INITIAL PUBLIC OFFERINGS IN KENYA AND THEIR LONG-RUN POSTLISTING PERFORMANCE: 1996-2000

BY

FLORANCE CHEPNG'ENO KOSITANY

A PROJECT REPORT SUBMITTED TO THE SCHOOL OF BUSINESS, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS IN INTERNATIONAL BUSINESS ADMINISTRATION.

UNITED STATES INTERNATIONAL UNIVERSITY
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I would like to dedicate this project to my loving parents Richard and Grace Kositany and to my siblings: Rose and David Ruto, Jane, Sam and Jackie Ngetich, Henry, Anne and Mathew Chepkwony, Kipsigei, Lorraine and Sheila. I did it for you. May you achieve your dreams.
DECLARATION

I, the undersigned, declare that this is my original work and has not been submitted, to any other college, institution and university other than United States International University in Nairobi for academic credit.

Sign: [Signature]
Florance C. Kositany

Date: 11th Oct, 2002

This project has been presented for examination with my approval as the appointed supervisor.

Sign: [Signature]
Protus C. Sigei

Date: 12th Oct, 2002

USIU-A

Sign: [Signature]
Dean Of School of Business

Date: 16/10/2002

Sign: [Signature]
Deputy Vice-chancellor, Academic Affairs

Date: 19/10/02
ACKNOWLEDGEMENTS

I wish to express my gratitude to a number of people who assisted me tremendously in this study. First and foremost, I am most indebted to my supervisor, Protus Sigei, for his guidance and patience. His expertise and advice went along way in facilitating the successful completion of this project.

My gratitude also goes to Mr. Boaz Yaya of the NSE library for assisting me with data collection. I know it wasn’t easy but he always went to any limits to ensure that I got all that I required.

I would also want to appreciate the encouragement I have always received from my family members Dad, Mum, Rose, Dave, Jane, Sammy, Jackie, Henry, Anne, Mathew, Kipsigei, Chebeth, Kipngeno and Sheila for their sacrifice and understanding has been tremendous, especially Sheila who got all the tantrums of my mood swings when the going got tough. Special thanks also goes to Nashion Ngetich for editing this project.

I extend my gratitude to all my friends for their encouragement especially Doreen Obwanga, Edna Kirui and also to all my relatives.

Last but not least I would thank God almighty for his help, grace and care
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ABSTRACT

This research seeks to investigate the post listing performance of the IPOs issued in Kenya through the Nairobi Stock Exchange in the period 1996-2000 and their long run performance. To do this it determined the extent of ex-post abnormal returns earned periodically through time and examined implications of over- or under-pricing of the IPOs. The results of the study demonstrate that these new equities have, on average, under-performed by a statistically insignificant margin in the long run. This result was confirmed using Cumulative Average Abnormal Returns (CAAR) approach and t-test computed at both 5% and 1% levels of significance. The findings, however, indicate some positive, though insignificant, returns adjusted for market effects in the short-run following the offering. The “short run” has, for our purposes, been equated to one year. The conclusion, therefore, is that returns on these IPOs seem to have been characteristic of the market average, which is contrary to the widely held belief that IPOs tend to under-perform in the long run. One key implication of these findings is that the IPOs in question have not occasioned wealth re-distribution effects of significant magnitudes between the old and the new shareholders.

Whereas the returns on the stocks have been computed on the basis of capital gains only, the study can also be re-cast to take into account any dividends received by shareholders. Dividends would, otherwise, enhance the performance of the IPOs both in the short and long runs. It is also recommended that the CAAR be benchmarked on an asset-pricing model so as to take account of risk premia in the computation of abnormal returns.
CHAPTER ONE

1.0 INTRODUCTION

In this chapter we look at the background of the topic and brief history. We also highlight the research problem and build up the objectives of the study. The chapter finally summarizes the importance of the study.

1.1 BACKGROUND

For many entrepreneurs, making an initial public offering (IPO) of their company’s equity is a dream come true. After years of sacrifice and hard work, the company is finally a success. It is interesting however, that successful entrepreneurs appear willing to sell equity in their firms for too little money: the case of under pricing IPOs.

Often when companies go public, the issue is solely intended to raise new capital. But there are occasions when no new capital is raised. The existing shareholders will instead, be off loading their shareholding in the company. This happens mainly when governments sell off their shareholding in state corporations.

There are several methods of issuing shares namely: by tender, public issue or rights issue.

This study is concerned with the public issue, where the public is being offered shares directly by the company at an agreed price. In particular, we look at the case where a company is being listed for the first time. Ordinarily, in an IPO, a company would always engage the services of an underwriter (typically an investment bank) who would be willing to buy the share that would be left unsold as a result of the level of subscription falling short of the shares floated. Other services engaged include those of legal advisors, valuers, auditors, reporting accountants, sponsoring brokers and communication specialists.
The stock exchange is a market that deals in the exchange of securities issued by publicly quoted companies and the government.

An important role that a stock exchange plays in many economies is that of promoting thrift, or saving. The very fact that institutions exist where savers can safely invest their money and, in addition, earn a return is an incentive for people to consume less and save more.

Secondly, the stock exchange assists in the transfer of savings to investment in productive enterprises as an alternative to keeping the savings idle. It should be appreciated that in as much as an economy can have savings, the lack of established mechanisms for channeling those savings into activities that can create wealth would lead to misallocation, or waste, of those savings. Therefore, even if a culture of saving were to be encouraged, the lack of developed financial markets may lead to economic stagnation.

Thirdly, a robust stock market assists in rational and efficient allocation of capital, which is a scarce resource. The fact that capital is scarce means systems have to be developed where capital goes to the most deserving user. An efficient stock market sector will have the expertise, the institutions and the means to prioritize access to capital by competing users so that an economy manages to realize maximum output in a least-cost manner (NSE, 2000)

Fourthly, stock markets promote higher standards of accounting, resource management and transparency in the management of business. This is because financial markets encourage the separation of owners of capital on one hand, from managers of capital, on the other. (NSE, 2000)

One of the major reasons for going public is usually to increase the equity base of a company, thus allowing for future expansion and growth without the interest burden associated with the use of debt. This ability to raise funds from outside investors by the issue of share is perhaps the most valuable of all the benefits that accrue to companies on floatation.
An immediate benefit enjoyed by a newly listed company is the considerable improvement in its overall financial position. The injection of substantial equity fund improves the company’s gearing and other important balance sheet ratios. With such capital reinforcement and good management, higher earnings and dividends are almost certain to follow.

In addition, going public raises the level of awareness about the company and its products in both the investment community and the rest of the public. This can result, for example, in greater ability to attract high caliber employees, unprompted approaches for potential acquisition and increased general business opportunities. Public companies also benefit from access to the useful information brought to them by their advisers, financial analysts, stockbrokers and shareholders.

Share holders and potential investors are also able to monitor the value of their investment in the newly listed company daily by referring to the price list of quoted companies as published in the media. This facility is a major advantage over investors in unlisted companies.

Moreover, a portfolio of quoted shares is generally regarded as being highly liquid asset as the shares may be sold through the stock exchange with the least amount of time and inconvenience. For this reason, quoted shares are a readily acceptable form of collateral to banks and other financial institutions.

Quoted shares, on the other hand, offer the investing public, particularly institutional investors and pension funds, an attractive avenue for investment by virtue of their liquidity and the detailed financial knowledge and record of each quoted company that is available to the public. Many investors regard quoted shares as an attractive hedge against inflation. (NSE, 2000)
1.2 PRICING OF INITIAL PUBLIC OFFERING

In Kenya, Capital Markets Authority’s (CMA) clearance is needed to sell securities to the public. The CMA is explicitly concerned with full disclosure of material information, and does not attempt to determine whether a security is fairly priced or not.

In principal, valuing IPOs is no different from valuing other stocks. The common approach of discounted cash flow analysis and comparable firms analysis can be used. In practice, historical accounting information is of limited use in projecting future profits or cash flows, because many IPOs are of young growth firms in high technology industries. Thus, a preliminary valuation may rely heavily on how the market is valuing comparable firms.

The pricing of new issues is raised as a particular problem in this study. Determining the offering price is one of the critical steps in the process of going public. Ross (1990) says this is one of the most difficult activities for the underwriter since this constitutes a potential cost to the issuing firm. In particular, if the issue is priced too low it may be oversubscribed and existing shareholders will experience an opportunity loss. If set too high it may be unsuccessful and be withdrawn. Mwarania (1989) stated that if the price is lower than the intrinsic value of the shares being offered, and if all the shares rank pari passu, then there is an implicit transfer of wealth from the older shareholders to the new and vice versa. Puxty (1991) states that issuing houses have a role of advising on pricing. The problem is that the issuing houses often act in a lead-underwriting role. It is clearly in their interest to have a lower price to clear the market.

In general management has to ascertain the maintainable level of profits, desired price-earning ratio (P/E), divided cover and dividend yield. The offering price is then determined given the relevant information on these matters and the knowledge of share prices of similar types of company. Schall (1988) argues on similar line but advocates two possible approaches viz the constant growth dividend model and the comparative P/E ratio.
The constant growth dividend model is used if net income and dividend of the firm have risen at a fairly regular rate, which are expected to continue in the future by both investors and management. The value of the stock P₀ can be estimated using the relationship:

\[ P₀ = \frac{D₁}{k_s - g} \]

Where, \( D₁ \) = expected dividend payment next period to all shareholders; \( k_s \) = Rate of return required by investors; and, \( g \) = Long-run dividend growth rate

There is need to estimate \( k_s \). Management and the investment banker may have some idea of the required rate of return based on their knowledge of the securities market and the firm. For example rate of return on shares of comparable firms with stocks currently being traded may be used to get some idea of the “going rate”. Alternatively the \( \text{beta} \) of the firm may be estimated and the capital asset pricing model (CAPM) used to determine the discount rate. Unfortunately this model is not always applicable since most firms going public do not have a record of stable growth income and dividends.

To apply the comparative P/E ratio, firm’s management compute P/E ratios of several firms similar to theirs or of other firms that have recently gone public. They also apply other relevant information such as earnings of comparable firms. From this, a subjective judgment is made of what should be the appropriate P/E ratio of the firm. The resulting ratio is multiplied by current net income to arrive at market value of the stock.

\[ S = (P/E) \times \text{Net Income} \]

Hanley (1993) holds a different view when she argues that the offering price is set based on the information about demand acquired during the “waiting period” for the issue from \textit{regular} investors through non-binding indication of interest. The waiting period is the time from the filing of the preliminary prospectus to the final offer date. Regular investors are those that are actively involved on an on going basis in purchasing shares of firms going
public. If demand for the issue is greater than expected, the final price will be set higher than the expected offering price disclosed in the preliminary prospectus.

Alternatively, if demand is low, the final offer price will be below the expected price. In practice, changes in the offer price are accompanied by revisions in the number of shares being issued. Unfortunately, the Kenyan market of new issues is not developed to this extent and, therefore, the revision of prices and number of issues offered is hardly applicable.

Spindt (1989) supported the Hanley’s argument and developed a model of pricing and allocation rules used by the underwriters to induce regular investors to truthfully reveal information to be used in setting initial offering price and revise the number of issues.

1.3 PROBLEM STATEMENT

In Kenya most of the initial public offerings have been over subscribed by great margins. For instance Kenya airways recorded a subscription rate of 96.4%, KCB 326%, National Bank of Kenya 300%, National Industrial Credit 77%, Crown Berger 104 % and HFCK 400%. The applications themselves theoretically reflect the demand by investors that might be as a result of the firm’s performance or of the issuing process of the overall stock exchange activity. The level of subscription is important to the firm because under-subscription lead to depressed share prices, which, in turn, increases the firm’s equity cost of capital. Over-subscription, on the other hand, stimulate larger than necessary premium, increasing the opportunity cost of issuing for the firm’s shareholders.

All the aforementioned phenomena are motivated by, and also affect, the ex ante and ex post returns on stock investments. The ex post returns, when set against an appropriate benchmark, can confirm whether a stock offering was under- or over-priced. This study seeks to ascertain the extent of underperformance, or otherwise, in the long run of IPOs issued through NSE between 1996 and 2000; which, in itself, gives a pointer as to whether the IPOs were under- or over-priced in the first place.
1.4 OBJECTIVES OF THE STUDY

1.4.1 General Objective.

To investigate the post listing performance, in the long run, of the IPOs issued in Kenya between 1996 and 2000.

1.4.2 Specific Objectives.

(i) To determine the extent of ex-post abnormal returns earned periodically, through time.

(ii) Examine the implications of over/under pricing of the IPOs

1.5 JUSTIFICATION OF THE STUDY

Going public is a watershed event in a company’s life. It enables a company to raise capital and creates a negotiable instrument for use in acquisitions or for other purposes but obligates a company to make regular financial disclosures and to deal with a new constitution.

The study also does shed some light on the large subscription margin common with initial public offerings in Kenya and is of great importance to the following parties:

The firms going public- firms that intend to go public would find the results of this study useful, as the findings will show the role that the offering price plays in determining short and long run returns to investors.

Investors- since they purchase shares with the objective of making returns in form of capital gains and/or dividends.
Underwriters- Given that underwriters are involved in price setting and buying the unsold issues, the link between the offering price and the level of subscription is of vital interests to them. This link turns out to be the post-listing performance of the IPOs.

Researchers- this study is anticipated to contribute to further research related to IPOs.

1.6 RESEARCH QUESTIONS

Are the Kenyan IPOs overvalued or undervalued?
What is the reason for that sort of valuation?
What is the reaction of the market to the valuation?
What is the performance of IPOs in the short and long runs?

1.7 RESEARCH HYPOTHESIS

$H_0$ : the “abnormal returns” are equal to zero.

$H_1$ : the “abnormal returns” are not equal to zero.
CHAPTER TWO

LITERATURE REVIEW.

2.0 INTRODUCTION

This chapter looks at the empirical evidence that have been brought forth by earlier researchers, and also identifies any aspects not addressed so far. This will help in guiding this study into the intended direction that should eliminate in testing the hypothesis mentioned earlier.

A stock market index measures the overall share price movement over any given time period. An increase in the value of the index implies an improvement in the market activities in terms of price or traded volume or both, and vice versa. If the index falls, many share prices are declining and many investors start their purchase decisions process. If the index is gaining, share prices, in general, are rising and investors commence their sale decision process.

A number of authors among them Van Horne (1970) have advocated for the use of industry average index (as opposed to the general stock exchange index) in evaluating the performance of stocks since this index more closely approximates underlying stock price movement of the type of associated with the industry.

The market Index model for computing abnormal returns utilizes the market index to estimate the rate of return on a given security. The returns on various securities are related only through common relationship with some basic underlying factors, which is the rate of return on a broad market index. To isolate the effects of an event on the price of the share, it is necessary to control for the differential effects of the market wide information on individual share return. The market index model proposed by Sharpe and tested by Blume provides a particularly simple and effective way to do so. (Moko, 1996) The market model assumes that individual security returns are linearly related to the return on market portfolio,
\( R_{jt} \) and that the usual assumptions of the regression model are satisfied. The market model takes the form

\[ R_{jt} = a_j + b_j R_{mt} + U_{jt} \]

where,

\( R_{jt} \) = Return for period \( t \) on the \( j \)th security; \( R_{mt} \) = Average return on a market portfolio of all assets on the Exchange or proxied by a sample of all securities such as the return on the NSE 20 share index; \( a_j, b_j \) = parameters that are to be estimated by least squares; and, \( U_{jt} \) = disturbance or error term for period \( t \)

The systemic part of a security’s return is presumed to be captured by its normal relationship to the return on the market portfolio or representative sample of the whole security market. Any return not accounted for by a security’s normal relationship to the market will be impounded in the error term \( U_{jt} \) which, presumably, captures the effects of company-specific influences.

Fisher (1972) argues that the general problem of adjusting for market wide movement in security price on individual common stock return has received considerable attention. One of the procedure is to estimate the parameters of the Sharpe-under- mission Capital Asset pricing Model for each security and to interpret the residual in each period \( e_{jt} \) as abnormal return on stocks. Moko (1996) the approach used in event study method. The capital Asset Pricing Model like market index model takes the form:

\[ R_{jt} = a_j + R_{mt} + e_{jt} \]

However the estimate of coefficient of \( a_j \) and \( b_j \) for each new security is not practical given that prior to the issue no price observation for unseasoned new issues is made. Estimation of these coefficients requires use of several price observations before the event of interest. This would enable one to forecast the expected return at the time of event that is then related to the actual return. (Moko, 1996)
One way for adjusting for market effect on new issues returns is to use market index (Fisher, 1972). The difference between security and market return is then computed using the following equation:

\[ U_{jt} = R_{jt} - R_{mt} \]

\( R_{mt} \) represents the market index most representative of the new issues.

If for each new issue stock; \( a_i \) equal to zero and \( b_j \) exist among recent offering and that the average \( b_j \) of new issues exceed one (that is if non-diversifiable risk of each issue is the same as that of the market), then the equation above is consistent with the capital asset pricing model (CAPM). However, one would expect that inter-firm difference in \( b_j \) exist among recent offerings and that the average \( b_j \) of new issues exceed one (that most new issues are "riskier" than the stocks in the stock exchange index). In addition, one would also not expect \( a_i \) (the point at which a regression line intercepts the vertical axis) to be equal to zero. One would expect the changes in average price of the new issues to show price performance superior to those of the stock exchange index. Closely allied to the question of risk is that of company's size and age. Those companies, which comprise the stock exchange index, tend to be both larger and older than those going public. (Moko, 1996). In a similar manner, differences in dividend yield also may introduce bias in the result. The total returns that an investor receives from the investment in a company stock is composed of dividends received over the holding period as well as the capital gain or loss realized at the end of the holding period. To the level that new stocks in the sample have a lower dividend yield than does the stock in the stock exchange index, one would expect the average price of the new stocks to show a greater increase than does the stock exchange index. The lower dividend would be off set by greater expected price appreciation. Thus if new stocks are riskier and have lower dividend yield than the stock exchange index sample, with which they are compared, they would be expected to show greater price appreciation than the stock exchange index sample. The result is that the transformation of stock return to excess return in the equation above serves to adjust roughly the market effect on new issue return. (Moko, 1996)
2.1 IPO UNDERPRICING

The best-known pattern associated with the process of going public is the frequent incidence of large initial returns (the price change measured from the offering price to the market price on the first trading day) accruing to investors in IPOs of common stock. Numerous studies document the phenomenon, showing that the distribution of initial returns is highly skewed, with a positive mean and a median near zero. In the US, the mean initial return is about 15 percent. (Ritter, 2000)

The new issue underpricing phenomenon exists in every nation with a stock market, although the amount of underpricing varies from country to country. (Arosio et al, 2000)

Ibbotson (1975) found out that the residual (excess return) of the new issues rose approximately 11.4% in the first month. However in the next 59 following months the residuals were not significantly different from zero. This gives the implication that in the “short run” an investor can earn a high return as opposed to buying after the offer in the market. This argument is based on the fact that stock markets are efficient and after the offer, all relevant information will be reflected in the prices. Fisher et al (1972) argued that based on efficient market hypothesis early price behavior has no value in predicting the later price behavior.

There are number of factors that have been theorized as the reasons for underpricing phenomenon of new issues, with different theories focusing on various aspects of the relations between investors, issuers and the underwriters taking the firms public. In general these theories are not mutually exclusive. Furthermore, a given reason can be more important for some IPOs than others. (Ritter, 2000)
The Winners Curse Hypothesis

An important rationale for the under pricing of IPOs is the “winners curse” explanation. Since a more or less fixed number of shares are sold at a fixed offering price, rationing will result if demand is unexpectedly strong. Rationing in itself does not lead to under pricing, but if some investors are at an information disadvantage relative to others, some investors will be worse off. If some investors are more likely to attempt to buy a share when the issue is under priced, then the amount of excess demand will be higher when there is more under pricing. Since other investors will be allocated only a fraction of the most desirable new issues, while they are allocated most of the least desirable new issues they face a winner’s curse: if they get all the shares that they had asked for, it will be because the informed investors don’t want. (Loughran, & Ritter, 1995)

The Bandwagon Hypothesis

The IPO market may be subject to bandwagon effects if potential investors pay attention not only to their own information about new issues, but also to whether other investors are purchasing. Bandwagon effect is a case where the investor checks around to see whether other investors are buying the issued share so that he can follow suit and if they aren’t he or she will also shy away from it even if there is favorable information about the shares being issued. To prevent this from happening an issuer might decide to under price the issue so as to induce the first few potential investors to buy, and induce a bandwagon, or cascade, in which all subsequent investors want to buy irrespective of their own information. (Ritter, 1998)
The Ownership Dispersion Hypothesis
Issuing firms may intentionally under price their share in order for them to generate excess demand and so be able to have a large number of small shareholders. This dispersed ownership will both increase the liquidity of the market for the stock, and make more difficult for outsiders to challenge management. (Ritter, 1991)

The Underwriter’s Monopoly Power Hypothesis
Underwriters take advantage of their superior knowledge of the market conditions to under price offerings, which permits them to expend less marketing effort and ingratiate themselves with buy-side clients. While there is undoubtedly some truth to this, especially with less sophisticated issuers, when investment-banking firms go public they under price themselves by as much as other IPOs of similar size. Underwriters have been successful at convincing clients and regulatory agencies including the offices of thrift supervision, that under pricing is normal for IPOs (Ritter, 1998)

The Signaling Hypothesis
Under priced new issues “leave a good taste” with investors allowing the firms and insiders to sell future offerings at a higher price than would otherwise be the case. This reputation argument has been formalized in several signaling models. In these models, issuing firms have private information about whether they have high or low values. They follow a dynamic issue strategy, in which seasoned offerings will follow the IPO. Various empirical studies, however, find that the hypothesized relation between initial returns and subsequent
seasoned new issues is not present, casting doubt on the importance of signaling as reason for under pricing. (Brealey & Myers, 1994)

2.2 THE GOING PUBLIC PROCESS IN KENYA

In most countries a diversity of options is available to introduce new shares on the stock exchange. As this paper has highlighted, several under pricing theories do touch on aspects of regulatory environment; therefore it would be ideal to bring forth the steps needed to be undertaken in the Kenyan setting.

Requirements before being quoted at Nairobi Stock Exchange¹.

1. The company must be registered with the registrar of companies as a limited company as per Companies Act Cap 486.
2. A company must have an issued capital of at least Kshs. 2 million with par value of between Shs. 5 and Shs. 10 per share.
3. At least 20% of the issued equity capital for which quotation is being sought must be offered to the public whose value must be at least Kshs 2 m which must be sponsored by a broker a member of NSE and must prepare detailed prospectus containing information about company as required by the NSE council.
4. The memorandum and articles of Association of the company must comply with the requirements of stock exchange whether or not required by law.
5. The stock exchange requires that the spread of shareholders existing at the close of an offer is sufficiently wide to justify the listing, approximately 150 shareholders is regarded as a minimum.

¹ Source: NSE(2000)
6. Details and particulars of the company such as current directors, legal advisors, company secretary, auditors, subsidiaries or associate companies, if any.

7. A report by the company auditors in respect of the last five completed financial years of the company if the company has been in existence for five or more years.

2.3 LONG-RUN PERFORMANCE

The other pattern associated with IPOs is the poor stock price performance in the long run. For instance companies going public in the U.S during the period of 1970-1993 produced an average return of just 7.9% per year for the five years after the offering, using the first closing market price as the purchase price. (Ritter, 1991)

It should be noted that most of the firms going public have relatively high market-to-book ratios and most are small-capitalization stocks. Small growth stocks in general have very low returns, and if IPOs are compared with non issuers that are chosen on the basis of market-to-book ratios, as well as size, the under performance is less than when non issuers are chosen on the basis of size alone.

The low returns in the aftermarket for IPOs partly reflect the pattern that IPO volume is high near market peaks when market-to-book ratios are high. The underperformance is concentrated among firms that went public in the heavy volume years, and for younger firms. Indeed, for more established firms going public, and for those that went public in the light-volume years of the mid-and late-1970's, there is no long-run underperformance. IPOs that are not associated with venture capital financing, and those not associated with high-quality investment bankers, also tend to do especially poorly. (Ritter, 1998)

Three theories have been proposed to explain the phenomena of the long-run underperformance of IPOs (Ritter, 2000)
The Divergence of Opinion Hypothesis
One argument is that investors who are most optimistic about an IPO will be the buyers. If there is great deal of uncertainty about the value of an IPO, the valuations of optimistic investors will be much higher than those of pessimistic investors. As time goes and more information becomes available, the divergence of opinion between optimistic and pessimistic investors will narrow, and consequently, the market price will drop.

The Impresario Hypothesis
The “impresario” hypothesis argues that the market for IPOs is subject to fads and that IPOs are under priced by investment bankers (the impresarios) to create the appearance of excess demand, just as the promoter of a rock concert attempts to make it an “event.” This hypothesis predicts that companies with the highest initial returns should have the lowest subsequent returns.

The Windows of Opportunity Hypothesis
If there are periods when investors are especially optimistic about the growth potential of companies going public, the large cycles in volume may represent a response by firms attempting to “time” their IPOs to take advantage of these swings in investor sentiment. Of course, due to normal activity, one would expect to see some variation through time in the volume of IPOs.

The window of opportunity hypothesis predicts that firms going public in high volume periods are more likely to be overvalued than other IPOs. This has the testable implication that high-volume periods should be associated with the lowest long-run returns.

There are also variations in the methodology. One variation is in terms of the after-market period used in the calculation: the calculations of the extent of under pricing may be based on the first day returns, and on the first week returns and or the first month returns. Another variation is that in some studies, under pricing has been measured in terms of first day excess return and or first week excess returns and/or first month excess return.
Ibbotson (1975) examined 128-common stock IPOs issued over the period 1960-1969 and found the first month return from date of offering to be 11.4%. However when Fisher and McDonald (1972) examined 142 IPOs issued in 1969, they found the first week returns to be 28.5% and the first month returns to be 34.6%. 
CHAPTER THREE

RESEARCH METHODOLOGY.

3.0 INTRODUCTION

This chapter specifies the methods and procedures that have been employed in this research to guide the implementation of the study. The methodology is meant to ensure not only that data collection is carried out systematically, but also that the collected data meets the research objectives and fulfill the information-needs requirement.

3.1 RESEARCH DESIGN

This study is “conclusive” in nature. This is because a specific hypothesis has been conjectured, tested on the basis of available data, and conclusions drawn on the basis of “statistics”.

3.2 SELECTION & SAMPLING CRITERIA.

This research used a sample of four companies that issued IPOs between the years 1996 and 2000 through the NSE.

For an institution to be included in the sample it had to have fulfilled the following: should be listed at the NSE; issued IPO at one point between the year 1996 and 2000; and, its monthly trading prices were available from the first day it started trading for the next immediate three years after the issue (this is because three years is typically considered long-run enough in most studies that have been done on IPOs; for instance that of Espenlaub et al 2000).
3.3 DATA COLLECTION METHOD

This research has relied on secondary data that was obtained from the NSE and from the IPO prospectuses of the individual companies\(^2\) under study.

The information collected included issue date; offering price; trading prices during subsequent periods taken at monthly intervals; and the NSE index value during subsequent periods taken at monthly intervals.

3.4 DATA ANALYSIS & PRESENTATION.

The data obtained from relevant sources has been analyzed using the cumulative average abnormal return (CAAR) method, and a t-statistic computed for purposes of testing for its significance at 5% and 1% significance levels. The findings were then presented in summarized and organized form, using tables and graphs.

3.5 CHALLENGES ENCOUNTERED

The many challenges faced were the difficulties in obtaining all the required data at the Nairobi Stock Exchange. In particular, the raw secondary data needed to be obtained from disparate sources even within the NSE.

\(^2\) see Table II for the specific IPOs
CHAPTER FOUR

DATA ANALYSIS AND FINDINGS.

4.0 INTRODUCTION

In this chapter, the data obtained from relevant sources is analyzed and presented in summarized and organized form. The first section will deal with data analysis involving computation of returns on the individual stocks. A t-test has been used to measure significance at 5% and 1% levels.

4.1 DATA ANALYSIS

For the entire 36 month-period, monthly returns on each of the four stocks were computed as follows:

\[ R_{jt} = \frac{(P_{jt} - P_{j,t-1})}{P_{j,t-1}} \quad j = 1,2, \ldots, 4; \quad t = 1,2, \ldots, 36 \]

\( P_{j,t} \) for instance, represents the price of stock \( j \) one month after the IPO and \( P_{j,0} \) represents stock \( j \)'s initial offering price.

The monthly returns on the average market portfolio was proxied using monthly returns on the NSE index \( R_{mt} \) over the 36-month period as follows:

\[ R_{mt} = \frac{(M_t - M_{t-1})}{M_{t-1}} \quad t = 1,2, \ldots, 36. \]

where \( M_t = \) NSE index value at period \( t \)

This research applies the standard event-study and adopts the CAAR_T model as its benchmark.
Here the monthly abnormal returns were computed for up to 36 months after the IPO. We have defined abnormal returns as returns on the four stocks in “excess” of the market portfolio (proxied by the NSE index) To avoid any downward bias in returns caused by Jensen’s inequality, when averaging returns across portfolios, discrete as (opposed to logarithmic) returns were used throughout this paper. Jensen’s inequality states that,

$$f(E(x)) \neq E(f(x))$$

where $E$ is the expectations operator and $f(.)$ is a function of a (random) variable.

An excess return, $U_{jt}$ was then computed for each stock in each period as follows.

$$U_{jt} = R_{jt} - R_{mt} \quad j = 1, \ldots, 4; \; t = 1, 2, \ldots, 36$$

where, $R_{jt}$ = return on stock $j$ in period $t$

$R_{mt}$ = return on the stock market

This formula measures the extent to which the rate of return on a newly issued share exceeds the rate of return earned on the stock market as a whole. Of course any company-specific or industry-specific news, which emerges after trading begins, reduces the accuracy of these corrections for developments after the issue price is fixed, although over short periods such influences are likely to be small.

Given two sets of returns, the stock exchange index return was subtracted from the new stock return. The difference represents the change in price for the new listed stock from the base date. Once these differences were computed for all stocks in the sample they were then summed up and an average calculated (sample mean). That is the abnormal returns with respect to the benchmark were computed and cumulated over time up to period $T$ after the IPO, using the Cumulative Average Abnormal Returns (CAAR$_T$) measure.

Sample mean ($U_t$) has been calculated as:

$$U_t = \frac{1}{n} \sum_j U_{jt} \text{ or } CAAR_T = \sum_{t+1}^{T} \frac{1}{n} \sum_j U_{jt} \quad j = 1, \ldots, 4; \; t = 1, 2, \ldots, T, \text{ where } T_{max} = 36$$
The sample mean could be viewed as a performance index that reflect, the return in excess of the stock market return, on a shilling of investment dividend equally among new issues in the sample.

Loughran and Ritter (1995) point out that cross-sectional t-statistics assessing the significance of abnormal returns are likely to be overstated because the t-tests assume that contemporaneous observations are independent. To control for the likely presence of cross-correlation in returns, Loughran and Ritter (1995), adopt a method developed by Jaffe (1974) and Mandelker (1974), which involves calculating average returns of rolling, calendar-time portfolios of event stocks. This approach is generally recommended over the event-time approach. It is on this basis that the t-statistic is computed and tested.

4.2 HYPOTHESIS TESTING

The null Hypothesis, $H_0$, is:

$$H_0: \text{CAAR}_t = 0$$

The alternative hypothesis, $H_1$, is:

$$H_1: \text{CAAR}_t \neq 0$$

A t-statistic was used to test whether the "abnormal return" was significant. The t-statistic was computed based on Brown and Warner's (1980, p.251-2) Crude Dependence Adjustment test for the CAARs in order to correct for cross-sectional dependence,

$$t\text{-test} = \frac{\text{CAAR}_t}{\sqrt{\frac{(T/35) \sum_{t=1}^{T}((U_t - (1/36) \sum_{i=1}^{36} U_i))^2}} \quad t = 1, 2, \ldots, 36$$
4.3 RESULTS

For the four IPO issued during the period 1996-2000, cumulative average abnormal returns (CAARs) for the first to the thirty-sixth month after the listing are shown in Table I and Figure I. The results confirm the existence of a statistically insignificant long run under performance at both the 5% and 1% significance levels. Thus we are unable to reject the null hypothesis.

Although the results indicate the presence of positive abnormal returns in the “short run” and negative abnormal returns in the long run, these abnormal returns are of no statistical significance.
CHAPTER FIVE

CONCLUSION AND IMPLICATIONS

5.0 CONCLUSION

This research sought to examine the returns on IPO stocks issued through the Nairobi Stock Exchange in the period 1996-2000 and their long-run performance. The results have demonstrated that these new equities have, on average, under-performed by an insignificant (statistical) margin in the long run. This result was confirmed using both 5% and 1% levels of significance. The findings also indicate some positive, though insignificant returns, adjusted for market effects in the short-run following the offering. The “short-run” has for our purposes, been equated to one year. The conclusion, therefore, is that returns on the IPOs examined seem to have been characteristic of the market average, which is contrary to the widely held belief that in the long run, IPO’s tend to under-perform. One key implication of these findings is that the IPOs in question have not occasioned wealth re-distribution effects of significant magnitudes between the old and the new shareholders.

5.1 IMPLICATION OF THE STUDY

The findings of this study has the following implications:

i). The short run holdings were of some positive returns to the initial subscribers. The fact that IPOs show some positive but statistically insignificant abnormal returns over the short run, suggests that the offerings were not under priced.

ii). The positive short-run returns give a weak pointer to the fact that the four companies that went public incurred some costs in form of issuing shares at a discount. The discount is a
cost to the existing shareholders of issuing firms much as it is a return to the new investors. In addition to the direct cost of going public, there is the indirect cost of wealth redistribution in favor of the new shareholders but at the expense of the old shareholders.

iii). The agency and moral hazard considerations have been minimal for the case of the IPOs examined. According to Ibbotson et al (1994), the underwriter may be induced to under price an IPO to leave “a good taste in investors’ mouth” in order to capture buyers. Fulghieri and Spiegel (1991) hypothesize that underwriters also want to gain the goodwill of strategic clients, assigning them under priced shares. Baron and Holmstrom (1984) highlight that marketing expenses have a decreasing marginal return and it is less costly to convince investors to subscribe for under priced IPOs. Ritter (1986) claims that the under pricing is asked by investors, since they realize that after the IPO the controlling shareholders may extract private benefits from the firm.

iv). There should have been no serious worries about information asymmetry between the offering parties and the investors regarding the price and the level of stock demand for the Kenyan IPOs in question. Benveniste and Spindt (1989) argue that under pricing provides a means to induce informed investors to reveal private information about the demand for shares in the pre-selling phase. Chemmanur (1993) shows that the under pricing may also generate useful information for the firm in order to plan for future seasoned offerings (‘market feedback hypothesis’).

5.3 LIMITATIONS OF THIS STUDY

i) The returns on the stocks computed over the 36-month period following the IPO have been based only on capital gains. No account has been taken of any dividends received by shareholders. Dividends would, otherwise, enhance the performance of the IPOs both in the short and long runs.
ii). Computation of the abnormal returns has not been benchmarked on any asset-pricing model (such as CAPM) but rather on the market average return, (proxied by the NSE index). A demerit with this approach consists in its failure to take account of risk premia in the computation of abnormal returns.
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### TABLE I
Cumulative Average Abnormal Returns

<table>
<thead>
<tr>
<th>PERIOD</th>
<th>CAAR (%)</th>
<th>T-STATISTIC</th>
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</thead>
<tbody>
<tr>
<td>$T_3$</td>
<td>0.1500</td>
<td>0.3476</td>
</tr>
<tr>
<td>$T_6$</td>
<td>0.0789</td>
<td>0.2034</td>
</tr>
<tr>
<td>$T_{12}$</td>
<td>-0.0072</td>
<td>-0.0413</td>
</tr>
<tr>
<td>$T_{18}$</td>
<td>-0.0782</td>
<td>-0.1112</td>
</tr>
<tr>
<td>$T_{24}$</td>
<td>-0.1110</td>
<td>0.01270</td>
</tr>
<tr>
<td>$T_{30}$</td>
<td>-0.1201</td>
<td>-0.1253</td>
</tr>
<tr>
<td>$T_{36}$</td>
<td>-0.1113</td>
<td>-0.01142</td>
</tr>
</tbody>
</table>
## TABLE II

List Of Companies Included In The Sample And Their Dates Of Listing

<table>
<thead>
<tr>
<th>NAME OF COMPANY</th>
<th>DATE OF LISTING</th>
<th>OFFERING PRICE (Kshs.)</th>
<th>INDEX VALUE ON THE DATE OF LISTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arthi River Mining (ARM)</td>
<td>15&lt;sup&gt;th&lt;/sup&gt; Aug 1997</td>
<td>12.25</td>
<td>3425.22</td>
</tr>
<tr>
<td>Rea Vipingo</td>
<td>17&lt;sup&gt;th&lt;/sup&gt; April 1996</td>
<td>10.50</td>
<td>2897.43</td>
</tr>
<tr>
<td>TPS (Serena)</td>
<td>12&lt;sup&gt;th&lt;/sup&gt; May 1997</td>
<td>13.00</td>
<td>3363.39</td>
</tr>
<tr>
<td>Kenya Airways (KQ)</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; June 1996</td>
<td>11.25</td>
<td>3021.80</td>
</tr>
</tbody>
</table>