PRICING
OF
INITIAL PUBLIC OFFERINGS

A THESIS

SUBMITTED TO THE FACULTY OF MANAGEMENT

AND

GRADUATE SCHOOL OF BUSINESS ADMINISTRATION

OF BİLKENT UNIVERSITY

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF

MASTER OF BUSINESS ADMINISTRATION

BY

VUSLAT AKKAŞOĞLU

FEBRUARY 1992

PRICING
OF
INITIAL PUBLIC OFFERINGS

A THESIS
SUBMITTED TO THE FACULTY OF MANAGEMENT
AND
GDADUATE SCHOOL OF BUSINESS ADMINISTRATION
OF BİLKENT UNIVERSITY
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
MASTER OF BUSINESS ADMINISTRATION

BY
VUSLAT AKKAŞOĞLU
FEBRUARY 1992

I certify that I have read this thesis and in my opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Business Administration.

Assist. Prof. Gülnur Şengül

I certify that I have read this thesis and in my opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Business Administration.

Assoc. Prof. Kürşat Aydoğan

I certify that I have read this thesis and in my opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Business Administration.

Assoc. Prof. Gökhan Çapoğlu

Approved for the Graduate School of Business Administration

Prof.Dr. Subidey Togan

TABLE OF CONTENTS

öZET

ILK HALKA ARZIN FIYATLAMASI

VUSLAT AKKAŞOĞLU

Yüksek Lisans Tezi, Işletme Enstitüsü

Tez Yöneticisi : Yardımcı Doç. Dr. GÜLNUR ŞENGÜL

Şubat 1991

Bu çalışmanın amacı Istanbul Menkul Kıymetler Borsasında Ocak 1990- Nisan 1991 döneminde halka arz edilen hisse senetlerine yatırım yapanların piyasaya kıyasla kısa ve orta vadede ne oranda getiri sağladıklarını incelemektir. Buna ek olarak, piyasanin değerinden farklı fiyatlamaya ayarlama hızı da araştırılmıştır.

Bulunan verilerin ışığında, halka arz edilen hisse senetlerinin düşük fiyatlandırıldığı ve bu hisse senetlerine yatırım yapanların kısa donemli, piyasanin ustunde getiriler elde edebilecegi saptanmistir. Piyasanın ,değerinden farklı fiyatlamaya fiyat ayarlamasının,hisse senedi halka arz edildikten sonra ilk iki gün içinde gerçekleştiği, ayarlamanın esas kısmının ilk gün içinde olduğu gözlenmistir.

ABSTRACT

PRICING OF INITIAL PUBLIC OFFERINGS

BY

VUSLAT AKKAŞOĞLU

SUPERVISOR: ASSOC. PROF. GÜLNUR SENGÜL

FEBRUARY 1991

The purpose of this study is to examine how investors in new stock issues have fared relative to the rest of the stock market both in short and in medium term in Istanbul Stock Exchange during the period January 1990-April 1991. Furthermore, the speed of market adjustment to mispricing is also examined.

In light of the findings, initial public offerings are found to be underpriced and investors in initial public offerings could enjoy short term returns relative the rest of the stock market. The market adjustment to mispricing is observed to be accomplished during the first two days of public trading with the bulk of the adjustment being in the first day.

ACKNOWLEDGEMENTS

I am grateful to Assist. Prof. Gülnur Şengül for her supervision and constructive comments throughout the study. I would also like to express my thanks to Assoc. Prof. Kürşat Aydoğan and Assoc. Prof. Gökhan Çapoğlu for their contribution.

I also thank to my family for their continous support and patience during the preparation of this thesis and throughout my life.

1. INTRODUCTION:

The capital market is a mechanism enabling those who want to borrow to issue claims which can then be taken up by those with funds to lend. The mechanism which involves the issue of financial liabilities by deficit units gives rise to what is now called the primary market.

One of the important aspect of the work of the primary market is to ensure that savings are directed towards the most productive or profitable use, that is the market should be allocatively efficient. For the issuer of shares this means posing the question as to what price should be fixed for the offer. As with the sale of any new product there is a case for offering the shares at a discount to the prices of existing securities in order to stimulate demand.

An understanding of the market for initial public offerings (IPOs) is important for investors and underwriters as well as for financial managers. The investor in the IPO either is "informed" ex ante about the after market equilibrium price or is "uninformed". If an IPO is underpriced, informed traders will enter orders for the issue, causing the issue to most likely be oversubscribed and thereby requiring an allocation or rationing of the issue. Uninformed investors will thus receive some rationed amount in response to their orders. On the other hand if an issue is overpriced, informed investors stay out of the

offering, leaving only uninformed traders to absorb the overpricing.

Underwriters, also should understand the IPO market in order to reduce their risks and costs of underwriting. Ending up with an unsuccessful new issue will cause bad reputation on the side of the underwriters ,as well as cause huge losses.

In addition, financial managers of non public firms may need IPO market in the future. They may attempt to fulfill some of their planned capital needs by public offering. Firms are more willing to spin off divisions to their current stockholders or allow managers to put together a leveraged buy-out that may eventually go public.

So, the understanding of the pricing of new stock issues are important for the three interest groups mentioned above. A priori expectations are for a downward bias in the pricing of new stock issues. The reasons are as follows:

1- Because of the unseasoned nature of the issue, the underwriter is uncertain about the public evaluation of the firms past earnings stream as well as the corporation outlook.

2- The probability that the issue will be "successful" is much higher if it is somewhat underpriced. In this context "successful" is defined as an offering that is quickly sold, is possibly oversubscribed, and enjoys

some increase in price soon after the offering. Such an offering results in satisfied customers for the underwriter as well as satisfied corporate stockholders.

3- A successful issue is one that sells quickly. In addition to satisfied customers, quick sale is important to the underwriter from reasons of rapid turnover of their capital.

The only constraint to the underpricing of an issue is the possible complaint by the issuing corporation that it could have received more capital from the issue. Such concern is minimized by the following:

a- The new stockholders are satisfied with their purchase of the "successful" issue.

b- Corporations do not attempt to fulfill all of their planned capital needs in the initial offering. They know that they can float future stock issues at a higher price to a satisfied stockholder group and possibly an eager public.

Focusing our view on Turkiye, increasing interest on the Istanbul Stock Exchange (ISE) gave rise to an improvement in the primary markets. The most striking phenomena among all the developments is the increasing tendency of the corporations to make new issue public offerings as well as issue offerings of existing shares. This development has important

implications since it brought about a new dimension to the supply side of the market, namely the issuance of shares as underpriced or overpriced depending on their market values.

2. LITERATURE SURVEY:

Several studies examining the price behavior of initial public offerings (IPOs) have been done. They have set different hypothesis and used different methodologies. The most relevant research for the present study will be listed below.

J.G.McDonald and A.K.Fisher (1972) investigated the price behavior of unseasoned new issues of common stock immediately following the offering and over the subsequent year during the period 1969-1970. They suggested that the short run price adjustment after the offering should be continued through the long run as the market continues to recognize and adjusts for underpricing.

As a market measure the return on the over the counter measure of the National Quotation Bureau was used.

An excess return, u_jt, is computed for each stock in each period.

$$u_jt = R_jt - R_mt$$

where R_jt =Return on stock j in period t.

R_mt =Return on OTC average in same period.

Same modeling is used to find excess return on each offering in this thesis. ISEI is used as a market measure.

The general problem of adjusting for market-wide movements in security prices on individual common stock returns has received considerable attention. One useful procedure is to estimate the parameters of the Sharpe -Lintner -Mossin Capital Asset Pricing Model for each security and to interpret the residual in each period, eit ,as an "abnormal return" on stock j:

$$Rjt = aj + bj\ Rmt + ejt \quad (1)$$

Rjt = the return on security i

Rmt = return on a general market index

aj , bj = intercept and slope of linear function.

ejt = the error term.

As the data files in McDonald and Fisher's study contained few observations of price for each unseasoned new issue, estimation of coefficients aj and bj for each security was not applicable. As a useful adhoc adjustment for market effects on new issue returns, the difference between security and market returns is computed in equation stated above, where the O.T.C. average represents the market index most representative of the O.T.C. population from which new issues are drawn. If for each new issue stock aj equals zero and bj equals one in the equation above, that is non-diversifiable risk of each new issue is the same as that of the O.T.C. average, then equation (1) is consistent with the capital asset pricing model. One would expect, however, that inter-firm differences in bj exists among recent offerings and that the average bj of new issues

exceeds one, i.e., that most new issues are riskier than the thirty five stocks in the O.T.C. average.

The result, then, is that the transformation of stock returns to excess returns in equation (1) serves to adjust roughly for market effects on new issue returns to investors. Market effects on IPOs in ISE is assumed to be contained in excess return u_{jt} just like McDonald and Fisher's study.

The findings indicated significantly large returns for the initial subscribers, adjusted for market effects, in the first week following the offering. The evidence supports the efficient market notion of rapid adjustment of prices to available information, so that subsequent returns from the first week to end of first year were not different for issues with large initial price increases as compared with returns on new issues as a whole.

Frank K.Reilly and Kenneth Hatfield (1969) examined how investors in new issues have fared relative to the rest of the stock market. It is hypothesized that underwriters will have a downward bias in their pricing of new stock issues and therefore, investors in new stock issues should enjoy superior short and long term returns relative to the rest of the market.

Reilly and Hatfield tested their hypothesis by the examination of

percentage price changes for the new issues during the periods specified relative to percentage price changes in various stock market price indicators, which is in line with the formulation used in this thesis.

The total period covered by the study extended from December 3, 1963 to June 14, 1966. The sample comprised of 53 new stock issues sold during December 1963 to August 1964 and January 1965 to June 1965.

All tests done by Reilly and Hatfield showed superior short run and long run results for the investor in new stock issues. Although the number of new issues experiencing superior price changes was not significant, the relative size of the gains was always substantially higher than the size of relative losses. Therefore research results consistently supported their hypothesis that investors in new stock issues should enjoy superior short and long term returns relative to the market.

This present study is smiliar to the studies done by Frank K. Reilly and Kenneth Hatfield in terms of hypothesis and methodology, but different from them in terms of time period covered and the firms studied. The former examined 53 new stock issues in New York Stock Exchange (NYSE) with period covered from December 3, 1963 to June 14, 1966. This study examines the 35 stocks that are initially offered in Istanbul Stock Exchange, from January 2, 1990 to April 24, 1991.

Robert E. Miller and Frank K. Reilly (1987) re_examine the speed of market adjustment to mispricing and further explore the relationship of underpricing to uncertainty. They considered initial public offerings with an initial price of 1$ or more, for 510 stocks traded in New York Stock Exchange during the period 1982-1983.

The return results for the first five days of trading for the entire group of stocks are examined. The results revealed that the adjustment to both types of mispricing takes place during the first trading day, with no significant returns occurring on any of the subsequent days.

In this study the methodology applied to test the speed of market adjustment to mispricing is smiliar to studies done by Robert E. Miller and Frank K. Reilly (1987) while the time period covered and the firms studied are different.

Seha M. Tinic (1988) presents a brief review of theories that have been suggested to explain underpricing of initial public offerings.

A.Risk-Averse-Underwriter Hypothesis

A popular explanation for underpricing of unseasoned equity is based on risk aversion of underwriters: investment bankers purposely underprice new common stocks to reduce their risks and costs of underwriting. In other words, underpricing serves as a method of reducing the chances of

ending up with an unsuccessful issue and the associated losses. Although it may have some superficial appeal, this explanation is not very satisfactory. It fails to address why issuers do not insist on investment bankers to adjust their underwriting spreads to compensate for the risks of the offering.

B.Monopsony-Power Hypothesis

Some researchers-Ritter (1984) for example- have suggested that gross underpricing may be a result of the monopsony power of the investment bankers in underwriting common stocks of small speculative firms. Their conclusions were based on the observation that large ,reputable investment banking firms generally do not accept to underwrite common stocks of small speculative start up firms. The IPOs of small firms are underwritten by investment bankers who, for some unexplained reason, can exercise greater bargaining power over the issuers. These investment bankers intentionally underprice the securities and ration them to their large customers who regularly buy a variety of investment services from them. That is, underpriced issues would be allocated only to the favored customers of the firm who regularly do business with the investment bank and pay commissions or fees far in excess of the competitive rates. In short the monopsony hypothesis maintains that the underwriters of IPOs intentionally price the securities at a discount from their expected values in the aftermarket because they can capture at least a fraction of the rents indirectly.

C.Speculative -Bubble Hypothesis

Under this hypothesis, large excess returns of the IPOs are attributed to the speculative appetites of investors who could not get allocations of the oversubscribed new issues from the underwriters at the offering prices. That is, the offering prices of the issues were consistent with their underlying economic values. However, the speculation in the after-market pushed their prices well above their intrinsic worth temporarily. The speculative-bubble hypothesis would imply that the initial positive excess returns of the IPOs should be followed by negative excess returns as the bubble bursts sometimes later. There is no evidence that supports such a pattern.

D.Asymmetric-Information Hypotheses

In Rock's (1986) model the asymmetry of information is between two groups of potential investors in the market:

a: the so called informed investors, who invest in information production and subscribe to IPOs only when they expect the aftermarket price to exceed the offering price and

b: uninformed buyers who subscribe to every IPO indiscriminately. Since there is always some uncertainty about the market prices of IPOs, if the issuers and their investment bankers attempted to offer the securities at

their expected market clearing prices, the uninformed investors would end up purchasing disproportionately large shares of the overpriced issues. In order to keep the uninformed investors in the IPO market, the investment bankers have to offer the securities at discounts from their expected after market prices. With systematic underpricing, the uninformed buyers would earn a normal expected rate of return on the IPOs allocated to them. That is their losses from the overpriced allocations would be compensated by the excess returns on the underpriced issues that are allotted to them.

3. RESEARCH METHODOLOGY:

3.1 THE PURPOSE OF THE STUDY:

On the basis of several strong arguments for underpricing and no substantial constraints, it is hypothesized that underwrites will have a downward bias in their pricing of new stock issues; and, therefore, investors in new stock issues should enjoy superior short and long term returns relative to the market. While a portion of the better than average performance should be attained in the short run, it should be continued through the long term as the market continues to recognize and adjust for underpricing.

The purpose of this study is to examine how investors in new stock issues have fared relative to the rest of the stock market both in short term and in medium term, in the Turkish Stock Market. Long term results could not be examined since for the 83 per cent of the sample at most up to six months data was available. This paper provides insights to underpricing mystery of IPOs but does not solve it. For purposes of completeness a variety of conjectures that purport to explain the observed underpricing in IPOs of common stocks is also mentioned in the Literature Survey section.

The new issues studied are selected from underwritten offerings

registered with the Capital Market Board (CMB) and offered to the public for the first time during the period January 1990 to April 1991.

One objective is to measure the initial performance from the offering date until the date when a public market (after market) is first established and the stocks' performance in the secondary market is observed.

The **second objective** is to examine the speed of market adjustment to mispricing of IPOs.

3.2 ASSUMPTIONS OF THE STUDY:

Assumptions of this study are listed below :

-In analyzing whether the IPO performed well relative to the rest of the stock market, Istanbul Stock Exchange Index(ISEI) is assumed to be an indicator of the rest of the market. Although it is not possible for a typical investor to form a portfolio consisting of stocks represented in ISEI, as an alternative for an IPO, theoretically it is the most resembling proxy for the performance of the market.

-The sample of IPOs studied consists of 35 stocks offered in the period January 1990 -April 1991. Information about the population mean and variance of the short and medium term net returns of IPOs would be

contained in the sample mean and variance. Therefore, the sample information, which is summarized in the values of statistics computed from the sample measurements, would be used to make inferences about the sampled population in terms of its parameters.

-Examining the speed of adjustment to mispricing, Miller and Reilly (1987) took the return results for the first five trading days in the secondary market for each stock. Taking into account the inefficiencies existing in Istanbul Stock Exchange, adjustment to mispricing is assumed to take longer for the Turkish Setting. For purposes of accuracy, the first seven trading days for each new public offering are examined.

3.3 THE METHODOLOGY OF THE STUDY:

The present study is an empirical investigation into the short term and medium term performance of initial public offerings, relative to the stock market.

Timing effect on IPOs are not explored in this study as the model is assumed to approximate market wide movements, but only the offerings are classified in four periods (Appendix 2) according to their offer date :

First period - 01.January.1990 to 02.August.1990 when the Exchange was in an up trend.

Second period - 08.August.1990 to 25.December.1990 when the Exchange was

in a down trend.

Third period - 26.December.1990 to 26.February.1991 when the Exchange was in an up trend.

Fourth period - after 26.February.1991 when the Exchange was in a down trend.

ISEI starts first period with 2218, second period with 5615, third period with 2952 and fourth period with 5271 down to 3277 on 1.August.91

Offerings also are classified in two sections; private issues and issues by the public participation, with corresponding returns on fifth day from offering, fifth friday and twenty fifth friday (Appendix 3).

The following hypothesis as provided by the literature is tested.

- underwriters will have a downward bias in their pricing of new stock issues; and, therefore, investors in new stock issues should enjoy superior short and medium term returns relative to the market.

This hypothesis is tested by the examination of percentage price changes (adjusted for capital increases) for the new issues during the period specified relative to percentage price changes in stock market price indicator, Istanbul Stock Exchange Index.

The significance of the results were tested by the Chi-Square test as

will be explained, in Research Methodology section.

The study also examines the speed of market adjustment to mispricing. This is done by observing the net return[1] results for the first seven days of trading for the entire group of IPOs. The significance of the results were tested by using t-test.

3.4 THE TIME PERIOD OF THE STUDY :

A sample of 35 initial public offerings registered to Capital Market Board during the period January, 1990- April 1991 are taken. Twenty seven of the offerings were made in 1990 where as 8 of them were made in 1991. The sample comprise of all the initial public offerings sold in 1990 and the ones sold till May 1991. (Last issue was sold on April 24, 1991). Issues offered in May and later months of 1991 could not be included because of the time limitations of the study.

The total period covered by the study extended from January 3,1990 (when the first new issue was sold) to June 16,1990 (when the last data was available). The bulk of this period was a fluctuating market. Istanbul Stock Exchange Index (ISEI) began the period at about 2312, reached a peak of about 5750(on August 2,1990), and ended the period at about 3479. The effects of Gulf War was felt tremendously in this period.

---

[1]Return on IPO minus return on ISEI for same time period.

3.5 SOURCES OF DATA :

The sample of new public offerings is taken from Capital Market Board sources.

The daily stock prices, the ISEI, the data related to the rights offering of corporations are provided in a LOTUS 123 Spreadsheet file by the CMB.

Missing daily stock prices in the Data File are completed from leading financial newspapers.

3.6 LIMITATIONS OF THE STUDY :

- The present study comprises the period of 1990 - April 1991. The period when the unfortunate Gulf War was experienced with all of it's dramatic consequences on Turkiye. Observed market wide movements, as a result of this war, should not be hold out of consideration. Although the model used[2] in this study is shown to approximate the market wide movements, by McDonald and Fisher (1972), it may bring certain limitations to the results of the present study.

- Return results for the initial public offerings are analyzed for the short term and the medium term. Medium term results can be taken as a proxy for the long term as long term results could not be studied due to

---

[2] $u_{jt} = R_{jt} - R_{mt}$

data limitations.

- The time involved for the fifth friday case varied from twenty nine to thirty three trading days depending on when the new issue was sold in its first week. Same variation is also true for the twenty fifth friday period. While this means there was a variable time period between sample observations, the comparisons between each new stock and the market indicator ISEI are comparable relative to time.

-The stock market indicator used in this study was the composite index. The industrial and the financial indices were not used.

- The purpose of this study was to investigate whether IPOs are underpriced or not, the reasons for underpricing were not explored.

3.7 HYPOTHESES :

1.Initial Public Offerings are underpriced, so investors in new stock issues should enjoy superior short and long term returns relative to the market.

This hypothesis is also consistent with economic theory. Because of the greater uncertainty involved in the new stocks, investors should look for a higher rate of return than from other issues (Reilly and Hatfield,

1969).

2. Consistent with the Efficient Market Hypothesis market adjusts to mispricing within a week after the initial offering. Seven days of trading is accepted as a week in testing this hypothesis.

Determining the speed of market adjustment to mispricing is important as it shows the right time period for the investors to benefit from underpricing.

3.7.1 Time Periods:

Daily return data for the first seven trading days in the secondary market, the fifth trading day, the fifth friday and twenty fifth friday (six month) returns from the first day in the secondary market are analyzed.

The fifth trading day returns are examined, because they show the first week performance of the stock in the aftermarket.

Fifth friday returns are examined, because they show the first month performance of the stock in the aftermarket. It is assumed to show short term performance of the IPOs.

One year return results are cited to show long term, in the

literature (McDonald and Fisher (1972),Reilly and Hatfield (1969)). One year data for most of the stocks in the sample was not available. So, six month's returns are calculated for the purpose of making medium term estimations.

Since the IPOs are sold in the primary market at fixed prices, the time periods are measured with respect to the stocks' first appearance in the secondary market. As 69 % of the stocks offering date and first appearance in the secondary market are same, this brings no considerable limitation to the study.

As a market measure the return on the ISEI was used. All reported returns are net returns equal to the percent price change for the IPO minus the percent price change in ISEI during the same time period. First day IPO returns are calculated from the offering price to first day ending bid price, with subsequent daily returns from bid to bid prices.

3.8 ADJUSTMENTS TO CAPITAL INCREASES

Daily return data of IPOs are obtained from CMB sources. The data file contained daily ending bid prices of securities trading in Istanbul Stock Exchange and ISEI for each day, for the years 1990 to May 1991.

Daily ending bid prices of securities needed to be adjusted for the capital increases that might have occurred in the studied time periods

This was necessary for the healthy determination of return between any two time period.

Data file containing the capital increases of the firms trading in ISE, with corresponding date and related ratio figures are also obtained from CMB.

The adjustments to capital increases are made as follows:

$$c = [\, P\,(r + s\,) - r\,(N)\,] \,/\, P$$

where

r = "rights offering" ratio

s = "stock dividend" ratio

N = nominal value of the stock

P = market price of the stock just before capital increase

The " c " value found is used to calculate the adjusted price of the stock after the capital increase. All the effected prices of the stock day by day, after the capital increases, are multiplied by this coefficient " c ".

3.9 TESTING THE FIRST HYPOTHESIS:

Hypothesis:

Initial public offerings are underpriced, so investors in new stock

issues should enjoy superior short and long term returns relative to the market.

The hypothesis to be tested stated in operational form is set as

Ho : p1 =p2 =0.5

against

Ha : p1) 0.5

where

p1 =the probability that a stock will outperform the market.

p2 =the probability that a stock will not outperform the market.

Testing the Hypothesis:

The significance of the results was tested by chi-square test

$$\chi^2 = \quad (ni - npi)^2 \ / \ npi$$

where

ni = observed frequency for cell i (i=1,2)

npi = expected frequency

n = number of issues in sample

pi = 0.5 (since under purely random circumstances half of the issues would outperform the market)

The chi-square test statistic for this case possesses 1 degrees of freedom since the only linear restriction on the cell frequencies is:

$$n1 + n2 = 35$$

In addition to examining the number of new issues that gained or lost, the extent of gains and losses experienced during the periods was also considered.

An excess return, u_jt, is computed for each stock in each period:

$u_jt = R_jt - R_at$

R_jt = the return on stock j in period t.

R_at = the return on the ISEI in period t.

R_jt is computed as:

$[p_jt - p_j(t-1)] / p_j(t-1)$

$p_j(t-1)$ = price of stock j on time t-1

p_jt = price of stock j on time t

R_at is computed as:

$[mt - m(t-1)] / m(t-1)$

$m(t-1)$ = ISEI on time t-1

mt = ISEI on time t

As a market measure the return on the ISEI was used. All reported returns are net returns equal to the percent price change for the IPO minus the percent price change in ISEI during the same time period. First day IPO

returns are calculated from the offering price to first day ending bid price, with subsequent daily returns from bid to bid prices.

IPOs that gained more or lost less than the stock market indicator were considered to have outperformed the market.

Time periods measured:

The comparison of new issue results compared to the overall market are considered in three subsections consistent with the three time periods. From offering to :

-Fifth day after the stock first appeared in the secondary market. (One week period as a representative of very short term).
-Fifth friday after the stock first appeared in the secondary market. (One month period as a representative of short term).
-Twenty-fifth friday after the stock first appeared in the secondary market.(Six months period, as a representative of medium term)

For each of these time periods the following frequencies are calculated:
-number of new issues showing increases from offering price
-number of new issues showing decreases from offering price
-number of new issues showing no change from offering price
-number of new issues outperforming the ISEI

3.10 TESTING THE SECOND HYPOTHESIS:

The Hypothesis:

Consistent with the Efficient Market Hypothesis market adjusts to mispricing within a week.

The null and alternative hypothesis set in operational form for total sample :

Ho : ut = 0 against Ha : ut) 0

where

ut = average net return for total sample of stocks on day t (t=1 to 7 days)

For sample stocks that experienced negative returns on day one

Ho : ut = 0 against Ha : ut (0

where

ut = average net return for sample stocks that experience negative returns on day t (t =1..7)

For sample stocks that experienced positive returns on day one

Ho : ut = 0 against Ha : ut) 0

where

ut = average net return for sample stocks that experience positive

returns on day t (t =1..7)

For sample stocks that experience no change on day one

Ho : ut = 0 against Ha : ut <> 0

where

ut = average net return for sample stocks that experience no change on day t (t =1..7)

Testing The Hypothesis:

To test these hypotheses a Student's t statistic is computed:

$$t = ut / (s / n^{1/2})$$

where

s = standard deviation of sample tested

n = sample size

Studied Time Periods:

Percent average net returns are calculated in four subsections:

-daily excess returns for total sample.

-daily excess returns for sample stocks that experienced positive returns on day one.

-daily excess returns for sample stocks that experienced negative returns on day one.

-daily excess returns for sample stocks that experienced no change on day one.

If underpricing of new issues exists, one would expect a significantly positive value of the initial rate of return; the average percent change in price from the offering to the first published market price, adjusted for market effects.

3.11 THE SAMPLE :

Appendix 1 lists the companies included in the sample, the date of the original offering, and the offering price as well as the ISEI on the day of the offering.

The total sample consists of 35 initial public offerings taken from the period 1990 - 1991. The offerings data are taken from the Capital Market Board and the sample to be studied is formed on the following criteria.

1- Each offering, included in the sample, should be pure common stock offering, being not offered previously.

2- Firms included in the sample should be alive and be presently traded in the stock market.

3- Six months of security price data after the stock is offered needed for medium term analysis. Some of the firms lack six months data but included in the sample for reasons of not narrowing the sample too much. This was necessary in order to drive healthy statistics from the sample,

about population.

4- Included offerings must have registered to the Capital Market Board. Unregistered initial public offerings like Finansbank, Tekstilbank, Garantibank and Demirbank are not included.

5- Offering price limitations for firms as a criteria was not brought. This should again narrow the sample to be studied.

Following data records are extracted from the data files obtained from CMB to construct the final data set.

- offering date and price of each initial public offering
- each stock's first trading day price in the secondary market
- each stock's prices for six days following the first trading day in the secondary market.
- each stock's prices for the fifth and the twenty fifth friday after its first appearance in the secondary market.
- ISEI for all the dates stock prices are recorded.

All prices are daily ending bid prices

These data are constructed into a LOTUS 123 spreadsheet file, and further, necessary data adjustments are made.

4.FINDINGS AND DISCUSSION :

Appendix 2 shows the return results of the stocks offered during four time periods classified. Although not tested statistically, the return results for the four time periods were not observed to have a consistent trend in line with the market trends descriptively. This can also be seen in Table A.

Appendix 3 classifies the return results of the stocks in terms of public and private issues. Again we could not observe any consistency in return results for the two different classifications.

TABLE A

OFFERINGS DURING		5TH DAY RETURN	5TH FRIDAY RETURN	25TH FRIDAY RETURN
FIRST PERIOD	# OF (+) RETURN	4	6	3
	# OF (-) RETURN	7	5	8
SECOND PERIOD	# OF (+) RETURN	11	12	11
	# OF (-) RETURN	5	4	5
THIRD PERIOD	# OF (+) RETURN	3	2	-
	# OF (-) RETURN	0	1	-
FOURTH PERIOD	# OF (+) RETURN	3	5	-
	# OF (-) RETURN	2	0	-

4.1.FINDINGS RELATED TO TESTING OF THE FIRST HYPOTHESIS:

In the following three subsections, the new issue results compared to the overall market are considered according to the time period studied.

4.1.1 IPO Performance From Offering to Fifth Day in the Secondary Market

Table I contains the summary statistics derived from a detailed analysis of the data from offering to fifth trading day (very short term) in the secondary market.

Table I shows the number of new issues showing increases from offering price, number of new issues showing decreases from offering price, number of new issues showing no change from offer price and more importantly, how many of the stocks outperformed the market from the day of the offering to the following fifth trading day in the secondary market. A new issue stock was considered to have outperformed the market if it gained more or lost less than the stock market indicator during the period.

Table I shows that 57.14 percent of the issues experienced some immediate premium. The premiums ranged from about 2 percent to 203.03 percent. In contrast 22.85 percent of issues suffered immediate losses ranging from -27.777 percent to -20 per cent. The remaining 14 percent of issues experienced no change in price.

Table I RESULTS BY NUMBER OF ISSUES ON FIFTH DAY IN THE MARKET

Number of new issues showing increases from offering price	20 (2% to 203.3%)
Number of new issues showing decreases from offering price	8 (-7.7% to 20%)
Number of new issues showing no change from offering price	7
Number of new issues outperforming the ISEI	23(64.7 % of total)

While more than half of the issues (64.7 percent) outperformed the market indicator (ISEI), it was necessary to determine whether this proportion was significantly different from the a priori expectation that under purely random circumstances half of the issues would outperform the market. The significance of the results was tested by the chi-square test,

$$X^2 = (f - e)^2 / e$$

f = observed frequency

e = expected frequency

n1 = stocks that have outperformed the market

n2 = stocks that have not outperformed the market

In line with Reilly and Hatfield's (1969)conclusion, we also, can conclude that, the number of new issues that outperformed the market was not significantly more than could be explained by random occurrence.

	n1	n2
Observed frequency	23	12
Expected frequency	17.5	17.5 (35*0.5)

Figure 1 :

We can reject the null hypothesis at 90 per cent confidence level. (χ^2) 2.7). The hypothesis was supported by the number of new issues outperforming the market at 90 per cent confidence level.

In addition to examining the number of new issues that gained or lost, the extent of gains and losses experienced during the period was also considered to derive results related with the hypothesis. Table 2 contains the results of this analysis. A relative loss indicates that the new issue did not increase as much as the market or declined by more. A relative gain means that the new issue increased by a greater percent than the market or declined by less.

As shown in Table II below, the number of issues that did not do as good as the market is 12; the average relative loss of these was about 11.22 per cent.In contrast, the average relative gain for those new issues that outperformed ISEI was 27.66 per cent.

Table II PERCENT CHANGE RESULTS FROM OFFERING TO FIFTH TRADING DAY IN THE MARKET

Average percent loss of new issue relative to ISEI (12 stocks).....-11.2102 %

Average percent gain of new issue relative to ISEI (23 stocks).....27.6610 %

Average percent change in all initial offerings .....10.9132 %

Average percent change in ISEI .....-3.4359 %

Percent Change Intervals			IPO	ISEI
-40	TO	-20.01	.	1
-20	TO	- 0.01	8	24
0	TO	19.99	22	8
20	TO	39.99	2	2
40	TO	59.99	1	.
60	TO	79.99	1	.
80	TO	99.99	.	.
100	TO	+	1	.

These results indicate that, the investor in new issues may not outperform the market with approximately 35 per cent of the issues acquired. However the average of his losses relative to the market is smaller than the average of his relative gains (11.2102 per cent average loss as compared to 27.66105 per cent average gain, shown as in Table II) This is interpreted as an upward potential for an investor in IPO, relative to his or her slight downward risk.

Also, the average per cent change increases observed for the new stock issues, than the average per cent change experienced by the market (10.9 per cent vs. -3.4 per cent, shown in Table II) was a notable result as it shows the average favorable performance of the IPOs compared to the

market.

These results are in line with the results obtained by Reilly and Hatfield (1969). The results support the hypothesis that investors in new stock issues enjoy higher very short run returns on the average than the overall market. These results also indicate that on the average new issues have done better than the stock market indicator since the relative losses in new stock issues are small compared to relative gains.

4.1.2 IPO Performance From Offering to Fifth Friday in the Secondary Market :

Table III and figure 2 presents the summary results of the tests from the offering day to fifth friday (short term) in the market.

	n1	n2
Observed Frequency	25	10
Expected Frequency	17.5	17.5

Figure 2:

The results by the fifth friday are significant at 97.5 per cent

Table III RESULTS FROM OFFERING TO FIFTH FRIDAY AFTER STOCKS APPEARANCE IN THE MARKET

Number of new issues showing increases from offering price	20
Number of new issues showing decreases from offering price	13
Number of new issues showing no change from offering price	2
Number of new issues outperforming the ISEI	25

confidence level ($X^2 > 5.023$)[1]. This time we reject the null hypothesis. The data present sufficient evidence to indicate that under purely random circumstances more than half of the issues would outperform the market in the short run.

Consistent with the above result, the average per cent change figures listed in Table IV indicate that the extent of the gains in new issues relative to the market was significantly higher than the relative losses.

According to Table IV, there were 8 IPOs observed, experiencing more than 20 per cent increase in price. This is two times of the performance result of ISEI for same intervals.

13 IPOs experienced decreases of more than 20 per cent, whereas market indicator fall below -20 per cent in 23 of the case. This again supports the relatively more upward potential with less downward risk for IPOs.

[1] Computed X^2 value is 6.42857.

Table IV SUMMARY OF RESULTS, FIFTH FRIDAY IN THE SECONDARY MARKET

Average percent loss of new issue relative to ISEI	-15.4361
Average percent gain of new issue relative to ISEI	27.5328
Average percent change in all new issues	12.9059
Average percent change in the ISEI	-2.3500

Percent Change Intervals	IPO	ISEI
-40 TO -20.01	2	5
-20 TO -0.010	11	18
0 TO 19.99	14	8
20 TO 39.99	3	3
40 TO 59.99	1	.
60 TO 79.99	2	1
80 TO 99.99	.	.
100 TO	2	.

It is noteworthy that the average percent change in price for all the new issues after four weeks was above the average percent price change that prevailed on the fifth day after the offering (12.90594 vs. 10.91825). Contrary to this result, Reilly and Hatfield observed lower percent price change prevailed on the fourth friday relative to first friday result. This difference can be attributed to the relative inefficiency of Turkish Stock Market.

4.1.3 IPO Performance From Offering to Sixth Month in the Secondary Market :

The medium term results by number of issues from the offering date to the

Table V RESULTS OF ISSUES FROM OFFERING TO 25th FRIDAY AFTER STOCK'S FIRST APPEARANCE IN THE MARKET

Number of new issues showing increases from offering price	12
Number of new issues showing decreases from offering price	14
Number of new issues showing no change from offering price	1
Number of new issues outperforming the ISEI	15
(Total issues having six months data are 27)	

friday six months after the offering are listed in Table V and figure 3.

	n1	n2
Observed frequency	15	12
Expected frequency	13.5	13.5

Figure 3 :

While more than half (55.5 per cent) of the issues outperformed the market indicator, the result is not significantly different from what was expected under random occurrence at 95 per cent confidence level but significant at 90 per cent .

According to the percent change figures listed in Table VI the average loss relative to the market is -29.32 per cent where as the average relative gain is about 37.20 per cent. The extent of the relative gain to

investor is greater than the extent of relative losses for the medium term also. But the magnitude of the difference between average relative gain and average relative loss notably declines as the period studied increases.

Table VI SUMMARY OF RESULTS SIX MONTHS AFTER OFFERING

Average percent loss of new issues relative to ISEI	-29.3222
Average percent gain of new issues relative to ISEI	-37.1984
Average percent change in all new issues	0.4966
Average percent change in the ISEI	- 4.6733

Percent Change Intervals	IPO	ISEI
-60 TO -40.01	4	.
-40 TO -20.01	6	4
-20 TO - 0.01	4	14
0 TO 19.99	6	7
20 TO 39.99	3	1
40 TO 59.99	3	1
60 TO 79.99	.	.
80 TO 99.99	.	.
100 TO +	1	.

Again from table VI the average percent change figures for the initial public offerings were 0.4966 per cent. It was -4.6733 per cent for the stock market indicator ISEI. Again for this time period, like the two periods analyzed above, average percent price change comparisons are in favor of the new stock issues.

The dispersion of returns to percent change intervals in six months case

is also highlighted in Table VI. The new stock issues distribution shows 7 cases with returns higher than 20 per cent (2 cases for ISEI), but new issues experiencing the returns that are smaller than -20 per cent are more than ISEI falling to same interval (10 vs. 4). Assuming that one measure of risk is the probability of a decline, these results would indicate that there is greater risk involved in investing in new issues than investing in seasoned market stocks in medium term.

In conclusion, the hypothesis of superior short term returns for investors in new stock issues are substantiated, but the medium term data do not present sufficient evidence to say so. However, one must keep in mind that, there were 27 issues having medium term data, compared with total of 35 issues for analyzing short and very short term.

4.2 FINDINGS RELATED TO TESTING OF THE SECOND HYPOTHESIS:

Table VII presents the daily net return results for the total sample of stocks with corresponding t values.

The average net return for all the stocks in the sample on the very first day from offering is substantially higher than the following six days return as can be seen from Table VII. The standard deviation of the average net returns for day one is also larger than the following day's deviation results. The significance of the results are tested by t-test statistic.

Table VII DAILY NET RETURN RESULTS FOR TOTAL SAMPLE (85 STOCKS)

DAY	% AVG NET RETURN	STANDARD DEVIATION	t values
1	12.54207	40.27272	1.842485
2	1.49259	5.08188	1.737610
3	1.09006	5.21492	1.236624
4	1.14688	5.01715	1.352373
5	-1.20044	6.48531	-1.103589
6	0.44862	4.51556	0.587761
7	-1.86070	21.73084	-0.506563

Only the first and second day returns are statistically significant at 95 per cent confidence (t > 1.645). The null hypothesis is rejected for the first two days.

These results show that the bulk of market adjustment to mispricing is accomplished within the first two days of trading. The mispricing observed is in favor of underpricing as the stocks experienced significant positive excess returns for the first two trading days in the market.

Table VIII presents the return results for the sample of stocks that experienced negative returns on day one.

The Hypothesis to be tested for this sample was:

Ho : $u_t = 0$

Ha : $u_t < 0$

where

u_t = average net return in period t; for sample stocks that experience negative returns on day one. (t=1 to 7 days)

Table VIII DAILY NET RETURN RESULTS FOR SAMPLE STOCKS THAT EXPERIENCED NEGATIVE RETURNS ON DAY ONE.(5 STOCKS)

DAY	% AVG NET RETURN	STANDARD DEVIATION	t values
1	-8.04806	5.013351	-3.589616
2	1.915608	4.491945	0.953580
3	0.169994	2.052486	0.185198
4	-0.998200	4.371827	-0.510551
5	-7.368650	8.296213	-1.984715
6	1.684521	1.471675	2.559466
7	2.345760	4.099434	1.279512

Only the first day return is statistically significant (t) 2.132) with 95 per cent confidence, for stocks that experience negative returns on day one. First day return is substantially lower than the successive day returns. Null hypothesis is rejected only for first day, since successive day returns are insignificant.

Table X DAILY NET RETURN RESULTS FOR SAMPLE STOCKS THAT EXPERIENCED NO CHANGE ON DAY ONE (10 STOCKS)

DAY	% AVG NET RETURN	STANDARD DEVIATION	t values
1	0	0	0
2	2.66195	4.11172	2.04727
3	0.80122	3.71637	0.68176
4	-0.00418	3.24248	0.00407
5	-0.35088	4.91315	0.22583
6	0.04209	3.86587	0.03442
7	0.82007	4.86569	0.53297

The fact that is revealed by the results listed in tables VIII, and IX, none of the daily returns for days two through five were significant, implies that excess returns are available only during the first two days of trading. This shows that adjustment to both types of mispricing takes place during the first two trading day, with no significant returns occurring on any of the subsequent days.

From table X, one can see that the stocks experiencing no excess return on the first day, earn significant positive excess returns on the second trading day. The following days excess returns were again insignificant. The adjustment to mispricing for the stocks experienced no change on day one, is accomplished on the very following day. This change is notably positive.

In Rock's model of underpricing it was assumed that, for a cost, investors could "purchase" information about the equilibrium price of an issue, and thus become an informed trader. If this is so, then an informed trader would earn on the average 23.96 per cent return [2], since such a trader would only invest in underpriced issues. On the other hand, the uninformed trader would invest in all issues, averaging a 14.03 per cent return[3]. The difference of 9.93 per cent becomes an upper bound on the cost that an uninformed investor should be willing to incur to become an informed trader.

---

[2] From Table IX, first day return.

[3] From Table VII, first and second day returns.

5. CONCLUSION :

This study attempted to examine how investors in new stock issues have fared relative to the rest of the stock market both in short term and in medium term. It is hypothesized that initial public offerings are underpriced. The speed of market adjustment to mispricing in initial public offerings are further explored.

The very short and short term results consistently supported the hypothesis, since the number of new issues outperforming the stock market indicator was statistically significant. The results are also strengthened, with IPOs, always experiencing substantially higher size of average relative gains than the size of average relative losses. The investor's downside risk is smaller as compared to his/her potential gains.

The hypothesis is not supported by the medium term results. Although the extent of average relative gains was higher than the extent of average relative losses, the difference between the two amounts was smaller than for the short term periods. Also there was greater risk involved in investing new issues in the medium term .

The market adjustment to mispricing is observed to be accomplished during the first two days of public trading, with the bulk of the adjustment being in the first day.

As a conclusion, initial public offerings are found to be underpriced and investors in IPOs can enjoy short term returns relative to the market.

Relatively smaller losses of the IPOs can be explained by the possible commitment of the issuer to support their offering if it experiences huge price declines. Underpricing in Initial Public Offerings can be attributed to risk aversion of underwriters purposely underpricing IPOs in order not to end up with an unsuccessful new stock issue.

According to timing classification of IPOs, which can be seen in Appendix 4, no considerable effect of market trend on the new stock issue is observed descriptively. Though this does not mean that timing of the new issue is not related to its afterwards performance. It is recommended for the future researchers to examine the effect of timing of new stock issue to its performance as well as the causes of underpricing mystery which is not analyzed in this study.

REFERENCES

-ROCK, K., "Why New Issues Are Underpriced" Journal of Financial Economics, March 1986, pp. 187-212.

-BEATTY, R. and RITTER, J., "Investment Banking, Reputation and the Underpricing of Initial Public Offerings" Journal of Financial Economics March 1986, pp. 213-232.

-IBBOTSON R. G., "Price Performance of Common Stock New Issues" Journal of Financial Economics, September 1975, pp. 235-272.

-MCDONALD J., and FISHER, A.K. , "New Issue Stock Price Behavior" Journal of Finance, March 1972, pp. 97-102.

-REILLY, F.K. and HATFIELD, K., "Investor Experience with New Stock Issues" Financial Analysts Journal, September-October 1969, pp73-80.

-TINIC, Seha M., "Anatomy of Initial Public Offerings of Common Stock" Journal of Finance, 1988, pp. 789-819.

-MILLER, R.E., REILLY, F.K., "An Examination of Mispricing Returns and Uncertainty for Initial Public Offerings" Financial Management, Summer 1987, pp. 33-38

APPENDIX 1

FIRMS	OFFER DATE	OFFER PRICE	1-DAY RETURN	5TH FRIDAY RETURN	25TH FRIDAY RETURN
OKAY TEKSTIL	03-JAN-1990	1,500	2425	-3.32	-6.78	-43.63
YUNSA	06-JAN-1990	5,500	3352	-38.69	-48.43	-42.59
SABAH YAYINCILIK	10-MAY-1990	7,500	3990	1.75	-19.73	24.34
EMEK SIGORTA	23-MAY-1990	4,500	3998	6.15	11.45	-6.65
TAM SIGORTA	23-MAY-1990	9,000	3998	-6.08	0.34	-43.52
EGEACIBADI ILAC	25-JUN-1990	35,000	3599	-14.67	61.40	-41.71
VESTEL	28-JUN-1990	13,250	4046	-1.78	-7.56	-44.65
PETKIM	10-JUL-1990	2,500	4199	-38.22	-1.47	-6.35
AKBANK	26-JUL-1990	12,000	4933	-10.41	14.41	9.44
KELEBEK MOBILYA	01-AUG-1990	10,800	5652	16.00	5.21	26.42
ASELSAN	01-AUG-1990	4,200	5652	14.22	9.50	-23.65
TOPRAK KAGIT	16-AUG-1990	7,500	5103	13.86	2.22	13.15
ISTANBUL MOTOR PIS.	20-AUG-1990	10,000	4920	12.09	-1.96	-4.91
T.TUTUNCULER BANK.	05-SEP-1990	6,000	4720	-2.16	0.97	14.41
T.DISBANK	13-SEP-1990	6,500	4995	-24.04	4.61	-9.29
KUTAHYA PORSELEN	24-SEP-1990	15,000	5060	29.29	21.95	11.42
FENIS ALUMINYUM	26-SEP-1990	6,400	4953	39.85	11.68	57.57
PARSAN	16-OCT-1990	7,000	5154	15.41	26.58	-23.46
KONYA CIMENTO	26-OCT-1990	25,000	4953	5.91	8.23	63.55
USAK SERAMIK	02-NOV-1990	5,000	4264	66.87	14.64	59.42
KENT GIDA	05-NOV-1990	29,000	4446	17.59	12.96	1.37
TRAKYA CAM	05-NOV-1990	7,000	4446	-2.41	-4.77	-22.23
MARSHALL BOYA	05-NOV-1990	10,000	4446	-0.41	-9.49	21.70
NET TURIZM	07-NOV-1990	6,500	4007	25.76	27.29	16.17
TUNCA TEKSTIL	05-DEC-1990	2,000	3642	2.86	27.69	172.39
UNYE CIMENTO	07-DEC-1990	10,000	4023	4.50	2.55	29.41
THY	21-DEC-1990	3,000	3336	-2.55	-41.63	-68.56
BILIM IPLIK	19-JAN-1991	4,000	4002	17.42	-12.54	-
ADANA CIMENTO (A)	21-FEB-1991	270,000	5258	29.61	90.58	0.00
ADANA CIMENTO (C)	21-FEB-1991	30,000	5258	205.98	209.67	0.00
MIGROS	27-FEB-1991	8,000	5271	27.79	29.25	-
T.KALKINMA BANKASI	8-MAR-1991	3,000	4691	-15.54	0.05	-
AFYON CIMENTO	27-MAR-1991	35,000	4597	-6.46	5.04	-
SUN ELEKTRONIK	29-MAR-1991	6,900	4519	69.41	84.60	-
VAKIF FINANSAL	24-APR-1991	6,000	4222	9.22	5.46	-

APPENDIX 2

FIRMS	OFFER DATE	OFFER PRICE	1ST	5TH DAY RETURN	5TH PERIOD RETURN	25T- PERIOD RETURN
FIRST PERIOD						
BRAN TEKSTIL	03-JAN-1990	1500	2425	-3.82	-6.78	-48.69
YONGA	01-JAN-1990	5000	5952	-99.69	-49.48	-42.59
BABAN YAYINCILIK	10-MAY-1990	7500	8550	1.75	-10.78	24.84
EMEK SIGORTA	23-MAY-1990	4500	5993	6.15	11.45	-6.65
TAM SIGORTA	23-MAY-1990	7000	9998	-6.08	0.04	-43.52
ECZACIBASI ILAC	25-JUN-1990	25000	3599	-14.87	61.49	-41.71
VESTEL	29-JUN-1990	12250	4046	-1.73	-7.56	-44.65
PETKIM	10-JUL-1990	3500	4180	-33.22	-1.47	-6.35
SECOND PERIOD						
AKBANK	26-JUL-1990	12000	4933	-10.41	14.41	9.44
KELEBEK MOBILYA	01-AUG-1990	10800	5652	16.00	5.21	26.42
ASELSAN	01-AUG-1990	4200	5452	14.22	9.58	-23.65
TOPRAK KAGIT	16-AUG-1990	7500	5103	13.86	2.22	13.15
ISTANBUL MOTOR PIS.	20-AUG-1990	10000	4920	12.09	-1.96	-4.91
T.TUTUNCULER BANK.	05-SEP-1990	6000	.4720	-2.16	0.97	14.41
T.DISBANK	13-SEP-1990	6500	4995	-24.04	4.61	-9.29
KUTAHYA PORSELEN	24-SEP-1990	15000	5060	29.29	21.95	11.42
FENIS ALUMINYUM	26-SEP-1990	6400	4953	39.85	11.69	57.57
PARSAN	16-OCT-1990	7000	5154	15.43	26.58	-23.46
KONYA CIMENTO	26-OCT-1990	25000	4953	5.91	8.23	63.55
USAK SERAMIK	02-NOV-1990	5000	4264	66.37	14.64	59.42
KENT GIDA	05-NOV-1990	25000	4446	17.59	12.96	-.87
TRAKYA CAM	05-NOV-1990	7000	4446	-2.41	-4.77	-33.33
MARSHALL BOYA	15-NOV-1990	10000	-446	-1.41	-4.49	2.7
NET TURIZM	07-NOV-1990	6500	4007	35.72	27.39	16.17
TUKAS TEKSTIL	05-DEC-1990	2000	3642	3.86	27.29	172.89
UNYE CIMENTO	07-DEC-1990	10000	4023	4.50	2.55	29.41
THIRTH PERIOD						
THY	21-DEC-1990	3000	3836	-3.65	-41.63	-48.54
EGIP ILAC	19-JAN-1991	4000	4062	17.40	-13.54	-
ADANA CIMENTO (A)	21-FEB-1991	270000	5258	29.61	90.58	0.00
ADANA CIMENTO (C)	21-FEB-1991	30000	5258	205.98	209.67	0.00
FOURTH PERIOD						
MIGROS	27-FEB-1991	8000	5271	27.79	29.25	-
T.KALKINMA BANKASI	06-MAR-1991	3000	4491	-15.54	0.05	-
AFYON CIMENTO	27-MAR-1991	3500	4597	-6.46	5.04	-
SEK ELEKTRON	29-MAR-1991	6700	4519	69.41	84.60	
[illegible]	[illegible]	[illegible]	4222	9.22	5.46	-

FIRST PERIOD : 03.JAN.1990 - 25.[illegible].90
SECOND PERIOD : [illegible] - 28.[illegible]
THIRTH PERIOD : 21.DEC.1990 - 21.FEB.[illegible]
FOURTH PERIOD : 22.FEB.1991 - ...

PERIOD 3

THOSE ISSUED BY PRIVATE SECTOR	NET 5TH DAY RETURN	NET 5TH FRIDAY RETURN	NET 25TH FRID RETURN
AKBANK	-10.41	14.41	9.44
ASELSAN	14.22	9.50	-23.65
DISBANK	-24.04	4.61	-9.29
ECZA ILAC	-14.37	61.40	-41.71
EMEK SIG	6.15	11.45	-6.65
FENIS AL	29.85	11.68	57.57
IST.MOT PIS	12.09	-1.96	-4.91
KELEBEK M	16.80	5.21	26.42
KENT GIDA	17.59	12.96	1.87
KUTAHYA PORS	29.29	21.95	11.42
MARSHALL BO	-0.41	-9.49	21.70
NET TURIZM	25.76	27.29	16.17
PARSAN MAK	15.41	26.58	-23.46
SABAH YAYIN	1.75	-19.73	24.34
TAM SIGORTA	-6.08	0.34	-43.52
TOPRAK KAGIT	13.86	2.22	13.15
TRAKYA CAM	-2.41	-4.77	-22.23
TUNCA TEKST	2.86	27.69	172.39
TUTUNBANK	-6.16	0.97	14.41
USAK SERAMIK	66.87	14.64	59.42
VESTEL ELEK	-1.73	-7.56	-44.65
YUNSA YUNLU	-38.69	-48.43	-42.59
OKAN TEKSTIL	-8.32	-6.78	-43.69
EDIF IP	17.42	-12.54	-
VAKIF FINANS	9.22	5.46	-
T.KALK BANK	-15.54	0.85	-
SUN ELEKTRO	69.41	84.60	-
THOSE ISSUED BY PUBLIC PARTICIPATION			
PETKIM	-33.22	-1.47	-6.35
THY	-2.55	-41.63	-68.56
ADANA (A)	29.61	90.58	0.00
ADANA (C)	295.98	209.67	0.00
MIGROS TURK	27.79	29.25	-
AFYON CIM	-6.46	5.04	-
KONYA CIM	5.91	9.23	63.55
UNYE CIM	4.50	2.55	29.41