

Price Performance of Initial Public Offerings  
In Istanbul Stock Exchange

A THESIS

Ibrahim Halil ÖZTOP

July, 1996

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**PRICE PERFORMANCE OF INITIAL PUBLIC OFFERINGS  
IN ISTANBUL STOCK EXCHANGE**

A THESIS

Submitted to the Faculty of Management  
and the Graduate School of Business Administration  
of Bilkent University

in Partial Fulfillment of the Requirements

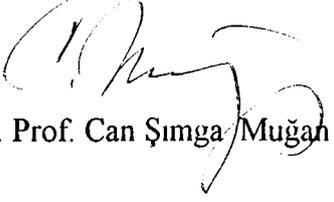
For the Degree of  
Master of Business Administration

By

İbrahim Halil Öztop

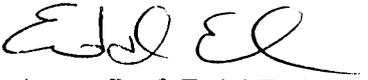
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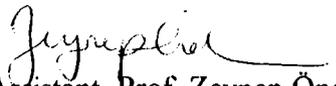
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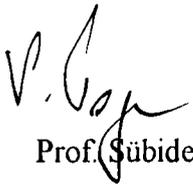
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## ABSTRACT

### PRICE PERFORMANCE OF INITIAL PUBLIC OFFERINGS IN ISTANBUL STOCK EXCHANGE

İBRAHİM HALİL ÖZTOP

M.B.A. Thesis

Supervisor: Assoc. Prof. Can Şınga Muğan

This study aims at investigating the price behavior of initial public offerings (IPOs) in Istanbul Stock Exchange (ISE) during 1994 and 1995 in the short- and medium-term. The study is also devoted to the structure, pricing methods, timing, advantages and disadvantages of IPOs and the existing regulatory environment. The existence of significant abnormal positive returns of new issues on the first and fifth trading days is the proof of underpricing. However, no significant excess returns are observed for the second and third week following the initial trading. The absence of significant abnormal initial returns in the IPO market in ISE during the same period suggests that new issues follow the general market movement. On the first and third month after the initial trading, the IPOs are overpriced since there exist significant abnormal negative initial returns. The observed high variability on average returns indicates that there might be some stocks that are underpriced while there might be some stocks that are overpriced. Investors purchasing new issues at the initial offering earn positive abnormal returns in the early aftermarket period. IPOs are profitable investments in the short-term (until the fifth trading day), but perform quite poorly over longer periods (after the first month following the initial trading date).

Key words: Initial public offering (IPO), underpricing, overpricing

## ÖZET

### İSTANBUL MENKUL KIYMETLER BORSA'SINDA HALKA AÇILAN ŞİRKETLERİN FİYAT PERFORMANSLARI

İBRAHİM HALİL ÖZTOP

M.B.A. Tezi

Tez Yöneticisi: Doç. Dr. Can Şimga Muğan

Bu çalışmanın amacı, 1994 ve 1995 yılında İstanbul Menkul Kıymetler Borsa'sında (İMKB) halka açılan şirketlerin kısa ve orta vadede fiyat davranışlarını araştırmaktır. Halka arzların yapısı, fiyatlandırma metodları, zamanlaması, avantajları, dezavantajları ve mevcut yasal düzenlemeler de bu çalışmada incelenmiştir. Birinci ve beşinci işlem gününde yeni hisse senetlerindeki anormal pozitif getirilerin varlığı düşük fiyatlandırmanın kanıtıdır. Ancak, ikinci ve üçüncü haftada önemli sayılabilecek fazla bir getiri görülmemiştir. Bu dönemde önemli anormal ilk getirilerin olmayışı yeni hisselerin genel piyasa hareketini izlediğini göstermektedir. İlk işlem tarihinden bir ve üç ay sonra, önemli anormal negatif getirilerin mevcudiyetinden halka arz edilen şirketler yüksek fiyatlandırılmışlardır. Bazı hisselerin düşük veya yüksek fiyatlandırılabilceği, gözlemlenen yüksek sapmalardan anlaşılmaktadır. Yeni hisse senetlerini halka arz zamanında alan yatırımcılar ilk işlem gördüğü tarihlerde anormal pozitif getiri sağlamaktadır. Halka arzlar kısa vadede (ilk beş güne kadar) karlı bir yatırım iken, ancak orta dönemde kötü bir performans göstermektedir.

Anahtar kelimeler: Halka açılan şirketler, düşük fiyatlandırma, yüksek fiyatlandırma.

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## I. INTRODUCTION

Most companies start up by raising equity capital from a small number of investors, with no liquid market to accommodate those investors who wish to sell their stock later. If a company prospers and needs additional equity capital, it generally finds desirable to go public by selling stock to a large number of diversified investors.

Going public refers to the change in status of a private company that wants to access the public capital market. The decision to go public may be due to the need for capital, the prestige of owning part of a public company or the desire to set up a profitable exit from the company for major shareholders.

Historically, Turkish firms have relied on bank loans to finance their on-going operations. However, after the establishment of Istanbul Stock Exchange (ISE) in 1985, companies began to use equity finance. The motives behind this preference of the companies were high interest rates and insufficiency of medium and long term credits in our country. Consequently, initial public offerings (IPOs) have become very popular. The sparkling performance of ISE has provided a suitable environment for the launch of new issues.

In the initial public offering process, there exist three stakeholders: issuer (firm), investor, investment banker (underwriter). The crucial point in the process is the pricing of initial public offering. If the price is set too low, the issuer does not get the full advantage of its ability to raise capital. If the stock is priced too high, the investor will get an inferior return

and the offering will not be successful. Investors, moreover, would be unwilling to purchase offering from an investment banker with a record of overpriced offerings.

Many studies have been conducted on the IPO market from different perspectives. The documented studies in finance literature covered the short-run and long-run performance of IPOs, the reasons of the underpricing of IPOs, underwriter price support, underwriter reputation and its impact on the pricing of new issues, the choice of the offering method in IPOs and the firm value.

In the light of the available literature, this study aims at investigating the pricing of the new issues in ISE. The purposes of the study are to analyze the initial return characteristics of IPOs in ISE, and to determine whether the new issues are underpriced or overpriced. The stocks that have been offered to the public during 1994 and 1995 constitute the sample of this study. This study concentrates on short-term and medium-term price behavior of IPOs in the days and weeks following the offer.

The paper is organized along the following lines. The following chapter presents the definition, advantages, disadvantages and structure of initial public offerings. Chapter 3 is devoted to the recent IPOs in ISE, focusing on the various pricing methods employed and the existing regulatory environment. The documented studies in finance literature is presented in Chapter 4. In Chapter 5, data and methodology of the study are discussed. The results of the tests and concluding comments constitute Chapter 6 and the last chapter, respectively.

## **II. BACKGROUND ON IPO**

### **II. 1. Definition**

The first public equity issue that is made by a company is referred to as an initial public offering (IPO). It is the first effort by private firms to raise capital in a equity market. From the financial point of view, a firm's ability to carry its operations in a healthy manner depends on its financial resource's strength and composition. For a firm it is necessary to find additional funds to make investments and implement its capabilities. Although a firm is able to use bank loans, it must strengthen its equity base to provide a feasible and rational combination of debt and equity. For this purpose, companies should increase their equity or find new shareholders. Publicly traded stocks have greater liquidity, which allow the companies to raise capital on more favorable terms than if it were privately held. Although there are different reasons behind the companies' decision to issue new stocks, basically to strengthen financial base, to be protected from undesired economic conditions and growth are the main objectives.

The executives and shareholders of the company considering going public should raise several questions before beginning the process. The alternatives to going public, the existence of cheaper and faster ways to raise capital and the influence of IPO on future performance of the company are some issues that management should bear in mind. Management also must evaluate the advantages and disadvantages of going public.

## II. 2. Advantages of Going Public

**Financial stability from the raising of needed capital:** When growth can no longer be financed internally or through borrowing, management will consider a public offering. Future capital requirements for manufacturing facilities, working capital, marketing efforts, acquisitions funded with cash, expanding into new industries or products, research and development are some expenses to consider when analyzing how much cash a company needs to raise. However, the planning process should start well before the capital is required, bearing in mind that an offering will take at least six months.

**Availability of stock for acquisitions:** Today mergers and acquisitions are very popular means of corporate expansion often financed through an exchange of stock. It is difficult to establish a fair market value for the shares being exchanged. The shares of a public company are valued by the market which makes this process simpler than private mergers and buyouts. Having publicly traded stock to offer allows companies and individuals who receive the stock to know they will have a profitable exit from the transaction, via a public market ready to accept their shares when they sell.

**Means of exiting for inside share holders:** By going public, officers and directors and early shareholders have a way of exiting from the company and knowing what they will get. It can be also realized as an employee compensation incentive. Stock options and other incentive programs help employees feel that they are part of the organization and that they benefit beyond a paycheck for doing a good job. When employees see that there is a ready market available for their shares, the job becomes more attractive to them.

**Added prestige and increased visibility for the company:** Newspapers may carry news about important corporate events. Analysts may provide company information for brokers and investors who spread the word about the great things happening at the company. Suppliers and customers are eager to do business with public company because they assume public entities are more financially reliable.

**Improved borrowing capability:** The equity capital generated by an IPO improves the debt-equity ratio and enhances the company's cash position. These two improvements are the key factors that the bankers love to see. The news about important corporate events and their reliable positions in the marketplace are the positive factors for the bankers in the evaluation of the company.

**Founder diversification:** As a company grows and becomes more valuable, its founders often have most of their wealth tied up in the company. By selling some of their stock in a public offering, they can diversify their holdings thereby reducing somewhat the riskiness of their personal portfolios.

### **II. 3. Disadvantages of Going Public**

**Closure of future financing from venture capitalists:** The offering process is the final step for venture capitalists as an exit from a company. An IPO is the incentive for them to be in the deal in the first place. Once a company has gone public, there is very little reason for a venture capitalist to become involved in the company.

**New management techniques:** New management techniques may be required of company officers to increase the stock price of the company. New owners may want to determine how the company runs. If the company's earnings or the stock price is not improving, shareholder approval may be difficult to get. Keeping stockholders, brokers and analysts informed also requires certain techniques. Management may want to retain a financial public relations firm to help fulfill disclosure requirements. It takes time and money to provide regular reports, press releases and other information that must be provided to the investors and regulators in order to keep them informed about their company.

**Full disclosure of personal and company skeletons:** Complete and adequate disclosure is the primary focus of Capital Markets Board (CMB). All details relating to the company, its officers, directors and major shareholders must be announced. If the company is relatively new and has a short track record, the risks inherent in investing in the company must be also detailed.

**Expense of going public:** There are many costs that management has to pay for application, disclosure, road shows to attorneys, auditors, printers, underwriters and regulatory agencies.

**Possible loss of control:** The stock market is going to indicate at what level the company's stock compares to the stock price of similar companies in the same industry. If the price is not high enough to raise the amount of capital required, the size of the offering may have to be increased. In this case, it is possible that the buying public shareholders could gain control such as changing the board of directors and management.

**Ongoing expense of being a public company:** The cost of remaining a public company is another expense that management should consider. The cost of preparing periodic reports, the proper disclosure and reporting documents are some examples.

**Inactive market and low price:** If the firm is very small and its shares are traded infrequently, its stock will not be liquid and the market price may not be representative of expected value of the stock.

#### **II. 4. Structure**

The goal of the company must be to raise an adequate amount of capital via the offering in the most effective way. One of the considerations must be what is an appropriate means of structuring the offering. There are two types of going public: direct issue and indirect issue. In the first method, the company issue new stocks by itself. The latter one is issue new stocks using an intermediary. The important ingredient to complete a successful offering is to use the right vehicle. For example, to do a straight stock offering may result in substantial ownership dilution, unacceptable to current stockholders.

There are two major components to the valuation process of an IPO: the total amount of money to be raised based on the capitalization and the per share price based on the market. The amount of money to be raised through the offering should be determined considering the financial needs analysis of the company together with investment banker. The selection of the investment banker depends upon several factors such as: reputation in IPOs, expertise in the company's particular industry, marketing strengths (including whether the bank will sell

primarily to institutional or retail customers), the quality of post-public offering support, investment bank's research analysts, market-making capabilities and strengths in other strategic areas (for example mergers and acquisitions). The company should also assess the underwriter's level of commitment to the deal and whether the underwriter has competitive offerings scheduled at the same time as the company's offering is proposed.

In indirect issue, the other crucial point is the choice of offering method. When a firm goes public with an initial equity offering, it has two options on how to issue the stock. Using an investment banker, the firm can issue stock to the public with either a firm-commitment (underwriting) or a best-efforts agreement. In the period from 1977 to 1982, Ritter (1987) found that for firms using investment bankers, 64.6% used firm-commitment offerings while 35.4% used best-efforts offerings. A third, but less frequently used, possibility is a direct offering without any use of an investment banker. In both types of offerings the investment banker distributes the new shares, but in a firm-commitment agreement he or she performs the additional function of insuring the proceeds to the issuer. In addition, a firm-commitment agreement uses the reputational capital of the investment banker to certify the value of the issue to a greater degree than in best-efforts offering.

In Nancy L. Bower (1989), the offering method chosen affects both the firm's cost of obtaining capital and investors' perceptions about a firm value. A partially pooling, partially separating equilibrium is found where high valued firms have information about their values revealed in a firm commitment offering, while low valued firms use best-efforts offerings and are unable to distinguish themselves from other firms. Firm-commitment offerings are more correctly valued by investors and one would expect to see a low variance of returns across companies. The value of a best-efforts offering, on the other hand, is in general incorrectly

perceived by investors. During the period following the offering, investors would be expected to learn more information about the firm and revise their price perceptions toward the actual value. The initial inaccurate pricing and revisions during the year will lead to greater variance in post-offering returns for best-efforts offerings than for firm commitment offerings.

Once management has determined the amount of capital to be raised, the question of price per share takes on added significance since that will determine the number of shares to be offered. The number of shares offered impacts how much of the company must be given up and possibly, who controls the company. The key during this part of the process is how the company is valued and the importance of that valuation to investors who may buy the offering. The price range of the company's stock is determined by negotiations between the company and the underwriters. It is important that the company discuss valuation at the earliest stages of the offering, including as part of the process of selecting an investment bank. The valuation is prepared after the study of current market conditions, past and projected financial performance, product or technology position, management team, potential for growth and new products in development. The underwriter obtains pricing comparisons by selecting several companies in the same industry that are closely related as possible to the offering company in revenues, earnings, total capitalization, length of operating history and the product line to identify a range of values.

The real key to successful pricing is for underwriter to get accurate and timely comparables. The comparables help set a pricing range, at the time of actual pricing it is all supply and demand. Once those companies are identified and the stock prices tracked, the price the stock is trading at can be used as a benchmark for the pricing of the offering. The factors considered by the underwriter when comparing the company with already public

companies are financial ratios, profit margins, amount and type of debts, growth potential of the company. Prior to writing the prospectus, part of the registration statement filed with CMB which is the source of disclosure of all the negative and positive information about the company, a detailed analysis is done by the underwriter including: thorough review of the industry, company's history, investigation of all products and services, a review of company relationships with affiliated companies and subsidiary arrangements, review of employment and management, financial statement analysis, projections for earnings, investments, strength and weaknesses of the company, threat and opportunities in the sector.

Understanding the principles that will be applied and the comparable companies that will be considered will help the company better understand the variations in valuation. The company should also take an active role in identifying comparable companies in the industry. The underwriters and the company will agree on a range of prices at the outset, which will be refined before filing, with the exact price of the shares determined just prior to commencement of the offering, based on the market and the reaction of potential purchasers to the offering. The company and the underwriters will agree on the size of the offering by taking into account the company's capital needs, dilution to the existing stockholders, the level of public 'float' desirable to achieve active trading market and liquidity for current stockholders, market receptivity and proposed price per share. Among these factors, creating liquid market for the stocks has a crucial place for the successful offering. Institutional investors, who have a tremendous impact on the market, like to see deep and active trading market for the stocks. If there are fewer shares, large investors concerned with any buy or sell orders will create large fluctuations in the price.

The ultimate responsibility for determining the timing of an offering is with the company. Once the general scope of the timing has been determined, the underwriters prepare a time and responsibility schedule indicating key dates in the process and assigning responsibilities for the various tasks that must be accomplished. The key to successful offering above the company considerations is market timing. It should be emphasized that timing the market influences how the stock is valued. This does not mean that a company cannot go public. A company can do a public offering at almost any time but at what price. Management must decide whether it is willing to accept the stock price the market dictates at any given time. Obviously when the market is hot, the stock will receive a more favorable valuation. A company in need for capital may not be in a position to wait for a down market to turn around. In some cases, even in a good market, particular industries are not in favor. Again this does not mean that a company in that industry can not raise money. The company will pay a penalty of reduced capital raised or increase the number of shares sold through an offering. Management and underwriter, after all paperwork and documentation has been done, can select the most suitable time for offering. To do so, they should watch overall stock market, the industry, selected public companies in the industry and their price actions.

## **II. 5. Pricing**

The pricing of IPOs is very difficult, because there is no observable market price prior to the offering and many of the issuing firms may have little or no operating history. If the price is set too low, the issuer does not get the full advantage of its ability to raise capital. If the stock is priced too high, the investor will get an inferior return and the offering will not be successful. Investors, moreover, would be unwilling to purchase offering from an investment banker with a record of overpriced offerings.

There is no universally applicable mathematical formula which will give a precise quotient of value. The uncertainty of the company's future performance within a changing economic/business environment, the lack of precision with which one can pinpoint the realizable synergetic benefits and the impact of human/psychological attitudes, create a wide area within which value of the subject company may fall. It is necessary to draw low and high parameters of value within which the stakeholders intend to execute their strategies. Forming the lower parameter will be the value of the company in its existing form without any synergetic benefits arisen from the proposed offering. At the higher parameter, the strategic benefits formed by the offering will be taken into account and the optimistic environment will be assumed to exist. Within the lower and higher parameter range, the value of the stock is determined considering the benefits of stakeholders; issuer, investor and investment banker.

There are 3 commonly used valuation approaches, each with their own advantages and limitations: discounted cash-flow valuation, relative valuation and contingent-claim valuation.

The most intellectual and logical valuation method, discounted cash-flow valuation, is to project forward performance of the company and to discount that future stream of cashflow to a present value with an appropriate discount rate, then to subtract debts from the present value. In our country, the applicability of this method is very difficult due to economic and business environments and discount rate.

In relative valuation, the value of an asset is derived from the pricing of comparable assets, standardized using a common variable such as earnings, cash flows, book value and sales. One illustration of this approach is the use of an industry-average price/earnings ratio to

value a firm assuming that the other firms in the industry are comparable to the firm being valued and the market on average price these firms, correctly. The other multiples in use are price/book value ratio, price/sales ratio, price/cash flows and price/dividends. In our country, the most common used method is relative valuation especially P/E multiple.

A contingent claim or option is an asset that pays off only under certain contingencies: if the value of the underlying asset exceeds a prespecified value for a call option, or is less than a prespecified value for a put option. An asset can be valued as a call option if the payoffs on it are a function of the value of an underlying asset; if that value exceeds a prespecified level, the asset is worth difference; if not, it is worth nothing. It can be valued as a put option if it gains value as the value of the underlying asset drops below a prespecified level and if it is worth nothing when the underlying asset's value exceeds that specified level. This method is not widely used in both developed and emerging markets.

### **III. REGULATION OF IPOs IN TURKEY**

In 1981, a new Capital Markets Law was enacted which established the Capital Markets Board (CMB) as the main regulatory body with responsibility for supervision and regulation of Turkish securities markets. The ISE was established in 1985 and commenced business in early 1986.

The principal function of the CMB is to take such measures to foster the development of the securities markets in Turkey, thereby contributing to the efficient allocation of financial resources in the Turkish economy and ensuring adequate protection for investors. The CMB supervises and regulates among public companies, banks and other financial intermediaries, mutual funds, investment corporations, investment consultancy firms and audit firms which offer their services to institutions operating in the capital markets.

The CMB performs its regulatory role through the promulgation of regulations defining the capital markets and the rules which participants in such markets are required to observe. The CMB regulations require that all securities publicly offered by issuers in Turkey be registered with the CMB. A prospectus filed with the CMB for registration must include such information as is necessary to enable a prospective investor to assess the merits of the issuer and the proposed investment. The CMB may refuse registration in the event that the CMB is not satisfied with the level of disclosure in the prospectus. The type and scope of information

required to be disclosed to the public under the CMB regulations is considerably less detailed than disclosure requirements of more developed securities markets such as the United States.

In connection with its supervisory role, the CMB requires companies which are subject to its jurisdiction prepare and publish balance sheets, income statements and annual reports, all of which must be prepared in accordance with accounting principles and standards set forth by the CMB. These companies must hold its annual meeting of shareholders within three months after the end of its fiscal year and within one month thereafter file its balance sheet, income statement and annual report in respect of the previous fiscal year, in a form audited by the CMB-approved auditors. In addition, unaudited quarterly reports must be filed in respect of each financial period ending in March and September, and semi-annual report, subject to limited review of the independent auditors, must be filed with the CMB in respect of the first six months of each year. In the event of any special circumstance such as a merger or acquisition, the CMB may require that additional information be disclosed by a public company or directors or major shareholders of a public company or other related parties in order to protect the interests of small investors.

Capital Market Law defines first issue of shares as going public. However, Turkish Capital Market Law has a very broad definition of going public; besides issuing new shares it also includes arrangements for selling the shares in the definition. Consequently, this definition considers firm's invitation of public to buy the shares as going public.

Companies may issue new stocks either by themselves, called direct issue or use an intermediary, called indirect issue. Regulation considers issuing shares to the public, related arrangements, conducting financial analysis, industry analysis, preparing documents and

applying to the Board as intermediary activities. In indirect issue, the offering method is classified into two: firm-commitment (underwriting) and best-efforts. In a firm-commitment agreement, the firm can issue equity using an underwriter who determines the value of the firm and certifies this value to investors for a fee. Thus a firm that employs underwriter has its value revealed, so the firm will get the planned amount of money from the issue less the underwriter's fee. In the best-efforts agreement, the investment banker does not guarantee that the stocks will be sold or that the company will get the cash it needs, only that it will put forth its best efforts to sell the issue. In this agreement, the underwriter fee is less than fee in the firm-commitment agreement so the company will save the remaining portion. There exist two ways of equity issue in the firm-commitment agreement according to Turkish Capital Market Law : full underwriting and underwriting. In the first one, the value of all shares offered to public must be fully paid to the firm in cash after public sales. There exists an upper limit for the financial responsibility in the firm-commitment agreement. By law, the underwriter can not guarantee more than two times of the amount of paid-in capital plus reserves of the bank. In the latter method, the banker agrees to buy the remaining shares that can not be sold in the specified period and pay for these shares after the issue.

There are two ways of initial public offering in Turkey:

- a) Increase capital and sell the new issued shares to the public ( preemptive rights not used).
- b) Sell the existing shares to the public (selling from the portfolio).

The information to be disclosed during the public offering of shares shall be included in the prospectus. According to the type of capital market instruments and going public, the Capital Market Board has determined the content of the information to be included in the

prospectus. Information and documents determined by the CMB is attached to the application for registration to the board. The CMB observes the deficiencies in the documents and requires the documents to be completed. Before the registration of the shares to the CMB, the prospectus shall not be delivered to the public or any other institutions. After the registration of shares with the CMB, the prospectus shall be registered and announced at the official gazette. The prospectus requires companies to disclose: a description of the company's business, its properties, identification of officers and directors, the plan for distributions of securities, the last three-year's financial statements. The prospectuses are not prepared as fill-in-the-blanks forms but similar to brochures. The financial statements in prospectuses must be audited by an independent external audit firm. In addition to the information required by the form, the issuer must also provide any other information necessary to make the statements complete and not misleading. The invitation to the public to buy the shares by means of circular is determined by the CMB and published at official gazette. The announcement and explanations directed to the public may include neither wrong, exaggerated nor misleading information. The CMB may prohibit the advertisements which it considers misleading. The sale of shares to the public shall be influenced within the context of the principles and within the sales period set forth in prospectus. The CMB requires that selling from the portfolio should be made according to full-commitment agreement. The issuer or the intermediary institutions must provide the registered prospectus to all purchasers. The sale of shares may be performed in stock exchange or out of stock exchange.

There are two ways of selling methods in initial public offerings: book building and selling in the stock exchange. In the method of book building, after all orders are gathered within the sales period, the distribution of shares will be made by satisfying at least all investors if demand exceeds supply. In this method, there are two ways of pricing: book building by

fixed price and book-building by receiving offer for price. In the latter method, the first trading price is quoted as the initial offering price in the prospectus in the stock exchange and the margin is 5% for the trading days. This lasts for five days and for these periods, only the intermediary can quote bid order and other intermediaries are on the ask side.

#### IV. PREVIOUS RESEARCH ON IPO

In finance literature, a number of studies documented the performance of initial public offerings for almost every equity market. The documented studies in finance literature covered the short-run and long-run performance of IPOs, the reasons of the underpricing of IPOs, the impacts of underwriter price support and underwriter reputation on the pricing of new issues, the choice of the offering method in IPOs and the firm value.

Previous research shows that, on average, the difference between the IPO offering price and the first trading market price is greater than reasonable risk premium. Different researchers (Tınıç 1988; Carter and Manaster 1990; Ritter 1991; Rock 1986) have attempted to provide some explanations for the abnormal initial returns. In the research of Ibbotson, Sindelar and Ritter (1988), measured from the offering price to the market price at the end of the first trading, IPO produce an average initial return that has been estimated at 16.4%. Over time researchers used different models to explain underpricing of IPOs. The study of Keasey and Short (1992) on UK Securities Market and Kunz's and Aggarwal's (1994) research on Swiss Market are the similar attempts related to the underpricing of initial public offerings.

One of the model explaining the underpricing is adverse selection models based on winner's curse phenomenon suggested by Rock in 1986 and advanced further by Carter and Manaster in 1990. Winner's curse is based on asymmetric information. There are two groups of potential investors in the market: a) the informed investors who invest in information production and subscribe to IPOs only when they expect the after-market price to exceed the

offering price and b) uninformed investors who subscribe to every IPO indiscriminately. Since there is always uncertainty about the market prices of IPOs, if the issuers and their investment bankers attempt to offer the securities at their expected market clearing prices, the uninformed investors will end up purchasing disproportionately large shares of the overpriced issues. In order to keep up the uninformed investors in the IPO market, the investment bankers have to offer the securities at discounts from their expected after market prices. Their losses from the overpriced allocations would be compensated by the excess returns on the underpriced issues.

The signaling models predict that issuing firms try to signal positive information to the investor by underpricing IPOs. Michaely and Shaw (1994), consistent with the winner's curse hypothesis, show that in markets where investors know a priori that they do not have to compete with informed investors, IPOs are not underpriced. IPOs underwritten by reputable investment banks experience significantly less underpricing and perform significantly better in the long run. It is found that firms, that underprice more, return to the reissue market less frequently and for lesser amounts, than firms that underprice less, and firms, that underprice less, experience higher earnings and pay higher dividends, contrary to the models' predictions. Enhancing banker relations with investors formulated by Welch (1989) based on signaling is that good firms underprice to leave a good taste in investor's mouth. Jegadeesh, Weinstein and Welch (1993) signaling models in which firms underprice their initial public offerings of equity so that they can subsequently issue seasoned equity at more favorable prices. A positive relation is found between IPO underpricing and the probability and the size of subsequent seasoned offerings.

In Information Cascades model, stated by Ibbotson, Sindelar and Ritter (1994), potential investors pay attention to not only their own information about a new issue but also

to whether other investors are purchasing. An investor may decide not to buy even if he has favorable information when he observes that no one else is buying. Therefore, the issuer may underprice to induce first few potential investors to buy and thereby setting off a cascade in which all subsequent investors want to buy irrespective of their private information.

One way to explain underpricing of IPOs is a form of insurance to reduce legal liability of investment banker. Tiniç (1988) develops and tests the hypothesis that underpricing serves as a form of insurance against legal liability and the associated damages to the reputations of investment bankers. The empirical results based on samples of IPOs that are brought to the market before and after the Securities Act of 1933 provide considerable support for implicit insurance hypothesis. Specifically, gross underpricing and market segmentation between prestigious investment bankers in originating unseasoned new issues appear to be peculiar to the post 1933 era.

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.

Monopsony-Power Hypothesis, another explanation proposed by Ritter (1984), is that gross underpricing may be a result of the monopsony power of the investment bankers in underwriting common stocks of small speculative firms. Large and reputable investment bankers generally do not accept to underwrite common stocks of small, speculative, start-up firms. According to Ritter, the IPO market is segmented. The IPOs of small firms are underwritten by investment bankers who 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.

Consequently, different hypotheses about the reasons of underpricing in the IPO market suggest differences in the degree of abnormal returns across different offer size and price categories, different risk classes of firms and different classes of underwriters. Thus, some types of IPOs, such as high risk IPOs, are underpriced more (Ritter, 1984). This observation leads to another stream of research in the IPO market: namely the presence of hot and cold issue markets. Hot issue markets refer to the periods during which initial returns of IPOs are excessively high.

The investment bank's reputation will have an explanatory power in the question of why IPOs are underpriced. It is argued that the level of investment banker prestige is negatively related to the riskiness of IPOs. In the research of Johnson and Miller(1988), three main hypotheses explaining the issues underwritten by prestigious investment bankers should exhibit lower initial returns are tested and the following conclusions are derived: The first one is that prestigious bankers underprice less than non-prestigious bankers. The second is that the lower initial returns that are exhibited by prestigious underwriter are caused by differences in risk alone and that banker prestige has no explanatory power in its own right. The third one is that the low initial returns exhibited prestigious bankers are caused by the tendency to associate with less risky issues more than non prestigious bankers. Carter and Manaster(1990) examined the returns earned by subscribing to initial public offerings of equity. It is shown that in IPOs, more informed investor require higher returns. The marketing of underwriter's reputation reveals the expected level of informed activity. Prestigious underwriters are associated with lower risk offerings. With less risk there is less incentive to acquire information and fewer

informed investors. Consequently, prestigious underwriters are associated with IPOs that have lower returns.

Aftermarket support of an initial public offering (IPO) is an effort by the underwriter to prop up aftermarket prices when the market price would decline without intervention. Schultz and Zaman (1994) studied the aftermarket for 72 IPOs using comprehensive trade and quote-change data from every market maker for the first three days of trading is studied. Underwriters quote higher bid prices than other market makers for issues that commence trading at or below the offer price. Underwriters repurchase large quantities of stock in the aftermarket without risk by overselling the issue by the amount of the overallotment option. If the IPO is hot, the overallotment option is exercised. If not, the short position is covered with aftermarket selling. Ruud (1993), after the investigation of the distribution of initial returns following IPOs, showed that positive mean initial returns may reflect the existence of a partially unobserved left(negative) tail. Most IPOs with zero one-day returns subsequently fall in price, suggesting that underwriter price support may account for the skewed distribution and hence the phenomenon of positive average initial IPO returns, even if offering prices are set at expected market value.

Ibbotson, Sindelar and Ritter (1994) in a recent paper find that underpricing persists over time and there are three anomalies associated with IPOs: (1) first day returns that average 10-15%, (2) cycles in both the volume of new issues and the magnitude of the first day returns and (3) long run underperformance. The argument related with these anomalies in the paper is that periodic overoptimism by investors creates windows of opportunity during which many firms rush to the market resulting in disappointing returns to long term investors when the issuers fail to live up to overly optimistic expectations. In contrast, firms that issue during low-

volume periods typically experience neither high initial price run-ups nor subsequent long run underperformance.

The other phenomenon documented by Ritter(1991) is in the long run, initial public offerings appear to be overpriced. In his study, issuing firms during 1975-1984 substantially underperformed a sample of matching firms from the closing price on the first day of the public trading to their three year anniversaries. There is substantial variation in the underperformance year to year and across industries, with companies that went public in high volume years faring the worst. The patterns are consistent with an IPO market in which (1)investors are periodically overoptimistic about the earnings potential of young growth companies and (2)firms take advantage of these windows of opportunity.

## **V. DATA AND METHODOLOGY**

The stocks that have been offered to the public during 1994 and 1995 in ISE constitute the sample of the study. In 1994 and 1995, there were 25 and 29 new stocks issued in ISE, respectively. One out of 25 stocks in 1994 and 6 out of 29 stocks in 1995 are the stocks of investment partnership. In constructing the sample, investment partnership due to their characteristics of relying on the performance of the stocks on their portfolios are excluded. Two out of 47 companies, namely Özfinans Factoring and Borova Yapı listed on regional market were also excluded. 45 companies constituting the sample corresponds to approximately 30 % of the total stocks since there were 158 stocks that were being traded on the market before these public offerings. The relevant raw data is obtained from Reuters and the initial offering prices and the closing prices are adjusted considering the realized paid in capital increases and dividend payments up to June 28, 1996, announced in annual and monthly factbook of ISE.

### **V. 1. Istanbul Stock Exchange**

The Istanbul Stock Exchange, ISE, was established in 1985 and commenced business in early 1986. The trading on the ISE has traditionally been characterized by a high degree of short-term speculative trading which is attributable in part to the relatively underdeveloped institutional investor base in Turkey and to the relatively small size of retail investor base. Trading prices for securities listed on the ISE are generally limited a range established daily by the ISE. Traders are not permitted to place orders at prices which are more than 10% higher

or 10% lower than the weighted average price of the relevant security in the preceding trading session.

Turkish disclosure and regulatory standards are less stringent in many respects than standards in more developed securities market. Less information on Turkish companies may be publicly available than regularly published by and about companies in developed securities market. Furthermore, there is lower level of regulation and monitoring of the Turkish securities markets and activities of investors in such markets as compared with the securities markets in the US, UK and certain other countries.

The ISE is considerably smaller and less liquid than securities market in USA, UK and certain other countries. As of March 31, 1995, the total market capitalization of all companies whose equities regularly trade on the ISE was 2,213.4 trillion TL. The average daily traded value of the stocks of all companies, for 1995, was 9.5 trillion TL. A disproportionately large percentage of the market capitalization and trading value of the ISE is represented by a small number of listed companies. The average daily traded value of the five most actively-traded stocks on the ISE for 1995 was 2,612 billion TL which represented approximately 27.5% of the average daily traded value of all stocks traded on the ISE in 1995. As of December 31, 1995, the shares of 205 companies were regularly traded on the ISE. Five companies are offered to the public and traded on the ISE as of May 1, 1996. As of December 31, 1995, the combined market capitalization of the ten companies with greatest market capitalization whose equity securities regularly trade on the ISE was 42.54 percent of the market capitalization of all companies regularly trading on the ISE as of that date.

The ISE is highly volatile market. The ISE reflected the political and economic uncertainty in Turkey in 1994 and 1995. On April 4, 1994, following a series of devaluations of Turkish Lira in January and February 1994, and increases in certain macroeconomic imbalances, but prior to the adoption of the Austerity Package, the ISE Composite Index stood at 16356.48. Following the announcement of the Austerity Package, the Index declined to 14737.37 as of May 30, 1994 and began to rise and stood at 27257.14 on December 30, 1994. In 1995, the highest daily closing value of the ISE is 54653.93 on April 21. Due to the political uncertainty faced in the fourth quarter of 1995, the Index dropped to 37757.81 on November 29 and began to rise to 38779 on December 30, 1995 and at 67045 on March 31, 1996.

## **V. 2. Data**

As aforementioned, the purpose of the study is to analyze the initial return characteristics of IPOs in ISE and to determine whether the new issues are underpriced or overpriced. The study concentrates on short term and medium term price behavior of IPOs in the days, weeks and months following the offer. Initial return characteristics are analyzed through the use of the closing prices of the first trading day, five, ten and fifteen successive trading days to make inferences about short term price behavior of IPOs in ISE during 1994 and 1995. The initial return characteristics for medium term price behavior are analyzed through the use of closing prices after one month and three months following the first trading day. Although the returns for a month and three months can be regarded as a short term returns in developed securities markets, these durations are considered as medium terms for the investors in ISE due to reflections of economic and political uncertainty in our country on ISE, highly volatile market.

The sample in 1994 contained 24 IPOs managed by 13 different leader intermediaries (Appendix A.1.). The size of the issues and the offering prices spanned a wide range. Issue size ranged from 3,700,000 shares to 145,000,000 shares and from 54 billion TL to 780 billion TL. The shares of the companies offered to the public spanned from 8.62% to 38.5%. The offering prices ranged from 4,000 to 65,000 in nominal TL. The volume of the offerings in 1994 totaled to 7,683,665,012,000 TL. Seventeen firms issued their stocks to the public with a firm-commitment (underwriting) agreement, whereas seven firms preferred best-efforts agreement in their offerings. Again, seventeen firms issued their stocks by increasing the paid-in capital and selling the new issued shares to the public (constraining their preemptive rights) and the rest of the sample; seven companies, sold the existing shares to the public (selling from their portfolio). Among twenty-four IPOs, the shares of eighteen and four firms were sold according to book building by receiving offer for price and book building by fixed price, respectively and the stocks of other two companies were sold in the stock exchange.

In 1995, the sample contained 21 firms which were offered to the public by 12 different leader brokers (Appendix A.2.). The issue size spanned from 750,000 shares to 300,000,000 shares and from 15 billion TL to 1,950 billion TL. The shares of the companies offered to the public ranged from 0.99% to 31.82%. The offering prices were in the range of 2,800 and 25,500 in nominal TL. The volume of the offerings in 1995 totaled to 10,698,461,750,000 TL. Nineteen firms and two firms issued their stocks to the public with a firm-commitment agreement and best-efforts agreement, respectively. Among twenty-one IPOs, the shares of thirteen and five firms were sold by collecting orders with a fixed price and with a book-building, respectively, and the stocks of other three companies were sold in the stock exchange. Ten firms issued their stocks by increasing the paid-in capital and selling the new

issued shares to the public and eight companies sold the existing shares to the public. Three firms used two ways in their initial public offerings at the same time.

### **V. 3. Methodology**

Initially, the price returns were analyzed for short-term and medium-term price behavior of new issues in 1994 and 1995. The first day price returns have been calculated through the use of the offering prices and the closing prices of the first trading day. The weekly price returns have been calculated for five, ten and fifteen successive days following the first trading day. The monthly returns were calculated for one month and three months after the first trading day. The raw price returns were computed in the following manner:

$$R(it) = (( P(it) - P(i0) ) / P(i0)) * 100$$

where

$R(it)$  : the price return of stock  $i$  in  $t$  periods after the offering.

$P(it)$  : the closing price of stock  $i$  in  $t$  periods after the offering which is adjusted for the stocks dividends and splits if any.

$P(i0)$ : the adjusted initial offering price of stock  $i$ .

Since the stocks have been offered to public in different periods, the market adjusted returns,  $AR(it)$  will be calculated for the IPOs for the mentioned periods through the use of the following formula:

$$AR(it) = ( ( P(it) - P(i0) ) / P(i0) - ( I(t) - I(0) ) / I(0) ) * 100$$

where

$AR(it)$  : the market adjusted price return of stock  $i$  in  $t$  periods after the offering.

$P(it)$  : the closing price of stock  $i$  in  $t$  periods after the offering which is adjusted for the stocks dividends and splits if any.

$P(i0)$  : the adjusted initial offering price of stock  $i$ .

$I(t)$  : the ISEC-100 market index at  $t$  periods after the corresponding offer.

$I(0)$  : the ISEC-100 market index at the date of offering each stock.

To test whether the new issues are underpriced or overpriced, the initial returns of the IPOs must be adjusted. To do so for overall market movements, ISEC-100 index was selected as the proxy for the market. ISEC-100 index is a composite index including the most active 100 companies listed on ISE. Each stock's excess return,  $Eit$ , from the offer date to the market price observed at time  $t$  was computed in the following manner (Tınıç, 1988) :

$$E(it) = \ln (P(it) / P(i0)) - \ln (I(t) / I(0))$$

where

$E(it)$  : the excess return of each stock  $i$  in  $t$  periods after the offer.

$P(it)$  : the closing price of each stock  $i$  in  $t$  periods after the offering which is adjusted for the stocks dividends and splits if any.

$P(i0)$ : the adjusted initial offering price of each stock  $i$ .

$I(t)$  : the ISEC-100 market index at  $t$  periods after the corresponding offer.

$I(0)$  : the ISEC-100 market index at the date of offering each stock.

The procedure used to adjust for market returns in the formula assumes that beta coefficient of the IPOs are all equal to one (Tınıç, 1988). However, there are very good

reasons to expect that the unseasoned new stocks would tend to be riskier than the existing stocks. Ibbotson (1975) documented that the volatility of the IPOs is considerably larger than the market's and that their beta coefficients tend to be large, particularly during the first two months following the offering date. Thus, the excess return,  $E(it)$ , calculated in the formula provides a somewhat upward-biased estimate of the initial performance of an IPO relative to the market. The existence of abnormal returns in IPOs during the period under analysis was tested by t-statistics. The hypothesis is that at 0.05 level of significance or less the excess return,  $Eit$ , is larger than zero.

## **VI. RESULTS**

The results of the study are presented in two sections :short-term and medium-term price behaviors of IPOs in 1994 and 1995 (Appendix B). In the first section, I have analyzed raw, adjusted and excess returns of IPOs on the first, fifth, tenth and fifteenth trading day. The initial return characteristics for medium-term price behavior are analyzed on the first month and third month following the offer in the next section.

### **VI. 1. Short-Term Price Behavior of IPOs**

The average return of 45 initial public offerings in 1994 and 1995 on the first day after the issue has been 7.44% with a standard deviation of 10.80%. During the same period, ISE market index had an average return of 2.06% with a variability of 14.22%. The average of market adjusted return on the first day after the issue was 5.37% with a standard deviation of 12.58% in the same period. The average return on the first day after the issue of 24 IPOs in 1994 and 21 IPOs in 1995 has been 8.44% and 6.29%, respectively. The ISE market index in 1994 had higher average return than the index return in 1995. However, the market adjusted initial returns of IPOs in 1994 was less than the market adjusted returns in 1995. The highest abnormal return on the first trading day, 26.65%, belongs to Otokar, whereas the investor who bought Alternatifbank had a loss of 14.26% on the first day. Roughly, one fifth of the sample was overpriced, while 73.3% of the sample had positive abnormal first day returns. Three out of forty-five companies had zero return on the first day following the offer. To test whether the stocks are underpriced or overpriced on the first day, the first step is to calculate the excess

return of the individual IPOs in 1994 and 1995. The excess returns of new issues from the offering date to first trading date averaged to 0.0563 with a variability of 0.1224. The null hypothesis that mean excess return of the sample is zero can be rejected at the 0.05 level of significance. The t-statistic is equal to 3.089 with 44 degrees of freedom. Hence it can be concluded that IPOs in ISE during 1994 and 1995 are underpriced.

**Table 1. The performance of IPOs on the first trading day following the offer.**

Year	Return (%)			Index Return (%)			Adjusted Return (%)		
	94	95	94&95	94	95	94&95	94	95	94&95
Mean	8.44	6.29	7.44	3.63	0.27	2.06	4.81	6.02	5.37
Std.Dev	10.18	11.61	10.80	18.43	6.92	14.22	14.95	9.50	12.58

Excess Return	1994	1995	1994 & 1995
Mean	0.0631	0.0488	0.0563
Std.Deviation	0.1567	0.0817	0.1224
T-Statistic	1.888	2.741	3.089

The second investigation of the short-term price behavior is on the weekly returns of new issues during the same period. Initially, I have analyzed returns of IPOs from the date of the offering to the date of five successive days following the first trading day. The first weekly return of 45 IPOs in 1994 and 1995 averaged to 9.47% with a variability of 25.13%. During the period under analysis, the average weekly return of ISE market index was 1.66% with a standard deviation of 13.11%. The average and standard deviation of market adjusted return for the first week have been 7.81% and 17.76%, respectively. As in the case of the first day abnormal return, the average first week return of 24 companies in 1994 was considerable

higher than the average weekly return of companies in 1995. This is also valid for both average weekly index return and average weekly market adjusted return. The lucky investor in Kerevitaş realized an abnormal return of 104.17% in the first week, the highest return for the period. The biggest loser in the first week was İhlas Holding with 36% negative return. One fourth of the sample had a negative return at the end of the first week, while the remainings were underpriced. The excess returns of the new issues from the offering date to the date of first week later than initial trading day averaged to 0.0579 with a standard deviation of 0.1507. As in the case of the first day abnormal return, the mean excess returns of IPOs for the first week is statistically different from zero at 0.05 level of significance. The t-statistic is equal to 2.579 with 44 degrees of freedom. It can be inferred that IPOs in 1994 and 1995 are underpriced regarding the performance of the new issues one week later than the initial trading date.

**Table 2. The performance of IPOs on the fifth trading day following the offer.**

	Return (%)			Index Return (%)			Adjusted Return (%)		
	94	95	94&95	94	95	94&95	94	95	94&95
<b>Year</b>	94	95	94&95	94	95	94&95	94	95	94&95
<b>Mean</b>	13.70	4.63	9.47	2.46	0.73	1.66	11.23	3.90	7.81
<b>Std.Dev</b>	31.06	15.28	25.13	16.23	8.57	13.11	19.67	14.80	17.76

<b>Excess Return</b>	<b>1994</b>	<b>1995</b>	<b>1994 &amp; 1995</b>
<b>Mean</b>	0.0837	0.0239	0.0579
<b>Std.Deviation</b>	0.1705	0.1299	0.1507
<b>T-Statistic</b>	2.302	0.842	2.579

The third analysis of IPOs during 1994 and 1995 is related with the performance of the stocks after ten successive days following the first trading date. The average return of the new issues on the tenth day following the initial trading day has been 7.30% with a variability of 38.56%. The market index during the same period had average return of 2.85% with a standard deviation 16.56% for two weeks. The average and standard deviation of market adjusted returns of IPOs for ten days were 4.45% and 26.93%, respectively. Kerevitaş has the highest return of 150% while Yapı Kredi Leasing has the lowest return of 59.17% for the same period. Twenty out of forty-five companies had negative returns during 1994 and 1995. For the second week, there exists a considerable decrease in the average return of new issues, from 11.56% in 1994 to 2.44% in 1995. The mean excess return of IPOs for the second week was 0.0013 with a standard deviation of 0.2046. Unlike the prior findings, IPOs are neither underpriced nor overpriced for the second week. The related t-statistics was 0.0427 insignificant at the level of 0.05.

**Table 3. The performance of IPOs on the tenth trading day following the offer.**

Year	Return (%)			Index Return (%)			Adjusted Return (%)		
	94	95	94&95	94	95	94&95	94	95	94&95
Mean	11.56	2.44	7.30	2.83	2.87	2.85	8.73	-0.44	4.45
Std.Dev	50.83	15.89	38.56	20.77	10.34	16.56	34.97	11.93	26.93

Excess Return	1994	1995	1994 & 1995
Mean	0.0087	-0.0109	0.0013
Std.Deviation	0.2721	0.1175	0.2046
T-Statistic	0.1506	-0.4252	0.0427

In the third week after their offer, the initial public offerings had an average return of 2.31% with a high variability of 36.33%. The average of market index return was 3.84% with a standard deviation of 17.76%. The market adjusted return for the third week following the first trading day had a mean of -1.54% and standard deviation of 25.56%. The number of companies having positive and negative returns at the end of the third week is 24 and 21, respectively. The average return of IPOs in 1995 was almost zero whereas new issues had an average return of 4.34% in 1994. Considering the performance of companies on the third week, Yapı Kredi Leasing was the loss leader and Kerevitaş was the gain leader. The mean excess return for the third week was -0.0621 with a standard deviation of 0.2491. The related t-statistic was -1.673, insignificant at a level of 0.05. According to the test results, the new issues are neither overpriced nor underpriced on the fifteenth day following the initial trading day.

**Table 4. The performance of IPOs on the third week after the initial trading.**

Year	Return (%)			Index Return (%)			Adjusted Return (%)		
	94	95	94&95	94	95	94&95	94	95	94&95
Mean	4.34	-0.02	2.31	3.45	4.29	3.84	0.89	-4.31	-1.54
Std.Dev	46.71	19.60	36.33	20.83	13.95	17.76	31.35	17.09	25.56

Excess Return	1994	1995	1994 & 1995
Mean	-0.0946	-0.0392	-0.0621
Std.Deviation	0.3085	0.1832	0.2491
T-Statistic	-1.439	-0.981	-1.673

Regarding the initial return characteristics of IPOs in ISE during 1994 and 1995, new issues were underpriced on the first trading day and first week following the first trading date. However, IPOs were neither underpriced nor overpriced on the tenth and fifteenth trading days following the first trading day.

## **VI. 2. Medium-Term Price Behavior of IPOs**

To analyze price behavior of IPOs during 1994 and 1995 in the medium-term, I have investigated the return characteristics of the stocks. Although investments in one month and three months can be regarded as short-term investments in developed securities markets, these durations are regarded as medium terms for the investors especially investing in new issues in ISE. The volatility of the market, speculative price movements and the influence of reflections of economic and political uncertainty in Turkey on ISE are the main factors that change the nature of the investment terms.

The average return of 45 initial public offerings on the first month after the first trading date has been -1.93% with a standard deviation of 34.75%. During the same period, ISE market index had an average return of 5.26% with a variability of 18.69%. The average of market adjusted return on the first month was -7.19% with a standard deviation of 26.76% in the same period. The average return of 24 IPOs in 1994 and 21 IPOs in 1995 on the first month has been -5.22% and 1.82%, respectively. The ISE market index in 1995 had higher average return than the index return in 1994. The market adjusted initial returns of IPOs in 1995 was higher than new issues in 1994. The highest abnormal return on the first month, 133.33%, belongs to Kerevitaş, whereas the investor who bought Yapı Kredi Leasing had a loss of 70.83% on the first month. 57.7% of the sample was overpriced, while the remainings

had positive abnormal monthly returns. The excess returns of new issues in the first month averaged to -0.120 with a variability of 0.292. The null hypothesis that mean excess return of the sample is zero can be rejected at the 0.05 level of significance since the t-statistic is equal to -2.754 with 44 degrees of freedom. Hence it can be concluded that IPOs in ISE during 1994 and 1995 are not underpriced considering the first month performance. If the alternative hypothesis is revised for testing overpricing of new issues during same period, that is excess monthly return of stocks is negative at significance level of 0.05, it can be inferred that overpricing of IPOs exists at the end of first month following the initial trading day.

**Table 5. The performance of IPOs on the first month after the first trading day.**

Year	Return (%)			Index Return (%)			Adjusted Return (%)		
	94	95	94&95	94	95	94&95	94	95	94&95
Mean	-5.22	1.82	-1.93	3.32	7.47	5.26	-8.54	-5.65	-7.19
Std.Dev	42.74	22.98	34.75	18.80	18.76	18.69	33.64	16.42	26.76

Excess Return	1994	1995	1994 & 1995
Mean	-0.1783	-0.0672	-0.120
Std.Deviation	0.3876	0.1518	0.292
T-Statistic	-2.157	-2.028	-2.754

The last investigation is related to the performance of IPOs in the third month after their offer. The initial public offerings had an average return of 7.65% with a high variability of 44.51%. The average of market index return was 10.86% with a standard deviation of 27.63%. The market adjusted return for the third month following the first trading day had a mean of -3.20% and standard deviation of 34.81%. The number companies having positive

and negative returns at the end of third month is 22 and 23, respectively. The average return of IPOs for the third month following the first trading day in 1995 was 14.66% whereas new issues had an average return of 1.52% in 1994. Comparing the performance of companies on the third month, Milpa was loss leader and Frigo Pak was gain leader. The mean excess return for the third month was -0.1034 with a standard deviation of 0.3886. The related t-statistic was -1.786, significant at level of 0.05. According to the test results, the new issues are overpriced on the third month after the initial trading day.

**Table 6. The performance of IPOs on the third month following the offer.**

Year	Return (%)			Index Return (%)			Adjusted Return (%)		
	94	95	94&95	94	95	94&95	94	95	94&95
<b>Mean</b>	1.52	14.66	7.65	10.94	10.76	10.86	-9.42	3.90	-3.20
<b>Std.Dev</b>	43.64	45.52	44.51	23.19	32.58	27.63	33.94	35.24	34.81

Excess Return	1994	1995	1994 & 1995
<b>Mean</b>	-0.2218	-0.0122	-0.1034
<b>Std.Deviation</b>	0.4322	0.3162	0.3886
<b>T-Statistic</b>	-2.407	-0.177	-1.786

Considering the results of the tests for medium-term price behavior, it can be concluded that a consistent return characteristic of IPOs in 1994 and 1995 is observed as a whole, that is, overpricing exists for new issues after the first month following the initial trading date.

## VII. CONCLUSIONS AND RECOMMENDATIONS

In our study which was aimed at analyzing the initial return characteristics of IPOs in ISE during 1994 and 1995, we have important drawbacks about the performance of new issues in the short and medium term. The structure, advantages, disadvantages, Turkish experience of IPOs are the other topics encountered in the study.

The existence of significant abnormal positive initial returns of IPOs in 1994 and 1995 on the first and fifth trading day showed that the new issues are underpriced. The excess returns for initial offerings were found to be significantly larger than zero. However, no significant excess returns are observed for the second and third week following the initial trading date. The absence of significant abnormal initial returns in the IPO market in ISE during the same period seems to suggest that new issues follow the general market movement. The overpricing of IPOs on the first month and third month after the initial trading date was proven by the existence of significant abnormal negative initial returns. The observed high variability indicates that there might be some stocks that are underpriced while there might be some stocks that are overpriced. High uncertainty around the intrinsic values, especially in the economic environment of Turkey, might be responsible for the high initial returns and losses observed for some new issues in the short and medium term. Segmentation according to risk class, issuer type, size, industry and price group might also help to explain abnormal initial returns observed for some stocks. However, the number of IPOs in ISE during the period under analysis does not present itself suitable for such grouping.

The existing limitations in our study are mainly due to the nature of ISE. The political and economic uncertainty in our country, especially Austerity Package on April 4,1994 and general election on December 24,1995, were the main factors that had considerable reflections on financial markets. The happenings in the alternative investment instruments, interest rates and foreign exchange rates, had strong influences on the market during the period under analysis. The volatile, small and less liquid market, low information usage, low information conveyed by financial tables and price manipulation in the aftermarket are the general characteristics inherent in ISE are the other limitations faced in the study.

Considering the importance of the topic both from the perspective of investors, firms going public and investment banker, further studies are needed to identify sources of variation in IPOs. The recommended studies may be on long-run performance of IPOs, the reasons of underpricing, underwriter price support, underwriter reputation and its impact on the pricing, the choice of the offering method in IPOs and the firm value.

**APPENDIX A.**

**INITIAL PUBLIC OFFERINGS IN ISTANBUL STOCK EXCHANGE**

**DURING 1994 AND 1995**

APPENDIX A.1. IPOs IN ISTANBUL STOCK EXCHANGE IN 1994

NAME OF COMPANY	SALE TYPE	OFFERING STRUCTURE	UNDERWRITER	OFFERING METHOD
TRANSTÜRK FREN DONANIM	RECEIVING OFFER FOR PRICE	SALE BY A SHAREHOLDER	İKTİSAT BANKASI	UNDERWRITING
EMSAN PASLANMAZ ÇELİK	BOOKBUILDING BY FIXED PRICE	CAPITAL INCREASE	YATIRIMBANK	BEST EFFORT
MİLPA TİC. VE SAN. ÜRÜNLER	RECEIVING OFFER FOR PRICE	SALE BY A SHAREHOLDER	TEB.	UNDERWRITING
ATLAS M.K.Y.O	BOOKBUILDING BY FIXED PRICE	CAPITAL INCREASE	GLOBAL	BEST EFFORT
YAPI KREDİ LEASING	RECEIVING OFFER FOR PRICE	SALE BY A SHAREHOLDER	YAPI KREDİ BANKASI	UNDERWRITING
İHLAS HOLDİNG	RECEIVING OFFER FOR PRICE	CAPITAL INCREASE	FİNANSBANK	BEST EFFORT
SABAH PAZARLAMA	BOOKBUILDING BY FIXED PRICE	SALE BY A SHAREHOLDER	İTERBANK	UNDERWRITING
EGEPLAST EGEPLASTİK	RECEIVING OFFER FOR PRICE	SALE BY A SHAREHOLDER	GLOBAL	UNDERWRITING
ÇUMRA KAĞIT	RECEIVING OFFER FOR PRICE	CAPITAL INCREASE	YATIRIMBANK	BEST EFFORT
KEREVİTAŞ GIDA SANAYİ	RECEIVING OFFER FOR PRICE	CAPITAL INCREASE	GLOBAL	BEST EFFORT
DARDANEL ÖNENTAŞ GIDA	RECEIVING OFFER FOR PRICE	CAPITAL INCREASE	GLOBAL	BEST EFFORT
BUGÜN YAYINCILIK A.Ş.	BOOKBUILDING BY FIXED PRICE	SALE BY A SHAREHOLDER	KARON	UNDERWRITING
MUTLU AKÜ VE MALZEMELERİ	RECEIVING OFFER FOR PRICE	SALE BY A SHAREHOLDER	KARON	UNDERWRITING
BORUSAN BİRLEŞİK BORU	RECEIVING OFFER FOR PRICE	SALE BY A SHAREHOLDER	FİNANSBANK	UNDERWRITING
MERKO GIDA SANAYİ	RECEIVING OFFER FOR PRICE	SALE BY A SHAREHOLDER	FİNANSBANK	UNDERWRITING
VİKİNG KAĞIT VE SELÜLOZ	RECEIVING OFFER FOR PRICE	SALE BY A SHAREHOLDER	GLOBAL	UNDERWRITING
KARSU TEKSTİL SANAYİ	SALE IN THE STOCK EXCHANGE	CAPITAL INCREASE	T. KALKINMA BANKASI	BEST EFFORT
HALK SİGORTA	RECEIVING OFFER FOR PRICE	SALE BY A SHAREHOLDER	YAPI KREDİ BANKASI	BEST EFFORT
ANADOLU BİRACILIK	RECEIVING OFFER FOR PRICE	SALE BY A SHAREHOLDER	İTERBANK	UNDERWRITING
GÜNEŞ SİGORTA	RECEIVING OFFER FOR PRICE	SALE BY A SHAREHOLDER	VAKIFLAR BANKASI	UNDERWRITING
TUKAŞ TURGUTLU KONSERVEÇİLİ	RECEIVING OFFER FOR PRICE	SALE BY A SHAREHOLDER	OYAK	UNDERWRITING
AKSİGORTA	BOOKBUILDING BY FIXED PRICE	SALE BY A SHAREHOLDER	GLOBAL	UNDERWRITING
RAKS ELEKTRİK EV ALETLERİ	RECEIVING OFFER FOR PRICE	CAPITAL INCREASE	GARANTİ YATIRIM	UNDERWRITING
SÖNMEZ PAMUKLU SANAYİ	RECEIVING OFFER FOR PRICE	SALE BY A SHAREHOLDER	KÖRFEZBANK	UNDERWRITING
ÇEMTAŞ ÇELİK MAKİNA	SALE IN THE STOCK EXCHANGE	SALE BY A SHAREHOLDER	İKTİSAT BANKASI	UNDERWRITING

NAME OF COMPANY	IPO DATE	FIRST TRADING DATE	NO OF SHARES	FREE-FLOAT (%)	AMOUNT SOLD (THOUSAND TL)	PRICE	REALISED
TRANSTÜRK FREN DONANIM	02-03.12.1993	03.01.1994	4,780,032	20.00	76,480,512	MIN-14000	16,000
EMSAN PASLANMAZ ÇELİK	13-15.1993	24.01.1994	12,200,000	28.37	119,560,000	9,800	9,800
MİLPA TİC. VE SAN. ÜRÜNLER	24-25.01.1994	15.02.1994	5,400,000	15.00	243,000,000	MIN-45000	45,000
ATLAS M.K.Y.O	25-27.01.1994	28.02.1994	55,000,000	84.61	77,000,000	1,400	1,400
YAPI KREDİ LEASING	21-24.01.1994	28.02.1994	30,000,000	15.00	180,000,000	MIN-3000	6,000
İHLAS HOLDİNG	7-18.02.1994	16.03.1994	14,042,000	18.23	702,100,000	MIN-50000	50,000
SABAH PAZARLAMA	2-4.03.1994	23.03.1994	9,625,000	38.50	134,750,000	14,000	14,000
EĞEPLAST EĞEPLASTİK	3-4.03.1994	20.04.1994	7,500,000	15.00	54,000,000	MIN-7200	7,200
ÇUMRA KAĞIT	11-12-13.05.1994	20.06.1994	3,700,000	9.32	59,200,000	MIN-16000	16,000
KEREVİTAŞ GIDA SANAYİ	12-13.05.1994	20.06.1994	8,000,000	28.57	192,000,000	MIN-22500	24,000
DARDANEL ÖNENTAŞ GIDA	28-29.07.1994	22.08.1994	12,000,000	37.50	780,000,000	MIN-50000	65,000
BUGÜN YAYINCILIK A.Ş.	03-04-05.08.1994	01.09.1994	20,000,000	20.00	90,000,000	4,500	4,500
MUTLU AKÜ VE MALZEMELERİ	24-25.08.1994	12.09.1994	11,250,000	15.00	506,250,000	MIN-30000	45,000
BORUSAN BİRLEŞİK BORU	01-02.09.1994	12.09.1994	30,000,000	20.00	690,000,000	MIN-20000	23,000
MERKO GIDA SANAYİ	06-07.10.1994	20.10.1994	36,000,000	15.00	180,000,000	MIN-4500	5,000
VİKİNG KAĞIT VE SELÜLOZ	13-14.10.1994	24.10.1994	12,600,000	31.50	252,000,000	MIN-20000	20,000
KARSU TEKSTİL SANAYİ	14-15-16-17.11.1994	17.11.1994	11,200,000	8.62	113,551,000	MIN-9000	10,138
HALK SİGORTA	19-20.10.1994	07.11.1994	56,000,000	16.00	560,000,000	MIN-10000	10,000
ANADOLU BİRACILIK	16-17.11.1994	28.11.1994	90,000,000	25.71	405,000,000	MIN-4200	4,500
GÜNEŞ SİGORTA	14-15-16.11.1994	28.11.1994	18,750,000	15.00	318,750,000	MIN-17000	17,000
TUKAŞ TURGUTLU KONSERVEÇİLİK	22-23.11.1994	05.12.1994	14,175,000	15.00	304,762,500	MIN-20000	21,500
AKSİGORTA	23-24.11.1994	05.12.1994	75,000,000	15.00	675,000,000	9,000	9,000
RAKS ELEKTRİKLİ EV ALETLERİ	06-07.12.1994	19.12.1994	15,000,000	30.00	247,500,000	MIN-16500	16,500
SÖNMEZ PAMUKLU SANAYİ	12-13.12.1994	26.12.1994	145,000,000	20.00	580,000,000	4,000	4,000
ÇEMTAŞ ÇELİK MAKİNA	26-30.12.1994	30.12.1994	11,520,000	20.00	142,761,000	10,500	13,500

APPENDIX A.2. IPOs IN ISTANBUL STOCK EXCHANGE IN 1995

NAME OF COMPANY	SALE TYPE	OFFERING STRUCTURE	UNDERWRITER	OFFERING METHOD
RANT FİNANSAL KİRALAMA A.Ş.	BOOK BUILDING BY FIXED PRICE	CAPITAL INCREASE	ATA M.K.	UNDERWRITING
GÖLTAŞ ÇİMENTO A.Ş.	RECEIVING OFFER FOR PRICE	CAPITAL INCREASE	GLOBAL	UNDERWRITING
BATIÇİM ÇİMENTO	RECEIVING OFFER FOR PRICE	CAPITAL INCREASE	TEB	BEST EFFORT
SÖKTAŞ	BOOK BUILDING BY FIXED PRICE	CAPITAL INCREASE	FİNANSBANK	UNDERWRITING
ERBOSAN BORU	SALE IN THE STOCK EXCHANGE	CAPITAL INCREASE	GARANTİ YATIRIM	BEST EFFORT
OTOKAR	BOOK BUILDING BY FIXED PRICE	SALE BY A SHAREHOLDER	TEB	UNDERWRITING
FRIGO-PAK GIDA MADDELERİ	BOOK BUILDING BY FIXED PRICE	CAPITAL INCREASE/ SALE BY A SHAREHOLDER	FİNANSBANK	UNDERWRITING
ÇBS BOYA KİMYA	BOOK BUILDING BY FIXED PRICE	CAPITAL INCREASE	FİNANSBANK	UNDERWRITING
GLOBAL MENKUL DEĞERLER	RECEIVING OFFER FOR PRICE	CAPITAL INCREASE	VAKIFLAR	UNDERWRITING
ARDEM	BOOK BUILDING BY FIXED PRICE	SALE BY A SHAREHOLDER	KOÇBANK	UNDERWRITING
ESEM SPOR GİYİM	RECEIVING OFFER FOR PRICE	SALE BY A SHAREHOLDER	GARANTİ YATIRIM	UNDERWRITING
COMMERCIAL UNION SİGORTA	BOOK BUILDING BY FIXED PRICE	CAPITAL INCREASE/ SALE BY A SHAREHOLDER	FİNANSBANK	UNDERWRITING
ECZACIBAŞI YAPI	BOOK BUILDING BY FIXED PRICE	SALE BY A SHAREHOLDER	ECZACIBAŞI M.K.	UNDERWRITING
TÜMTEKS	BOOK BUILDING BY FIXED PRICE	SALE BY A SHAREHOLDER	FİNANSBANK	UNDERWRITING
NERGİS HOLDİNG	RECEIVING OFFER FOR PRICE	CAPITAL INCREASE	GLOBAL	UNDERWRITING
ALTERNATİFBANK	BOOK BUILDING BY FIXED PRICE	CAPITAL INCREASE	FİNANSBANK	UNDERWRITING
BOSSA	BOOK BUILDING BY FIXED PRICE	SALE BY A SHAREHOLDER	FİNANSBANK	UNDERWRITING
KAPLAMİN	BOOK BUILDING BY FIXED PRICE	CAPITAL INCREASE	İTERBANK	UNDERWRITING
ADANA ÇİMENTO	SALE IN THE STOCK EXCHANGE	SALE BY A SHAREHOLDER	OYAK M.K	UNDERWRITING
EMİNİŞ AMBALAJ	SALE IN THE STOCK EXCHANGE	SALE BY A SHAREHOLDER	İTERBANK	UNDERWRITING
HAZNEDAR ATEŞ TUĞLA	BOOK BUILDING BY FIXED PRICE	CAPITAL INCREASE/ SALE BY A SHAREHOLDER	TEB	UNDERWRITING

NAME OF COMPANY	IPO DATE	FIRST TRADING DATE	NO OF SHARES	FREE-FLOAT (%)	AMOUNT SOLD (THOUSAND TL)	PRICE	REALISED
RANT FINANSAL KIRALAMA A.Ş.	07-0 8.02.1996	20.02.1995	25,000,000	25.00	70,000,000	2800	2800
GÖLTAŞ ÇİMENTO A.Ş.	23-24.02.1995	06.03.1995	33,600,000	13.22	252,000,000	7500	7500
BATIÇİM ÇİMENTO	09-10.03.1995	20.03.1995	32,000,000	7.80	416,000,000	12000	13000
SÖKTAŞ	23-24.03.1995	03.04.1995	12,500,000	15.63	187,500,000	15000	15000
ERBOSAN BORU	10-14.04.1995	17.04.1995	16,750,000	11.55	110,125,000	MIN-5500	5500-7500
OTOKAR	13-14.04.1995	24.04.1995	16,000,000	20.00	408,000,000	25500	25500
FRIGO-PAK GIDA MADDELERİ	06-07.04.1995	24.04.1995	11,250,000	28.13	174,375,000	15500	15500
ÇBS BOYA KİMYA	27-28.04.1995	15.05.1995	38,800,000	29.85	263,840,000	6800	6800
GLOBAL MENKUL DEĞERLER	02-03.05.1995	22.05.1995	115,000,000	16.43	1,121,250,000	6000	9750
ARDEM	16-17.05.1995	29.05.1995	36,000,000	15.00	612,000,000	17000	17000
ESEM SPOR GIYİM	23-24.05.1995	05.06.1995	40,000,000	16.00	480,000,000	11000	12000
COMMERCIAL UNION SIGORTA	08-09.06.1995	20.06.1995	22,500,000	15.00	309,375,000	13750	13750
ECZACIBAŞI YAPI	15-16.06.1995	26.06.1995	300,000,000	30.00	1,950,000,000	6500	6500
TÜMTEKS	14-15.06.1996	26.06.1996	35,000,000	31.82	402,500,000	11500	11500
NERGIS HOLDING	08-09.06.1995	26.06.1997	120,000,000	16.67	840,000,000	7000	7000
ALTERNATİFBANK	22-23.06.1995	03.07.1995	180,000,000	20.00	630,000,000	3500	3500
BOSSA	10-11.08.1995	21.08.1995	270,000,000	15.00	1,215,000,000	4500	4500
KAPLAMIN	23-24.08.1995	04.09.1995	25,000,000	16.67	287,500,000	11500	11500
ADANA ÇİMENTO	09-11.10.1995	12.10.1995	3,800,000	0.99	74,500,000	18000	19000-21000
EMİNİŞ AMBALAJ	13-15.12.1995	18.12.1995	6,000,000	15.00	91,438,750	15000	15000-16000
HAZNEDAR ATEŞ TUĞLA	30.11.1995-01.12.1995	11.12.1995	22,500,000	18.00	112,500,000	5000	5000

## **APPENDIX B.**

### **RESULTS FOR THE WHOLE SAMPLE**

RETURN OF IPOs IN 1994

COMPANY NAME	DATE	1 DAY	5 DAYS	10 DAYS	15 DAYS	1 MONTH	3 MONTHS
TRANSTÜRK FREN	03-Dec-93	10.94%	65.62%	150.00%	75.00%	18.75%	-20.31%
EMSAN PASLANMAZ	15-Dec-93	10.20%	4.59%	-21.43%	-51.02%	-35.71%	-58.16%
YAPI KREDİ LEASİNG	24-Jan-94	-10.00%	-28.34%	-59.17%	-69.17%	-70.83%	-66.96%
MİLPA	25-Jan-94	-10.00%	-34.44%	-54.45%	-60.56%	-63.90%	-81.56%
İHLAS HOLDİNG	18-Feb-94	-10.00%	-36.00%	-52.00%	-38.00%	-63.00%	-57.76%
EGEPLAST	04-Mar-94	11.12%	15.28%	1.36%	-8.32%	-30.56%	94.44%
SABAH PAZARLAMA	04-Mar-94	21.67%	43.33%	53.33%	90.00%	46.67%	43.33%
ÇUMRA KAĞIT	13-May-94	10.94%	43.75%	28.13%	28.13%	10.94%	12.50%
KEREVİTAŞ	13-May-94	10.42%	104.17%	150.00%	133.33%	133.33%	37.50%
DARDANEL	29-Jul-94	23.06%	24.60%	12.30%	-4.63%	-0.01%	-18.47%
BUGÜN YAYINCILIK	05-Aug-94	1.11%	2.28%	-18.18%	-39.77%	-45.45%	-45.45%
MUTLU AKÜ	25-Aug-94	0.83%	-30.54%	-24.94%	-33.90%	-40.62%	51.69%
BORUSAN	02-Sep-94	21.67%	0.86%	24.90%	12.88%	22.50%	39.31%
MERKO	07-Oct-94	11.97%	5.97%	-8.03%	-1.03%	1.97%	1.97%
VIKİNG KAĞIT	14-Oct-94	0.00%	22.87%	-1.10%	-7.11%	-10.10%	-25.08%
HALK SİGORTA	20-Oct-94	10.00%	14.99%	14.99%	14.99%	17.46%	22.49%
GÜNEŞ SİGORTA	16-Nov-94	2.94%	3.99%	-9.77%	-9.77%	-11.30%	25.40%
ANADOLU BİRA	17-Nov-94	7.78%	24.76%	30.14%	23.76%	21.21%	7.18%
KARSU TEKSTİL	17-Nov-94	21.21%	21.21%	28.95%	39.26%	26.37%	13.47%
TUKAŞ	23-Nov-94	9.35%	16.33%	9.35%	11.68%	7.03%	-4.63%
AKSİGORTA	24-Nov-94	25.70%	15.74%	19.48%	10.76%	-10.40%	-1.68%
RAKS EV ALETLERİ	07-Dec-94	11.59%	4.66%	1.49%	-11.20%	-22.30%	-15.95%
SÖNMEZ PAMUKLU	13-Dec-94	10.00%	11.51%	-3.69%	-1.16%	-17.63%	62.18%
ÇEMTAS	30-Dec-94	0.00%	11.53%	5.77%	0.00%	-9.62%	21.15%
AVERAGE		8.44%	13.70%	11.56%	4.34%	-5.22%	1.52%
STD DEVIATION		10.18%	31.06%	50.83%	46.71%	42.74%	43.64%

RETURN OF IPOs IN 1995

COMPANY NAME	DATE	1 DAY	5 DAYS	10 DAYS	15 DAYS	1 MONTH	3 MONTHS
RANT	08-Feb-95	7.14%	1.79%	12.50%	25.00%	28.57%	39.29%
GÖLTAŞ ÇİMENTO	24-Feb-95	10.34%	3.45%	12.07%	25.86%	34.48%	64.66%
BATI ÇİMENTO	10-Mar-95	14.44%	14.81%	12.87%	10.41%	37.52%	21.10%
SOKTAS	24-Mar-95	7.14%	21.43%	30.36%	25.00%	31.05%	54.18%
FRIGO PAK	07-Apr-95	22.58%	22.58%	19.35%	17.74%	1.61%	112.90%
ERBOSAN	14-Apr-95	17.78%	19.44%	-1.11%	11.11%	3.33%	13.89%
OTOKAR	14-Apr-95	26.65%	26.65%	22.63%	-3.50%	-1.49%	56.81%
ÇBS BOYA	28-Apr-95	10.61%	-4.14%	0.28%	-1.19%	-2.67%	3.23%
GLOBAL	03-May-95	-5.13%	1.54%	-6.67%	-23.08%	-27.18%	-58.46%
ARDEM	17-May-95	-7.97%	-12.04%	-12.04%	-12.04%	-17.45%	-5.50%
ESEMSPOR	24-May-95	2.08%	10.42%	4.17%	-2.08%	-16.67%	-14.58%
COMMERCIAL UNION	09-Jun-95	-0.17%	-5.62%	-20.14%	-27.40%	-21.95%	-35.38%
NERGİS	09-Jun-95	-7.14%	-12.86%	-14.29%	-20.00%	-17.14%	-35.00%
TUMTEKS	15-Jun-95	0.00%	-23.48%	-25.22%	-26.96%	-8.70%	4.35%
EYAP	16-Jun-95	23.08%	12.31%	15.38%	18.46%	16.92%	1.54%
ALTERNATİFBANK	23-Jun-95	-14.26%	-21.41%	-21.41%	-25.70%	-27.12%	-42.13%
BOSSA	11-Aug-95	3.67%	1.39%	5.95%	2.53%	-6.58%	2.53%
KAPLAMIN	24-Aug-95	4.20%	-0.24%	-4.67%	-6.89%	4.20%	17.49%
ADANA ÇİMENTO B	11-Oct-95	-7.65%	6.15%	-0.85%	-0.85%	-21.85%	-31.18%
HÄZNEĐAR	01-Dec-95	22.00%	34.00%	26.00%	34.00%	50.00%	100.00%
EMİNİŞ	15-Dec-95	2.77%	1.08%	-3.97%	-20.82%	-0.60%	38.14%
AVERAGE		6.29%	4.63%	2.44%	-0.02%	1.82%	14.66%
STD DEVIATION		11.61%	15.28%	15.89%	19.60%	22.98%	45.52%

INDEX RETURN IN 1994

COMPANY NAME	DATE	1 DAY	5 DAYS	10 DAYS	15 DAYS	1 MONTH	3 MONTHS
TRANSTÜRK FREN	03-Dec-93	21.77%	32.37%	60.20%	45.72%	3.32%	-8.59%
EMSAN PASLANMAZ	15-Dec-93	30.55%	-0.11%	-3.70%	-25.40%	-8.91%	-6.09%
YAPI KREDİ LEASING	24-Jan-94	-39.81%	-35.73%	-40.19%	-38.84%	-41.41%	-43.74%
MİLPA	25-Jan-94	-27.69%	-24.10%	-33.98%	-33.61%	-33.44%	-31.87%
İHLAS HOLDİNG	18-Feb-94	-21.50%	-23.01%	-28.19%	-9.20%	11.40%	0.24%
EGEPLAST	04-Mar-94	32.37%	8.18%	-2.96%	0.90%	5.34%	39.59%
SABAH PAZARLAMA	04-Mar-94	13.02%	21.61%	31.37%	48.95%	32.58%	26.73%
ÇUMRA KAĞIT	13-May-94	27.32%	24.11%	23.78%	30.48%	39.04%	52.74%
KEREVİTAŞ	13-May-94	27.32%	24.11%	23.78%	30.48%	39.04%	52.74%
DARDANEL	29-Jul-94	23.13%	21.29%	19.26%	11.08%	15.72%	22.31%
BUGÜN YAYINCILIK	05-Aug-94	16.53%	9.99%	8.90%	9.97%	19.15%	28.42%
MUTLU AKÜ	25-Aug-94	-5.77%	-7.63%	0.50%	4.61%	4.70%	12.37%
BORUSAN	02-Sep-94	-5.08%	-6.96%	1.23%	5.37%	5.46%	13.19%
MERKO	07-Oct-94	-8.45%	-8.51%	-7.11%	-6.21%	-1.57%	-6.27%
VİKİNG KAĞIT	14-Oct-94	-11.69%	-7.10%	-5.98%	-0.39%	-1.38%	-7.84%
HALK SİGORTA	20-Oct-94	3.28%	8.17%	9.26%	8.35%	14.28%	19.25%
GÜNEŞ SİGORTA	16-Nov-94	-0.32%	6.29%	4.60%	1.65%	-0.31%	6.21%
ANADOLU BİRA	17-Nov-94	1.22%	7.94%	6.23%	3.23%	1.24%	7.86%
KARSU TEKSTİL	17-Nov-94	0.00%	-0.64%	4.37%	5.50%	2.74%	4.49%
TUKAŞ	23-Nov-94	6.80%	6.91%	3.90%	5.29%	1.25%	16.99%
AKSİGORTA	24-Nov-94	7.33%	7.44%	4.42%	2.07%	1.75%	17.57%
RAKS EV ALETLERİ	07-Dec-94	-0.64%	-0.84%	-4.32%	-5.40%	-9.05%	22.55%
SÖNMEZ PAMUKLU	13-Dec-94	-2.62%	-4.31%	-5.38%	-6.79%	-13.00%	31.29%
ÇEMTAS	30-Dec-94	0.00%	-0.35%	-2.14%	-4.94%	-8.17%	-7.44%
AVERAGE		3.63%	2.46%	2.83%	3.45%	3.32%	10.94%
STD.DEVIATION		18.43%	16.23%	20.77%	20.83%	18.80%	23.19%

**INDEX RETURN IN 1995**

COMPANY NAME	DATE	1 DAY	5 DAYS	10 DAYS	15 DAYS	1 MONTH	3 MONTHS
RANT	08-Feb-95	10.29%	12.91%	19.24%	24.66%	32.64%	64.47%
GÖLTAŞ ÇİMENTO	24-Feb-95	5.60%	11.82%	13.74%	23.46%	49.04%	75.24%
BATI ÇİMENTO	10-Mar-95	5.05%	10.41%	19.87%	34.27%	58.61%	54.60%
SOKTAS	24-Mar-95	-12.35%	-11.23%	12.24%	30.19%	11.92%	24.04%
FRİGO PAK	07-Apr-95	11.32%	4.46%	14.80%	-2.99%	5.99%	11.56%
ERBOSAN	14-Apr-95	2.85%	13.38%	-3.29%	6.27%	3.34%	0.14%
OTOKAR	14-Apr-95	3.06%	-3.29%	6.27%	-10.19%	-1.88%	3.28%
ÇBS BOYA	28-Apr-95	7.80%	-6.71%	1.52%	8.71%	8.26%	1.36%
GLOBAL	03-May-95	-11.01%	-4.41%	0.01%	10.55%	7.13%	-7.15%
ARDEM	17-May-95	-5.18%	-2.33%	7.96%	5.37%	-3.47%	-8.56%
ESEMSPOR	24-May-95	7.15%	13.71%	10.98%	12.15%	2.63%	-0.69%
COMMERCIAL UNION	09-Jun-95	-4.47%	-2.97%	-13.54%	-13.86%	-13.20%	-23.69%
NERGİS	09-Jun-95	-2.97%	-10.32%	-13.80%	-10.25%	-4.87%	-22.21%
TUMTEKS	15-Jun-95	3.40%	-4.43%	-8.14%	-4.35%	1.37%	-17.10%
EYAP	16-Jun-95	-0.58%	-8.11%	-11.68%	-8.04%	-2.53%	-20.30%
ALTERNATİFBANK	23-Jun-95	-12.34%	-12.60%	-9.00%	-5.98%	-5.85%	-18.47%
BOSSA	11-Aug-95	-2.85%	-0.75%	2.71%	-1.28%	-11.45%	-4.71%
KAPLAMIN	24-Aug-95	2.38%	0.35%	-2.72%	-9.61%	-3.65%	-12.16%
ADANA ÇİMENTO B	11-Oct-95	-5.05%	8.20%	4.91%	-1.26%	-8.76%	2.03%
HAZNEDAR	01-Dec-95	1.57%	0.84%	7.37%	1.75%	13.13%	59.27%
EMİNİŞ	15-Dec-95	2.06%	6.47%	0.90%	0.44%	18.45%	64.96%
AVERAGE		0.27%	0.73%	2.87%	4.29%	7.47%	10.76%
STD.DEVIATION		6.92%	8.57%	10.34%	13.95%	18.76%	32.58%

**ADJUSTED RETURN OF IPOs IN 1994**

COMPANY NAME	DATE	1 DAY	5 DAYS	10 DAYS	15 DAYS	1 MONTH	3 MONTHS
TRANSTÜRK FREN	3-Dec-93	-10.83%	33.26%	89.80%	29.28%	15.43%	-11.73%
EMSAN PASLANMAZ	15-Dec-93	-20.35%	4.70%	-17.73%	-25.62%	-26.80%	-52.07%
YAPI KREDİ LEASİNG	24-Jan-94	29.81%	7.39%	-18.98%	-30.33%	-29.42%	-23.23%
MİLPA	25-Jan-94	17.69%	-10.34%	-20.46%	-26.95%	-30.46%	-49.69%
İHLAS HOLDİNG	18-Feb-94	11.50%	-12.99%	-23.81%	-28.80%	-74.40%	-58.01%
EGEPLAST	4-Mar-94	-21.26%	7.10%	4.32%	-9.23%	-35.90%	54.86%
SABAH PAZARLAMA	4-Mar-94	8.64%	21.72%	21.96%	41.05%	14.09%	16.61%
ÇUMRA KAĞIT	13-May-94	-16.38%	19.64%	4.35%	-2.35%	-28.11%	-40.24%
KEREVİTAŞ	13-May-94	-16.90%	80.06%	126.22%	102.86%	94.29%	-15.24%
DARDANEL	29-Jul-94	-0.06%	3.31%	-6.96%	-15.71%	-15.73%	-40.78%
BUGÜN YAYINCILIK	5-Aug-94	-15.43%	-7.72%	-27.07%	-49.74%	-64.60%	-73.87%
MUTLU AKÜ	25-Aug-94	6.60%	-22.91%	-25.44%	-38.51%	-45.32%	39.32%
BORUSAN	2-Sep-94	26.75%	7.82%	23.67%	7.50%	17.04%	26.12%
MERKO	7-Oct-94	20.42%	14.48%	-0.92%	5.19%	3.54%	8.24%
VİKİNG KAĞIT	14-Oct-94	11.69%	29.97%	4.88%	-6.72%	-8.72%	-17.24%
HALK SİGORTA	20-Oct-94	6.72%	6.82%	5.73%	6.64%	3.18%	3.24%
GÜNEŞ SİGORTA	16-Nov-94	3.26%	-2.30%	-14.37%	-11.43%	-11.00%	19.19%
ANADOLU BİRA	17-Nov-94	6.55%	16.82%	23.92%	20.53%	19.97%	-0.68%
KARSU TEKSTİL	17-Nov-94	21.21%	21.85%	24.58%	33.76%	23.62%	8.98%
TUKAŞ	23-Nov-94	2.56%	9.42%	5.45%	6.39%	5.78%	-21.61%
AKSİGORTA	24-Nov-94	18.37%	8.30%	15.06%	8.69%	-12.14%	-19.24%
RAKS EV ALETLERİ	7-Dec-94	12.24%	5.50%	5.81%	-5.80%	-13.25%	-38.51%
SÖNMEZ PAMUKLU	13-Dec-94	12.62%	15.82%	1.69%	5.64%	-4.63%	30.89%
ÇEMTAS	30-Dec-94	0.00%	11.88%	7.91%	4.94%	-1.45%	28.59%
AVERAGE		4.81%	11.23%	8.73%	0.89%	-8.54%	-9.42%
STD.DEVIATION		14.95%	19.67%	34.97%	31.35%	33.64%	33.94%

**ADJUSTED RETURN OF IPOs IN 1995**

COMPANY NAME	DATE	1 DAY	5 DAYS	10 DAYS	15 DAYS	1 MONTH	3 MONTHS
RANT	8-Feb-95	-3.15%	-11.13%	-6.74%	0.34%	-4.07%	-25.18%
GÖLTAŞ ÇİMENTO	24-Feb-95	4.74%	-8.37%	-1.67%	2.40%	-14.55%	-10.59%
BATI ÇİMENTO	10-Mar-95	9.39%	4.40%	-7.01%	-23.86%	-21.09%	-33.50%
SOKTAS	24-Mar-95	19.49%	32.66%	18.12%	-5.19%	19.13%	30.14%
FRİGO PAK	7-Apr-95	11.26%	18.12%	4.55%	20.73%	-4.38%	101.34%
ERBOSAN	14-Apr-95	14.92%	6.06%	2.18%	4.84%	-0.01%	13.75%
OTOKAR	14-Apr-95	23.60%	29.95%	16.36%	6.69%	0.39%	53.53%
ÇBS BOYA	28-Apr-95	2.80%	2.57%	-1.24%	-9.90%	-10.93%	1.87%
GLOBAL	3-May-95	5.88%	5.95%	-6.68%	-33.63%	-34.31%	-51.31%
ARDEM	17-May-95	-2.79%	-9.70%	-20.00%	-17.40%	-13.98%	3.06%
ESEMSPOR	24-May-95	-5.06%	-3.30%	-6.82%	-14.24%	-19.30%	-13.89%
COMMERCIAL UNION	9-Jun-95	4.30%	-2.65%	-6.60%	-13.54%	-8.76%	-11.69%
NERGİS	9-Jun-95	-4.17%	-2.54%	-0.48%	-9.75%	-12.27%	-12.79%
TUMTEKS	15-Jun-95	-3.40%	-19.05%	-17.07%	-22.61%	-10.07%	21.45%
EYAP	16-Jun-95	23.66%	20.42%	27.07%	26.50%	19.45%	21.84%
ALTERNATİFBANK	23-Jun-95	-1.93%	-8.81%	-12.41%	-19.72%	-21.27%	-23.66%
BOSSA	11-Aug-95	6.52%	2.14%	3.24%	3.81%	4.86%	7.24%
KAPLAMIN	24-Aug-95	1.81%	-0.60%	-1.96%	2.72%	7.85%	29.65%
ADANA ÇİMENTO B	11-Oct-95	-2.60%	-2.05%	-5.76%	0.41%	-13.09%	-33.21%
HAZNEDAR	1-Dec-95	20.43%	33.16%	18.63%	32.25%	36.87%	40.73%
EMİNİŞ	15-Dec-95	0.71%	-5.39%	-4.87%	-21.26%	-19.06%	-26.81%
AVERAGE		6.02%	3.90%	-0.44%	-4.31%	-5.65%	3.90%
STD.DEVIATION		9.50%	14.80%	11.93%	17.09%	16.42%	35.24%

**EXCESS RETURN OF IPOs IN 1994**

COMPANY NAME	TARİH	1 DAY	5 DAYS	10 DAYS	15 DAYS	1 MONTH	3 MONTHS
TRANSTÜRK FREN	03-Dec-93	-0.093159	0.2241296	0.44505	0.1831281	0.13915125	-0.13730218
EMSAN PASLANMAZ	15-Dec-93	-0.169457	0.0460229	-0.203435	-0.420798	-0.3485052	-0.808539681
YAPI KREDİ LEASING	24-Jan-94	0.4022319	0.1088892	-0.38177	-0.684998	-0.6974748	-0.53240086
MİLPA	25-Jan-94	0.2188837	-0.146509	-0.371009	-0.520645	-0.6119429	-1.307107829
IHLAS HOLDING	18-Feb-94	0.1367501	-0.184773	-0.402891	-0.381487	-1.1021949	-0.864273426
EGEPLAST	04-Mar-94	-0.175038	0.0635995	0.0435855	-0.09589	-0.4167083	0.331468157
SABAH PAZARLAMA	04-Mar-94	0.2007655	0.3132442	0.1496363	-0.040677	0.1578193	0.217500185
ÇUMRA KAĞIT	13-May-94	-0.137719	0.146921	0.034515	-0.018181	-0.2258253	-0.305775115
KEREVİTAŞ	13-May-94	-0.142424	0.497782	0.7029696	0.5812808	0.51767579	-0.10510442
DARDANEL	29-Jul-94	-0.000508	0.0269092	-0.060171	-0.152481	-0.1461194	-0.405557167
BUGÜN YAYINCILIK	05-Aug-94	-0.141986	-0.072733	-0.285829	-0.60205	-0.7812685	-0.856249828
MÜTLÜ AKÜ	25-Aug-94	0.0676676	-0.285038	-0.291831	-0.45911	-0.5671649	0.300036785
BORUSAN	02-Sep-94	0.2482944	0.0807179	0.2101022	0.0687989	0.149766	0.207667892
MERKO	07-Oct-94	0.2013	0.1469396	-0.009908	0.0538116	0.03530614	0.084268235
VIKING KAĞIT	14-Oct-94	0.12433	0.2796368	0.0505949	-0.069821	-0.0925639	-0.207100594
HALK SİGORTA	20-Oct-94	0.0629953	0.0611254	0.0511065	0.0594428	0.02740803	0.026816579
GÜNEŞ SİGORTA	16-Nov-94	0.0322307	-0.021855	-0.147802	-0.119236	-0.1168961	0.166103546
ANADOLU BİRA	17-Nov-94	0.0627211	0.1448192	0.2030769	0.1813768	0.18002612	-0.006307697
KARSU TEKSTİL	17-Nov-94	0.1923528	0.1987906	0.2114623	0.2776293	0.20694752	0.082464117
TUKAŞ	23-Nov-94	0.023642	0.084424	0.0511429	0.0588986	0.05551968	-0.20426057
AKSİGORTA	24-Nov-94	0.1579894	0.0744341	0.1347533	0.0817385	-0.1271	-0.178750258
RAKS EV ALETLERİ	07-Dec-94	0.1161408	0.0539959	0.0589154	-0.063296	-0.1574721	-0.377187505
AVERAGE		0.0630911	0.0837033	0.0087393	-0.094662	-0.1782553	-0.22179962
STD. DEV		0.1567131	0.1705829	0.2721243	0.3085483	0.38757031	0.432206077
T.STATISTIC		1.8883155	2.3015394	0.1506329	-1.43901	-2.1572639	-2.407028698

**EXCESS RETURN OF IPOs IN 1995**

COMPANY NAME	TARİH	1 DAY	5 DAYS	10 DAYS	15 DAYS	1 MONTH	3 MONTHS
RANT	08-Feb-95	-0.028971	-0.103756	-0.0582	0.0026988	-0.0311575	-0.166187888
GÖLTAŞ ÇİMENTO	24-Feb-95	0.0439122	-0.077815	-0.014764	0.0192485	-0.1027552	-0.062304082
BATI ÇİMENTO	10-Mar-95	0.0855925	0.0390826	-0.060234	-0.195643	-0.1426854	-0.244223056
SOKTAS	24-Mar-95	0.0736955	0.1643474	0.154609	0.2434239	0.1009898	0.123153214
FRİGO PAK	07-Apr-95	0.0963197	0.159919	0.0389021	0.1936587	-0.0421692	0.646253542
ERBOSAN	14-Apr-95	0.135487	0.0520858	0.0223252	0.044523	-0.000103	0.128658142
OTOKAR	14-Apr-95	0.2061683	0.2697676	0.1431581	0.0718475	0.0039637	0.417607684
ÇBS BOYA	28-Apr-95	0.0256673	0.0271253	-0.012267	-0.095509	-0.106398	0.018305017
GLOBAL	03-May-95	0.064037	0.0604017	-0.069115	-0.362696	-0.3860156	-0.804391246
ARDEM	17-May-95	-0.029912	-0.104634	-0.204844	-0.180528	-0.1564499	0.032884309
ESEMSPOR	24-May-95	-0.048419	-0.029425	-0.063378	-0.135745	-0.2083037	-0.150714947
COMMERCIAL UNION	09-Jun-95	0.0439802	-0.027652	-0.079392	-0.171029	-0.106326	-0.166304542
NERGİS	09-Jun-95	-0.043936	-0.02874	-0.005605	-0.115053	-0.1380926	-0.179590536
TUMTEKS	15-Jun-95	-0.033441	-0.222327	-0.205652	-0.269638	-0.1046252	0.230138869
EYAP	16-Jun-95	0.2134956	0.2006384	0.2673311	0.253193	0.1819902	0.242144312
ALTERNATİFBANK	23-Jun-95	-0.022242	-0.106198	-0.146653	-0.23542	-0.2561299	-0.342769045
BOSSA	11-Aug-95	0.0649829	0.0213813	0.0310621	0.0379066	0.0534758	0.073217219
KAPLAMIN	24-Aug-95	0.0175294	-0.005963	-0.020329	0.0296177	0.0783084	0.290869059
ADANA ÇİMENTO B	11-Oct-95	-0.027792	-0.019132	-0.056493	0.0041172	-0.1548315	-0.393773115
HAZNEDAR	01-Dec-95	0.1833092	0.2842684	0.160002	0.2753452	0.2821201	0.227726752
EMİNİŞ	15-Dec-95	0.0068913	-0.051923	-0.049472	-0.237811	-0.1754145	-0.177379374
AVERAGE		0.048874	0.0238788	-0.010905	-0.039214	-0.0671719	-0.012222843
STD.DEV		0.0817041	0.1299154	0.1175306	0.1832178	0.151772	0.316250536
T.STATISTIC		2.7412189	0.8422896	-0.425196	-0.980806	-2.0281755	-0.177113075