: CBK; September 2015**

**Appendix 4: 91- Day Treasury Bills Rate data**

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<b>Month/year</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
Jan	6.95	8.46	6.56	2.41	20.56	8.08	9.26
Feb	7.28	7.55	6.21	2.57	19.7	8.38	9.16
March	6.89	7.31	5.98	2.77	17.8	9.88	8.98
April	7.35	7.34	5.17	3.26	16.01	10.38	8.8
May	7.76	7.45	4.21	5.35	11.18	9.46	8.82
June	7.73	7.33	2.98	8.95	10.09	6.21	9.81
July	8.03	7.24	1.63	8.99	11.95	5.92	9.78
Aug	8.02	7.25	1.83	9.23	10.93	10.03	8.29
Sept	7.69	7.29	2.04	11.93	7.77	9.58	8.38
Oct	7.75	7.26	2.12	14.8	8.98	9.72	8.67
Nov	8.39	7.22	2.21	16.14	9.8	9.94	8.64
Dec	8.59	6.82	2.28	18.3	8.3	9.52	8.58

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**Source: CBK; September 2015**



## Appendix 5: Consumer price index

<b>Consumer price index</b>							
<b>Month/Year</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
Dec	114.34	134.69	141.9	109.38	130.09	134.25	143.85
Jan	119.65	135.6	104.89	110.57	130.82	135.62	145.4
Feb	121.28	139	105.18	112.05	130.76	136.57	145.95
March	122.63	140.5	104.97	114.62	132.51	137.96	146.61
April	126.28	141.9	105.56	118.29	133.74	139.25	148.2
May	128.83	141.2	105.79	119.48	134.09	139.52	149.7
June	129.12	140.2	105.61	120.91	133.06	139.59	149.91
July	128.92	139.8	105.98	122.44	131.92	139.87	150.6
Aug	130.37	139.9	106.25	123.97	131.51	140.29	152.02
Sept	131.67	140.5	106.74	125.23	131.89	142.82	152.24
Oct	132.47	141.2	106.97	127.2	132.46	142.75	151.92
Nov	134.77	141.5	107.86	129.13	133.33	143.14	151.85
Dec	134.69	141.9	109.38	130.09	134.25	143.85	152.51

**Source: Kenya bureau of statistics; September 2015**

**Appendix 6A: Market capitalization for listed financial institutions**

<b>Market capitalization in millions</b>							
<b>YEAR</b>	<b>BBK</b>	<b>CFC</b>	<b>COOP</b>	<b>DTB</b>	<b>EQTY</b>	<b>HFCK</b>	<b>KCB</b>
7-Dec	94,478,900	31546800	0	11010670	44860790	4451150	49399460
Jan-08	95,051,880	32568421.11	0	11109814.39	46725077.75	4571250	50399000
Feb-08	97767648	32842105.32	0	12088037.04	56866955.09	5117500	55888000
Mar-08	91657170	30105263.21	0	11529052.67	56504745.18	4312500	51,896,000
Apr-08	99125532	31747368.48	0	15651562.37	93087945.59	4916250	66,367,000
May-08	96409764	31473684.27	0	15407006.71	103229822.9	3450000	64371000
Jun-08	95730822	32021052.69	0	15570043.81	113675254.5	3708750	61876000
Jul-08	89620344	29010526.37	0	15162451.04	99234424.14	6267500	61377000
Aug-08	85546692	27915789.52	0	14754858.27	100715534.9	5750000	59879999.98
Sep-08	79436214	22715789.51	0	14347265.5	75166373.51	4887500	55998888.87
Oct-08	61444251	15189473.71	0	9863745.034	63687764.74	3795000	43911999.98
Nov-08	65178432	18063157.93	0	11086523.34	55171377.6	3599500	46573333.32
Dec-08	68573142	16421052.66	38546132.56	11168041.9	65168875.55	4462000	52117777.76
Jan-09	65857374	15600000.03	29918262.6	11494116.11	57763321.51	3783500	45464444.43
Feb-09	48883824	14231578.97	25894168.8	8151855.4	41841380.33	3036000	34375555.54
Mar-09	54654831	12931578.97	22219996.2	9211596.602	64428320.15	3404000	43801111.1
Apr-09	59067954	13136842.13	21345193.2	10026782.14	50172628.62	3346500	44355555.54
May-09	61444251	15052631.61	24844405.2	11086523.34	51468600.58	3519000	37259589.97

Jun-09	74683620	18200000.03	36,566,765	12064745.99	59984987.72	3887000	49899999.98
Jul-09	71288910	17515789.5	32129803.08	11901708.88	62762070.49	3795000	48236666.65
Aug-09	62462664	15873684.24	31256710.61	11412597.56	53134850.24	3657000	45464444.43
Sep-09	59407425	15189473.71	30208999.64	11657153.22	51653739.43	3519000	45464444.43
Oct-09	59746896	13684210.55	29685144.15	11086523.34	53690266.79	3312000	44022888.87
Nov-09	62123193	12589473.71	31431329.1	10923486.24	49802350.92	3588000	44909999.98
Dec-09	61104780	12315789.5	31317947.4	11412597.56	53134850.24	4140000	45464444.43
Jan-10	66875787	12315789.5	33942356.4	11657153.22	59059293.47	4151500	48791111.09
Feb-10	68573142	12110526.34	34117317	11657153.22	57763321.51	4036500	45464444.43
Mar-10	69252084	10947368.44	34923699	12879931.53	58503876.92	3910000	48791111.09
Apr-10	78078330	13684210.55	41384583.32	13684210.55	13939672.73	68686513.72	51008888.87
May-10	80,115,156	18610526.35	44178479.24	13776635.63	83312482.95	4715000	44909999.98
Jun-10	83509866	20252631.61	52385548.5	14591821.17	88866648.48	4830000	41250666.65
Jul-10	89620344	23126315.83	52385548.5	15651562.37	87940954.23	5462500	42137777.76
Aug-10	88941402	23810526.36	57624103.35	17608007.66	92569425.5	5577500	56053213.72
Sep-10	91657170	24221052.67	63910369.17	17771044.77	99049285.29	6152500	61217891.22
Oct-10	90978228	24221052.67	69498161.01	21846972.47	97197896.78	6612500	66380845.91
Nov-10	83509866	22031578.99	66355028.1	21357861.15	94420814.01	5807500	62693021.13
Dec-10	84867750	20663157.93	66355028.1	22010009.58	99049285.29	6095000	64166178.86
Jan-11	85546692	22031578.99	70720490.48	23640380.66	107380533.6	6424187.5	67853890.29
Feb-11	93693996	21621052.67	70720490.48	23477343.55	105529145.1	6895687.5	68591432.57

Mar-11	78078330	20663157.93	57973340.34	22499120.9	92569425.5	6011625	69328974.86
Apr-11	89620344	16284210.55	61116473.25	23477343.55	99974979.54	6306312.5	75966855.43
May-11	96952917.6	14642105.29	60767236.26	20216601.39	92569425.5	5952687.5	74491770.86
Jun-11	93422419.2	13821052.66	57100264.22	19564452.96	95346508.27	5540125	70804059.43
Jul-11	83917231.2	14231578.97	53433274.77	21129609.24	85163871.46	4809300	67853890.29
Aug-11	70338391.2	13889473.71	49940903.87	13889473.71	19368808.47	71833874.19	4031325
Sep-11	57845858.4	12110526.34	49067811.15	18879697.15	65354014.4	3878087.5	48537517.11
Oct-11	80115156	11084210.55	50464759.51	18390585.82	73129846.15	3772000	53584231.43
Nov-11	64906855.2	11289473.7	43480017.71	17510185.44	64798597.85	3206200	44529832.22
Dec-11	70881544.8	10947368.44	42781543.53	17705829.97	60725543.13	2923300	50021844.85
Jan-12	67,079,469.60	10,947,368.44	45,226,203.16	17,216,718.64	65,539,153.25	3,359,437.50	56,404,454.14
Feb-12	74,412,043.20	11,494,736.86	41,035,358.08	18,097,119.03	70,352,763.38	3,383,012.50	60,857,437.36
Mar-12	65,450,008.80	11,015,789.49	44,353,110.43	18,292,763.56	71,278,457.64	3,288,712.50	66,052,584.45
Apr-12	69,523,660.80	11,221,052.65	47,670,862.79	18,684,052.62	76,832,623.17	3,489,100.00	66,794,748.32
May-12	70,609,968.00	12,042,105.28	45,575,440.25	19,955,742.06	77,758,317.42	3,630,550.00	68,279,076.06
Jun-12	70,881,544.80	11,905,263.18	39,114,554.08	20,347,031.12	78,684,011.68	3,406,587.50	68,279,076.06
Jul-12	76,584,657.60	11,563,157.91	48,404,260.67	18,586,230.35	79,609,705.93	3,654,125.00	71,247,731.54
Aug-12	79,572,002.40	13,136,842.13	48,404,260.67	19,564,453.00	83,312,482.95	3,500,887.50	76,483,929.29
Sep-12	79,300,425.60	10,947,368.44	49,871,056.45	24,431,110.66	86,089,565.72	3,324,075.00	81,681,866.23
Oct-12	85,818,268.80	10,605,263.18	52,595,105.75	26,191,911.42	89,792,342.74	3,642,337.50	88,364,928.01
Nov-12	78,757,272.00	16,603,508.80	50,918,767.72	25,091,410.94	86,089,565.72	3,618,762.50	82,424,428.65

Dec-12	85,546,692.00	16,603,508.80	52,804,648.01	25,311,511.04	87,940,954.23	3,642,337.50	88,364,928.01
Jan-13	87,719,306	16,900,000	54,271,444	28,172,812	97,197,897	4,137,413	99,503,364
Feb-13	90,163,498	17,888,304	57,624,120	30,814,013	104,603,451	4,620,700	113,612,050
Mar-13	92,336,112	23,719,298	68,729,859	31,914,514	123,117,336	5,716,938	123,265,362
Apr-13	96,138,187	23,521,637	68,101,233	33,895,415	115,711,782	5,834,813	124,750,487
May-13	97,496,071	24,707,602	69,987,113	36,536,616	133,299,973	6,070,563	123,265,362
Jun-13	85,275,115	25,102,924	64,329,472	37,417,016	115,711,782	5,952,688	110,413,070
Jul-13	94,508,726	25,893,567	67,053,521	36,316,516	122,191,642	6,247,375	127,571,857
Aug-13	92,607,689	27,079,532	67,263,064	38,297,417	121,265,947	5,658,000	125,333,755
Sep-13	92,879,266	28,660,819	67,891,690	39,618,017	125,894,419	5,893,750	138,762,371
Oct-13	101,298,146	30,835,088	74,806,585	40,058,217	131,448,584	6,306,313	144,730,645
Nov-13	95051880	34392982.51	77111549.47	42919518.72	131448584.2	7367187.5	143238576.8
Dec-13	95595033.6	34392982.51	74387500.17	42259218.43	113860393.4	7426125	141000474.1
Jan-14	92,064,535.20	33,997,660.87	72,920,673.39	47,101,420.54	114,786,087.62	7,047,635.00	129,067,847.68
Feb-14	87,719,306.40	41,904,093.63	78,997,396.17	51,943,622.66	119,414,558.90	7,971,915.00	130,559,961.53
Mar-14	87,447,729.60	41,508,771.99	83,816,865.96	49,522,521.60	117,563,170.39	7,971,915.00	137,274,473.83
Apr-14	92,336,112.00	50,996,491.30	95,341,685.03	51,943,622.66	141,631,221.02	8,260,752.50	146,227,156.91
May-14	89,620,344.00	52,182,456.22	90,103,130.91	52,383,822.85	154,590,940.59	9,017,437.50	146,227,156.91
Jun-14	90,706,651.20	50,996,491.30	94,363,821.59	52,824,023.04	170,327,742.92	10,078,312.50	152,195,612.29
Jul-14	92,064,535.20	50,601,169.66	93,141,458.54	54,144,623.62	167,550,660.16	10,667,687.50	162,640,409.21
Aug-14	97,767,648.00	49,810,526.39	93,630,390.08	62,948,627.30	173,104,825.69	10,490,875.00	171,593,092.29

Sep-14	95,051,880.00	49,019,883.11	105,120,281.29	65,127,618.25	198,098,570.57	11,021,312.50	173,085,206.14
Oct-14	91,249,804.80	49,019,883.11	103,897,971.27	65,127,618.25	186,990,239.51	10,608,750.00	162,640,409.21
Nov-14	92,336,112.00	48,624,561.47	92,652,543.79	61,011,746.46	184,213,156.75	11,080,250.00	173,085,206.14
Dec-14	90,706,651.20	49,019,883.11	97,786,325.90	56,895,874.68	185,138,851.00	10,785,562.50	170,100,978.44

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**Source: NSE September 2015**

**Appendix 6B: Market capitalization for listed financial institutions**

<b>Market capitalization in millions</b>							
<b>YEAR</b>	<b>NBK</b>	<b>NIC</b>	<b>SCTB</b>	<b>KENYA RE</b>	<b>JUB</b>	<b>ICDC</b>	<b>OLYM</b>
7-Dec	8050000	4700000	52500300	8700000	10000000	12812400	520000
Jan-08	8150000	4920148.784	54937497.62	8970000	10293750	13611309.03	544000
Feb-08	9500000	16614773.45	58201111.34	9510000	9000000	14986188.73	558,000
Mar-08	8,400,000	15,428,004	54,121,594	8,400,000	8,595,000	13,748,797	528,000
Apr-08	18,988,313	18,988,313	56,569,304	10,020,000	8,910,000	15,948,605	572,000
May-08	11800000	18691620.13	58473079.15	9720000	8550000	14848700.76	552,000
Jun-08	12200000	17653196.79	57113240.1	10140000	8235000	14436236.85	618000
Jul-08	12500000	16466427.26	54121594.19	8940000	7875000	13336333.09	574000
Aug-08	11700000	16466427.26	51401916.09	9420000	7965000	12648893.24	560000
Sep-08	9850000	14612099.86	49498141.42	8520000	7380000	10641568.88	538000
Oct-08	7450000	12609426.28	44874688.65	7230000	4680000	7589335.944	438000
Nov-08	8050000	12535253.18	43514849.6	7110000	5580000	7616833.538	392000
Dec-08	8600000	12906118.66	43514849.6	7650000	5535000	10311597.75	400000
Jan-09	7850000	11941868.42	43786817.41	7080000	5850000	8001799.854	362000
Feb-09	5600000	10013367.93	38075493.4	4980000	4230000	5362030.83	320000
Mar-09	5650000	8900771.49	37803525.59	7140000	4050000	5637006.77	374000
Apr-09	6700000	10117210.25	36715654.35	7740000	4545000	5499518.8	322000
May-09	6650000	11422656.74	5085000	7800000	5085000	7176872.034	376000

Jun-09	7950000	12891284.03	39163364.64	7800000	5850000	8826727.674	332000
Jul-09	7900000	11993789.61	37259589.97	7290000	5625000	8936718.05	280000
Aug-09	7000000	10443571.9	37259589.97	6300000	4905000	7066881.658	286000
Sep-09	7000000	10443571.9	38075493.4	6030000	5085000	6324446.62	240000
Oct-09	6550000	9464487.038	38619429.02	6090000	4500000	5829489.928	262000
Nov-09	7250000	9627667.849	39979268.07	6600000	5085000	6434436.996	252000
Dec-09	7800000	10198800.69	43786817.41	7020000	5175000	6186958.65	260000
Jan-10	7800000	11422656.77	45962559.89	8070000	6255000	7341857.598	296000
Feb-10	7950000	11749018.39	48410270.18	7680000	6075000	6874398.5	292,000
Mar-10	11500000	10606752.72	51401916.09	8100000	7695000	8579249.328	338000
Apr-10	12250000	12646512.85	54121594.19	7950000	8100000	9816641.058	380000
May-10	11270000	13193168.56	58745046.96	7140000	7785000	10284100.16	332000
Jun-10	11060000	14180412.47	60376853.82	7260000	7650000	12236429.33	320000
Jul-10	10920000	14180412.47	69079823.74	7440000	7830000	12098941.36	286000
Aug-10	10780000	16603647.51	68263920.31	7320000	9751500	12648893.24	320000
Sep-10	10920000	16334399.17	74791147.75	7170000	9355500	13886284.97	262000
Oct-10	11130000	17680640.86	74352977.45	7200000	9652500	14518729.63	272000
Nov-10	10780000	17321643.08	77510825.91	7080000	9355500	14669966.4	272000
Dec-10	10850000	16513898.06	74065900.31	6630000	9108000	13913782.56	238000
Jan-11	12740000	17949889.2	77797903.04	6840000	9652500	14518729.63	234000
Feb-11	13160000	17949889.2	80094520.11	6330000	9256500	13308835.5	202000



Mar-11	10500000	16513898.06	75501285.98	5940000	8662500	13006361.96	196000
Apr-11	10850000	16424148.62	72056360.38	5760000	10395000	13913782.56	216000
May-11	9940000	17375492.73	70620974.72	6000000	9355500	13611309.03	194000
Jun-11	9730000	17375492.73	67176049.12	5160000	8811000	13762545.8	176000
Jul-11	7840000	15302280.53	64305277.79	4830000	8761500	11373004.88	160000
Aug-11	59076244.07	6860000	12834170.77	58276658	8712000	10344594.86	170000
Sep-11	6510000	11846926.86	51099729.67	4710000	8712000	10314347.5	168000
Oct-11	6860000	11846926.86	51673883.94	4770000	8875350	9255690.14	156000
Nov-11	5600000	10662234.17	45645264.15	4290000	8712000	8684015.164	154000
Dec-11	5670000	9477541.488	45932341.28	4380000	8439750	8983463.963	128000
Jan-12	6,020,000.00	10,366,061.00	45,071,109.88	4,500,000.00	8,712,000.00	9449273.205	150,000.00
Feb-12	5,950,000.00	11,452,029.30	48,516,035.48	4,560,000.00	8,113,050.00	9815266.181	134,000.00
Mar-12	5,348,000.00	10,168,612.22	49,951,421.14	4,470,000.00	9,692,100.00	8684015.164	134,000.00
Apr-12	5,376,000.00	11,846,926.86	47,367,726.95	5,850,000.00	9,855,450.00	10314347.51	138,000.00
May-12	5,880,000.00	13,426,517.11	51,386,806.81	7,410,000.00	9,256,500.00	9715449.915	156,000.00
Jun-12	5,376,000.00	14,315,036.62	57,702,503.73	6,390,000.00	8,875,350.00	8484382.631	150,000.00
Jul-12	5,474,000.00	14,512,485.40	55,980,040.94	7,140,000.00	10,361,835.00	8184933.833	146,000.00
Aug-12	5,250,000.00	13,031,619.55	58,563,735.13	7,665,000.00	9,882,675.00	7985301.3	142,000.00
Sep-12	5,138,000.00	13,426,517.11	59,424,966.53	8,225,000.00	9,882,675.00	8018573.389	148,000.00
Oct-12	5,362,000.00	18,757,634.21	65,453,586.32	8,715,000.00	9,942,570.00	8684015.164	146,000.00
Nov-12	4,900,000.00	19,127,850.68	72,961,645.30	7,945,000.00	10,122,255.00	8251478.01	144,000.00

Dec-12	4,830,000.00	20,769,143.66	72,652,485.79	7,490,000.00	10,361,835.00	8218205.921	136,000.00
Jan-13	4,970,000	23,076,826	80999792.67	8400000	11200365	8817103.519	144000
Feb-13	5,082,000	24,570,033	83473068.78	8750000	11439945	9549089.471	146000
Mar-13	6,230,000	29,049,652	93057013.71	10920000	15452910	13242291.32	160000
Apr-13	5,740,000	27,963,684	86255504.41	11200000	15572700	13475195.94	168000
May-13	6,230,000	30,678,604	92747854.2	12110000	15752385	15305160.83	204000
Jun-13	5,880,000	28778159.84	88728780.52	11340000	13476375	14473358.61	184000
Jul-13	6,230,000	30407112.29	93984492.26	11865000	16710705	15305160.83	184000
Aug-13	5,740,000	30,950,096	90892897.12	10605000	16051860	16136963.04	148000
Sep-13	5,810,000	32,036,065	93366173.23	10080000	15512805	17966927.93	186000
Oct-13	5,670,000	32,307,557	93675332.74	10115000	17010180	20462334.58	178000
Nov-13	7700000	33665017.18	97694406.42	11550000	17968500	20961415.91	156000
Dec-13	8050000	32579048.88	93984492.26	10850000	16770600	21959578.58	184000
Jan-14	9,660,000.00	32,036,064.73	90,892,897.12	12,669,078.13	18,687,240.00	23623183.01	190,000.00
Feb-14	9,240,000.00	33,936,509.25	93,366,173.23	13,649,006.83	18,926,820.00	25120427.01	186,000.00
Mar-14	8,330,000.00	34,479,493.40	96,457,768.37	12,949,057.76	18,267,975.00	24288624.79	174,000.00
Apr-14	8,190,000.00	34,208,001.32	95,221,130.31	13,858,992.00	18,447,660.00	26284950.11	190,000.00
May-14	8,400,000.00	35,538,312.50	96,457,768.37	13,509,017.01	20,304,405.00	25619508.34	194,000.00
Jun-14	8,330,000.00	34,343,747.37	95,530,289.83	13,474,019.56	23,478,840.00	27449473.22	226,000.00
Jul-14	8,050,000.00	36,434,236.34	95,530,289.83	12,634,080.68	22,819,995.00	31275763.43	196,000.00
Aug-14	8,050,000.00	44,198,909.66	98,312,725.45	12,319,103.60	24,377,265.00	35933855.85	192,000.00

Sep-14	7,280,000.00	43,601,627.10	104,805,075.25	12,809,067.94	26,593,380.00	43586436.26	224,000.00
Oct-14	7,350,000.00	37,927,442.75	103,877,596.70	11,899,134.16	27,072,540.00	41922831.83	254,000.00
Nov-14	7,070,000.00	38,226,084.03	102,950,118.16	11,759,144.34	26,473,590.00	40591948.28	248,000.00
Dec-14	+6,930,000.00	36,796,872.17	103,568,437.19	11,934,131.61	26,952,750.00	40591948.28	208,000.00

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**Source: NSE September 2015**

## Appendix 7: Other Attachements



### INSTITUTE OF POST GRADUATE STUDIES AND RESEARCH

Private Bag - 20157  
KABARAK, KENYA  
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14<sup>th</sup> September, 2015

Ministry of Education, Science and Technology,  
National Commission for Science, Technology and Innovation,  
9<sup>th</sup> Floor, Utalii House,  
P.O. Box 30623 – 00100,  
NAIROBI.

Dear Sir/Madam,

**RE: RESEARCH BY GDB/M/1070/09/11– LOICE J. KOSKEI**

The above named is a Doctoral student at Kabarak University in the School of Business. She is carrying out research entitled “The Effect of Foreign Portfolio Investments on Stock Returns in Kenya: Evidence from NSE Listed Financial Institutions”

The information obtained in the course of this research will be used for academic purposes only and will be treated with utmost confidentiality.

Please provide the necessary assistance.

Thank you.

Yours faithfully,

**Dr. Betty Tikoko**  
**DIRECTOR POST GRADUATE STUDIES & RESEARCH**



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**Kabarak University Moral Code**

*As members of Kabarak University family, we purpose at all times and in all places, to set apart in one's heart, Jesus as Lord. (1 Peter 3:15)*



**KABARAK UNIVERSITY**

**INSTITUTE OF POSTGRADUATE STUDIES AND RESEARCH**

**DOCTOR OF PHILOSOPHY**

**QUALIFYING EXAMINATION PROVISIONAL TRANSCRIPT**

ACADEMIC YEAR: 2011/2012

NAME: LOICE J. KOSKEI

REG. NO: GDB/M/1070/09/11

**EXAMINATION:**

Qualifying examination overall grade (General paper, Specialization, Research Methods and Oral examination).

GRADE: A PASS

**RECOMMENDATION:**

The Candidate has been approved to proceed with Thesis Proposal Writing and Research.

DIRECTOR  
(POSTGRADUATE STUDIES)



REGISTRAR  
(ACADEMIC & RESEARCH)

(0-39%=F; 40-49%=D; 50-59%=C; 60-69%=B; 70-100%=A)



# KABARAK UNIVERSITY

## Certificate of Participation

This is to certify that

*Loice Jepkurgat Koskei*

Successfully presented a paper titled


*“The Effect of Foreign Portfolio Equity Turnover on Stock Returns of Listed Financial Institutions in Kenya”*

at the Kabarak University 6th Annual International Research Conference held on 13th – 15th July 2016

### Conference Theme

*Research and Innovation For Societal Empowerment*

  
Registrar

  
Deputy Vice Chancellor



The University of  
Nottingham



# Certificate of Participation

School of Business & Economics (Daystar University) and The Africa Research Group  
(University of Nottingham), award this certificate to

*Loice Koskei*

in recognition of their efforts and participation at the  
**4th International Conference on HRM and the  
Management of Organizations in Africa**  
held at the Weston Hotel in Nairobi on 26-28 August 2015.

*Prof. Van Kamocha*

Prof. Van Kamocha  
Centre Director - Africa Research Group and  
Professor of HRM at Nottingham University



*Rev. Prof. James Kombo*

Rev. Prof. James Kombo  
DVC - Academic Affairs  
Daystar University

**THE EFFECT OF FOREIGN PORTFOLIO EQUITY AND EXCHANGE RATE RISK  
ON STOCK RETURNS OF COMMERCIAL BANKS IN KENYA**

**Loice Koskei<sup>1\*</sup>, Dr. Lawrence Kibet, Dr. Andrew Nyang'au**  
Kabarak University, Egerton University, Mt. Kenya University  
Corresponding author's email: [loikosy@yahoo.com](mailto:loikosy@yahoo.com)

**Abstract**

*Reversals of foreign portfolio equity due to a shift in investor risk appetite may have a drastic impact on the value of shares of commercial banks hence the effect on stock returns. Uncertainties in the flow of foreign portfolio investments (FPI) result in unpredictable behaviour of stock returns in Kenya's economy and also at the firm level. The objective of this study was to find out the effect of foreign portfolio equity and exchange rate risk on stock returns of listed commercial banks in Kenya. The target population of the study was 11 commercial banks listed on the Nairobi Securities Exchange. The study used purposive sampling technique and concentrated on 10 commercial banks. This study used a causal research design and adopted a panel data regression using the Ordinary Least Squares (OLS) method where the data included time series and cross-sectional. Hausman test was carried out and findings indicated that random effects model was preferable for this study. Results from panel estimation showed that exchange rate risk affect stock returns of listed financial institutions in Kenya. The study recommended that policies that would attract foreign portfolio investment should be pursued by commercial banks in order to enhance stock returns.*

**Keywords:** Foreign portfolio equity, Stock returns, Exchange rate risk, Commercial banks, Nairobi securities exchange, Kenya.



**A COMPARISON OF THE EFFECT OF FOREIGN PORTFOLIO EQUITY ON  
STOCK RETURNS OF LISTED BANKING AND NON-BANKING  
INSTITUTIONS IN KENYA.**

**Loice Koskei<sup>1\*</sup>, Dr. Lawrence Kibet, Dr. Andrew Nyang'au**  
Kabarak University, Egerton University, Mt. Kenya University  
Corresponding author's email: [loikosy@yahoo.com](mailto:loikosy@yahoo.com)

**Abstract**

*Uncertainties in the flow of FPI result in unpredictable behaviour of stock returns in Kenya's economy and also at the firm level. The net effect of this is the possibility of financial loss suffered by the banking and non-banking institutions. The objective of the study was to compare the effects of foreign portfolio equity on stock returns of listed banking and non-banking institutions in Kenya. The study used purposive sampling technique and concentrated on 14 banking and non-banking institutions listed on the Nairobi Securities Exchange. Secondary data was obtained from Central bank of Kenya, Nairobi securities exchange and capital markets authority for the period January 2008 to December 2014. The study used causal research design, and adopted a panel data regression using the Ordinary Least Squares (OLS) method where the data included time series and cross-sectional data that was pooled into a panel data set and estimated using panel data regression. Results from panel estimation showed that exchange rate risk had a significant negative coefficient of -0.8371 with a P- value of 0.0020 for banking institution and negative coefficient of -0.6023 with a significant P- Value of 0.0673 for non-banking institutions. The results are statistically significant at one percent level of significance and five percent level of significance for banking and non-banking institutions respectively. Inflation had significant negative coefficient of -1.7550 with a P- value of 0.0210 in relation to stock returns for banking institutions and an insignificant negative coefficient of -0.6875 with a P- value of 0.4569 for non-banking institutions. The results indicate that the stock returns of banking institutions are affected by inflation while inflation has no effect on non-banking stock returns. The study recommended that policies that would attract foreign portfolio investment should be pursued in order to enhance stock returns.*

**Keywords:** Foreign portfolio equity, banking institutions, non-banking institutions, stock returns, Nairobi securities exchange.