PERFORMANCE OF INITIAL PUBLIC OFFERINGS: THE EVIDENCE FROM NAIROBI STOCK EXCHANGE

BY

ETIENNE NDATIMANA

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DECLARATION

This management research project is my original work and has not been submitted for a degree in any other university.

Signed: _____ Date: _____

ETIENNE NDATIMANA

This project has been submitted for examination with my approval as the University Supervisor.

Signed: _____ Date: 21-11-08

LISIOLO LISHENGA,
Lecturer, School of Business
University of Nairobi

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DEDICATION

This work is dedicated to the founders and members of *Stichting Vrienden Van Rwanda*, my sponsor organization, for their commitment and support to the education of Rwandans, thus making the greatest initial investment for securing a purposeful and constructive future for the beneficiaries like myself, the country, and the world.

TABLE OF CONTENTS

LIST OF ACRONYMS

AMEX	American Exchange
ARM	Athi River Mining Ltd
CAAR	Cumulative Average Abnormal Returns
CMA	Capital Market Authority
CMC	CMC Holdings Ltd
CRSP	Center for Research in Share Pricing
CSRC	China Securities Regulatory Commission
EPS	Earnings Per Share
HFCK	Housing Finance Corporation of Kenya
KCB	Kenya Commercial Bank
KES	Kenya Shilling
KFC	Kenya Finance Company
KQ	Kenya Airways
Kshs	Kenya Shillings
LTD	Limited Liability
MAAR	Market Adjusted Abnormal Returns
MABHR	Market Adjusted Buy and Hold Returns
NBK	National Bank of Kenya
NIC	National Industrial Credit Bank
NSE	Nairobi Stock Exchange
NYSE	New York Stock Exchange
OFS	Offer For Sale
P/E	Price per Earnings Ratio
SEC	Security Exchange Commission
SEO	Seasoned Equity Offer
TPS	Tourism Promotion Services
UK	United Kingdom
USA	United States of America
WR	Wealth Relatives

LIST OF TABLES

ABSTRACT

Numerous studies have documented three anomalies in the pricing of initial public offerings (IPOs) of common stock: (1) the (short-run) under pricing phenomenon, (2) the "hot issue" market phenomenon and, (3) the long run underperformance of IPOs. Hitherto, evidence from the NSE regarding these anomalies has been scanty and inconclusive. This project contributes to IPO literature, by adducing evidence on two of the three anomalies. We document evidence supporting the unequivocal under pricing of IPOs at the NSE as compared to the closing first day trading price of the IPOs. Regarding the second anomaly, e.g. the long run underperformance, support is mixed: there is evidence that IPOs under perform the market on their third anniversary; this underperformance, however, dissipates so that by the fifth anniversary the IPOs are doing just as well as ,if not better than, the market benchmark.

CHAPTER 1: INTRODUCTION

1.1 Background

Most companies start out as family owned business or by raising equity capital from a small number of investors, with no liquid market existing if these investors wish to sell their stocks while others start as state corporations. If a company prospers and needs additional equity capital, at some point the firm generally finds it desirable to "go public" by selling stocks to a large number of diversified investors. Once the stock is publicly traded, this enhanced liquidity allows the company to raise capital on more favourable terms than if it had to compensate investors for the lack of liquidity associated with a privately held company (Ritter 1998).

Pagano et al (1998) observed that the decision to go public is one of the most important and least studied questions in corporate finance. Most corporate finance textbooks limit themselves to describing the institutional aspects of this decision providing only a few remarks on its introduction. Pagano further states that the conventional wisdom is that going public is simply a stage of growth of a company. In developed countries like in Germany and Italy, publicly traded companies are the exceptions rather than the rule, and quite a few private companies are much larger than the publicly traded companies.

The "practical guide to listing on Nairobi Stock Exchange (NSE)" states that companies get listed primary to :1) raise funds for expansion and growth without interest burden of funds borrowed from lending institutions, 2) To improve the liquidity of their securities and, 3). To increase public awareness about the company and its products. Securities may be brought to listing by way of first, initial public offering (IPO) – where the public at large is invited to subscribe by way of offer for sale (OFS) which can be fixed price or by tendering, secondly, introduction to provide a market for existing shareholders and lastly, private placement – shares are placed for sale to identified investors.

In the long-run IPOs are associated with poor stock performance measured from the market price at the end of the first day of trading. The international evidence on the long-run performance of IPOs is summarized in Table 2 (Ritter 1998). The long run is typically defined to be in the region of three years and above. Jumba (2002) indicated that in the long run the average daily return for a sample of nine IPOs of common stock in 1992 -2000 was 0.06% in the three years after going public, while a market model of the NSE index constituent companies produced a daily average return of 0.3% over the same period. The average of all cumulative IPO returns and cumulative market return three years after seasoning was 44% and 272.4% respectively.

This concurs with Ritter (1991) who examined 1,526 USA firms which went public between 1975 and 1984 and found that the average return on a firm's stock over the three years following its IPO was significantly lower than the average on firms matched by size and industry. Ritter suggested that over optimism on part of investors is the most likely explanation for long-run underperformance, contending that investors in the IPO market are systematically fooled into paying too high price. Jain and Kini (1994) found that, in general, firms undergo a decline in operating performance following IPO. They provide further evidence that investors value IPOs based on expectation that earnings growth will continue, when in fact earnings deteriorate. This is consistent with the view in Ritter (1991) and Loughran and Ritter (1995) that investors are overoptimistic at the time of the IPO.

Brav and Gompers (1997) challenge the view that IPO firms underperform in the long run. They provide evidence that underperformance is typical of small firms with low book –to – market ratios and find that when returns are weighted equally, firms backed by venture capitalists outperforming IPOs is concentrated in small, non-venture backed firms. As these firms are more likely to underperform regardless of whether they are IPOs firms or not. Brav and Gompers conclude that underperformance is not an IPO effect.

While there has been a growing empirical literature examining performance of IPOs for countries outside the USA in recent years, most studies still analyze US data. The typical patterns documented in these studies are initial underpricing and long run underperformance

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of IPOs. For example, using USA data from 1980 to 2001. Welch and Ritter (2002) report that, at the end of the first day of trading, IPOs traded at 18.6% (on average) above the price at which the company sold them.

Nevertheless, over years the average IPO underperformed the Center for Research in Share Pricing (CRSP) value weighted index by 23.4%. IPO underpricing is not restricted to the United States, for example Levis (1993) show that IPOs in the United Kingdom (UK) underperformed relevant benchmarks for 36 months after their first day of trading. In contrast, Kiymaz (1999) reports that Turkish IPOs substantially outperform the market in the three years following the first day of trading, while Lee (1993) reported superior IPO performance for Korea based on three year wealth relative for firms going public from 1988 to 1990. Chun et al (2002) while reexamining Lee (1993) claim with a larger number of firms (325 IPOs) over a longer time period (1986 to 1995) reported that Korean IPOs outperformed the stock market with the divergence widening over time in contrast to patterns observed in developed markets.

The Kenyan stock market is developing although it remains relatively small compared to developed market like New York Stock Exchange (NYSE). American Stock Exchange (AMEX), NASDAQ, and Tokyo Stock Exchange. The Nairobi Stock Exchange was constituted in 1954 to help finance companies and provide a market for their securities. To date 58 companies in a wide range of industries have listed their shares. In addition, NSE lists also corporate and treasury bonds, preference shares and debentures. With a market capitalization of about Kshs 473 billion as at February 2005, it is one of the largest exchanges in East and Central Africa region. The NSE has 48 quoted companies currently. 10 firms having been de-listed over time. Recently a number of companies including Scangroup, Access Kenya, Kenya Reinsurance, KenGen, Equity Bank, and Safaricom have been listed.

1.2 Statement of the Research Problem

Companies raise external capital by selling a range of different securities, which they market in a variety of ways. According to Smith (1986), capital markets provide an avenue for these transfers and signals for corporate investment decisions.

Examination of the return behavior of initial public equity offerings from offer price to after market price indicates that the average issue is offered at a significant discount from the price expected in the after market. However, after market returns in the United States appears to be normal (Ibbotson (1975), and Ritter (1984, 1985).

Ritter (1991), Loughran and Ritter (1995) adduce US evidence to the effect that IPOs underperform similar companies in the long run. They also found that a similar pattern exists for firms making seasoned equity offerings (SEOs), and hence they label this wider phenomenon the "new issues puzzle".

In measuring long-run performance of IPOs, researchers in developed capital markets prefer market adjusted buy and hold returns (MABHR) model to CAAR. Conrad and Kaul (1993) showed that cumulative adjusted abnormal returns are biased because they not only process true returns but also have an upward bias in a single period returns induced by errors in measurement. In contrast MABHRs do not suffer from this bias. Moreover CAAR implicitly assume frequent and thus costly portfolio rebalancing. Barber and Lyon (1997) also argued that the abnormal returns should be calculated as the simple buy and hold return on the sample firm less the simple buy and hold return on the benchmark.

This research focused on IPOs equity issues by companies in Kenya. The aim of this study was to examine the underpricing, and the long run underperformance phenomena of IPOs at the Nairobi Stock Exchange. Jumba (2002) also dealt with these issues, but this study intended to improve on the other by employing a bigger sample and using statistically more robust methods.

Specifically this study differed as follows: First, while Jumba used cumulative adjusted abnormal return (CAAR) model in calculating long run performance of IPOs, this study employed the market adjusted buy and hold returns (MABHR), which is more appropriate for emerging markets which are plagued with thin trading. Secondly, this study used a bigger sample of 15, and covering a wider period 1992-2007: in contrast, Jumba used a sample of 9 IPOs issued between 1992 and 2000. Finally, the current study observed long run performance over a five year period while Jumba observed performance of IPOs over a three year period after issue. Five years window period has been chosen based upon the evidence in Loughran (1993) who, while examining 3,656 NASDAQ listed IPOs from 1967 to 1988, reported that IPOs underperforms for approximately five years.

1.3 Objectives of the Study

a) To ascertain whether IPOs at the NSE exhibit the initial underpricing phenomenon.

b) To evaluate the long-run performance of IPOs in Kenya.

1.4 Significance of the Study

1) To the academic community, this study will provide a body of knowledge regarding first day returns and long-run performance of IPOs in Kenya.

2) To the regulatory authority, namely Capital Market Authority and Nairobi Stock Exchange, it will provide insight on how IPOs perform in Kenya.

3) To brokers and underwriters, the study will provide insight on the performance of IPOs in Kenyan security market.

4) Confidence is only available to those market participants who have access to all the relevant information. By educating investors on IPOs their confidence will be boosted and be able to make rational decision of their investing in primary or secondary markets.

CHAPTER 2: LITERATURE REVIEW

The financial theory has been uncovering an IPO pattern where the initial abnormal returns are positive and long-run abnormal returns are negative. Ibbotson (1975) with a small and non-normal distributed sample of USA IPOs, concluded that, on average the IPO abnormal return until the end of the first trading month was +11.4%. At the end of one year, the average monthly abnormal return was 2.4%. In the long term, however he did not find statistically strong support to reject the hypothesis of an efficient market.

Later, Ritter (1991) showed evidences that IPO issuers underperform other non-issuers in the same economic sector with equal market value, in the long term. The author concludes that timing for placing an IPO is not a random, being chosen the most adequate moment for the market. Loughran and Ritter (1995) compared two portfolios of IPO issuers and non-issuers through the process, which Ritter (1991) called wealth relatives defined as the ratio between the buy and hold IPO portfolio returns, and a buy and hold non-issuers portfolio returns for the same time period. In a study with one-year data after the IPO event, they estimated the wealth relatives as 0.9, which means a negative abnormal return. When replacing the non-issuers portfolio by the Standard and Poor's 500 index the conclusions did not change. Even using a five year period, abnormal returns remained negative with higher systematic risk than non-issuers portfolio.

Using a sample of 1,011 USA firms, which went public between 1994 and 1995, Thomas (2000) found that these firms significantly underperform the market in the three years following their IPO. He concluded that, Underwriter reputation, first-day returns, the market return prior to the offering and venture capital ownership have statistically and economically significant relationship with long run returns.

While, Wolfgang et al. (2003) examined the underpricing and long-term performance of Swiss IPOs from 1983 to 2000 and reported an average market adjusted initial return of

34.9%, and using buy and hold abnormal returns as well as skewness adjusted wealth ratio to measure long-term performance of Swiss IPOs, they did not find a strong continuous

underperformance of Swiss IPOs in the aftermarket, this is in contrast to previous findings for USA by Welch and Ritter (2002).

Chun et al. (2002) observed that emerging stock markets play an increasingly important role in developing countries, but have received less attention in the literature than banking sector and the bond market. Moreover, most studies of emerging stock markets that have been undertaken have focused on the secondary market. In Kenya, The Daily Nation's Business magazine "Smart Company" of 6th September 2005 reported that the Treasury wanted to offload 30 per cent of its shareholding in KenGen through the NSE. The target is to raise Ksh 10 billion through an IPO, the biggest ever in Kenya's corporate history. The main challenge is pricing the issue to attract as many retail investors as possible and also have a healthy mix of institution investors. Though the company has been profitable, the trend faces down. The KenGen managing director was reported to have already reformed the board to fulfill the stringiest requirements of a public company and started preparing employees to transition from a state corporation to a commercial business. For the IPOs, a team of brokers had been picked to handle the transaction by specializing in retail and institution markets. From the above it's apparent that decision to go public has both benefits and costs.

2.1 Relevant Costs and Benefits in Going Public

Pagano et al. (1998) observed that there are both relevant costs and benefits in a decision to go public these are:

2.1.1 Relevant costs

The costs of going public include, Adverse Selection: in general, investors are less informed than the issuers about the true value of the companies going public. This informational asymmetry adversely affects the average quality of the companies seeking a new listing and thus the price at which their shares can be sold and also determines the magnitude of the underpricing needed to sell them. Chun et al. (2002) observed that, small and newer companies are less well known to investors, this information asymmetry adversely affects the average quality of companies seeking to go public and thus their potential share price. As a result, IPO probability would be positively correlated with firm size.

Secondly, Administrative Expenses and Fees: going public implies considerable direct costs such as underwriting fee, registration fee, auditing, certification and dissemination of accounting information, and stock exchange fees. Chun et al (2002) noted that, in the USA, IPO costs are typically 7% of gross proceeds, in Italy about 3.5% and 3% in Korea.

Lastly, Loss of Confidentiality – Pagano et al. (1998) pointed out that loss of confidentiality is a deterrent from getting funding in public markets, as disclosure rules of stock exchange forces companies to unveil information whose secret may be crucial for their competitive advantage such as data on ongoing research and development (R&D) projects or future marketing strategies. This also exposes such companies to closer scrutiny by tax authorities reducing their scope for tax elusion and evasion.

2.1.2 The Benefits of Going Public

The benefits of going public includes, overcoming borrowing constraints: gaining access to a source of finance alternative to banks is a benefit mostly cited for going public. The opportunity to tap public markets for funds is particularly appealing for companies with large current and future investment, high leverage and high growth. Secondly, greater bargaining power with banks: Pagano et al (1998) highlighted that by gaining access to the stock market and disseminating information to the generality of investors, a company elicits outside competition to its lender and ensures a lower costs of credit, a larger supply of external finance or both.

Thirdly, liquidity and portfolio diversification: the decision to go public affects the liquidity of a company's stock as well as the scope for diversification by the initial holders of the company. While shares of private companies will be traded only at considerable cost for the initiating party, shares traded on an organized exchange is cheaper and traded at short notice. As a result, if the initial owners raise money from dispersed investors, they factor in the liquidity benefit provided by being listed on an exchange. Fourthly, monitoring: the stock market provides a managerial discipline device, both by creating the danger of hostile takeovers and by exposing the market's assessment of managerial decisions. Moreover,

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shareholders of a public company can use information embodied in stock prices to design more efficient compensation plan for managers.

Others are, investor recognition: by being listed on a major exchange the existence of a security is brought to the attention of potential investors. Change of control: by going public, the initial owner can change the proportion of cash flow rights and control rights which he will retain when he bargains with a potential buyer. He uses the IPO as a step to achieve the structure of ownership in the company that will maximize his total proceeds from its eventual sale. Window of opportunity: Ritter (1992) states that in periods in which stocks are mispriced, companies in the same industry recognizes this overvaluation and have incentive to go public to exploit this.

2.2 Security Offering by Public Corporations

Smith (1986) states that after a firm has decided on the security to issue, it must choose the method to market it. It can offer the securities on a pro-rata basis to its own shareholders through a right offering for example Uchumi supermarkets in October 2005. It can hire an underwriter to offer the securities for sale to the public; or it can place the securities privately.

The most frequently employed methods by which public corporations market new securities are right offering and firm commitment –underwritten offering. In an underwritten offering, initial negotiation focuses on the amount of capital, the type of security and the terms of the offering. In rights offering, each shareholder received options to buy newly issued securities. One right is issued per each share held. The contract states the number of rights required to purchase one unit of newly issued security, the exercise price and the expiration date.

Privately owned companies face two major alternatives to remain private or to become a public corporation. Smith (1986) calls initial public equity offerings a special case of security offering as,

i) The uncertainty about the market-clearing price of the offering is significantly greater than for public corporations with claims currently trading.

ii) Because the firm has no traded shares, examination of stock price reaction to announcements is impossible.

2.3 IPO Underpricing

Ritter (1985) examined the return behavior of initial public equity offering from offer price to after market indicating that the average issue is offered at a significant discount from the price in the after market. The focus here is on the asymmetry of information between informed and uninformed potential security holder. In an offering there is uncertainty about the market clearing prices. If the offer prices are set at their expected market clearing price, uninformed investor systematically earn below normal returns. If an issue is underpriced, informed investors also submit bids and the issue is rationed, and if the issue is overpriced informed investors are less likely to submit bids and the issue is more likely to be undersubscribed. Hence, uninformed investors systematically receive more of overpriced issues and less of underpriced issues. Uninformed investors anticipate this adverse selection and bid only if the offer price is below their expected after market price by enough to compensate for their expected losses on overpriced issues.

Ritter (1997) noted that the new issue-underpricing phenomenon exists in every nation with a stock market although the amount of underpricing varies from country to country. Loughran and Ritter (2005) observed that in the 1980's the average first day returns on IPOs were 7%. The average first day return doubled to almost 15% during 1990-1998, before jumping to 65% during the Internet bubble years of 1999-2000 and then reverting to 12% 2001-2003. Appendix II gives average initial return for 38 countries.

2.4 Money Left on the Table

Ritter (2004) defines the amount of money left on the table as the difference between the closing price on the first day and the offer price, multiplied by the number of shares sold. In other words, this is the first day profit received by investors who were allocated shares at the

offer price. It represents a wealth transfer from the shareholders of the issuing firm to these investors.

The dollar amount of underpricing per share, multiplied by the number of shares offered, is referred to as the amount of money "left on the table". The offering price for an IPO has important implication for the outcome of that offering. If the offer price is too high, sufficient buyer interest will not materialize and the offering will fail. If set low the offering will be over subscribed which implies the firm is leaving "cash on the table" that it could have collected if it had offered for a higher price and secondly the development of administrative scheme to allocate shares in effect is distributing surplus value from the offering.

For instance Kenya Airways (KQ) IPO closed on April 19th, 1996 with an over subscription level of 94% of the 235 million shares offered at Ksh 11.25 per share. On the first day trade KQ shares closed the day at Ksh. 13.90, thus they left Ksh 623 million {(13.90-11.25)*235} on the table. If the same number of shares could have been offered at Ksh 13.90 instead of Ksh 11.25 pre-issue shareholders would have been better off by Ksh 623 million, instead the wealth of those who were allocated shares at the offer price increased by this amount. Table 1 shows amount of money left on the table by firms that issued IPO in the USA over a period of time.

Table 1: money left on the table (US evidence)			
Year	Number of IPOs	Average first-day return	Aggregate amount left on the table
1990	89	9.50%	$3 billion
1991	250	11.40%	$1.39 billion
1992	338	9.90%	$ 1.65 billion
1993	437	11.60%	$3.12 billion
1994	319	8.60%	$1.37 billion
1995	366	20.40%	$4.16 billion
1996	570	16%	$6.43 billion
1997	389	13.80%	$4.21 billion
1998	266	21.80%	$4.93 billion
1999	463	70.30%	$35.93 billion

2.5 Reasons for New Issue Underpricing

Ritter (1997) advances a number of reasons for the new issues underpricing phenomenon, with different theories focusing on various aspects of the relations between investors, issuers and the investment bankers taking the firm public. This is explained by the following theories/hypothesis.

2.5.1 The Winner's Curse Hypothesis

Because of information asymmetry, when an issue is underpriced, some investors attempts to buy more shares leading to excess demand as a result of which 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. Such investors (facing winners curse) get all the shares, which they ask for, only because the informed investors don't want the shares. Faced with this adverse selection problem, the less informed investors will only submit purchase orders if, on average IPOs are underpriced sufficiently to compensate them for the bias in the allocation of new issues.

2.5.2 The bandwagon Hypothesis

Welch (1992) reports that investors take into account previous buying decisions from other investors in the IPO process. If investors' decisions are sequential, latter investors behave according to previous investment decision. To avoid initial lack of interest in the IPO, which can affect subsequent investment decisions, the issuer undervalues, it. This should capture an important first "Wave" of investors who will attract others, creating the effect of a cascade.

2.5.3 The Investment Banker's Monopsony Power Hypothesis

This hypothesis holds that investment bankers take advantage of their superior knowledge of the market conditions to underprice offerings. This permits them to expend less marketing effort and ingratiate themselves with buy-side clients. They thus price the shares to compensate the clients.

2.5.4 The Lawsuit avoidance Hypothesis

This hypothesis theorizes that under pricing reduces the incidence of litigation. Aggrieved parties are most likely to sue if the issue is overpriced than otherwise. Since the law makes all participants in the offer who sign the prospectus liable for any material omissions, one way of reducing the frequency and severity of future lawsuits is to underprice.

2.5.5 The Signaling Hypothesis

Implies the issuer's management has a high value reference for the company. In order to signal this value over time, they underprice the IPO. Usually, in the long term, the issuer does a seasoned equity offering to recover the initial underprice.

2.5.6 The Market Incompleteness Hypothesis

The hypothesis holds that markets being incomplete should punish new issues rather than listed companies. Thus, investors ask a premium (the initial return) for holding IPO stock instead of listed stocks; hence the underpricing.

2.6 IPO Process

The process of making an initial public offering of securities in the United States is a long, complicated and costly affair, and many proposed offerings are delayed or withdrawn before the offering date. The process typically takes four to six months and generally costs the firm over 20% of the market value of the securities issued (Ritter 1987). Furthermore, firms must follow a strict set of regulations and provide detailed information about their finances and strategy before their equity is ever traded on a public exchange. Studying IPO process in the US is important, as it is the most developed security market and emerging market such as Kenyan uses US as the benchmark.

In the US, firms begin the process by retaining one or more underwriters. Typically, the underwriter receive a percentage of the gross proceeds from the offering (the gross spread), as well as an over allotment option permitting them to sell an additional percentage (usually 15%) of offering. In exchange, the underwriters conduct the diligence on the firms on behalf of Investors, assist in the preparation of the necessary regulatory documents, manage the marketing and pricing of the stock and support the price after the initial offering (Ritter 1987).

Firms seeking to go public in the US must file a number of documents, including prospectus with SEC, which regulates the securities industry and financial market in the US. The prospectus details the firm's financial situation: its ownership structure and its intended plan for the capital raised in the offering. On the day prior to offering date, the firm will meet with the lead underwriter to decide on an offering price and the number of shares to be sold. The next day, the underwriting syndicate will distribute the shares and the stock will begin trading on an exchange. In almost all offering some or all of the existing shareholders of a firm agree not to sell their shares for a certain period following the offering, ensuring an orderly supply of shares to the market. This "lock-up" period generally last 180 days. Though longer (or shorter) period are possible (Ritter 1987).

In china, the China securities regulatory commissions (CSRC) determine an annual quota of new shares to be issued each year. The quota is allocated among the provinces and state-

industrial commissions according to criteria that support regional or industrial development goals, in consideration of the balance among provinces and industries. Rights issues and seasoned equity offering (SEOs) also need permission from the CSRC.

Until 2000, most offering prices were calculated according to a formula set by the CSRC, which uses earning per share (EPS) and the P/E ratio. The CSRC also takes charge of the timing of IPOs according to the market situation and capacity.

2.7 IPO Process in Kenya

In Kenya securities may be brought to listing by way of:

1) Initial public offering – where the public at large is invited to subscribe
2) Introduction – to provide a market for existing shareholders and
3) Private placement – shares are placed for sale to identified investors.

According to NSE practical guide, a prospective issuer need to budget to spend between 5 and 10 percent of the value of securities to be listed with the primary costs being publicity and printing but all such expenses are tax deductible.

There are both regulatory and market environment requirements to be listed in NSE. Regulatory requirements includes: First, the company must be incorporated or registered under the companies Act, secondly, availability and reliability of financial records, with no qualification of the auditors report. Third, the Company's, management, shareholding and core business must remain substantially the same. Fourth, securities must be freely transferable and not subject to any restriction on marketability or pre-emption rights. Other requirements are; the company must undertake to comply with the rules of the market, only one class of voting shares which are the shares listed on the exchange must have their information memoranda or prospectus approved by the CMA. Only fully paid shares can be listed and lastly the company must not be in breach of its loan covenants.

The market expects the issuer to; i) make consistent profits, ii) have a viable and realistic business plan, iii) a wide range and depth of qualification and experience in the management team and the board, iv) transparency in ownership and activities and v) issuers must also take

into consideration the issues of timing and market sentiments. Appendix III gives the NSE listing process.

2.8 VALUING IPOs

Ritter (1998) states that, in principal, valuing IPOs is no different from valuing other stocks. The common approach of discounting cash flow (DCF) analysis and comparable firms' analysis can be used. In practice, because many IPO's are of young growth firms in high technology industries; historical accounting information is of limited use in projecting future profits or cash flows. Thus a preliminary valuation may rely heavily on how the market is valuing comparable firms. In some cases, publicly traded firms in the same line of business are easy to find. In other cases, it may be difficult to find publicly –traded "pure plays" to use for valuation purposes.

In USA when book building is adopted the final valuation of the firm going public typically occurs at a pricing meeting the morning a firm is expected to receive SEC clearance to go public. Ritter (1998) described book building as where the lead investment banker canvasses potential buyers and records who is interested in buying how much at what price. In other words, a demand curve is constructed; the offering is then priced based upon this information.

In Kenya, in his budget speech on 8th June 2005, the finance minister stated that with the passing of Privatization Bill 2005 that "had been in Parliament waiting tray for nearly three (3) years" a large number of public enterprises in finance, telecommunication, infrastructure and energy sectors were set for privatization under the new legal framework. The targets being Kenya Railways Corporation, Consolidated bank, Housing Finance, National Bank, Telkom, Kengen and Kenya-Re, the Bill provides for employment of independent valuers to ascertain the worth of every public asset to be privatized, this will prevent asset stripping, under valuation and outright grabbing of public property.

While the bill identifies methods of privatization, as consisting of concession, leases management contracts, negotiated asset sales and liquidation, the weekly financial standard

of 23rd August, 2005, reported that public offerings at the NSE appears to be the favourable means. This provision is in line with a key objective of the divestiture, which is to broaden the base of ownership of the national economy by the Kenyan public.

Important factors in valuing a company, is the sector of the economy it belongs, its past performance, management record, growth potential and strategic plan. The pricing could also be based on peer comparison for instance; KenGen will be compared to a similar utility company operating in a similar environment in another part of the continent.

The value of a firm yet to be privatized is subject of the considerable uncertainty. Government bureaucrats and private consultants are a poor substitute for capital market in determining the market price for shares.

2.9 "Hot Issue" Market

The periods of high average initial returns and rising volume are known as "hot issue" markets. It has been noted that high initial returns tend to be followed by rising IPO volume. Both Ritter (1991) and Loughran and Ritter (1995) find that underperformance of IPOs is particularly severe for firms which went public during periods of heavy issuance "hot market". They interpret this as being consistent with view that firms time their IPOs to coincide with "windows of opportunity" periods when their market valuation is highest. Lerner (1994) provides further evidence of the "windows of opportunity" hypothesis, finding that venture capitalists time IPOs to coincide with a firm's peak market valuation.

2.10 Long-Run Performance

There are several reasons why the long-run performance of IPOs is of interest. First, from an investor's viewpoint, the existence of price patterns may present opportunities for active trading strategies to produce superior returns. For instance if the pattern for IPO is that they underperform an investor may opt to invest only in secondary markets and vice versa. Secondly. A finding of nonzero aftermarket performance calls into question the informational efficiency of the IPO market. Thirdly, the volume of IPOs displays large variations over

time. If the high volume periods were associated with poor long-run performance, this would indicate that issuers are successfully timing new issues to take advantage of "window of opportunity". Fourth, if the cost of external equity capital for companies going public depends not only upon transaction costs incurred in going public but also upon the returns that investors receive in the aftermarket. To the degree that low returns are earned in the aftermarket, the cost of external equity capital is lowered for these firms.

The financial theory has been uncovered an IPO pattern where the initial abnormal returns are positive and the long-run abnormal returns are negative. Ibbotson (1975) reported a negative relation between initial returns at the IPO and long-run share price performance for a sample of USA IPOs issued during the period 1960-69. He reported that there was a general positive performance in the first year, negative performance in the next three years and a general positive performance in the fifth year. Ritter (1991) analyzed the performance of USA IPOs issued between 1975-84 and reported that they underperformed the benchmark (NASDAQ and AMEX) by about 29% in the three-year period after the launch. Kim et al (1995) in Korea and Loughran et al (1994) in Sweden reported IPOs out performing the markets by 91.6% and 1.2% respectively.

Ritter (1998) measuring from the market price at the end of the first day of trading, observed that companies which went public during 1970-93 produced an average return of 7.9% per year for the five years after the offering, using the first closing market price as the purchase price. A control group of non-issuing firms, matched by market capitalization, produced average annual return of 13.1%. Thus, IPO's underperformed by 5.2% per year in the five years after going public. He observed that underperformance is concentrated among firms that went public in the heavy volume years and for younger firms. For more established firms going public and for those that went public in light-volume years there was no long-run underperformance.

The international evidence on long-run performance of new issues is summarized in the table below;

Table 2: International Evidence of Long				
Country	Author [s]	Number of IPOs	Issuing years	Total abnormal return
Australia	Lee, Taylor & Walter	266	1976-89	-46.5%
Austria	Aussenegg	57	1965-93	-27.3%
Brazil	Aggarwal et al	62	1980-90	-47.9%
Canada	Jog & Srivistava	216	1972-93	-17.9%
Chile	Aggarwal et al	28	1982-90	-23.7%
Finland	Keloharju	79	1984-89	-21.1%
Germany	Ljungqvist	145	1970-90	-12.1%
Japan	Cai & Wei	172	1971-90	-27.0%
Korea	Kim, Krinsky & Lee	99	1985-88	+2.0%
Singapore	Hin & Mahmood	45	1976-84	-9.2%
Sweden	Loughran & Litter	162	1980-90	+1.2%
U.K	Levis	712	1980-88	-8.1%
U.S.A	Loughran & Ritter	4753	1970-90	-20.0%

Source: initial public offerings by Ritter J.R [springs 1998]

Three theories have been proposed to explain the phenomena of the long run underperformance of IPOs. These are;

2.10.1. The Divergence of opinion hypothesis:

Miller (1977) argued that investors who are most optimistic about an IPO would be the buyers. If there is a 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 on and more information becomes available, the divergence of opinion between optimistic and pessimistic investors will narrow and consequently, the market price will drop.

2.10.2. The Impresario hypothesis:

Shiller (1990) argued that the market for IPO is subject to fads and that IPOs are underpriced by investment bankers [the impresarios] to create the appearance of excess demand, just as the promoter of a rock concert to make it an "event". This hypothesis predicts that companies with the highest initial returns should have the lowest subsequent returns. Shiller supports the idea of financial firms creating an initial and apparent demand surplus. In the long-run the market would correct the price. Issuers have no second chance because financial firms, which do not underprice, would be out of business..

2.10.3. The window of opportunity hypothesis:

Ritter (1991) argued that, 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. And lastly, the windows of opportunity hypothesis predict that firms going public in high volume periods are more likely to be overvalued than other IPOs. This has the testable implication that the high volume periods should be associated with the lowest long-run returns.

In Kenya, Apaka (1998) examined the difference in the pricing behavior of primary and secondary offerings of common stock occurring at the NSE 1980-1997, he confirmed existence of underpricing but found no conclusive evidence to support the proposition that the extent of underpricing was the same for both primary and secondary types of offerings, Jumba (2000), found that in Kenya IPOs in the short-run earned high initial returns to the market return. That the period of issue was important as stocks which were issued when the market index was high registered higher initial return on the closing day of the first day of trading "hot periods" within the market. That in the long run, though IPOs registered a positive return they underperformed the market. Jumba concluded that investors are better off buying in the pre-market and disposing off the stocks in the secondary market in the initial days of trading rather than buying in the after market and holding the stocks for a three-year period.

2.11 Summary of Literature Review

The literature reviewed reveals various anomalies in IPO pricing. The three observed anomalies inconsistent with Efficient Markets Hypothesis are; IPO first day abnormal returns, IPO long term underperformance and, hot issues market. While the last regularity is not capable of being tested in Kenya (due to the relatively small number of IPOs) the first two can. The current study will use suitable methods to achieve the first objective on the existence of positive initial returns, and the second objective on the existence of the long term underperformance of IPOs at the NSE.

CHAPTER3: RESEARCH METHODOLOGY

3.1 Research Design

This is an analytical study designed to test whether or not some IPOs regularities observed in many developed markets exist at the NSE. Specifically, the study examined the short term IPO underpricing, and long term underperformance of IPOs.

3.2 Population and Sample of Study

The population of study was all companies listed in the Nairobi Stock Exchange. There are 48 listed companies as at February 2006 (Appendix IV). From the companies that are listed in the Nairobi Stock Exchange the companies that issued IPO were studied. The sample included all companies that went public between 1990-2008 whether they are currently listed or not. Appendix III gives a list of the companies.

3.3 Data and Data Collection

Data to be used in this study are secondary. Specifically stock process for the companies will be collected for period under study. This is the offer price and after market prices as recorded in the NSE daily stock prices database. The prospectus of issuing firms will provide vital information on the offer price and number of shares offered and background information on these firms.

3.4 Data Analysis

3.4.1. Objective One

3.4.1.1. Market Adjusted Abnormal Return (MAAR)

To evaluate the existence of IPO underpricing phenomenon at the Nairobi Stock Exchange (NSE) i.e. whether underpriced or overpriced, percentage change from offer prices to after market prices was calculated for each "new" company.

To examine the amount of underpricing or overpricing, we computed the market adjusted abnormal return [MAAR] on the first trading day for each firm in the sample using the corresponding NSE 20 share index as a bench mark and employing methodology used by Aggarawal et al [1993].

The return of a stock "i" at the end of the first trading day is calculated as:

$$R_{i1} = \frac{P_{i1}}{P_{i0}} - 1$$

Where P_{i1} is the closing price of the stock "i" on the first trading day and P_{i0} is its offering price and R_{i1} is the total first day return on the stock.

The return on the NSE 20 share index for the corresponding time period is:

$$R_{NSE1} = \frac{P_{NSE1}}{P_{NSE0}} - 1$$

Where P_{NSE1} is the closing NSE 20 share index value on the first trading day and P_{NSE0} is the closing NSE 20 share index value on the offering of the appropriate stock, while R_{NSE1} is the first day's comparable NSE 20 share return.

Using these two returns, the market adjusted abnormal return for each IPO on the first day trading, $MAAR_{i1}$, is computed as:

$$MAAR_{i1} = (\frac{1 + R_{i1}}{1 + R_{NSE1}} - 1) * 100$$

The mean MAAR for the sample was computed as the arithmetic average of initial abnormal return on all IPOs in the sample "n".

$$MAAR_{*} = \frac{1}{n} \sum_{i=1}^{n} MAAR_{i1}$$

To test for the significance of abnormal initial return, test statistics was applied. The t-statistic for the market adjusted abnormal return was computed as:

t-statistic=$MAAR_s$ *$\sqrt{n}/sd_s$

where $MAAR_s$ is the average benchmark adjusted initial return of the sample "s", "n" is the number of observations in the sample and "sd_s" is the cross-sectional standard deviation of the market adjusted abnormal returns for the sample.

3.4.1.2 Money left on the Table

IPOs underpricing phenomenon is known to results in money being left on the table. The money left on the table is defined as the difference between the closing price on the first day of trading and the offer price, multiplied by the number of shares sold.

To identify if there was money left on the table in our case, change in IPO offer price and first day closing price was calculated for each IPO, the difference was then multiplied by the number of shares sold and the resultant figure was the Kenya Shillings (KES) amount left on the table.

3.4.2 Objective Two

3.4.2.1 Market Adjusted Buy and Hold Return (MABHR)

The impact on investor's wealth will be analyzed, if the same amount of money is invested passively in each IPO after the first day of trading i.e. we calculated buy-and-hold return for the sample of IPOs [excluding the initial return] and compared them with the buy- and hold returns achieved by investing in NSE 20 share index as a benchmark. The monthly return is measured by comparing the closing price on the last trading day of the month on which the stock is traded with the closing price in the previous month. These returns incorporated dividends and adjusted for rights and scrip issues. Allowing for the initial underpricing and the possibility of price support in the first few trading days, the first month of trading was excluded from the study of long run returns. It is expected that this month would allow prices to adjust downwards towards the true market equilibrium after the support has been withdrawn. This is consistent with Khurshed (1999).

The following methodology, as used by Ritter (1991) was used to calculate long run returns:

$$MABHR_i = \sum_{t=2}^{61} (ln\frac{P_{it}}{P_{it-1}} - ln\frac{NSE_{it}}{NSE_{it-1}})$$

Where $MABHR_i$ denotes the market adjusted buy and hold return for a firm "i" over a 61 months period (for the purpose of the study this constitutes only 60 monthly reading since the first month of trading is excluded from the data) $P_{i,t}$ and $NSE_{i,t}$ denotes the closing price in the "t" month of the stock "i" and the closing index in the corresponding month respectively. These returns exclude the initial underpricing. A month is defined as successive 21 trading-days period relative to IPO date.

A positive MABHR is interpreted as a better performance of the respective IPO compared to benchmark. The mean MABHR is computed as the arithmetic average of abnormal return on all IPOs in the sample of size "n".

$$MABHR_{ipo,t} = \frac{1}{n}\sum_{i=1}^{n} MABHR_{it}$$

Where MABHRipo,t is the mean market adjusted buy and hold return from all IPOs in the sample during period "t", "n" is the sample size and $MABHR_{it}$ is the market adjusted buy and hold return for firm "i" during period "t".

$$t-statistic = MABHR_{ipo,t} * \sqrt{\frac{n_t}{Sd_t}}$$

where $MABHR_{ipo,t}$ is the average benchmark-adjusted return for the month "t" for the sample "n_t" is the number of observations in the month "t" and "Sd_t" is the cross-sectional standard deviation of the market adjusted buy and hold return for the month "t". The result will be presented as tabulated in appendix V (d).

Wolfgang et al. (2003) while analyzing Switzerland case noted that underperformance tend to be significant only in the very long run. Both Lee (1993) and Chun et al (2002) while, examining long run performance reported that Korean IPOs outperformed the stock market

benchmarks with the divergence widening over time in contrast to pattern observed in developed markets. To determine if long run IPOs performance in Kenya also shows a pattern, the results of analysis will be presented as shown in appendix V (e).

To establish long run performance of IPOs,, the average percentage change of market prices was calculated for 5 years from the date of IPO. We shall measure long run share price performance for the first year, next 3 years and the fifth years. This is consistent with Ibbotson, (1975). Ritter (2005). Geometric mean is calculated for year 1-5. It is the preferred measure of central value as it is especially adapted to average ratios, rate of exchange and logarithmically distributed series. It satisfies the time reversal test and gives equal weight to equal ratio of change. One year is defined as twelve, 21-trading days intervals (252 days). This is consistent with Loughran et al. (1995).

3.4.2.2. Wealth Relatives

Following Ritter (1991) and Loughran and Ritter (1995), secondary market performance was measured using wealth relatives. Performance of sample IPOs relative to the market benchmark was explored, that is security-to market wealth relative, denoted by WR will be computed as follows:

$$WR = \frac{1 + average5 - yeartotalreturnonIPOs}{1 + average5yearreturnonmarketbenchmark}$$

$$WR_n = \frac{1 + \frac{1}{N}\sum_{i=1}^{N} R_n}{1 + \frac{1}{N}\sum_{i=1}^{N} R_{NSE}}$$

If WR>1 the return from investing in an IPO portfolio is higher than investing in the market portfolio, if WR<1 it means the opposite and if WR=1 one would be indifferent in which portfolio to invest.

CHAPTER 4: DATA ANALYSIS

4.1 SAMPLE SELECTION

IPO issues at the Nairobi Stock Exchange have been few and far between. Compounding the problem is the unavailability of data on issues for periods before 1990s. The study thus confined itself to the IPOs conducted between 1992 to 2007. The first objective will use information on all IPOs in this period. For the second objective, however it was necessary to limit the study to only pre-2003 IPOs : This is because long run returns were to cover a period of 5 years. Therefore, the underpricing phenomenon was tested using 15 IPOs. Long run tests will use 11 Pre-2003 IPOs. The following table gives details of IPOs at NSE from 1990 to 2008.:

Table 3: Initial Public offerings (IPOs) at NSE (1990

Company	Shares floated	Issue price (KES)	Subscription rate (%)	Amount raised (KES'000)	Date security commenced trading
KCB-2nd IPO	9,000,000	33.00	147	297,000	Dec 1990
KFC	3,261,970	12.50	110	40,800	Jan 1992
UCHUMI	16,000,000	14.50	103.2	232,000	Jan 1993
CROWN	8,638,000	16.00	104	232,000	Jan 1993
HFCK	18,000,000	7.00	400	126,000	Jan 1993
EA Oxygen	1,600,000	26.50	100	42,400	Mar 1993
CMC	2,000,000	10.00	100	20,000	Apr 1993
Firestone	40,000,000	33.50	101	1,420,000	Dec 1994
NBK	40,000,000	10.00	300	400,000	Dec 1994
NIC	179,299,286	52.00	77	718,000	Dec 1994
REA(prvtpmt)	1,200,000	8.50	1,100	102,000	

REA	8,000,000	10.50	216	84,000	May 1996
KQ	235,423,896	11.25	194.6	2,664,000	Jun 1996
TPS	12,893,000	13.00	400	167,609	Jul 1997
ARM	23,000,000	12.25	250	281,750	Dec 1997
Mumias	300,000,000	6.25	60	1,125,000	Nov 2001
KenGen	658,900,000	11.90	333	7,800,000	11-05-06
Scangroup	69,000,000	10.45	620	721,050	29-08-06
Eveready	63,000,000	9.50	830	556,800	18-12-06
Access	80,000,000	10.00	363	800,000	04-06-06
KenyaRe	240,000,000	9.50	405	2,280,000	27-08-07
Safaricom	10,000,000,000	5.00	532	50,000,000	09-06-08

4.2 Test of First Day IPO Performance

Table 4 reports the aftermarket performance for 15 NSE new issues. The market adjusted abnormal returns for the first day of trading are in most cases positive and significantly different from zero. On one extreme end NBK and KenGen IPOs generate returns of greater than 100% during their first day of trading. Only one IPO that of Mumias, had negative MAAR during the first day of trading. Looking at the overall statistics, and consistent with previous studies on IPOs in USA reported in Table 1, large positive mean and median excess returns of 43.1% and 21.7% respectively, are found for Kenya as seen in the table below. The t-statistic of 2.4675 is significant at the five percent level.

Table 4. First day market adjusted abnormal return (in %) for the IPOs

Firm	Date of first trade	First day Return	NSE20 share Index Return	$MAAR_{it} = (\frac{1+R_{it}}{1+R_{NSEI}} - 1) * 100$
Uchumi	4/01/93	0.1339	0.00589	0.21697
Crown	Jan 1992	0.0310	0.00670	0.0243866
HFCK	Jan 1993	0.5000	0.00277	0.4958565
Sameer	Dec 1994	0.0450	0.00212	0.0425659
NBK	Dec 1994	1.6000	0.0066	1.5829525
Rea	May 1996	0.1430	-0.0063	0.1501028
KQ	June 1996	0.1160	0.007	0.1078009
TPS	July 1996	0.2920	0.0029	0.2885708
ARM	Dec 1997	0.0290	-0.00039	0.0281704
Mumias	Nov 2001	-0.55357	-0.0356	-0.537092
KenGen	11-05-2006	2.361345	0.003228	2.3505299
ScanGroup	29-08-2006	0.564593	0.004475	0.5576234
Eveready	18-12-2006	0.157895	0.006297	0.1506487
Access	04-06-2006	0.345	0.008313	0.3339111
Kenya re	27-08-07	0.684211	0.007609	0.6714924

Mean	0.430966
t-statistics	2.46575
Std deviation	0.699124
Median	0.21697
% issues with –ve returns	6.25%

As reported by Aggarawal et al. (1993), comparative average initial one-day returns are found to be 78.5%, 16.7%, and 2.8% for Brazil, Chile, and Mexico. Previous international evidence on new issues consistently finds excess returns in the short-run.

MONEY LEFT ON THE TABLE

Table 5 shows the level of IPO underpricing from another perspective. It works out the money that was not obtained from the issue due to the issue price being pegged lower than first trading price. The level of money left on the table is simply phenomenal. Indeed, in all the 15 IPOs, in no case did first day closing price fall below the issue price. And this happened even in the case where the IPO was undersubscribed as was in the case of Mumias and NIC IPOs. The largest amount left on the table resulted from the highly oversubscribed issues of Safaricom (KES 31 billion), KenGen (KES 18.5 billion), Mumias (KES 2.33 billion) and NIC (KES 0.717 billion).

Table 5: Money left on the Table (Kenya evidence)

Company	IPO Prices		No. of Shares Offered	Money left on the table (KES'000)	Aggregate Proceeds (KES'000)
	Offer KES	First Day Close KES			
a	b	c	d	e=(c-b)*d	f=b*d
Uchumi	14.50	17.75	16,000,000	52,000	232,000
Crown	16.00	16.50	8,638,000	4,319	138,000
hfck	7.00	10.50	18,000,000	63,000	126,000
Sameer	33.50	35.00	40,000,000	60,000	1,420,000
nbk	10.00	26.00	40,000,000	640,000	400,000
nic	52.00	56.00	179,299,286	717,000	9,323,562
Rea	10.50	12.00	8,000,000	12,000	84,000
KQ	11.25	12.55	235,423,896	306,000	2,664,000
tps	13.00	16.80	12,893,000	48,993.40	167,608
arm	12.25	12.60	23,000,000	8,050	281,750
Mumias	6.25	14.00	300,000,000	2,330,000	1,125,000
KenGen	11.90	40.00	658,900,000	1,851,000	7,800,000
Scan	10.45	16.35	69,000,000	407,000	721,050
Eveready	9.50	11.00	63,000,000	94,500	556,800
Access	10.00	13.45	80,000,000	276,000	800,000
Kenya Re	9.50	16.00	240,000,000	1,560,000	2,280,000
Safcom	5.00	8.10	10,000,000,000	3.1,000,000	50,000,000

As reported by Aggarawal et al. (1993), comparative average initial one-day returns are found to be 78.5%, 16.7%, and 2.8% for Brazil, Chile, and Mexico. Previous international evidence on new issues consistently finds excess returns in the short-run.

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hfck	7.00	10.50	18,000,000	63,000	126,000
Sameer	33.50	35.00	40,000,000	60,000	1,420,000
nbk	10.00	26.00	40,000,000	640,000	400,000
nic	52.00	56.00	179,299,286	717,000	9,323,562
Rea	10.50	12.00	8,000,000	12,000	84,000
KQ	11.25	12.55	235,423,896	306,000	2,664,000
tps	13.00	16.80	12,893,000	48,993.40	167,608
arm	12.25	12.60	23,000,000	8,050	281,750
Mumias	6.25	14.00	300,000,000	2,330,000	1,125,000
KenGen	11.90	40.00	658,900,000	1,851,000	7,800,000
Scan	10.45	16.35	69,000,000	407,000	721,050
Eveready	9.50	11.00	63,000,000	94,500	556,800
Access	10.00	13.45	80,000,000	276,000	800,000
Kenya Re	9.50	16.00	240,000,000	1,560,000	2,280,000
Safcom	5.00	8.10	10,000,000,000	3.1,000,000	50,000,000

4.3 Tests of Long Run Aftermarket Performance of IPOs

Evidence on the U.S. new issues market suggests that IPOs underperform the market in the long-run. Aggarawal and Rivoli (1990) find the mean and median market-adjusted returns to be negative for investors who purchase new issues at the offering price and hold for one year. Ritter (1991) finds similar results over a three-year holding period assuming a purchase on the first day. Aggarawal et, al. (1993) found that in Brazil, the mean excess return of -39.2% for an investor who bought at the offering price and held for one year is significantly different from zero, and for three years it is -25.6%. Similar patterns are evident in the wealth relatives, which drop from 1.79 on day 1 to 0.60 at the end of three years.

Appendix V reports the cumulative average benchmark- adjusted returns (MAABRs), excluding first month returns, for the 60 months in the aftermarket for NSE IPOs. The series exhibit mixed results during the 60-month period following the first month of trading; the average cumulative returns fall (excluding initial returns) to -3.1% after the first 3 months, falls further to -6.17% at the end of the first year, and randomly traces -1.92%, 0.68%, -1.72%, and finally 8.66%, at the end of the2nd, 3rd, 4th, and 5th year respectively. The average returns, moreover are not statistically significant at 1% or 5% level of significance.

We can note the following; first, in contrast to the U.S. results and UK, evidence shows that the level of IPO underperformance is mixed and not economically and statistically significant.

Secondly, one of the issues left unresolved by Ritter (1991) in his study of the USA markets is the longer term (beyond 36 months) pattern of IPOs performance. The findings of Ibbotson (1997) tend to suggest that underperformance does not extend beyond the three- year period. Evidence for the UK market (Levis, 2002) suggests that the relative underperformance probably continues beyond the third-year anniversary of their public listing. Our study, still returns mixed resuts for the 4th and 5th year anniversaries at -1.72% and 8.7% respectively.

WEALTH RELATIVES

To have a quantitative measure of long-run performance, some benchmark must be used. Focus will be on wealth relatives, defined as the average gross total return on IPOs divided by the average gross total return on NSE20 index where both of these are measured over the 5 years after the IPO, excluding the initial return, as the primary measure of IPO aftermarket performance. The wealth relative (WR) after 5 years of seasoning is 1.086632

Since the WR>1, the return from investing in an IPO portfolio is higher than investing in the market portfolio. Thus for a five year period, it implies that IPOs outperform the market. Kenyan IPOs do not persist in underperformance (if any) beyond their third anniversary.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1 SUMMARY AND CONCLUSIONS

The following sections summarize and conclude on the findings of the analysis of data on NSE IPOs:

Initial First Day returns

The initial returns were, consistent with evidence from other markets around the world, statistically and economically significant. On average the returns were found to be a significant 43.1%; and substantial amounts of money are left on the table in every IPO, even the undersubscribed IPOs. This is consistent with Jumba (2002) finding that IPOs are deliberately underpriced in the pre-market.

Previous international evidence on new issues consistently finds excess returns in the short-run. Explanations for this regularity range from liability avoidance , information asymmetry, need to compensate investors for taking a risk, monopsonistic power of investment bankers, and the social need to make IPOs of government entities to be spread as wide as possible during privatization.

Long-term performance of IPOs

The average cumulative returns fall (excluding initial returns) to -3.1% after the first 3 months, down further to -6.17% at the end of the first year, and randomly traces -1.92%, 0.68%, -1.72%, and finally 8.66%, at the end of the 2nd, 3rd, 4th, and 5th year, respectively. The average returns, moreover are not statistically significant at 1% or 5% levels of significance. The overall conclusion regarding long run performance is that there is no discernible regularity when gauged against the market benchmarks. This finding does not

chime in with Jumba (2002), and Ibbotson et al.(1994) who report IPOs underperformance in the long run.

One difference between this study and Jumba (2002) is that Jumba's study used daily data, and did not incorporate adjustment for market returns until at the very end of the period of the study coverage. The market adjusted abnormal returns (MAAR) used in this study do a better job of describing under and over performance.

To check the robustness of our initial tests we calculated a quantitative measure of long-run performance i.e. the wealth relatives, defined as the average gross total return on IPOs divided by the average gross total return on the market index, where both of these are measured over the 5 years after the IPO, excluding the initial return. The wealth relative is 1.0866 at the 5th anniversary and -1.017 at the third anniversary. The implication is that any underperformance for the first 3 years reverses by the 5th year.

5.2 POLICY RECOMMENDATIONS

Pursuant to the analysis and findings in this study, we recommend that the issue of pricing IPOs be given more scrutiny by the government through its agencies, the NSE and the CMA. When IPOs are floated to privatize public enterprises, there is a possibility that deliberate underpricing results in loss of revenue to the exchequer, while at the same time lining the pockets of private operatives. The question to be asked and answered is whether or not public wealth is being alienated fraudulently. The noble policy of setting prices low so as to enable all cadres of Kenyans to benefited could be subverted when no ceiling is imposed on amount of shares to be allocated and when the allocation is on a pro-rata basis as happen in the 2008 IPO of Safaricom Limited.

5.3 LIMITATIONS

1. The evidence from the NSE must be interpreted cautiously because of the small sample size and the fact that most IPOs are concentrated during a few years (1993 and 2006). This phenomenon, in fact, exists in nearly all markets except the U.S. and UK.

2. Data used in the study was monthly data. The results could differ probably if daily data were used.
3. Studies on performance of IPOs in developed economies employ matched samples. Results of such studies would carry more validity than those based on market indices. This procedure cannot reasonably be applied in NSE simply because one cannot get the firms to pair with the IPO firms. To that extent one should be careful in making unqualified comparisons of studies using different approaches.

5.4 SUGGESTIONS FOR FURTHER RESEARCH

The subject matter of this project still attracts considerable intellectual effort. More efforts need to be directed at various aspects as follows:

1. Many theories proliferate attempting to explain away the underpricing anomaly. While the reasons for its occurrence may be a settled issue in the developed markets, the issue should occupy the minds of third world market practitioners and academics.
2. The long run underperformance could be sample specific and a creation of data mining. More concerted effort is required to establish the authenticity of this regularity and to theorize on its roots.

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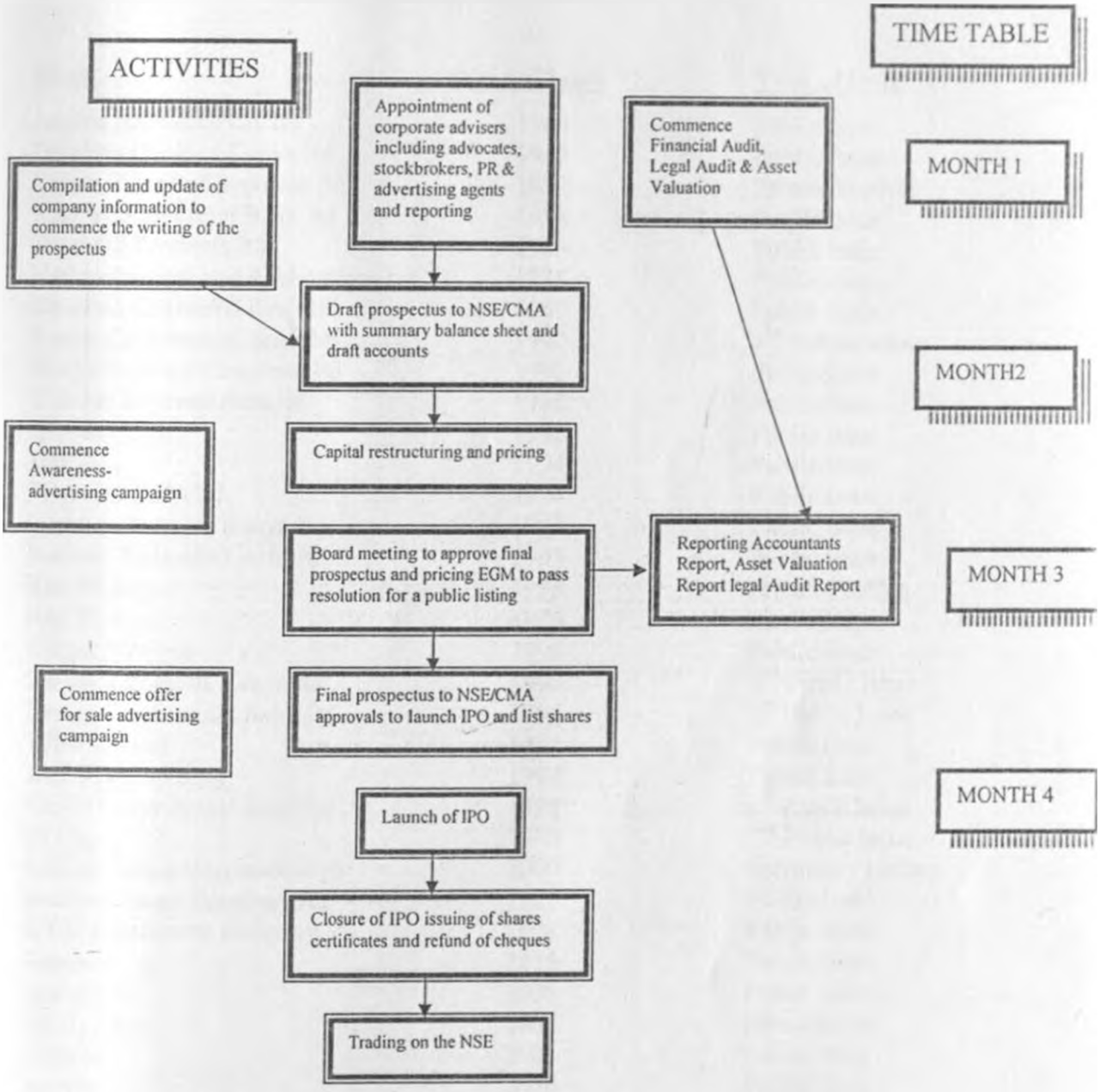
APPENDICES

Appendix I. Average Initial Returns for 38 Countries

Country	Source	Sample Size	Time period	Avg. initial Return
Australia	Lee et al	381	1976-95	12.10%
Austria	Aussenegg	83	1984-02	6.30%
Belgium	Rogiers et al	86	1984-99	14.60%
Brazil	Aggarwal et al	62	1979-90	78.50%
Canada	Jog et al	500	1971-99	6.30%
Chile	Aggarwal et al	55	1982-97	8.80%
China	Datar et al	432	1990-00	256.90%
Denmark	Jakobsen et al	117	1984-98	5.40%
Finland	Keloharju et al	99	1984-97	10.10%
France	Husson et al	571	1983-00	11.60%
Germany	Ljungqvist	407	1978-99	27.70%
Greece	Kazantzis et al	338	1987-02	49%
Hong Kong	McGuiness et al	857	1980-01	17.30%
India	Krishnamurti et al	98	1992-93	35.30%
Indonesia	Hanafi et al	237	1989-01	19.70%
Israel	Kandel et al	285	1990-94	12.10%
Italy	Arosio et al	181	1985-01	21.70%
Japan	Fukuda et al	1689	1970-01	28.40%
Korea	Dhatt et al	477	1980-96	74.30%
Malaysia	Isa et al	401	1980-98	104.10%
Mexico	Aggarwal et al	37	1987-90	33%
Netherland	Wessels et al	143	1982-99	10.20%
New Zealand	Vos et al	201	1979-99	23%
Nigeria	Ikoku	63	1989-93	19.10%
Norway	Emilsen et al	68	1984-96	12.50%
Philippines	Sullivan et al	104	1987-97	22.70%
Poland	Jelic et al	140	1991-98	27.40%
Portugal	Almeida et al	21	1992-98	10.60%
Singapore	Lee et al	441	1973-01	29.60%
South Africa	Page et al	118	1980-91	32.70%
Spain	Ansotegui et al	99	1986-98	10.70%
Sweden	Rydqvist, Schuster	332	1980-98	30.50%
Switzerland	Drobetz et al	120	1983-00	34.90%
Taiwan	Lin et al	293	1986-98	31.10%
Thailand	Wethyavivorn et al	292	1987-97	46.70%
Turkey	Kiymaz	163	1990-96	13.10%
United Kingdom	Levis et al	3122	1959-01	17.40%
United States	Ritter et al	14978	1960-03	18.30%

Source: Loughran et al (2004), Initial Public Offerings: International Insight.

APPENDIX II. NSE LISTING PROCESS



Source: Nairobi Stock Exchange

Appendix III. NAIROBI STOCK EXCHANGE LIMITED

SHARE ISSUES 1984-2008

Firm	Year of Issue	Type of issue
Jubilee Insurance Co. ltd	1984	public Issue
Barclays Bank of Kenya ltd	1986	Public Issue
Kenya Finance Corporate ltd	1987	Private Placing
Kenya commercial Bank ltd	1988	Public Issue
Total Oil Products ltd	1988	Public Issue
Nation Printers and Publications ltd	1988	Public Issue
Standard Chartered Ban' ltd	1989	Public Issue
Kenya Commercial Bank ltd	1990	2nd Public Issue
Kenya Finance Corporate ltd	1991	Public Issue
Uchumi Supermarkets ltd	1992	Public Issue
Crown Berger	1992	Public Issue
HFCK	1994	Public Issue
Firestone (EA) ltd	1994	Public Issue
National Bank of Kenya ltd	1994	Public Issue
National Industry Credit ltd	1995	Public Issue
Rea Vipingo	1995	Private Placing
Rea Vipingo	1996	Public Issue
Kenya Airways	1996	Public Issue
National Bank of Kenya ltd	1996	2nd Public Issue
Kenya Commercial Bank ltd	1996	3rd Public Issue
TPS (Serena)	1997	Public Issue
Athi River Mining	1997	Public Issue
Kenya Commercial Bank ltd	1998	4th Public Issue
HFCK	1999	2nd Public Issue
African Lakes Corporation plc	2000	Secondary Listing
Mumias Sugar Company ltd	2001	Public Issue
ICDC Investment company	2001	Public Issue
KenGen	2006	Public issue
Scangroup	2006	Public issue
Equity bank	2006	Introduction
Eveready	2006	Public issue
Access	2006	Public issue
Kenya re	2007	Public issue
Safaricom	2008	Public issue

Source: The Nairobi Stock Exchange

Appendix IV. Companies listed at the NSE as at February 2006

Unilever Tea
Kakuzi
Rea Vipingo
Sasini
Car and General
CMC
Hurtchins Biemer
City Trust
Kenya Airways Ltd
Marshalls
Nation Media Group
Standard Chartered Group
TPS East Africa
Uchumi Sipermarkets
Barclays Bank
CFC Bank
Diamond Trust
Housing Finance
Jubilee Holdings Ltd
KCB Bank
Kenya Re
National Bank
National Industrial Credit
Pan African Insurance
Standard Chartered Bank
Athi River Mining
BOC
Bamburi
BAT
Carbacid
Crown Berger
E.A. Cables
E.A. Portland
E.A.Breweries
Eveready
Kenya Oil
Kenya Power and Lighting
KenGen
Mumias
Olympia Capital
Sameer
Total
Eaagads
Express
Williamson Tea
Kapchorua
K. Orchards
Limuru Tea
A.Bauman
Unga

Appendix V: Descriptive statistics of Cummulative average market adjusted buy and hold returns (MABHR) from the first to 60th month of seasionong of IPOs at NSE

Month of seasoning	Number of IPOs	Cum.av. MABHR	S. Deviation	t-statistic
1	15	-0.03807	0.136143	-0.39965
2	15	-0.01912	0.128153	-0.20686
3	15	-0.03069	0.161617	-0.29563
4	15	0.02142	0.119281	0.240202
5	15	-0.00994	0.113462	-0.11434
6	15	0.000522	0.076692	0.0073
7	15	-0.15617	0.634594	-0.75927
8	14	0.144608	0.652032	0.670071
9	14	0.034915	0.114997	0.385243
10	13	-0.03404	0.107357	-0.37463
11	13	0.01012	0.154201	0.092917
12	13	-0.06166	0.140047	-0.59406
13	13	0.000553	0.083034	0.006924
14	13	-0.05346	0.105848	-0.59246
15	13	0.235072	0.15607	2.145424
16	12	0.026676	0.085289	0.316423
17	12	0.012321	0.081822	0.14921
18	11	0.039742	0.095257	0.427068
19	11	-0.04517	0.189844	-0.34383
20	10	-0.02685	0.10581	-0.30014
21	10	0.033482	0.171962	0.327326
22	10	-0.00952	0.080037	-0.07997
23	10	0.046913	0.104631	0.316334
24	10	-0.01921	0.141814	-0.14472
25	10	-0.00896	0.219937	-0.11128
26	10	-0.01165	0.176154	-0.15163
27	10	0.044337	0.064893	0.176627
28	10	0.041058	0.059032	0.32415
29	10	0.143369	0.630116	1.065794
30	10	-0.04675	0.160435	-0.36906
31	10	-0.03649	0.180953	-0.33434
32	10	-0.01765	0.14087	-0.24567
33	10	-0.00537	0.119146	-0.05629
34	10	0.019885	0.108934	0.237334
35	10	0.051969	0.090947	0.560424
36	10	0.006812	0.070201	0.045283

37	10	-0.06715	0.085992	-0.79775
38	10	0.021858	0.226275	0.23068
39	10	0.02946	0.070851	0.247518
40	10	0.082251	0.089786	0.734251
41	10	0.039195	0.141662	0.440876
42	10	-0.0072	0.125484	-0.09152
43	10	0.013103	0.079037	0.11604
44	10	-0.00214	0.061926	-0.02365
45	10	0.034552	0.127503	0.304022
46	10	-0.03114	0.081691	-0.22639
47	10	0.079774	0.129161	0.649648
48	10	-0.01716	0.189239	-0.15934
49	10	-0.08967	0.150788	-1.08273
50	10	0.029919	0.115965	0.19232
51	10	0.03667	0.068586	0.461907
52	10	0.10617	0.242019	1.276261
53	10	0.027312	0.063026	0.213967
54	10	0.037369	0.069203	0.449206
55	10	0.022534	0.162935	0.136844
56	10	0.01432	0.23004	-0.9876
57	10	-0.08298	0.271154	-1.14427
58	10	-0.00627	0.103102	-0.03762
59	10	-0.01109	0.052591	-0.15297
60	10	0.086632	0.278005	0.519578

Appendix VI: Workings for the MABHR for the IPOs at the NSE for the period 1992-2007

MONTH	MABHRuch	MABHRcrown	MABHRhfck	MABHRsmeer	MABHRnbk	MABHRrea	MABHRkq	mean	std dev	tstat
1	0.065654	-0.05107	0.114311	0.142053	0.017922	-0.20489	-0.11785	-0.03807	0.136143	-0.39965
2	-0.07829	-0.06385	0.147019	0.019071	-0.00091	-0.10459	-0.00876	-0.01912	0.128153	-0.20686
3	-0.0316	-0.01633	-0.51523	0.090615	-0.18164	0.034935	0.026517	-0.03069	0.161617	-0.29563
4	-0.10366	-0.08119	0.212572	-0.0251	0.106341	0.019833	0.010125	0.02142	0.119281	0.240202
5	-0.07037	0.037183	0.002918	0.13887	0.074087	-0.0181	-0.05089	-0.00994	0.113[illegible]2	-0.11434
6	-0.0121	0.099034	0.127568	-0.07676	-0.01198	-0.02863	-0.04468	0.000522	0.076692	0.0073
7	-2.43046	0.058896	-0.16857	-0.02046	-0.02115	0.009438	-0.00716	-0.15617	0.634594	-0.75927
8	2.395003	-0.10165	-0.08189	-0.03902	-0.03103	0.008649	-0.00743	0.144608	0.652032	0.670071
9	0.027991	0.167454	0.185916	0.040499	0.106989	-0.1238	-0.06005	0.034915	0.114997	0.385243
10	-0.06706	-0.04129	0.126066	-0.06087	-0.14039	0.1164	0.073112	-0.03404	0.107357	-0.37463
11	-0.18017	-0.22033	-0.27921	-0.08785	-0.0296	0.043564	0.070963	0.01012	0.154201	0.092917
12	0.120903	0.144433	0.092465	0.151675	0.110092	-0.06481	-0.03585	-0.06166	0.140047	-0.59406
13	0	-0.04763	-0.09051	-0.01036	-0.21502	-0.08704	0.010753	0.000553	0.083034	0.006924
14	-0.10317	-0.017	-0.22262	0.092648	0.011317	-0.12905	-0.08708	-0.05346	0.105848	-0.59246
15	-0.11038	-0.23113	0.012021	-0.11778	-0.151	0.045306	0.003342	0.235072	0.15607	2.145424
16	0.074949	-0.06931	0.184261	0.062186	0.026566	0.070813	0.063695	0.026676	0.085289	0.316423
17	0.050781	0.042007	0.210478	-0.05688	0.030593	-0.00759	0.006643	0.012321	0.081822	0.14921
18	0.028416	0.016987	0.157475	-0.07314	0.017907	-0.08459	0.193952	0.039742	0.095257	0.427068
19	0.041901	-0.45157	-0.32332	0.121633	0.042346	0.060872	-0.15068	-0.04517	0.189844	-0.34383
20	0.020005	0.01938	-0.02637	-0.16993	-0.13567	0.00194	0.023143	-0.02685	0.10581	-0.30014
21	0.233253	0.01011	-0.09053	0.123439	-0.07921	-0.05071	0.050098	0.033482	0.171962	0.327326
22	-0.12125	-0.02941	-0.06534	-0.04394	-0.11046	0.016766	0.016766	-0.00952	0.080037	-0.07997
23	-0.05146	0.12772	0.192259	-0.06417	0.119137	0.056415	0.166558	0.046913	0.104631	0.316334
24	-0.0687	0.100801	-0.00456	-0.07355	0.09388	-0.08786	-0.21312	-0.01921	0.141814	-0.14472

25	-0.16188	-0.19732	-0.10958	-0.04059
26	-0.05442	-0.09541	0.000771	0.074879
27	0.103455	0.063373	0.034935	-0.0028
28	0.083958	0.047485	0.019833	-0.01653
29	-0.05712	-0.08793	-0.07195	-0.05089
30	-0.015	0.007917	-0.07061	0.007159
31	0.020638	0.045304	-0.03564	0.046062
32				
33	-0.10329	-0.25248	-0.06419	0.167481
34	0.091855	0.098209	0.041839	-0.00625
35	0.134397	0.211386	0.157744	-0.05053
36	0.02538	0.090425	0.04837	-0.14111
37	-0.03535	-0.00203	-0.12733	-0.2617
38	-0.1133	-0.24846	0.073477	0.582249
39	0.045306	0.020613	-0.12377	0.165014
40	0.21963	0.012402	0.163779	0.052201
41	-0.01665	-0.00047	-0.26618	0.028513
42	-0.07222	0.036767	0.091161	-0.02039
43	0.049337	-0.01305	-0.07232	0.070778
44	-0.01576	0.079902	-0.10627	0.059445
45	0.052867	-0.23203	0.032901	0.080466
46	-0.12009	0.115612	0.030901	0.026651
47	0.216263	0.002021	0.175367	-0.00771
48	-0.11418	0.028969	-0.14604	-0.35356
49	0.072837	-0.29138	-0.13447	0.100937
50	0.023509	0.171145	0.005309	0.113193

-0.119	-0.056	-0.0006	-0.00896	0.219937	-0.11128
-0.00874	-0.0531	0.049485	-0.01165	0.176154	-0.15163
0.044444	-0.05139	0.059833	0.044337	0.064893	0.176627
0.029253	0.128206	0.029402	0.041058	0.059032	0.32415
1.921451	0.05413	0.027228	0.143369	0.630116	1.065794
-0.36924	-0.10405	-0.2054	-0.04675	0.160435	-0.36906
-0.52526	0.06712	-0.11346	-0.03649	0.180953	-0.33434
				#DIV/0!	0
0.129181	0.049923	0.028417	-0.00537	0.119146	-0.05629
-0.17405	0.071201	0.217202	0.019885	0.108934	0.237334
0.096606	0.006608	0.012998	0.051969	0.090947	0.560424
-0.01018	-0.02499	-0.04955	0.006812	0.070201	0.045283
-0.06889	-0.11156	-0.05389	-0.06715	0.085992	-0.79775
-0.17705	-0.03371	0.057467	0.021858	0.226275	0.23068
0.001716	0.014866	0.047091	0.02946	0.070851	0.247518
0.097762	0.044723	0.089459	0.082251	0.089786	0.734251
0.099609	0.001229	0.03945	0.039195	0.141662	0.440876
-0.10235	-0.04258	-0.10897	-0.0072	0.125484	-0.09152
-0.09673	0.045829	0.176655	0.013103	0.079037	0.11604
-0.02623	0.003852	0.063041	-0.00214	0.061926	-0.02365
-0.06028	-0.00797	0.006937	0.034552	0.127503	0.304022
-0.17561	-0.02084	-0.04917	-0.03114	0.081691	-0.22639
0.321107	-0.13304	0.091212	0.079774	0.129161	0.649648
-0.20274	0.263375	0.014023	-0.01716	0.189239	-0.15934
-0.06473	-0.36635	0.013849	-0.08967	0.150788	-1.08273
-0.10571	0.163842	-0.20521	0.029919	0.115965	0.19232

51	0.019011	0 02998	-0.08082	0.029062	-0 07266	0.05439	0.074063	0.03667	0.068586	0.461907
52	0 01698	0.07009	0.689508	-0.01874	0.01698	-0 22301	0.12183	0.10617	0.242019	1.276261
53	0 002837	-0 00293	-0.01822	0.038555	0.002837	0.134404	0.123765	0.027312	0.063026	0.213967
54	0.052085	0.040978	0.032729	0.001312	-0.07665	0.092809	-0.00689	0.037369	0.069203	0.449206
55	0.023928	0.379707	-0.18837	0.179394	-0.08024	-0.02906	-0.09132	0.022534	0.162935	0.136844
56									#DIV/0!	0
57	-0.14108	0.035907	-0.80449	0.031982	0.028417	0.122462	0.123704	-0.08298	0.271154	-1 14427
58	0 030854	-0.24252	0.02483	0.028945	0.050148	-0.03389	0.03926	-0.00627	0.103102	-0.03762
59	0.044829	0.006608	0.085467	-0.10572	0.006608	-0.03043	-0.00401	-0.01109	0.052591	-0.15297
60	-0.00394	-0.00394	0.858809	-0.00394	-0.00394	0.064237	0.119782	0.086632	0.278005	0.519578
								0.010907		

	MABHRtps	MABHRarm	MABHRmumias	MABHRkengen
1	-0.05004	-0.32594	-0 1644	0.048318
2	-0.18881	0.004484	-0.05851	-0.09339
3	0.074294	0.175359	-0.12458	-0.04065
4	0.056527	0.178765	-0.23112	-0.09476
5	-0.06741	-0.2456	0.052966	-0.11134
6	0.040605	0.036767	0.043855	-0.15476
7	0.017443	0.143672	-0.06844	-0.11696
8	-0.12832	0.11701	-0.0326	-0.16513
9	0.033675	-0.21579	0.083362	-0.06183
10	0.02967	0.016766	0.179271	0.230589
11	0.270974	-0.03668	0.183832	0.065716
12	-0.24585	-0.24608	-0.14777	0.060791
13	-0.04643	-0.21015	0.045897	0.007795
14	0.037412	-0.18413	-0.20456	0.054874
15	0.097574	0.242155	-0.25828	0.023692
16	0.02436	-0.07003	-0.0328	-0.11651
17	0.002837	0.002837	-0.14543	0.031435
18	0.0303	0.096623	0.126874	-0.07363
19	0.035956	-0.08194	0.106577	0.10137
20	-0.16422	0.177492	-0.01428	

MABHRscana	MABHRever	MABHRaccess	MABHRkre	mean	std dev	tstat
-0.08701	0.102804	0.085228	-0.1462	-0.03807	0.136143	-0.39965
-0.22159	0.20695	0.219578	-0.0652	-0.01912	0.128153	-0.20686
-0.05149	0.095358	-0.04667	0.050819	-0.03069	0.161617	-0.29563
0.163874	0.068731	-0.00404	0.044398	0.02142	0.119281	0.240202
-0.13627	0.102062	0.190618	-0.04788	-0.00994	0.113462	-0.11434
0.005672	-0.02971	0.099738	-0.08678	0.000522	0.076692	0.0073
0.113847	0.02424	0.021067	0.102045	-0.15617	0.634594	-0.75927
0.005248	0.07265	0.013026		0.144608	0.652032	0.670071
0.07787	0.07212	0.154399		0.034915	0.114997	0.385243
-0.00533	-0.03404			-0.03404	0.107357	-0.37463
-0.04564	0.01012			0.01012	0.154201	0.092917
0.031722	-0.06166			-0.06166	0.140047	-0.59406
0.013276	0.000553			0.000553	0.083034	0.006924
0.046789	-0.05346			-0.05346	0.105848	-0.59246
0.011463	0.235072			0.235072	0.15607	2.145424
0.101936				0.026676	0.085289	0.316423
-0.01986				0.012321	0.081822	0.14921
				0.039742	0.095257	0.427068
				-0.04517	0.189844	-0.34383
				-0.02685	0.10581	-0.30014

21	0.39406	-0.1341	-0.12159
22	0.06257	0.134705	0.044365
23	-0.00269	0.04201	-0.11664
24	0.00227	-0.195	0.253763
25	0.000917	0.011388	0.583074
26	0.108329	0.274593	-0.41289
27	-0.02709	0.043037	0.175578
28	-0.0159	-0.03224	0.137115
29	0.03632	-0.22476	-0.11278
30	0.027687	0.013508	0.240575
31	0.08492	0.040409	0.004966
32		0.048557	
33	-0.01531	-0.02139	0.027984
34	-0.0148	-0.05474	-0.07161
35	0.007918	-0.02657	-0.03086
36	0.021062	0.008483	0.100228
37	0.042137	0.008339	-0.06121
38	0.008348	0.099304	-0.02975
39	0.057327	0.05439	0.012047
40	0.040667	-0.08296	0.184848

0.033482	0.171962	0.327326
-0.00952	0.080037	-0.07997
0.046913	0.104631	0.316334
-0.01921	0.141814	-0.14472
-0.00896	0.219937	-0.11128
-0.01165	0.176154	-0.15163
0.044337	0.064893	0.176627
0.041058	0.059032	0.32415
0.143369	0.630116	1.065794
-0.04675	0.160435	-0.36906
-0.03649	0.180953	-0.33434
	#DIV/0!	0
-0.00537	0.119146	-0.05629
0.019885	0.108934	0.237334
0.051969	0.090947	0 560424
0.006812	0.070201	0 045283
-0.06715	0.085992	-0.79775
0.021858	0.226275	0.23068
0.02946	0 070851	0.247518
0.082251	0.089786	0.734251

41	0.041633	0.195028	0.269787
42	-0.01558	-0.13033	0.292485
43	-0.00854	0.022235	-0.04317
44	-0.01101	-0.08879	0.020442
45	0.156773	0.246973	0.068875
46	-0.01937	-0.07515	-0.02435
47	0.066119	0.048845	0.017559
48	0.07613	0.047143	0.215291
49	-0.00867	-0.1539	-0.06479
50	0.016632	0.065635	0.050839
51	0.110441	0.118597	0.084628
52	0.017013	0.073913	0.297134
53	0.010146	0.052966	-0.07125
54	-0.00818	0.181331	0.064162
55	0.017394	0.095188	-0.08129
56			
57	0.015485	-0.13659	-0.10561
59	-0.03668	-0.04989	-0.02772
58	0.086122	0.079569	-0.12605
60	0.008883	-0.07852	-0.09111

0.039195	0.141662	0.440876
-0.0072	0.125484	-0.09152
0.013103	0.079037	0.11604
-0.00214	0.061926	-0.02365
0.034552	0.127503	0.304022
-0.03114	0.081691	-0.22639
0.079774	0.129161	0.649648
-0.01716	0.189239	-0.15934
-0.08967	0.150788	-1.08273
0.029919	0.115965	0.19232
0.03667	0.068586	0.461907
0.10617	0.242019	1.276261
0.027312	0.063026	0.213967
0.037369	0.069203	0.449206
0.022534	0.162935	0.136844
	#DIV/0!	0
-0.08298	0.271154	-1.14427
-0.01109	0.052591	-0.15297
-0.00627	0.103102	-0.03762
0.086632	0.278005	0.519578