ISTANBUL BILGI UNIVERSITY

INSTITUTE OF SOCIAL SCIENCES

FINANCIAL ECONOMICS MASTER'S DEGREE PROGRAM

THE IMPACT OF B/M AND P/E FACTORS FOR ISTANBUL STOCK EXCHANGE

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ISTANBUL

2019

The Impact of B/M and P/E Factors for Istanbul Stock Exchange

Borsa İstanbul için F/K ve DD/PD Faktörlerinin Etkisi

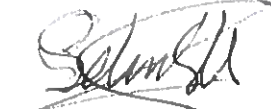Aslı Ümmühan İleri
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Tezin Onaylandığı Tarih :   16.01.2019

Toplam Sayfa Sayısı: 88

Anahtar Kelimeler (Türkçe)   Anahtar Kelimeler (İngilizce)

1) EPH   1) EMH

2) Hisse Senedi Öngörülebilirliği   2) Stock Predictability

3) Fiyat-kazanç Oranı   3) Price-to-earnings Ratio

4) Defter değeri-piyasa değeri Oranı   4) Book-to-market Ratio

5) Anomaliler   5) Anomalies

ACKNOWLEDGMENTS

TABLE OF CONTENTS

ABBREVIATIONS

EMH: Efficient Market Hypothesis

ISE: Istanbul Stock Exchange

P/E: Price-to-Earnings Ratio

B/M: Book-to-Market Ratio

HP/E: High P/E Ratio

LP/E: Low P/E Ratio

HB/M: High B/M Ratio

LB/M: Low B/M Ratio

HML: High minus Low

SMB: Small minus Big

CAPM: Capital Asset Pricing Model

LIST OF FIGURES

LIST OF TABLES

ABSTRACT

The Impact of B/M and P/E Factors for Istanbul Stock Exchange

Market efficiency states that both technical and fundamental analysis are not useful in order to obtain profitable returns. However, many other research still question its validity. Main predictive factors of stock market returns is widely examined in the literature and numerous studies reported that financial ratios such as price-to-earnings and book-to-market have an ability to explain the return behavior and anomalies are exist in the stock markets. These researches mostly focused on the developed markets in the literature, but few targets to ISE as it is an emerging market. The primary aim of this study is to examine the relationship of book-to-market and price-to-earnings ratios with ISE stock return behaviors. The paper also discusses the validity of Efficient Market Hypothesis in ISE.

The dataset of the study was Bist All Index which includes all traded ISE stocks and the data source was Bloomberg terminal. This study covers the years between 2000 and 2016 (17 years). The book-to-market and price-to-earnings ratios selected as predictive variables and taken as a basis for portfolio formation. Each equity is assumed to have equal weight in the portfolios and an investment strategy established by the short of overvalued stocks, and long of undervalued instead. Portfolios held for one year and disposed at the end of each year. Outcomes of this study verify that both book-to-market and price-to-earnings variables have a predictive ability on stock returns, however book-to-market ratio is better at capturing undervalued or overvalued stocks rather than price-to-earnings ratio. Results also present that the ISE is not an efficient market.

Key Words: EMH, Stock Predictability, Price-to-earnings Ratio, Book-to-market Ratio, Anomalies.

ÖZET

Borsa İstanbul için F/K ve DD/PD Faktörlerinin Etkisi

Piyasa etkinliği, teknik ve temel analizlerin karlı getiri sağlamak için yararsız olduğuna yer vermektedir. Ancak, birçok araştırma hala geçerliliğini sorgulamaktadır. Literatürde borsa getirilerinin ana belirleyici faktörleri geniş çapta incelenmiştir ve birçok çalışma fiyat-kazaç ve defter değeri-piyasa değeri gibi finansal rasyoların getiri davranışını açıklama kabiliyeti olduğunu ve piyasalarda anomalilerin varolduğunu bildirmiştir. Literatürde bu çalışmalar çoğunlukla gelişmiş piyasalara odaklanmıştır, ancak bunlardan azı gelişmekte olan bir piyasa olduğu için BIST'i hedeflemiştir. Bu çalışmanın öncelikli amacı BIST getiri davranışları ile fiyat-kazanç ve defter değeri-piyasa değeri rasyoları arasındaki ilişkiyi incelemektir. Makale aynı zamanda Etkin Piyasa Hipotezi'nin geçerliliğini de tartışmaktadır.

Çalışmanın veriseti tüm işlem gören BIST hisse senetlerini içeren BIST Ulusal Tüm Endeksidir ve veri kaynağı Bloomberg terminalidir. Çalışma 2000-2016 (17 yıl) arasındaki yılları kapsamaktadır. Defter değeri-piyasa değeri ve fiyat-kazanç oranları öngörü değişkenleri olarak seçilmiş ve portföy oluşumu için temel olarak alınmıştır. Portföylerde, her hisse senedinin eşit ağırlığa sahip olduğu varsayılmıştır. Aşırı değerlenmiş hisse senetlerinin açığa satıldığı ve yerine az değer biçilmiş hisse senetlerinin alındığı bir yatırım stratejisi oluşturulmuştur. Portföyler bir yıl elde tutulmuş ve her yıl dönem sonlarında elden çıkarılmıştır. Çalışmanın sonuçları, defter değeri-piyasa değeri ve fiyat-kazanç değişkenlerinin her ikisinin de hisse senedi getirileri üzerinde öngörü kabiliyeti olduğunu doğrulamaktadır, ancak defter değeri-piyasa değeri oranının az ve fazla değer biçilmiş hisse senetlerini fiyat-kazanç oranına göre daha iyi yakalamaktadır. Sonuçlar aynı zamanda BIST'in etkin bir piyasa olmadığını da ortaya koymaktadır.

Anahtar Kelimeler: EPH, Hisse Senedi Öngürülebilirliği, Fiyat-kazanç Oranı, Defter değeri-piyasa değeri Oranı, Anomaliler

INTRODUCTION

The identification of predictive variables effecting stock market return behavior attracted financial audiences and practitioners for the last two decades. They examined various metrics such as market-to-book ratio, size, price-earnings ratio, price-to-sales ratio, dividend yield, interest rate and many others.

Practitioners and financial audiences use these variables to differentiate between a security's true value and investor speculation as they present some clues about the performance of a stock. These variables used extensively in relative valuation models when determining whether a company's stock is a good buy and they help to assess the position in the market. In this respect, they also give an information about a firm's value if the company is overvalued or undervalued.

However there are many arguments against stock return predictability. While some advocates that there is no signifigant relation and analysis are useless in the literature, many other suggests, especially in recent years, that these variables are future forecaster of share price behavior.

In this study, the predictive ability of financial variables is questioned and it is examined whether investors' pricings are correct or subject to mispricing using these ratios. In this respect, the purpose of this paper is to give a better vision on the topic of stock return predictability for an emerging market, Istanbul Stock Exchange. The work concentrates on the price-to-earnings and book-to-market ratios as they are one of the most commonly used relative valuation measure in the market and define a multiple relative to a company's earnings and book value respectively to the market.

The process of the study starts with the selection of portfolios. Within this context, an investment strategy considering the facts on price-to-earnings and book-to-

market ratios is constructed to test the predictability of ISE stock returns. In this regard, this article also presents a new test on the financial ratios' capability of stock returns predictability.

The study also investigates the ability of an investment strategy to obtain superior returns. In this respect the validity of Efficient Market Hypothesis on ISE is questioned. Considering the limited amount of past researches on this topic, it is aimed to present a better perspective for the literature on the ISE.

In order to address the subject "The impact of B/M and P/E Factors for Istanbul Stock Exchange", the study is organized as follows. Section 2 targets to ensure a general overview of the features of the predictive factors, EMH, and the literature on anomalies, relation of return behaviors with these predictive factors and market efficiency. Later on in Section 3, the data used for the research and the methodology employed will be introduced. Then, outcomes regarding the investment strategy followed in this research will be presented and discussed in Section 4. In this part, comparisons on the predictive power of variables and their effects on the return behaviors will be given. Section 5 concludes the study.

2. LITERATURE REVIEW

In this section, I give an information about the features of book-to-market and price-to-earnings ratios as they represent the basis of portfolio formation. Then, the characteristics of EMH will be introduced. Further, literature on EMH, anomalies and the use of these financial variables will be given both for international markets and the ISE.

2.1. FEATURES OF FINANCIAL RATIOS

The book-to-market ratio defines undervalued or overvalued stocks by the comparison of its book value and market value. The ratio is calculated as book value divided by market value. From a different perspective, it's a measure between market value and actual worth of a security. Book value of an equity also can be measured by subtracting total liabilities, preferred shares, and intangible assets from the total assets. The ratio also represents how much a company would have left in assets if it went out of business today. In addition, some practitioners takes the total shareholders' equity figure as the book value.

A book-to-market ratio above 1 indicates that the stock is undervalued and the stock price of a company is trading for less than the worth of assets. A high book-to-market ratio is also viewed as a value stock, that is, it is trading cheaply in the market compared to its book value. On the other hand, a book-to-market ratio below 1 implies for overvalued stocks and it demonstrates that these type of companies are trading higher than their book values in the market. In return, a ratio lower than 1 means that investors are willing to pay more for a company than it's worth net assets. That is to say, if these investors predict profitable performance for a company's future behavior they are willing to pay this premium.

The price-to-earnings ratio is basically calculated as market share price of a company divided by its earnings per share. Correspondingly it presents some clues

about the performance of a stock with respect to relationship between its market capitalization and earnings. A low price-to-book ratio is also viewed as a value stock, that is, it is trading cheaply in the market. The ratio is also referred as the earnings or share multiple since it provides an information of the possible dollar amount to be invested in order to gain one dollar of the earnings amount. In such way, it is a measurement for a quality of an investment.

In their growth phase, companies trade at a higher price-to-earnings value and low book-to-market value than a more mature company would. In this case, these companies possibly overvalued. However, stock with a lower P/E level within its usual interval indicates to undervalue situations as mentioned. In addition, it could be identified whether a stock is trading higher or lower by comparison between its current and historical P/E. Using extensive intervals of time also can present a better perspective on the range.

As per mispricing view, P/E impact indicates that low P/E equities provide superior returns stocks compared to high P/E companies. In other words, investing in stocks with low P/E values can provide to investors to obtain systematically higher returns. In the same manner, investing in equities having high B/M ratio is favorable to derive profitable results.

A trading plan based on predictive variables can give some clues about the topic whether ISE is an efficient or not. Please remind that a trading plan should involve strategies on both selling and buying investments. However, an investor may lose the competitive advantage on the market if same strategy is applied by many others. In the case of a market efficiency belief, no one has a stable advantage in the market and an investment strategy concentrating on transaction costs and minimizing taxes by investing passively would be a better way to reach profitable results.

4

2.2. MARKET EFFICIENCY

Fama (1970) has been the first to develop the Efficient Market Hypothesis (EMH). Market efficiency is formulated by Eugene Fama in 1970 suggests that and prices fully reflect all available information on a particular stock or market at any given time. Fama was awarded the Nobel Memorial Prize in Economic Sciences jointly with Robert Shiller and Lars Peter Hansen in 2013.

According to the market efficiency stated in the EMH of Fama (1970), all investors have access to the same information and no one has an advantage in predicting a return on a stock price. So, prices quickly adjust to the new information based on timely actions of investors and it is not possible to beat the market by generating abnormal profits. As prices respond only to information available in the market, and all market participants have access to the same information, no one will have the ability to out-profit anyone else. These results reveal to the randomness of stock prices. Therefore, an investment strategy model which aims the project significant returns can not be established due to the market efficiency. This "random walk" behavior results in the failure of any investment strategy that outperform the market. In this respect, the theory also motivates to the passive investing. For instance, index funds provides a return that is directly linked to individual markets while charging minimal expenses. As they do not require high transaction costs, they motivate investors to the passive management as an investment strategy rather than a portfolio management which requires high transaction costs. Passively managed funds do not attempt to beat the market and aim to match the risk and return of the stock market.

On the other hand, most mutual funds are managed under the active strategy. Active management requires market timing and more hands-on research. As, they experience a higher volume of trading and fund managers' skills to outperform the securities market, their expenses are higher. Choosing whether investing in an index fund or not, relates on the efficient market hypothesis and low expenses.

There are three degrees of market efficiency according to the EMH; weak from, semi-strong from and strong form. These three types are detailed below.

2.2.1. Weak Efficiency

Weak form of EMH addresses that all past prices of a stock are reflected in today's stock price. Therefore, this form of efficiency is used as an argument against technical analysis and proposes that past price performance does not provide predictive power on an underlying's future price which indicates that trading decisions con not be made based on a historical price performances.

2.2.2. Semi-strong Efficiency

Semi-strong form considers that public information about a company is available to investors and is incorporated into the current price of the stock, in addition to the historical data available in the weak form of EMH. As information becomes publicly available, traders assess immediately to reflect the new information. This form is used as a counter discussion to fundamental analysis, and suggests that any public information does not give predictive power on a future price changes. This means that neither fundamental nor technical analysis can be used to achieve superior gains and can't give traders a better ability to predict a future strategy.

2.2.3. Strong Efficiency

The strongest version states that all information, whether public or private, is factored into the current price of the stock. Not even non-public insider knowledge could give an investor an advantage or even if the information is not available to investors, and is only known to corporate directors, the current stock price still reflects it. This means that knowing insider information can not improve price prediction leading to "abnormal profit over time."

2.3. EMH TESTS

2.3.1. Tests on Weak Form Efficiency

- **Statistical Tests** –EMH assumes that the returns on the market are independent as the new info. In this scope, it may be said that the tests used to analyse the weak form EMH test for the independence assumption. Examples of these tests are the autocorrelation tests (returns are not significantly correlated over time) and runs tests (stock price changes are independent over time).

- **Trading Tests** – Weak form EMH also states that past returns are not indicative of future results, therefore, the weak form rejects the rules that traders apply are invalid. For instance, filter rule may be viewed as a trading test which allows us to see if an investor can earn an abnormal return.

2.3.2. Tests on Semi-strong Form Efficiency

- **Event Tests** – Since this form of efficiency indicates to reflection for all publicly available information, its test must refer to both before and after an event of a security, such as earnings. This type of tests aim to prove that an investor is not able to earn significant returns by trading on an event.

- **Regression/Time Series Tests** – This type supports that an investor can not reach to an abnormal return as a result of a regression or time series tests.

2.3.3. Strong-Form Tests

- **Insiders** – As the strong form of EMH states that the market is reflective of all information both public and private, investors with excess information must play a role in this type of analysis. Insiders to a company those who

have access to inside information are forbidden by SEC regulations in order to avoid them to gain abnormal returns with using this excess information. One of the example for insiders might be senior managers.

The EMH view also supports that the successful investments which provides better results than the market occurs by luck. These are not related with an investor's ability to project future performances or analysis, but related with random consequences. According to the randomness, many investors can outperform whereas others can underperform.

In recent years, it is reported in some studies on many stock exchanges that markets are not following conditions of market efficiency. These arguments against market efficiency supports the existence of stock market anomalies such as January effect, price-to-earnings ratio, size effects, and neglected firms. For instance January anomaly states that first month of the year provides higher returns than others. According to the view, anomalies described for circumstances where a group of securities or a security performs contrary to the notion of market efficiency in financial markets.

2.4. LITERATURE WORK ON STOCK RETURN PREDICTABILITY, EMH AND OBSERVED ANOMALIES

2.4.1. Studies on World Capital Markets

EMH has been one of the most attractive topic in finance. In this field, the results from academic studies have formed the basis for investment strategies. Efficient market researches can be traced back to Fama (1965). In his study, he described the notion of "efficient" for the first time and proposes that stock market prices follow a random walk.

The topic of stock market predictability literature has been developed notably over last twenty years. Many studies on the main objective of the ability to predict return behavior tested with regression models. During these type of studies, the realized stock premium is depend on predictive indicators and significant t- or F- statistics and high R2s are construed to the benefit of stock market predictability.

Basu (1977) discusses the relation of investment performances of stocks with their P/E ratios and tests the idea that price-to-earnings ratios contain information regarding future performance of an asset. According to his work, stocks with low P/E values subsequently tend to have higher average returns than stocks with high P/E ratios. He promotes the idea of market inefficiency.

These days, the degree of market efficiency are more important and many studies have addresses to market inefficiencies with findings such as autocorrelation, size and weekend-effect. For instance, Lo and MacKinlay (1988), Fama and French's (1988) findings indicates that stock prices do not have a random behavior and they analyze autocorrelation of share prices.

After more than two decades, Fama (1991) reviews the voluminous theoretical and empirical work undertaken by numerous researchers on the informational efficiency of stock markets. According to his view, the cleanest evidence on market-efficiency provided by event studies, especially event studies on daily returns.

In international markets, another study is performed by Chan, Hamao and Lakonishok (1991). They studied Japanese data and examined the predictive power of four variables; size, earnings yield, cash flow yield and book-to-market ratio. Their findings indicates that book-to-market ratio and cash flow yield, have a significant positive impact on expected returns. Earlier studies demonstrated the same findings in different stock markets. For example, Rosenberg, Reid and Lanstein (1985) worked on U.S stock markets. They has two strategies which are based on "book/price" and "specific-return-reversal" strategy. Book/price strategy

9

constructed by buying stocks with a high book value of common equity per share divided by market price per share ratio and sells stocks with a low book/price ratio, where "book value" is common equity per share, including intangibles. Their second strategy calculates the difference between the investment return for the previous month on the stock and a fitted value for that return based upon common factors in the stock market in the previous month. This differential return is the "specific return" that is unique to the stock. Their study indicated that both strategies independently reached to significant outcomes and return on stocks positively related with their strategies. The study promote to the existence of potential profit opportunities.

Fama and French (1992) argue the significance of the relation between returns and predictive variables. They searched an evidence of compensation for additional sources of risk that are not included in available asset pricing models and found the proof that beta alone was not good enough to explain variance in stock returns. They also suggested that book-to-market ratio of stocks holds the capability to express cross-sectional variation and the outcomes illustrate that adding size to the regressions kills the explanatory power of the E/P dummy. Their research performed on American Stock Exchange (AMEX), New York Stock Exchange (NYSE) and NASDAQ stocks for the years between 1963 and 1990. Their origin on the study was stock market "anomalies" stated in early studies. With their outcomes on the research, the capital asset pricing model is received a major blow and their model results the "death of beta".

On the other hand, CAPM uses a beta to compensate investors for the risk they take. Regarding this, a high beta indicates to supreme sensitivity of macro-economic changes and a high variance whereas, a low beta means that the asset is not heavily affected by market changes, so the expected return can also be lower. The beta in the Three Factor Model of Fama and French (1992) is analogous to the beta used in the CAPM, but they are not the same by the reason of other two more factors clarifying portfolio return which are SMB and HML. SMB is the abridgment of

10

small market capitalization minus big. It basically assess the (historical) excess returns of small caps over large caps. On the other hand, HML is the abridgment of high book-to-market ratio minus low and it is used to determine the (historical) excess returns of value stocks over growth stocks. Their formulation on the study was as follow:

$$E(R) = R_f + ß_3 (R_m - R_f) + ß_2 * SMB + ß_1 * HML$$

Where:

$E(R)$ = Expected rate of return

R_f = Risk-free rate

$ß$ = Factor's coefficient (sensitivity)

R_m = Return of the stock market

SMB = Small (cap) Minus Big

HML = High (book/price) Minus Low

At the most of the trustworthy studies, it is identified that there is a positive relation between P/E ratio and risk factors surprisingly where the conjunction was expected on a negative relation.

Lakonishok, Shleifer and Vishny (1994) suggested that cognitive biases underlying investor behavior was at the root of the rewards to value investing. According to their study, return differences are ultimately explained by the tendency of investors to make judgmental errors and their outcomes demonstrates that value investing presents higher returns by the reason that they exploit the suboptimal behavior of the typical investor. They supported that successfulness of value strategies does not depend on their high level of fundamental risks. Yet Kothari, Shanken and Sloan (1995) provided another explanation for the returns on investment models rested on methodological issues of data-selection bias. They suggested that a useful pricing

model must be trusted to work under a wide variety of conditions and not just for a limited set of portfolios.

Bae and Kim (1998) used Japanese data and their investment strategy de concluded that both book value and earnings hold the capability to present profitable trading strategies. They also analysed an investment strategy includes a combination of book value earnings and found that it provides notably superior outcomes for all possibilities. The results interpreted that book value (or earnings value) observe characteristics of equity values which are not seen with earnings value (book value) and outcomes further demonstrates to dominative characteristic of book value rather than earnings to predict stock behavior.

Kothari and Shanken (1997) conclude reliable evidence that dividend yield and book-to-market ratio follow time-series variation in estimated one-year returns for the years between 1926 and 1991 on the US market. Moreover, Pontiff and Schall (1998) documented that the B/M ratio presents some predictive capability caused by its connection with future earnings.

Ang and Bekaert (2007) studied the predictive variables in excess returns, interest rates and cash flows for five developed countries including Germany, US, Japan, France, and UK and emerging European countries. In their research, it is concluded that the predictive power of the dividend yield is best visible at short horizons with the short rate and do not provide long-horizon predictive power. It is also found that the earnings yield has a strong power as a forecasting instrument for future cash flow behavior. On the other hand, Dickinson and Muragu (1994) analysed the weak-form market efficiency on Nairobi Stock Exchange and their findings were consistent with the EMH.

As researches refers to different evidences, it can be said that stock behaviors in the World differ by their institutional, developmental and cultural differences especially in industrialized and developing countries.

Although, there is an increasing amount of study on Asian stock markets in recent years, many targets to developed markets. In this sense, studies on emerging capital markets are very limited compared to studies available on developed stock markets. One of the main reasons of this difference due to the organizational characteristics between these markets, which actually associated with international economic and technological developments. However, researches on emerging markets effected by these developments in recent years and many practitioners focused their attention for emerging market characteristics.

Additionally, based on the cumulative evidence from studies on the anomalies, the academic community has generally come to agree that value investment strategies, on average, outperform growth investment strategies and stock returns can be predicted by financial indicators.

Studies on Istanbul Stock Exchange as it is an emerging market is very limited due to the abovementioned reasons and some of these studies are stated below.

2.4.2. Studies on Istanbul Stock Exchange

Essentially, results of the emerging stock markets indicates that these are not as informationally efficient as industrialized markets. Considering the ISE's changes in its cultural, operational, characteristical and technological changes, it is projected to obtain an inefficiency on ISE.

Many studies on ISE used time series regressions to analyse the effectiveness of financial indicators on the price behavior and the results has documented that value stocks show superior performance over growth stocks on average and these are signals for the predictability of price behaviors in the ISE as many different factors.

Gonenc and Karan (2003) analyse the behavior of value and growth portfolios, and small and large capitalization portfolios for Istanbul Stock Exchange (ISE). They examined the years between 1993 and 1998 and their sample reached to level of 80% coverage of the capitalization on the market. In the conclusion of their study, growth portfolios showed superior performance over value portfolios and the outcomes were not consistent with the evidence from most developed and emerging markets. As a result it is demonstrated that the structure of the market and the fundamental of stocks traded in the ISE differ from markets around the world.

Karan (1996) searched for a P/E effect and used the ISE data and formed portfolios for the years between 1989 and 1995. He find that long run holds the best ability of produce excess returns in the case of a portfolio formation with low price-to-earnings ratio factor. Another outcome was that Istanbul Stock Exchange does not provide an efficient portfolio. In addition, he mentioned that highest return can not be obtained by investing in index portfolio.

Aksu & Onder (2003) examined the relationship of book-to-market and size factors with stock returns in ISE. They applied CAPM and Fama and French (1993) three-factor model for the years between 1993 and 1997. Their findings indicated that book-to-market and size effects are significant, however size effect hold higher explanatory power. In addition, the find that, on average, small sized firms with high book-to-market ratios provide significant excess return.

Muradoğlu and Metin (1996) tested the semi-strong form of market efficiency according to monetary sizes by using unit roots and cointegration. They also investigated long run relationship between inflation and prices and short run dynamics by the assumption of proxy hypothesis on an emerging market. The findings imply that find that prices can be predicted and Istanbul Stock Exchange is not consistent with market efficiency with respect to monetary variables.

Aydoğan and Güney (1997) tested the predictability level of P/E ratio and dividend yield on ISE stock returns for the period 1986-1995. According to their conclusions, high (low) level of returns observed in the periods which hold low (high) P/E and high (low) dividend yield values. They summarized the outcomes with the opinion that price-earnings ratio and dividend yield are valuable estimation tools with regard to the market timing perspective.

Aydoğan and Gürsoy (2000) analysed 19 emerging markets and used both book-to-market and earnings-to-price ratios to form market timing and asset allocation strategy and observed that both ratios hold a role on future return forecasts, specifically over longer time periods. In another study of Akdeniz, Altay-Salih and Aydogan (2000), investigating firm specific factors, discusses book-to-market, earnings-to-price ratio and firm size power in Istanbul Stock Exchange for the years between 1992 and 1998. They do not include financial companies to their study. Although book-to-market values and stocks returns positively related, it is observed that there is a negative relation between size and stock returns.

Aras and Yilmaz (2008) analysed stock return predictability for the years between 1997 and 2003 in 12 emerging stock markets (including also Turkey). Their prediction metrics were dividend yield, price-earnings ratio, and market-to-book ratio. They define "a new index value" using the proper combination of these predictive variables and multi-regression models and applied validation tests in order to test forecasting power of the estimated model. The studies' outcomes indicated that market-to-book ratio holds the strongest power for one-year period as a predictor. This followed by dividend yield. In addition, it is also observed that their model is fairly good.

Eraslan (2013) examined the validity of the Fama and French three-factor asset pricing model on the ISE. He used monthly excess stock returns for the years between 2003 to 2010 during the study and the size and B/M factors chosen for explanatory items as the study based on Fama and French three-factor model.

Outcomes present that the model provide only limited support on ISE for the period 2003-2010. The model hold some power on variations. However, this power was not found strong enough. Also, evidences that large sized companies provide higher average excess returns compared to small companies and portfolios with high B/M values achieved higher excess returns than portfolios with low B/M values are shown. Moreover, size indicator does not have an influence on big-size portfolios, whereas hold an ability to explain the excess return variations on small and medium-sized company portfolios.

Erbil (1993) analysed day of the week effect. His attention was during the years between 1989 and 1991. Although, Thursday provided negative average returns, it is not found significant. In this respect, it is observed that there was no statistically remarkable difference between the days of the week according to his study. In addition, Erbil (1993) tested the most profitable month and find that the highest return occurred in January.

Muradoğlu and Oktay (1993) also focused on the day of the week, week-end, month of the year and January effects during 1988-1992 in order to test weak-form of market efficiency. As a consequence of the research it is stated that week-end and January effects which are seen in many international markets is also observed for ISE. A dissimilarity of the Turkish market was the duration of the week-end effect which is longer on ISE including a period from Friday to Tuesday. Another evidence was that the level of the day-of-week effect decreased over years except for 1990-1992. On the other hand, Fridays provided higher returns in general whereas Tuesdays hold lower returns than other days. According to results, ISE also provided a strong January-effect.

Since many findings of researches indicate that ISE holds a strong day of the week effect, Muradoğlu and Oktay (1993) also supported that a strong month of the year and January effects exist in the ISE (the highest returns observed in January and

September) and the ISE does not satisfy the conditions of the weak form of efficiency according to these findings.

Demirer and Karan (2002) examined the 'Daily Effect' in the ISE. Evidences of their study can not clear the existence of a weekend effect in the Turkish stock market during the years between 1988 and 1996. According to their outcomes, Friday provided higher returns and another result implies that yesterday's return can be used as a signal to today's return. Most significant evidence of their research was 'start-of-the-week effect' which suggests that the way how the market starts can be a good measure on the behavior of the market for the rest of the week. In this respect, it is shown that the week which starts with a positive Monday return provided significantly better results compared to a week starting with a negative Monday return. They concluded a positive opinion on market efficiency in terms of expected returns, whereas they supported a market inefficiency in terms of expected variability.

3. DATA AND METHODOLOGY

In this stage, the information on the data set and investment strategy of the study, and its components are explained to test the validity of market efficiency for Istanbul Stock Exchange.

3.1. DATA AND THE PORTFOLIO SELECTION CRITERIA

The sample period of this study covers the years between 2000 and 2016 (17 years). As detailed in literature review section, the book-to-market and price-to-earnings ratios have been shown as good measures of identifying the relation between a stock behavior and return for many years. These two financial indicators used in numerous research which aims to evaluate the degree of market efficiency and its validity. In this respect, B/M and P/E ratios are taken as a basis for portfolio formation and these two financial ratios are selected as predictive variables of the study.

The source of data is Bloomberg terminal. All companies listed in Bist All Shares Index, with its ticker symbol XUTUM, are included to the thesis. Therefore, information on XUTUM index is obtained from Bloomberg and all the calculations made in Microsoft Excel.

Analysis are conducted on yearly basis. It is thought that it is sufficient to assess stocks in their yearly book-to-market and price-to-earnings values since portfolio returns will be evaluated on the next years' one year period performances. In this respect, year-end book-to-market and price-to-earnings ratios are used for the study.

Another data group used in the study are yearly returns of listed firms in the ISE. Adjusted values of yearly returns for dividend payments and stock splits are represented by Bloomberg terminal to users. In order to use in the study, adjusted returns are extracted from Bloomberg terminal. Without the necessity of any

calculation, the terminal also provides book-to-market values of securities. However, it is detected that properties of Bloomberg present a P/E ratio which is calculated as non-adjusted closing price divided by earnings per share before extraordinary items. Thus, non-adjusted closing price and earnings per share values of stocks are obtained from Bloomberg separately in order to overcome this issue. These non-adjusted closing prices divided by earnings per share component in order to calculate of the P/E ratios and P/E values which are calculated based on these separately extracted price and earnings per share items are taken into consideration during the portfolio formation. All the calculations are performed in Microsoft Excel.

Since the valuation metrics of returns are evaluated on yearly basis and the latest return represents the realized one-year return between December 2016 and December 2017, the latest data on predictive variables was for the year 2016. Because, the analysis are performed considering the followings years' return and it is not possible to obtain a one-year return on 2018. Thus, the latest price-to-earnings and book-to-market data used in the study should belong to the year 2016 correspondingly.

Only the companies that are currently listed on the stock market are included in the Bloomberg terminal and the information of these companies are provided to the public. Information on companies that have previously been excluded on the stock market for bankruptcy or other reasons are not available. However, most equities are registered on Istanbul Stock market in recent years and those which excluded from ISE as a result of bankruptcy or mergence even though they were previously registered on the market could not be included to the information set for this reason. In other words, stocks must have a continuous listing on ISE to be included in the analysis, must not be delisted and be actively traded and survived over the period 2000-2016.

It is thought that these properties of the Bloomberg resources may lead to a survivorship bias that might prevent the study from fruitful results. By the fact that the criterion is limited only to successful companies, the companies that have problems with unsuccessful positions are not included in any established portfolio.

However, Istanbul Stock Exchange does not contain a large number of companies which are previously registered and then removed from the market. Hence, the fact that all of these companies remain small within the market resolves the problem to a large extent.

During the study, portfolios are established according to the year-end price-to-earnings and book-to-market ratios for each year as applied by many researchers. Firstly, equities are classified based on the P/E and B/M ratios at the end of each year. Then firms are ranked by their P/E and B/M values from largest to smallest separately.

These two ranking list refer to different consequences, the characteristics of these two financial indicator classified under different valuation metrics. Book-to-market ratio list require a ranking from undervalued to overvalued stocks (as the list ranked from highest to lowest), whereas price-to-earnings ranking was its opposite. These two facts will be important during the investment strategy establishment. In addition, stocks having negative P/E ratios are excluded from the ranking list as negative values of P/E ratio is not meaningful and no investor buy negative P/E stocks.

In the first stage of the study, research sample has been kept low in order to analyse the behavior of the best and worst performing companies in the ranking and first sample of the analysis is limited to 10 companies. Portfolios are formed for 10 companies each year. In this respect, top and bottom 10 companies with highest and lowest values are grouped based on the ranked list of the book-to-market and price-to-earnings ratios for each year.

In the next phase, the number of 10 and 20 additional companies (the amount of sample increased to 20 and 30 equities respectively) are included to both P/E and B/M portfolios in order to increase the volume of the included companies traded in the ISE, diversify the risk and extended the number of firms in the sample. In this respect, it is also aimed to obtain a benchmark to assess the effectiveness of the investment strategy which matches with the objective of the research. The figures of these additional samples and their behavioral differences are detailed in section 5-results. By this increase in the included stock amount in the sample, it is also aimed to increase the market capitalization of the portfolios. Thereby, the total number of 12 portfolios including three high and low P/E (for 10, 20 and 30 stock sample) and three high and low B/M are grouped each year in order to construct a strategy.

3.2. ESTABLISHMENT OF THE INVESTMENT STRATEGY

Deciding which stock to sell is a difficult task in an investment strategy. Valuation-level sell methods make the process as mechanical as possible. During the valuation-level strategies, the short seller is in the opinion of the price of the borrowed security's will have a falling tendency, allows someone to be bought back at a lower price. As the judgements and valuation metrics of the study depends on price-to-earnings (P/E) and book-to-market (B/M) ratios, they are used as valuation basis. In practice, investors buy undervalued stocks and these variables can also give a successful sign to sell when a stock gets overvalued. These procedures require constant monitoring, research and analysis on owned and potential new stock additions. Taking into account all these facts, two investments, one with P/E portfolios and the other with B/M portfolios, are established based on the following rules;

- Each equity is assumed to have equal weight in the portfolio. Firstly, the number of 10 companies with the lowest B/M values (overvalued companies) in the ranking list are shorted (this was the study's first sample)

and 10 companies with the highest B/M values (undervalued companies) are bought instead of these shorted stocks. Portfolios held for 12 months as investment funds and liquidated at the end of the period for each year between 2000 and 2016. Another new portfolio has been formed for the following year's B/M ranking and equities which are in the top and bottom 10 ranking are selected to the portfolio.

- Same strategy also implemented for the number of 20 and 30 stocks (second and third sample of the study respectively) each year. These samples present the portfolios of the analysis. Please also remind that this investment strategy does not include an initial cash out. These procedures are applied for each year between 2000 and 2016.

- Portfolio performances which are formed by year-end figures are measured based on the following year's financials by comparison to current period. For instance, portfolio performances of stocks which are taken with B/M values of the year 2000 are measured by stock returns of the year 2001. But this subject will be explain in further paragraphs in detail.

- On the P/E side, approach was the same with the method applied to B/M stocks. Each equity, again, is assumed to have equal weight in the portfolio. However, the number of 10 companies with the highest P/E values (value companies) in the ranking list are shorted this time as they considered overvalued (this was the study's first sample of P/E strategy) and 10 companies with the lowest P/E values (undervalued companies) are bought instead of these shorted stocks for each year between 2000 and 2016. Portfolios held for 12 months and disposed at the end of the each year for 2000-2016 period.

- Further, P/E portfolios including 20 and 30 stocks (second and third sample of the study respectively) are formed based on the same process which applied to P/E portfolios including the number of 10 companies.

In the idea of the investment method of the research, an investor short a stock and owns a portfolio of stocks with a better opportunity presents itself. Once a better

22

possible investment has been determined, current existing position on holding portfolio is reduced or removed since it isn't predicted to perform as well as the new stock. For instance, reason of the short-sale of high P/E stocks is that they present low earnings and bad future estimates. In practice, an investor believes that the price of low earnings equity will decline and this would be a signal to dispose these stocks. Further, a better potential has been identified by low P/E stocks as they stand for undervalued possibilities and this is the reason of the investment in portfolios which hold low P/E ratios. Because, investors buy equities when its price seem low relative to historical norms.

As each portfolio is equally weighted, returns of these portfolios are calculated with arithmetic average formula below and the average return of stocks held in portfolio is taken as annual portfolio return of shorts and longs. Within this context, return of year t+1 of each stock is obtained for each stock shorted and invested in the year t in order to assess one year period return and use during the portfolio return calculation.

For the determination of yearly gains or losses, firstly the gain or loss on the short-sale and long position should be known. The explanation of the arithmetic average formula used to calculate portfolio return is expressed below.

Arithmetic Average Formula:

$$I_t = \frac{\sum_{i=0}^{n} R_{i(t+1)}}{n_t}$$

Where I_t is the value of the portfolio return at time t, $R_{i(t+1)}$ is the adjusted return of the i stock at time $t+1$, n_t is the value of the amount of equities included in the calculation of the portfolio return at time t.

23

If the next year return of a stock is greater than zero, it is taken as a gain, whereas the values lower than zero taken as a loss effect on the portfolio for each long position and this approach related inversely on shorted stocks. Further, if the average of next years adjusted returns on equally weighted portfolios are negative (positive), it means the return of the long portfolio I invested has loss (gain). In the case of short-selling activities, I made a loss (gain) if the average of following years' adjusted returns on equally weighted portfolios are positive (negative).

For each year analysed, n is taken as 10 in the arithmetic average formula for the first portfolios. As I had two equally weighted portfolios constructed from top and bottom 10 for each year, the total amount of 34 portfolios (68 in total, 34 for B/M and 34 for P/E) are provided between the years 2000-2016 for each investment method.

The same procedures which applied to first portfolios of each year are also applied to second portfolios including 20 companies. After the preparation of additional second ten price-to-earnings ratios and book-to-market ratios, they are matched with the realized returns of each equity which adjusted to stock splits and dividend payments. Since I already had the top and bottom 10, I only match the returns of other ten companies in this process for each year. These returns taken as a performance indicator are also calculated just as 10 company approach. Therefore, for a stock in year t, the return realized between year t and t+1 is taken as a measure. Returns of equal weighted portfolios are calculated by using above arithmetic average formula. The only difference in the formula is the n factor. N is equal to 20 since there is a number of 20 company for this time. 34 portfolios are constructed at total of the second samples formation for each type of financial indicator (34 portfolio for B/M strategy and 34 for P/E strategy). In addition, another 68 portfolio set is constructed with the same approach for the last sample including the number of 30 stock in each portfolio. The difference, again, was the n factor which is taken as 30 this time.

Then, yearly gain and loss amounts are calculated based on these shorted and long portfolios. These yearly returns are calculated as the arithmetic average return of long position portfolios (gain or loss on long) minus the arithmetic average return of short position portfolios (gain or loss on short). You may find below this formula used to obtain yearly gain and loss amounts. This formula is applied to each year's portfolios and the number of 17 values of gains or losses are obtained to show the yearly returns.

$$G/L_t = LI_t - SI_t$$

The return on shorted portfolios for the given time are referred as SI_t in the formula and LI_t indicates to return on long positions. Basal year taken as t and G/L_t is the gain or loss amount on the strategy of year t. Each year if short sale return is negative and long position is positive, a gain occurred directly as both positions made a profit. If shorted amount is positive and the long position is negative, it is always taken as loss. In the case of having negative or positive value in both long and short position at the same time, the compensated ability of the gain in long position for the loss of short selling or its opposite situation is examined. For each portfolio, the number of 17 yearly return provided which makes 51 yearly return in total. 102 yearly returns are examined as the study involves a strategy on B/M and P/E portfolios.

In order to have a better understanding on the value of the portfolio hold in many periods and compound gain achieved at the end of 17 years period, it is assumed that 1 TL is invested initially in the year 2000. Then, the return (ending values after invested periods) for an initial investment of 1 TL ensured by the below formula to ensure the effect of compounding. These type of cumulative return equations is used for non-single periods. Please remind that this stage of the study is performed to present results in multiperiod form for an easier perspective and established only by assumption. This also help us to improve our understanding on the analysis of

effectiveness of the strategy applied based on predictive B/M and P/E values. You may find the expression of multiperiod return formula.

Multiperiod Return:

$$R_t = R_{(t-1)} \times \left(1 + \frac{G/L_t}{100}\right)$$

As referred in the former formula, G/L_t is referred for the yearly returns. For the year t, $R_{(t-1)}$ indicates to multiperiod return (cumulative gain for the assumption of 1 TL investment in year 2000) on the prior year which is in year $(t-1)$ and R_t is the multiperiod return for year t.

The first year (starting year) subject to research was the year 2000. Any cumulative return does not occur in 2000 as it is our base year. For this reason $R_{(t-1)}$ is taken as one in the equation for 2000, since one is the multiplicative identity.

To test the level of predictive power of B/M and P/E on stock returns, the analysis is performed in sub periods in order to perform a benchmark. Also, the best performing period is analysed by this method. These outcomes of the study is detailed in section four.

4. RESULTS

The number of companies which P/E and B/M ratio information available were between 175 and 225 during the first half period of the study. These set of information increased approximately to the level of 300 at the end of second half. You may find below the total number of firms, those price-to-earnings and book-to-market values available in Bloomberg terminal and their average values of book-to-market and price-to-earnings ratios on yearly basis. As it is demonstrated below Table 4.1., the yearly fluctuations on the average of B/M values were more consistent than P/E values by the reason that the characteristics of price and earnings per share components tend to be more instable over periods. Average B/M values show a falling tendency until 2010, then they follow a slight increase till the end of 2016.

Table 4.1. The Total Number of Stocks and Their Average Values

Years	Number of P/E Stocks	Average P/E Ratios	Number of B/M Stocks	Average B/M Ratios
2000	175	8,76	178	13,63
2001	178	-4,37	177	12,99
2002	177	16,46	177	1,50
2003	180	42,57	183	1,51
2004	195	12,62	197	6,16
2005	204	7,11	203	0,77
2006	212	8,82	212	0,86
2007	223	24,76	221	0,81
2008	224	4,69	224	1,90
2009	227	20,01	224	0,96
2010	242	26,37	239	0,73
2011	259	166,08	254	1,01
2012	277	115,61	274	0,91
2013	290	18,01	286	1,14
2014	299	18,60	294	1,02
2015	301	4,43	299	1,20
2016	301	11,57	303	1,12

Please note that Bloomberg terminal only gives the historical data of currently traded equities which causes to a survivorship bias. This is another reason of this increasing trend in the number of included companies in the market during the study.

In the next stage, I determined the stocks which has negative price-to-earnings ratios for the each examining year, I excluded the stocks where negative price-to-earnings ratio is available in the market and I was left only with 212 stocks for 2016 and 176 on the total of 17 years' average (the average of 17 years was 233 in the prior form). As the excluding factor is negative, the average of P/E values increased each year correspondingly. In addition, it is also observed that these number of negative P/E stocks has an increasing trend in 2001, which is 42% in percentages on the market, can be described by virtue of 2001 Crisis in Turkey. In 2001 market experienced large losses by the results of the devaluation of the Turkish Lira and it was the worst performing year of ISE. Below the Figure 4.1. and Table 4.2., the change in stock number after the elimination of negative P/E stocks and the P/E averages demonstrated on yearly basis. In addition, table includes the total number of negative P/E stocks in the market, and their weight on yearly basis. It is observed that there were approximately number of 57 negative P/E stocks over 17 years.

Figure 4.1. Number of the P/E Stocks Subject to Test

Number of P/E Stocks After the Elimination

28
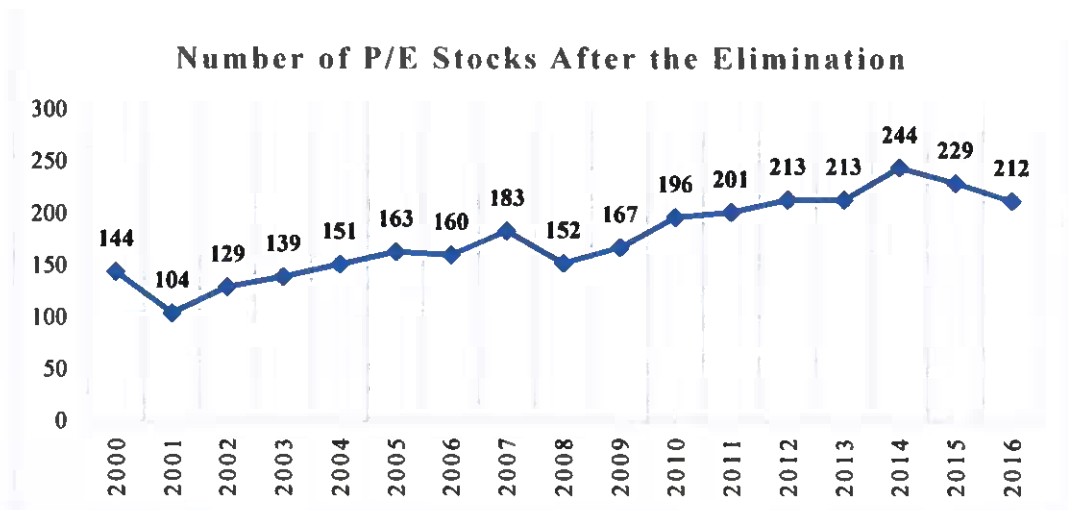
Table 4.2. The Effect of Negative P/E Factor

Years	Number of P/E Stocks	Average P/E Ratios	Number of Negative P/E Stocks	Negative P/E Stock in Total (in Percentages)
2000	144	12,95	31	18%
2001	104	17,37	74	42%
2002	129	34,04	48	27%
2003	139	59,65	41	23%
2004	151	24,30	44	23%
2005	163	32,04	41	20%
2006	160	22,25	52	25%
2007	183	41,37	40	18%
2008	152	13,26	72	32%
2009	167	38,09	60	26%
2010	196	46,43	46	19%
2011	201	225,97	58	22%
2012	213	166,06	64	23%
2013	213	39,80	77	27%
2014	244	38,75	55	18%
2015	229	20,50	72	24%
2016	212	33,59	89	30%

Then, lists are ranked by their year-end P/E and B/M ratios for each year. At this stage of the study, portfolios are formed for 10 companies each year as stated in "Data and Methodology" section. Following this, top and bottom 20 and 30 are grouped in order to construct extended samples of the study. The average on price-to-earnings value of top 10 companies (HP/E of first sample) were 718,3, only two years (2011 and 2012) experienced extreme values of P/E caused by the values of HATEK and ANELE equities (please refer to the Appendix 12-13), whereas the behavior of bottom 10 stock were more stable, fluctuated between 0,8 and 4,6.

As the sample enlarged to 20 equities, the average of the B/M and P/E price-to-earnings ratios increased (decreased) for low P/E stocks (high P/E stocks). For this second sample, the average P/E values were 388,5 for high value stocks, 3,0 for low value stocks. Average values of 30 equities sample were 270,0 and 3,6 respectively,

as this sample is closer to the market, the decrease in volume of high P/E effect was expected on the averages. Yearly P/E averages of samples are as follows. For the below demonstration on Table 4.3., P/E averages of portfolios are documented under two main classification according to the investment strategy of this study. Please remind that low P/E stocks bought instead of shorted high P/E stocks.

Table 4.3. The Average P/E Values of Portfolios

Years	Shorted Portfolios			Long Portfolios		
	10 Stock Sample	20 Stock Sample	30 Stock Sample	10 Stock Sample	20 Stock Sample	30 Stock Sample
2000	109,15	66,17	47,91	0,83	1,17	1,45
2001	102,98	64,53	47,83	1,41	2,19	2,67
2002	334,84	183,67	128,91	1,16	1,76	2,26
2003	682,71	361,20	247,88	1,12	1,94	2,65
2004	175,21	110,59	82,38	2,36	3,31	3,96
2005	229,10	150,74	113,13	4,64	5,90	6,75
2006	170,49	103,89	78,12	2,74	3,97	4,54
2007	497,85	281,65	198,74	2,65	3,78	4,41
2008	83,84	55,30	43,08	1,14	1,58	1,97
2009	407,88	231,11	164,29	2,57	3,52	4,09
2010	486,81	294,39	215,43	3,15	4,67	5,63
2011	4.187,93	2.147,42	1.447,13	2,68	3,50	4,03
2012	3.161,93	1.621,41	1.096,07	2,70	3,87	4,78
2013	525,09	297,54	211,46	2,00	2,61	3,29
2014	557,71	310,09	221,13	1,25	2,01	2,67
2015	122,07	89,61	74,25	1,54	2,04	2,54
2016	375,13	235,13	171,48	2,15	2,88	3,52

The change between B/M ratio portfolios were more consistent compared to P/E results. All values were likely remained in between 0,1 and 0,5 where average book-to-market values were 0,2, 0,2 and 0,3 on low B/M portfolios for the first, second and last model respectively. On the other hand, average of 2000 and 2001 were high compared to other years of high B/M portfolios and 17 years average were 33,8 , 18,22 and 12,9 respectively for the first, second and last portfolios.

The following Table 4.4. shows the details of the yearly average values of all book-to-market portfolios.

Table 4.4. The Average B/M Values of Portfolios

Years	Shorted Portfolios			Long Portfolios		
	10 Stock Sample	20 Stock Sample	30 Stock Sample	10 Stock Sample	20 Stock Sample	30 Stock Sample
2000	0,32	0,43	0,53	209,22	107,25	72,87
2001	0,23	0,32	0,38	206,06	105,00	70,97
2002	0,13	0,23	0,31	7,58	5,18	4,18
2003	0,24	0,33	0,39	7,40	5,02	4,11
2004	0,19	0,27	0,34	103,25	52,64	35,67
2005	0,13	0,19	0,23	2,94	2,19	1,85
2006	0,15	0,22	0,26	2,46	2,10	1,87
2007	0,14	0,19	0,23	2,48	2,05	1,83
2008	0,18	0,33	0,44	5,39	4,72	4,37
2009	0,18	0,25	0,28	2,73	2,29	2,07
2010	0,08	0,14	0,18	2,01	1,76	1,60
2011	0,09	0,16	0,21	2,96	2,61	2,36
2012	0,10	0,15	0,18	2,72	2,49	2,29
2013	0,13	0,17	0,20	3,87	3,33	2,99
2014	0,11	0,15	0,18	4,50	3,49	3,05
2015	0,10	0,13	0,17	4,79	3,94	3,48
2016	0,08	0,12	0,16	4,39	3,71	3,24

4.1. RESULTS FOR P/E PORTFOLIOS

In order to obtain gains or losses on yearly basis, high P/E portfolios comprise of top 10 stock shorted each year and 10 stocks including low P/E values bought instead of these shorted companies as an investment strategy. The revenue or loss on short compared with long amounts and it is observed that gain recorded in 13 years of the study, and loss occurred only in other 4 years.

Further investigation is made to examine characteristics of such earnings. In 12 years on average of all portfolios, shorted stocks do not record a loss on the market. Since such portfolios do not record a loss, we may accept this situation as a loss from our point of view. Because, if we owned these stocks instead of dispose them, we could hold a gain. In despite of the loss recorded on shorted portfolios in 10 years, their loss covered by long positionings on high P/E portfolios. It is observed that low P/E stocks perform better than high P/E portfolios on the market as the strategy provided profitable results. In other words, low P/E assets rise in value more compared to high P/E's. Below at the Table 4.5., the performance of the first portfolio, including in positions on short and long, and yearly gains are stated. The HP/E symbol is used for shorted portfolios including stocks in the top 10 and the LP/E symbol is used for long portfolios in the bottom 10 at following. Please remind that the below table presents values in percentages (%).

Table 4.5. Yearly Performances of First P/E Portfolio

Years	10 Sample Results in %		
	Short(HP/E)	Long (LP/E)	Gain-Loss
2000	39,3	37,4	-1,9
2001	-10,7	4,9	15,6
2002	-4,8	83,1	87,9
2003	42,9	145,3	102,4
2004	52,1	72,7	20,7
2005	-12,6	7,1	19,7
2006	21,9	55,5	33,5
2007	-51,2	-34,6	16,6
2008	64,4	153,9	89,5
2009	133,1	97,2	-35,9
2010	-33,2	-29,4	3,8
2011	17,1	94,3	77,2
2012	-35,6	-5,5	30,2
2013	54,5	34,6	-19,8
2014	23,2	-3,5	-26,6
2015	5,6	35,5	29,8
2016	5,1	83,1	77,9

As per Table 4.5. above, it is already obtained a gain on shorts of first portfolio as they recorded a loss on average market values in 6 years. Moreover, 2007, 2010, 2012 and 2014 saw loss for long portfolios. 2007, 2010 and 2012 recover these losses by the gain in short selling whereas 2014 could not tolerate and saw a loss in overall. On the other hand, 2009 and 2013 longs were lower in absolute value compared to shorts, therefore it causes losses in large amounts, especially in 2009.

For 20 companies, the results were quite similar. Only three years recorded loss including 2009, 2013 and 2014. In 2014, the decline in the performance caused mainly by the loss in long position. Moreover, 2007 and 2010 saw major loss from long, especially 2007, but these are tolerated by the significant gain from the short-sell strategy where short on 2007 almost doubled in absolute value corresponding to their loss amount. Although the loss of long in 2010, the high income in short sale increased the declined amount and a pretty good revenue made in total. 2001, 2005 and 2012 also made a total gain from short selling activities although the profitability of the long was not high.

When looking the first and second portfolio, it is seen that yearly performances were much higher on the second sample comprising from 20 stocks. One reason was that the pick in 2004 positively affected by the good returns of one-year period of TSKB TI Equity (393%) which can be included in 20 ranking but not in 10 ranking. Both portfolios present superior long performances in the year 2008 which mainly obtained by THYAO TI Equity which is ranked two in the list and provided one year return in proportion to 410% between 2008 and 2009. These outcomes may be referred to the diversification effect. As our strategy is established based on more diversified portfolios with smaller portion in each stock for the second case in order to minimize the risk on the portfolio, our compound gain of the 17 years-end were better. You may find below the details of the yearly outcomes for P/E positions comprising 20 equities. Results on the Table 4.6. described the values in percentages (%).

Table 4.6. Yearly Performances of Second P/E Portfolio

Years	20 Sample Returns in %		
	Short(HP/E)	Long (LP/E)	Gain-Loss
2000	44,5	52,5	8,0
2001	-7,1	0,7	7,8
2002	21,8	61,4	39,6
2003	45,0	108,6	63,6
2004	58,4	177,4	118,9
2005	-10,3	1,2	11,5
2006	17,0	33,1	16,1
2007	-51,5	-32,6	18,9
2008	91,2	155,7	64,4
2009	93,1	83,3	-9,8
2010	-30,1	-10,6	19,5
2011	18,7	65,6	46,9
2012	-23,5	4,1	27,6
2013	48,1	43,1	-5,0
2014	0,4	-1,7	-2,2
2015	10,9	25,7	14,8
2016	7,9	63,8	55,8

Where the number of stock included in the portfolio enlarged to 30 equity in the last sample, 60 companies are included to study each year. Only two years experienced loss on long for the last portfolio. Although the loss on long in 2007 and 2010, disposal stocks of shorted companies produce better results in absolute value, therefore no loss recorded at total. Furthermore, 2005, 2007, 2010 and 2012 experienced good performing short sells (as these years saw losses on shorts in the market) and hold a significant role on the gain. According to the total performances of year-end returns, only three years including 2001, 2006 and 2014 gave losses. In all cases, the gain on the long portfolio could not tolerate the loss occurred from short activities. In addition, 2004 and 2008 experienced really good performing long positionings.

Comparing the last sample with the first and second, it is clearly seen that portfolios including 30 equity shorts provided higher level of losses than other both portfolios. Also gains on long positions were lower. This can be explained by the fact of portfolio size. As the last portfolio enlarged to 30 number of stocks, accordingly a closer value to the market expected depending on the market behavior. Although a sample size 20 help to minimize the risk and provide higher returns, the number of 30 company sample placed the investment in a lower level of total return. A portfolio enlarged to 30 number of company was too big in size to differ from the market and the effectiveness of P/E ratio on the portfolio lost its efficiency on the market. Below in the Table 4.7. and Figure 4.2., details are illustrated on P/E portfolios including 30 companies.

Table 4.7. Yearly Performances of Last P/E Portfolio

Years	30 Sample Returns in %		
	Short(HP/E)	Long (LP/E)	Gain-Loss
2000	40,4	62,0	21,5
2001	13,8	0,9	-12,8
2002	25,9	59,6	33,7
2003	43,7	93,4	49,7
2004	60,9	151,7	90,9
2005	-6,2	3,9	10,1
2006	26,1	25,7	-0,3
2007	-51,8	-36,1	15,7
2008	103,9	154,2	50,4
2009	71,2	72,3	1,1
2010	-27,2	-0,4	26,8
2011	26,3	59,6	33,2
2012	-27,1	4,3	31,4
2013	35,7	41,7	6,0
2014	9,6	4,8	-4,7
2015	10,7	30,5	19,7
2016	14,7	59,6	44,9

Figure 4.2. Comparison of the Yearly Performances of P/E Portfolios
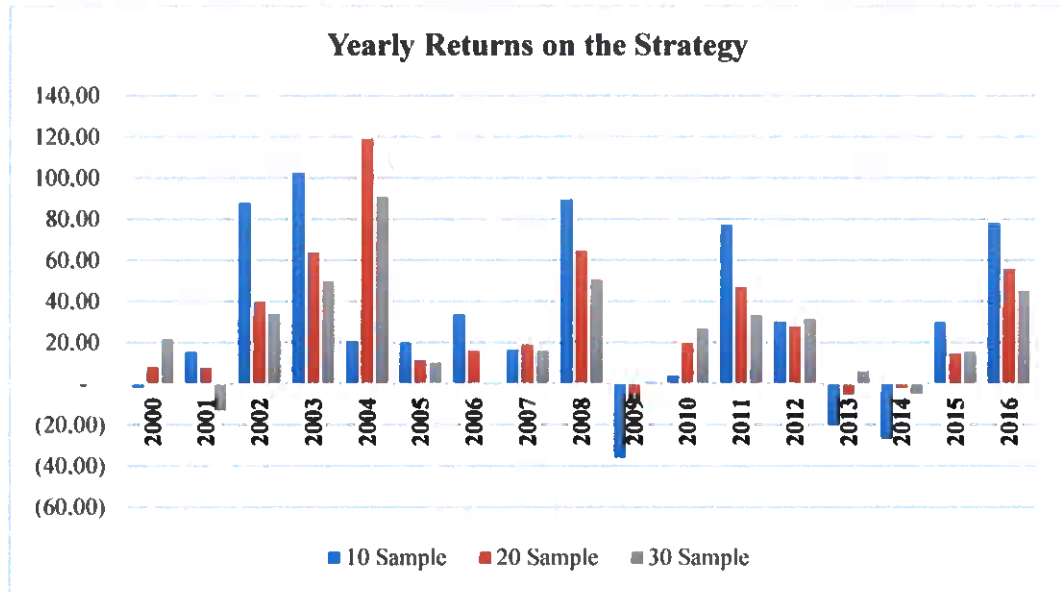
In order to have a better understanding on the multiperiod gain as the strategy is hold in multiperiods, the gain presented hereinafter by the assumption of 1 TL initial investment in the base year 2000. Please remind that this stage is performed to present results from an easier perspective as detailed in "Data & Methodology" section. In 5 years period, returns of 10 and 20 samples were approximately same, but the performance of 30 stock sample were lower which corresponding 72% of 10 stock and 69% of 20 stock portfolios. The result was TL 4,46 for TL 1 invested on the last sample. The return on the first and second portfolios were 6,23 TL and 6,49 TL respectively. At the end of 2010, the outcomes of interval was more explanative and gives an opportunity to compare efficiency of P/E factor. In 10 years, these amounts increased to 12,22 TL, 15,88 TL and 9,91 TL on the 10,20 and 30 stock portfolios respectively. In percentages, first sample increased 96% during the second half of 10 years. Massive increase corresponding to 145% realized in the second portfolio for the second half of 10 years and 122% for the last sample during the same period. This means, rising acceleration is preserved. Below Table.4.8. demonstrates the change in percentages.

36

Table 4.8. The P/E Portfolio Performance Between 2005 and 2010

	2010 (in TL)	2005 (in TL)	Change (%)
10 stock	12,22	6,23	96%
20 Stock	15,88	6,49	145%
30 stock	9,91	4,46	122%

Moreover, superior performances are observed in 2002, 2003 and 2008 for the first sample (One-year returns were 88%, 102%, and 89% respectively). The highest gain recorded in 2004 equaled to 119 % on the 20 company sample which is actually the highest performance of all yearly gains among all type of portfolios. Second highest value was 64 % and observed in 2008 on this sample. The volume of the gains in the change was positively higher compared to the change in losses between first and second sample results, therefore the cumulative return of 17 years for 1 TL invested was 49 TL, corresponding to positive improvement of 29% compared to first portfolio. You may find below at the Figure 4.3. and Table 4.9. the details and fluctuations of these multiperiod amounts on all models.

Figure 4.3. Multiperiod P/E Returns for 2000-2016

37
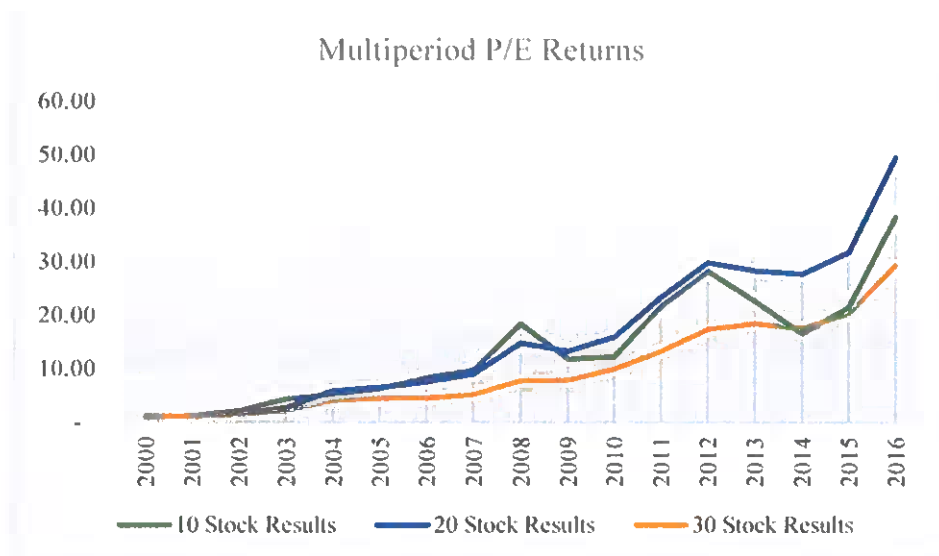
Table 4.9. Multiperiod P/E Strategy Returns

Years	First Sample (in TL)	Second Sample (in TL)	Third Sample (in TL)
2000	0,98	1,08	1,22
2001	1,13	1,16	1,06
2002	2,13	1,63	1,42
2003	4,31	2,66	2,12
2004	5,20	5,82	4,05
2005	6,23	6,49	4,46
2006	8,32	7,54	4,44
2007	9,70	8,96	5,14
2008	18,38	14,73	7,73
2009	11,78	13,29	7,82
2010	12,22	15,88	9,91
2011	21,66	23,33	13,21
2012	28,19	29,77	17,36
2013	22,59	28,28	18,40
2014	16,58	27,67	17,53
2015	21,53	31,75	20,99
2016	38,30	49,47	30,42

All portfolio performances maintain their level of returns and positionings of 17 years. For instance, last portfolio is always provided worst results on the all years tested, no such year of last sample was higher than first sample on the multiperiod gains. This means the strategy provided consistent results. The values of 1 TL invested were 38 TL, 49 TL and 30 TL respectively at the end of 2016. In the last year of the study, portfolios provided efficient results. The progress of last 6 years from 2010 to 2016 were visually high compared to second 5 year period between 2005 and 2010. 10 stock portfolio perform 213% rise, 20 one was with 212%, and the last sample showed 207% pick. In addition, portfolios recorded 76%, 100%, 112% improvement respectively during the third 5 years period between 2010 and 2015. You may find at the below Table 4.10. and Table 4.11, the change in percentages.

Table 4.10. The P/E Portfolio Performance Between 2010 and 2015

	2015	2010	Change (%)
10 stock	21,53	12,22	76%
20 Stock	31,75	15,88	100%
30 stock	20,99	9,91	112%

Table 4.11. The P/E Portfolio Performance Between 2010 and 2016

	2016	2010	Change (%)
10 stock	38,30	12,22	213%
20 Stock	49,47	15,88	212%
30 stock	30,42	9,91	207%

One common characteristics of all P/E tests was that best performances are produced during 2003, 2004, 2008 and 2016. On the contrary, losses are monitored in 2009, 2013 and 2014 prominently.

4.2. RESULTS FOR B/M PORTFOLIOS

Other explanatory variable subject to test market efficiency was book-to-market ratio. During the study, it is observed that investment strategy based on book-to-market portfolios present more profitable results. Yearly losses are seen only in two years which are 2009 and 2014 on all samples and these are mainly caused by short selling activities. First sample longs showed minor losses in general. Although 2009 gave a really good performance from long positions, shorted companies made a better place on the market resulting a loss in total. On the other hand, results of 2008 and 2016 were preferable as their one year period returns were almost higher than five times of other years' average. One year period returns of these portfolios for the first, second and last portfolios were 173%, 151% and 132% on 2008, whereas 124%, 67% and 56% on 2016 respectively. That is to say, these two years were the main reasons of the success on the multiperiod gain on 17 year-end period. Below at Table 4.12., one-year period returns of the first portfolio are given. The LB/M

39

symbol is used for shorted portfolios including stocks in the bottom 10 and the HB/M symbol is used for long portfolios in the top 10 for the below demonstration.

Table 4.12. Yearly Performances of First B/M Portfolio

10 Sample Returns in %			
Years	Short(LB/M)	Long (HB/M)	Gain-Loss
2000	14,8	65,9	51,1
2001	-31,9	6,3	38,2
2002	41,3	78,8	37,5
2003	36,1	96,1	60,0
2004	48,6	80,6	32,0
2005	-11,4	7,4	18,8
2006	21,2	41,4	20,2
2007	-31,8	-0,8	31,0
2008	54,0	226,8	172,8
2009	115,5	103,4	-12,1
2010	-21,7	-16,3	5,4
2011	20,8	30,3	9,5
2012	-26,5	-2,8	23,7
2013	9,0	25,6	16,5
2014	23,9	-8,9	-32,8
2015	-7,2	23,4	30,7
2016	23,6	147,6	124,0

As per the above table, shorted portfolios made a loss on the market in number of 6 years (2001, 2005, 2007, 2010, 2012 and 2015) which provide gain to the first portfolio including 10 companies, whereas long positions recorded losses in 2007, 2010, 2012 and 2014. Except 2014, all these losses tolerated by gains on shorts, achieving a positive value when sum up. Although the gain on the long in 2009, a loss recorded in the year-end performance as a result of higher losses on shorts for each portfolio. It is also observed that there was a significant performance on the long of 2008, almost four times greater than the total 17 years' average.

Only the number of two years recorded a loss on the strategy based on 20 companies caused mainly by the bad performing shorts. On yearly performances, 2008 provided a significant return, whereas 2009 was the worst performing case. In 2009, disposal on shorted companies could not detected well by B/M value and provide significant returns compared to market which causes a significant loss on the portfolio. These stocks with ticker symbol were ASLAN TI Equity, BURCE TI Equity, KENT TI Equity and AFYON TI Equity (you may find the details in Appendix 27) and were main reasons of the decrease on the portfolio.

Table 4.13. Yearly Performances of Second B/M Portfolio

Years	20 Sample Returns in %		
	Short(LB/M)	Long (HB/M)	Gain-Loss
2000	40,1	76,2	36,2
2001	-25,5	-2,4	23,1
2002	32,2	66,6	34,4
2003	44,4	74,2	29,8
2004	51,7	130,7	79,0
2005	-0,7	3,0	3,7
2006	10,7	34,4	23,7
2007	-40,7	-24,7	16,1
2008	42,4	193,1	150,7
2009	118,1	76,4	-41,7
2010	-29,3	-10,2	19,0
2011	12,9	26,8	13,9
2012	-20,6	2,4	22,9
2013	15,1	41,8	26,8
2014	22,4	-0,3	-22,8
2015	-6,4	18,6	25,0
2016	18,1	84,6	66,5

In the second sample, gains on shorts are tracked in the same years as the first sample. However, additional 10 companies on the second sample performed unsuccessful long positions on average compared to first sample and it is effected the profitability of second sample in a negative way. In addition, longs on these

additional 10 companies, the number of 7 provided losses in 2005 (Please refer to Appendix 23).

The last sample buyings were closer to the first portfolio on average compared to second sample. Although the yearly losses are tracked in the same years on all portfolios, the last portfolios' were seem to be lover. Losses on buyings only were in three years which are 2001, 2007 and 2010. However these are tolerated by successful releases with shorts. Moreover, other years where gains recorded on shorts were 2012 and 2015 as like in the first and second sample. Table 4.14. shows the one-year period returns of the last portfolio subject to study and Figure 4.4. provides a comparison of year-end returns of each portfolio.

Table 4.14. Yearly Performances of Last B/M Portfolio

Years	30 Sample Returns in %		
	Short(LB/M)	Long (HB/M)	Gain-Loss
2000	34,9	103,2	68,3
2001	-21,2	-1,5	19,7
2002	26,0	73,0	47,0
2003	41,9	76,5	34,6
2004	60,7	150,7	90,1
2005	0,2	12,8	12,6
2006	17,1	36,3	19,2
2007	-43,2	-34,1	9,1
2008	60,5	192,3	131,8
2009	82,6	70,3	-12,3
2010	-25,5	-11,2	14,3
2011	16,8	27,7	10,9
2012	-14,2	0,2	14,4
2013	23,1	42,8	19,8
2014	11,0	1,5	-9,5
2015	-6,1	20,3	26,4
2016	21,1	76,6	55,5

Figure 4.4. Comparison of Yearly Returns of B/M Portfolios
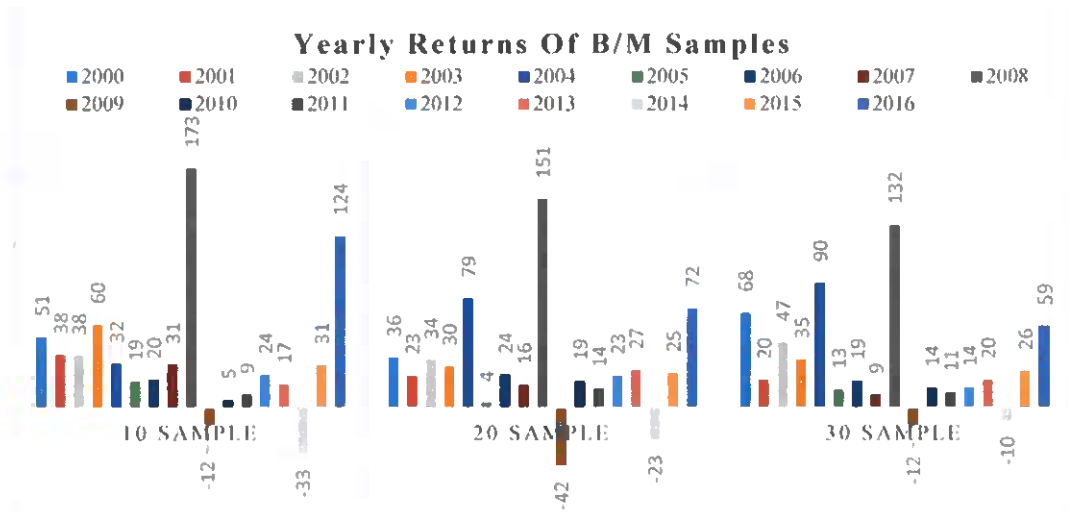
The last sample multiperiod gains were better than second sample, affected by higher level of revenues till 2009. Although the performances on the last sample give better returns than second sample, they do not perform as good as the first sample. Moreover, superior performances are observed in 2008 on each models. The highest return was for the first portfolio which is 173% in 2008 and this was also the best success of the strategy. One significant reason on the multiperiod gains was also the pick in 2008, whereas 2014 decreased the compound returns. The summary of results are given in below Table 4.15 and fluctuations over 17 years on multiperiod gains are shown at the following Figure 4.5.

Figure 4.5. Multiperiod B/M Returns
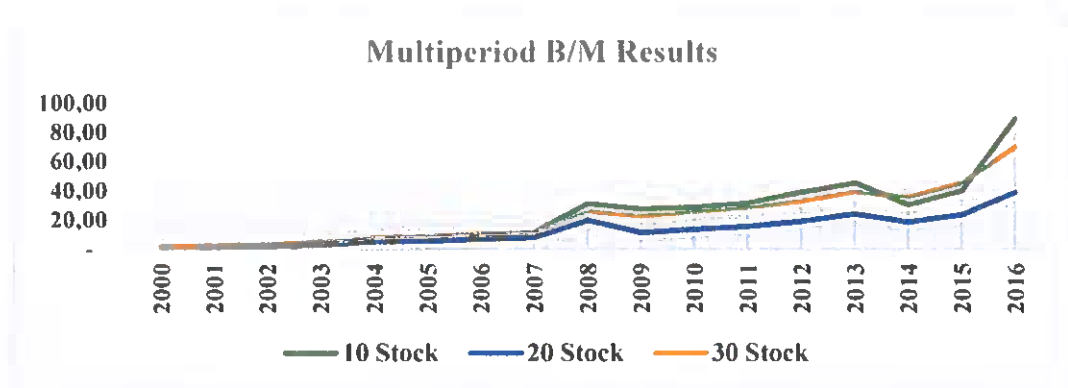
Table 4.15. Multiperiod B/M Strategy Returns

Years	First Sample(in TL)	Second Sample(in TL)	Third Sample(in TL)
2000	1,51	1,36	1,68
2001	2,09	1,68	2,01
2002	2,87	2,25	2,96
2003	4,60	2,92	3,99
2004	6,06	5,23	7,58
2005	7,20	5,42	8,54
2006	8,66	6,71	10,17
2007	11,34	7,79	11,10
2008	30,93	19,53	25,73
2009	27,17	11,38	22,57
2010	28,64	13,55	25,80
2011	31,35	15,44	28,61
2012	38,77	18,97	32,72
2013	45,18	24,05	39,19
2014	30,36	18,58	35,46
2015	39,67	23,22	44,84
2016	88,84	38,68	69,75

In 5 years period ended in 2005, 1 TL ended with a value of 7 TL for the first B/M sample and 5 TL and 9 TL for second and last portfolios respectively. During the second 5 years period between 2005 and 2010 these amounts (7, 5, 9 TL) reached to 29, 14 and 26 TL respectively. Despite of the pick in 2008, the increasing percentage of the second five years period stood at 298%, 150% and 202% effected negatively by the loss in 2009. Specifically, compound gain raised with the proportion to 173%, 151% and 132% respectively in percentages at 2008 compared to 2007. Table 4.16 and 4.17 show the change in percentages

Table 4.16. The B/M Portfolio Performance Between 2005 and 2010

	2010 (in TL)	2005 (in TL)	Change (%)
10 Stock	28,64	7,20	298%
20 Stock	13,55	5,42	150%
30 Stock	25,80	8,54	202%

Table 4.17. The B/M Portfolio Performance Between 2007 and 2008

	2008 (in TL)	2007 (in TL)	Change (%)
10 stock	30,93	11,34	173%
20 Stock	19,53	7,79	151%
30 stock	25,73	11,10	132%

4.3. SIMILARITIES AND DIFFERENCES

One of the common characteristics of P/E and B/M strategies monitored during 2008 as it provided significant level of one-year period return for both predictive variables. Another similarity observed in 2009 and 2014. Both years recorded losses and were worst performing ones among all.

During 17 years period, B/M portfolios represents better gains for first and last sample than P/E portfolios. P/E returns were approximately 43% of B/M's on the first sample including 10 company strategy. To have a better understanding on figures, the assumption of 1 TL investment in the year 2000 ended with a value of 89 TL on the B/M, whereas P/E stocks remained at the level of 38 TL on the first case. The volume of multiperiod gains was lower on the last sample at the P/E side, whereas last sample of B/M strategy hold a good position within the study's' framework reaching up to 70 TL of the 17 years-end multiperiod return on initial invested 1 TL assumption. Regarding both situation, where the sample amount increased to 30 sample, the gap between P/E and B/M outcomes become distinct, the performance between two variables achieved the level of 129% difference (Outcome of the P/E was 30 TL on the same sized sample).

On the contrary, second P/E sample showed better performance during 17 years compared to B/M stocks. 1 TL reached to 49 TL on the P/E cumulative gains, whereas B/M stood at the value of 39 TL. This interval equals to 28% difference between both 20 company figures.

P/E portfolios including 20 stocks provide better returns than 10 company sample in almost every years on compound results. This position is a signal of the importance of the diversification and draws the inference that diversified portfolios showed superior performance on P/E side. However, the 30 company strategy was not profitable compared to 10 stocks portfolio. This may be a result of decreasing effectiveness of P/E decrease on the portfolio as the portfolio enlarged and the results are converged with the market.

However, B/M portfolios held different features. It is observed that 10 stock portfolio give severely better returns compared to 20 stock portfolio. Although an increase occur on returns between 20 and 30 sample, 10 company sample where book-to-market effect widely seen overperform these two cases of study. However, the last sample presented more profitable results unexpectedly compared the second sample. Below on the Figure 4.6., the fluctuations of yearly B/M returns are demonstrated.

Figure 4.6. Yearly Returns of B/M Samples

46
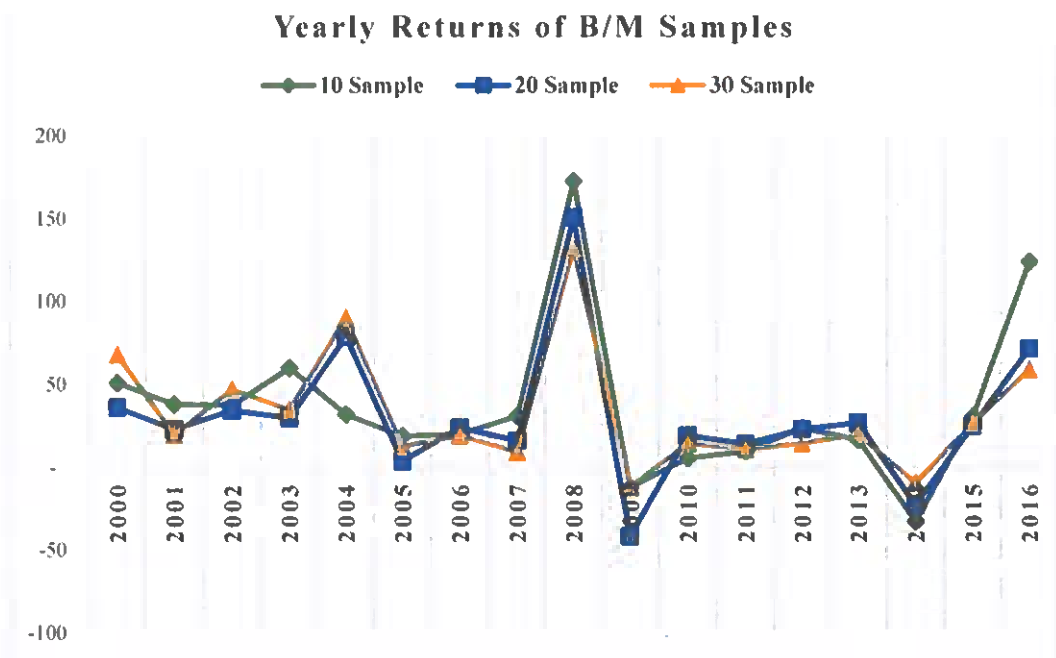
As detailed in introduction section, these ratios helps to determine the market value of a company relative to its actual worth. The B/M ratio use book value to differentiate between the true value of a publicly traded company and investor speculation, whereas price-to-earnings ratio make this operation by considering a company's earnings.

In this respect, it is also interpreted that book value of a company is more useful and a better metric than earnings when assess whether the stock of a company is over or undervalued. On the other hand, price-to-earnings ratio better reflect when explaining a companies' actual worth as it is harder to capture valuation factors on the market. An investment strategy established by book-to-market ratio reveals higher returns on cumulative forms.

CONCLUSION

Efficient Market Hypothesis states that prices are already adjusted to new information in the market and no investor has the ability to establish a successful investment strategy in order to obtain superior returns as they show a random behavior. Therefore, it is indicated that an investment model or a strategy based on predictive indicators are useless due to the market efficiency.

In this paper, I examined the relationship between financial indicators and ISE stock returns for 17 years period between 2000 and 2016. In this respect, price-to-earnings and book-to-market ratios are used as predictive variables for possible profitable investment opportunities. The aim of this paper is to provide an evidence for the predictability of ISE stock returns and asses the existence of the stock market anomalies in ISE. The study highlighted to four main objectives; is there a predictive relation of financial indicators with return behaviors; which indicator is more powerful at explaining if a relation exist; the ability of an investment strategy to obtain superior returns; and the validity of Efficient Market Hypothesis in ISE.

As per the study's approach, it is enough to record a gain as our portfolios are constructed with zero initial investment. Based on the outcomes, our investment strategy was successful and give high profit even on the case including minimum level of return. Except of the number of two years, B/M strategy provide positive one-year returns for all size of portfolios. On the other hand, losses on P/E portfolios are seen in 3 years on average among total 12 years tested.

The fact that higher returns on the second P/E portfolios (including 20 company) than first (including 10 company) can be explained by the benefit of diversification. As our strategy is established based on more diversified portfolios with smaller portion in each stock for the second case in order to minimize the risk on the portfolio, our total multiperiod gain of the 17 years-end were better. Further, as the portfolio size enlarged to 30 equities on the strategy, the effectiveness of P/E

decreased on the portfolio results and lower level of returns are obtained. Probably, the number of 30 company was too big in size and remain poor to differ from the market and diversification lost its influence on the strategy. However, B/M portfolios demonstrated different characteristics. First B/M portfolio (including 10 stocks) where B/M effect widely seen give severely better returns compared to second (including 20 stocks) and last portfolio (including 30 stocks). This can be a result of significant B/M effect on the ISE. On the other hand, the last sample presented more profitable results compared the second sample unexpectedly on B/M side. This is the unclear area of this research.

Cumulative outcomes on Table 5.1. demonstrate that long-term investment on the B/M portfolios limited to 10 stocks presented the most productive results. Most expanded B/M portfolios (including 30 stocks) provide better results even from the best performing P/E portfolios (including 20 stocks), whereas most expanded P/E strategy illustrates worst performing sample, however the strategy was still very profitable.

Table 5.1. Comparison of Multiperiod Gains

Years	10 P/E Stock	20 P/E Stock	30 P/E Stock	10 B/M Stock	20 B/M Stock	30 B/M Stock
2000	0,98	1,08	1,22	1,51	1,36	1,68
2001	1,13	1,16	1,06	2,09	1,68	2,01
2002	2,13	1,63	1,42	2,87	2,25	2,96
2003	4,31	2,66	2,12	4,60	2,92	3,99
2004	5,20	5,82	4,05	6,06	5,23	7,58
2005	6,23	6,49	4,46	7,20	5,42	8,54
2006	8,32	7,54	4,44	8,66	6,71	10,17
2007	9,70	8,96	5,14	11,34	7,79	11,10
2008	18,38	14,73	7,73	30,93	19,53	25,73
2009	11,78	13,29	7,82	27,17	11,38	22,57
2010	12,22	15,88	9,91	28,64	13,55	25,80
2011	21,66	23,33	13,21	31,35	15,44	28,61
2012	28,19	29,77	17,36	38,77	18,97	32,72
2013	22,59	28,28	18,40	45,18	24,05	39,19
2014	16,58	27,67	17,53	30,36	18,58	35,46
2015	21,53	31,75	20,99	39,67	23,22	44,84
2016	38,30	49,47	30,42	88,84	38,68	69,75

Figure 5.1. Comparison of Multiperiod Gains

Comparison of Multiperiod Gains
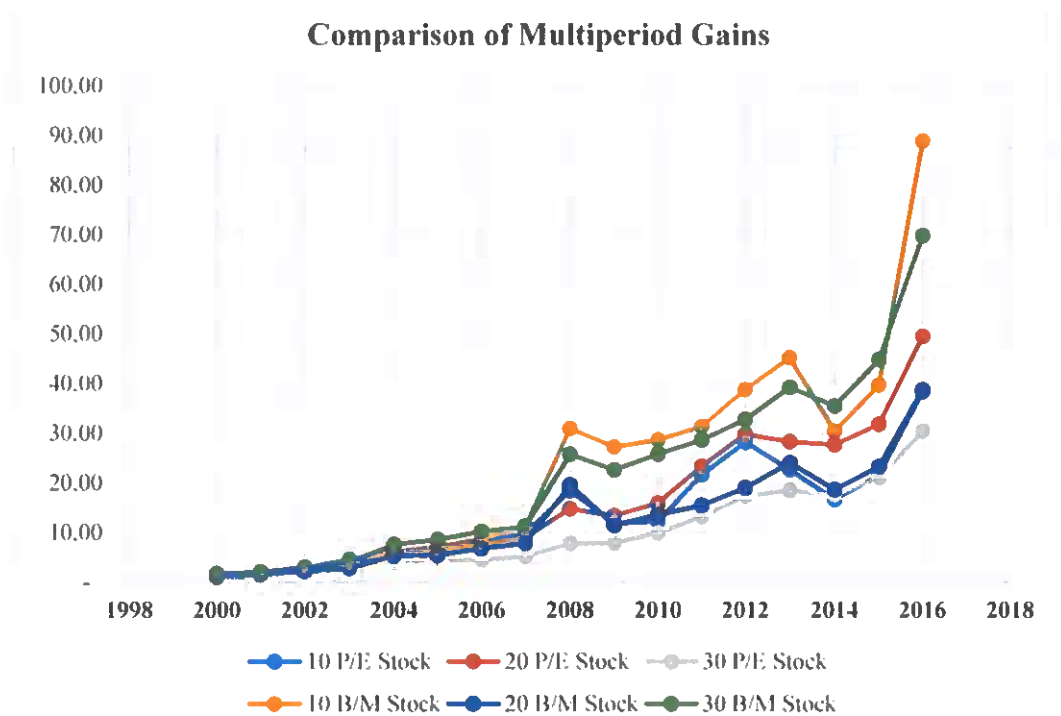
These findings demonstrate that potential profitable opportunities can be captured by provided investment strategy during the study which established on book-to-market and price-to-earnings values. Another inferential comprehension of the study is that book-to-market ratio is a stronger financial indicator for the valuation metrics of ISE stock returns than price-to-earnings ratio. As B/M dominate over P/E, it can be concluded that B/M has a stronger predictive power in order to reach more profitable returns. However, both indicators are able to explain the valuation metrics and hold significant relation on success according to the findings of the study. The outcomes of the study direct financial audiences to construct their strategies based on both price-earnings and book-to-market ratio for the potential profitable stock returns in the ISE since these indicators plays a major role for the future behavior on returns. In this respect, results are comply with the general view on evidences of international markets.

50

According to the market efficiency, an investor does not able to earn high profit in an efficient market by using an investment strategy which based on the analysis. In this respect, evidences of this study are not consistent with market efficiency. It can be concluded the trading strategy based on investment in stocks with high B/M or low P/E values was successful and this is a signal for existence of anomalies in the ISE. It is also shown that stock performances are not independent and ISE is an inefficient market.

Findings of this study suggests that future research on the ISE market efficiency might benefit from examining the relation between B/M and P/E values of stocks. Outcomes also reveals that profitable strategies can be a consistent phenomena.

REFERENCES

Akdeniz, L., Altay-Salih, A., & Aydogan, K. (2000). Cross-section of expected stock returns on the Istanbul Stock Exchange. *Russian & East European Finance and Trade, 36*, 6-26.

Aksu, M. H., & Onder, T. (2003). *The size and book-to-market effects and their role as risk proxies in Istanbul stock exchange*, Koc University (Working Paper No. 2000-04). doi: 10.2139/ssrn.250919.

Ang, A., & Bekaert, G. (2007). Stock return predictability: is it there? *The Review of Financial Studies, 20*, 651-707.

Aras, G., & Yilmaz, M. K. (2008). Price-earnings ratio, dividend yield,and market-to-book ratio to predict return on stock market: evidence from the emerging markets. *Journal of Global Business and Technology, 4*, 18-30.

Aydoğan, K., & Güney, A. (1997). Hisse senedi fiyatlarının tahmininde F/K oranı ve temettü verimi. *İMKB Dergisi, 1*, 83-96.

Aydoğan, K., & Gürsoy, G. (2000). P/E and Price-to-Book Ratios as predictors of stock returns in emerging equity markets. *Emerging Markets Quarterly, 4*, 60-67.

Bae , K. H., & Kim, J. B. (1998). The usefulness of earnings versus book value for predicting stock returns and cross corporate ownership in Japan. *Japan and the World Economy, 10(4)*, 467-485.

Basu, S. (1977). Investment performance of common stocks in relation to their Price-Earnings Ratios: a test of the Efficient Market Hypothesis. *Journal of Finance, 32*, 663-682. doi:10.1111/j.1540-6261.1977.tb01979.x.

Chan, L., Hamao, Y., & Lakonishok, J. (1991). Fundamentals and stock returns in Japan. *Journal of Finance, 46*, 1739-1789. doi: 10.1111/j.1540-6261.1991.tb04642.x.

Demirer, R., & Karan, M. B. (2002). An investigation of the day-of-the-week effect on stock returns in Turkey. *Emerging Markets Finance and Trade, 38*, 47-77.

Dickinson, J. P., & Muragu, K. (1994). Market efficiency in developing countries: a case study of the Nairobi Stock Exchange. *Journal of Business Finance & Accounting, 21(1)*, 133-150. doi: 10.1111/j.1468-5957.1994.tb00309.x.

Eraslan, V. (2013). Fama and French Three-Factor Model: evidence from Istanbul Stock Exchange. *Business and Economics Research Journal, 4(2)*, 11-22.

Erbil, A. F. (1993). *Stock market seasonality in the Istanbul stock exchange* (Unpublished Master's Thesis). Bilkent University, Ankara.

Fama, E. F. (1965). The behavior of stock market prices. *Journal of Business, 38*, 34-105. doi: 10.1086/294743.

Fama, E. F. (1970). Efficient capital markets:a review of theory and empirical work. *Jornal of Finance, 25(2)*, 383-417. doi:10.2307/2325486.

Fama, E. F. (1991). Efficient capital markets: II. *The Journal of Finance, 46*, 1575-1617. doi: 10.1111/j.1540-6261.1991.tb04636.x.

Fama, E. F., & French, K. R. (1988). Permanent and temporary components of stock prices. *Journal of Political Economy, 96*, 246-273. doi: 10.1086/261535.

Fama, E., & French, K. (1992). The cross-section of expected stock returns. *The Journal of Finance, 47*, 427-465.

Gonenc, H., & Karan, M. B. (2003). Do value stocks earn higher returns than growth stocks in an emerging market? Evidence from Istanbul Stock Exchange. *Journal of International Financial Management and Accounting, 14*, 1-25. doi: 10.1111/1467-646X.00088.

Karan, M. B. (1996). Hisse senetlerine yapılan yatıtımların performanslarının Fiyat/Kazanç oranına göre değerlendirilmesi: İMKB üzerine ampirik bir çalışma. *İktisat, İşletme ve Finans Dergisi*, 26-35.

Kothari, S. P., & Shanken, J. (1997). Book-to-market, dividend yield, and expected market returns: a time-series analysis. *Journal of Financial Economics, 44*, 169-203. doi: 10.1016/S0304-405X(97)00002-0.

Kothari, S. P., Shanken, J., & Sloan, R. G. (1995). Another look at the cross-section of expected stock returns. *The Journal of Finance, 50(1)*, 185-224. doi: 10.1111/j.1540-6261.1995.tb05171.x.

Lakonishok, J., Shleifer, A., & Vishny, R. W. (1994). Contrarian investment, extrapolation, and risk. *The Journal of Finance, 49*, 1541-1578. doi: 10.1111/j.1540-6261.1994.tb04772.x.

Lo, A. W., & MacKinlay, A. C. (1988). Stock market prices do not follow random walks: evidence from a simple specification test. *Review of Financial Studies, 1*, 41-66.

Muradoğlu, G., & Oktay, T. (1993). Türk hisse senedi piyasasında zayıf etkinlik: takvim anomalileri. *Hacettepe Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 11*, 51-62.

Muradoğlu, Y. G., & Metin, K. (1996). Efficiency of the Turkish stock exchange with respect to monetary variables: a cointegration analysis. *European Journal of Operational Research, 90*, 566-576. doi: 10.1016/0377-2217(95)00071-2.

Pontiff, J., & Schall, L. D. (1998). Book-to-market ratios as predictors of market returns. *Journal of Financial Economics, 49*, 141-160.

Rosenberg, B., Reid, K., & Lanstein, R. (1985). Persuasive evidence of market inefficiency. *Journal of Portfolio Management, 11*, 9-16. doi: 10.3905/jpm.1985.409007.

APPENDIX

APPENDIX 1: P/E RESULTS IN 2000

2000					
Equity Name	Highest P/E	Returns (%)	Equity Name	Lowest P/E	Returns (%)
TUKAS TI Equity	378,57	242,86	DOHOL TI Equity	0,37	-13,73
BSOKE TI Equity	192,22	77,78	ALGYO TI Equity	0,44	116,08
ARSAN TI Equity	118,79	36,23	FINBN TI Equity	0,62	75,40
PENGD TI Equity	82,01	4,35	ICBCT TI Equity	0,72	-3,88
IEYHO TI Equity	81,36	24,34	ADNAC TI Equity	0,74	49,39
DERIM TI Equity	65,30	8,51	AKGRT TI Equity	0,85	25,25
IZMDC TI Equity	51,20	46,10	TSKB TI Equity	0,88	23,09
YYAPI TI Equity	46,79	-24,93	YKGYO TI Equity	1,07	46,39
BANVT TI Equity	37,75	-40,82	MIPAZ TI Equity	1,28	-27,13
BRYAT TI Equity	37,47	18,87	PETUN TI Equity	1,34	83,43
SISE TI Equity	36,62	16,00	IHEVA TI Equity	1,38	-50,77
AKCNS TI Equity	33,36	35,63	MRDIN TI Equity	1,39	119,21
MGROS TI Equity	32,86	45,93	ANSGR TI Equity	1,47	11,21
BOYP TI Equity	21,93	-17,59	GARAN TI Equity	1,49	103,84
CMENT TI Equity	19,72	162,11	GUSGR TI Equity	1,49	22,58
BUCIM TI Equity	19,38	100,00	YGYO TI Equity	1,51	63,79
MERKO TI Equity	18,90	21,15	PINSU TI Equity	1,54	125,43
EGSER TI Equity	16,62	-22,56	IZOCM TI Equity	1,55	68,88
METRO TI Equity	16,50	34,51	DITAS TI Equity	1,59	12,00
AEFES TI Equity	16,11	122,15	USAS TI Equity	1,61	200,23
ERSU TI Equity	14,07	27,20	GSDHO TI Equity	1,74	-9,19
KCHOL TI Equity	13,13	78,12	YATAS TI Equity	1,84	-13,86
CMBTN TI Equity	13,06	12,75	GOLTS TI Equity	1,86	97,37
KRSTL TI Equity	12,54	52,63	AKBNK TI Equity	1,93	74,41
DYOBY TI Equity	12,34	136,47	UNYEC TI Equity	1,97	94,04
IPEKE TI Equity	10,40	32,07	MARTI TI Equity	2,06	129,02
LOGO TI Equity	10,06	-2,60	ASUZU TI Equity	2,07	-8,37
ASELS TI Equity	9,87	48,96	YKBNK TI Equity	2,11	93,48
IHLAS TI Equity	9,22	-45,68	BOSSA TI Equity	2,25	232,57
ECILC TI Equity	9,21	-18,18	PNSUT TI Equity	2,30	118,63

	Short	Long
10 Equity	39,3	37,4
20 Equity	44,5	52,5
30 Equity	40,4	62,0

	Yearly Gain/Loss
10 Equity	- 1,90
20 Equity	8,00
30 Equity	21,55

APPENDIX 2: P/E RESULTS IN 2001

2001					
Equity Name	Highest P/E	Returns (%)	Equity Name	Lowest P/E	Returns (%)
PETKM TI Equity	351,52	- 31,76	YGYO TI Equity	0,68	73,68
CMBTN TI Equity	137,44	10,34	ADNAC TI Equity	0,82	19,25
METRO TI Equity	127,02	- 5,88	ALGYO TI Equity	0,98	- 22,82
THYAO TI Equity	98,90	- 24,36	TSKB TI Equity	1,02	30,67
ERSU TI Equity	79,17	- 16,04	AKGRT TI Equity	1,32	- 19,00
BURCE TI Equity	70,56	1,52	MNDRS TI Equity	1,62	- 53,43
TEKTU TI Equity	47,46	- 37,64	ALKA TI Equity	1,76	105,54
KCHOL TI Equity	41,47	- 9,21	PEGYO TI Equity	1,77	- 50,57
ARCLK TI Equity	38,26	36,39	ANSGR TI Equity	1,81	- 9,89
MGROS TI Equity	38,04	- 30,00	YKGYO TI Equity	2,35	- 24,51
AVGYO TI Equity	35,63	- 70,61	KUTPO TI Equity	2,44	97,92
AKCNS TI Equity	34,50	1,77	ATAGY TI Equity	2,59	10,29
KONYA TI Equity	33,07	71,88	MRDIN TI Equity	2,65	21,26
PRKAB TI Equity	28,50	- 58,79	AYEN TI Equity	2,76	- 29,56
DITAS TI Equity	26,67	- 29,63	GSDHO TI Equity	2,90	- 61,76
SAHOL TI Equity	23,27	- 26,58	USAS TI Equity	2,95	- 18,42
MRSHL TI Equity	21,86	- 8,87	BOSSA TI Equity	3,30	37,30
ANACM TI Equity	20,45	27,33	IZOCM TI Equity	3,31	- 11,88
BUCIM TI Equity	18,72	10,44	NUGYO TI Equity	3,34	- 48,96
HURGZ TI Equity	17,98	48,01	CLEBI TI Equity	3,36	- 31,34
ARSAN TI Equity	16,85	675,53	ANHYT TI Equity	3,40	- 36,95
YUNSA TI Equity	15,91	44,73	AKENR TI Equity	3,41	- 33,02
NTHOL TI Equity	15,26	- 53,19	EGEEN TI Equity	3,43	46,88
NETAS TI Equity	14,46	- 50,90	GENTS TI Equity	3,52	- 1,51
ZOREN TI Equity	14,40	17,33	BOLUC TI Equity	3,60	11,48
GOLTS TI Equity	14,17	18,60	TIRE TI Equity	3,65	2,25
AYGAZ TI Equity	14,06	- 2,11	SANKO TI Equity	3,78	- 2,77
KLNMA TI Equity	13,77	- 38,09	YAZIC TI Equity	3,78	- 1,76
ATEKS TI Equity	13,19	- 57,83	ADBGR TI Equity	3,90	20,85
INTEM TI Equity	12,41	0,13	BAGFS TI Equity	3,93	8,67

	Short	Long
10 Equity	- 10,7	4,9
20 Equity	- 7,1	0,7
30 Equity	13,8	0,9

	Yearly Gain/Loss
10 Equity	15,56
20 Equity	7,77
30 Equity	- 12,82

APPENDIX 3: P/E RESULTS IN 2002

2002					
Equity Name	Highest P/E	Returns (%)	Equity Name	Lowest P/E	Returns (%)
DEVA TI Equity	2.240,00	30,49	DOHOL TI Equity	0,23	114,00
PETKM TI Equity	344,35	1,72	SKTAS TI Equity	0,48	5,78
METUR TI Equity	318,94	- 83,35	YKBNK TI Equity	0,72	110,91
KENT TI Equity	87,61	34,07	ADNAC TI Equity	1,08	110,41
BAKAB TI Equity	74,84	- 11,64	FINBN TI Equity	1,13	141,15
ARSAN TI Equity	69,73	- 70,99	GSDHO TI Equity	1,19	29,27
KCHOL TI Equity	66,42	66,26	GSRAY TI Equity	1,49	72,00
MGROS TI Equity	50,55	39,31	ANSGR TI Equity	1,62	69,86
BOYP TI Equity	49,09	4,49	MNDRS TI Equity	1,81	9,76
LINK TI Equity	46,86	- 58,04	ANHYT TI Equity	1,88	167,83
KRSTL TI Equity	43,67	- 10,53	ALGYO TI Equity	2,01	27,41
AKCNS TI Equity	40,93	86,00	KUTPO TI Equity	2,17	21,40
ENKAI TI Equity	35,08	77,65	VAKKO TI Equity	2,23	5,22
AEFES TI Equity	34,51	72,15	AYEN TI Equity	2,27	- 17,82
BRYAT TI Equity	31,21	91,55	SKBNK TI Equity	2,32	46,88
ALCTL TI Equity	31,14	70,73	CLEBI TI Equity	2,41	30,23
ASLAN TI Equity	29,83	22,22	GOLTS TI Equity	2,44	32,79
EMKEL TI Equity	28,46	- 8,51	AKGRT TI Equity	2,49	136,07
TCELL TI Equity	25,85	44,33	TSKB TI Equity	2,59	80,33
YKGYO TI Equity	24,28	37,31	ADEL TI Equity	2,75	34,32
ESCOM TI Equity	24,01	- 36,21	USAS TI Equity	2,78	61,19
ARCLK TI Equity	23,60	68,85	MARTI TI Equity	2,84	61,90
INTEM TI Equity	23,08	35,63	BOSSA TI Equity	2,93	- 11,93
CMENT TI Equity	22,01	- 20,74	ANACM TI Equity	3,09	198,00
DURDO TI Equity	21,15	122,11	AKSA TI Equity	3,18	25,83
ZOREN TI Equity	19,74	14,77	PRKME TI Equity	3,22	34,33
IEYHO TI Equity	17,59	2,41	CELHA TI Equity	3,50	58,21
BUCIM TI Equity	15,51	1,12	ALCAR TI Equity	3,60	53,15
EGGUB TI Equity	15,13	61,62	EDIP TI Equity	3,62	19,23
HURGZ TI Equity	12,07	93,33	KONYA TI Equity	3,63	61,36

	Short	Long
10 Equity	- 4,8	83,1
20 Equity	21,8	61,4
30 Equity	25,9	59,6

	Yearly Gain/Loss
10 Equity	87,86
20 Equity	39,63
30 Equity	33,70

APPENDIX 4: P/E RESULTS IN 2003

2003					
Equity Name	Highest P/E	Returns (%)	Equity Name	Lowest P/E	Returns (%)
DEVA TI Equity	2.920,00	114,39	DOHOL TI Equity	0,31	33,64
BAGFS TI Equity	1.860,00	3,04	SKTAS TI Equity	0,64	61,34
ERSU TI Equity	1.265,00	- 9,26	KRDMD TI Equity	0,64	334,80
KIPA TI Equity	223,82	17,31	KERVT TI Equity	0,92	67,33
TOASO TI Equity	193,75	- 11,61	SKBNK TI Equity	1,21	152,63
BSOKE TI Equity	89,39	64,12	KRDMB TI Equity	1,31	217,09
UNYEC TI Equity	77,64	27,42	MAALT TI Equity	1,38	46,43
PRKAB TI Equity	68,76	14,42	GSRAY TI Equity	1,44	130,27
BUCIM TI Equity	68,49	39,69	KRDMA TI Equity	1,45	249,61
ASLAN TI Equity	60,24	169,70	AYEN TI Equity	1,93	160,14
IHLAS TI Equity	52,30	- 7,79	EGGUB TI Equity	2,00	183,75
IHEVA TI Equity	47,44	- 24,00	ALYAG TI Equity	2,23	10,00
DERIM TI Equity	44,84	7,00	FINBN TI Equity	2,55	113,87
BRYAT TI Equity	40,27	72,12	TSKB TI Equity	2,68	48,86
TATGD TI Equity	40,05	17,70	ECILC TI Equity	2,82	77,93
BFREN TI Equity	36,87	382,97	KNFRT TI Equity	2,84	- 23,47
ALARK TI Equity	36,86	6,67	NUGYO TI Equity	2,85	42,06
VAKKO TI Equity	36,30	1,24	AKSUE TI Equity	2,88	150,77
ULKER TI Equity	34,04	- 26,19	ANSGR TI Equity	3,29	107,91
SODA TI Equity	27,94	40,23	AVGYO TI Equity	3,41	6,78
BRMEN TI Equity	24,36	11,76	IZOCM TI Equity	3,81	61,50
ADANA TI Equity	23,75	54,77	PARSN TI Equity	3,81	55,87
BOSSA TI Equity	23,72	24,68	BANVT TI Equity	3,92	- 4,04
ALKA TI Equity	21,79	- 23,89	SISE TI Equity	3,99	98,01
AFYON TI Equity	21,58	117,70	TRCAS TI Equity	4,05	31,67
HURGZ TI Equity	20,90	10,12	TBORG TI Equity	4,11	- 5,31
MRSHL TI Equity	19,27	10,26	ANHYT TI Equity	4,14	70,41
FMIZP TI Equity	19,14	118,47	EGPRO TI Equity	4,24	135,50
GOODY TI Equity	18,96	3,57	KONYA TI Equity	4,27	136,71
CEMTS TI Equity	18,83	83,09	ADNAC TI Equity	4,44	49,99

	Short	Long
10 Equity	42,9	145,3
20 Equity	45,0	108,6
30 Equity	43,7	93,4

	Yearly Gain/Loss
10 Equity	102,41
20 Equity	63,63
30 Equity	49,75

58

APPENDIX 5: P/E RESULTS IN 2004

2004					
Equity Name	Highest P/E	Returns (%)	Equity Name	Lowest P/E	Returns (%)
GEREL TI Equity	767,86	6,29	KERVT TI Equity	0,77	160,36
ALKA TI Equity	214,06	18,98	NTTUR TI Equity	0,85	72,50
SODA TI Equity	164,00	104,92	NTHOL TI Equity	0,95	6,78
KENT TI Equity	122,63	61,58	SKTAS TI Equity	0,97	28,49
RHEAG TI Equity	98,24	104,17	KRDMD TI Equity	2,71	- 6,31
KARSN TI Equity	92,90	- 13,57	ADNAC TI Equity	3,20	104,53
ASUZU TI Equity	77,70	73,55	ARENA TI Equity	3,36	149,26
ESCOM TI Equity	77,39	0,56	EREGL TI Equity	3,46	59,67
BOYP TI Equity	71,28	68,25	AKGRT TI Equity	3,61	95,93
KIPA TI Equity	66,00	95,83	TTRAK TI Equity	3,74	56,20
ASLAN TI Equity	61,14	66,95	PARSN TI Equity	3,77	233,23
CLEBI TI Equity	59,44	179,17	TSKB TI Equity	3,98	392,84
PRKAB TI Equity	53,70	81,36	KRDMB TI Equity	4,07	37,47
HURGZ TI Equity	48,75	67,61	IZMDC TI Equity	4,08	- 6,55
YATAS TI Equity	45,52	78,69	ANSGR TI Equity	4,17	66,56
TUKAS TI Equity	44,40	9,49	LOGO TI Equity	4,23	1.393,50
KLNMA TI Equity	38,91	97,13	DEVA TI Equity	4,43	435,84
IHEVA TI Equity	37,20	0,00	SKBNK TI Equity	4,56	155,31
TOASO TI Equity	36,59	17,60	BOSSA TI Equity	4,62	25,00
KLMSN TI Equity	34,04	50,00	GSRAY TI Equity	4,69	86,54
PINSU TI Equity	34,01	22,79	YAZIC TI Equity	4,71	132,03
ATAGY TI Equity	28,29	109,33	FENER TI Equity	4,91	117,44
DGZTE TI Equity	27,18	47,69	CEMTS TI Equity	4,93	85,24
ZOREN TI Equity	26,98	16,55	KRDMA TI Equity	4,99	- 7,08
METUR TI Equity	26,46	86,29	TUPRS TI Equity	5,20	96,53
TIRE TI Equity	26,31	1,86	FINBN TI Equity	5,40	299,22
VKGYO TI Equity	23,48	196,87	EGGUB TI Equity	5,41	46,86
VAKKO TI Equity	22,52	167,35	IZOCM TI Equity	5,60	183,95
TCELL TI Equity	22,40	11,53	ERBOS TI Equity	5,65	9,84
ULKER TI Equity	22,10	- 2,67	USAK TI Equity	5,73	40,63

	Short		Long
10 Equity	52,1		72,7
20 Equity	58,4		177,4
30 Equity	60,9		151,7

	Yearly Gain/Loss
10 Equity	20,68
20 Equity	118,93
30 Equity	90,86

APPENDIX 6: P/E RESULTS IN 2005

2005					
Equity Name	Highest P/E	Returns (%)	Equity Name	Lowest P/E	Returns (%)
ATEKS TI Equity	1.153,85	- 18,67	MAKTK TI Equity	1,97	- 52,63
TEKTU TI Equity	236,97	- 38,72	ADNAC TI Equity	2,78	- 7,33
EGSER TI Equity	132,86	64,52	TTRAK TI Equity	4,87	61,86
BURCE TI Equity	127,84	- 25,61	BOYP TI Equity	4,94	70,71
TUKAS TI Equity	117,78	- 21,70	TSPOR TI Equity	5,05	0,81
ZOREN TI Equity	107,37	- 28,21	PEGYO TI Equity	5,06	- 22,41
PENGD TI Equity	104,65	- 19,05	DOHOL TI Equity	5,09	7,60
DENCM TI Equity	104,13	- 15,47	GSRAY TI Equity	5,22	- 30,21
RHEAG TI Equity	103,33	- 23,13	EGCYO TI Equity	5,29	14,53
KRDMB TI Equity	102,24	0,00	PETUN TI Equity	6,12	28,26
MARTI TI Equity	99,25	- 21,36	SKTAS TI Equity	6,29	- 20,40
FMIZP TI Equity	92,40	2,68	AKGRT TI Equity	6,34	10,10
KENT TI Equity	87,95	- 14,68	UNYEC TI Equity	6,48	8,01
KRDMA TI Equity	84,83	13,73	DOAS TI Equity	6,76	- 10,78
METRO TI Equity	67,87	41,67	GENTS TI Equity	7,24	5,49
AYEN TI Equity	66,99	- 21,17	MRDIN TI Equity	7,35	21,91
GUBRF TI Equity	60,28	9,32	AGYO TI Equity	7,52	- 27,08
METUR TI Equity	59,64	- 27,41	CEMTS TI Equity	7,83	- 7,48
CMBTN TI Equity	52,48	- 36,81	ISGSY TI Equity	7,90	8,47
KLNMA TI Equity	52,12	- 25,37	ATAGY TI Equity	7,95	- 34,98
KRDMD TI Equity	46,55	- 7,14	ARENA TI Equity	7,96	- 12,60
KIPA TI Equity	44,96	118,63	YAZIC TI Equity	7,99	1,10
DGZTE TI Equity	44,54	- 47,66	ADEL TI Equity	8,16	18,05
GUSGR TI Equity	40,75	- 24,00	ALCAR TI Equity	8,27	15,30
ICBCT TI Equity	37,94	- 10,75	YUNSA TI Equity	8,43	8,76
PRKME TI Equity	36,04	- 3,52	TRCAS TI Equity	8,55	52,78
YKGYO TI Equity	35,35	- 33,33	CLEBI TI Equity	8,71	25,89
DGGYO TI Equity	31,46	- 15,38	USAS TI Equity	8,83	- 25,30
VAKKO TI Equity	31,00	17,56	PINSU TI Equity	8,83	22,73
DEVA TI Equity	30,40	24,59	KORDS TI Equity	8,85	- 13,48

	Short		Long
10 Equity	- 12,6		7,1
20 Equity	- 10,3		1,2
30 Equity	- 6,2		3,9

	Yearly Gain/Loss
10 Equity	19,72
20 Equity	11,49
30 Equity	10,14

APPENDIX 7: P/E RESULTS IN 2006

2006					
Equity Name	Highest P/E	Returns (%)	Equity Name	Lowest P/E	Returns (%)
BFREN TI Equity	783,67	0,16	ADNAC TI Equity	1,52	2,66
VESTL TI Equity	197,46	- 21,20	USAS TI Equity	1,70	4,23
GLRYH TI Equity	173,58	2,53	GSRAY TI Equity	2,07	37,06
METRO TI Equity	99,05	37,70	TRGAS TI Equity	2,20	88,87
KENT TI Equity	97,70	4,03	AYGAZ TI Equity	2,67	61,57
ESCOM TI Equity	96,35	- 2,16	KRDMD TI Equity	2,88	165,38
KUTPO TI Equity	74,52	- 11,50	ERBOS TI Equity	3,13	66,07
GUSGR TI Equity	73,05	49,80	TSPOR TI Equity	3,40	79,25
TIRE TI Equity	55,74	114,78	DOHOL TI Equity	3,75	- 0,45
RYSAS TI Equity	53,82	45,05	AGYO TI Equity	4,07	49,86
VAKKO TI Equity	47,30	- 18,18	COMDO TI Equity	5,01	- 5,45
NTHOL TI Equity	43,51	87,10	GSDDE TI Equity	5,03	- 3,36
MGROS TI Equity	40,99	27,63	PETUN TI Equity	5,04	74,44
DITAS TI Equity	40,54	3,84	EGEEN TI Equity	5,08	- 7,05
FMIZP TI Equity	35,30	- 24,12	BOLUC TI Equity	5,10	- 2,98
MIPAZ TI Equity	34,95	3,98	ALCTL TI Equity	5,13	1,69
DENCM TI Equity	34,62	- 8,93	BAKAB TI Equity	5,30	- 28,65
ANHYT TI Equity	33,64	2,65	BSOKE TI Equity	5,39	0,96
CCOLA TI Equity	31,39	26,99	IPEKE TI Equity	5,48	70,83
ICBCT TI Equity	30,59	19,74	CEMTS TI Equity	5,51	7,22
TOASO TI Equity	29,91	27,96	DGGYO TI Equity	5,51	- 6,22
PRKAB TI Equity	28,85	- 8,25	YUNSA TI Equity	5,52	- 14,12
DOAS TI Equity	28,44	54,59	UNYEC TI Equity	5,58	59,88
ALGYO TI Equity	27,81	6,14	GENTS TI Equity	5,61	5,49
IHEVA TI Equity	27,37	369,61	TTRAK TI Equity	5,66	27,57
ECILC TI Equity	27,26	- 4,59	PARSN TI Equity	5,71	59,09
BIMAS TI Equity	26,36	42,93	ISGSY TI Equity	5,72	- 22,51
ATAGY TI Equity	23,69	- 46,02	SARKY TI Equity	5,75	- 14,97
NETAS TI Equity	23,12	- 6,39	THYAO TI Equity	5,76	40,98
ANACM TI Equity	22,89	6,09	KONYA TI Equity	5,81	- 25,44

	Short	Long
10 Equity	21,9	55,5
20 Equity	17,0	33,1
30 Equity	26,1	25,7

	Yearly Gain/Loss
10 Equity	33,53
20 Equity	16,11
30 Equity	- 0,33

APPENDIX 8: P/E RESULTS IN 2007

2007					
Equity Name	Highest P/E	Returns (%)	Equity Name	Lowest P/E	Returns (%)
PENGD TI Equity	2.314,29	- 72,31	ADNAC TI Equity	1,02	- 37,55
TIRE TI Equity	960,34	4,85	VAKKO TI Equity	1,75	- 49,21
SILVR TI Equity	446,81	- 78,10	ECILC TI Equity	2,11	- 45,77
SANKO TI Equity	253,54	- 54,67	NTTUR TI Equity	2,28	- 52,59
KARSN TI Equity	248,15	- 71,37	ECZYT TI Equity	2,63	- 36,10
BFREN TI Equity	222,22	- 61,75	KERVT TI Equity	2,76	7,45
KUTPO TI Equity	220,17	- 52,15	GSRAY TI Equity	2,83	36,55
KLMSN TI Equity	115,60	- 15,25	AYGAZ TI Equity	2,99	- 54,18
METRO TI Equity	101,56	- 52,31	CIMSA TI Equity	4,03	- 51,79
AKSUE TI Equity	95,82	- 59,40	AVGYO TI Equity	4,06	- 63,29
CELHA TI Equity	87,50	- 21,25	GSDDE TI Equity	4,59	- 69,57
ESCOM TI Equity	83,80	- 49,72	NUGYO TI Equity	4,63	- 58,22
ERSU TI Equity	75,00	- 63,10	CMENT TI Equity	4,83	- 43,52
AKSA TI Equity	66,00	- 40,81	KCHOL TI Equity	4,83	- 52,55
ALCTL TI Equity	63,54	- 64,56	ISFIN TI Equity	4,84	- 62,52
KENT TI Equity	62,36	- 29,32	KARTN TI Equity	4,98	- 9,88
SNGYO TI Equity	60,58	- 78,78	GUBRF TI Equity	5,05	163,64
FMIZP TI Equity	58,22	- 37,38	ERBOS TI Equity	5,10	- 51,95
OZGYO TI Equity	51,09	- 63,91	NTHOL TI Equity	5,13	- 74,14
ALGYO TI Equity	46,40	- 68,42	BANVT TI Equity	5,21	- 47,33
GUSGR TI Equity	38,32	- 29,19	MRDIN TI Equity	5,25	- 22,35
TATGD TI Equity	38,22	- 60,97	AKGRT TI Equity	5,36	- 53,80
DGZTE TI Equity	37,15	- 51,34	KONYA TI Equity	5,38	- 23,79
IHEVA TI Equity	35,05	- 74,09	ARENA TI Equity	5,58	- 61,22
SEKFK TI Equity	35,02	- 70,19	THYAO TI Equity	5,67	- 33,72
RYSAS TI Equity	31,88	- 82,73	ADEL TI Equity	5,71	- 33,93
KORDS TI Equity	29,86	- 64,56	EGCYO TI Equity	5,71	- 66,33
GEREL TI Equity	29,05	- 45,90	BRSAN TI Equity	5,96	- 32,25
COMDO TI Equity	27,53	13,21	BOLUC TI Equity	6,06	- 39,27
BOYP TI Equity	27,17	- 59,73	KRDMD TI Equity	6,09	- 63,77

	Short		Long
10 Equity	- 51,2		- 34,6
20 Equity	- 51,5		- 32,6
30 Equity	- 51,8		- 36,1

	Yearly Gain/Loss
10 Equity	16,60
20 Equity	18,86
30 Equity	15,74

APPENDIX 9: P/E RESULTS IN 2008

2008					
Equity Name	Highest P/E	Returns (%)	Equity Name	Lowest P/E	Returns (%)
BURCE TI Equity	290,32	19,66	ADNAC TI Equity	0,87	105,58
SARKY TI Equity	118,71	85,03	THYAO TI Equity	0,88	409,95
TAVHL TI Equity	104,94	85,86	GSDDE TI Equity	0,88	219,34
BSOKE TI Equity	92,27	81,26	DYOBY TI Equity	0,95	83,34
OLMIP TI Equity	39,69	0,79	KRDMD TI Equity	1,07	104,51
DERIM TI Equity	39,67	32,49	ISFIN TI Equity	1,26	170,28
FINBN TI Equity	39,41	49,82	KRDMA TI Equity	1,31	112,15
ICBCT TI Equity	38,52	120,83	KRDMB TI Equity	1,33	111,31
DGATE TI Equity	38,28	105,00	IZMDC TI Equity	1,42	81,52
ANACM TI Equity	36,62	63,48	DGGYO TI Equity	1,48	141,30
KENT TI Equity	33,01	48,85	USAS TI Equity	1,56	82,11
ASLAN TI Equity	31,38	59,90	ALGYO TI Equity	1,73	230,87
ULKER TI Equity	30,14	101,77	ADEL TI Equity	1,84	202,50
AKSUE TI Equity	29,26	142,61	ISGSY TI Equity	1,85	106,72
ASELS TI Equity	28,52	296,96	NUGYO TI Equity	1,99	171,91
LINK TI Equity	26,06	93,69	PRKME TI Equity	2,16	110,37
AYGAZ TI Equity	23,40	186,07	BAGFS TI Equity	2,21	69,79
EREGL TI Equity	22,38	52,12	ISMEN TI Equity	2,24	265,28
DOHOL TI Equity	21,91	79,19	CEMTS TI Equity	2,25	87,68
BIMAS TI Equity	21,44	119,38	KAREL TI Equity	2,30	247,14
ARCLK TI Equity	20,70	279,96	VKGYO TI Equity	2,42	345,88
AFYON TI Equity	20,48	170,59	AKSA TI Equity	2,43	171,60
BTCIM TI Equity	20,17	15,69	PARSN TI Equity	2,51	84,50
CCOLA TI Equity	19,85	137,21	KCHOL TI Equity	2,61	102,44
PKART TI Equity	19,66	87,92	PETUN TI Equity	2,76	125,88
GUSGR TI Equity	17,59	61,54	GSRAY TI Equity	2,76	34,67
KUTPO TI Equity	17,35	306,90	ANSGR TI Equity	2,77	91,63
FENER TI Equity	17,13	14,46	ALCAR TI Equity	2,96	81,28
OZGYO TI Equity	16,99	114,48	SKBNK TI Equity	2,99	158,32
DGKLB TI Equity	16,46	102,50	TOASO TI Equity	3,27	316,70

	Short	Long
10 Equity	64,4	153,9
20 Equity	91,2	155,7
30 Equity	103,9	154,2

	Yearly Gain/Loss
10 Equity	89,50
20 Equity	64,44
30 Equity	50,35

APPENDIX 10: P/E RESULTS IN 2009

2009					
Equity Name	Highest P/E	Returns (%)	Equity Name	Lowest P/E	Returns (%)
DGKLB TI Equity	1.350,00	54,32	GSDDE TI Equity	1,27	321,58
TTTFTT TI Equity	791,21	- 50,87	GLYHO TI Equity	1,92	43,84
PIMAS TI Equity	702,04	3,78	ADNAC TI Equity	2,22	68,85
RHEAG TI Equity	345,00	809,63	ISFIN TI Equity	2,47	57,71
KENT TI Equity	285,47	300,00	EGCYO TI Equity	2,54	52,73
DURDO TI Equity	193,88	43,68	IHLAS TI Equity	2,55	256,86
GOODY TI Equity	125,85	90,17	ATAGY TI Equity	2,68	21,51
BUCIM TI Equity	107,14	1,67	VAKFN TI Equity	2,69	65,41
IHEVA TI Equity	103,67	18,58	SEKFK TI Equity	3,52	43,21
FMIZP TI Equity	74,51	60,04	ARENA TI Equity	3,82	40,08
CEMTS TI Equity	70,83	36,47	GSRAY TI Equity	3,89	174,03
YATAS TI Equity	70,64	21,21	USAK TI Equity	3,95	70,83
GOLTS TI Equity	60,70	73,46	TSKB TI Equity	4,18	70,06
MAALT TI Equity	60,19	81,01	ADEL TI Equity	4,32	130,77
BSOKE TI Equity	57,95	38,21	EMKEL TI Equity	4,50	11,46
KRSTL TI Equity	55,00	117,12	ECZYT TI Equity	4,65	6,41
KLNMA TI Equity	44,67	46,55	ECILC TI Equity	4,72	2,80
BTCIM TI Equity	43,60	22,95	PETUN TI Equity	4,78	70,36
ANACM TI Equity	41,93	75,53	DGATE TI Equity	4,82	93,66
AKENR TI Equity	37,85	18,76	KAREL TI Equity	4,90	64,09
DGGYO TI Equity	34,89	54,96	VESBE TI Equity	4,97	28,54
SARKY TI Equity	34,52	53,31	BAKAB TI Equity	4,98	22,98
RYSAS TI Equity	33,45	- 3,50	ISMEN TI Equity	5,16	53,35
EGPRO TI Equity	33,02	46,42	ARMDA TI Equity	5,18	115,25
METRO TI Equity	32,76	- 27,88	CRDFA TI Equity	5,20	39,90
MGROS TI Equity	32,30	54,82	TSPOR TI Equity	5,25	182,60
ICBCT TI Equity	27,56	1,89	NTTUR TI Equity	5,26	- 15,83
PKART TI Equity	26,22	- 8,06	MERKO TI Equity	5,28	- 7,80
TKFEN TI Equity	26,20	32,83	AYGAZ TI Equity	5,39	52,80
SANKO TI Equity	25,72	69,86	SELEC TI Equity	5,54	30,48

	Short	Long
10 Equity	133,1	97,2
20 Equity	93,1	83,3
30 Equity	71,2	72,3

	Yearly Gain/Loss
10 Equity	- 35,92
20 Equity	- 9,80
30 Equity	1,05

64

APPENDIX 11: P/E RESULTS IN 2010

2010					
Equity Name	Highest P/E	Returns (%)	Equity Name	Lowest P/E	Returns (%)
ASLAN TI Equity	1.214,86	- 32,72	GLYHO TI Equity	1,12	2,86
AFYON TI Equity	1.024,79	- 52,46	PEGYO TI Equity	1,62	- 48,24
OZGYO TI Equity	718,75	- 20,87	IPEKE TI Equity	2,06	- 40,54
AKGRT TI Equity	477,08	- 28,82	KOZAA TI Equity	2,13	- 42,86
BFREN TI Equity	347,36	- 34,74	ADNAC TI Equity	2,76	- 26,74
IHYAY TI Equity	280,60	- 67,02	NTTUR TI Equity	3,17	- 36,14
ALCTL TI Equity	277,78	- 11,08	DOHOL TI Equity	4,15	- 52,68
PKART TI Equity	232,11	- 13,83	CRDFA TI Equity	4,55	- 6,46
DYOBY TI Equity	161,47	- 51,70	AGYO TI Equity	4,92	- 26,67
TUKAS TI Equity	133,33	- 18,97	VAKFN TI Equity	5,05	- 16,82
GLRYH TI Equity	129,27	7,55	OLMIP TI Equity	5,47	0,20
DENCM TI Equity	123,53	- 60,95	SKBNK TI Equity	5,90	- 31,26
MGROS TI Equity	122,50	- 56,97	ARMDA TI Equity	6,00	6,08
TEKTU TI Equity	119,79	- 29,57	ISFIN TI Equity	6,03	- 4,92
GOLTS TI Equity	108,01	- 28,32	ARENA TI Equity	6,04	- 6,61
KERVT TI Equity	96,35	- 33,99	KAREL TI Equity	6,13	2,32
DURDO TI Equity	83,49	- 36,63	BOYP TI Equity	6,38	86,43
ERSU TI Equity	82,46	- 9,57	MNDRS TI Equity	6,42	64,20
KLNMA TI Equity	80,23	- 42,27	TRGYO TI Equity	6,59	- 36,09
PARSN TI Equity	74,12	21,16	EKGYO TI Equity	6,83	2,03
RYGYO TI Equity	68,35	- 19,09	TTRAK TI Equity	6,97	55,79
SILVR TI Equity	67,83	- 45,71	ATAGY TI Equity	7,08	11,50
MAKTK TI Equity	67,43	- 70,00	ADEL TI Equity	7,30	67,34
YATAS TI Equity	62,78	- 57,86	PETUN TI Equity	7,45	- 6,03
KRDMB TI Equity	55,41	- 7,52	BAKAB TI Equity	7,51	28,49
BOSSA TI Equity	52,79	2,40	SISE TI Equity	7,56	20,54
KRDMA TI Equity	51,24	- 8,94	GENTS TI Equity	7,70	27,79
IHGZT TI Equity	50,15	- 65,34	SASA TI Equity	7,93	14,29
ESCOM TI Equity	49,79	102,54	ULKER TI Equity	7,97	- 0,88
AKSEN TI Equity	49,13	- 44,66	TSKB TI Equity	8,02	- 17,57

	Short			Long
10 Equity	- 33,2			- 29,4
20 Equity	- 30,1			- 10,6
30 Equity	- 27,2			- 0,4

	Yearly Gain/Loss
10 Equity	3,79
20 Equity	19,49
30 Equity	26,84

APPENDIX 12: P/E RESULTS IN 2011

2011					
Equity Name	Highest P/E	Returns (%)	Equity Name	Lowest P/E	Returns (%)
HATEK TI Equity	30.000,00	- 29,05	AKFGY TI Equity	1,35	12,93
TIRE TI Equity	9.800,00	12,24	ULKER TI Equity	2,20	94,05
KENT TI Equity	518,91	5,61	ISGSY TI Equity	2,31	65,49
IHLGM TI Equity	345,78	79,09	GARFA TI Equity	2,43	90,50
INTEM TI Equity	244,90	11,57	ADNAC TI Equity	2,53	34,19
KRSTL TI Equity	209,09	0,00	KOZAA TI Equity	2,93	244,05
BURCE TI Equity	204,29	0,90	IPEKE TI Equity	3,03	328,41
ATEKS TI Equity	202,44	69,88	LINK TI Equity	3,14	- 16,24
ASLAN TI Equity	185,79	19,17	NTTUR TI Equity	3,25	16,13
FENER TI Equity	168,07	1,30	KRDMD TI Equity	3,60	73,28
IHGZT TI Equity	154,50	12,23	SNGYO TI Equity	3,68	47,47
SAMAT TI Equity	147,22	- 45,14	CRDFA TI Equity	4,08	44,84
KIPA TI Equity	131,58	- 2,43	DGATE TI Equity	4,15	6,58
GUSGR TI Equity	106,04	21,08	KLGYO TI Equity	4,17	- 7,76
THYAO TI Equity	105,92	195,28	MNDRS TI Equity	4,28	- 36,17
BRKSN TI Equity	96,70	34,30	VAKBN TI Equity	4,50	88,77
AVGYO TI Equity	90,91	- 52,00	DESPC TI Equity	4,51	45,32
GOLTS TI Equity	82,57	28,79	SODA TI Equity	4,54	- 15,49
SILVR TI Equity	78,51	- 4,21	DOAS TI Equity	4,58	206,26
NTHOL TI Equity	75,12	15,29	BOSSA TI Equity	4,70	- 9,95
CLEBI TI Equity	60,57	6,32	ARMDA TI Equity	4,84	39,73
NUGYO TI Equity	50,99	402,60	GSDHO TI Equity	5,01	40,00
KONYA TI Equity	49,49	8,58	TRGYO TI Equity	5,03	83,56
TSPOR TI Equity	48,85	- 4,44	VAKFN TI Equity	5,07	7,54
EUHOL TI Equity	48,31	15,00	YKBNK TI Equity	5,08	93,31
NETAS TI Equity	44,21	- 5,85	TRCAS TI Equity	5,10	47,90
PRKAB TI Equity	42,54	- 1,95	PRKME TI Equity	5,12	96,30
CCOLA TI Equity	41,09	64,76	EGEEN TI Equity	5,14	41,45
TEKTU TI Equity	39,90	1,23	BAKAB TI Equity	5,18	- 7,53
AVOD TI Equity	39,72	- 70,72	KRDMA TI Equity	5,31	31,87

	Short	Long
10 Equity	17,1	94,3
20 Equity	18,7	65,6
30 Equity	26,3	59,6

	Yearly Gain/Loss
10 Equity	77,20
20 Equity	46,94
30 Equity	33,24

APPENDIX 13: P/E RESULTS IN 2012

2012					
Equity Name	Highest P/E	Returns (%)	Equity Name	Lowest P/E	Returns (%)
ANELE TI Equity	21.300,00	- 53,05	ZOREN TI Equity	0,96	- 9,57
TEKTU TI Equity	8.200,00	- 30,49	GLYHO TI Equity	1,87	- 0,05
USAS TI Equity	405,00	- 36,23	AGYO TI Equity	2,35	- 7,92
PINSU TI Equity	399,11	- 12,09	EDIP TI Equity	2,52	- 35,14
ASUZU TI Equity	388,24	- 20,83	YAZIC TI Equity	2,80	19,50
BRKSN TI Equity	228,31	- 64,80	ADNAC TI Equity	2,86	- 20,35
BEYAZ TI Equity	196,46	- 53,87	ISGSY TI Equity	3,22	37,58
KENT TI Equity	194,83	- 47,79	HURGZ TI Equity	3,37	- 34,78
CELHA TI Equity	168,50	- 35,61	DGKLB TI Equity	3,47	29,46
PETKM TI Equity	138,87	- 1,44	METUR TI Equity	3,59	- 33,33
TATGD TI Equity	117,17	6,90	DGGYO TI Equity	4,11	151,22
BERA TI Equity	114,27	- 54,93	RYGYO TI Equity	4,35	- 34,05
VKGYO TI Equity	88,83	121,74	CRDFA TI Equity	4,66	11,30
ASLAN TI Equity	77,50	- 30,15	TRGYO TI Equity	4,81	- 11,18
ORGE TI Equity	75,31	- 81,39	ARENA TI Equity	4,91	- 10,68
CEMAS TI Equity	74,05	- 39,32	ARMDA TI Equity	5,03	- 5,61
VAKKO TI Equity	73,54	- 35,25	KLGYO TI Equity	5,48	- 43,58
PRZMA TI Equity	71,38	28,42	AKSA TI Equity	5,65	65,45
MERKO TI Equity	63,27	- 6,45	KRDMD TI Equity	5,70	1,00
CMENT TI Equity	53,50	- 23,35	GSDHO TI Equity	5,75	12,99
ESCOM TI Equity	50,77	- 59,80	NTTUR TI Equity	5,85	22,22
MRGYO TI Equity	49,53	- 28,30	AKSUE TI Equity	6,04	29,80
FMIZP TI Equity	46,66	- 32,25	GUBRF TI Equity	6,25	- 22,25
USAK TI Equity	46,23	- 42,22	KRDMA TI Equity	6,43	61,48
BLCYT TI Equity	44,12	- 42,44	DESPC TI Equity	6,73	- 28,98
MGROS TI Equity	43,88	- 25,58	TSGYO TI Equity	6,86	- 5,13
IZOCM TI Equity	43,74	- 37,11	ISMEN TI Equity	6,86	- 11,54
BUCIM TI Equity	43,36	- 13,67	EGSER TI Equity	6,89	44,87
NUGYO TI Equity	43,19	- 48,19	IHEVA TI Equity	6,92	- 44,59
BIZIM TI Equity	42,61	- 13,81	HEKTS TI Equity	7,12	0,61

	Short		Long
10 Equity	- 35,6	-	5,5
20 Equity	- 23,5		4,1
30 Equity	- 27,1		4,3

	Yearly Gain/Loss
10 Equity	30,16
20 Equity	27,61
30 Equity	31,40

APPENDIX 14: P/E RESULTS IN 2013

2013					
Equity Name	Highest P/E	Returns (%)	Equity Name	Lowest P/E	Returns (%)
TEKTU TI Equity	2.850,00	8,77	ODAS TI Equity	0,73	62,30
MEPET TI Equity	659,35	86,66	METRO TI Equity	1,53	- 7,04
GOZDE TI Equity	594,19	13,12	NTTUR TI Equity	1,76	45,45
VKGYO TI Equity	278,37	- 66,30	AKFGY TI Equity	1,84	32,20
TMPOL TI Equity	166,79	43,85	ASUZU TI Equity	2,07	60,50
NETAS TI Equity	158,70	23,98	ESCOM TI Equity	2,20	66,25
ATPET TI Equity	158,39	262,03	ALGYO TI Equity	2,27	9,72
BAGFS TI Equity	149,60	83,23	YGYO TI Equity	2,47	48,78
TATGD TI Equity	135,52	61,29	YAZIC TI Equity	2,52	4,93
ANELE TI Equity	100,00	28,00	RYSAS TI Equity	2,60	23,08
PRZMA TI Equity	95,33	- 53,85	DENGE TI Equity	2,61	57,71
CLEBI TI Equity	91,89	138,53	ISGSY TI Equity	2,63	- 6,92
AFYON TI Equity	79,41	208,41	ADNAC TI Equity	2,78	22,88
TIRE TI Equity	78,46	15,69	SASA TI Equity	3,03	121,59
MAALT TI Equity	63,71	13,98	MRGYO TI Equity	3,08	0,00
DMSAS TI Equity	62,92	25,00	YGGYO TI Equity	3,30	35,16
ASLAN TI Equity	61,56	31,62	GLRYH TI Equity	3,36	114,04
LKMNH TI Equity	56,94	- 4,50	RYGYO TI Equity	3,62	67,25
SRVGY TI Equity	54,94	- 3,23	DESPC TI Equity	3,76	92,40
PETKM TI Equity	54,65	46,41	KUYAS TI Equity	4,09	11,86
ATAGY TI Equity	45,22	33,38	MNDRS TI Equity	4,10	90,48
INDES TI Equity	44,23	40,35	ARENA TI Equity	4,26	80,75
DGGYO TI Equity	42,74	3,40	PAGYO TI Equity	4,41	10,29
ECZYT TI Equity	39,40	24,42	YKBNK TI Equity	4,43	33,85
VANGD TI Equity	38,56	- 7,19	BOYP TI Equity	4,57	2,05
VAKFN TI Equity	38,39	23,96	ARMDA TI Equity	4,72	148,82
PGSUS TI Equity	37,04	- 8,68	USAS TI Equity	4,77	- 37,86
TGSAS TI Equity	37,03	3,25	DGZTE TI Equity	5,04	9,16
KRDMB TI Equity	35,59	- 14,64	CIMSA TI Equity	5,09	50,47
KONYA TI Equity	34,90	10,46	AKGRT TI Equity	5,11	2,18

	Short	Long
10 Equity	54,5	34,6
20 Equity	48,1	43,1
30 Equity	35,7	41,7

	Yearly Gain/Loss
10 Equity	- 19,85
20 Equity	- 5,03
30 Equity	6,03

68

APPENDIX 15: P/E RESULTS IN 2014

2014					
Equity Name	Highest P/E	Returns (%)	Equity Name	Lowest P/E	Returns (%)
IHLGM TI Equity	1.370,00	- 45,26	MRGYO TI Equity	0,20	5,26
PETKM TI Equity	975,19	16,20	SASA TI Equity	0,59	6,67
MRSHL TI Equity	821,93	- 14,27	EUHOL TI Equity	1,09	- 50,00
ACSEL TI Equity	700,00	30,16	METRO TI Equity	1,13	1,52
ICBCT TI Equity	643,16	38,83	IHGZT TI Equity	1,23	- 6,38
PKART TI Equity	395,59	17,10	ATEKS TI Equity	1,49	11,23
KRSTL TI Equity	232,89	- 5,65	ADNAC TI Equity	1,53	7,00
OYLUM TI Equity	185,00	- 12,16	TRGYO TI Equity	1,63	- 2,90
GSDHO TI Equity	161,20	- 11,72	EDIP TI Equity	1,64	- 14,74
KENT TI Equity	92,18	218,31	OZKGY TI Equity	1,96	7,70
MEPET TI Equity	81,17	- 62,84	NTTUR TI Equity	2,26	14,06
BIZIM TI Equity	70,17	- 32,71	GLRYH TI Equity	2,49	- 4,10
TSGYO TI Equity	69,90	- 19,44	ALGYO TI Equity	2,64	44,55
ATAGY TI Equity	63,66	36,10	EGCYO TI Equity	2,74	- 41,67
NTHOL TI Equity	63,62	- 12,09	IHYAY TI Equity	2,78	- 20,00
TUCLK TI Equity	61,64	- 33,90	YKGYO TI Equity	2,78	- 39,35
BOSSA TI Equity	60,00	- 26,69	KUTPO TI Equity	2,84	3,95
INTEM TI Equity	51,85	- 8,25	OZGYO TI Equity	2,85	8,62
IZFAS TI Equity	51,71	- 64,97	SILVR TI Equity	3,10	- 6,82
AVOD TI Equity	51,00	1,96	ISGYO TI Equity	3,23	40,82
DEVA TI Equity	48,17	84,76	MERKO TI Equity	3,48	17,46
AVGYO TI Equity	47,62	13,00	TATGD TI Equity	3,62	38,50
AKSEN TI Equity	45,08	- 13,31	SRVGY TI Equity	3,69	13,28
VERUS TI Equity	43,92	155,94	DGZTE TI Equity	3,79	94,49
LINK TI Equity	43,07	17,25	DENGE TI Equity	3,92	- 29,57
ASLAN TI Equity	42,41	18,67	ARSAN TI Equity	3,95	- 29,72
MGROS TI Equity	42,13	- 23,30	PAGYO TI Equity	4,06	24,79
CCOLA TI Equity	40,73	- 25,68	DAGI TI Equity	4,23	77,01
DENCM TI Equity	39,86	31,99	RYSAS TI Equity	4,30	- 11,84
BEREN TI Equity	39,13	19,21	KOZAL TI Equity	4,81	- 14,98

	Short		Long
10 Equity	23,2	-	3,5
20 Equity	0,4	-	1,7
30 Equity	9,6		4,8

	Yearly Gain/Loss
10 Equity	- 26,62
20 Equity	- 2,16
30 Equity	- 4,75

APPENDIX 16: P/E RESULTS IN 2015

2015					
Equity Name	Highest P/E	Returns (%)	Equity Name	Lowest P/E	Returns (%)
MEPET TI Equity	211,54	6,91	SASA TI Equity	0,64	126,34
TIRE TI Equity	173,42	- 12,41	OZGYO TI Equity	1,11	0,00
ISGSY TI Equity	154,81	- 6,83	GSDHO TI Equity	1,12	18,27
KENT TI Equity	127,50	- 41,83	METUR TI Equity	1,39	24,56
AVISA TI Equity	110,85	16,37	ADNAC TI Equity	1,47	47,59
KUYAS TI Equity	110,75	32,07	AKSGY TI Equity	1,49	32,57
EGGUB TI Equity	86,94	30,47	TRGYO TI Equity	1,70	31,38
TURGG TI Equity	84,16	- 16,10	ATEKS TI Equity	2,01	52,12
CCOLA TI Equity	80,74	- 10,56	ALGYO TI Equity	2,22	38,73
YGYO TI Equity	80,00	58,33	TTTFH TI Equity	2,23	- 16,82
MERKO TI Equity	74,00	- 23,65	DENGE TI Equity	2,28	- 25,98
AKSUE TI Equity	61,27	- 14,69	ISGYO TI Equity	2,35	4,97
TMPOL TI Equity	59,63	7,93	OZKGY TI Equity	2,43	0,54
BERA TI Equity	58,57	- 23,41	BAGFS TI Equity	2,47	- 23,19
BRKSN TI Equity	57,31	89,26	SRVGY TI Equity	2,60	21,28
ASLAN TI Equity	56,84	- 2,77	VAKFN TI Equity	2,64	71,77
DYOBY TI Equity	53,04	116,56	YYAPI TI Equity	2,64	18,67
GOLTS TI Equity	51,16	4,32	FLAP TI Equity	2,65	116,67
CELHA TI Equity	50,00	18,50	GLRYH TI Equity	2,70	- 23,08
SANEL TI Equity	49,75	- 9,69	EDIP TI Equity	2,71	- 2,47
TUCLK TI Equity	47,31	45,79	BEYAZ TI Equity	2,89	142,01
USAK TI Equity	46,74	6,98	AGYO TI Equity	2,92	96,97
ACSEL TI Equity	46,64	- 37,40	BNTAS TI Equity	3,02	129,53
CMBTN TI Equity	45,75	- 5,43	THYAO TI Equity	3,41	- 32,21
BRSAN TI Equity	43,37	39,66	OSTIM TI Equity	3,44	56,37
PEGYO TI Equity	43,33	2,56	BLCYT TI Equity	3,77	- 3,33
AFYON TI Equity	43,15	28,83	VERTU TI Equity	3,79	10,93
KARTN TI Equity	39,79	- 14,66	HLGYO TI Equity	4,01	- 5,35
KRSTL TI Equity	39,67	- 14,37	PAGYO TI Equity	4,03	9,88
ASELS TI Equity	39,60	51,18	KLGYO TI Equity	4,06	- 4,40

	Short	Long
10 Equity	5,6	35,5
20 Equity	10,9	25,7
30 Equity	10,7	30,5

	Yearly Gain/Loss
10 Equity	29,83
20 Equity	14,76
30 Equity	19,75

APPENDIX 17: P/E RESULTS IN 2016

2016					
Equity Name	Highest P/E	Returns (%)	Equity Name	Lowest P/E	Returns (%)
TURGG TI Equity	795,40	8,55	YYAPI TI Equity	1,00	14,61
TMPOL TI Equity	643,15	- 49,20	RYGYO TI Equity	1,25	89,55
ERSU TI Equity	482,35	59,76	TRGYO TI Equity	1,77	63,90
EDIP TI Equity	376,19	49,37	NUGYO TI Equity	2,00	15,29
KUYAS TI Equity	319,39	33,81	ADNAC TI Equity	2,16	11,03
BIZIM TI Equity	313,95	6,94	GSDHO TI Equity	2,50	30,91
KARTN TI Equity	253,76	10,30	ANACM TI Equity	2,57	73,24
BJKAS TI Equity	204,08	2,25	ANELE TI Equity	2,59	180,06
NTTUR TI Equity	197,01	- 100,00	DENGE TI Equity	2,64	313,46
CMENT TI Equity	166,05	29,50	ALGYO TI Equity	3,00	38,57
SEKUR TI Equity	151,72	- 2,27	DGZTE TI Equity	3,02	20,29
TIRE TI Equity	122,45	50,83	ISGYO TI Equity	3,15	- 1,56
MAALT TI Equity	111,57	- 0,52	AKSGY TI Equity	3,22	30,55
ISGSY TI Equity	105,63	16,00	METUR TI Equity	3,62	4,23
MRSHL TI Equity	94,16	50,14	SRVGY TI Equity	3,70	6,67
BRKSN TI Equity	84,43	- 20,92	MIPAZ TI Equity	3,80	125,00
AFYON TI Equity	79,10	- 1,64	MARKA TI Equity	3,84	87,78
BTCIM TI Equity	69,29	49,47	VAKBN TI Equity	3,90	56,77
SANEL TI Equity	68,08	- 3,39	IHLAS TI Equity	3,92	76,67
PRZMA TI Equity	64,90	- 30,47	HATEK TI Equity	3,95	38,06
GOLTS TI Equity	61,55	- 12,46	GLRYH TI Equity	4,36	28,89
ASLAN TI Equity	55,01	- 5,02	VAKFN TI Equity	4,59	69,22
ICBCT TI Equity	54,45	188,80	HALKB TI Equity	4,61	17,23
ACSEL TI Equity	47,98	- 12,65	ISCTR TI Equity	4,66	40,06
OTKAR TI Equity	45,92	- 5,24	ORGE TI Equity	4,78	74,06
ATEKS TI Equity	41,60	51,07	TRKCM TI Equity	4,83	103,38
AVISA TI Equity	35,89	- 4,86	ALBRK TI Equity	4,88	35,37
NETAS TI Equity	34,71	58,56	CRDFA TI Equity	5,04	0,68
OZKGY TI Equity	33,27	25,13	ALKA TI Equity	5,08	117,47
KONYA TI Equity	31,26	- 1,75	YKBNK TI Equity	5,12	26,53

	Short	Long
10 Equity	5,1	83,1
20 Equity	7,9	63,8
30 Equity	14,7	59,6

	Yearly Gain/Loss
10 Equity	77,93
20 Equity	55,83
30 Equity	44,93

APPENDIX 18: B/M RESULTS IN 2000

2000					
Equity Name	Lowest B/M	Returns (%)	Equity Name	Highest B/M	Returns (%)
TCELL TI Equity	0,10	13,00	DOHOL TI Equity	2.000,00	- 13,73
THYAO TI Equity	0,16	- 20,41	EGCYO TI Equity	20,49	70,49
EMKEL TI Equity	0,23	- 14,04	IHLGM TI Equity	13,21	106,60
PRKME TI Equity	0,27	- 30,00	SKTAS TI Equity	13,05	53,84
AEFES TI Equity	0,38	122,15	ADNAC TI Equity	9,25	49,39
NETAS TI Equity	0,38	- 25,07	MAKTK TI Equity	8,55	65,11
KCHOL TI Equity	0,40	78,12	MARTI TI Equity	8,18	129,02
MGROS TI Equity	0,40	45,93	KNFRT TI Equity	7,33	169,56
YYAPI TI Equity	0,41	- 24,93	IZMDC TI Equity	6,31	46,10
ALCTL TI Equity	0,44	2,82	SKBNK TI Equity	5,82	- 17,87
ALARK TI Equity	0,44	31,54	ALGYO TI Equity	5,67	116,08
AKSUE TI Equity	0,49	4,30	ICBCT TI Equity	5,56	- 3,88
TRCAS TI Equity	0,54	33,50	PETUN TI Equity	5,45	83,43
AYGAZ TI Equity	0,55	19,60	EDIP TI Equity	5,42	233,33
KERVT TI Equity	0,55	- 35,39	BSOKE TI Equity	5,36	77,78
AFYON TI Equity	0,57	39,90	TSKB TI Equity	5,18	23,09
YAZIC TI Equity	0,57	36,10	MERKO TI Equity	5,17	21,15
CLEBI TI Equity	0,58	195,04	FINBN TI Equity	4,99	75,40
FROTO TI Equity	0,58	38,63	NTHOL TI Equity	4,99	6,73
KENT TI Equity	0,61	290,24	BOSSA TI Equity	4,94	232,57
ASLAN TI Equity	0,62	9,52	NTTUR TI Equity	4,94	32,35
GOODY TI Equity	0,62	13,09	ALKA TI Equity	4,71	56,25
BANVT TI Equity	0,63	- 40,82	YGYO TI Equity	4,69	63,79
LOGO TI Equity	0,67	- 2,60	YKGYO TI Equity	4,42	46,39
AYEN TI Equity	0,73	52,81	GOLTS TI Equity	4,11	97,37
BUCIM TI Equity	0,73	100,00	PINSU TI Equity	4,10	125,43
PENGD TI Equity	0,75	4,35	DYOBY TI Equity	3,65	136,47
KARSN TI Equity	0,80	- 2,44	PEGYO TI Equity	3,54	102,50
KORDS TI Equity	0,81	15,57	EEYHO TI Equity	3,52	24,34
AVGYO TI Equity	0,83	96,66	ATEKS TI Equity	3,39	885,70

	Short	Long
10 Equity	14,8	65,9
20 Equity	40,1	76,2
30 Equity	34,9	103,2

	Yearly Gain/Loss
10 Equity	51,09
20 Equity	36,16
30 Equity	68,25

APPENDIX 19: B/M RESULTS IN 2001

2001					
Equity Name	Lowest B/M	Returns (%)	Equity Name	Highest B/M	Returns (%)
TCELL TI Equity	0,09	- 22,40	DOHOL TI Equity	2.000,00	- 18,88
KENT TI Equity	0,16	- 32,50	EGCYO TI Equity	12,02	- 34,87
AEFES TI Equity	0,17	- 35,42	SKTAS TI Equity	8,49	40,63
THYAO TI Equity	0,20	- 24,36	SKBNK TI Equity	7,09	- 55,92
CLEBI TI Equity	0,20	- 31,34	ADNAC TI Equity	6,49	19,25
KCHOL TI Equity	0,22	- 9,21	IHLGM TI Equity	6,39	- 16,67
EMKEL TI Equity	0,27	- 40,18	ICBCT TI Equity	5,79	- 37,88
MGROS TI Equity	0,28	- 30,00	MAKTK TI Equity	5,18	- 40,85
ALARK TI Equity	0,34	- 35,44	NTHOL TI Equity	4,67	- 53,19
ATEKS TI Equity	0,34	- 57,83	IHEVA TI Equity	4,45	261,84
BUCIM TI Equity	0,36	10,44	IHLAS TI Equity	4,36	24,99
PRKME TI Equity	0,38	- 20,24	IZMDC TI Equity	4,32	- 19,11
TRCAS TI Equity	0,40	- 19,15	MERKO TI Equity	4,27	- 38,41
USAS TI Equity	0,41	- 18,42	TSKB TI Equity	4,21	30,67
AFYON TI Equity	0,41	9,09	MIPAZ TI Equity	4,01	- 20,87
CMENT TI Equity	0,41	- 16,49	NTTUR TI Equity	3,73	- 60,00
FROTO TI Equity	0,42	- 8,20	YATAS TI Equity	3,73	12,00
YAZIC TI Equity	0,42	- 1,76	ATAGY TI Equity	3,65	10,29
AVGYO TI Equity	0,42	- 70,61	ALYAG TI Equity	3,63	- 22,45
ALCTL TI Equity	0,43	- 55,07	MARTI TI Equity	3,57	- 28,08
TBORG TI Equity	0,43	- 15,97	PETUN TI Equity	3,41	- 24,07
AYGAZ TI Equity	0,46	- 2,11	YKGYO TI Equity	3,02	- 24,51
AKSUE TI Equity	0,49	- 39,37	BSOKE TI Equity	3,02	- 0,83
TOASO TI Equity	0,51	- 35,58	ALKA TI Equity	3,01	105,54
AYEN TI Equity	0,51	- 29,56	YGYO TI Equity	2,87	73,68
NETAS TI Equity	0,52	- 50,90	FINBN TI Equity	2,84	- 21,05
YYAPI TI Equity	0,55	- 37,76	IEYHO TI Equity	2,83	- 47,30
GOODY TI Equity	0,55	15,79	AKGRT TI Equity	2,75	- 19,00
EGPRO TI Equity	0,56	50,00	KNFRT TI Equity	2,72	- 17,74
ZOREN TI Equity	0,57	17,33	ALGYO TI Equity	2,62	- 22,82

	Short		Long
10 Equity	- 31,9		6,3
20 Equity	- 25,5		- 2,4
30 Equity	- 21,2		- 1,5

	Yearly Gain/Loss
10 Equity	38,21
20 Equity	23,08
30 Equity	19,72

APPENDIX 20: B/M RESULTS IN 2002

2002					
Equity Name	Lowest B/M	Returns (%)	Equity Name	Highest B/M	Returns (%)
NTTUR TI Equity	0,03	93,33	EGCYO TI Equity	32,68	133,68
EGSER TI Equity	0,04	160,53	SKTAS TI Equity	9,56	5,78
ENKAI TI Equity	0,08	77,65	ADNAC TI Equity	5,00	110,41
TCELL TI Equity	0,10	44,33	IHLGM TI Equity	4,84	42,22
FROTO TI Equity	0,12	168,57	NTHOL TI Equity	4,64	72,73
METUR TI Equity	0,15	- 83,35	MERKO TI Equity	4,35	89,69
PENGD TI Equity	0,18	30,12	TSKB TI Equity	4,24	80,33
EGPRO TI Equity	0,19	- 0,72	SISE TI Equity	3,71	80,65
TBORG TI Equity	0,19	- 6,25	YKBNK TI Equity	3,43	110,91
ARSAN TI Equity	0,24	- 70,99	MARTI TI Equity	3,35	61,90
PIMAS TI Equity	0,25	74,78	IZMDC TI Equity	3,29	80,22
AEFES TI Equity	0,26	72,15	GSDHO TI Equity	3,06	29,27
LINK TI Equity	0,28	- 58,04	PETUN TI Equity	2,99	28,78
ASLAN TI Equity	0,31	22,22	ALGYO TI Equity	2,94	27,41
BUCIM TI Equity	0,32	1,12	MNDRS TI Equity	2,65	9,76
ALCTL TI Equity	0,34	70,73	PINSU TI Equity	2,61	46,44
AFYON TI Equity	0,36	39,33	AKGRT TI Equity	2,59	136,07
YYAPI TI Equity	0,37	- 1,17	TEKTU TI Equity	2,59	36,23
CMENT TI Equity	0,40	- 20,74	BSOKE TI Equity	2,54	8,18
FMIZP TI Equity	0,40	30,42	FINBN TI Equity	2,51	141,15
DERIM TI Equity	0,43	- 25,77	EDIP TI Equity	2,49	19,23
ASELS TI Equity	0,44	- 14,58	YKGYO TI Equity	2,30	37,31
SANKO TI Equity	0,45	27,38	MAKTK TI Equity	2,25	30,95
DGKLB TI Equity	0,45	13,48	NUGYO TI Equity	2,17	74,69
ESCOM TI Equity	0,48	- 36,21	SAHOL TI Equity	2,16	92,53
ALARK TI Equity	0,48	106,58	EREGL TI Equity	2,16	147,76
THYAO TI Equity	0,48	31,36	INTEM TI Equity	2,12	35,63
BURCE TI Equity	0,49	11,19	CEMTS TI Equity	2,10	161,54
BAKAB TI Equity	0,50	- 11,64	MIPAZ TI Equity	2,08	145,60
ICBCT TI Equity	0,50	34,45	DOHOL TI Equity	2,01	114,00

	Short	Long
10 Equity	41,3	78,8
20 Equity	32,2	66,6
30 Equity	26,0	73,0

	Yearly Gain/Loss
10 Equity	37,51
20 Equity	34,39
30 Equity	47,03

APPENDIX 21: B/M RESULTS IN 2003

2003					
Equity Name	Lowest B/M	Returns (%)	Equity Name	Highest B/M	Returns (%)
NTTUR TI Equity	0,02	54,02	NUGYO TI Equity	15,60	42,06
EGPRO TI Equity	0,19	135,50	EGCYO TI Equity	13,99	61,44
GEREL TI Equity	0,23	- 66,91	SKTAS TI Equity	9,69	61,34
ALARK TI Equity	0,24	6,67	PNSUT TI Equity	6,98	123,43
FMIZP TI Equity	0,25	118,47	PETUN TI Equity	6,76	156,36
ALYAG TI Equity	0,25	10,00	EGGUB TI Equity	5,33	183,75
PENGD TI Equity	0,26	- 18,47	BSOKE TI Equity	4,28	64,12
ULKER TI Equity	0,28	- 26,19	GOLTS TI Equity	4,15	138,29
ALCTL TI Equity	0,28	- 22,27	ADNAC TI Equity	3,68	49,99
DURDO TI Equity	0,37	170,14	YKGYO TI Equity	3,57	80,43
KENT TI Equity	0,38	57,46	SODA TI Equity	3,27	40,23
THEVA TI Equity	0,38	- 24,00	EDIP TI Equity	3,12	107,31
YAZIC TI Equity	0,39	101,44	TEKTU TI Equity	2,79	63,40
PIMAS TI Equity	0,39	11,44	TSKB TI Equity	2,59	48,86
ENKAI TI Equity	0,43	2,60	SARKY TI Equity	2,52	59,12
DGZTE TI Equity	0,44	- 2,61	BOSSA TI Equity	2,46	24,68
ARCLK TI Equity	0,45	5,77	ATEKS TI Equity	2,43	35,68
BFREN TI Equity	0,45	382,97	ICBCT TI Equity	2,42	48,89
FROTO TI Equity	0,45	17,95	DMSAS TI Equity	2,41	115,00
SANKO TI Equity	0,46	- 26,36	MNDRS TI Equity	2,41	- 21,11
HURGZ TI Equity	0,47	10,12	ALGYO TI Equity	2,38	47,06
USAS TI Equity	0,48	118,88	KONYA TI Equity	2,37	136,71
BRYAT TI Equity	0,49	72,12	GSDHO TI Equity	2,36	14,09
TCELL TI Equity	0,50	99,71	ISGYO TI Equity	2,33	75,19
DERIM TI Equity	0,51	7,00	KRDMD TI Equity	2,31	334,80
AEFES TI Equity	0,52	58,19	MERKO TI Equity	2,29	- 21,74
MIPAZ TI Equity	0,54	- 5,50	SASA TI Equity	2,27	2,58
MGROS TI Equity	0,55	40,92	SISE TI Equity	2,27	98,01
YYAPI TI Equity	0,56	- 16,84	PARSN TI Equity	2,14	55,87
NETAS TI Equity	0,56	- 15,19	EGEEN TI Equity	2,05	70,31

	Short	Long
10 Equity	36,1	96,1
20 Equity	44,4	74,2
30 Equity	41,9	76,5

	Yearly Gain/Loss
10 Equity	60,03
20 Equity	29,78
30 Equity	34,64

APPENDIX 22: B/M RESULTS IN 2004

2004					
Equity Name	Lowest B/M	Returns (%)	Equity Name	Highest B/M	Returns (%)
ALGYO TI Equity	0,00	168,00	ISGSY TI Equity	1.000,00	1,14
BFREN TI Equity	0,07	30,56	SKTAS TI Equity	11,76	28,49
DURDO TI Equity	0,11	- 7,89	MNDRS TI Equity	3,29	54,93
FMIZP TI Equity	0,20	140,44	ADNAC TI Equity	2,92	104,53
ALCTL TI Equity	0,23	66,31	BSOKE TI Equity	2,70	207,76
PKART TI Equity	0,23	- 39,56	PETUN TI Equity	2,54	73,76
ALYAG TI Equity	0,24	92,13	MAALT TI Equity	2,47	202,44
PENGD TI Equity	0,25	- 30,39	ARSAN TI Equity	2,32	3,05
KENT TI Equity	0,25	61,58	SODA TI Equity	2,30	104,92
PRKME TI Equity	0,27	5,19	BOSSA TI Equity	2,19	25,00
TCELL TI Equity	0,28	11,53	PNSUT TI Equity	2,12	162,21
USAS TI Equity	0,29	11,92	EGGUB TI Equity	2,10	46,86
FENER TI Equity	0,34	117,44	ECZYT TI Equity	2,08	72,70
NTHOL TI Equity	0,34	6,78	TSKB TI Equity	2,04	392,84
PIMAS TI Equity	0,34	118,75	BOYP TI Equity	2,02	68,25
GSRAY TI Equity	0,37	86,54	GSDHO TI Equity	2,01	315,25
AEFES TI Equity	0,37	41,65	IPEKE TI Equity	2,00	450,79
EMKEL TI Equity	0,38	137,36	ATEKS TI Equity	1,99	9,38
ULKER TI Equity	0,42	- 2,67	YATAS TI Equity	1,97	78,69
MGROS TI Equity	0,42	18,30	GOLTS TI Equity	1,94	210,18
DERIM TI Equity	0,46	37,38	MERKO TI Equity	1,93	131,94
HURGZ TI Equity	0,47	67,61	YKGYO TI Equity	1,90	174,70
EGPRO TI Equity	0,48	273,02	SARKY TI Equity	1,81	36,36
AFYON TI Equity	0,48	181,32	VKGYO TI Equity	1,80	196,87
TATGD TI Equity	0,49	- 8,27	NTTUR TI Equity	1,76	72,50
LINK TI Equity	0,49	51,57	METRO TI Equity	1,69	66,04
ALARK TI Equity	0,49	42,50	ICBCT TI Equity	1,66	296,44
KRDMA TI Equity	0,49	- 7,08	PARSN TI Equity	1,62	233,23
AKBNK TI Equity	0,50	61,08	TEKTU TI Equity	1,61	714,78
MIPAZ TI Equity	0,51	86,72	AKSA TI Equity	1,61	- 14,05

	Short	Long
10 Equity	48,6	80,6
20 Equity	51,7	130,7
30 Equity	60,7	150,7

	Yearly Gain/Loss
10 Equity	31,97
20 Equity	78,96
30 Equity	90,07

APPENDIX 23: B/M RESULTS IN 2005

2005					
Equity Name	Lowest B/M	Returns (%)	Equity Name	Highest B/M	Returns (%)
EMKEL TI Equity	0,04	- 31,48	SKTAS TI Equity	9,94	- 20,40
BFREN TI Equity	0,06	- 33,62	AKGRT TI Equity	3,86	10,10
FMIZP TI Equity	0,08	2,68	MNDRS TI Equity	2,24	- 2,10
BIMAS TI Equity	0,11	126,87	ADNAC TI Equity	2,16	- 7,33
BJKAS TI Equity	0,12	- 63,51	ECZYT TI Equity	1,98	22,05
ALCTL TI Equity	0,14	- 47,10	BOYP TI Equity	1,91	70,71
KENT TI Equity	0,16	- 14,68	BOSSA TI Equity	1,90	66,15
ALYAG TI Equity	0,17	- 58,74	ARSAN TI Equity	1,87	- 28,40
FENER TI Equity	0,18	13,40	AKSA TI Equity	1,79	16,10
AFYON TI Equity	0,22	- 7,34	MAKTK TI Equity	1,79	- 52,63
TEKTU TI Equity	0,23	- 38,72	PETUN TI Equity	1,67	28,26
AKMGY TI Equity	0,24	- 5,66	ATEKS TI Equity	1,66	- 18,67
BUCIM TI Equity	0,25	19,98	EGGUB TI Equity	1,55	- 19,37
MIPAZ TI Equity	0,25	- 15,90	DMSAS TI Equity	1,51	- 16,82
DURDO TI Equity	0,26	- 8,57	VESTL TI Equity	1,42	- 26,69
DEVA TI Equity	0,26	24,59	SARKY TI Equity	1,38	59,66
PIMAS TI Equity	0,26	- 35,51	SASA TI Equity	1,35	- 34,13
KOZAA TI Equity	0,27	147,95	IHLAS TI Equity	1,31	- 45,56
TBORG TI Equity	0,28	- 17,55	EDIP TI Equity	1,29	68,83
FINBN TI Equity	0,28	29,39	YATAS TI Equity	1,27	- 9,17
ADANA TI Equity	0,29	19,35	BAKAB TI Equity	1,24	57,67
PRKME TI Equity	0,29	- 3,52	AKENR TI Equity	1,23	- 30,16
GSRAY TI Equity	0,30	- 30,21	OLMIP TI Equity	1,20	15,14
HURGZ TI Equity	0,30	- 27,54	PINSU TI Equity	1,18	22,73
ASLAN TI Equity	0,31	- 8,09	ECILC TI Equity	1,17	25,58
TCELL TI Equity	0,31	6,77	SODA TI Equity	1,17	48,50
NTHOL TI Equity	0,32	47,62	GOODY TI Equity	1,16	36,13
AKBNK TI Equity	0,32	- 1,72	COMDO TI Equity	1,14	98,01
AEFES TI Equity	0,33	18,15	METRO TI Equity	1,12	41,67
YKBNK TI Equity	0,33	- 1,56	ISGSY TI Equity	1,12	8,47

	Short	Long
10 Equity	- 11,4	7,4
20 Equity	- 0,7	3,0
30 Equity	0,2	12,8

	Yearly Gain/Loss
10 Equity	18,78
20 Equity	3,71
30 Equity	12,62

APPENDIX 24: B/M RESULTS IN 2006

<table>
<tr><th colspan="6">2006</th></tr>
<tr><th>Equity Name</th><th>Lowest B/M</th><th>Returns (%)</th><th>Equity Name</th><th>Highest B/M</th><th>Returns (%)</th></tr>
<tr><td>EMKEL TI Equity</td><td>0,06</td><td>0,00</td><td>AKGRT TI Equity</td><td>3,73</td><td>32,95</td></tr>
<tr><td>BIMAS TI Equity</td><td>0,08</td><td>42,93</td><td>ADNAC TI Equity</td><td>2,74</td><td>2,66</td></tr>
<tr><td>BFREN TI Equity</td><td>0,09</td><td>0,16</td><td>SKTAS TI Equity</td><td>2,58</td><td>99,37</td></tr>
<tr><td>FMIZP TI Equity</td><td>0,09</td><td>- 24,12</td><td>ARSAN TI Equity</td><td>2,53</td><td>18,18</td></tr>
<tr><td>KIPA TI Equity</td><td>0,14</td><td>- 35,23</td><td>MNDRS TI Equity</td><td>2,42</td><td>13,86</td></tr>
<tr><td>FENER TI Equity</td><td>0,18</td><td>59,78</td><td>IHLAS TI Equity</td><td>2,28</td><td>116,33</td></tr>
<tr><td>BJKAS TI Equity</td><td>0,18</td><td>- 4,81</td><td>IHLGM TI Equity</td><td>2,15</td><td>4,35</td></tr>
<tr><td>KENT TI Equity</td><td>0,20</td><td>4,03</td><td>ECZYT TI Equity</td><td>2,13</td><td>- 4,89</td></tr>
<tr><td>NTHOL TI Equity</td><td>0,23</td><td>87,10</td><td>ATEKS TI Equity</td><td>2,03</td><td>- 0,82</td></tr>
<tr><td>KOZAA TI Equity</td><td>0,23</td><td>82,23</td><td>EGGUB TI Equity</td><td>2,02</td><td>131,97</td></tr>
<tr><td>BUCIM TI Equity</td><td>0,25</td><td>2,27</td><td>MAKTK TI Equity</td><td>2,02</td><td>16,67</td></tr>
<tr><td>AKMGY TI Equity</td><td>0,25</td><td>15,62</td><td>DMSAS TI Equity</td><td>2,01</td><td>41,60</td></tr>
<tr><td>MAALT TI Equity</td><td>0,26</td><td>- 68,44</td><td>VESTL TI Equity</td><td>1,94</td><td>- 21,20</td></tr>
<tr><td>DYOBY TI Equity</td><td>0,28</td><td>1,28</td><td>SASA TI Equity</td><td>1,92</td><td>- 16,87</td></tr>
<tr><td>ADANA TI Equity</td><td>0,28</td><td>0,97</td><td>AKSA TI Equity</td><td>1,68</td><td>- 21,15</td></tr>
<tr><td>MGROS TI Equity</td><td>0,29</td><td>27,63</td><td>KRSTL TI Equity</td><td>1,60</td><td>22,77</td></tr>
<tr><td>FINBN TI Equity</td><td>0,29</td><td>- 0,34</td><td>ALKA TI Equity</td><td>1,59</td><td>38,38</td></tr>
<tr><td>DENIZ TI Equity</td><td>0,31</td><td>- 3,60</td><td>PETUN TI Equity</td><td>1,56</td><td>74,44</td></tr>
<tr><td>CCOLA TI Equity</td><td>0,31</td><td>26,99</td><td>AKENR TI Equity</td><td>1,54</td><td>146,48</td></tr>
<tr><td>AFYON TI Equity</td><td>0,32</td><td>- 0,69</td><td>YATAS TI Equity</td><td>1,52</td><td>- 6,57</td></tr>
<tr><td>DURDO TI Equity</td><td>0,32</td><td>- 19,17</td><td>AGYO TI Equity</td><td>1,52</td><td>49,86</td></tr>
<tr><td>MIPAZ TI Equity</td><td>0,32</td><td>3,98</td><td>THYAO TI Equity</td><td>1,51</td><td>40,98</td></tr>
<tr><td>TBORG TI Equity</td><td>0,33</td><td>- 26,29</td><td>KRDMD TI Equity</td><td>1,50</td><td>165,38</td></tr>
<tr><td>TATGD TI Equity</td><td>0,33</td><td>67,17</td><td>KUTPO TI Equity</td><td>1,45</td><td>- 11,50</td></tr>
<tr><td>ENKAI TI Equity</td><td>0,33</td><td>104,14</td><td>CMENT TI Equity</td><td>1,43</td><td>18,97</td></tr>
<tr><td>AEFES TI Equity</td><td>0,34</td><td>28,60</td><td>GSDHO TI Equity</td><td>1,42</td><td>27,97</td></tr>
<tr><td>CLEBI TI Equity</td><td>0,34</td><td>- 12,86</td><td>PETKM TI Equity</td><td>1,40</td><td>68,63</td></tr>
<tr><td>ALCTL TI Equity</td><td>0,35</td><td>1,69</td><td>GSDDE TI Equity</td><td>1,37</td><td>- 3,36</td></tr>
<tr><td>DEVA TI Equity</td><td>0,35</td><td>69,03</td><td>AYGAZ TI Equity</td><td>1,37</td><td>61,57</td></tr>
<tr><td>TCELL TI Equity</td><td>0,35</td><td>82,63</td><td>BOSSA TI Equity</td><td>1,28</td><td>- 18,48</td></tr>
</table>

	Short		Long
10 Equity	21,2		41,4
20 Equity	10,7		34,4
30 Equity	17,1		36,3

	Yearly Gain/Loss
10 Equity	20,19
20 Equity	23,74
30 Equity	19,19

APPENDIX 25: B/M RESULTS IN 2007

2007					
Equity Name	Lowest B/M	Returns (%)	Equity Name	Highest B/M	Returns (%)
TBORG TI Equity	0,06	- 49,73	AKGRT TI Equity	4,30	- 53,80
BIMAS TI Equity	0,08	- 6,05	ADNAC TI Equity	3,36	- 37,55
BFREN TI Equity	0,09	- 61,75	ECZYT TI Equity	2,64	- 36,10
FMIZP TI Equity	0,11	- 37,38	VESTL TI Equity	2,49	- 67,68
FENER TI Equity	0,14	38,93	MNDRS TI Equity	2,10	- 66,07
BJKAS TI Equity	0,18	- 30,81	AKSA TI Equity	2,09	- 40,81
KOZAA TI Equity	0,19	- 82,97	MAKTK TI Equity	1,99	- 57,14
ENKAI TI Equity	0,19	- 65,56	ARSAN TI Equity	1,95	- 54,55
MERKO TI Equity	0,20	6,82	IHLGM TI Equity	1,95	470,83
KENT TI Equity	0,20	- 29,32	ATEKS TI Equity	1,94	- 65,29
SKBNK TI Equity	0,20	- 78,08	SASA TI Equity	1,93	- 65,22
SEKFK TI Equity	0,21	- 70,19	YATAS TI Equity	1,74	- 61,08
TAVHL TI Equity	0,21	- 68,79	BOSSA TI Equity	1,71	40,12
AKMGY TI Equity	0,22	- 29,55	KUTPO TI Equity	1,64	- 52,15
TCELL TI Equity	0,24	- 29,34	GSDDE TI Equity	1,64	- 69,57
TIRE TI Equity	0,24	4,85	ISGSY TI Equity	1,60	- 38,34
CCOLA TI Equity	0,27	- 52,02	NUGYO TI Equity	1,56	- 58,22
DURDO TI Equity	0,27	- 24,74	DMSAS TI Equity	1,50	- 58,38
NTHOL TI Equity	0,27	- 74,14	YUNSA TI Equity	1,49	- 64,07
MIPAZ TI Equity	0,27	- 74,64	GOODY TI Equity	1,45	- 58,11
HALKB TI Equity	0,28	- 56,73	BAKAB TI Equity	1,44	- 53,54
PENGD TI Equity	0,28	- 72,31	CMENT TI Equity	1,44	- 43,52
AEFES TI Equity	0,29	- 24,08	SKTAS TI Equity	1,44	- 55,94
DEVA TI Equity	0,29	- 65,18	VKGYO TI Equity	1,40	- 56,16
VAKFN TI Equity	0,29	- 82,13	AVGYO TI Equity	1,39	- 63,29
OTKAR TI Equity	0,30	- 51,24	GLRYH TI Equity	1,38	- 35,80
BUCIM TI Equity	0,31	- 31,58	ECILC TI Equity	1,35	- 45,77
TSPOR TI Equity	0,32	9,96	SARKY TI Equity	1,35	- 46,71
GARAN TI Equity	0,32	- 57,98	KRSTL TI Equity	1,31	- 54,03
PKART TI Equity	0,32	- 50,99	GSDHO TI Equity	1,28	- 74,83

	Short		Long
10 Equity	- 31,8		- 0,8
20 Equity	- 40,7		- 24,7
30 Equity	- 43,2		- 34,1

	Yearly Gain/Loss
10 Equity	30,97
20 Equity	16,06
30 Equity	9,13

APPENDIX 26: B/M RESULTS IN 2008

2008					
Equity Name	Lowest B/M	Returns (%)	Equity Name	Highest B/M	Returns (%)
MERKO TI Equity	0,03	- 40,00	AKGRT TI Equity	7,06	87,76
TIRE TI Equity	0,04	- 27,41	GSDDE TI Equity	6,51	219,34
BFREN TI Equity	0,11	96,08	MNDRS TI Equity	6,09	210,53
BIMAS TI Equity	0,11	119,38	ADNAC TI Equity	5,57	105,58
FENER TI Equity	0,11	14,46	GSDHO TI Equity	5,34	150,00
DURDO TI Equity	0,19	29,26	VESTL TI Equity	4,92	205,88
BJKAS TI Equity	0,26	232,85	ATEKS TI Equity	4,78	211,90
FMIZP TI Equity	0,30	48,56	MAKTK TI Equity	4,65	805,56
KENT TI Equity	0,32	48,85	SASA TI Equity	4,57	145,83
KLMSN TI Equity	0,35	18,00	ECZYT TI Equity	4,42	125,34
AKMGY TI Equity	0,37	50,33	NUGYO TI Equity	4,22	171,91
TTKOM TI Equity	0,42	43,27	YATAS TI Equity	4,19	220,83
TCELL TI Equity	0,42	26,85	ALGYO TI Equity	4,08	230,87
ASLAN TI Equity	0,45	59,90	BRMEN TI Equity	4,05	100,00
AEFES TI Equity	0,46	65,61	YKGYO TI Equity	4,03	216,39
FINBN TI Equity	0,49	49,82	EGSER TI Equity	4,01	150,00
BURCE TI Equity	0,49	19,66	PARSN TI Equity	4,01	84,50
BUCIM TI Equity	0,50	8,08	DMSAS TI Equity	4,00	115,87
IHLGM TI Equity	0,53	- 37,96	IHLAS TI Equity	4,00	131,82
NUHCM TI Equity	0,54	22,70	AKSA TI Equity	3,94	171,60
TSPOR TI Equity	0,55	8,28	SKTAS TI Equity	3,81	77,24
GUBRF TI Equity	0,61	30,80	KAREL TI Equity	3,79	247,14
BANVT TI Equity	0,63	162,77	SNGYO TI Equity	3,78	295,74
ADANA TI Equity	0,63	127,45	DGGYO TI Equity	3,76	141,30
MGROS TI Equity	0,67	145,99	PEGYO TI Equity	3,76	128,00
CCOLA TI Equity	0,68	137,21	VKGYO TI Equity	3,60	345,88
COMDO TI Equity	0,69	- 1,34	GOODY TI Equity	3,57	90,65
IZOCM TI Equity	0,71	183,31	ECILC TI Equity	3,52	193,60
PKART TI Equity	0,71	87,92	KUTPO TI Equity	3,50	306,90
OTKAR TI Equity	0,72	84,80	BSOKE TI Equity	3,48	81,26

	Short	Long
10 Equity	54,0	226,8
20 Equity	42,4	193,1
30 Equity	60,5	192,3

	Yearly Gain/Loss
10 Equity	172,77
20 Equity	150,66
30 Equity	131,79

APPENDIX 27: B/M RESULTS IN 2009

2009					
Equity Name	Lowest B/M	Returns (%)	Equity Name	Highest B/M	Returns (%)
BFREN TI Equity	0,03	184,00	AKGRT TI Equity	4,72	58,21
BIMAS TI Equity	0,07	53,60	ADNAC TI Equity	3,42	68,85
FENER TI Equity	0,11	16,80	BRMEN TI Equity	2,83	32,86
FMIZP TI Equity	0,14	60,04	GSDDE TI Equity	2,82	321,58
METUR TI Equity	0,21	63,64	ECZYT TI Equity	2,51	6,41
ASLAN TI Equity	0,22	589,02	USAK TI Equity	2,34	70,83
MERKO TI Equity	0,24	- 7,80	IHLAS TI Equity	2,29	256,86
ZOREN TI Equity	0,25	- 10,58	SKTAS TI Equity	2,27	187,14
IZOCM TI Equity	0,25	51,90	MNDRS TI Equity	2,12	18,64
AKMGY TI Equity	0,26	154,80	GSDHO TI Equity	2,02	12,63
AFYON TI Equity	0,26	195,55	SNGYO TI Equity	1,98	12,55
CLEBI TI Equity	0,29	44,96	PARSN TI Equity	1,97	53,66
KENT TI Equity	0,29	300,00	BSOKE TI Equity	1,94	38,21
EGPRO TI Equity	0,31	46,42	SARKY TI Equity	1,90	53,31
BURCE TI Equity	0,31	414,29	DMSAS TI Equity	1,90	75,74
AEFES TI Equity	0,32	41,19	GOODY TI Equity	1,86	90,17
IEYHO TI Equity	0,33	29,85	ISGSY TI Equity	1,77	53,44
CCOLA TI Equity	0,33	37,31	ALCAR TI Equity	1,74	52,29
DURDO TI Equity	0,33	43,68	GLYHO TI Equity	1,73	43,84
TTKOM TI Equity	0,34	52,50	NUGYO TI Equity	1,70	19,82
KOZAA TI Equity	0,35	- 4,15	PEGYO TI Equity	1,70	24,56
ANHYT TI Equity	0,35	12,50	CEMTS TI Equity	1,68	36,47
ADANA TI Equity	0,35	17,74	KRSTL TI Equity	1,67	117,12
MRDIN TI Equity	0,35	27,27	EGSER TI Equity	1,65	124,00
BANVT TI Equity	0,36	42,22	AGYO TI Equity	1,64	0,71
TIRE TI Equity	0,36	- 17,45	DGGYO TI Equity	1,59	54,96
GARFA TI Equity	0,37	7,56	ECILC TI Equity	1,58	2,80
TCELL TI Equity	0,38	3,21	SASA TI Equity	1,58	89,83
KLMSN TI Equity	0,39	14,87	GENTS TI Equity	1,54	73,30
HALKB TI Equity	0,39	12,06	ISFIN TI Equity	1,52	57,71

	Short	Long
10 Equity	115,5	103,4
20 Equity	118,1	76,4
30 Equity	82,6	70,3

	Yearly Gain/Loss
10 Equity	- 12,14
20 Equity	- 41,71
30 Equity	- 12,28

APPENDIX 28: B/M RESULTS IN 2010

2010					
Equity Name	Lowest B/M	Returns (%)	Equity Name	Highest B/M	Returns (%)
BFREN TI Equity	0,01	- 34,74	ECZYT TI Equity	2,68	- 18,82
METUR TI Equity	0,02	- 9,10	ADNAC TI Equity	2,24	- 26,74
ASLAN TI Equity	0,05	- 32,72	GLYHO TI Equity	2,17	2,86
BIMAS TI Equity	0,06	2,29	PEGYO TI Equity	1,98	- 48,24
KENT TI Equity	0,07	- 36,69	MNDRS TI Equity	1,95	64,20
AFYON TI Equity	0,09	- 52,46	GSDHO TI Equity	1,92	- 48,60
FMIZP TI Equity	0,11	- 7,01	ATEKS TI Equity	1,89	- 17,00
AKMGY TI Equity	0,11	- 44,28	AGYO TI Equity	1,85	- 26,67
FENER TI Equity	0,13	- 25,23	ECILC TI Equity	1,73	- 25,20
KOZAL TI Equity	0,14	22,56	RYGYO TI Equity	1,73	- 19,09
IZOCM TI Equity	0,18	20,44	TRGYO TI Equity	1,68	- 36,09
RHEAG TI Equity	0,18	- 58,09	TTFH TI Equity	1,67	- 37,72
IEYHO TI Equity	0,18	- 85,52	TSGYO TI Equity	1,57	- 36,17
LINK TI Equity	0,19	- 23,64	GEREL TI Equity	1,56	48,65
CLEBI TI Equity	0,20	- 12,61	NUGYO TI Equity	1,54	52,10
ZOREN TI Equity	0,20	- 46,60	USAK TI Equity	1,47	15,12
DENCM TI Equity	0,20	- 60,95	BSOKE TI Equity	1,44	- 23,24
BURCE TI Equity	0,21	- 39,88	DOHOL TI Equity	1,41	- 52,68
MERKO TI Equity	0,24	- 24,62	GLRYH TI Equity	1,40	7,55
DURDO TI Equity	0,24	- 36,63	PARSN TI Equity	1,37	21,16
EGPRO TI Equity	0,24	- 38,53	BRMEN TI Equity	1,35	- 38,71
DESPC TI Equity	0,25	- 55,67	SARKY TI Equity	1,31	- 1,17
MGROS TI Equity	0,26	- 56,97	NTTUR TI Equity	1,30	- 36,14
TSPOR TI Equity	0,26	- 46,17	ISGSY TI Equity	1,27	- 3,27
AEFES TI Equity	0,26	- 0,51	BOSSA TI Equity	1,26	2,40
YYAPI TI Equity	0,27	- 33,49	ISGYO TI Equity	1,25	- 21,40
TTKOM TI Equity	0,27	17,86	ATAGY TI Equity	1,25	11,50
CCOLA TI Equity	0,27	12,13	MRGYO TI Equity	1,24	- 39,05
ALYAG TI Equity	0,27	32,79	VESTL TI Equity	1,22	- 25,82
KARTN TI Equity	0,28	- 9,83	CEMTS TI Equity	1,22	20,75

	Short		Long
10 Equity	- 21,7		- 16,3
20 Equity	- 29,3		- 10,2
30 Equity	- 25,5		- 11,2

	Yearly Gain/Loss
10 Equity	5,41
20 Equity	19,04
30 Equity	14,28

82

APPENDIX 29: B/M RESULTS IN 2011

			2011		
Equity Name	Lowest B/M	Returns (%)	Equity Name	Highest B/M	Returns (%)
BFREN TI Equity	0,01	18,35	GSDHO TI Equity	3,93	40,00
METUR TI Equity	0,02	5,68	ECZYT TI Equity	3,71	58,97
BIMAS TI Equity	0,08	68,67	ADNAC TI Equity	3,18	34,19
CLEBI TI Equity	0,09	6,32	PEGYO TI Equity	3,13	0,00
ASLAN TI Equity	0,09	19,17	TRGYO TI Equity	2,85	83,56
KENT TI Equity	0,11	5,61	AKFGY TI Equity	2,79	12,93
FENER TI Equity	0,12	1,30	ECILC TI Equity	2,64	16,67
BIZIM TI Equity	0,13	49,75	NTTUR TI Equity	2,48	16,13
FMIZP TI Equity	0,14	22,64	ADESE TI Equity	2,47	- 0,40
IZOCM TI Equity	0,16	10,58	AGYO TI Equity	2,46	40,63
AFYON TI Equity	0,17	- 21,58	GSDDE TI Equity	2,43	- 3,53
ALYAG TI Equity	0,20	- 20,37	TSGYO TI Equity	2,42	30,00
SAMAT TI Equity	0,22	- 45,14	DOHOL TI Equity	2,36	73,58
KOZAL TI Equity	0,23	73,79	RYGYO TI Equity	2,34	3,05
TTKOM TI Equity	0,23	6,29	TTTEH TI Equity	2,33	12,47
TSPOR TI Equity	0,24	- 4,44	ATEKS TI Equity	2,29	69,88
TBORG TI Equity	0,25	- 20,21	UTPYA TI Equity	2,24	- 13,02
AKMGY TI Equity	0,26	37,69	MRGYO TI Equity	2,14	- 9,37
KONYA TI Equity	0,26	8,58	DMSAS TI Equity	2,12	26,03
MRSHL TI Equity	0,28	34,43	ICBCT TI Equity	1,99	43,55
IHLGM TI Equity	0,29	79,09	KRSTL TI Equity	1,94	-
CCOLA TI Equity	0,29	64,76	BSOKE TI Equity	1,93	16,32
INTEM TI Equity	0,30	11,57	IEYHO TI Equity	1,92	- 20,63
AEFES TI Equity	0,31	14,69	USAK TI Equity	1,92	- 42,80
BRKSN TI Equity	0,31	34,30	IHGZT TI Equity	1,87	12,23
ESCOM TI Equity	0,31	- 79,23	GLYHO TI Equity	1,79	13,89
NTHOL TI Equity	0,32	15,29	SNGYO TI Equity	1,77	47,47
TTRAK TI Equity	0,33	83,42	THYAO TI Equity	1,77	195,28
YYAPI TI Equity	0,34	- 37,76	ISGSY TI Equity	1,75	65,49
BOYP TI Equity	0,34	62,14	PINSU TI Equity	1,73	9,64

	Short	Long
10 Equity	20,8	30,3
20 Equity	12,9	26,8
30 Equity	16,8	27,7

	Yearly Gain/Loss
10 Equity	9,46
20 Equity	13,91
30 Equity	10,89

APPENDIX 30: B/M RESULTS IN 2012

			2012		
Equity Name	Lowest B/M	Returns (%)	Equity Name	Highest B/M	Returns (%)
BIMAS TI Equity	0,06	1,15	GSDHO TI Equity	3,10	12,99
BFREN TI Equity	0,08	- 31,61	PEGYO TI Equity	3,09	- 27,59
ASLAN TI Equity	0,08	- 30,15	IEYHO TI Equity	2,78	- 26,00
FMIZP TI Equity	0,10	- 32,25	ECZYT TI Equity	2,74	- 15,35
FENER TI Equity	0,11	- 29,78	UTPYA TI Equity	2,72	- 38,32
KENT TI Equity	0,11	- 47,79	ECILC TI Equity	2,61	10,50
BIZIM TI Equity	0,11	- 13,81	GSDDE TI Equity	2,58	- 20,73
ORGE TI Equity	0,11	- 81,39	ADESE TI Equity	2,58	139,04
CLEBI TI Equity	0,11	- 39,11	AKFGY TI Equity	2,55	- 28,92
IHLGM TI Equity	0,14	39,69	RYGYO TI Equity	2,50	- 34,05
IZOCM TI Equity	0,14	- 37,11	ADNAC TI Equity	2,49	- 20,35
ACSEL TI Equity	0,16	- 10,98	METRO TI Equity	2,43	54,35
AFYON TI Equity	0,18	- 25,44	MRGYO TI Equity	2,39	- 28,30
CCOLA TI Equity	0,20	40,72	NTTUR TI Equity	2,37	22,22
MRSHL TI Equity	0,20	- 38,28	BOSSA TI Equity	2,31	- 0,12
KOZAL TI Equity	0,21	- 46,37	AVGYO TI Equity	2,28	93,75
TTRAK TI Equity	0,21	12,01	AGYO TI Equity	2,18	- 7,92
AKMGY TI Equity	0,22	- 26,83	ITTFH TI Equity	2,08	- 34,25
BOYP TI Equity	0,22	34,34	DGZTE TI Equity	2,03	1,45
NUGYO TI Equity	0,23	- 48,19	TSGYO TI Equity	2,01	- 5,13
KONYA TI Equity	0,23	- 17,63	MNDRS TI Equity	2,00	- 22,22
METUR TI Equity	0,23	- 33,33	EMKEL TI Equity	2,00	10,58
BRKSN TI Equity	0,24	- 64,80	VESTL TI Equity	2,00	- 17,99
TKNSA TI Equity	0,24	69,10	OZKGY TI Equity	1,97	- 19,99
OTKAR TI Equity	0,24	36,01	KRSTL TI Equity	1,90	21,74
ALYAG TI Equity	0,25	- 36,43	GLYHO TI Equity	1,87	- 0,05
TSPOR TI Equity	0,25	- 51,27	KUYAS TI Equity	1,81	27,09
TBORG TI Equity	0,26	77,65	GLRYH TI Equity	1,81	- 16,18
FROTO TI Equity	0,27	10,07	TRGYO TI Equity	1,77	- 11,18
TTKOM TI Equity	0,27	- 3,91	BSOKE TI Equity	1,72	- 13,29

	Short		Long
10 Equity	- 26,5		- 2,8
20 Equity	- 20,6		2,4
30 Equity	- 14,2		0,2

	Yearly Gain/Loss
10 Equity	23,66
20 Equity	22,92
30 Equity	14,38

APPENDIX 31: B/M RESULTS IN 2013

2013					
Equity Name	Lowest B/M	Returns (%)	Equity Name	Highest B/M	Returns (%)
KIPA TI Equity	0,06	19,08	MRGYO TI Equity	4,66	0,00
BIMAS TI Equity	0,08	17,05	METRO TI Equity	4,17	- 7,04
IHLGM TI Equity	0,10	- 80,92	PEGYO TI Equity	4,16	7,14
ASLAN TI Equity	0,12	31,62	AKFGY TI Equity	4,14	32,20
BIZIM TI Equity	0,14	- 17,90	RYGYO TI Equity	3,82	67,25
CLEBI TI Equity	0,14	138,53	IEYHO TI Equity	3,77	- 8,11
FENER TI Equity	0,15	18,55	UTPYA TI Equity	3,60	36,89
BEREN TI Equity	0,15	28,44	IHGZT TI Equity	3,50	- 7,84
VKGYO TI Equity	0,16	- 66,30	ADNAC TI Equity	3,48	22,88
BOYP TI Equity	0,18	2,05	GSDDE TI Equity	3,41	112,31
FMIZP TI Equity	0,18	40,16	ECZYT TI Equity	3,29	24,42
TKNSA TI Equity	0,18	- 22,49	TTFH TI Equity	3,17	37,13
CCOLA TI Equity	0,20	- 1,77	EDIP TI Equity	2,96	- 1,04
KENT TI Equity	0,20	20,34	GSDHO TI Equity	2,86	66,67
OTKAR TI Equity	0,21	65,30	MNDRS TI Equity	2,81	90,48
ULKER TI Equity	0,22	24,60	USAK TI Equity	2,70	66,67
TTRAK TI Equity	0,23	34,10	YGYO TI Equity	2,65	48,78
AKGUV TI Equity	0,23	- 27,87	ECILC TI Equity	2,49	14,50
TBORG TI Equity	0,23	26,10	BOSSA TI Equity	2,48	134,39
IZOCM TI Equity	0,23	53,02	OZKGY TI Equity	2,46	99,28
ACSEL TI Equity	0,24	79,11	VESTL TI Equity	2,43	309,68
AFYON TI Equity	0,25	208,41	NTTUR TI Equity	2,41	45,45
TTKOM TI Equity	0,26	26,35	KLGYO TI Equity	2,36	12,87
KONYA TI Equity	0,26	10,46	DGZTE TI Equity	2,36	9,16
MARKA TI Equity	0,27	- 45,69	RYSAS TI Equity	2,34	23,08
FROTO TI Equity	0,28	45,59	AGYO TI Equity	2,31	10,57
TOASO TI Equity	0,28	23,88	ANELE TI Equity	2,29	28,00
MGROS TI Equity	0,29	42,19	VAKFN TI Equity	2,19	23,96
ANHYT TI Equity	0,29	9,02	SNGYO TI Equity	2,18	- 2,44
PGSUS TI Equity	0,31	- 8,68	IHEVA TI Equity	2,17	- 12,20

	Short	Long
10 Equity	9,0	25,6
20 Equity	15,1	41,8
30 Equity	23,1	42,8

	Yearly Gain/Loss
10 Equity	16,55
20 Equity	26,76
30 Equity	19,76

APPENDIX 32: B/M RESULTS IN 2014

			2014		
Equity Name	Lowest B/M	Returns (%)	Equity Name	Highest B/M	Returns (%)
BOYP TI Equity	0,06	53,71	MRGYO TI Equity	9,66	5,26
BIMAS TI Equity	0,08	4,50	METRO TI Equity	5,37	1,52
ASLAN TI Equity	0,11	18,67	MARTI TI Equity	5,30	- 17,46
AFYON TI Equity	0,11	- 1,29	IHGZT TI Equity	4,60	- 6,38
AVISA TI Equity	0,11	25,93	PEGYO TI Equity	3,87	- 13,33
OTKAR TI Equity	0,12	7,36	EDIP TI Equity	3,59	- 14,74
LOGO TI Equity	0,12	55,56	ADNAC TI Equity	3,48	7,00
NUGYO TI Equity	0,13	17,77	IEYHO TI Equity	3,47	- 20,59
BFREN TI Equity	0,14	19,21	AKFGY TI Equity	2,87	- 14,10
CLEBI TI Equity	0,14	37,21	IHEVA TI Equity	2,78	- 16,67
FMIZP TI Equity	0,15	0,52	UTPYA TI Equity	2,73	- 25,53
TTRAK TI Equity	0,17	- 2,18	ECZYT TI Equity	2,71	74,21
ACSEL TI Equity	0,17	30,16	IHYAY TI Equity	2,65	- 20,00
KENT TI Equity	0,17	218,31	BERA TI Equity	2,58	- 18,65
BIZIM TI Equity	0,18	- 32,71	DGZTE TI Equity	2,47	94,49
ULKER TI Equity	0,18	- 3,64	SNGYO TI Equity	2,40	- 14,17
TKNSA TI Equity	0,18	- 30,84	USAS TI Equity	2,40	- 29,69
IZOCM TI Equity	0,20	- 17,45	ISGYO TI Equity	2,34	40,82
BRISA TI Equity	0,20	- 13,71	RYGYO TI Equity	2,34	- 15,69
EGEEN TI Equity	0,21	61,70	TRGYO TI Equity	2,29	- 2,90
TUKAS TI Equity	0,22	74,17	TTFH TI Equity	2,25	- 6,55
MARKA TI Equity	0,22	- 33,33	KOZAA TI Equity	2,24	- 27,11
MGROS TI Equity	0,22	- 23,30	ALGYO TI Equity	2,23	44,55
ULUSE TI Equity	0,23	- 26,80	AGYO TI Equity	2,19	- 2,94
CCOLA TI Equity	0,24	- 25,68	NTTUR TI Equity	2,17	14,06
POLTK TI Equity	0,24	69,09	ECILC TI Equity	2,16	17,67
FROTO TI Equity	0,24	- 3,47	RYSAS TI Equity	2,12	- 11,84
ATPET TI Equity	0,24	- 69,94	KLGYO TI Equity	2,09	39,47
TTKOM TI Equity	0,25	- 17,66	EGCYO TI Equity	2,09	- 41,67
MEPET TI Equity	0,26	- 62,84	PAGYO TI Equity	2,09	24,79

	Short	Long
10 Equity	23,9	- 8,9
20 Equity	22,4	- 0,3
30 Equity	11,0	1,5

	Yearly Gain/Loss
10 Equity	- 32,81
20 Equity	- 22,77
30 Equity	- 9,50

APPENDIX 33: B/M RESULTS IN 2015

2015					
Equity Name	Lowest B/M	Returns (%)	Equity Name	Highest B/M	Returns (%)
KENT TI Equity	0,06	- 41,83	MRGYO TI Equity	9,18	- 5,00
KERVT TI Equity	0,07	- 34,16	HGZT TI Equity	4,88	18,18
AVISA TI Equity	0,08	16,37	METRO TI Equity	4,60	34,33
ASLAN TI Equity	0,09	- 2,77	EDIP TI Equity	4,59	- 2,47
LOGO TI Equity	0,10	26,99	PEGYO TI Equity	4,49	2,56
BIMAS TI Equity	0,11	- 2,43	UTPYA TI Equity	4,49	111,43
TKNSA TI Equity	0,11	- 47,27	IEYHO TI Equity	4,36	3,70
OTKAR TI Equity	0,11	51,89	KLGYO TI Equity	3,85	- 4,40
OZBAL TI Equity	0,12	- 24,10	ADNAC TI Equity	3,75	47,59
BFREN TI Equity	0,13	- 14,73	BRMEN TI Equity	3,70	28,57
TMPOL TI Equity	0,14	7,93	IHEVA TI Equity	3,55	- 3,33
BOYP TI Equity	0,14	- 5,08	BERA TI Equity	3,18	- 23,41
CLEBI TI Equity	0,15	- 27,37	IHYAY TI Equity	3,15	- 4,17
MGROS TI Equity	0,17	0,75	AKFGY TI Equity	3,14	- 2,99
VERUS TI Equity	0,17	- 0,16	GSDHO TI Equity	3,10	18,27
TTRAK TI Equity	0,18	15,92	KOZAA TI Equity	3,08	76,86
CRFSA TI Equity	0,18	14,36	YGYO TI Equity	3,00	58,33
FMIZP TI Equity	0,19	- 1,90	TRGYO TI Equity	2,99	31,38
EGEEN TI Equity	0,20	- 24,76	USAS TI Equity	2,90	- 20,00
TUKAS TI Equity	0,21	- 35,41	EGCYO TI Equity	2,90	7,14
POLTK TI Equity	0,22	- 4,92	TTFH TI Equity	2,88	- 16,82
IZOCM TI Equity	0,22	- 14,39	SNGYO TI Equity	2,82	- 6,45
DOCO TI Equity	0,22	- 23,86	AGYO TI Equity	2,60	96,97
KIPA TI Equity	0,22	- 28,11	IHLAS TI Equity	2,57	36,36
TBORG TI Equity	0,23	11,53	TSGYO TI Equity	2,52	13,79
ULKER TI Equity	0,23	- 6,62	IPEKE TI Equity	2,50	70,73
KONYA TI Equity	0,24	- 11,45	NTTUR TI Equity	2,48	- 9,59
TMSN TI Equity	0,25	- 18,39	OZKGY TI Equity	2,46	0,54
INTEM TI Equity	0,25	38,56	TEKTU TI Equity	2,42	19,61
TTKOM TI Equity	0,26	1,10	RYGYO TI Equity	2,41	31,37

	Short	Long
10 Equity	- 7,2	23,4
20 Equity	- 6,4	18,6
30 Equity	- 6,1	20,3

	Yearly Gain/Loss
10 Equity	30,65
20 Equity	25,02
30 Equity	26,45

APPENDIX 34: B/M RESULTS IN 2016

2016					
Equity Name	Lowest B/M	Returns (%)	Equity Name	Highest B/M	Returns (%)
BOYP TI Equity	0,03	- 48,20	MRGYO TI Equity	6,90	457,89
CRFSA TI Equity	0,07	- 22,71	RYGYO TI Equity	5,02	89,55
OTKAR TI Equity	0,08	- 5,24	EDIP TI Equity	4,70	49,37
MGROS TI Equity	0,08	56,77	PEGYO TI Equity	4,33	120,00
AVISA TI Equity	0,08	- 4,86	KLGYO TI Equity	4,19	140,79
KENT TI Equity	0,09	5,41	BERA TI Equity	4,16	294,90
ASLAN TI Equity	0,10	- 5,02	HGZT TI Equity	4,15	126,92
INTEM TI Equity	0,10	17,81	MARTI TI Equity	3,54	155,56
KERVT TI Equity	0,11	233,99	METRO TI Equity	3,51	10,00
LOGO TI Equity	0,12	8,10	GSDHO TI Equity	3,43	30,91
BIMAS TI Equity	0,13	62,88	TTTFH TI Equity	3,35	30,90
SEKUR TI Equity	0,13	- 2,27	IHEVA TI Equity	3,34	75,86
TMPOL TI Equity	0,13	- 49,20	USAS TI Equity	3,29	- 100,00
COMDO TI Equity	0,14	- 100,00	IHYAY TI Equity	3,06	121,74
OZBAL TI Equity	0,15	11,49	NTTUR TI Equity	2,94	- 100,00
CLEBI TI Equity	0,16	69,72	HATEK TI Equity	2,91	38,06
BFREN TI Equity	0,17	45,36	IEYHO TI Equity	2,91	42,86
TTRAK TI Equity	0,17	7,40	TRGYO TI Equity	2,88	63,90
TTKOM TI Equity	0,18	21,97	SNGYO TI Equity	2,86	32,76
VERUS TI Equity	0,20	58,77	ADNAC TI Equity	2,76	11,03
FMIZP TI Equity	0,20	6,06	OZKGY TI Equity	2,42	25,13
TKNSA TI Equity	0,21	52,37	DENGE TI Equity	2,42	313,46
AKSEN TI Equity	0,21	38,59	ISGYO TI Equity	2,38	- 1,56
AFYON TI Equity	0,22	- 1,64	BRMEN TI Equity	2,34	56,67
POLTK TI Equity	0,24	90,64	OZGYO TI Equity	2,32	23,81
MAKTK TI Equity	0,24	41,84	ISGSY TI Equity	2,29	16,00
TOASO TI Equity	0,24	37,52	AKFGY TI Equity	2,28	85,38
KONYA TI Equity	0,26	- 1,75	HLGYO TI Equity	2,27	9,90
AYEN TI Equity	0,27	- 1,23	AKSGY TI Equity	2,17	30,55
IZOCM TI Equity	0,27	7,74	EMKEL TI Equity	2,12	46,24

	Short	Long
10 Equity	23,6	147,6
20 Equity	18,1	84,6
30 Equity	21,1	76,6

	Yearly Gain/Loss
10 Equity	123,99
20 Equity	66,54
30 Equity	55,54