The Performance of Russian IPOs (1996–2005)

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1.1 Introduction

After the collapse of Soviet Union, the financial markets in Russia were in a state of complete destitute. Without comprehensive fiscal policies, the laws governing the financial markets were mediocre.

The implementation of economic reforms has aided the establishment and the consequent development of the Russian capital markets. In particular, since the balance of payments crisis of 1998, the Russian equity markets have made considerable progress in facilitating the requisite to raise equity finance. As per graph 1, (pg, 72) the number of Russian Domiciled Initial Public Offerings (RDIPOs) during 1996-2005 progressively increased. In the cited period there were 23 listings from which (11) emanated from the consumer and service sector, (6) from the telecoms and technology sector, (5) from the energy and resources sector and (1) from the aviation industry. During the cited period, the percentage of firms that listed on mature markets vis-à-vis the incumbent Russian Market was 52% against 48%, respectively. (Pie chart 1, pg 71)

As per graph 2, (pg, 72) initially, the listing destination of choice for RDIPOs was the United States, (US) however, increased regulation in the form complying with the Sarbanes-Oxley[1] directive meant that there was a flurry of domestic[2] IPO's. However, the Russian equity markets retrospectively lacked the capacity and sophistication needed to raise substantial amounts of equity finance. Graph 3, (pg, 73) illustrates average capital raised by exchange. The largest issuance of equity on the Russian Trading System (RTS) was for Lebedyansky in 2005, for the value of $151m, relative to Mobile Telesystems that raised $353m on the New

[1] Companies, that have parent companies or subsidiaries listed on the US stock exchange must comply with the Sarbanes-Oxley directive, 2002

[2] Russian

York Stock Exchange in 2005 (NYSE) and Sistema that raised $1.56b in on the London Stock Exchange,(LSE) in 2005.

Interestingly, from the 12 RDIPOs that floated in 2005, the destination for 9 of them was London, UK. In order to curtail the trend of listing abroad, the Russian financial markets regulator, Oleg Vyugin, sponsored legislation requiring 30% of respective issuances to be listed on a domestic market.(E&Y 2007) Therefore, inline with regulatory requirements, RDIPO's have continued to increase in size and complexity by trading in global depositary receipts[3].(GDRs)

In 2006, RDIPOS raised US$18 billion through 21 deals; however, $10.4b is attributed to an IPO issued by state owned Rosneft. The flurry of mega-RDIPOs continued in 2007, with the dual listing of a Russian State-Bank, VTB, raising approximately US $8 billion. According to E&Y 2007, another 71 RDIPOs are scheduled to float between the fall of 2007 to 2009.

The pipeline of RDIPO's appears to be strong however, factors like the reoccurrence of a Yukos-type scandal in conjunction with the uncertainty associated with a looming presidential election in 2008, may affect initial subscription demand and long-term performance. Therefore, it is reasonable to assume that the alternative motive of a foreign listing is to secure a form of political risk insurance. One naturally questions, "How does one distinguish between companies that seek political risk assurance as oppose to a company seeking to raise capital?"

[3] GDR's facilitate the trading of a security in more than one market, consequently minimizing arbitrage.

1.2 Motivation

We are motivated to investigate the performance of RDIPO's, more so because Russia is a post-transition country. In hindsight, the repercussions of economic transition and the consequent capital flight of $133bn (See: Whalley 1998) during 1992-1997, effected the traditional relationship between incumbent financial institutions and companies, thus the desire for alternative finance grew. Hence, we are interested to analyze the performance of companies that opted to raise equity finance, as oppose to companies that issued corporate bonds or sought funds on the money markets[4].

Our motivation is further fueled by noting that since transition, the performance of RDIPO's has yet to be conclusively investigated.

1.3 Structure

The rest of this paper is structured as follows: The next section will consist of a literature review focusing on phenomena typically associated with the performance of IPO's'. The third section will outline the empirical methodology, complemented by a description of the data. The fourth section will present our findings; and finally the last section will consist of a summary and conclusion.

[4] Reverting to the Money Markets is a short-term solution. Furthermore, between 1999-2005, 381 corporate bonds were issued by non-financial entities. However, according to CBONDS 2004, almost all issues have embedded put options with time to exercise every 12 or 18 months. Therefore, the Russian corporate bond market is also a relatively short-term solution. Whereas equity finance is considered to be a long-term solution to raising finance, hence in order to develop a consistent understanding of the determinants of performance, we opt to investigate equity finance.

Section 2

Through an extensive study of 1526 IPO's Ritter (1991) concludes that the performance of IPO's are affected by the short-run underpricing phenomenon and the long-run underperformance of stock.

Thus, the objective of any IPO is to achieve the highest value for the issuer whilst ensuring an optimistic start to secondary trading and strong long-term performance. (Sohail 2007 pg421)

2.1 Underpricing

The problem of under-pricing has been expansively researched and clearly indicates some loss of value to the issuer. (Sohail 2007 pg421)

The phenomenon of underpricing is principally the result of reconciling the offer price and the close price, determined by the free- market on the first day of trading. Hence, investors have an opportunity to realize short-term abnormal returns.

Stoll's (1970) analysis on the cost of equity finance was the first to observe the phenomena of short-term underpricing.

Stoll concluded- "in the short run, the stocks in the sample showed remarkable price appreciation…an immediate average appreciation of 75% was observed...Clearly, the short-run results do not indicate reluctance on the part of the public to invest in new small issues. In fact, they demonstrate a remarkable demand for new issues, a demand which is difficult to explain" Stoll (1970 pg 314)

Since the initial observations of Stoll, (1970) the underpricing phenomenon continues to be of considerable interest.

A detailed study conducted by Loughran et al (1994) highlighted the universality and extent of underpricing. 25 countries were analyzed, from which significant underpricing was observed in developing countries, when compared to developed countries. For example, 10,626 US IPO's were studied during 1960-1992. The average underpricing was 15%, whereas 132 Malaysian IPO's were exposed to approximately 80% of underpricing. The sample sizes and time period are not similar therefore, one may question the appropriateness of such comparisons however, there are additional studies that have similar findings for developed and emerging economies. For example, Su and Fleisher (1999) analysed Chinese IPO's during 1985-1987, the underpricing for A-shares was a remarkable 948%.

Kıymaz (2000) studied Turkish IPO's during 1990-1996; his results suggest that average underpricing was approximately 13%. Akraz et al (2003) build on Kiymaz's (2000) work by forecasting underpricing levels for Turkish IPO's during 1992-2000. Despite identifying a host of underlying reasons for why underpricing occurs, "the overall predictive ability of the forecasting models can be described as mediocre". Akraz et al (2003, pg16) such findings suggest that either the model used in the study was poorly constructed; alternatively there were other significant factors that were not taken into consideration.

During 1960-1996, Ritter (1998) finds underpricing levels to average around 15.8% for US IPO's.

A study by Krinsky and Rotenberg (1989) found Canadian IPO's, between 1971-1983 to be underpriced by 11.6%, whereas an alternative study conducted by Jog and Riding (1987) for the same time period yielded an average of 9.96%.

Derrien et al (2000) finds that the level of underpricing in French IPO's, during 1992-1998 is dependant on the methodology used to determine the initial offer price. I.e. IPO's that were auctioned were underpriced by 9.7% whereas IPO's that used the book-building technique were under priced by 16.9%.

Investors can use signaling models devised by Welch, (1989) to price the real-value of a firm by interpreting an array of indicators[5]. Indeed, a number of theories have attempted to theoretically and empirically identify how the interpretation of such signals are related to underpricing.

2.1.2 Equilibrium model

Rock(1986) formulated the winners curse theory to explain the rationale behind IPO underpricing.

According to Rocks theory, the winners curse is the consequence of asymmetric information between investors.

Informed investors are able to ascertain the idiosyncrasies associated with a particular stock, hence are able to establish the investment grade of a company. Thus, investment-exposure is accordingly determined. Investors that are not able to determine the efficient value of a stock,

[5] Company Size, market value of a company et al

are likely to purchase larger quantities of overpriced stock, relative to under-priced stock. Thus, uninformed investors face the winners curse, as they are more likely to be allocated shares in overpriced issues as opposed to under-priced issues. Subsequently, if the market is not able to absorb high demands for IPO subscriptions from informed and uninformed investors, then investors may revert to purchasing additional shares at market, which in turn increases initial underpricing. Omran (2005) Hence generating a positive relationship between over-subscription and the amount of underpricing.(Womack 2003)

Lee's (1999) paper investigated the role of the informed investor. The paper empirically confirmed a relationship between large investors and there tendency to invest in IPO's that yielded abnormally high initial returns. Furthermore the paper suggests, that informed investors provide valuable demand and pricing feedback to underwriters…underpricing, on average, compensates for the value of this information, probability that, if the issue is overpriced, informed investors will face the consequent winner's curse. Lee(1999 pg426) Thus the level of interest in an IPO can be signaled by interpreting the general sentiments of investors. If an IPO is considered to be overpriced, then investors may refrain from subscribing to respective issuances.

If informational asymmetry between underwriters and companies is alleviated, underpricing would be eliminated. Kiymazs (2000)

Interestingly, Choudhury and Sherman (1996) empirically confirm that based on the assumption that all market participants have access to the same information, informed investors would still take larger positions in IPO's relative to uninformed investors.- Such findings suggest that informed investors are wealthier than uninformed investors but more

importantly, the winners curse theory presented by Rock (1986) can be rejected. In hindsight, Rocks (1986) model fails to explain why underwriters keep uniformed investors in the market. A possible explanation is to supplement liquidity levels.

Ogden (2005) argues that the information asymmetry problem forces shareholders to retain a larger percentage of equity. However by doing so, shareholders by default cap the amount of capital that the market is able to raise. Therefore, in order to counter reduced liquidity, companies induce greater levels of underpricing to lure more investors to buy greater levels of stock.

2.1.3 The role of an underwriter

A recent study by Dimitris et al (2007) proposes that the level of underpricing and over-subscription positively correlates with the level of prestige associated with the respective underwriter. I.e. Prestigious underwriters are less likely to induce abnormal levels of underpricing. Thus, one can consider underpricing to be the result of an underwriter indicating investment risk. In retrospect, a prestigious underwriter's reputation is based on the confidence and advice that it offers clients. In order to maintain confidence levels, prestigious underwriters recommend IPO's that are inline with the risk profile of there respective institutional client[6]. Thus, in return for reduced risk, prestigious underwrites charge a premium, consequently earning economic rents at equilibrium. (Carter 1990)

From a structuring perspective, underwriters have a number of options to execute public offerings. Ljungqvist et al (2000) investigated the impact of the methodology used to derive an efficient offer price. The study was conducted on 2105 IPO's, during 1992-1999 and

[6] For example, pension funds are classified as "risk adverse" investors.

covered 61markets. The results suggested that IPO's' that used book-building as a means to conjure an offer price experienced less underpricing when compared to fixed price offers. In retrospect, the study highlighted the high cost of book-building.

Kaneko (2001) reports that underwriters using the book-building method for Japanese IPO's, were prone to significant levels[7] of initial abnormal returns; particularly during hot market periods.

The methodology behind the process of book-building is based on consulting all respective participants in the IPO syndicate. Upon agreeing a price-range, bids are collected from prospective investors; the issue price is agreed after receiving bids by a specified closing date. Subsequently, investors receive stock as per pre-agreed allocations.

Globally, underwriters are converging to the book-building technique. Sherman (2000) observes a positive trend across 40 countries; the book building was the favored method of deriving an offer price. She suggests that book-building techniques facilitate price elasticity in regards to an issuer's aspiration to secure the optimum price.

2.1.4 First Seasoned Equity Offerings (FSEO)

Leland and Pyle (1977) first investigated the effects of owner retainer-ship. They proposed that investors could deem the percentage of equity issued to outside investors, as a signal to determine the value of a company. Thus, companies that retain larger percentages of equity are said to be of better quality.

[7] Relative to the Auction method

Grinblatt and Hwang (1989), build on the cited theory. The paper suggests that in conjunction with Leland and Pyles' (1977) signal, one should also evaluate the level of underpricing when assessing the quality of an issuing company.

The amalgamated model proposes that an issuing firm fathoms its true value therefore, with the anticipation of raising funds through a seasoned equity offering (SEO), good-quality firms distinguish themselves by the level of induced underpricing. The objective of such a strategy is to be able negotiate better terms and conditions for prospective capital in the future. Gosh (2000) reports that there is relationship between the amount of capital raised through an FSEO and the level of underpricing. I.e. large market capitalisations and large amounts of capital raised, are likely to show signs of increased underpricing, thus raising larger amounts of capital through an FSEO.

2.1.5 Market Climate

Underwriters analyse liquidity levels, volatility, trends etc to interpret whether or not the markets are hot or cold. Derrien and Womack (2003) propose that the sentiments of the market, influence the volume of issuances and the levels underpricing an IPO is succumbed to. A hot market, where demand for IPO's can deemed to be high, creates a climate whereby the equilibrium ex-post price of an IPO is abnormally greater relative to ordinary market conditions. Thus, underwriters factor in such sentiments to determine the level of underpricing. Therefore, if an underwriter foresees the market to be hot, then in order to counteract the expected abnormal ex-post price, a higher-level of underpricing is induced on the pre-issue offer price. In retrospect, if the markets are cold, the level of underpricing will be lower relative to hot and ordinary market conditions. An empirical study by Ljungqvist et al (2003) confirms that the level of underpricing is proportionately high in hot markets.

Interestingly, the paper suggests that as "a hot market can end prematurely, carrying IPO stock in inventory can be considered to be risky, so to break even in expectation, regular investors require stock to be underpriced." Ljungqvist et al (2003 pg 2)

Therefore, to summarise, in order to minimize the opportunity to arbitrage, the market requires underpricing to counteract abnormal ex-post returns. In retrospect, investors use underpricing as a hedging tool against a slow down in the market.

2.1.6 Size and Exchange

A paper by Graves (1993) concludes that underpricing is effected by the quality of an exchange. The paper reports that underpricing on the NYSE is 4.82%. Whereas specialist exchanges (NASDAQ) that host companies with a higher degree of ex-ante yield an average underpricing level of 10.41%, over the same time-period.

As with an underwriter's prestige, stock exchanges are also known for their repute in the international markets. The more prestigious an exchange is said to be, the more capital they are said to raise. As per pie chart 2, (pg, 71) in 2006, the London Stock exchange (LSE), Hong Kong Stock Exchange (HKSE) and the New York Stock Exchange (NYSE) were the destination of 42% of global IPO's. Hong-Kong raised the most capital at $46.1b, followed by London at $33.3b and thirdly New York at $24.5b.

Graves (1993) also suggests that the size of the IPO also affects the level of underpricing. Larger IPO's are less risky when compared to smaller IPO's. Furthermore, the larger the IPO, the greater the potential gains from acquiring information in regards to the issue. Michaely (1994 pg 295)

The principle reason for why the monetary size of an IPO effects underpricing is in relation to the type of investor a large IPO's is likely to lure. Institutional investors typically invest in Large IPO's as they traditionally have the liquid capability of participating in such transactions. For example, the third largest issuance of 2006 was from Rosnefts' IPO. The issuance raised $10.6b; institutional investors included the Russian Government, ONGC of India, and SINOPEC of China.

In sum, the phenomenon of underpricing is indeed somewhat of an enigma. No two studies are the same. Ritter (1998) cannily proposes that theories, signals and models that explain underpricing are dependant on zealous postulations. In hindsight, something as pure as the periodic table seldom exists thus, only through the process of testing hypothesized theories, can one establish a generic theory for why underpricing occurs.

2.2.0 Long term performance

The long-term performance of an IPO is of considerable interest, thus has been well documented. (See: Levis 1993, Craig 2001)

Jegadeesh, (1993) proposes that from an investor's perspective, the analysis of long term performance allows institutional investors to form reflective trading strategies. He reports that buying stock with historically poor yields and selling stock with historically high yields can be a profitable trading strategy. Ritter (1991) goes into further depth and concludes that if the long term performance of a stock is $R_i > R_m$, (where R_i is return of a stock and R_m is the return of the market) then one is drawn to investigate the fads effecting the efficiency of the equity markets. He reports that during 1975-1984, the average holding period of 3 years for 1,526 IPO's yielded a return of 34.4%. However, stocks, selected by industry and market

value, returned 61.86%, over 3 years. Hence, there is a draw down for one investing in an IPO portfolio relative to investing in the matched stock portfolio by a ratio 0.831. The paper concludes that IPO's in the long-run under-perform.

Ritter (1991) also highlights that by determining the relationship between long term performance and volume of IPO issuances, underwriters can take advantage of the "windows of opportunity" by timing there issuance accordingly. Furthermore, for a pre-IPO company, the cost of external equity capital for companies going public depends not only upon the transaction costs incurred in going public, but also the returns that investors receive in the aftermarket, Ritter (1991 Pg 4) to the extent that low returns can reduce the cost of equity capital.

In a separate study, Ritter (1995) investigates 4753 issuances, over a period of 20 years. The paper concludes that five years after the issue of an IPO, investors receive average returns of 5% per year, and only 7% for companies that issue subsequent SEO's,. The paper wittily concludes that "investing in firms issuing stock is hazardous to your wealth".(1995 pg 46)

Between 1980-1988, Levis (1993) computes the performance for 712 British IPO's, he notes that the initial 3 year average return was -30.59%.

Finn et al (1988) investigated long run performance for 93 Australian IPO during 1996-1978. He reported an average annualized return of -6.52%.

The long-run underperformance of IPO's' is not a recent phenomenon. Interestingly a study by Schlag et al (2000) on German IPO's concluded that signs of underperformance existed before World War one. Furthermore, a study by Gompers (2001) on 3661 American IPO's during 1935-1972 also confirmed signs of long run underperformance.

The studies cited above, have focused on mature equity markets relative to developing countries, thus one may assume that the phenomena of underpricing is accordingly associated. In hindsight a paper by Jelic et al(2001) analyses the long term performance of Malaysian IPO's between 1980-1995. The paper initially reports positive gains, where the cumulative abnormal return (CAR) after 3 years is 24.83% and the Buy and Hold Abnormal Returns (BHAR) is 21.98% for the same time period. However, when the sample is matched to respective companies, underperformance arises.

Interestingly, a study by Smith (1990) provides a polar view in regards to the long-term performance of IPO's. The paper analyses the performance of 58 Management Buyouts (MBO's) of public listed companies. He notes that there is a significant positive difference between pre/post MBO of one year. Thus reporting that upon going private, operative performance retrospectively increases. He proposes that the gain in performance is due a reduction in the conflict of interest between stakeholders. I.e. managers and the shareholders

2.2.1-Doctorines of Long-term performance

A number of theories attempt to explain the long-term underperformance of IPO's.
A paper by Jain et al (1994) relates long run underperformance of IPO's with informational asymmetry amongst stakeholders. For example, the paper draws parallels with the principal-agent problem (See: Stiglitz 1987) and consequently suggests that that a company bears increased agency cost when transiting to a public listing. In hindsight, the objective of a shareholder is to be the recipient of optimal returns. However, as manager ownership is reduced, incentives to create value maximization accordingly dilate. Therefore, Jain (1994)

concludes that companies that retain a higher percentage of equity ownership perform better than companies that float a large percentage of equity. Lee (1993) provides a supplementary perspective by suggesting that the size of a company proportionately suggests quality. Consequently, as larger companies have access to larger pools of cash, in some cases with favorable terms and conditions, better quality[8] is noted. Therefore, larger companies tend to exhibit better long-term performance, relative to smaller sized companies

Furthermore, Jains (1994) study suggests that prior to an IPO; managers can "Window dress" there firm to increase the valuation of a company. This can be done by artificially appreciating the price-earnings (P/E) ratio and market-to-book (M/B) value relative to the proposed offer price. Thus on listing, investors pay a premium, expecting earnings growth to continue in tandem with forecasted statistics i.e. P/E however, over a long time period the short term effects of window dressing wither away. Therefore, initial forecasted performance becomes a mirage, hence affecting long-term returns.

When it comes to the issuance of an IPO, optimism is contagious; indeed this is how Ritter (1995) describes investor sentiment. Moreover, collective optimism is said to be the result of market fads. In such periods, positive sentiment of investors drives the overvaluation of firms. In retrospect, managers take advantage of this "window of opportunity" and sell there allocated stock at higher prices. This suggests that investors typically violate rational choice theories. (See: Allingham 2002) Such sentiments could ofcourse be the result of hot markets, or the analysis of "window dressed" results and trends.

Indubitably, if the markets are efficient i.e. at equilibrium, then naturally the dynamics of the markets would factor in such antics. Thus, on the basis of such conjecture, one would expect

[8] By referring to quality, we draw parallels with long-term performance.

the long-term performance of IPO's to be inline with market equilibrium. However, as per our review, earnings per share (E/S) decline in the long run.
In order to distinguish between fads and over optimism, Ritter (1991) suggests that one should use a cross-sectional time series data set.

Contradictory to investor optimism and irrationality, Shen and Ma 2003, develop a theory (quintessentially based on the prospective theory: see Kahneman 1979), to provide an innovative explanation in regards to why IPO's under-perform in the long run.
According to the prospect theory, the probabilities of uncertain outcomes do not directly enter into the valuation strategies of investors, as the standard expected utility theory (see: Anand 1995) assumes. Rather, the probabilities are transformed in a nonlinear fashion, and subsequently enter the valuation function. (Shu and Ma 2003 Pg3) Consequently, investors reclassify outcomes with an acute probability of occurring with a large weighting. In a similar fashion, high probability outcomes are relatively polarized, hence are lightly weighted. Albeit the return of IPO's is lower than matching stocks, by weighting the outcomes Shu and Ma (2003) document high returns for small probability outcomes relative to returns being calculated in the conventional utility way. The paper concludes that the prospect of yielding abnormal positive returns, fundamentally insinuates investors to invest in IPO's.

As per our literature review, the level of underpricing can be used as an indicator to signal the quality of a company to the market. According to Huang and Grinblatt, (1989) companies signal there quality by the level of induced underpricing, from thereon, in order to lure additional finance at favorable terms and conditions, companies execute seasoned equity offers. (SEOs) Thus, based on the information received from the cited signaling

model, one is able to formulate a relationship between the level of underpricing and the long run performance of an IPO. Thus, IPO's that have higher levels of underpricing vis-à-vis have lower long-run returns.

2.2.2 Benchmarking

Bessler (2002), highlights the difficulties in selecting an aptly suitable benchmark. Nonetheless, in order to classify return as abnormal, one has to counter the return against an appropriate benchmark. A number of models have been theorised to quantify the return of stock. Until recently, a frequented method was to use the capital asset pricing model. (CAPM) The model relies on the soundness of market equilibrium to calculate the return of a portfolio relative to risk. The model assumes that investors are diversified, thus, accordingly the model factors only systematic risk.

There are a number of scholars that criticize CAPM, Fama (1991) proposes that when one uses CAPM, they are in parallel, testing to see whether the markets are efficient. The inclusion of a second hypothesis is unwarranted and certainly not ideal. Furthermore, another much-discussed criticism is in regards to the predictive power of the model. Womack et al(2003)find that realized returns relative to returns generated by CAPM is in most cases incorrect. Nonetheless, according to Womack et al(2003) it is the average R^2 value of .85 that continues to justify the use of CAPM however, without being pedantic; the model fails to explain the remaining .15 of variation. Evidently, the cited .15 unexplained anomaly can affect the very figures that attempt quantify long-term performance[9].

[9] Naturally, one cannot solely rely on R-Squared, as it can be vehemently bias, affected by the number and type of explanatory variables.

An alternative model is the Arbitrage Pricing theory. (APT) However, APT is quintessentially a revision of CAPM. The only significant difference between CAPM and APT is in regards to the number of risk variables that are taken into consideration. CAPM only considers one risk-variable i.e. market risk, whereas APT factors in an array of risk factors. i.e. currency risk, supplier risk etc.

According to Laux 2002, Fama French 3 and 4 Factor models are of increasing interest. Homologous to CAPM, the model proposes that further to market risk, size and value risk should be taken into consideration when computing returns of a stock.

Womack (2003) analyses the performance of the Legg Mason Value Prim fund. The fund manager utilizes the CAPM technique to profess that 46 basis points was added to the portfolio on a monthly basis. However, Womack et al(2003) use the Fama French factor 3 model to suggest that the fund manager added 22 basis points per month. Furthermore, CAPM explained 89% of the variation relative to the factor 3 model, which explained 92% of the model

The matched-portfolio technique can also be used to proxy expected returns against a benchmark. A portfolio of matching stocks is formulated by identifying stocks that have similar characteristics. From amongst many, the paper proposes sector exposure, capitalization, and size. (Kane 2007)
However, as noted by Lyon and others, (1998) formulating a benchmark portfolio from the universe of the equities market is considered to be a "noisy procedure". Furthermore, the cited methodology can skew results, distorting expected returns.

Clearly, dependant on the methodology employed, the long-term performance accordingly varies. This area has been intensely documented, See: Fama 2004, Xu et al(2003), Edwin (1999)

Interestingly, Gompers (2001) study of 3661 IPO's from 1935-1975, notes:

"…CAPM and Fama-French three-factor regressions, are insignificantly different from zero or even significantly positive…IPO's and similar sized and book-to-market stocks have lower returns…The results raise questions concerning the interpretation of the underperformance of IPO's…The long-run performance depends considerably on the method for calculating returns and performance." Gomper (2001 P2-pg3)

Continuing with Gompers (2001) thoughts, Fama (1998) provides a comprehensive insight by proposing that the study of underperformance is often plagued by bad-model problems. For example, the cumulative abnormal return, (CAR) is calculated by the linear measurement of cumulative monthly average returns. However, an outlier in the form of a distorted monthly average could spuriously affect cumulative returns. Subsequently, as a supplementary statistic, studies also calculate buy and hold abnormal returns. (BHAR) As oppose to CAR's, BHAR's are calculated by compounding single monthly returns, thus the abnormal returns grow exponentially as oppose too linearly.

2.3.1 Formulating Hypothesis

Further to our literature review on underpricing, we hypothesize:

H1: Initial Cross-sectional underpricing will be greater than 0

As noted, the underpricing phenomenon is not a country specific characteristic. Nonetheless, we observed that the emerging markets are prone to higher levels of underpricing relative to mature markets.

As Russia, is firmly fixated in the Goldman-Sachs derived acronym BRIC,(Brazil, Russia, India and China) our second hypothesis is:

H2: Listings on the Russian exchange will be exposed to greater levels of initial underpricing relative to the listing of IPO's from exchanges in the UK and USA.

As per the efficient markets hypothesis see: Malkiel (1987) we expect the market to eliminate noise commonly attributed to initial underpricing, thus:

H3: Cross-sectional underpricing in the short term will be equal to zero

H4: We expect to observe positive relationships between high initial underpricing (UP) and:

H4a Ex-Ante - The more uncertainty there is about a respective IPO, the more attributed risk. Hence, in order to quell investor concerns, underwriters will accordingly discount. (Beatty and Ritter 1986)

H4b Market valuation- A company that has large market capitalization proportionately signals the quality of a company. Therefore, higher valuations equate to higher levels of underpricing. (Gosh 2000)

H4c Market Volatility - Market returns react to a number of factors i.e. the release of macro economic data. In times of high market volatility, we expect high levels of initial under pricing level.

H4d Over subscription- Higher levels of over subscription can force investors to increase there IPO allocation by purchasing at market therefore, where there are high levels of OS, we expect high levels of underpricing. (Omran 2005)

H4e Shares Offered – The higher the number of shares retained, will signal higher levels of underpricing. (Ogden 2005)

H4f First Seasoned Equity Offer - Companies that exhibit higher levels of underpricing are subsequently more likely to issue seasoned equity, with the objective of renegotiating the cost of finance.(Gosh 2000)

H4g Exchange- Here, we seek to investigate the reputation argument. I.e. if a company lists on a mature market, they are in turn likely to exposed to low levels of underpricing, as oppose to abnormal levels on the Russian exchange. (Graves 1993)

Subsequently, further to our literature review on the long run performance of IPO's, we hypothesize:

H5: Companies with high levels of initial underpricing will exhibit poor performance in the long-run. Huang and Grinblatt (1989)

H6: we expect strong positive relationships between long term performance and

H6a: Market capitalization: larger companies perform better relative to companies with a small capitalization. (Lee 1993)

H6b: Shares retained: The higher the percentage of shares retained, the higher management incentive to be efficient at optimum. Jain (1994)

H7: As over-subscription is a short-term phenomenon, we expect to observe a negative relationship with performance. (Omran 2005)

Section 3

3.1 Data and Methodology

The focus of this study is RDIPO's. We define a RDIPO as an entity that is officially incorporated in Russia.

A number of scholars (Bessler 2002, Levis 1993 et al) have noted that IPO related quantitative analysis is highly sensitive to the methodology used. As previously mentioned, the study of Canadian IPO's by Krinsky (1989) and Jog (1989) are prime examples of sensitivity[10].

Our analysis will consist of a three-stage process. We will start by referring to Aggrawals (1993) framework to measure initial and short-term performance. We will then utilize Ritter's' (1991) technique to evaluate the long-term performance of an IPO. We will conclude with identifying the determinants of initial and long-term performance, using an ordinary least squares specification similar to Suhail(2007) and Omran (2005)

3.2.1 Data Considerations

In order to achieve an evocative set of results for the Long-term performance of an IPO, a number of data related factors have to be taken into consideration. Ritter (1991) recommends that one should use 36 months of data to calculate long-term performance. The consequence of the cited recommendation would result in a substantial reduction of our already limited dataset. We find respite in noting that scholars like Doeswijk, R (2006), Chinmoy 2000 et al have used smaller time-periods.

[10] Despite, analyzing the same time-period and dataset, the respective studies differed on underpricing levels by 16.4%.

We are compromising our ability to derive robust results, retrospectively anticipating to derive results that will factor in more cross sectional information. Henceforth, our study focuses on 19 issuances, which represents 82% RDIPOs issued during 1996-2005.

3.3 Methodological considerations

3.3.1 Short Term

In order to calculate the short term performance of an IPO, Aggrawal (1993) et al suggested that one should determine the mean return during 2 to 20 days of initial trading. Whereas a more recent study by Coakley (2004) et al proposes that one should use 2 to 10 days of data. Craigs (2001) paper suggests that short term performance should be analysed between the first 2 to five days of trading. Suhayl (2007) uses 2 to 15 days to determine short-term IPO performance.

In light of the proposals put forward by recent literature, we observe that a steadfast rule in regards to the period one should factor in whilst determining short-term performance does not exist. However, one does note that since Aggrawals (1993) study, the number of days assessed, has gradually reduced. Therefore, after much thought, we adopt a 10 day average, as it is close to median trading range of the cited studies[11]. When calculating the short-term performance of an IPO, the normal practice (as per cited studies) is not to include the first day of trading. This is because; one can reasonably expect the effects of initial underpricing to generate a degree of volatility. Henceforth, the exclusion of the first day of trading prevents the distortion of results.

[11] Our methodology and reasoning behind selecting 10 days is vehemently bias as we formulated our selection on the limited research that was carried out. In hindsight, our decision is made based on the resources and time made available.

3.3.2 Long Term

As previously identified, a number of trends are noted when tracking the listing destination of Russian IPO's. Relative to referenced studies that focus on IPO's listed on incumbent exchanges, our study records the cross-sectional overview of global Russian-domiciled listings. Hence, we are able to distinguish ourselves from the mass array of literature that seeks to exemplify the performance of IPO's'. However, such uniqueness has led us to a host of potential issues. For example, Russian domiciled companies that seek expansion capital from the global equity markets, do so with the intention of using the capital for incumbent[12] transactions, activities, and operations. See (PBNCO 2005) Therefore, does one compare performance of Russian origin companies relative to the index they are listed on[13], or should all Russian domiciled companies, regardless of where they are listed, be equally weighted and thus, compared against a Russian index? In hindsight, one notes through the examples of Ritter, (1991) listing on the NASDAQ certainly does not mean that the respective company should be tracked against the performance of the NASDAQ composite. The FTSE index company has devised the Russian International Order Book (RIOB) index that tracks the performance of Russian IPO's listed on the LSE. However, index data starts from the inception date, September 2006. Thus, for the purpose of this study we are not able to utilize the much sought after advantages of benchmarking against the RIOB.

We could develop a customised matching stocks portfolio by following the parameters identified by Kaine. (2007) However, in the absence of literacy guidance, it is a complexly bias task in identifying and matching proposed similarities with our sample of Russian domiciled stocks. Nonetheless, a number of studies have used the respective listed index as a

[12] Russian

[13] Should a Russian company that lists on the LSE, be compared to the market returns of the LSE?

benchmark. (See: Goergon et al1999, Oxera, 2006) Therefore, we to will follow the same analogy i.e. derive net returns of an IPO against the corresponding index.

Our review on factoring risk on IPO performance, disclosed vehement signs of sensitivity to corresponding models. As reported by Gompers, (2001) his CAPM and Fama adjusted models yielded similar results. Therefore, in light of such findings in conjunction with the framework proposed by Suhail,(2007) we will use the Sharper-Litner Capital Asset Pricing Model adjusted by Abnormal Returns (CAPMAR)to account for market risk. In order to be robust and check for consistency, one should ideally factor in the Fama French model. However, drawing parallels with the case of selecting a benchmark, we are unable to conclusively determine the risk coefficients for size and value.

3.3.3 Determinants of performance

Our observations are acute relative to the studies identified in our literature review. Analysis derived by small samples can lack in authenticity, as the observed maybe the result of ephemeral phenomenon.

Due to the size of the dataset, the selected data may not be normally distributed. A normal distribution amplifies the measure of uncertainty by comparing the sample mean relative to the variance and standard deviation. Thus, on the assumption that data is normally distributed one can use students t-tests to investigate the nulls of respective hypothesis's.

One can use a number of tools to ascertain whether sample data is normally distributed. For the purpose of this study, we will use histograms, augmented by the Shapiro-Wilk test. If our data is not found to be normally distributed, we will then use the non-parametric Wilcoxon

signed-rank test. The suggested test has a similar function to students *t*-test however, does not factor in the normal distribution hypothesis.

As per the review conducted by Laux (2002) test statistics can be affected by direct and indirect forms of biasness. For example, his review suggests that the revision of benchmark portfolio to include stocks not in the focal group can have a negative impact on abnormal returns. The proposed solution is structured around using the buy and hold technique for the respective benchmark. Conversely, as the buy and hold technique connects each sub-period return multiplicatively; the associated biasness would over a period of time cumulatively compounds to reject the null hypothesis. Consequently, Laux's (2002) recommends that albeit not eliminating the bias associated with a benchmark, the CAR approach should be used, as it avoids skewed bias. Nonetheless, in order to control the effects of skewed bias, one can bootstrap.

3.4Methodology

3.4.1 Initial Excess Return

In order to calculate the initial level underpricing on the first day of trading, we calculate the Market adjusted abnormal return. (MAAR) The MAAR allows one to factor in a respective market index to derive a net return.

The MAAR model is built by first calculating the total raw return of stock "I"

(1) $R_i = (P_{io} - P_{i1}) / P_{i1}$

Where R_i is the raw return of Stock "*I*" on the first trading day, P_{io} is the daily close price of stock "*I*" and P_{i1} is the offer price of stock "*I*". We understand the first offer price to be the mutually agreed price offered by the IPO underwriting syndicate.

We use the same technique to calculate the raw return of the market index R_{mi} relative to the corresponding period of R_i.

By amalgamating the stock and market raw returns, we are able to formulate the MAAR model:

(2) $MAAR_1 = ((1 + R_i) / (1 + R_{mi}) - 1) * 100$

3.4.2 Short Term performance

The short-term performance of an IPO is calculated by determining the daily market adjusted abnormal returns for 10 days. Upon doing so, the average will be calculated to give the mean short-term performance.

$$(3)\ \overline{SR}_{1\text{-}10days} = 1/10 * \sum_{t=1}^{t=10}((1 + R_{i,t}) \ / \ (1+ R_{mi}) - 1) * 100)$$

3.4.3 Long Run Performance

Similar to the issues attributed to determining the period for Short-term performance, the consensus amongst scholars (Bessler 2002, Schlag 2000 et al) is that a favored means of calculating long-term performance does not exist. Nonetheless, as previously mentioned, we will use a methodology, similar to Ritter. (1991)

Ritter (1991) uses cumulative (CAR, Cumulative abnormal return) and passive strategies (BHAR, Buy and hold abnormal return) to calculate long-term performance. Although both methodologies seek to determine the long-term performance of a stock, they intrinsically differ from each other. The methodology behind the BHAR technique is to buy and hold every part of a new issue in a designated period, without rebalancing the portfolio. The cumulative methodology assumes that the portfolio is re-weighed. Therefore, in order to factor is consistency, most scholars use both approaches. (See: Ritter 1991)

The period used to investigate the long run performance of selected stocks will consist of 12 and 24-month periods. Accordingly, the first stage of analysis will consist of deriving

cumulative abnormal returns. (CAR) We will then calculate the buy and hold abnormal returns. (BHAR) The final stage of the analysis will consist of devising the Wealth Relative. (WR)

CAR

The cumulative average return is calculated by building on the raw stock and market adjusted returns that were used for the MAAR model. Thus, the net market adjusted return on a stock is derived by the following formulae:

$$(4)\ AR_{it} = R_{it} - R_{mt}$$

Where AR_{it} is the market adjusted net return at time *t*, R_{it} is the return on stock at time *t*, and R_{mt} is the net market return at time *t*.

Consequently, we calculate the average market adjusted return for a portfolio, at time *t*.:

$$(5)\ \overline{AR}_t = 1/N * \sum_{t=1}^{n} (AR_{it})$$

Finally, the cumulative long-run performance from month X to Y is the total of monthly returns, adjusted by the market for the period of interest.

$$(6)\ CAR_{X,Y} = \sum_{t=y}^{x} AR_t$$

BHAR

We calculate monthly BHARs using:

$$(7)\ BHAR_{it} = \{[\prod_{t=1}^{\min(t,\,Delisting)} (1 + R_{i,t})]\} - [\prod_{t=1}^{\min(t,\,Delisting} (1 + R_{m,t})]\}$$

To calculate the average BHAR for a portfolio of stocks:

$$(8)\ \overline{BHAR}_{it} = 1/N * \sum_{t=1}^{n} BHAR$$

Where $BHAR_{it}$ is the average BHAR for the respective portfolio, N is the number of stocks in the in the sample, and *t* is the period for which the BHAR is calculated.

As mentioned previously, by calculating $CAR_{X,Y}$ and $BHAR_{it}$ one is able to ascertain long-term performance from the first day of trading, to the respective time period under investigation. i.e. 12 and 24 months

3.4.4 CAR and BHAR adjusted by CAPMAR

By using MAAR, the respective CARS' and BHARs' are adjusted by market risk.(Omran 2005) However, the returns are not adjusted by the risk of an individual stock therefore, we compute corresponding CAPMAR figures:

$$(9)\ CAPMAR_{i,t} = (R_{i,t} - R_{f,t}) - (\beta_i * (I_{m,t} - R_{f,t})$$

Where the $CAPMAR_{i,t}$ is classified as the abnormal return of a stock *i* adjusted by CAPM at time *t,*. R_{it} is the risk free rate i.e. the short-term one-month rate for bank deposits. $I_{m,t}$ is the return of the market and β_i is the risk of stock *I,* which is calculated by the CAPM regression model, which is the slope obtained from regressing (Omran 2005 Pg9) corresponding daily returns over one year:

$$(R_{i,t} – R_{f,t}) \text{ on } (I_{m,t} - R_{f,t}))$$

3.4.5 Wealth Relative

Inline with Ritters (1991) framework, we calculate the wealth relatives (WR) as a performance measure to determine whether the return of the stock out performs the market, or vice versa. The WR is computed by:

$$(10) \quad WR = [1/N * \sum_{t=1}^{n} \{\prod_{t=1}^{t} (1 + R_{i,t})\}] \; / \; [1/N * \sum_{t=1}^{n} \{\prod_{t=1}^{t} (1 + R_{m,t})\}]$$

A WR figure of 1 suggests that the return of the IPO outperformed the return of the respective market. A WR figure below one suggests that the return of the market outperformed the return of the stock.

3.4.6 Cross-sectional regression analysis

We conduct regression analysis to exemplify the relationships commonly attributed to underpricing and long run performance. Consequently, the following models are used.

(13) $UP_i = C + \mu_1 EX_i + \mu_2 SHARE\_OFF_i + \mu_3 MR_i + \mu_4 EXG_i + \mu_5 FSEO_i + \mu_6 lnMV_1 + \mu_7 OS + \mu_8 T_i \ \mu_9 MV + {}_i\bar{e}_i$

(14) $AFTMARKAR_{i-1} = C + \mu_1 UP + \mu_2 EX_i + \mu_3 SHARE\_OFF_i + \mu_4 MR_i + \mu_5 EXG_i + \mu_6 FSEO_i + \mu_7 lnMV_1 + \mu_8 OS + \mu_9 T_i \ + {}_i\bar{e}_i$

Table 2 explains and identifies the respective variables.

Table 2

Variable	Description
UP	Underpricing: is a dependant variable, defined as the initial difference between the offer price and the close price on the first day of secondary market trading.
AFTMARKAR[14]	Defined as performance, categorized as the aftermarket abnormal return for portfolio *i* over period *t*.
EX	Defined as, Ex-ante. This variable measures the uncertainty attributed to a stock. Ex-ante is derived by calculating the standard deviation of daily returns over the first trading period of one month.

[14] AFTMARKAR individually represents 8 dependant variables, namely CAR!2, CAR12C (Where "C" after a respective number means that the variable has been adjusted by risk) CAR24, CAR24C, BHAR!2, BHAR12C, BHAR 24 and BHAR24C

Variable	Description
SHARE_OFF	Is the percentage of shares offered to the public.
lnMV	Is defined as the market valuation of an RDIPO at the time of listing.
MR	Captures the amount of money raised by an RDIPO
EXG[15]	We create 5 dummy variables, categorized by identifying each respective RDIPO to its corresponding exchange.
FSEO	Is a dummy variable and stands for "first seasoned equity offer". An FSEO, whether in the form of debt or equity, is understood to be the first subsequent equity offering issued by a company. If a company has issued an FSEO, then we will classify this as 1, vis-à-vis for non-FSEO issuance, the classification will be 0.
MV	Refers to Market Volatility and is calculated by deriving the standard deviation of daily market returns over a two-month period[16]
OS	Identifies whether or not the issuance of an IPO was over-subscribed. We measure OS by factoring in the multiple used to determine the number of times the issuance was over-subscribed.
T	T is a dummy variable and refers to the year of listing.

As per the suggested framework recommended by Sohail (2007) we will not be including the Price earnings ratio (PE) variable: The price earnings ratio is used as an indicator to asses the quality of a company in terms of how much an investor pays for each unit of income[17]. The

[15] EXG: AIM, LSE, NASDAQ, NYSE, RTS

[16] We do not consider market volatility for assessing the determinants of long-term performance, as the cited variable only captures 2 months of volatility, therefore, MV will not adequately represent market volatilities over the corresponding period.

[17] For example, if the stock price is low relative to high earnings then this presents a potential opportunity to buy stock as it is undervalued.-suggesting that the firm is of "good" quality.

cited variable would indeed provide valuable insight in to the relationship between the quality of a company pre -post IPO relative to underpricing. However, to calculate the pre-PE one requires corresponding data. Alas, such data is not consistently available for our selected sample.

Elements of causality exist in models 13 and 14. i.e. is the NYSE a liquid exchange because it is apart of a prosperous economy. On the other hand, is the NYSE liquid because the companies that list there are liquid, hence contribute to the prosperity of the economy. As per our literature review, we note that causality and endogeneity are not controlled or adjusted. Therefore, we will adhere to the existing framework, and thus will not account for causality and endogeneity.

3.5.1 Data Collection

Data for the respective benchmark indices[18] was collected from a Reuter's terminal. However, data for RTS was collected from the incumbent website[19].

Historical data in regards open, close, minimum, and maximum price for our IPO sample dataset was sourced from a Reuter's terminal. Data for IPO's that listed on the RTS was collected from www.rts.ru

The risk free rates for Russia, USA and UK was sourced from The Russian Central Bank, St Louis Federal Reserve and Econstat respectively

Information in regards to the number of shares offered, market valuation, capital raised, destination of listing of a stock were sourced from PBN. (2005)

Information about FSEO and OS was retrieved directly from the respective companies.[20]

[18] LSE, AIM, NASDAQ, NYSE and RTS

[19] www.rts.ru

3.5.2 Describing the Data

Panel A provides descriptive statistics in regards to our Independent variables.

Panel A

Variable	Mean	Std. Dev.	Min	Max
M_RAISED	234.42	362.11	8.00	1560.00
M_VALUE	1617.74	2276.76	72.00	8200.00
SHARE_OFF	21.85	8.90	8.30	38.50
EX	4.20	5.97	0.00	26.86
OS	2.47	3.15	0.00	12.00
MV	2.70	4.49	0.41	15.28
FSEO		-	-	-
T (TIME) [21]	-	-	-	-
EXG	-	-	-	-

Without distinguishing by a particular IPO, We can make the following general comments about the distribution of the data.

One immediately notes that the data, in general is severely dispersed, and thus shows abnormal signs of variation. M_Raised, M_Value, EX, OS and MV, reflects such levels of dispersion where the standard deviation is approximately 1.5 times greater than the mean. See Histograms 1-5.((pg, 77-79) Further observation of histograms 1-5; give us reason to believe that our data may not be normally distributed. Thus to test whether or not hypothesis testing is valid we apply the Shapiro-Wilks test. As per table one, (Pg 80) M_RAISED, M_VALUE_UP, EX and MV are not normally distributed. In order to normalize our data we take the logarithmic values of M_RAISED, M_VALUE, and MV. As we are working with an acute sample we cannot afford to loose further observations, therefore, we do not take the log of UP. We apply the Wilcox-signed rank test to test the null

[20] Quantitative and qualitative information about our dataset is available from IPO Pioneers, PBNCO (2005)
[21] We do not describe Time and EXG as A) They are dummy variables and B) we have already discussed in great detail about listing destinations and period of issuances.

hypothesis i.e. the median abnormal returns are equal to zero, as oppose to the mean being equal to zero

We note that the average amount of capital-raised during1996-2005 is $234m, with a range of $1552m. Subsequently, the markets have valued our sample companies with a mean value of $1.6billion, with a market value range of $8.1billion. Box plot one, (pg 81) and two, (pg 81) provide a graphical account of the distribution of the data for capital raised and market value, respectively. Illustratively, both plots are similar; the means are relatively close to the first quartile. Furthermore, box plot 1, (pg 81) displays an observation at $1500m, which is far beyond the upper whiskers of the box. We note a similar development in box plot 2, (pg 81) however; there are three observations above the upper whisker. Such observations will obscure the mean statistics. There are two possible explanations in regards to the observed anomalies. The first explanation is that the observations are indeed anomalies. This would suit capital raised relatively well (box plot 1, pg 81) however; the anomalies explanation cannot satisfactorily explain the elevated observations in box plot 2, (pg 81). The second explanation could be the development of a trend, which is the result of cyclical hot/cold markets[22].

The average percentage of shares offered over our selected time of 9 years is 21.85. Box plot 3, (pg 82) illustrates that the data is normally distributed (confirmed by histogram 6) and that the mean is skewed to the left of the distribution.

Furthermore, on average IPO's were over-subscribed by a factor of 2.47. Rather interestingly, we observe that RDIPO's were never under-subscribed. As illustrated by box plot 4, (pg 82)

[22] In times of a hot market, PE ratios usually tend to be higher; hence companies have inflated market valuation and are subsequently able to raise more capital relative to a cold market where PE ratios are low. Hence, the emergence of an emerging trend could account for increased market valuations.

the range for oversubscription is portrayed by a factor of 12. Nonetheless, we note again that there is an observation that distorts the box plot. In retrospect 50% of oversubscription, multiples are between 0 and 4.5 therefore, overall investor sentiment towards our sample has been of vehement interest[23].

Overall market volatility varies; there is range of 14.84%, with an average 2.47%. However, with a standard deviation of 4.2% the markets were extremely volatile. Volatility could be due to the inclusion of an emerging market (Russia) with mature markets from the US and UK. However, as per box plot 5, (pg 83) the respective data is distorted by a single observation. A closer inspection reveals that the observed anomaly emanates from the NYSE between 2000-2002. Upon identifying the dates concerned, we recall that during the cited period, the dotcom bubble hit its peak and subsequent burst, thus markets were indeed very volatile.

Due to the methodology used to capture FSEO observations, we describe the variable independently. Thus, one notes that during 1996-2005, 9 out of 19 RDIPOs issued FSEO's. A closer inspection of the variable reveals that from the companies that issued an FSEO, 66% of FSEO's came from stocks that listed on the RTS, 22% from the NYSE and 11% from the LSE.

Stocks listed on the RTS are at the forefront of issuing FSEOs. Common reasons for why a companies issue FSEO's include; raising additional capital to expand operations, restructure debt and merge with, or acquire competitors. According to Bessler (2002) German

[23] However, the level of interest in RDIPOs, when compared to the Spanish market is relatively small. According to Gonzalez.et al (2005) on average Spanish IPO's are oversubscription by a multiple of 18.35 during 1987-1997

companies' issue FSEO's with 5 years of listing; we observe a similar trend for companies that listed on the RTS.

Section 4

4.0 Descriptive Results

4.1 Initial underpricing: General overview

Panel B

Variable	Obs	Mean	Std.dev	Min	Max
Underpricing	19.00	5.85	11.09	-11.56	41.95

As per Panel B, we note that an investor that subscribed to a stock during our sample time period could expect to benefit by positive initial underpricing of 5.58%. The mean is inline with the lower quartiles of our literature review, where the focal was mature markets i.e. Levis (1993)

Dependant on the country a company lists on, we expected, (as per our literature review) variation in the levels of underpricing. This is noted by the standard deviation, which is twice as large as the mean. However, the standard deviation could be the result of the 53.2 percentage point range. Indeed this maybe the case, as box plot 6, (pg 83) conceptualizes the findings of panel B. We note that the maximum level of underpricing observed is 41.95%;. It is interesting to note that the first[24] foreign listing in 1986 yielded the cited level of underpricing.

The minimum level of initial underpricing was approximately -11%, hence it is likely that an investor at some point during our selected period experienced a loss on the first day of trading.

[24] First in the history of Russia

Despite significant levels of dispersion, 50% of initial underpricing levels were between 0% and 10%. Indubitably, we can accept the null for our 1st hypothesis, as the Wilcoxon sign statistic yields a z statistic of 2.314, at the significance level of 5%. Therefore, the mean (median) initial excess returns are significantly different from zero.

4.1.2 Initial underpricing: By Exchange

In order to get an insight into how the international markets perceived our sample data set, we collated the average initial underpricing levels, per exchange in Panel C.

Panel C

Exchange	Mean_UP	Std.dev	Mix	Max
NYSE	14.809	19.659	-2.706	41.951
NASDAQ[25]	-11.558	-	-	-
LSE	2.831	8.231	-4.102	13.263
RTS	4.450	4.118	-0.841	10.064
AIM	12.081	-	-	-

As per graph 4, (pg, 73) we report that with an average of 14.8%, the highest levels of initial underpricing are recorded on the NYSE. Subsequently, the markets deemed IPO listings on the NASDAQ to be overpriced; hence negative initial underpricing was recorded at -11.5%. Listings on the LSE experienced the lowest levels of positive initial under-pricing at 2.8%, Listings on the AIM recorded initial underpricing at 12%[26].

[25] NASDAQ and AIM have blank observations in std, min and max because each respective exchange listed one RDIPO.

[26] We distinguish between companies that listed on the AIM and companies that listed on non-AIM LSE exchanges, as the regulatory requirements for listing on the AIM are far more flexible as oppose to listing on a FTSE index. Companies listing on the AIM are not required to disclose previous financial history therefore; such companies are exposed to higher levels of risk. Thus, we cannot classify companies that list on the Aim with companies that have to go through an arduous process of being listed on the FTSE. I.e. From our dataset, the average market capitalization of companies that listed on the LSE was $5.1b relative to $154m for AIM.

Without focusing on the underlying reasons for why underpricing occurs, the LSE is the most apt in reconciling and managing initial underpricing. Therefore, from a risk-averse investor's perspective i.e. a pension fund, subscribing to a Russian issuance on the LSE is the "safest bet". In retrospect, speculative investors may subscribe to issuances on the NYSE where one, based on past performance, has the opportunity of making exceptional returns or alternatively can, make an initial loss of -2.7%.[27]

During 1996-2005, Russian companies initially chose to list on the NYSE relative to listing on the LSE. As per Graph 5(pg, 74), we note a negative trend in initial underpricing, starting from a high of 41% in 1996, followed by subsequent reductions to 4% in 2000, settling in 2004, at -2.7%. Subsequently, in 2005, we note a flurry of listings on the LSE as oppose to zero on the NYSE. Thus, as mentioned previously, such levels of underpricing dispersion may not be inline with the investment strategy of an institutional investor. Subsequently, RDIPO's may have been the subject of speculative attack, hence explaining variability of initial underpricing on the NYSE. However, if on the assumption, that the same profile of investors subscribed to NYSE as well as LSE, then our explanation of variant underpricing between the NYSE and LSE is not valid.

[27] :As per the minimum statistic of the sample

4.1.3 Short-term performance

Panel D

Variable	Obs	Mean	Std.dev	Min	Max
S.T_Performance	19.00	.05	1.87	2.25	-6.04

We classify the short-term performance of an IPO as the average level of underpricing over a 10-day period. We report average underpricing levels to be .05%, with a standard deviation of 1.87% and a range of -8%.

Graph 6, (pg, 74) compares initial underpricing with short-term performance. 10% of our sample eliminates underpricing, subsequently, 37% of our sample accommodates 1% or less of underpricing.

Regardless, of where an IPO is listed, the initial underpricing phenomenon is to a certain extent, controlled within a matter of weeks. Moreover, our findings highlight that the markets are efficient as they do eliminate attributed noise however, only to a certain degree. Extending the timeframe to measure short-term performance, may permit one to calculate the time taken to eliminate underpricing- i.e. 100% convergence to the market.

The Wilcoxon rank test yields a Z statistic of 1.429; therefore, we reject the null for H3, as the median mean short-term performance is not equal to zero.

4.1.4 Long Term performance: CARS and BHARs

We have already reported that RDIPO's are unable to sustain the initial excess returns offered to investors. However, how do RDIPO's perform in the Long run? Panel E provides insight.

Panel E

Variable	Std. Dev.	Mean	T	P>t	Min	Max
CAR_12M	60.04	26.99	3.980	0.000	-94.67	182.95
CAR_24M	86.54	33.39	5.800	0.000	-83.41	271.16
BHAR12M	64.50	19.98	4.132	0.000	-130.66	146.87
BHAR24M	98.29	37.03	3.500	0.001	-100.07	284.63

We report that that average returns over a 12 and 24-month period are significantly dispersed. High levels of dispersion is made apparent by the multiples at which the standard deviations supercede the corresponding means by, respectively.

The average cumulative return over a 12-month period, adjusted by the market is 26.99% with a *t* statistic of 3.98. Interestingly, 78% of our sample demonstrated positive returns. Additionally 73% of firms studied, yielded returns of 10% or more. The lowest return was -94%. Conversely, the largest return was 182%.

Over a 24-month period, the cumulative return increases by 2.4% to give an average return of 33.39%, with a *t* statistic of 5.8

Dispersion levels increased from a multiple of 2.25 to 2.6. Subsequently, the range of returns increases by 27%. The cited statistics suggest that there are turbulent factors that affect the

linearity of performance. In retrospect, an alternative explanation could be , stocks that performed well in the first 12 months continued to excel, whereas stocks that signaled poor performance, continued to perform poorly, hence increasing the respective range. Indeed we note that average performance by stocks that underperformed in year 1, increased from -14.6% to -42.8% in year 2.

Relative to the 12 month cumulative return, the buy and hold strategy for 12 months yields a lower average return of 19.20% with *t* statistic of 4.13. Nonetheless, both computations are effected by similar levels of dispersion. Moreover, 26% of the sample portfolio is outperformed by the market. The 12-month BHAR performance of underperforming stocks is on average -49.9%, relative to -14.6% for 12- month CAR. However, the average buy hold return for 24 months increases by 92.9% to 33.39%, with a *t* statistic of 3.50, at the 1% significant level. In hindsight, the percentage of stocks from the sample portfolio that make a loss in 24 months increases to 36.8%. The market on average outperformed underperforming stocks by 54.75%.

We report with 100%[28] confidence that for the period of 12 and 24 months, the mean returns are "greater" than zero for cumulative and buy hold returns.
Similar to cumulative returns, the buy hold returns for 12 and 24 months propose that the market is consolidating on two fronts. On the one hand, the sample portfolio succumbs to market factors, as the number of stocks that under-perform increases. Furthermore, the return of underperformed stocks relative to the market also increases over time. However,

[28] Excluding 24 Month BHAR, which is at 99% confidence

the average return of the sample retrospectively increases over time, albeit being associated with a smaller group of out-performers.

Brav *et al.* (2000), concludes that the size and strength of the statistical test are dependant on the methodology used to determine long-term performance. Graph 7, (pg, 75) illustrates the variation between the statistics generated by the CAR and BHAR models, respectively. We report that from 1996-2000, there is significant variation between results that have been generated by CAR relative to BHAR. For example, in 1999 the CAR model calculates the 12-month return to be 183%, whereas the BHAR model calculates a return of 66%. For marketing purposes, a fund manager would naturally use the former statistic as oppose to the latter. The CAR model fails to consider market movements therefore, in times of high volatility, a cumulative statistics can be highly distorted. (See: Michel *et al* 1991) A closer inspection reveals that the observed abnormal variation is attributed to a technology stock. Furthermore, the IPO was issued in 1999 subsequently, the IPO floated on the NASDAQ. The cited period was at the peak of the speculative dot-com bubble. The NASDAQ specializes in technology stocks; therefore, one could expect severe volatility during the suggested period. Indeed this was the case, during 1999-2000, from 6 out 12 months, the benchmark yielded negative returns.

As per graph 7,(pg, 75) from 2000 onwards the derived returns calculated by CAR and BHAR start to converge.

4.1.5 Long Term performance: CARS and BHARs, adjusted by CAPMAR

Panel F provides an insight into the long run performance of IPO's adjusted by CAPMAR.

Panel F

Variable	Mean	T	P>t	Std. Dev.	Min	Max
CAR_12_CAP	28.17	3.21	0.002	38.24	-32.48	98.98
CAR24M_CAP	48.94	2.30	0.017	92.83	-115.10	324.99
BHAR12M_CAP	24.55	4.74	0.000	49.09	-60.57	130.79
BHAR24_CAP	86.16	4.00	0.022	138.42	-92.52	384.68

We report that when factoring in the respective risk of a corresponding IPO, the cumulative return of a stock over 12 months is 28%, with a *t* statistic of 3.21, at the 5% significant level. 73% of our sample yielded positive returns, from which 68% of our portfolio yielded returns of 10% or more. Over a 24month period, the cumulative return increased by 73%, to yield an average portfolio return of 48.94%, with a *t* statistic of 3.21, significant at the 5% level. The buy and hold strategy for a 12 month period generates a return of 24.55%, with a *t* statistic of 4.74. Therefore, we can be 100% in proclaiming that the mean return is greater than zero.

In parallel with 12-month cumulative returns, the number of stocks that outperform the market that use the buy and hold technique is also 73%. However, the cumulative return is 12.85% higher relative to buy and hold returns. We can attribute the difference to the method of computation or an adverse response to risk. The same principle applies to the difference of 76% fashioned between 24-month returns for cumulative and buy hold returns, respectively. However, in regards to the latter, factoring in risk may have had a positive effect.

Graph 8, (pg, 75) illustrates an abnormal spike in 2004. The CAR model calculates a return of 51%, whereas the BHAR model calculates a return of 158%. As noted by Fama, (2004) the BHAR model multiplicity connects sub-period B to sub period C and so forth. A problem with this technique is that if an anomaly in sub-period B is noted, the significance of the anomaly is proportionally magnified. Thus based on this premise, we investigate the causality of the abnormal difference. We report that in trading months 1, 3 and 7, the return of stock outperforms the market return by a factor of 10, 7 and 5, respectively. By implementing the BHAR model, the cited multiples are subsequently magnified, affecting the average returns of the portfolio consequently providing insight into the abnormal difference.

Graph 9, (pg, 76) highlights the difference of returns over a 24-month period computed by cumulative and buy hold returns model, adjusted by risk. We note that the difference between the returns is relatively acute until 2002. In 2003, the difference in returns is 123%.

Panel G

	CAR12_CAPM	**CAR24M_CAPM**	**BHAR12_CAPM**	**BHAR24_CAPM**
Valuation	4.20%	31.76%	879.11%	40.88%

As per panel G, We report that when long-term performance is adjusted by risk, abnormal returns, on average significantly increase in value. Such findings are inline with Womack et al (2003)

4.1.6 Wealth Relative

By computing average wealth relatives, we report that over a 12 and 24-month period, RDIPO's out performed there corresponding market index. Moreover, if an investor subscribed to our portfolio of RDIPOs, and held there respective position until the first anniversary of trading, then they could have invested 2.3% less in each respective RDIPO to achieve the same wealth generated by market returns. Furthermore, an average wealth relative of 1.018 for 24 months implies that an investor could have invested 1.8% less in our portfolio to achieve wealth, which would be inline with market returns.

As we are comparing only two time-periods, we cannot prophesize whether or not wealth relative ratios will continue to decrease in the foreseeable future. However, based on our literature review, although our portfolio does not under-perform in the long-run, reduced year on year performance could signal a progressive convergence to the statistically reported phenomenon of long-run underperformance.

4.2 Empirical results

In the presence of heteroskedasticity, we employ robust ordinary least square regressions to ascertain the determinants of underpricing and long performance.

4.2.1 Determinants of Initial Underpricing:

Panel H (PG 51) provides an insight into the variation of initial underpricing.

Based on our results one in general, is unable to ascertain the determinants of underpricing for RDIPOs.

A single, statistically significant relationship is generated with the year 2002. Thus, we are able to ascertain with a degree of confidence that underpricing from 1996- 2002has reduced[29]. Based on generic explanations, in the cited period, reduced ex-ante in the form of investors becoming familiar with RDIPOS (after the first issuance of RDIPOS[30]) could potentially explain the reduction of underpricing. However, we cannot aptly rely on such generic explanations, as although our model is able to explain 96% of variation, it fails to explain the determinants of reduced underpricing. Our models lack of explanatory power maybe down to the limited observations[31] of our respective dataset. Therefore, before we reject all our H4 nulls, we deviate[32] from the original underpricing specification proposed by Sohail. (2007)

[29] We interpret our coefficients with caution, as the T (Year) is a dummy variable.
[30] Vimplecom 1996
[31] Another possible explanation could be due to outliers. In fact, our entire data-set can be considered to be an outlier. Nonetheless, for robustness we controlled for outliers however, our results failed to provide further insight. Thus, we do not report results, adjusted by outliers.
[32] : Our selection procedure on removing variables is based on random selection. In sum, we only report statistically significant relationships. Thus in specification 2, we eliminate FSEO and the year an IPO was listed. Specification 3 excludes market value, FSEO and the year of when an IPO was listed

Panel H

	UNDERPRICING
EX	-0.036
t-statistic	(-0.088)
_1999	-47.838
t-statistic	(-1.359)
_2000	-32.279
t-statistic	(-1.277)
_2002	-28.308
t-statistic	(-2.463)
_2003	-24.581
t-statistic	(-1.178)
_2004	-32.776
t-statistic	(-1.452)
_2005	-24.18
t-statistic	(-1.077)
lnMR	-0.646
t-statistic	(-0.047)
lnMV	0.91
t-statistic	-0.047
MV	-0.238
t-statistic	(-0.264)
SHARE_OFF	0.31
t-statistic	-0.796
FSEO	6.896
t-statistic	-0.714
OS	1.252
t-statistic	-0.252
NYSE	-0.292
t-statistic	(-0.009)
NASDAQ	(dropped)
t-statistic	
aim	(dropped)
t-statistic	
RTS	-5.985
t-statistic	(-0.386)
LSE	-13.557
t-statistic	(-0.447)
_cons	23.665
-0.731	
r2_a	0.661
N	19
R-Squared	96%

As per panel I (Pg57), we report with a degree of confidence that the market value of a RDIPO negatively affects the level of underpricing. Thus, we conclude that RDIPO's that are valued relatively high by market capitalization, do exhibit lower levels of underpricing[33]. Our result is inline with Welch, (1998) and Grinblatt et al's (1989) signaling model, however, is contrary to Goshs' (2000) findings. A possible explanation for why we have diametric results relative to Gosh, (2000) maybe due to the insignificant relationship observed between underpricing and FSEOs. According to Gosh (2000), higher value firms are under-priced so that FSEO's can be negotiated with favorable terms and conditions. In the case of our dataset, 46% of RDIPOs' issued FSEOs. Thus, we note that, as RDIPOs are not akin to issuing FSEOs therefore; RDIPOs are not motivated to abnormally under-price.
In light of the above, we reject our null for H4b.

As per panel I, we report that there is a positive and significant relationship between the multiples at which an issuance is oversubscribed by, and the level of underpricing. I.e. Higher levels of underpricing are noted in tandem with the oversubscription multiple. Our results are consistent with Omran (2005) and theoretically, inline with the winners curse model proposed by Rock. (1986) Underpriced IPO's are naturally more in demand than overpriced IPO's. Therefore, due to the allotted restrictions on IPO subscription, investors purchase additional stock at market, which in turn drives the market price higher, resulting in higher levels of initial underpricing. Therefore, we can accept our null for H4d.

[33] For example, Sistemas' market value in 2005 was $8.2b, the IPO was under-priced by 5%, whereas RBC information systems had a market value of $82m yet, was under-priced by 10%

We report as per panel J (Pg57), that a subsequent alteration of our model reveals that there is a positive and significant relationship between the percentage of shares retained and the level of underpricing. Our results are in line with the findings of Ogden. (2005) Therefore, we can accept the null of H4e.

Furthermore, we are able to report with confidence that there is significant positive relationship between the levels of underpricing and the destination exchange of a RDIPO. The highest coefficient of 38.22 is attributed to the NYSE whereas the lowest coefficient is -15.44 and is attributed to the LSE. As the exchange variables are classified as dummy variables, we must interpret the coefficients with caution. Nonetheless, we report that the NYSE experienced higher levels of underpricing relative to the LSE. In hindsight, the coefficient for the RTS is 22.054.

Contrary to our literature review on initial underpricing levels in the emerging markets[34], average initial underpricing on the RTS was lower than the NYSE and the NASDAQ[35] Therefore; we reject the null of H2, as abnormal initial underpricing levels were not observed on the RTS. We can use our findings to report with a degree confidence that that the RTS experienced low levels of underpricing as, market valuations were relatively small, over subscriptions seldom occurred[36] and the percentage of shares retained was relatively small relative to the floatation's on the NYSE.

[34] :(Mainland China had 948% of initial levels of underpricing between 1985-1987, Su and Fleisher (1999), from 1991-1995, Shah (1995) observed underpricing in India to average around 104%)

[35] There was only one observation on the NASDAQ, the stocks subsequently overpriced by 11%, hence on the first trading day; investors would have made a net loss of 11%.

[36] In fact only 22% of the data-set experienced multiples of oversubscription

Panel I:
Under pricing without FSEO and Time variables

UP	EX	lnMR	lnMV	MV	SHARE_OFF	OS	NYSE	NASDAQ	RTS	LSE	_cons	R-Squared
Coeff	0.074	6.057	-11.414	-2.138	0.333	3.717	28.775	-13.893	1.69	11.049	32.111	75%
t-stat	-0.398	-1.204	(-1.403)	(-1.974)	-1.582	-1.902	-1.817	(-1.973)	-0.266	-0.685		

Panel J:
Underpricing without FSEO, Time and Market volatility

UP	EX	lnMR	lnMV	SHARE_OFF	OS	NYSE	aim	RTS	LSE	_cons	R-Squared
Coef	0.192	-1.626	-1.317	0.481	1.54	38.22	22.054***	17.685***	15.444*	19.102*	60%
T-Stat	-0.831	(-0.921)	(-1.017)	-2.053	-1.99	-2.168	-9.482	-5.967	-2.505	(-2.662)	

*** Significant at 100%
** Significant at 99%
* Significant at 95%

Investor concerns, (Ex-ante) sentiments of the markets, (Market Volatility) and anticipated performance (FSEO) have little power in explaining the phenomena of underpricing. Therefore, we reject the nulls of: H4a H4c H4f

4.2.1 Determinants of Long Term performance:

In order to identify the determinants of long-term performance, we conducted several regressions on 12 and 24-month time intervals. Hereto Panel K (Page 58) provides an insight.

Our model fails to exemplify the determinants of long-term performance. Nonetheless, we identify three individual cases where our model yields significant relationships. However, when the respective results are adjusted for risk, one can no longer use the statistics as reliable. Henceforth, noting again that the lack of explanatory power is likely to be the consequence of an acute data-set[37], we adjust the specification of our model[38].

As per panel L, (Pg 60) a subsequent alteration to our model identifies, that initial oversubscription can be used as a positive and significant indicator in ascertaining long-term performance. Hence, RDIPOs that were heavily oversubscribed perform better, relative to companies with smaller multiples of oversubscription. Thus, we reject the null for H7.

Our results are in contrast to Omran. (2005) The paper reports that initial investor optimism dissipates over time. Therefore, consequently, over long-time period horizons, higher oversubscription levels yield negative abnormal returns.

[37] Again, we account for outliers, our results failed to provide further insight. Thus, we do not report results, adjusted by outliers.
[38] Similar to the random selection technique used to adjust our initial underpricing model, we only report statistically significant relationships. Thus in specification 2 we eliminate year of listing and market value, in specification 3, we eliminate year of listing.

Panel K	car12	car12C	car24	car24C	bhr12	bhr12C	bhr24	bhr24C
UP	-1.099	-0.143	0.008	2.168	-1.498	-0.593	5.157	5.157
	(-0.358)	(-0.052)	-0.001	-0.172	(-0.326)	(-0.140)	-0.277	-0.277
EX	0.344	0.72	-3.362	-2.565	0.192	1.287	-5.085	-5.085
	-0.581	-1.364	(-1.945)	(-1.131)	-0.209	-1.695	(-1.507)	(-1.507)
_1999	-83.862	16.506	108.016	263.148	-234.286	-68.134	0.267	0.267
	(-0.551)	-0.12	-0.234	-0.426	(-1.023)	(-0.329)	0	0
_2000	-51.743	49.08	139.182	271.818	-115.175	2.914	290.794	290.794
	(-0.420)	-0.472	-0.379	-0.568	(-0.616)	-0.018	-0.404	-0.404
_2002	-57.954	-2.144	6.212	133.646	-80.844	-18.674	156.395	156.395
	(-0.603)	(-0.026)	-0.022	-0.354	(-0.554)	(-0.148)	-0.277	-0.277
_2003	-68.124	8.68	87.765	199.713	-41.228	32.162	252.914	252.914
	(-0.895)	-0.125	-0.382	-0.648	(-0.359)	-0.312	-0.557	-0.557
_2004	-40.86	47.371	20.337	104.214	-8.353	86	220.982	220.982
	(-0.372)	-0.468	-0.06	-0.229	(-0.051)	-0.563	-0.33	-0.33
_2005	-137.765	5.357	23.701	94.541	-149.395	23.3	158.098	158.098
	(-1.608)	-0.069	-0.094	-0.281	(-1.134)	-0.207	-0.318	-0.318
lnMR	-1.321	-5.315	-13.704	-23.219	17.285	10.462	-11.122	-11.122
	(-0.057)	(-0.395)	(-0.218)	(-0.330)	-0.472	-0.449	(-0.095)	(-0.095)
lnMV	18.524	10.172	35.471	51.28	-6.186	-9.609	24.7	24.7
	-0.463	-0.365	-0.316	-0.382	(-0.098)	(-0.216)	-0.116	-0.116
SHARE_OFF	1.642	0.255	3.017	2.648	1.636	0.148	3.437	3.437
	-1.923	-0.354	-1.227	-0.84	-1.23	-0.141	-0.721	-0.721
FSEO	-34.242	1.585	-40.87	-35.993	-54.817	-1.751	-80.685	-80.685
	(-1.316)	-0.063	(-0.571)	(-0.382)	(-1.304)	(-0.055)	(-0.585)	(-0.585)
OS	7.597	5.069	-0.35	-7.354	18.489	14.386	-1.757	-1.757
	-0.716	-0.768	(-0.012)	(-0.228)	-1.087	-1.347	(-0.033)	(-0.033)
NYSE	-169.268	-91.098	-167.106	-213.583	-200.313	-108.406	-272.558	-272.558
	(-2.175)	(-1.462)	(-0.771)	(-0.796)	(-1.620)	(-1.209)	(-0.659)	(-0.659)
RTS	-139.155	-98.984	-116.362	-107.965	-179.226	-132.254	-194.898	-194.898
	(-4.132)	(-3.788)	(-1.198)	(-0.886)	(-3.435)	(-3.257)	(-1.039)	(-1.039)
LSE	-109.339	-71.55	-152.105	-160.754	-108.179	-81.052	-155.156	-155.156
	(-1.394)	(-1.113)	(-0.649)	(-0.530)	(-0.911)	(-0.801)	(-0.338)	(-0.338)
_cons	90.419	28.708	-75.154	-189.423	177.017	72.32	-99.875	-99.875
	-0.732	-0.269	(-0.205)	(-0.395)	-0.938	-0.451	(-0.139)	(-0.139)
r2_a	0.893	0.782	0.587	0.389	0.769	0.754	-0.201	-0.201

Panel L	car12Y_MV	car12Y_MVC	car24Y_MV	car24Y_MVC	bhr12Y_MV	bhr12Y_MVC	bhr24Y_MV	bhr24Y_MVC
UP	-1.495	-1.357	-1.514	-2.531	-2.259	-1.923	-1.353	-1.353
	(-1.166)	(-1.441)	(-1.362)	(-1.627)	(-1.418)	(-1.584)	(-0.943)	(-0.943)
EX	-0.458	-0.146	-2.916	-1.609	-0.169	0.623	-4.674	-4.674
	(-0.390)	(-0.190)	(-1.270)	(-0.491)	(-0.107)	-0.579	(-1.644)	(-1.644)
lnMR	6.798	4.635	6.684	1.349	5.666	7.015	-0.137	-0.137
	-0.676	-0.816	-0.469	-0.068	-0.402	-0.825	(-0.008)	(-0.008)
SHARE_OFF	1.416	0.427	2.547	2.71	1.789	0.619	4.438	4.438
	-0.976	-0.398	-1.607	-1.387	-0.903	-0.424	-1.468	-1.468
FSEO	12.935	6.917	-57.357	-29.987	26.232	16.891	-51.479	-51.479
	-0.478	-0.387	(-1.955)	(-0.747)	-0.724	-0.72	(-1.480)	(-1.480)
OS	10.161*[39]	8.076*	7.606	8.055	13.455*	11.143*	8.768	8.768
	-2.989	-3.316	-1.428	-1.255	-2.676	-2.901	-1.351	-1.351
NYSE	-132.339*	-56.479	-190.296*	-235.136*	-18.38	12.825	53.19	53.19
	(-2.391)	(-1.243)	(-3.100)	(-3.203)	(-0.255)	-0.218	-0.612	-0.612
aim	-61.685	13.479	-75.963*	-104.040*	104.536*	136.814**	290.624***	290.624***
	(-1.873)	-0.572	(-2.607)	(-2.790)	-2.57	-4.601	-6.787	-6.787
RTS	-164.478***	-70.385**	-176.820***	-210.058**	-54.069	5.944	80.533	80.533
	(-6.528)	(-3.556)	(-5.284)	(-4.576)	(-1.623)	-0.222	-1.403	-1.403
LSE	-146.028**	-60.637	-179.823*	-220.158*	-15.867	24.176	112.14	112.14
	(-4.588)	(-2.139)	(-3.136)	(-3.017)	(-0.368)	-0.603	-1.178	-1.178
_cons	84.05	40.169	142.218	200.2	-49.559	-65.886	-117.349	-117.349
	-1.254	-0.966	-1.668	-1.825	(-0.550)	(-1.158)	(-0.910)	(-0.910)
r2_a	0.61	0.488	0.678	0.584	0.344	0.377	0.442	0.442
N	19	19	19	19	19	19	19	19

[39] *** Significant at 100%
** Significant at 99%
* Significant at 95%

As per panel M, (Pg 63) we report with confidence that size of a company influences the long-term performance of RDIPOS. Our result is in line with Lee (1999), Groenger (2005) et al. A positive coefficient suggests that higher levels of capital raised, equate to better long-term performance. Although subjective, over a two year time period, Sistema raised $1.5b in 2005 and yielded a return of 88% [40] Whereas, Lebedyansky raised $151m in 2005, and yielded a net loss of -26%[41]

Furthermore, the market capitalization of a company significantly affects long-term performance of RDIPOS. A positive coefficient indicates that the larger the capitalization of a company at floatation, the greater the likelihood of a stock yielding larger abnormal returns in the long run. Our results are in line with the findings of Le (2007)

We accept the null for H6a.

Additionally, the listing destination of a RDIPO can significantly affect long-term performance. As the exchange variable is a dummy, we must be cautious when interpreting our coefficients. Therefore, for greater clarity, we investigate the returns of our portfolio, categorized by corresponding exchange. Panel N and Panel Nb (Pg 62) present the average percentage abnormal return and the average percentage abnormal return adjusted by risk, respectively.

Panel N

Exchange	CAR_12M	CAR24M	BHAR12	BHAR24
NYSE	35.334	3.503	24.768	-10.689
NASDAQ	182.949	271.163	66.692	35.462
RTS	-8.904	-3.543	-15.935	6.917
LSE	45.643	57.522	58.856	90.987
AIM	86.041	151.100	121.838	284.629

[40] Calculated using BHAR, adjusted by risk
[41] Calculated using BHAR, adjusted by risk

Panel Nb

Exchange	CAR12_C	CAR24M_C	BHAR12_C	BHAR24_C
NYSE	29.809	-5.440	19.693	-11.476
NASDAQ	93.294	324.986	15.208	384.675
RTS	6.276	27.125	3.123	72.374
LSE	46.195	56.747	57.926	85.764
AIM	81.459	155.500	112.585	303.790

We report that RDIPOs, that list on the NASDAQ yield the highest abnormal returns, followed by listings on the AIM. Traditionally, technology stocks and issuances on focal exchanges like the AIM are prone to greater risk levels; therefore, greater risk can yield greater profit. Nonetheless, there was only one observation on the NASDAQ and AIM, respectively. Therefore, abnormal returns maybe the result of ephemeral phenomenon. Abnormal returns yielded by RDIPOs on the LSE, in general yield higher returns relative to its main competitor, the NYSE. In fact, in the long run, RDIPOs' yield negative returns on the NYSE, whereas risk adjusted abnormal returns positively vary between 57%- 86% on the LSE.
Listings on the RTS yield the lowest returns. We are able to explain the long-term performance of the RDIPOs on the RTS by reconciling with our significant determinants. Thus, we report that the RTS had low levels of oversubscription, additionally, market valuations and the size of RDIPOS was also relatively small. However, when adjusted by risk, returns over a 24-month period of stocks listed on the RTS outperform stocks on the NYSE by 115%[42].

Underpricing, investor uncertainty, and the percentage of shares offered, fail to contribute towards the explanation of over/under long term performance of RDIPOs. Therefore, we reject the null of H5 and H6.

[42] Calculated using 24month BHAR, adjusted by risk

Panel M	car12yr	car12yrC	car24yr	car24yrC	bhr12yr	bhr12yrC	bhr24yr	bhr24yrC
UP	-1.405	-1.275	-1.479	-2.528	-2.124	-1.793	-1.268	-1.268
	(-1.265)	(-1.659)	(-1.165)	(-1.470)	(-1.607)	(-2.037)	(-0.778)	(-0.778)
EX	-0.224	0.066	-2.825	-1.601	0.18	0.96	-4.454	-4.454
	(-0.195)	-0.083	(-1.121)	(-0.461)	-0.119	-0.937	(-1.420)	(-1.420)
lnMR	-14.363	-14.509	-1.548	0.607	-25.985	-23.514*	-20.042	-20.042
	(-1.472)	(-1.960)	(-0.063)	-0.024	(-2.226)	(-3.337)	(-0.783)	(-0.783)
lnMV	35.142*[43]	31.792*	13.67	1.231	52.564*	50.700**	33.057	33.057
	-2.671	-3.223	-0.389	-0.035	-3.363	-5.021	-0.811	-0.811
SHARE_OFF	1.95	0.91	2.754	2.729	2.588	1.39	4.94	4.94
	-1.49	-1.114	-1.765	-1.378	-1.437	-1.257	-1.683	-1.683
FSEO	26.09	18.818	-52.24	-29.526	45.909	35.87	-39.104	-39.104
	-0.986	-1.198	(-1.591)	(-0.642)	-1.286	-1.844	(-0.967)	(-0.967)
OS	5.02	3.424	5.606	7.875	5.764	3.725	3.931	3.931
	-1.435	-1.088	-0.616	-0.915	-1.591	-1.361	-0.432	-0.432
NYSE	-103.689*	-99.843**	-127.184	-132.253	-172.327*	-171.648***	-268.508*	-268.508*
	(-2.475)	(-3.788)	(-2.068)	(-1.722)	(-3.049)	(-5.777)	(-3.231)	(-3.231)
NASDAQ	40.702	-32.461	67.8	103.305*	-135.921**	-167.086***	-310.361***	-310.361***
	-1.503	(-2.312)	-2.324	-3.147	(-4.179)	(-10.325)	(-8.824)	(-8.824)
RTS	-124.818**	-103.788**	-109.424*	-106.789	-191.547**	-162.644***	-230.807**	-230.807**
	(-3.735)	(-4.670)	(-2.774)	(-1.976)	(-4.398)	(-5.784)	(-4.305)	(-4.305)
LSE	-149.082**	-132.682***	-129.043	-118.386	-217.233**	-206.035***	-239.379	-239.379
	(-3.822)	(-8.626)	(-1.643)	(-1.172)	(-3.703)	(-7.347)	(-2.068)	(-2.068)
_cons	-81.52	-40.335	25.844	92.521	-100.409	-78.947	75.554	75.554
	(-1.193)	(-1.023)	-0.187	-0.563	(-1.126)	(-1.478)	-0.406	-0.406
N	19	19	19	19	19	19	19	19
R-Squared	87%	87%	86%		81%	88%		
r2_a	0.689	0.688	0.642	0.524	0.513	0.709	0.406	0.406

[43] *** Significant at 100%
** Significant at 99%
* Significant at 95%

5.0 Summary and concluding remarks

We examine the initial, short, and long-term performance of 19 RDIPOs during 1996-2005.

In line with respective literature, our results confirm that RDIPOs yield economically and statistically significant initial excess returns. Furthermore, short-term performance converges towards market efficiency; however, equilibrium is not realized in the given timeframe. Our results also confirm a pseudo hypothesis, i.e. returns are dependant on the computation method used.

We report that in the long-run RDIPOs outperform the market, subsequently in contrast to our literature review, RDIPOs on average, do not under-perform in the long-run. Conversely, a closer inspection reveals that on average, RDIPOs' on the LSE continue to realize incremental abnormal returns however, stocks on the NYSE signal signs of long-term underperformance. Thus in order to ascertain the determinants of long-term performance, we conduct a series of regressions. We note that oversubscription, market valuation, destination of exchange, and the size of a company prove to key indicators. However, in retrospect to our literature, variables like ex-ante, percentage of shares offered, FSEO provide acute direction.

Our study is the first to document the performance of RDIPOs, therefore, we cannot benchmark or compare our findings with that of others. Thus in order interpret the findings of this paper conclusively, more investigation is required.

Albeit having a limited number of observations, our study could be furthered by computing abnormal returns using the Fama French factor models. Subsequently, one could increase the period used to measure short and long-term performance.

With 71 RDIPOs scheduled between 2007 and 2009, in due course scholars, academics, and investment analysts alike with have the opportunity in investigating the performance of RDIPOS with increased time frames and a larger dataset.

Bibliography:

Aggarwal, R., Leal, R., Hernandez, F, 1993, The aftermarket performance of initial public offerings in Latin America Financial Management 22, p. 42-53

Allingham, Michael (2002). Choice Theory: A Very Short Introduction, Oxford.

Anand, Paul. Foundations of Rational Choice Under Risk Oxford, Oxford University Press. 1993

Beatty, R. Ritter, J, 1986, Investment banking, reputation and the underpricing of initial public offerings », Journal of Financial Economics 15, p. 213-232

Bessler,W and Thies.S, 2002, Initial Public Offerings, Subsequent Seasoned Equity Offerings, and Long-Run Performance: Evidence from IPOs in Germany

Briston,R Jelic, R., B. Saadouni, 1998, The accuracy of earnings forecasts in IPO prospectuses on the Kuala Lumpur Stock Exchange, Accounting and Business Research 29, 57–72.

Burton G. Malkiel (1987). "efficient market hypothesis," The New Palgrave: A Dictionary of Economics, pg. 120-23.

Carter, R, Manaster, S,1990, Initial public offerings and underwriter Reputation, Journal of Finance 45, p. 1045-1068

Chinmoy G, N Raj, 2000, A Test of the Signaling Value of IPO Underpricing with REIT IPO-SEO Pairs

Craig S. Galbraith, Merrill Gregory B, 2001, IPO performance in business to business "B2B" e-commerce firms: Effects of strategy and industry

Coakley, J, Hadass, L, and Wood, A, 2004, Post IPO operating performance, venture capitalists and mark timing, Essex Discussion papers

Derrien, F and Womack, K. 2003 Auctions vs. Bookbuilding and the Control of Underpricing in Hot IPO Markets. The Review of Financial Studies, Vol. 16, No. 1 pp. 31-

Dimitris F. Kenourgios, Spyros Papathanasiou, Emmanouil Rafail Melas, 2007, Initial performance of Greek IPOs, underwriter's reputation and oversubscription, Journal of Managerial Finance Volume: 33 Issue: 5 Page: 332 - 343

Doeswijk, R.; Hemmes, H. Venekamp, R. (2006) 25 Years of Dutch Ipos: An Examination of Frequently Cited Ipo Anomalies Within Main Sectors and During Hot- and Cold-Issue Periods, Source: De Economist, Volume 154, Number 3 , pp. 405-427(23)

Fama, E, 1991, Efficient Capital Markets: II The Journal of Finance

Fama, E and French K, 2004, The capital asset pricing model: theory and evidence, Journal of Economic perspectives- Volume 18, Number 3Pages 25-46

Frank J. Finn, Higham, R, 1988, The performance of unseasoned new equity issues-cum-stock exchange listings in Australia Journal of Banking & Finance Volume 12, Issue 3, Pages 333-351

Edwin, J E and Gruber, M. 1999, Inverstment. ISBN 0262050595

Ernst and Young, 2007, Globalization Global IPO Trends Report 2007

Gregorio, G, 2005, An International Perspective of IPOs ISBN: 0750679751

Goergen M, Mudambi R, Khurshed A, 1999, On the long run of IPO's

Gompers, P.A, Brav, A., Geczy, C., 2000, Is the abnormal return following equity issuances anomalous?, Journal of Financial Economics, 56, 209-249.

Gompers, Paul A. Lerner, J, The Really Long-Run Performance of Initial Public Offerings: The Pre-Nasdaq Evidence, The Journal of Finance, Vol. 58, No. 4 (Aug., 2003), pp. 1355-1392

Gonzalez Lvarez Susana, A Victor M, 2005 Signaling and the Long-run Performance of Spanish Initial Public Offerings (IPOs) Journal of Business Finance & Accounting, 32(1) & (2), January/March 2005, 0306-686X

Graves, A,J Shantaram P. Hegde; RMiller; F,K. Reilly,1993, The Effect of the Trading System on the Underpricing of Initial Public Offerings Financial Management, Vol. 22, No. 1, pp. 99-108.

Grinblatt and Hwang 1989, The signaling process in initial public offerings, Asia Pacific Journal of Management, Volume 9, Number 2 / October, 1992

Jain,A, B and Kini, O, 2004, The Post-Issue Operating Performance of IPO Firms The Journal of Finance, Vol. 49, No. 5. pp. 1699-1726.

Jegadeesh,N and Titman,S, 1993, Returns to Buying Winners and Selling Losers: Implications for Stock Market Efficiency, The Journal of Finance, Vol. 48, No. 1 (Mar., 1993), pp. 65-91

Jelic R; Saadouni B.; Briston R, 2001, Performance of Malaysian IPOs: Underwriters reputation and management earnings forecasts, Pacific-Basin Finance Journal, Volume 9, Number 5, November 2001 , pp. 457-486(30)

Jog, Vijay M. and Allan L. Riding (1987), "Underpricing in Canadian IPOs," Financial Analysts Journal, Nov-Dec., pp. 48-55.

Kane, D and Enos, 2007, Matching Portfolios

Kaneko, T. R Pettway. 2001, Auctions versus Book-Building Underwriting of Japanese IPOs: OTC, Mothers, and NASDAQ-Japan Issues

Kahneman, D and Tversky.A (1979) "Prospect Theory: An Analysis of Decision under Risk", Econometrica, XLVII , 263-291.

Kiymaz, Halil, 2000, The initial and aftermarket performance of IPOs in an emerging market: Evidence from Istanbul Stock Exchange, Journal of Multinational Financial Management, 10, 213-227

Krinsky, I. And W. Rotenberg (1989), "The Valuation of Initial Public Offerings," Contemporary Accounting Research, Vol. 5, No. 2, pp. 501-505.

Laux, C(2002) The methodology of Long Run Return studies

Le –Pukthuanthong, K and Varaiya, N,X, IPO Pricing, Block Sales and Long Term Performance, Forthcoming in The Financial Review

Leland, H. and D. Pyle, (1977) Information asymmetries, financial structure and financial intermediation, Journal of Finance 32, 1977, pp371-387

Levis, M. 1993, The Long-run performance of Initial public offers: the UK experience 1980-1988, financial management.

Ljungqvist, A WJ Wilhelm Jr,2003, IPO Pricing in the Dot-Com Bubble - The Journal of Finance Vol. 58, No. 2. (Apr., 2003), pp. 723-752.

Ljungqvist, A, Jenkinson, T., Wilhelm, W.2000, Global integration in primary equity markets: The role of U.S. banks and U.S. investors

Loughran, T., Ritter J. R., and K. Rydqvist, 1994, "Initial public offerings: International insights". Pacific-Basin Finance Journal 2, 165-199.

Lyon, J.D. Barber, .M., and Tsai, C., 1998 Improved Methods for tests of Long-Run Abnormal Stock
Returns, Journal of Finance, vol. 54, no. 1, pp. 165-203.

Michaely.R Wayne H. Shaw, 1994 The Pricing of Initial Public Offerings: Tests of Adverse-Selection and Signaling Theories The Review of Financial Studies, Vol. 7, No. 2. pp. 279-319.

Pandey, A, 2004, Initial Returns, Long Run Performance and charectoristics of issuers: Differences in Indian IPO's, Following fixed price and book building process

Oxera, 2006, The London markets and private equity-backed IPOs Report prepared for British Venture Capital Association and London Stock Exchange

Ogden, J, Jen, Frank, Zheng, 2005, Pursuing Value Through Liquidity in IPOs: Underpricing, Share Retention, Lockup, and Trading

Omran, M 2005, Underpricing and Long-run performance of Share issue privatizations in the Egyptian Stock Market, Journal of Research

PBNCO, IPO Pioneers, 2005: www.pbnco.com

Ritter, J 1991, The Long-Run Performance of Initial Public Offerings, The Journal of Finance, Vol. 46, No. 1, pp. 3-27.

Ritter, J and Loughran, T, 1995, The New Issues Puzzle, The Journal of Finance, Vol. 50, No. 1, pp. 23-51.

Ritter, Ray J, 1998, Initial public offerings, Contemporary Finance Digest, pg 5-30.

Ritter. And Welche I, 2002. A review of IPO activity, Pricing and Allocation

Rock, K.,1986, Why new issues are underpriced , Journal of Financial Economics 15, p. 187-212,

Shah, A, 1995, The Indian IPO Market: Empirical Facts—Technical Report, Centre for Monitoring Indian Economy, Mumbai

Shen, Y, T MA, 2003, Prospect Theory and the Long-Run Performance of IPO Stocks

Sherman A.; Chowduhry B, 1996, The winner's curse and international methods of allocating initial public offerings, Pacific-Basin Finance Journal, Volume 4, Number 1, pp. 15-30(16)

Schlag.C and Wodrich, A, 2000, Has There Always Been Underpricing and Long-Run Underperformance? - IPOs in Germany Before World War I

Sherman, Ann E., 2000, "Global trends in IPO methods: Book building vs auctions, Memo dated November 2000, University of Notre Dame

Sohail, M and Nasr M, 200, Performance of Initial Public Offerings in Pakistan, International Review of Business Research Papers, Vol.3 No.2 June 2007, Pp. 420 - 441

Smith, A, 1990, Corporate ownership structure and performance: The case of management buyouts, Journal of Financial Economics 27, 143-164.

Stiglitz, J, and Sappington, 1987, Privatization, Information and Incentives, Journal of Policy Analysis and Management

Stoll R. Curley J, (1970) Small business and the new Issues Market for Equities, The Journal of Financial and Quantitative Analysis, Vol. 5, No. 3 pp. 309-322

Su, D., Fleisher, B.,1999, An empirical investigation of underpricing in Chinese IPOs », Pacific-Basin Finance Journal 7, p. 173-202

Whalley, J and Abalkin, A,1999, The problem of Capital flight from Russia

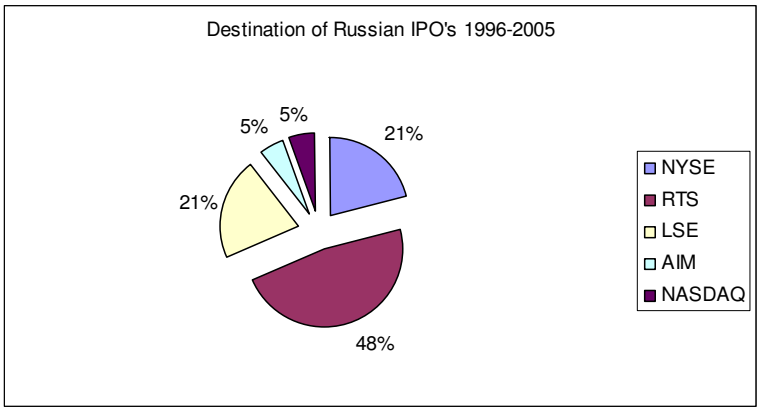
Womack, Kent L. and Zhang, Y, 2003 "Understanding Risk and Return, the CAPM, and the Fama-French Three-Factor Model" . Tuck Case No. 03-111

Websites:

Russian Bond Briefing, 2004
http://www.cbonds.info/catalogue_inv/russia.phtml

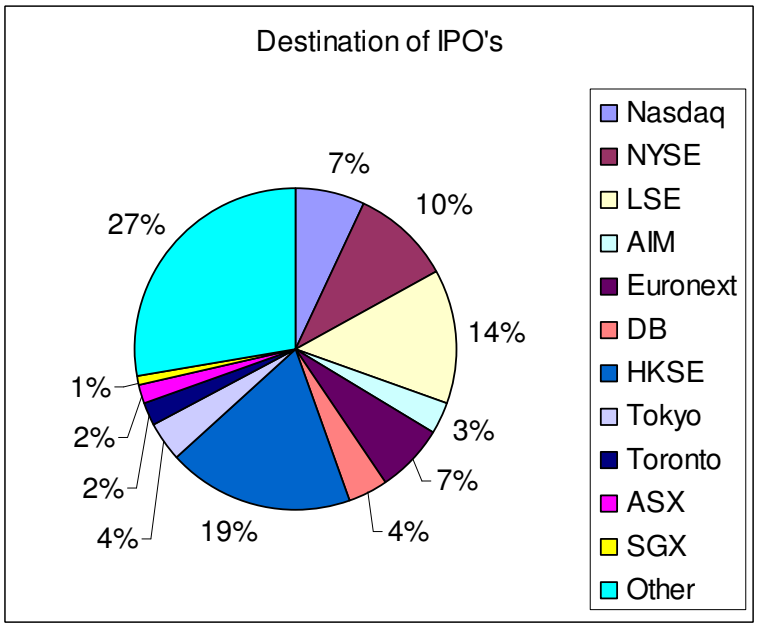
Russian Trading System (RTS)
www.rts.ru

Appendix:
Pie Chart one:



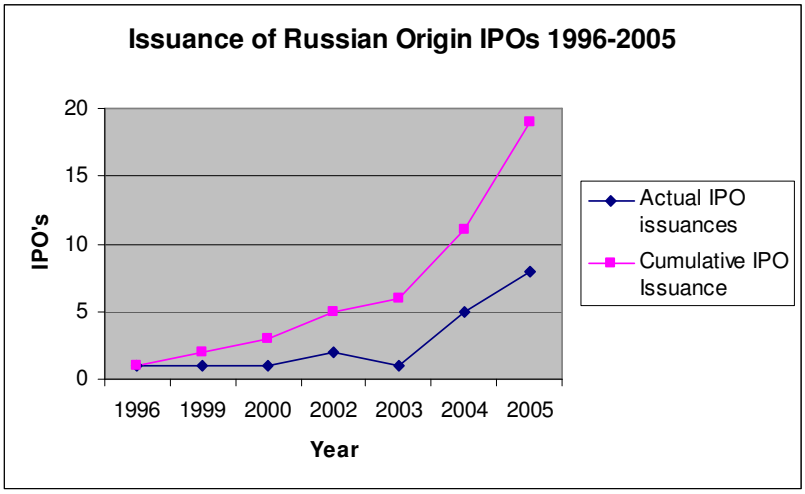
Source: PBNCO 2005

Pie Chart 2:
Destination of IPO's in 2006



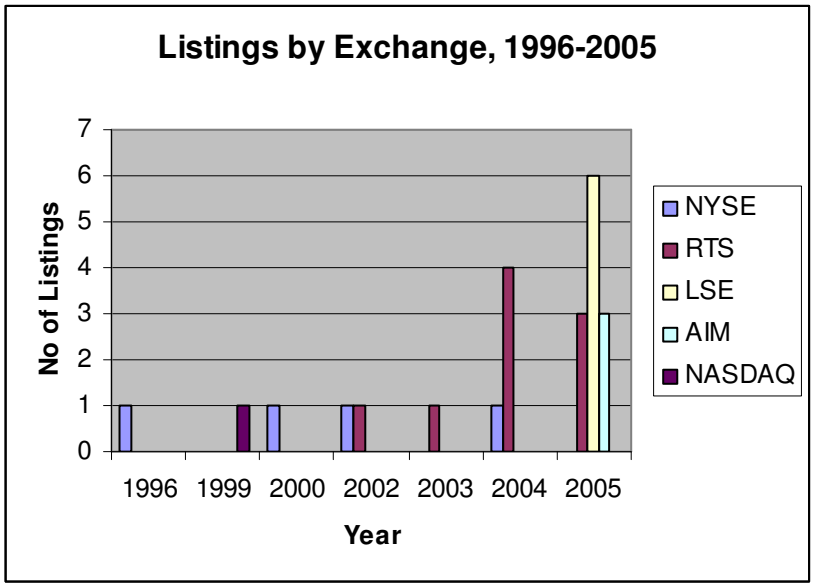
Source: Ernst & Young 2007

Graph 1:



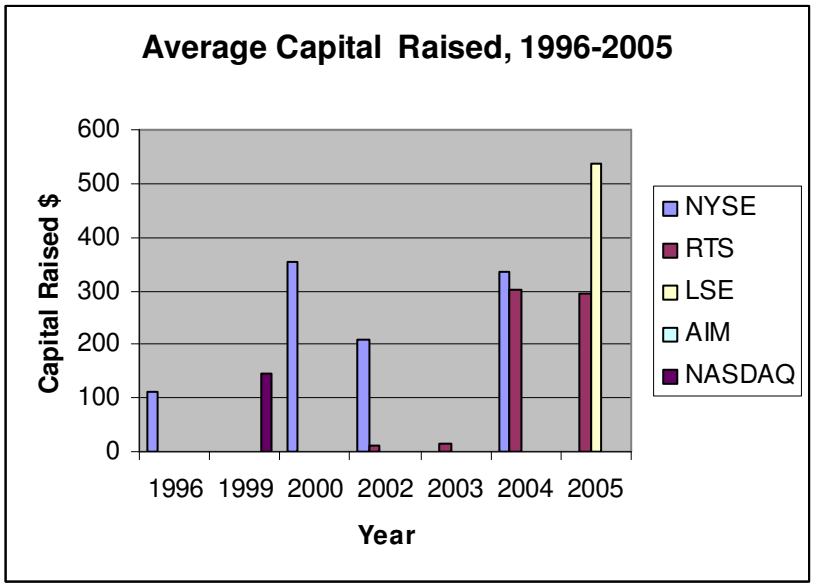
Source: PBNCO 2005

Graph 2:



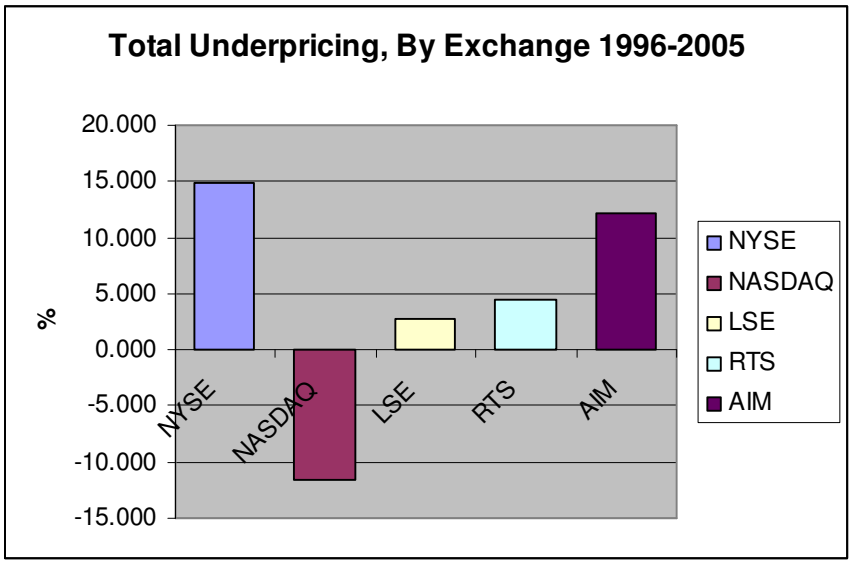
Source: PBNCO 2005

Graph 3



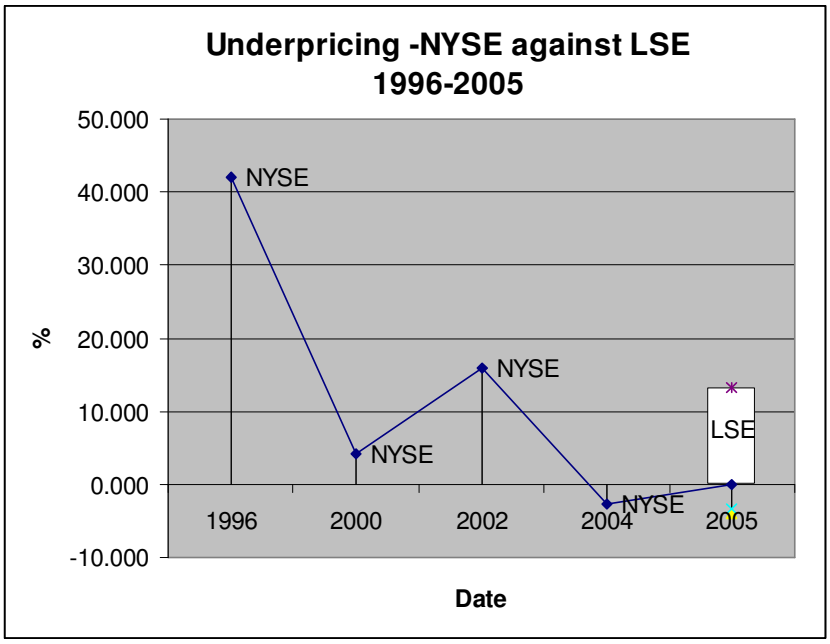
Source: PBNCO 2005

Graph 4:



Source: Underpricing computed by BQ, data sourced from respective stocks, exchanges from Reuters and www.rts.ru

Graph 5:



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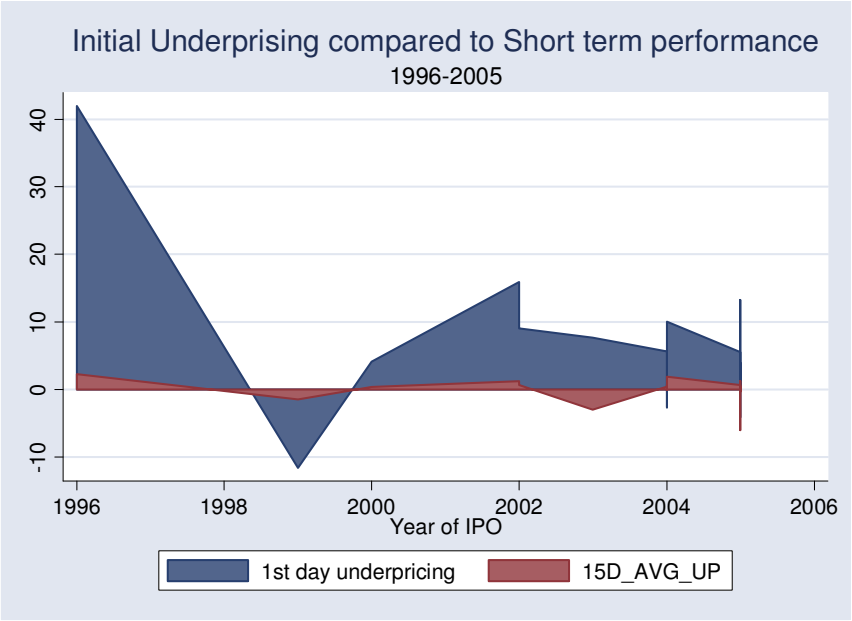

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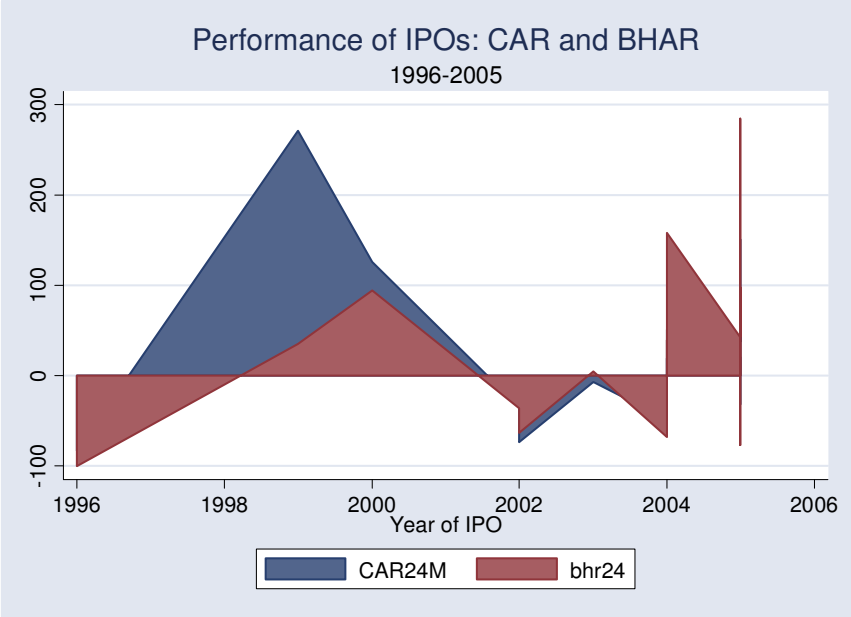
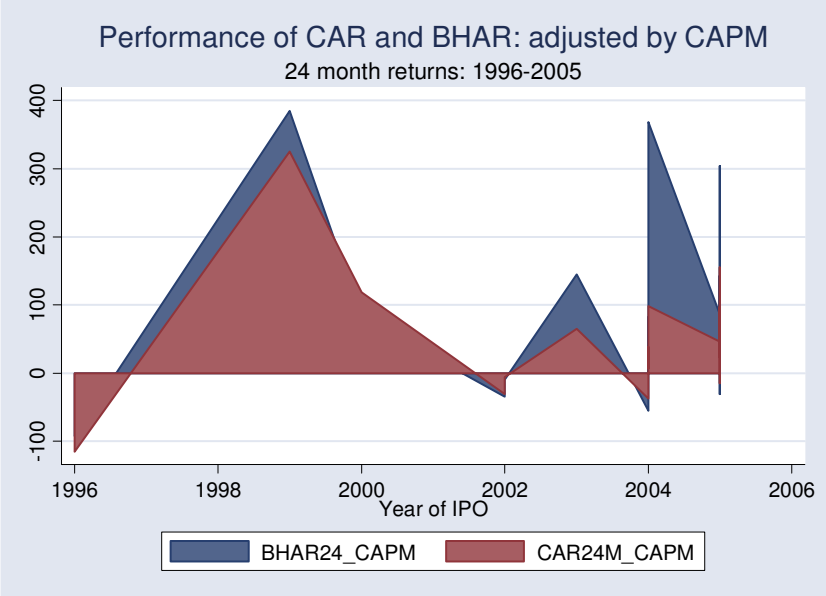
Graph 7:



Source: Performance computed by BQ, data sourced from respective stocks, exchanges from Reuters and www.rts.ru

Graph 8:



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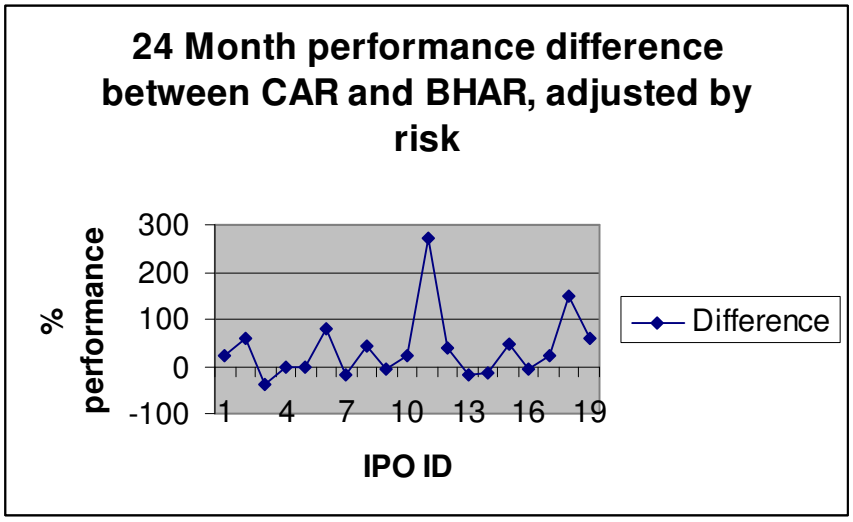
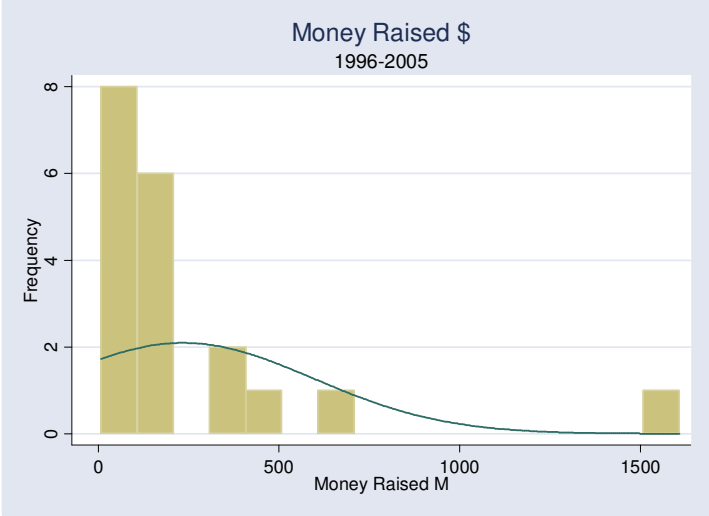
Graph 9:



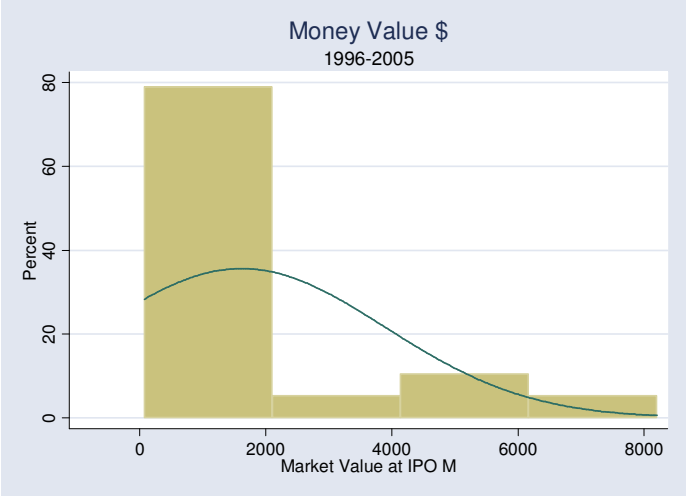
Source: Performance computed by BQ, data sourced from respective stocks, exchanges from Reuters and www.rts.ru

Histogram 1

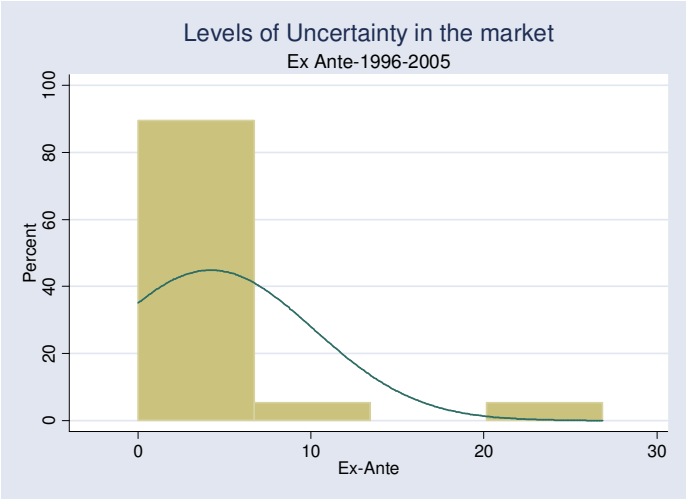


Data Source: PBNCO 2005

Histogram 2

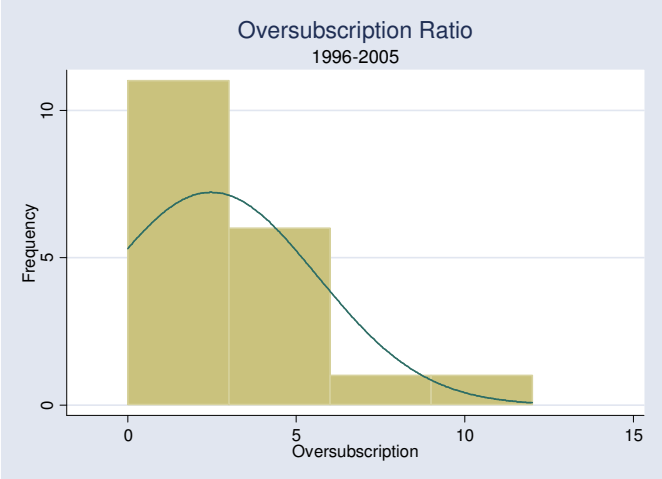


Histogram 3



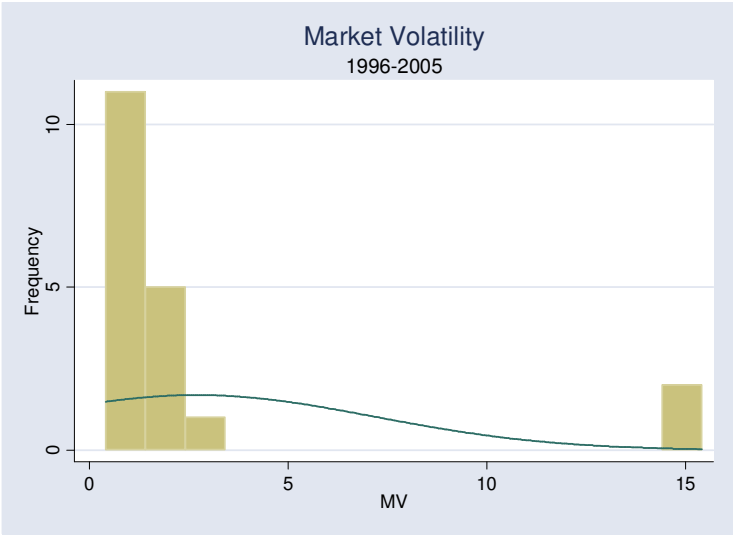
Data Source: PBNCO 2005

Histogram 4



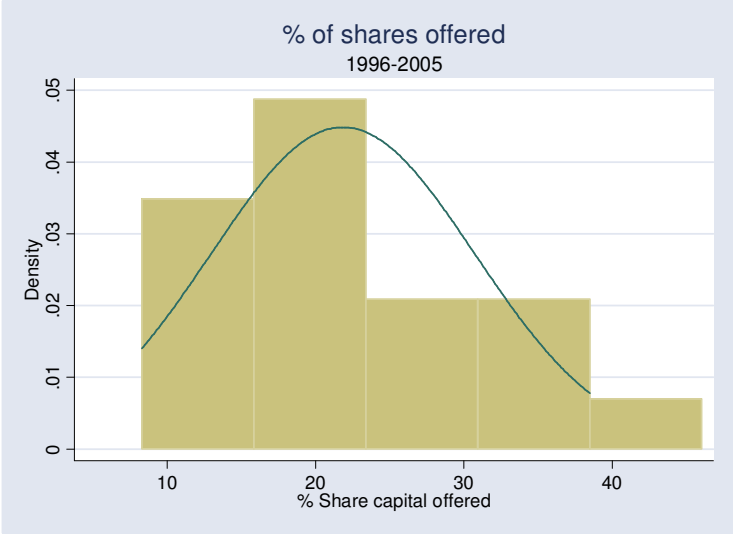
Data Source: PBNCO 2005

Histogram 5



Data Source: Calculated by BQ, using data from Reuters

Histogram 6

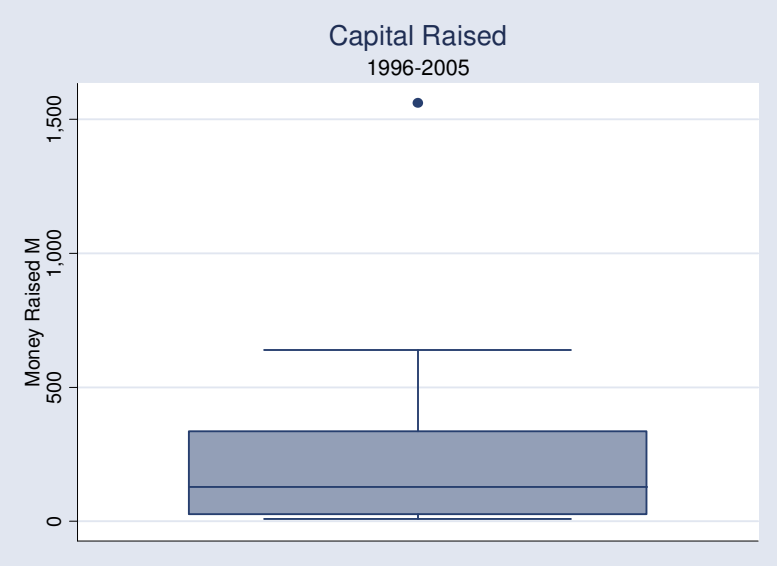


Data Source: PBNCO 2005 and corresponding company broachers

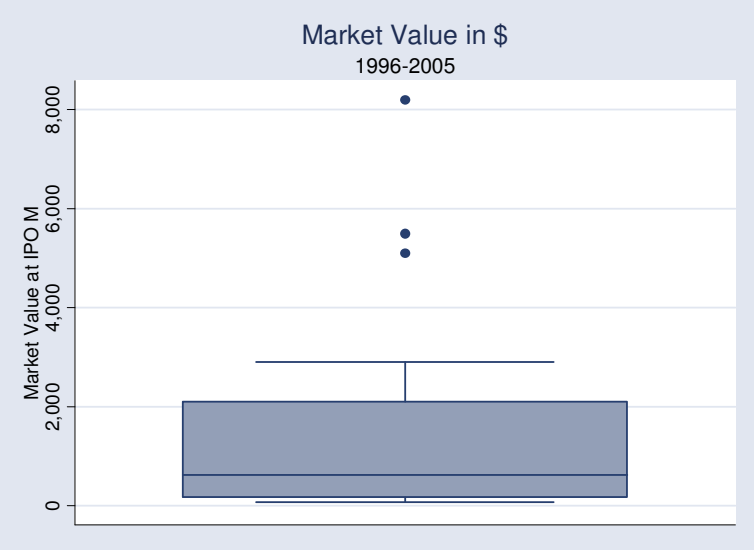
Table 1:

Shapiro-Wilk		Test for Normal Data			
Variable	**Obs**	**W**	**V**	**Z**	**Prob>z**
M_RAISED	19	0.61614	8.763	4.36	0.00001
M_VALUE	19	0.70615	6.708	3.823	0.00007
SHARE_OFF	19	0.96033	0.906	-0.199	0.57886
UP	19	0.84814	3.467	2.497	0.00626
car_12m	19	0.95609	1.002	0.005	0.49808
car12_capm	19	0.95646	0.994	-0.012	0.50485
car24m	19	0.92795	1.645	1	0.15877
car24m_capm	19	0.90817	2.096	1.487	0.06852
bhr12_capm	19	0.97497	0.571	-1.124	0.86952
bhr24_capm	19	0.88612	2.6	1.919	0.02749
EX	19	0.53339	10.652	4.752	0
OS	19	0.82597	3.973	2.771	0.00279
MV	19	0.49942	11.428	4.893	0
bhr_24	19	0.93935	1.385	0.654	0.25665

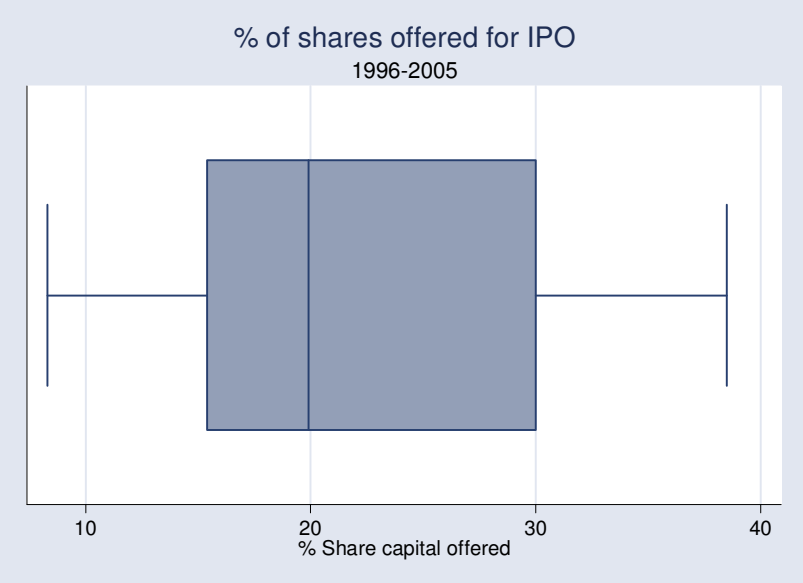
Box Plot 1



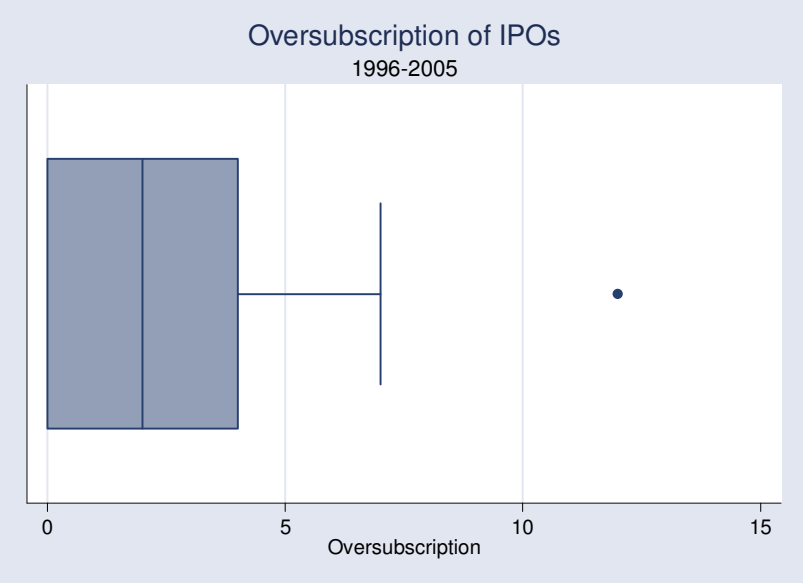
Box Plot 2



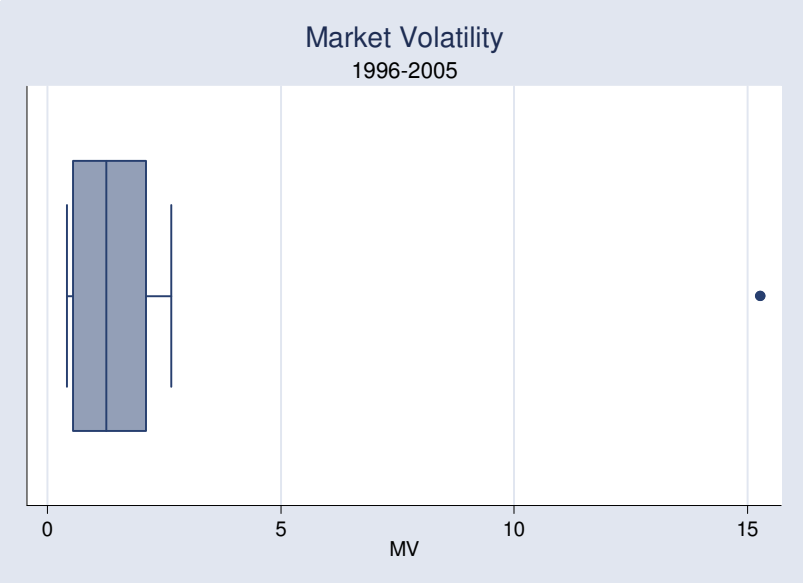
Box plot 3



Box plot 4



Box plot 5:



Box plot 6