

Testing Applicability of Capital Asset Pricing Model in the Kenyan Securities Market

Agatha N. Okumu

Finance Department, Safaricom Ltd., Nakuru Retail Center, Kenya

Samuel O. Onyuma

School of Business, Laikipia University, Kenya

Correspondent Author: sonyuma@yahoo.com

Abstract

The capital asset pricing model (CAPM) developed by Sharpe (1964), Lintner (1964) and Black (1972) stipulate that the expected return on a stock is determined by the risk free interest rate and a risk premium. Early empirical tests of the model generally supported its main prediction as Beta being the only explanatory factor in explaining the cross sectional variation across stock. However, more recent empirical work on asset pricing has identified a number of variables that help explain cross sectional variation in stock returns in addition to the market risk. The validity of the capital asset pricing model, as well as the firm specific factors that explain stock returns in Nairobi Stock Exchange (NSE) has not been conclusively addressed. The purpose of this seminar paper is to investigate the risk-return relationship within the CAPM framework, and explore whether CAPM is a good indicator of asset pricing of stock returns in the Kenyan stock market for the period January 2009-December 2010. That is, to examine empirically how well the market equilibrium model explains the risk return relationship in the Kenyan market. Secondary data was collected from the monthly Bulletin of the Nairobi Stock Exchange and the Central Bank of Kenya. A methodology similar to that of Fama and French (1992) was employed by taking into account the constraints imposed by a smaller sample both in time and in terms of number of stocks. Both market return and security return were computed. The empirical findings indicate that the Sharpe-Lintner-Black CAPM inadequately explains the Kenya's equity market economically and statistically significant role of market risk for the determination of expected returns. The empirical findings do not support standard CAPM as a model to explain assets pricing in Kenyan equity market.

Keywords: Arbitrage Pricing Theory, Capital Asset Pricing Model, Market Returns, Nairobi Securities Exchange.

1. Introduction

1.1 Background of the Study

The stock market plays an important role in mobilizing savings or excess funds and allocating the accumulated capital to productive investment in areas that bring the most value to the economy and investors. Investors expect to earn a return on their investment. However, such returns are largely affected by various risks in the market. Investors therefore find investments with returns that are superior to what the capital markets offer for the same risk.

The investment return in form of dividends and capital gains is a reward to an investor for bearing the risk or uncertainty in the markets expected return. The return on any security (stock) traded in a stock market is composed of two parts. First, the normal or expected return from the stock which the investors in the market predict or expect. This actually depends on the information investors have that bears on the security or stock, and it is based on the markets understanding today of the important factors that will influence stock in the coming year. Secondly, part of the return on the stock is the uncertain or risky part. This is the portion that comes from unexpected information that is revealed within the year. The unexpected return is therefore the true risk of any investment. The volatility of a security's return is measured by variance which is the squared deviations of a security's return from its expected returns.

The foundations for the development of asset pricing models were laid by Markowitz (1952) and Tobin (1958). Early theories suggested that the risk of an individual security is the standard deviation of its returns – a measure of return volatility. Thus, the larger the standard deviation of security returns the greater the risk. An investor's main concern, however, is the risk of his/her total wealth made up of a collection of securities, the portfolio. Markowitz observed that, when two risky assets are combined their standard deviations are not additive, provided the returns from the two assets are not perfectly positively correlated; and when a portfolio of risky assets is formed, the standard deviation risk of the portfolio is less than the sum of standard deviations of its constituents.

Markowitz was the first to develop a specific measure of portfolio risk and to derive the expected return and risk of a portfolio. The Markowitz model generates the efficient frontier of portfolios and the investors are expected

to select a portfolio, which is most appropriate for them, from the efficient set of portfolios available to them. The computation of risk reduction as proposed by Markowitz is tedious. Sharpe (1964) developed a computationally efficient method, the single index model, where return on an individual security is related to the return on a common index. The common index may be any variable thought to be the dominant influence on stock returns and need not be a stock index (Jones, 1991). The single index model can be extended to portfolios as well. This is possible because the expected return on a portfolio is a weighted average of the expected returns on individual securities.

When analyzing the risk of an individual security, however, the individual security risk must be considered in relation to other securities in the portfolio. In particular, the risk of an individual security must be measured in terms of the extent to which it adds risk to the investor's portfolio. Thus, a security's contribution to portfolio risk is different from the risk of the individual security.

Investors face two kinds of risks, namely, diversifiable (unsystematic) and non-diversifiable (systematic). Unsystematic risk is the risk that is unique to an asset. It is the component of the portfolio risk that can be eliminated by increasing the portfolio size, the reason being that risks that are specific to an individual security such as business or financial risk can be eliminated by constructing a well-diversified portfolio. Thus such risk is reduced or eliminated by holding assets that do not vary in the same direction. Systematic risk on the other hand is associated with overall movements in the general market or economy and therefore is often referred to as the market risk. It is that risk that is common to all assets in a well-diversified portfolio. The market risk is the component of the total risk that cannot be eliminated through portfolio diversification.

The CAPM developed by Sharpe (1964) and Lintner (1965) relates to the expected rate of return of an individual security to a measure of its systematic risk. The concern of an investor is to hold assets that yield the highest returns at a given risk. The Capital Asset Pricing Model (CAPM) developed by William Sharpe (1964) is used to determine a theoretically appropriate required rate of return of an asset in well diversified portfolio, given the asset's non-diversifiable risk (market / systematic risk), which is represented by Beta (β). CAPM therefore is a model for pricing an individual security or a portfolio, which consist of risky asset and a risk free asset. The model posits that the expected return on a security is a positive function of its beta. Beta measures the volatility of the security, relative to the asset class. The equation contends that investors require higher levels of expected returns to compensate them for higher expected risk.

However, Sharpe (1964) based his model on several assumptions which must hold, they include: investors are rational and they choose among alternative portfolio on the basis of each portfolio expected return and risk; investors have homogeneous expectations about the future. All market participants have identical information; there exist risk free assets that all investors can borrow and lend at this rate; it also assumes that capital markets are efficient and perfect with no transaction costs and no taxes; securities are perfectly marketable and infinitely divisible and investors take any position they wish; and one period planning horizon for all investors is possible. Investors therefore can determine whether a specific investment is appropriate by using CAPM by comparing the required rate of return and the riskiness of the asset measured by asset Beta. It is also expected that investors should require a higher return for holding a risky asset.

1.2 The Underlying Problem

While investors prefer more wealth (returns) to less, at any given level of return, a certain level of risk is assumed by an investor. Investors therefore aim to strike a balance between risk and return. Most investors actually hold a portfolio of assets with the objective of maximizing returns and reducing risk. Risk and return are very important concepts in financial management. Investors usually prefer returns which are stable and with less volatility. Several finance models exists which can be used to determine returns and return volatility. There exist market efficiency studies of the Kenyan stock market. Most of the studies conducted on market efficiency in Kenya have concentrated on the weak-form efficiency using various corporate announcements, with none vouching for return volatility.

Majority of these studies were conducted on how efficient the market is, but not on the applicability of the CAPM. Stock investors in Kenya have also witnessed return unpredictability, calling for the need to assess how returns at the NSE are predictable and their stability, given risk exposure. This study had two objectives of comparing actual returns with the CAPM estimated returns, and compare the correlation between market returns and stock returns.

2. Reviewed Literature

2.1 Economic Importance of Securities Markets

A well-organized and efficient stock market is crucial for economic development through the mobilization of both domestic and offshore capital. Countries with well-developed stock markets are more developed than those with thin stock markets (Capasso, 2006). Stock markets are important because they stimulate growth in

domestic savings and contribute to efficient allocation of capital among competing investments (Laurenceson, 2002). This promotes domestic capital formation and long-term economic growth and development. Andritzky (2007) and Filer, Hanousek and Campos (2000) argue that stock markets contribute to financial liberalization by providing a means of diversifying risk for capital raisers and investors. Enisan, et al (2009) found that stock market development in Africa has a significant positive long run impact on economic growth, whereas, Alkulaib, et al (2009) found that efficient capital markets contribute to regional market integration.

Stock markets provide an avenue for alternative savings tool to savers and non-bank sources of financing. An efficient financial sector reduces the cost of producing or trading goods and services and thus makes an important contribution to raising the living standards. It helps investors to allocate the savings through financial markets and institutions rather than buying non-productive assets as a store of value (Wagacha, 2002). Different people / firms have different opportunity set and choice of investment depends on the utility (tastes and preferences) that an investor gets from a particular investment (Gichana, 2007). A typical investor, buyer, broker or advisor would prefer more benefits to loss. Firms will prefer those investments that will make them reach their goals. Investors would prefer satisfactory investment that basically would take into account return and risk. (Gichana 2007).

In Kenya, the stock market has not yet fully played its role in capital mobilization and as a source of finance for corporation (Kibuthu 2005; Ngugi, 2003). An efficient stock market serves as a medium for transferring part of the ownership of foreign firms and government parastatals to local citizens (Onyuma 2008; Tarus et al., 2006). The Kenyan stock market underwent its historical crisis following the sudden corporate financial fragility and the drastic economic slowdown between 1998 and 2002. This occurred immediately following the ripple effects of the multiparty election of 1997 and the stoppage of donor funding thereafter. During this time, all listed companies went through a lean time with many reporting huge losses, with non-payment of dividends, while banks registered huge non-performing loan books (Onyuma, 2009).

The above factors caused a significant loss in the NSE 20 Index from a high of 5,037 point in July 1994, to 2,300 points in January 1998 on the onset of the crisis, and subsequent erosion of the Index down to 980.37 points in December 2001. Consequently, the activity at the stock market became low during this period, but became very volatile following the political elections in December 2002. This election was significant, as it led to shifts in economic and fiscal policies, which have since seen the market index rise to historical level of 6,061.46 points in January 2007. However, these gains have been eroded by the recent global financial crisis of 2007 to 2009, the December 2007 disputed presidential election, and the current surges in inflation and interest rates including the depreciation of the Kenyan currency to an all-time low of Sh. 107 to the US Dollar. Thus, further development of the stock market and the stability of returns earned therein becomes important area of policy focus.

2.2 Empirical Literature

Finance theories such as CAPM and Arbitrage Pricing Theory (APT) have been used to assess the efficiency of stock markets and attempting to explain different determinant of the stock returns. Efficient markets theory states that markets always adjust instantaneously to take account of all available information whether past, public, inside or secret such that no individual investor or investment analyst has more information than the information that is already reflected in the security's price (Fama, 1970). Efficient markets theory posits that the stock price followed a random walk as stock returns tend to be independent of past returns. This implies that security prices are determined by expectations of future economic profits, risks and interest rates (Kendall, 1953).

According to capital markets theory, the expected return from a security is primarily a function of risk. The price of the security reflects the present value of its expected future cash flows which incorporate many factors such as volatility, liquidity and risk of bankruptcy. Optimal portfolios should provide the investor with the combination of return and risk that the combination investor finds desirable (Tanous, 1997). Returns can be optimized through diversification and asset allocation and by minimization of investment cost and taxes. In addition the portfolio manager must choose a portfolio that is geared toward the time horizon and risk profile of the investor (Clarke 1998).

Early studies on CAPM (Lintner, 1965; Douglas, 1969) were primarily based on individual security returns. Their empirical results were discouraging. Miller and Scholes (1972) highlighted some statistical problems encountered when using individual securities in testing the validity of the CAPM. Most studies subsequently overcame this problem by using portfolio returns. Black et al. (1972) in their study of all the stocks of the New York Stock Exchange over the period 1931-1965, formed portfolios and reported a linear relationship between the average excess portfolio return and the beta, and for $\beta > 1$ (< 1) the intercept tends to be negative (positive). Therefore, they developed a zero-beta version of the CAPM model where the intercept term is allowed to change in each period. Extending the Black, Jensen and Scholes (1972) study, Fama and Macbeth (1973) provided evidence of a larger intercept term than the risk-free rate, and that the linear relationship between the average return and the beta holds and (iii) that the linear relationship holds well when the data

covers a long time period. Subsequent studies, however, provide weak empirical evidence on these relationships (Fama and French (1992), Davis (1994) and Miles and Timmermann (1996).

The mixed empirical findings on the return-beta relationship prompted a number of responses: the single-factor CAPM is rejected when the portfolio used as a market proxy is inefficient, Roll (1977) and Ross (1977). Even very small deviations from efficiency can produce insignificant relationship between risk and expected returns (Roll and Ross, 1994; Kandel and Stambaugh, 1995). Secondly, Kothari, Shanken and Sloan (1995) highlighted the survivorship bias in the data used to test the validity of the asset pricing model specifications.

Research on stock returns in emerging markets indicates that these markets are characterized by high volatility and high returns. It has been shown that they are not integrated to the developed markets of the World as evidenced by very low correlation with the rest of the World and among themselves (Bekaert and Harvey, 1997). Other results strongly support the relationship among the variables play a significant role in determining stock return. It was found that time variability causes the stock return to vary and all variables become significant with time factor. So the variables beta, book to market value and size but the time impact also has significant importance (Mostafizur, 2006). Investor interest in emerging markets exploded during the last decade as a result of the quest for higher returns and further international diversification. Yet little is known about the nature of stock returns in those markets. There is, however, much more to be understood at the individual stock level in emerging markets.

To overcome CAPM single variable (beta) determinant, several models of CAPM extensions and APT were developed. The Multifactor models have been applied in a growing number of studies found that the cross-sectional variation in average security returns cannot be explained by the market beta alone and showed that fundamental variables such as size (Banz, 1981), ratio of book-to-market value (Rosenberg, Reid and Lanstein, 1985; Chan, et al., 1991), macroeconomic variables and the price to earnings ratio (Basu, 1983) account for a sizeable portion of the cross-sectional variation in expected returns. Secondly, in the Investor Expectations, the basic CAPM requires that all investors have the same knowledge. All investors wish to own the same portfolio of risky securities. But if some segments have different opinions, each segment will identify a different optimal risky portfolio resulting in more than one source of risk affecting security returns. When consumption over a series of periods is considered, Multi-period models posit that there are a number of risks faced by investors that are not captured by the standard CAPM beta. For the CAPM to hold, normality of returns is a crucial assumption, and if the CAPM holds, then only the beta should be priced.

The Arbitrage Pricing Theory on the other hand was developed by Stephen Ross (1970). It is based on the law of one price which contends that two goods that are perfect substitutes for each other must be priced identically. If not arbitrage transactions will occur until the prices of the goods are identical. In APT, the security's return is determined by a variety of events that cause investors to assess what the value of a security should be.

2.3 Studies in the NSE on Risk-Return Relationship

For a rational financial decision maker, return constitute only one side of the decision making process. The other aspect that must be taken into account when one makes investment decisions is risk or volatility of returns. If investor can specify a certain pattern in volatility, then it would be easier to make investment decisions based on both return and risk. In fact this would give investors another tool to design profitable investment strategies (Onyuma, 2009).

Furthermore, Studies on volatility aim to show the price discovery of financial assets as a function of volatility and pricing of derivative securities. Investors who dislike risk may adjust their investments in the assets whose volatility are expected to increase (Watanpalachaikul and Islam 2006). In addition, finding certain pattern in stock return volatility may be useful to investors in several ways. These include the use of predicted volatility pattern in hedging and speculative purpose and in valuation of certain assets (Onyuma, 2009).

Nangaya (2002) identified risk volatility in share prices as one of the factors that influence investment in various investment instruments at the NSE as viewed by investment companies, including economic factors like return risk monetary and fiscal policies, and company related social factors like infrastructure, insecurity and geographical factors. Onyango (2004) and Kakiya (2010) assessed the response of price to earnings announcement. In their findings they concluded that prices respond positively to earnings announcements, and that earnings was a major factor in stock price determination since most investors used earnings as a measure of which company to invest in. Dickinson and Murage (1994) studied the weekly returns at the NSE and reported that the market was weak-form efficient. Their findings are similar to those of Kingori (2001). For instance, Mokara (2004) on earnings announcements, Twala (2005) on dividend, Karanja (2006) on rights issue, Atiti (2005) on price momentum, and Atogo (2010) on stock split, Karuiki and Onyuma (2012) on reforms, Okumu (2013) on automation, Kakiya et al (2013), Wabwire et al (2013) on return volatility, with conflicting market efficiency results. This calls for further studies especially on the volatility and predictability of returns at the Kenyan stock market.

3. Methodology

3.1 Data Type and Data Collection

This study used secondary data collected from the Nairobi Stock Exchange (NSE), including information on prices of securities and value of the NSE 20 Share Index. Information on the 91-Day Treasury Bills rate was collected from the Central Bank of Kenya (CBK). Using a data collection sheet, the average monthly stock prices and monthly closing stock index values were collected from the monthly bulletin compiled by the NSE and CBK. The data included computed monthly returns and prices for the period January to December 2010. Therefore a total of 12 months, information was used for the analysis.

3.2 Data Analysis

The data collected was used to test the applicability of CAPM in the Kenyan stock market. CAPM postulates that, beta is the only measure for estimating risk and therefore provides an insight in understanding risk return relationship. In a well-diversified portfolio, beta measures the systematic risk of an individual security and therefore the market will pay premium only for systematic risk since it is non-diversifiable. CAPM uses the security market line (SML) to estimate the expected return on a given security.

The SML is stated as follows:

$$E(R_j) = R_f + (E(R_m) - R_f)\beta_j$$

Where $E(R_j)$ = Expected return on security j
 R_f = Risk free rate of interest
 R_m = Expected return on the market portfolio, and
 β_j = Undiversifiable risk of security's (beta)

Since beta measures the relative volatility of a security's return in relation to the market return, it is measured in terms of security's and market's covariance and the market's variance. It is found by the following formula:

$$\beta_j = \frac{COV(R_j, R_m)}{Var.(R_m)}$$

The study estimated beta coefficient for each stock in a one stage process. The beta was estimated via Ordinary Least Squares for the period using average data for the 12 months of stock price together with the average market returns measured by the NSE stock index. The ordinary least squares (OLS) regression equation is given by:

$$\beta_j = \frac{N \sum XY - (\sum X)(\sum Y)}{N \sum X^2 - (\sum X)^2}$$

Where N is the number of observation and in this case is 11, X_i is the percentage change in share price of company X in i^{th} month and Y_i is the percentage change in NSE share index in i^{th} month.

To test the model across all the sectors of investment of the NSE (agricultural, finance and investment, industrial and allied, and commercial and service), four quoted companies in each sector was selected based on the highest traded volumes of shares in 2010. These investment sectors are used as they were before the recent market reclassification by the NSE in early 2011. To obtain the realized (actual return) of a given stock (X) in a particular month, closing stock price in period t was compared with the previous month's price and converted into a percentage. Finally, average returns for the whole period was obtained. Similarly, the stock market index values (Y) were used as a proxy for portfolio market return and a comparison of NSE index for each month with the previous index was done and converted as a percentage before average for the whole period was found. The figure found was taken as market return. Even though CAPM is an ex-ante model, that is we need data on expected prices, it was difficult to know the investors expected prices and therefore actual past (ex-post) data was used.

Finally, the quoted stock expected return was estimated using CAPM: $R_j = R_i + B_j R_m$. Thus $B_j R_m$ measures the premium to be paid for the risk assumed by the investor by investing in a particular share. It is also important to know the relationship between the stock return and the market return (NSE 20 Share Index). A coefficient of correlation (r) and coefficient of determination (r^2) was calculated to test the relationship.

4. Results and Discussion

4.1 Empirical Results for Actual Return and CAPM Estimated Return

An analysis of stocks actual returns exhibited returns above the actual market return for most of quoted stocks as measured by the NSE 20 share index. A sectoral comparison resulted in returns on average above the actual market return in all the sectors except the finance and investment sector which had mean return of 1.7 percent less than the market returns of 2.4 percent. Commercial and services sector recorded the highest mean percentage return of 7.58 percent. Could this point to a possibility of investors obtaining extraordinary gains by beating the market? The estimated stock return using CAPM showed a weak positive relationship between

returns and stock betas, and where stock beta is negative, the estimated return is less than the Treasury bills average percentage return of 7.1 percent.

In a case where stock beta is more than 1 the estimated CAPM return is the highest at 9.88 percent. The result is in tune with the expected behavior of stock with high beta which measures variability of returns in relation to the market returns. This implies that the higher the stock beta, the higher the estimated expected return. The results of actual returns, the stock beta and the CAPM estimated return are presented in Table 1 below.

4.2 Correlation between Market Return and Stock Return

To establish the relationship between the market return and the stock return, coefficient of correlation and coefficient of determination was calculated and presented in Table 2. For a good relationship to exist, the coefficient of correlation (r) should be more than 0.75 and 95% coefficient of determination. This test is important in validating whether there is any relationship between the two variables of market returns and stock returns.

The result indicate a poor relationship between the NSE return and the stock returns, with the highest coefficient of correlation being 0.64 in finance and investment sector and the lowest of 0.02 in Agricultural sector. Overall, finance and investment sector exhibited the most plausible relationship and Agricultural sector recording the weakest results. This implies that, there is no direct relationship between the NSE return and the stock prices and the NSE index is a poor estimator of market returns for the period under consideration.

Similarly, the coefficient of determination for all the stocks is weak and the highest being 41 percent. This means only 41 percent variations in stock prices is explained by the movement in NSE market conditions, and about 59 percent is explained by other factors. The results indicate that using the two parameters in CAPM may distort the results and may be misleading. The relationship of the two returns is presented in Table 2. For more comprehensive analysis of asset pricing, it is needed to identify factors and information variables that are able to explain expected return more adequately.

4.3 Conclusion and Recommendations

It is important for investors to make the distinction between short-term risk where beta and price volatility are useful-and longer-term, fundamental risk, where big-picture risk factors are more telling. High betas may mean price volatility over the near term, but they do not always rule out long-term opportunities. The results show that when the NSE market return in excess of the risk-free return is negative, an inverse relationship between beta and portfolio returns is expected, while positive linear relationship is exhibited between beta and expected return. These findings indicate that the Sharpe-Lintner-Black CAPM inadequately explains the Kenya's equity market economically and statistically significant role of market risk for the determination of expected returns. They therefore do not support standard CAPM as a model to explain assets pricing in Kenyan stock market.

The following are the recommendations for further research: first, the article used data for a short period of one year. It is recommended that a research to cover several years can be done. Second, other factors of importance like the book-to-market, size, leverage and price – earnings may be studied to see the effect of returns on stocks. Finally, investigation of investor profile in different time periods and stocks may also yield some interesting results.

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Table 1: Empirical Results for Actual Return and CAPM Estimated Returns

Stock	Realized Return (%)	Stock Beta (B_j)	Estimated CAPM Return $E(R_j)$
<i>A. Agricultural</i>			
1. Kakuzi	7.9	0.15	7.46
2. Rea Vipingo	1.9	-0.01	7.08
3. Sasini	3.7	0.22	7.63
4. Willamson	<u>14.9</u>	0.003	7.11
<i>Average</i>	<i>7.01</i>		
<i>B. Commercial/Services</i>			
1. Kenya Airways	9.1	0.21	7.60
2. Safaricom	12.5	0.06	7.24
3. Access Kenya	4.2	0.29	7.80
4. TPS Serena	<u>5.7</u>	0.24	7.68
<i>Average</i>	<i>7.88</i>		
<i>C. Finance & Investment</i>			
1. Equity Bank	0.7	0.32	7.87
2. KCB	0.2	1.16	9.88
3. BBK	2.6	0.56	8.44
4. Coop Bank	<u>3.3</u>	0.24	7.68
<i>Average</i>	<i>1.70</i>		
<i>D. Industrial & Allied</i>			
1. EA Portland	1.2	-0.42	6.09
2. BAT	3.2	0.50	8.30
3. E.ABL	3.0	0.56	8.44
4. Mumias Sugar	<u>10</u>	0.20	7.58
<i>Average</i>	<i>4.45</i>		
91 Day T.B rate	7.1		
NSE 20 share Index Return	2.4		

Source: Data analysis (2014)

Table 2: Relationship between NSE Return and Stock Return

Stock	Coefficient correlation (r)	Coefficient of determination (r^2)	Estimated stock Beta (β)
<i>A. Agricultural</i>			
1. Kakuzi Ltd	0.28	7.84	0.15
2. Rea vipingo	-0.02	0.04	-0.01
3. Sasini	0.39	15.21	0.22
4. Willamson Ltd	0.01	0.01	0.03
<i>B. Commercial & Services</i>			
1. Kenya Airways	0.44	19.36	0.21
2. Safaricom	0.17	2.89	0.06
3. Access (K) Ltd	0.34	1.56	0.29
4. TPS Serena	0.28	7.84	0.24
<i>C. Finance & Investment</i>			
1. Equity Bank	0.48	23.04	0.32
2. Kenya Commercial Bank	0.59	34.81	1.16
3. Barclays Bank	0.64	40.96	0.56
4. Cooperative Bank	0.55	30.25	0.24
<i>D. Industrial and Allied</i>			
1. EA Portland	-0.26	6.76	-0.42
2. British American Tobacco	0.32	10.24	0.50
3. E.A Breweries Ltd	0.54	34.81	0.56
4. Mumias Sugar	0.47	22.09	0.20

Source: Data Analysis (2014)

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