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DECISIONS ON FINANCIAL STATEMENT INFORMATION BASED FORECASTS

(YÜKSEK LİSANS TEZİ)

A.Levent ALKAN

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SUPERVISOR: Prof. Dr. Doğan ALTUNER

İstanbul 1997

I certify that this thesis is satisfactory for award of
the degree of Master of Accounting and Finance ..

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ACKNOWLEDGEMENTS

I am thankfull to Professor Dr. Doğan ALTUNER, Associate Professor Dr. Abdulgaffar AĞAOĞLU and Associate Professor Dr. A.Osman Gürbüz for their contributions to this research.

I also express my greatfulness to Assistant Professor Türkan ÖNDER, Assistant Professor Jale SÖZER and Associate Professor Dr. Nejdet ŞENSOY for their contributions during proposal stage.

I am grateful to Professor Dr. Noyan ARSAN and Professor Dr. Salih NEFTÇI for their valuable additions and generous software supports.

This thesis would have not been a success without devoted support of Miss Jale Seçkiner, and Dr. Meral Varış Tezcanlı.

ABSTRACT

The financial highlights, describing each country's economical conditions and reflection against to expected and unexpected fluctuations would change their homogeneity. The nation is heterogeneous in the case of critical evaluations and expectations. So that, depending on country, the analytical consideration, has changed dramatically. The main financial phenomenon, like book-market equity, size effect, E/P and leverage, will be valid for all national capital markets. But the applications of these concepts are different from one country to another.

The corporate attitude definitions are homogeneous in each nation. This definition will be heterogeneous in multi-national applications. Although most of the phenomenon is transparent enough to be a guiding light for international capital markets, applications of these phenomenon are specific and unique to each nation's capital market.

Corporate profile is clarified by using its fundamental financial indicators. The generally market's accepted corporate profile definitions will be like high performance company (HPC) or low performance company (LPC) including long term and short term time preferences. The performance evaluation regarding to investors speculative decisions conclude, a definite short term investment preferences or buy and hold long term investment preferences for taking positions.

In addition to that, the corporate performance definitions will be tested in audited (year ended accountings), and non-audited (first or third quarterly accounting) financial statement information. Undoubtedly, the result of audited and non-audited financial statement information would judge managerial strategies, regulations and even official authorities. Naturally, it is expected to be active to audit corporate accounting information systems. Consequently, evaluations of market about forecasted long term or short term corporate attitudes (i.e. LTHPC or STHPC) realized by criticization and scrutinization from either speculative or buy and hold trading strategy is free to accomplish manipulation.

Ultimately, alternative investor behaviours are compared. The short term daily price breaking offs and long term continues upward trends are determined. The determination is used to found out financial instrument intention of Turkish institutional and individual investors. The marginal propensity to buy or reject relating to high performance and low performance corporates is used to identify the manipulations and market's preferences. It is clear that, the market stabilization will decrease the percent of risky investments in overall institutional investors. The investor behaviors are identifed in a term differential point of view such as short and long term. In that term difference, market propensity of buying or rejecting is strongly effected from macro ecenomic financial indicators of total external debt, GNP, level of export, non-gold reserves, level of import, current account balance, GDP, budget deficit, effective exchange rate. When the term is increased from short to long, intension to the common stock investments are minimized. In the high inflationary countries, the term concept is shorter in comparison to low inflationary contries. In ISE, when term has realized a change from short to long, the percent of HPC in overall tradings common stocks are deminished with large amounts.

ÖZET

Şirketlerin beklenmeyen ekonomik gelişmeler ve ani dalgalanmalara karşı dayanma gücü, ortaya konulan finansal açılımların özel durumlarda değişeceği sonucunu ortaya çıkarmaktadır. Firmaların özele inen kritik değerlendirmeler ve buna bağlı beklentiler karşısında bağımsız davrandıkları, bunun da analitik düşünceyi ülkeden ülkeye değiştirdiği görülmüştür. Şirketlerin performans tanımları ülkelerin kendi yapıları içerisinde saydam bir yapı gösterirken, uluslararası boyutlu değerlendirildiğinde bu saydamlık tutarsız olmaktadır. Bu araştırma sonucunda elde edilen bulgular, şirketlerin profillerinin temel finansal göstergelerle kesin bir açıklığa kavuşturulabilldiğini göstermektedir.

Belirlenen şirket profili, düşük ve yüksek performanslı olarak kısa veya uzun vadeli iki zaman dilimini kapsamaktadır. Sermaye piyasasında kabul edilen şirket profili ile ilgili tanımlamalar, uzun ve kısa vade ayırımlarını da içine alan Yüksek Perfromanslı Şirket (YPŞ) ya da Düşük Perfromanslı Şirket (DPŞ) ler şeklinde olacaktır. Kısa ve uzun vadeli yüksek veya düşük performanslı şirketler belirlenirken finansal tablo bilgileri niteliksel yöntemlerle irdelenmiştir.

Bunlara ek olarak, şirket performans tanımları denetli (yıl sonu muhasebe bilgileri) ve denetsiz (ilk ya da üçüncü çeyrekteki muhasebe bilgileri) periyodun finansal tablo bilgileri olarak ele alınmıştır. Daha açıkcası, denetli ve denetsiz finansal tablo bilgilerinin karşılaştırılması, kanunlar , yönetim statejileri, ve resmi yetkilileri de içine alan geniş bir yelpazeyi yargılama fırsatı bulacağı ümit edilmiştir. Dolayısıyla, piyasanın tahmini uzun vadeli ya da kısa vadeli şirket durum tanımları, (uzun vadeli yüksek-düşük performanslı ya da kısa vadeli yüksek/düşük performanslı şirketler) spekülatif mi, yoksa al ve tut strajisinin mi, manipulasyonu gerçekleştirmede başarılı olduğu titizlikle araştırılmıştır.

Son olarak da, alternatif yatırımcı davranışları karşılaştırılmaktadır. Kısa vadeli günlük fiyat kopuşları ve uzun vadeli sürekli yukarı trendler belirlendi. Bu ayırdım Türk kurumsal ve bireysel yatırımcısının finansal araç tercihini belirlemede kullanılmaktadır. Piyasanın stabil olması, kurumsal ve bireysel yatırımcı kararlarındaki risk yüzdesini azaltmaktadır. Yatırımcı davranışlarının, kısa ve uzun vadeli olarak iki farklı şekilde incelenmeksi zorunluğu ortaya çıkmaktadır. Bu vade farklılığı yatırımcı davranışlarını toplam borç göstergesi, GSMH, dış borç, ihracat düzeyi, altın olmayan reservler, cari ödemeler dengesi, GSYİH, bütçe açığı, doviz kuru gibi makro ekonomik göstergelerden, uzun vadeli yatırım tercihlerinin etkileşiminin daha güçlü olmasına bağlanmaktadır. Yüksek enflasyonlu ülkelerde vade kavramı, düşük enflasyonlu ülkelere göre daha kısa süreli period dilimlerine bölünme zorunluluğunu ortaya çıkarmıştır. Istanbul Menkul Kıymetler Borsasında, vade kısadan uzuna yönelik değiştiğinde, toplam tercihler içerisindeki yüksek performanslı şirket yüzdesi artmıştır. Bunun yanında yatırımcıların hisse senedi işlemlerinde kısa vadeyi yeğleyip, uzun vadeli pozisyon almaktan sakındıkları ortaya çıkmaktadır.

Sonuç olarak, ISE'deki sanayi şirketleri, tanımlanan kriterler ve eşik değerlerini aşmaları durumunda elde edecekleri şirket tanımları denetli ya da denetsiz dönemde değişmeyen özellikler ortaya koymaktadır. Bu nedenle yüksek performanslı

şirketlerin bilanço değişikliklerini tahmin etmek daha kolay olmaktadır. Diğer taraftan tanımlanan eşik değerlerini aşamayan düşük performanslı şirketlere olan kısa vadeli olağanüstü ilgide yükseklik, oldukca ilgi çekicidir. IMKB'de kısa vadeden uzun vadeye geçilirken, yüksek performanslı şirketlerin uzun vadeli alış eğilimlerin yetersiz olduğu sonucu elde edilmektedir.

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LIST OF ABBREVIATIONS

AIS	Accounting Information Systems
APT	Arbitrage Pricing Theory
CAPM	Capital Asset Pricing Model
CAR	Cumalative Abnormal Return.
E/P	Earnings Per Share
GDP	Gross Domestic Products
HIPM	Human Information Processing Model
HP	High Performance
HPC	High Performance Company
IE	Information Effect
IFM	International Finance Market
ISO	Internatioanal Standards Organization
LP	Low Performance
LPC	Low Performance Company
LTHPC	Long Term High Performance Company
LTLPC	Long Term Low Performance Company
MBP	Market's Buying Propensity
MDA	Multiple Descriminant Analysis
MIS	Management Information Systems
MLTBP	Market's Long Term Buying Propensity
MLTBR	Market's Long Term Buying Rejected
MRA	Multiple Regression Analysis
MSTBP	Market's Short Term Buying Propensity
MSTBR	Market's Short Term Buying Rejected
MVC	Mean Variance Criteria
NEE	Negative Earning Effect.
POEAP	Post-earning announcement price.
PREAP	Pre-earning announcement price.
ROA/Credit Cost	Return On Asset / Credit Cost
ROE	Return On Equity
SEC	Sequrity Exchange Commission
SML	Security Market Line
STHPC	Short Term High Performance Company
STLPC	Short Term Low Performance Company
TQM	Total Quality Management

I. INTRODUCTION AND THE BACKGROUND FOR THE STUDY

The thesis study has emphasized the importance of financial statement analysis. That thesis analyzed mainly three important topics: **a)** in order to identify the manipulation in the audited and non-audited announcement periods, **b)** in order to determine the behaviors of institutional and individual investors, and **c)** in order to clarify the investors time preferences such as speculators or buy and holders.

1.1. Objective of the Study.

The forecasting of company attitudes will make contributions to the all sections of the economy. The advantages of the company attitudes forecasting could be summarized with four topics[1].

Company attitude forecasts will provide a dynamic reflection to the economic conditions, and also it will supply healthy and analytical information to all stages of a sound management.

1. On the data, information, knowledge sequence of MIS, identification of company attitude forecasting stage will enhance consistency for managerial decisions and it will render contributions to the accounting information systems.
2. Credit evaluations.
3. Assists for investment decisions.
4. A strong tool for external auditors.

On the literature, those of the determined company attitude forecasting advantages will enlighten some more important additional topical subject.

1. Forecasting of company attitudes will assist to determine LPCs and HPCs. Quantitative support in the company attitude definitions combined with qualitative opinions. By this way it will create an ideal analysis method. Certainly defined and categorized companies will put forward equally sharing of overall credit funding pastry. But on the other hand, if system is not so intelligent to define that LPCs and HPCs then, HPCs percent share of the credit funding on that pastry is moved to the LPC. The system should encourage successful companies. If the system could not realize that difference, the competition in global economy will enforce them to understand the importance of sound forecasting. Recently, Turkey has entered to the Custom Union with European countries. The union has precisely defined rules and regulations. These regulations are concentrated on the standardized quality[2] (ISO series), product efficiency, capital sufficiency, TQM[3]

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[1] Money and Finance Encyclopedia " Financial Forecasting Methods." pp: 1074.
[2] D.A. Sanders., J.A. Sanders.,R.H. Johnson., C.F. Scott " ISO 9000 What?, Why?, How?", pp:115-143.
[3] Isikawa Kuoro., "What is Totall Quality Control, The Japanese Way", Mc Graw-Hill, New Jersey, 1985.

(Total Quality Management) etc. For today's management, determination of profit center corporate is an obligation in order to encourage the correct ones.

2. The time preference of investors is another important topic. In practical life there are two types of corporate affiliated with investment decisions, such as, short term and long term. In the short term point of view, profitability of corporate is taken into consideration. But, on the long term, point of view, the company has scrutinized how they are accomplished the real value addition, operational flexibility and efficiency. Most of the time individual investors in the capital markets carry too much doubt about their investments. Also, individual investors will be sensitive to their investment risk. The time dependent classification of companies will minimize that risk. Because, individual investors will determine the most suitable time to invest. But on the other hand, institutional investors have been still using these kinds of strategies named as, speculative or buy and hold. Determination of companies depending on time preference will multiply contemporary approaches of investment strategies. The time preference of individual investors will increase the profit making capabilities of themselves and depth of capital market.

3. The unofficial and official behaviors of companies according to their financial statement announcements are scrutinized. The alternative behaviors for the auditing mechanism of SEC are deterministic to understand the market's efficiency.

1.2. Design of the Study.

In the first chapter of this thesis an introduction is taken as a goal. This introduction includes the importance of thesis. The sections after that study will define the margins of all thesis.

In second chapter, the financial statement analysis and its importance is implied. Random Walk, Capital Asset Pricing Models are compared against to fundamental analysis.

In chapter three, research purpose and the reason of logit model preference is explained. Also in this chapter, parameter design of low performance and high performance companies are accomplished. During the designing stage, all difficulties, assumptions and limitations are identified. Moreover, the investors time preference are mentioned.

In chapter four, designed parameter testing, error term, residual and multicollinearity concepts are taken into consideration. Also, the tests are executed in a developed capital market of NASDAQ. This comparison was an ex-ante test of designed parameters.

The purpose of the chapter five, is try to recognize the manipulations and insider information in ISE. The comparison of audit and non-audited financial statement information are used to detect manipulations in the capital market.

Furthermore, the behaviors of investors are discovered. And then, the analytical comparison of Turkey with IFM are succeeded.

The chapter seven will include conclusions and discussions of obtained results of the preceding chapters.

1.3 Scope and Significance of the Study.

1.3.1. Human Information Processing Models (HIPM) Versus Statistical Methods :

In recent years, although the statistical studies have increased about company attitude forecasts, the traditional methods stayed the same importance in practical usage. Some of the creditworthiness institutions still have been using the experiences of skillful experts[4] in U.S.A. That means the importance of human information based processing models stayed the same manner. This situation should supported with some statistical methods.

Human information processing models are separated into two groups such as individuals and grouped users. The empirical studies about measuring successful or unsuccessful companies are accomplished with personal or individual group preferences. The Z model of Altman[5] is analyzed to forecast company attitudes with the skilful with in 1 or 2 year prior. The result of Altman's Z model and human information processing based evaluation group defined the about same number of high performance and low performance corporate. But Altman's Z model has advantage to expert's subjective evaluations for 3 year prior forecasts. The detailed analysis of individual deductions and econometric model outputs are summarized as the following:

1. Individual deduction models are obtained less successful results than statistical models.
2. Individual deduction models are closely related with selected parameters.
3. In overall statistical decision, the parameter weights are determined more sensible than HIPM. And in statistical models, usage and preference is weighted and effective factors are selected. But the concluding result of the statistical model and HIPM are similar to each other for short term projections.
4. Probabilities of forecasting power do not match the decisions of analyst's individual evaluations.

The group deductions are compared with individual deductions and statistical model performances. High performance result of the group deduction can be explained by the group's prejudice removing ability[7].

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[4] P.J.Elmer and D.M. Borowski " An Expert System Approach to Financial Analysis.", Financial Management, Agustos, 1988 pp: 66-76.

[5] Alltman, E., "Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy." , The Journal of Finance, September, 1968.

[7] Chalos, P., "Financial Distress: A Comparative Study of Individual, Model and Committee Assessments." Journal of Accounting Research. August, 1985.

As a conclusion, performance of HIPM is increased when they have group decision making in comparison to individuals. Thus, parameter selections are free from external inferences. But the evaluations of the human information processing include some problems. These kinds of problems are eliminated with statistical analysis methods. The ideal method will be the combination of human deductions and statistical inferences. In this respect, the assumptions of statistical models are eliminated. The HIPM alone had some difficulties to select the parameters by comparing many of the variables combining with their qualitative parameters. The combination of HIPM together with statistical analysis will conclude a perfect results[8].

1.3.2. Company Attitudes Forecasting By Using Its Financial Statement Information

Although the main opinion of this research is to define LPCs and HPCs, the bankruptcy research studies in the literature assisted to define the behaviors of countries. Ağaoğlu[9], is explained his bankruptcy philosophy with Darwin's the great swallowing of the small theory. But in the Japanese economy, the banks do not unconcerned to the bankruptcies of their companies in the system. Thus, the Japanese system has felt responsible to any alternative bankruptcies of companies in Japanese. Because of that philosophical difference, the bankruptcy rate of companies on Japanese are deviated from its western equals. By the same manner, designed company attitude parameters will realize more consistent and reliable output for the testing samples of designed capital market. Although, designed HPCs and its financial statement information are meaningful inputs for its original capital market. But the financial information of foreign capital markets will not be transparent for the research purpose all the time. In other words, the parameters generated on a foreign capital markets will be meaningless for the Turkish capital markets.

The company attitude forecast systems are early stimulus systems. For the capital market conditions, having a pre knowledge about company attitudes, could provide extremely high profits and at the same time prevent extremely high losses. The pre knowledge of company attitudes will be reflected to its price levels. So, Markowitz[10] has opened a new page of Capital Assets Pricing Model (CAPM) on the finance literature to explain the risk and return relation of companies. The study of CAPM are kept all financial statement information in the non- systematic risk of alpha and systematic risk of beta. In the following years of the Markowitz, this phenomenon is developed and created new concepts originated from CAPM: arbitrage pricing theory[11] (APT).

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[8] G.Whitterred and Ian Zimmer, "The implications of Distress Prediction Models for Corporate Lending," Accounting and Finance. May, 1985.

[9] A.Gaffar Ağaoğlu, 1989, "Economic Analysis and Development Trends of Banking Operatins in Turkey." Doctoral Thesis, 1989.

[10] Markowitz, H., "Portfolio Selection". Journal of Finance, December, pp: 77-91, 1952. ; "Portfolio Selection. Efficient Diversification of Investment.", New York, John Wiley and Sons.

[11] The Arbitrage Pricing Theory originally developed by Ross (1976a,b), attempts to provide a model that explains asset pricing better than the original CAPM. Over the past decade, the APT has emerged as the alternative theory of asset pricing to CAPM. APT is the more general model whose derivation is based on more intuitive and less restrictive underlying assumptions than the original CAPM. The CAPM and APT are not inconsistent, and the original CAPM can be obtained as a special case of more general APT under certain conditions.

II. IMPORTANCE OF FINANCIAL STATEMENT ANALYSIS

For an analyst, the way of superior performance analysis is transpired only having one of the followings..

1. Access to secret or insider information.
2. Superior analytical tools.
3. Superior forecasting abilities.

Forecasting ability has supported to assess the impact of technological and economic developments on the situation of firms.

2.1 Technical Analysis as a Supplement to Fundamental Analysis During Forecasting Stages of Firms.

Corporate future forecasts by fundamental analysis is based on economic, industry, and company statistics. In the fundamental analysis the stocks are analyzed with a risk-return framework .The fundamental analysis has checked the power to generate consistent profit, continuous growth, alternative risks and competition attitudes of corporate. The technical analysis findings are confirmed with fundamental analysis. The technicians identify the price trend depends on price and volume statistics. But findings of technicians are not consistent. Thus, technicians obtained forecasts are relatively changed from one analyst to the other. Because of that reason, we can say that, the technical analysis is statistical but not measurable.

Finally, the technical analysis has the purpose of recognize when one trend comes to an end and prices start in the opposite direction. But this aim is a supplement rather than a substitute . The problem of technical analysis is the non-smooth changing of the prices and lack of indicators to define the critical changes of prices.

2.2. Random Walk as a Special Case of Efficient Market Theory.

2.2.1. Frontiers of Random Walk Theory

The answer to the question of whether a series of historical stock prices or rates of return be an aid in predicting future stock prices. That rates of return, is created the random-walk theory.

But random-walk model or hypothesis should be considered as a special case of the general efficient market model or hypothesis [12]. Brief outlook of the three generally discussed forms of the efficient market hypothesis namely, the weak form of the efficient market hypothesis, the semi-strong form, and the strong form will be discussed.

The random-walk model, supported that previous price or return changes are inadequate in predicting future price or earning changes. All the initiatives to predict the future prices by making use of historical prices will be a failure according to the random walk hypothesis[13].

In addition to that, random walk hypothesis proposes the successive price changes as independent. Stock's price should deviate from its intrinsic value in such a way that, different investors should evaluate the available information differently or have different intellects into the future attitudes of the firm. In every financial theory there is a stationary level of equilibrium. Any deviation from its intrinsic value, will create an acceleration of buying or selling stocks. After that acceleration an end point price level of steady state is tested. And after that steady state the stock price will return to its equilibrium.

The random-walk model does not make a performance comparison to the stocks. In contrast to the technical analysis, random walk detects the trends in stock prices after one has removed the general market influences. While this removing has provided a trend definition it will not give any decision about future forecasting. In this respect, it will agree to the relative price movements in stead of absolute price changes. This is not mean that random walk hypothesis is against to upward or downward movement. It should be notified that, the random walk is entirely consistent with an upward or downward price movement.

Discussions about a competitive market, instantaneous adjustments to new information, knowledgeable market participants, or easy access to markets, are all in reality not part of random-walk model. It is very important that theory supports fundamental analysis and certainly does not get rid of it.

2.2.2. Random Walk and Technical Analysis[14]

The random-walk theory will be against to the technical analysis. Especially, the theory has an objection to technical analysis and its consistently successful approach of a long time period. Although, the technicians support that future price of any stock will be strongly dependent to historical price of the stock. The random walk accept that the successive price changes are independent. In contrast to the random walk theory, technicians do not accept the findings of random walk researchers. The technicians state that statistical procedures employed in the literature of the past, were quite simple to detect complex, historical price relationships.

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[12] Eugene F. Fama, "Efficient Capital Markets: A Review of Theory and Empirical Work," *Journal of Finance*, 25, No.2 (May, 1970), 383-417.

[13] Eugene F. Fama, Random Walks in Stock market Prices," *Financial Analysts Journal*, 21 No.5 (September-October, 1965),55-59.

[14] George E. Pinches, " The Random Walk Hypothesis and Technical Analysis." Financial Analysts Journal, 26, No:2 pp: 104-10, 1970.

2.2.3. Random Walk and Fundamental Analysis

Defining the relationship between random walk and fundamental analysis is not as easy as the relationship between technical analysis. Random walk states that short term price movements are purely random depending on the correct intrinsic value of the stock. Random walk emphasizes the concept of short term price change independence, and it propose nothing about long term trends of the stocks.

Especially for semi-strong form, random walk theory states that fundamental analysis will be wonderful to catch the opportunities arising from difference of existing and true intrinsic value of the stock. Specifically, the fundamentalists will have a superiority for the case of contradiction with true and existing intrinsic values. Fundamentalists will use either their future prospects or insider information about the company.

2.3. Corporate Attitude Forecasts of CAPM.

Portfolio analysis considers the determination of future risk and return in holding various blends of individual securities. Analysts have proposed using beta coefficients to approach the problem of stock selection. Portfolios are constructed by optimizing beta coefficients in line with the market outlook. For example, if the market is expected to advance in the future, portfolios will be constructed containing stocks with beta coefficients that give maximum return. The underlying assumptions during the proving stage of CAPM, voluminous body of literature lumped together for disappearing of beta and average return relation during more recent 1963-1990 period.

2.3.1. Derivation and Assumptions of CAPM.

Markowitz studies about mean-variance criterion of assets implies that the variance of asset returns serves as a risk indicator. A preference for expected return an aversion to variance is implied by monotonically and strict concavity of an individual's utility function. (i.e. investors are risk averse.). Another strong assumption of MVC is security returns normally distributed. A portfolio obeying the quadratic program above is a frontier portfolio, seen in Figure 1 below.

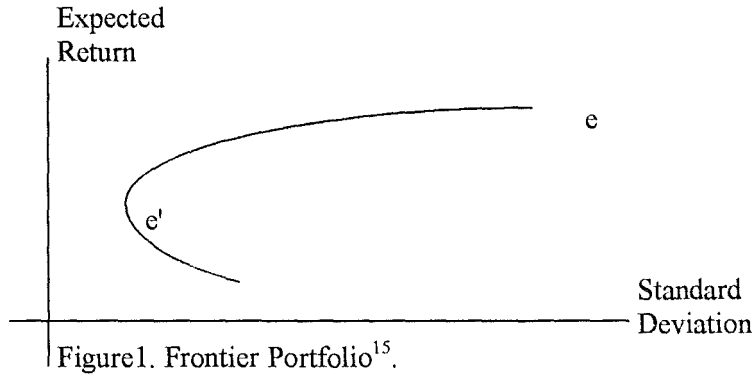

Figure1. Frontier Portfolio[15].

Portfolio p will be on the e'-e curve, called the efficient frontier. MVC is normative, because of its strong underlying assumptions. The separation theorem due to Tobin[16] dichotomizes investment decisions under uncertainty into two steps. Given that investors can borrow and lend unlimited amounts of money at a risk-free rate r_f. Also investors will first decide on the weights of a portfolio p of risky assets regardless of their tastes and preferences[17]. And then to decide in the mix of this portfolio with the risk-less asset, whose return is denoted by r_f. Obviously, the second step of the separation property depends on the tastes and preferences of individuals. The figure below shows investment decisions of investors under this framework.

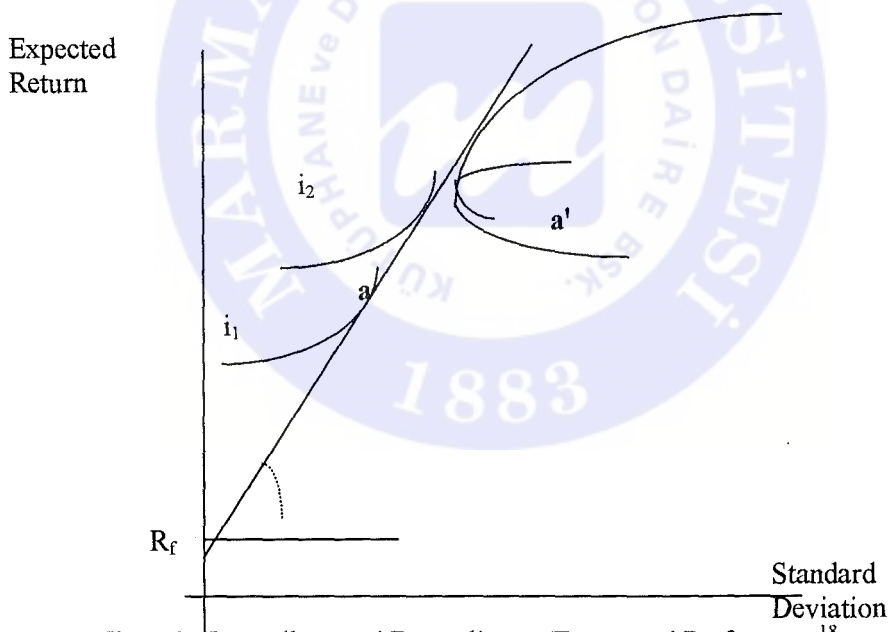

Figure2. Regardless and Regarding to Tastes and Preferences[18].

[15] Alan L. Tucker, Kent G. Becker, Micheal J. Isimbabi, Joseph P.Ogden. " Contemporary Portfolio Theory and Risk Management". pp. 62. 1995.
[16] Tobin, J. "Liquidity Preference as Behaviour Toward Risk." Review of Economic Studies. February, pp: 65-66, 1958.
[17] Investors can actually hold single stock portfolios, however this will not enable them to reach the efficient frontier. On the other hand, the seperation is valid in the single stock portfolio framework as well. For detailed exposition of stock case see Levy and Sarnat (1984) pp. 397 – 405.
[18] Alan L. Tucker, and others. " Contemporary Portfolio Theory and Risk Management". pp. 165. 1995.

Given that investors 1 and 2 agree on the expected returns and standard deviations of risky investments. They will hold m in their portfolio as risky asset. And r_f as the risk-free asset. What they disagree is the risk level being dependent on individual's tastes and preferences, i.e. the mix of m with r_f. The straight line from r_f through m is called the transformation line.

Investor 1 builds a portfolio of positive weights both in m and r_f and reaches the indifference curve i_1, on the other hand, investor 2 builds a "leveraged portfolio", borrowing at r_f to invest more in m and reaches the indifference curve i_2. The normative investment choice as described above is applied to the positive problem of capital market equilibrium and determination of security prices by Sharpe[19] ,Lithner[20], Mossin[21] and Fama[22] named as Capital Asset Pricing Model (CAPM). As we quote from Levy and Sarnat[23].

"In addition to the underlying assumption, investors are risk-averse and select their portfolios by the MVC, we shall assume that the capital market implied the following conditions perfectly:

1) The market comprises many buyers and sellers of securities, none of whose transactions is large enough to affect the prices in the market, and all of whom have an equal opportunity to invest.

2) There are no transaction costs or transfer taxes, nor is there an income or capital gains tax.

3) All investors have all relevant information regarding alternative investments and there are no costs involved in obtaining this information. All investors, therefore have the same expectations regarding the expected returns and variances of all the alternative investment options.

4) All investors can borrow or lend any amount in the relevant range without affecting the interest rate. The borrowing rate equals the lending rate and it is the same for all investors both large and small, institutional and individual.

5) There is a given uniform investment period for all investors; that means all decisions are taken at a point in time, and all investments are held for the same period.

Sharp's approach to drive the CAPM at points m in figure 2 is the efficient frontier and the curve aa' have the same tangent whose slope is equal to the slope of **transformation line**. Let r denote risk-free rate r_f, μ denotes expected rate of return. σij is the covariance between i and j. We create a portfolio p with the rate of return R_p[24]:

$$R_p = xa\ Ra + (1 - xa)\ Rm$$

[19] Wiliam F. Sharpe.,"Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk", Journal of Finance, September, 1994.
[20] John Lintner, "Security Prices Risk and Maximal Gains from Diversification", Journal of Finance, December 1965.
[21] Jan Mossin., "Equilibrium in a Capital Asset Market", Econometrica, October 1966.
[22] E.F. Fama, "Risk, Return and Equilibrium: Some Clarifing Comments", Journal of Finance, March 1968.
[23] Levy Sarnat, "Capital Investment and Financial Decisions", pp: 39 – 569, 1984,
[24] Alan L.Tucker, K.G. Becker, M.J. Isimbabi, J.P. Ogden." Contemporary Portfolio Theory and Risk Mng." Pp: 49-91.1995

Where

Xa :The proportion invested in stock a.
Ra :The rate of return on security a.
1 – xa :The proportion invested in portfolio m.
Rm :The rate of return on portfolio m.

$$\mu p = xa\ \mu a + (1 - xa)\ \mu m$$

is the rate of return on portfolio.

$$\sigma^2 p = xa^2\ \sigma^2 p + (1 + xa)^2\ \sigma^2 m + 2\ xa\ (1 - xa)\ \sigma am$$

is the variance of the portfolio. Which defines the volatility of the portfolio.

$$\sigma p = \{ (xa^2\ \sigma^2 p + (1 + xa)^2\ \sigma^2 m + 2\ xa\ (1 - xa)\ \sigma am) \}^{1/2}$$

is the standard deviation of the portfolio. Which defines the risk of portfolio.
At point m, the curves aa' and the efficient frontier coincide, therefore the proportion xa invested in security a is zero. So we take the derivative

$$\frac{\delta \mu p}{\delta\ xa} \quad \text{and} \quad \frac{\delta \sigma p}{\delta\ xa} \quad \text{and evaluate at a point m where xa = 0}$$

$$\frac{\delta \mu p}{\delta\ xa} = \mu a - \mu m \qquad (1)$$

since at point m, xa = 0 and σm = σp the partial derivative of portfolio standard deviation will be as following formula.

$$\frac{\delta \sigma p}{\delta\ xa} = \frac{(\sigma am - \sigma^2 m)}{\sigma m} \qquad (2)$$

The chain rule specifies that partial differentiating of portfolio rate of return to the xa can be represented as the following.

$$\frac{\delta \mu p}{\delta\ xa} = \frac{\delta \sigma p}{\delta\ xa} \quad \frac{\delta \mu p}{\delta \sigma p} \qquad (3)$$

Using the formulas (1) , (2) and (3) we can describe rate of return for stock a as the following.

$$\mu a = r + \frac{(\mu m - r).\ \sigma am}{\sigma^2 m} \qquad (4)$$

since $\beta_a = \frac{\sigma am}{\sigma^2 m}$ the equation can be rewritten as

$$\mu a = r + (\mu m - r).\beta_a \qquad (5)$$

This derivation holds in equilibrium for each security ; expected return of a security equals to risk-free rate plus the risk premium times the systematic risk of the security denoted by β_a.

Linther[25]'s approach to the same problem is maximizing tangent of the angle α (tanα) in figure 2. Levy and Sarnat minimizes the portfolio variance when r_f is also included in the minimizing problem instead of maximizing tanα.

Although there are several extensions of the CAPM, to relax the strong assumptions of the model, the importance of fundamental financial information and the importance that knowledge gained importance on the period between 1963 and 1990. The zero-beta model under no risk-less asset is developed by Fisher and Black[26]. The study of Fama and French[27] become against to the studies of Sharp, Linther and Black.

According to the risk definitions two types of risks are taken into consideration. One is systematic risk and the other one is non-systematic risks. Non-systematic risks have ability to scatter its risk. These types of risks are specific to company or sector and it is known as company risks or sector risks. On the other hand the systematic risks are non-scattered. This systematic risk is called as market risk and its effects are observed on the all transacted stocks in market so called market risks. The risky factors like inflation, recession or interest rates including economy effected the prices of all stocks on the same direction but on different rates.

The economical behavior of a company depends on the economical behavior of the financial market, economical politics of the government, competition with other firms, turnover of investments, leveraged or non-leveraged financial situation. These affects are explained as company risk and market risk by the CAPM. The market risks were defined as government's interest rate policy, currency policy, and exchange rate risk. On the other hand the competition in the sector and the place of the company in this rivalry, top level management of the company, marketing strategy and its affects on the sales are the company risks. It is possible to diversify the non-systematic risk by taking stock position on different group of sectors.

On the other hand the well known solution to avoid systematic risk is to change portfolio composition. Plus the fact that different portfolio alternatives like put or call option trading are considered to be a solution to the systematic risk problem. Also the future and forward markets have shown an alternative solution to overcome the difficulties of systematic risks.

2.3.2. The Superiority of Financial Statement Information to CAPM.

a) Contradictory Particulars of CAPM for Future Return and Risk Relations.

[25] Linther, John, "The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolio and Capital Budgets.", Review of Economics and Statistics, February 1965.
[26] Black, Fisher, "Capital Market Equilibrium with Restricted Borrowing." Journal of Business, 1972.
[27] E.F. FAMA and K.R. FRENCH, "Cross Section of Expected Stock Return.". Journal of Finance, XLVII.,No:2, June 1992.

Most of the practical studies in ISE are based on the financial statement information analysis. The systematic risk levels of developing and developed countries are compared including ISE. The results of analyzing has emphasized that, developing countries are more risky than developed countries[28].

The theoretical and practical incompatibility of CAPM could be explained by comparing its strong assumption of symmetrical normal distribution. In the real life the risk and return relation has implemented an asymmetrical normal distributions. In practical life, the risk and stock return relation is not configured as a perfect normal distribution. They have been observed in skew to left or right. The normal distribution histogram on skew is scrutinized and each of the half on normal distribution is separated by its average. Each half of the total normal distribution does not carry the same risks although they share the same half of total returns. That's why the CAPM is efficient only in the case of normally distributed return functions.

In trading, some investors have bright precedence against the others because of the market is accepted as semi-weak form. The information are not uniformly distributed in the market. On the bases of trading, there are some insider information regards. If the percentage of insider information increases in a market than the usage of CAPM will not be so pragmatic.

Low level correlation between developed and developing countries emphasize that, the developing markets are not becoming a united whole with developed countries[29]. For developing countries, Demirgüç and Huizinga[30] explained that, they have lack of becoming a united whole with developed countries. So it is an important handicaps of portfolio investments on developed countries. The second problem is non-efficiency of ISE against to NYSE, NASDAQ, or AMEX. That's why, correct investment is not a practical application using CAPM in ISE. In ISE, the weak, semi-strong, and strong form of market classifications are tested. K.Metin, G.Muradoğlu ,B.Yazıcı[31] and E.Balaban[32] found that random walk test results provide an evidence in favor of rejection for a weak form of efficiency in Istanbul Stock Exchange.

The other important thing is to clarify manipulations occurring in the capital market. Because the market prices of some companies has been increased and decreased free from its financial prospects, future expectations, sector advantages or disadvantages. The only thing affecting market capitalization of these kinds of companies are manipulation and insider information. By the clarification of ''earning forecasts'' the fundamentally strong companies and speculatively strong companies can be distinguished analytically.

b) Relationship Between Stock Returns and Financial Statement Information

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[28] Gökhan UGAN, "The Systematic Risk Management on the Emerging Capital Market.", ISE Review, Vol:1,No:2, 1997.

[29] Harvey, Campbell R., "The Risk Exposure of Emerging Equity Markets.", The World Bank Economic Review (International), January 1995, pp:15-50.

[30] Kunt, Aslı Demirgüç and Huizinga, Harry, "Barriers to Portfolio Investments in Emerging Stock Markets.", Journal of Development Economies, August 1995, pp: 335-374.

[31] K.Metin, G.Muradoğlu, B.Yazıcı "An Analysis of the Day of the Week Effect on the Istanbul Stock Exchange.", ISE Review Volume: 1 No:4, 1997.

[32] Balaban E, " Day of Weak Effects: New Evidence from an Emerging Stock Market." Applied Economics Letters, Vol:100, pp:83-89, 1995.

After Sharpe-Linther-Black until now, some empirical studies contradicted to that Beta suffice description of expected returns. Let us get in touch these empirical studies briefly one by one.

Size effect of Banz[33]. Banz has considered on the **market equity** (ME) concept. The effects of ME (stock's price times shares outstanding) on average return provided by market Betas are not uniform. Banz has proved a negative relation of ME and firm's average returns. Average returns on low ME stocks are too high by their provided Betas and average returns on large stocks are low by their provided Betas.

Positive relation between **leverage** and average return of Bhandari[34]. Bhandari has notified that, the leverage is associated with risk and expected return. In the Sharp Linther Black model leverage risk should be caught by market Beta. But Bhandari find that the leverage enhances to explain stock returns including ME as well as Beta.

Stattman[35] and Rosenberg, Reid, and Lanstein[36] . They find that average returns on US stocks are positively related to the ratio of firm's **book value of common equity** (BE) to its **market value** (ME). Chan, Hamao and Lakonishok (1991) find that **book to market equity** BE/ME, also has a strong role in explaining stock returns in Japanese stocks.

Basu[37] proposed that **earnings-price ratios (E/P)** support the explanations of average returns on US stocks including size effects and market Betas. Also Ball[38] discuss that E/P captures the delegation for various factors on the expected returns. E/P is likely to be higher for stocks with higher risk and expected returns.

Chan and Chen[39] proposed that earning prospects of the firms are associated with a risk factor in returns. Companies that the capital market judges to have poor prospects, proved by Chan & Chen by **low stock prices and high ratios of book to market equity**, will have higher expected stock returns.

The last one is the study of Fama and French[19]. Fama and French find that, the simple relation between Beta and average return disappears during the more recent period of 1963 and 1990. They have discussed about the sufficiency of Beta to describe stock return. On their discussion the point that they have supported is the combination of size and book to market equity. The size effect and book value of common equity to market value include the effects of leverage and E / P in average stock returns. On the other hand Black, Jensen, and Scholes[40] and Fama and MacBeth[41] find that there is a positive simple relationship between average return and market Beta during the early years between 1929 and 1968.

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[33] Banz, Rolf W, "The Relationship Between Return and Market Value of Common Stocks." Journal of Financial Economics 9, 3-18, 1981.

[34] Bhandari, Laxmi Chand, "Debt/Equity Ratio and Expected Common Stock Returns: Emprical evidence, Journall of Finance, 43, 507-528, 1988.

[35] Statman, Dennis.,"Book Values and Stock Return." Journal of Seleceted Papers, pp: 4 25-45, 1980.

[36] Rosenberg, Barr, Kenneth Reid and Ronald Lanstein, "Persuasive Evidence of Market Efficiency.", Journal of Portfolio Management 11 pp: 9-17, 1985.

[37] Basu, Sanjoy, "The Relationship Between Return Earnings Yield, Market Value of Common Stocks: Further Evidence.", Journal of Financial Economics 12, 129-156, 1983.

[38] Ball, Bay, " Anomalities in Relationships Between Securities' Yields and Yield-Surrogates." , Journal of Financial Economics, 6, 103-126, 1978.

[39] Chan, K.C. and Nai-fu Chen, "Structural and Return Characteristics of Small and Large Firms." Journal of Finance 46, 1467-1484, 1991.

[40] Black, Micheal C. Jensen, and Myron Scholes, "The Capital Asset Pricing Model: Some Empirical Test, in M.Jensen, ed.:Studies in the Theory of Capital Markets, 1972.

[41] Fama and Macbeth, " Risk and Return Equilibrium: Emprical Test.", Journal of Political Economy. 81, 607-636.

Attitudes forecasts using financial statement information will provide analytical approach for each of the researched companies. In this article the importance of foreseeing is dominated. As a conclusion, to relieve the uncertainty of the risk remaining on the real earnings (i.e. the survival earnings after casualties of inflation) of any company and having a bright decision about company's future prospects and providing an analytical will be necessary in ISE.

By using practical life feedback '' attitudes forecasts'' of any company is planning to provide a sound decision making to any investors in this article. Also, by the use of its leading financial ratios as much as financial indicators of its. Because of economical fluctuations there are some sector priorities. Also in the same sector some companies are superior to the others. Situation of companies are reflected to its lasting financial information. Searching and finding out the powerful companies and weakness companies will provide a qualified service to the other researchers and investors.

III. RESEARCH AND DESIGN METHODOLOGY

3.1. Research Purpose.

Company attitude forecasts regarding to its financial ratios are accomplished with three different models such as multiple discriminate analysis, multiple regression analysis, and logit-normit analysis. Each of the model has some priorities in comparison to the others. But logit-normit analysis has definite theoretical advantages. The performance of company attitude is analyzed to obtain a decision about the followings:

a) Insight for the future of the company. This will provide a definite profit advantages for the astute investors. The insight for the future of the company is affiliated with random walk theory as well.
b) Identification of the investor time preferences.
c) Clarification of manipulations in the ISE:
d) Enlighten the propensity variation of investors on the share as a financial instrument.
e) Discussion of validity for the generated financial statement information parameters of ISE in the NASDAQ.

3.2. Research Design.

3.2.1. Statistical Methods:

a) Theoretical Background

In statistical inferences there are two types of errors like alpha and beta. In alpha type of errors the correct hypothesis is rejected but for beta type of error, the wrong hypothesis is accepted.

The two types of different organizational hypothesis are null hypothesis and alternative hypothesis. The null hypothesis are presented the most common idea about proposal. The alternative hypothesis is the opposite situation to the null hypothesis.

Table 1. Hypothesis Alternatives.

	Real Condition	
	Null Hypothesis Correct	Null Hypothesis Wrong
Decision		
Null Hypothesis Correct.	Sound Decision	beta error
Null Hypothesis Wrong .	alpha error	Sound Decision

In order to talk about the wrong decisions of really correct hypothesis, (i.e. alpha error) finance, telecommunication and fields are popular. On the other hand, the correct decisions of really wrong hypothesis (i.e. beta error) is used on the medical science.

For finance applications, the error type of alpha (the decision raw of wrong null hypothesis) is taken into consideration to reject or accept the null hypothesis. Since the error condition is fulfilled in the decisions of wrong null hypothesis, the sound decision making is to be searched on the wrong null hypothesis row.

The opportunity cost of decision is obtained when correct hypothesis is accepted as wrong. On finance applications accepting correct of really wrong hypothesis is concluded as loss of earnings.

There are two different types of structural hypothesizes[42]. The first one is parametric hypothesis and the second one is non-parametric hypothesis. In the parametric case, null hypothesis shoul,d compared with a value while in non-parametric null hypothesis with a qualification or a statement. The parametric and non-parametric hypothesis that will be used in the thesis are followings.

The parametric hypothesis in the short term company attitudes definition:

H_o : (H_0=0) R_L=1 H_o : (H_0=0) F >= 0.5

H_1 : (H_0=1) R_L=0 H_1 : (H_0=1) F < 0.5

In this formula R_L function is represented the logical relation output. R is another function which is used to define the real conditions of **short term company attitudes.** And it is denoted by following equations.

$R = X_L + Y_L + (Z_L * W_L)$ If R >= 1 then R_L= 1 If R < 1 then R_L= 0

These real conditions are constructed with four different parameters. Those parameters are X, Y, Z, and W. They have the threshold values of X_0, Y_0, Z_0 and W_0 respectively. If X >= X_0, Y >= Y_0, Z >= Z_0, W >= W_0 then X_L, Y_L Z_L and W_L values will be logically 1. If X < X_0, Y < Y_0, Z < Z_0, W < W_0 then X_L, Y_L Z_L and W_L values will have logically 0 value.

[42] Willliam G.Zikmund. " Business Research Methods." The Dryden Press, 1984. pp: 432 – 443.

Table 2. Logical Truth Table of STC Based on Hypothesis Study[43].

X_L	Y_L	Z_L	W_L	R	R_L
0	0	0	0	0	0
0	0	0	1	0	0
0	0	1	0	0	0
0	0	1	1	1	1
0	1	0	0	1	1
0	1	0	1	1	1
0	1	1	0	1	1
0	1	1	1	2	1
1	0	0	0	1	1
1	0	0	1	1	1
1	0	1	0	1	1
1	0	1	1	2	1
1	1	0	0	2	1
1	1	0	1	2	1
1	1	1	0	2	1
1	1	1	1	2	1

On the other hand F representing the forecasted result of logistic function. Since the logistic regression output defines a probabilistic function, theoretically it lies between the interval of 0 and 1. Then F function will be defined as the following.

$$F = \frac{1}{1 + e^{-(a_1 + b_1 x_1 + ...)}} \qquad (6)$$

When the x_i values increased, the exponential term will approach to infinitive. and the F function will approximate to zero. On the other hand, when the x_i values decreased, than the exponential term will approach zero and the F function will approximate to one[44].

The non-parametric hypothesis in the short term company attitudes definition:

H_o : There is no association between R_L and F.

H_1 : There is an association between R_L and F.

By the same manner, the parametric and non-parametric hypothesis in the **long term company attitudes** definition will be as the followings:

H_o : (H_0=0) $R_L = 1$ H_o : (H_0=0) $F > 0.5$

H_1 : (H_0=1) $R_L = 0$ H_1 : (H_0=1) $F < 0.5$

$R = X_L . Y_L . (Z_L .+. W_L)$ If $R >= 1$ then $R_L = 1$ If $R < 1$ then $R_L = 0$

[43] M.Morris MANO. " Digital Design." Prentise/Hall Internationall Inc., 1984, pp: 34-153.
[44] Statistical Terms Encyclopedia. Log-Lot Section. pp: 88.

These real conditions are constructed with four different parameters. Those parameters are X, Y, Z, and W. They have the threshold values of X_0, Y_0, Z_0 and W_0 respectively. If $X >= X_0$, $Y >= Y_0$, $Z >= Z_0$, $W >= W_0$ then X_L, Y_L Z_L and W_L values will be logically 1. If $X < X_0$, $Y < Y_0$, $Z<Z_0$, $W<W_0$ then X_L, Y_L, Z_L and W_L values will have logically 0 value.

Table 3. Logical Truth Table of LTC Based on Hypothesis Study[43].

X_L	Y_L	Z_L	W_L	R	R_L
0	0	0	0	0	0
0	0	0	1	0	0
0	0	1	0	0	0
0	0	1	1	0	0
0	1	0	0	0	0
0	1	0	1	0	0
0	1	1	0	0	0
0	1	1	1	0	0
1	0	0	0	0	0
1	0	0	1	0	0
1	0	1	0	0	0
1	0	1	1	0	0
1	1	0	0	0	0
1	1	0	1	1	1
1	1	1	0	1	1
1	1	1	1	2	1

Also F value will represent the forecasted result of another logistic function.

$$F = \frac{1}{1 + e^{-(c_1 + d_1 x_1 + \ldots)}} \qquad (7)$$

Then, the non-parametric hypothesis in the long term company attitudes definition:

H_o : There is no association between R_L and F.

H_1 : There is an association between R_L and F.

Testing of the correlation between two population is employed by Spearkman rank correlation[45]. The parameters of Spearkman rank correlation are n , r_s, and r_o. Where n is the number of observations, r_s is the Spearkman rank correlation test coefficient for specified n and level of significance. And finally, r_o is the correlation value to test comparison of two population.

According to this method in the condition of $r_o > r_s$ and $r_o < -r_s$ we can talk about the association of two populations.

[45] William Mendenhall, James E. Reinmuth, Robert Beaver. "Statistics for Management and Economics." PWS-KENT Publishing Company, 1989. pp: 961-963.

The companies in the ISE are analyzed according to Real Company Attitudes and Econometric Results of the Model. This comparison is realized with two different situations of the same companies for the specified time intervals.

b). Alternative Options to Select Econometrics Model

In the case of company attitudes forecasts three alternative statistical methods like multiple discriminate analysis (MDA), multiple regression analysis (MRA) and logit – normit are used in the literature. But it is known that, before than those multi-dimensional analysis the single dimensional analysis should be taken into consideration. The first single dimensional forecasting method is realized at 1935[46]. For attitude forecasts, three stages are defined in the earlier studies. In the first stage, the averages of successful and unsuccessful companies are compared with each others. In the second, the threshold values of each parameter are defined company attitudes are determined according to that threshold testing. The last stage is the testing of normal distributions for financial ratios. The financial failure or successful situation is predicted until 5 years before[47]. In forecasting of company attitudes, the following three headings are considered as important problems.

1. The indecisiveness to determine the company attitudes.
2. The indecisiveness about the functional shape of the model. (i.e. linear or non-linear).
3. The weight assigned
4. Error variables in the model[48].

This lack of theoretical sufficiency has created descriptive and predictive models. The theoretical outputs should be more practical than a scientific motivation. It is well known that, any multi-dimensional model is better than uni-dimensional model. In MDA linear and quadratic types of analysis are used. The assumptions of MDA are listed as followings.

1. The groups have abilities to be defined independently.
2. Data are random selected from population.
3. The independent variables are performed normal distributions.
4. The deviation matrix of groups are identical.

Altman has been developed his Z model as Zeta because of Z's inefficiency of supplying needs. On the other hand the MRA is the most widely used method in the finance and economy. The relationship between dependent and independent variables described easily because of linear relations. The dependent function has an alternative to obtain a value bigger than 1 and less than 0. The assumption of MRA are listed as the following.

1 There are linear relationships between dependent and independent variables.
2 Heteroscadastisity is neglected.
3 The independent variables are multiple and normal distributed.
4 There is no auto correlation between successive terms in the model.

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[46] Altman, E., 1988, "The Prediction of Corporate Bankruptcy: A Discriminant Analysis." Grand Publishing Inc.
[47] W.H. Beaver, " Market Prices, Financial Ratios, and the Prediction of Failure." Journal of Accounting Research. Fall, 1968.
[48] Foster, G., 1986, " Financial Statement Analysis." Prentice Hall Edition, 1986.

Although the obtained results of MRA and MDA are similar, the MRA is respondent the normal distribution expectations more accurate than MDA. In a Turkish application of financial successful or failure determination, 0.5501 coefficient of determination is obtained. In this study the successful companies have classified with 94.45% and unsuccessfully with 93.33%[9].

The logit-normit functions are relaxed some theoretical assumptions of MRA and MDA. By the simulation method the MRA and normit model forecasting powers are compared in U.S.A. In order to accomplish this test, the Compustat database is used by randomly selected two samples like 50 and 100. By using the monte carlo simulation technique, the current ratio, financial leverage, and dummy variables are used to test the forecasting performances of probit and MRA. The result has a definite advantage for MRA in N=50 case. And when N=100, this advantage is decreased for MRA. When the sample size is increased the forecasting performance of both models are increased. But the normit model was more sensitive to the increase of sample size. 1000 iteration is tested to realize that study[50]. In Turkey the comparison study of those three alternative method is resulted that logit-probit model has provided advantages to the others[51].

For company attitudes definition, the econometric model is covered 5 years period data in ISE. In the logit model analysis of company attitudes definition, asymmetrical time relation of companies originated from different times initial public offerings are eliminated.

c). Some More Details About Logit Model[49]

ca). History of Logit Model

Logit model produced from three distinct and separate sources: applied mathematics, experimental statistics, and economic theory. The logistic function was designed as early as 1845 with growth curve; and started the first studies of the bivariate probability model. The growth curve were originally designed to describe the development of a living population over time. On the other hand normit function is originated from biological statistics of the 1930s. The theory of discrete choice or random utility originated as part of economic theory around 1950. The complete development of the generalized logit model dates from its use in traffic analysis in the early 1970s.

The first to generalize the logit model to more than two situation, and to pass from the bivariate to the multinomial logit model was Theil at 1969. This generalization has started a very wide field. The multinomial logit model was applied with a modal split. And it has solved many theoretical problems in the directions of the applied things to do. Mc Fadden has developed conditional logit model. And he was generated a new concept on the logit such as nested logit.

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[50] Noreen, E., " An Empirical Comparison of Probit and Regression Hypothesis Tests." Journal of Accounting Research, V:26, No:1, 1988.

[51] R. Aktaş, "Forecasting of Financial Failure for Industrial Corporate." Türkiye İş Bank Culture Publish, 1993.

[49] J.S. CRAMER, "An Introduction the Logit Model for Economists." A Division of Hodder & Stoughton.

cb). Bivariate Logit Model

The logit model has its origin in the analysis of biological experiments. The variables in the logit model is specified as qualitative or limited dependent variables and it is expressed as discrete choice. For a single attribute, the dependent variable Y is a scalar which can take only two values, conventionally assigned the values 0 and 1, and is defined as;

$Y_I = 1$ If particular condition is satisfied.

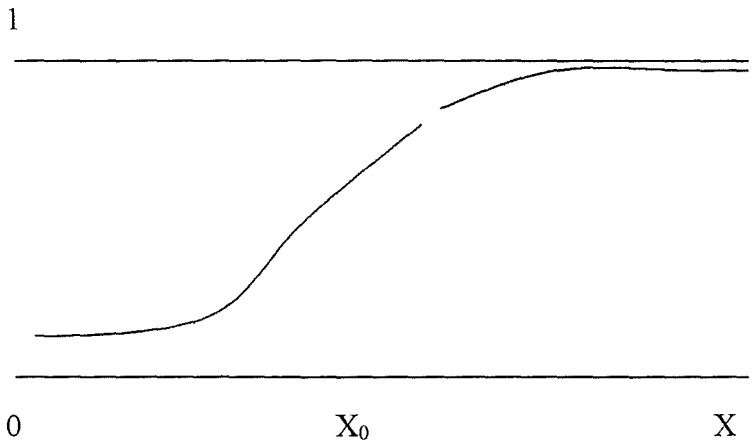
$Y_I = 0$ Otherwise.

cc). Sigmoid or S – Shaped Curve:

The regression equation may be revived by specifying

$$P(X) = a + b X$$

which is the linear probability model. This method leads to improve the estimation of a and b by linear regression methods, with suitable embellishments like a correction of heteroscedasticity. The phenomenon is proposed with Goldberger and an extensive treatment by using a comparison with statistical discrimination is supported with Ladd. However, such technical improvements do not remove the principal objection, which is that the linear specification is not constrained to the limited range from 0 to 1, imposed on probabilities. The monotonically varying probability with X and yet remain within these bounds, we must look for a sigmoid or S-shaped curve which flatten out at either end so as to respect these natural limits. In fact, great many functions that meet this requirement; one of these is the logistic function. The logistic function follows the sigmoid curve as shown in the following.



The logistic function above follows the sigmoid curve.

Sigmoid or S shaped curve which flattens out at either end so as to respect these natural limits. The function is symmetrical around this midpoint X_0, in the sense that the same curve is obtained if we reverse the direction of the X – axis and turn the diagram upside down. The original curve and this mirror image cross at the midpoint X_0, with probability 0.5. The slope of the curve is governed by b, and at the point of inflexion it equals b/4. The position of the curve is determined by the parameter a. Insecticides and similar products are graded by the midpoint concentration level $X_0 = - a / b$, known as the 50% effective dosage, or ED50. In economic analyses the main interest is however in effects, not levels. These effects are stated as elasticity of the form. Similarly, viewing the linear regression equation as an approximation to some more complex analytical relation between the regressor and the regressand. The log odds ratio is taken as the starting point of the analysis. This ratio has been defined for any P (X) as,

$$R(X) = \log (P(X) / (1 - P(X)))$$

The Taylor series expansion around X1 yields

$$R(X) = R(X1) + R'(X1)(X - X1) + \text{remainder}$$

$$R(X) = R(X1) - R'(X1)X1 + R'(X1)X + \text{remainder}$$

In the serially expanded function the first term is a constant. In the R function X1 is substituted and a constant term is obtained. The derivative of a first order function will yield a constant term. The second term is linear in X and the remaining represents higher order derivatives.

Another argument of the logit model is to conceive a random process where individuals alternate between two states, such as successful and failure, educated and uneducated. The term of signification either situation are nonnegative random variables; if they are affected by the repressor X, various models will lead to an expected duration of the intervals spent in states 0 and 1 of the form.

$$e^{(a0 + b0X)}$$
$$e^{(a1 + b1X)}$$

which avoids negative values. In the general conditions, the probability of finding an individual drawn at random situation 1 is then

$$P(X) = e^{(a1 + b1X)} / (e^{(a1 + b1X)} + e^{(a0 + b0X)})$$

Since the numerator and the denominator can be multiplied by and exponential term like $e^{(p + qX)}$ without affecting P (X), the parameters are not identified; we therefore normalize them by substituting

$$a = a1 - a0 \quad \text{and} \quad b = b1 - b0$$

and then by assigning

$$a0 = 0 \text{ and } b0 = 0$$

the equation will supply the logit model.

$$P(X) = e^{(a+bX)} / (1 + e^{(a+bX)})$$
$$Q(X) = 1 - P(X) = 1 / (1 + e^{(a+bX)})$$

On another point of derivation, assumed a continuous impact X1 is a function of the stimulus X with a random disturbance, as in the regression equation.

$$X1 = a + b\,x_I + d_1$$

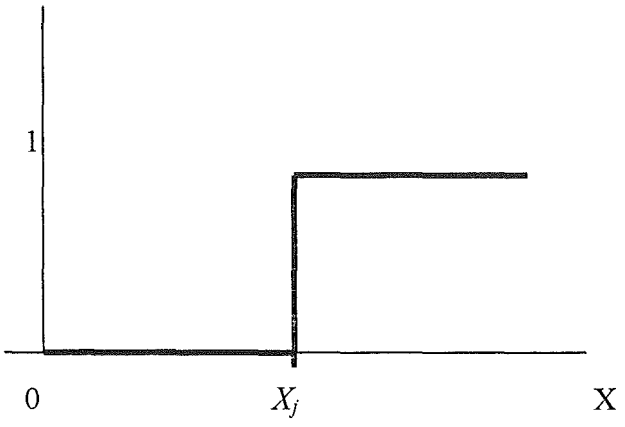
And a threshold X0 is given,

$$X0 = c + e\,x_I + d_2$$

Y = 1 If X1 > X0

Y = 0 If Otherwise

Response function of any single experiment looks like the step function as the following:



cd). The Normit Probability Densities versus Logit Probability Densities:

In practice only two densities are used in the described manner above. The first is the logistic density, which yields the logit model, and the second is the normal, which leads to the probit model. The probit specification is analytically less tractable than the logistic function. The two functions are quite similar in shape, as was first pointed out by Winsor at 1932. The logit model has higher peak in the middle than the normal, and it declines faster than normal, and then it slows down to thicker tails that are often mentioned.

3.2.2 Research Framework

a). Short Term Hpc & Lpc in Real Conditions of ISE:

The main purpose of the research is to determine which company is high performance and which one is low performance. Because of that reason, the first step of clarification is to define HPC very strictly. In fact to evaluate the performance of a company needs a multi dimensional analysis. The companies can have a potential to make profit but not responding that profit capability to its outputs. On the other hand the company could carry the potential to gain but the concluded income result is not enough to represent this potential. The point behind this research is to invent the HPC with an analytical approach.

So, on this article there are three different alternatives and four different fundamental financial conditions assist to discover HPC and LPC. These three alternatives are real profitability, the power of profit making against credit costs, leverage.

The leverage concept is analyzed in two different manners. One is operating and the other is financial. In this article considered leverage[52] concept is supported by Miller's study about the relation of leveraging up to the corporate capital structure and risks. Also in 1988 Bhandari find that the leverage supports to explain stock returns including size effect as well as Beta. Plus the fact that Ertuna's study of inflation

[52] Merton H. Miller "Leverage" Journal Of Finance VOL XLVI, No.2 June 1991

corrected financial statement analysis get in touched the point of financial and operating leverage.

The leverage concept is combined with real net income change.[53] Inflation and stock return relations study of FAMA and SCHWERT suggest that, common stock returns and expected inflation rate are negatively correlated. The study notifies that in the case of increasing inflation stock returns are decreased. The study is supported this article by giving a message of inflation critical analysis. When net income of the company breakthrough the expected and unexpected yearly inflation rate. This will be an indication of being short term HPC.

The study of Ertuna[54] has conducted another important criteria of a company that is ROA and credit cost comparison of any company. This concept states that, the investment performance of any company can be measured by its capability of overcoming the load of credit cost. According to the study of Ertuna ROA reflects the operating profitability of a company. Sould ROA overpass the credit cost, this will be a demonstration of being profit center for the company. So, in order to define a short-term HPC, ROA and Credit Cost ratio should be greater than one. If the corporate ROA is higher than credit cost then, the company has concluded a real net income already. Otherwise it will realize that profit in the following periods.

Implementing a short-term high performance company (HPC) is the most popular deterministic characteristic of net profit after tax. The net profit after tax has become insufficient alone to prove on defining HPC and Low Performance Company (LPC). The point behind this dissatisfied phenomenon arise from just disregarding the sales of companies. On the other hand the operating profits, financial benefits and credit costs of the companies should be considered to define HPC and LPC. Plus the fact that, on the companies there are some non-fund outflow expenses. These non-fund outflow expenses can be classified due to costs, due to operational expenditures, and other activity expenditures and losses. Some examples of these classified non-fund outflow expenses are listed as below.

Order Advances Received
Provision For Retirement Pay
Provision For Other Payables & Expenses.
Depreciation

If the company has much of non-fund outflow expenses, in this case it will be possible to hide profit generation capability of the company. On the other hand the operating efficiency of the companies can not be clarified if the analysis of the company is based on point of view of net profit only. Although a company has leveraged and has a bright potential to gain it has been approved as the LPC.

The other financial topic is credit cost. The credit cost used in this article to determine HPC and LPC companies. And this ratio is financial expenses to short and long term financial liabilities. The company comparison parameter of credit cost is compared with ROA in order to have an analytical output. The threshold level of this comparison is defined as excess point of ROA against Credit Cost. If ROA of the company is greater than Credit Cost, then the company has a potential of using their sources with high performances as well as their investments.

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[53] FAMA and SCWERT "Asset Returns And Inflation" Journal Of Financial Economics 5 1977
[54] İ.Özer ERTUNA "Inflation Corrected Financial Statement Analysis", Bilrapor System, 1980.

In the high inflation environment to increase real net profit is a dramatic result for any company. On the other word to make more profit more than yearly inflation rate is not so easy. Because of reason the company can be classified as HPC for the tested time interval. But this attitude is exactly a two edged sword. One edge of the sword is to be able to obtain a financial gain against inflation and to get a positive state in comparison to other companies. But the other edge of the sword is to have a probability of obtaining this profit from extraordinary income and profit. According to the analysis based on this article, extraordinary items profit contradiction on the profit after tax can be resolved by an infinitive time interval analysis. For discrete time analysis the company has increased its income against inflation rate, so its a HPC for specified period. But if the company do not support its income with its real activities then it may change the case of HPC attitude against inflation rate for the following time or the trait of the company. And the company will not be as stable. Vice versa, if the real activities and the financial activities logically positive, than the company will provide financial gain against yearly inflation rate for future time periods. So undetermined state of the company is clarified with a new point of view that is leverage.

The company has two kinds of leverages. One is operating leverage and the other one is financial leverage. The operating leverage compares the yearly change rate of operation profit and gross sales. And the financial leverage compares the yearly change rate of operational profit and profit before extraordinary items and tax. Leverages are considered logically positive if it is greater than 1. And in order to define HPC both financial and operating leverages should be satisfied together. Buy this way any company having high profit change rate than inflation rate can be selected

Thus, HPC definition is concluded with an analytical and systematical approach as following.

X : If the net profit after tax is greater then that yearly declared consumer price index.
Y : If ROA is greater then credit cost
Z : Financial leverage is greater then one.
W :Operating Leverage is greater then one.

On the columns of X, Y, Z, W 1s and 0s are described as the following. If the parameters are positive against definition then they are notified as 1. If the companies are not satisfied defined criteria then denoted as 0. The last column of company situations are high performance if they are denoted as 1 and 0 if they are low performance.

The company is to be selected as **Low Performance** with in the criteria of the followings.

(a) None of Profitability, ROA credit cost and leverage conditions are satisfied.

(b) The profitability and credibility conditions are failed one of the leverage conditions is satisfied.

Also the company will be **High Performance** if the followings conditions are satisfied.

(a) One of the profitability, credibility or total leverage (financial and operating leverage) conditions satisfied.

(b) All of the profitability, credibility or total leverage conditions are satisfied

Table 4. Logical Truth Table Representing Company's Short Term Real Attitudes Regarding to Their Four Different Financial Aspect[43].

X	Y	Z	W	Short Term Real Conditions Of Hpc And Lpc
0	0	0	0	0
0	0	0	1	0
0	0	1	0	0
0	0	1	1	1
0	1	0	0	1
0	1	0	1	1
0	1	1	0	1
0	1	1	1	1
1	0	0	0	1
1	0	0	1	1
1	0	1	0	1
1	0	1	1	1
1	1	0	0	1
1	1	0	1	1
1	1	1	0	1
1	1	1	1	1

Alternative Real Company Attitudes	Number Of Real HPCs For Short Term in Overall	Number Of Real LPCs For Short Term in All
$2^4 = 16$ Different Alternative Conditions	13	3

As shown in above table 3 companies are defined as low performance if they achieved only financial or operating leverage without having return on assets advantages against their credit costs as well as positive real net profits in comparison to the yearly inflation rates.

The chosen econometric modeling for the design of any high performance company is Logistic Regression. So, econometric model of high performance companies on their dichotomous output functions phenomenon should be defined accurately. The dichotomous function is defined logically true when the corporate financial information is able to pass over the threshold level that is described in detail four different conditions above. The design of HPC reflecting real conditions are described with logical conjunctions of and & or statements. Because of that reason conjunction of and is denoted by ". ". Also the conjunction of or is denoted by "+". Then the HPC equation described by the following.

$$HPC = X + Y + Z \cdot W \qquad (8)$$

In order to find the effective ratios suitable to describe a high performance company is checked in the four different classified groups. The first group is Liquidity, the second one is Turn Over, third one is Leverages and Financial Structuring, the forth one is Profitability and Growth.

In the article during the analyzing stage instead of corporate forecasts growth of net income, gross sales or other the multi dimensional and more analytical combination are taken into consideration. 34 ratio and 771 periods on different companies in the ISE starting from 1989 to the 1995 are searched to discover the parameters of HPC. The parameters are concentrated on seven different group of ratios.

b). Long Term Hpc & Lpc in Real Conditions of ISE:

Investors trading points of view defined two different kinds of strategies such as passive trading and active trading. What the meaning of passive trading is to take position on HPC and do not trade it for an infinitely long time duration for capital market's criteria. Although the active trading need to have a short term knowledge about company attitudes, the passive trading do not need that much of short term company knowledge.

Because of investment strategic differences between active (speculative) and passive (buy and hold) trading, short term and long term company clarification will be an obligation. In the passive trading, the decisions are concentrated on the long performance of the companies. The short term company attitude projections will not be sufficient to put forth a passive (buy and hold) investment. Since the passive (buy and hold) trading in application is inevitable, that means the long term company attitude projection will be as important as short term company attitude projection.

In the long term company projection to determine the criteria will not be as easy as we did in the short term company attitude definition.

c). Selecting Criteria Limits For Long Term Company Attitudes:

The normal distributions of parameter X, Y, Z and W are configured. According to that configuration mean and standard deviation are made sense of long term performance limits.

$$\mathbf{HPC = X \,.\, Y \,.\, (Z + W)} \qquad \mathbf{(9)}$$

where **X : The net profit after tax,**
Y : ROA over credit cost ,
Z : Financial leverage,
W :Operating Leverage.
The boundaries of designed parameters are listed as following:

1. The leverage levels, found fault with the boundary of mean plus standard deviation. The upper level of both financial and operating leverage is defined as that mean plus standard deviation.
2. The lower limit of the leverages will be mean minus standard deviation.

3. According to their normal distribution information, the boundaries of operating leverage will be in the interval of 0 and 3. and for the financial leverage between 0 and 15.
4. Net income minimized the importance of defining long term company attitudes and. If the yearly net income change is greater than zero, then it is exceptional for long term performance evaluations. There is no upper boundary of net income.
5. ROA / Credit Cost should be at least greater than zero. The result that is very close to level zero is obtained by using the relation of mean minus standard deviation.

Table 5. Normal Distribution Of Operating Leverage[55].

Name Of Criteria	Mean	Standard Deviation	Kurtosis[56]
Net Profit	177.8	1001.69	102.140
ROA / CC	2.1	5.18	29.846
Financial Leverage	1.1	14.88	167.796
Operating Leverage	0.9	2.01	57.773

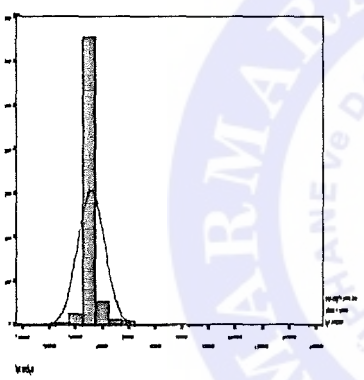

Figure 3. Normal Distribution of Operating Leverage.

Operating leverages based on ISE companies will constitute a proper normal distribution. The standard deviation from mean 0.9 is not so high. Thus, the good statistical validity of operation leverage is characterized on ISE. But the normal distribution of operating leverage is located at the left corner of the graph. The fixed costs on the COGS will keep in constant the term on the denominator of operation leverage formula, while the operating profit is increasing.

The higher values of operating profit will constitute an unsuccessful management. In the long term company attitude definitions a limited boundary of operating leverage levels are accepted to contribute a positive feedback for the company.

[55] In Drop Down Menu of SPSS, descriptive statistics and histogram sections are used to produce this. table.
[56] Kurtosis: A term used to describe the extent to which a unimodal frequency curve is peaked : that is to say, the extent to the relative sternness of ascent in the neighborhood of the mode. The term is introduced by Karl Pearson in 1906. For more detailed information please refer to Statistical Encyclopedia page: 80.

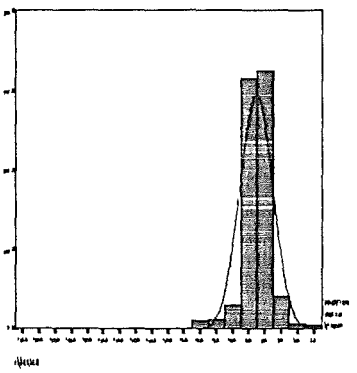

Figure 4. Normal Distribution of ROA/Credit Cost.

ROA/Credit Cost has a definite normal distribution. It has the same stability like normal distribution of operating leverage. More than 70% of ROAs are located around its mean. The higher ROA/Credit Cost alternatives are very seldom probabilities for ISE. But lower ROA/Credit Cost alternatives are more common in comparison to that higher values. The ROA/Credit Cost criteria represents companies being either a profit center or a financially failed company. So if the company management could not balance the relationship between its credit lines and profit sources, than it will create an unsuccessful company result. That's why this ratio is so important on the company attitude determination.

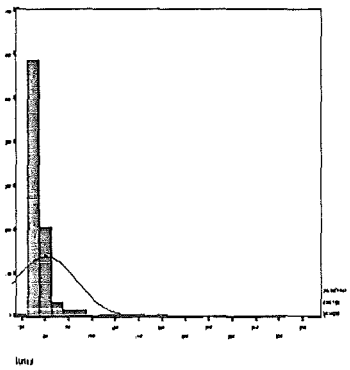

Figure 5. Normal Distribution of Financial Leverage.

Financial leverage normal distribution is skewed to the left. The standard deviation from mean 1.1 is extremely high in comparison to the leverage of operating and criteria of net profit growth rate or ROA/Credit Cost. This situation emphasizes the instability of financial leverages on ISE. Because of that reason, financial leverage criteria will contribute to define the LPCs.

In comparison to the short term company definitions, financial leverage is considered in a limited interval for the long term company definitions. In an inventively long time period corporate will constitute unsuccessful table arising from increasing fixed costs. In modern managerial finance, the contribution margin concept is taken into consideration to determine the break even point of any production. Contribution margin, is defined as production price times quantity of generated production mines variable costs. The theory states that, fixed costs are permanent costs for manufacturers. So, the revenue will be regarded to variable costs only. Should extremely high financial leverage, increasing fixed costs will reflect a constant operating profit and generate an extremely increasing profits before extraordinary items and tax .

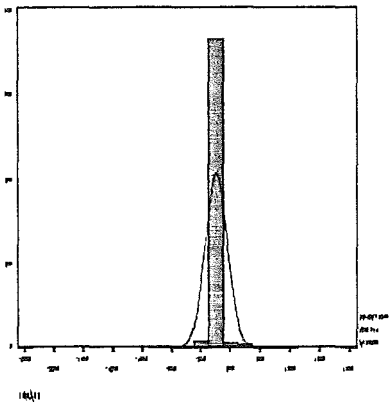

Figure 6. Normal Distribution of Net Profit Growth Rate.

The normal distribution of net profit after tax in ISE has a high standard deviation but most of the companies are located around mean in comparison to short term, net profit criteria has different meanings for long term company attitude definitions. The net profit alone, has an impact on the short term company attitude definitions But for the long term company evaluations this concept will have a small contribution to clarification of attitudes. As it is stated from the normal distribution of net profit growth rate, net profits of companies have extremely wide different values on the profit axis. So, the long term company attitude definitions should be on the criteria of being HPC but its limits are regarded as minimum. (as it is stated on the its normal distribution.)

Table 6. Logical Truth Table Representing Company's Long Term Real Attitudes Regarding to Their Four Different Financial Aspect[43].

X	Y	Z	W	Long Term Real Conditions of Hpc and Lpc
0	0	0	0	0
0	0	0	1	0
0	0	1	0	0
0	0	1	1	0
0	1	0	0	0
0	1	0	1	0
0	1	1	0	0
0	1	1	1	0
1	0	0	0	0
1	0	0	1	0
1	0	1	0	0
1	0	1	1	0
1	1	0	0	0
1	1	0	1	1
1	1	1	0	1
1	1	1	1	1

Alternative Real Company Attitudes	Number Of Real HPCs For Long Term In Overall	Number Of Real LPCs For Long Term In All
$2^4 = 16$ Different Alternative Conditions	3	13

The study on the long term high performance company definition condensed on the careful criteria identifications. But criteria limit definitions are not easily defined in comparison to short term attitude definitions Because , for long term company attitude definitions, equilibrium concept of economy is analyzed the criteria limits and definitions. And than it is transpired strictly. At first, satisfying a high performance company attitudes, the criteria net profit, roa/credit cost and leverage is considered to be satisfied synchronously. The threshold limits of net income, roa/credit cost, and leverages are accepted in the lower levels in their normal distributions. These normal distributions are configured including all industrial companies in the ISE.

Again on truth table the columns of X, Y, Z, W 1s and 0s are described as the following. If the parameters are positive against to definitions then they are notified as 1. If the companies are not satisfied the defined criteria then denoted as 0. The last column company situations are high performance if they are denoted as 1 and 0 if they are low performance.

3.3. Designing of Econometric Model

In the analysis of HPC and LPC, Logit model is selected. During the logit analysis the heteroscedasticity, non normality of disturbance term, possible values of P(i) that is lying outside 0 - 1 range and lower coefficient of determination problems are resolved.

Two different types of portfolios are selected from different Capital Markets of different countries. The selected portfolios of each country's Capital Market are compared with regression output of designed function and real states corporate.

When we have concluded the result of real conditions for high or low performance corporate, portfolio correlation were checked. During the whole comparing stage of regression result and real attitude of the companies three equal groups of portfolios are taken into consideration. The measurement, accuracy, and reliability tests are accomplished

In the analyzing stage of corporate , the selected portfolios have the same number of companies on their analyzed period.

3.3.1 Designing of Parameters

a). Short Term Company Attitude Definitions

During design stage 771 time intervals and 28 different financial ratios are tested. Logistic regression result is summarized as following.

Table 7. Logit Regression Output of Long Term High Performance Company[57].

Observed		0	1	Percent Correct
0	0	187	59	76.02 %
1	1	39	486	92.57 %
			Overall	87.29 %

---------- Variables In The Equation ----------

Variable	B	SE	df	Sig	R
I_1	1.4996	0.2240	1	0.0000	0.2106
I_2	0.3961	0.2183	1	0.0696	0.0366
I_3	0.8596	0.3440	1	0.0092	0.0703
I_4	0.0052	0.0007	1	0.0000	0.2530
I_5	-0.4437	0.7949	1	0.1767	0.0007
Constant	-1.0732	0.2987	1	0.0003	

[57] Method of Stepwise is used. Entry: 080 ; Removal: 095 is accepted. SPSS for Windows Release 5.01 (October 09, 92) is practiced to obtain this table.

According to logistic function results the high performance company has shown by the proven econometric probability function of the following lines.

$$P(I) = \frac{1}{1 + e^{-(-1.0732 + 1.4996I_1 + 0.3961I_2 + 0.8956I_3 + 0.0052I_4 - 0.4437I_5)}} \quad (10)$$

where I_1: ROA / Credit Cost
I_2: ROE
I_3: Cash Flow Yield
I_4: Net Profit Growth Rate
I_5: Gross Profit Margin

P (I) is the probability of being HPC for any selected company on the ISE.

The parameters of HPC contains 5 different variables. The graphical configurations of each variables are observed for the probability of being high performance company. The effects of each variables checked on the HPC probability output by keeping other variables constant. From mines to positive infinitive overall axis of variable is assigned . Since the main purpose is to reflect the all changes on the probability output whole axis should be assigned.. The remaining variables are considered to be unity in order to get out of its effect on the probability of HPC.

b) Long-Term Company Attitude Definitions

TABLE 8. Logit Regression Output of Long Term High Performance Company[60].

Observation	0	1	Percent Correct
0	182	54	77.12 %
1	20	470	95.92 %
		Overall :	89.81 %

---------- Variables In Equations----------

Variables	B	SE	df	Sig	R
I_1	1.1401	0.3166	1	0.0003	0.1094
I_2	4.7480	1.0385	1	0.0000	0.1437
I_3	0.1232	0.0315	1	0.0001	0.1206
I_4	0.0064	0.0008	1	0.0000	0.2516
Constant	- 0.7397	0.1648	1	0.0000	

$$P(I) = \frac{1}{1 + e^{-(-0.7397 + 1.14I_1 + 4.74I_2 + 0.1232I_3 + 0.0064I_4)}} \quad (11)$$

where, I_1: ROE.
I_2: Net Profit Margin.
I_3: Operating Leverage
I_4: Net Profit Growth Rate.

3.3.2. Graphical Interpretations of Short Term Company Attitude Definition Parameters :

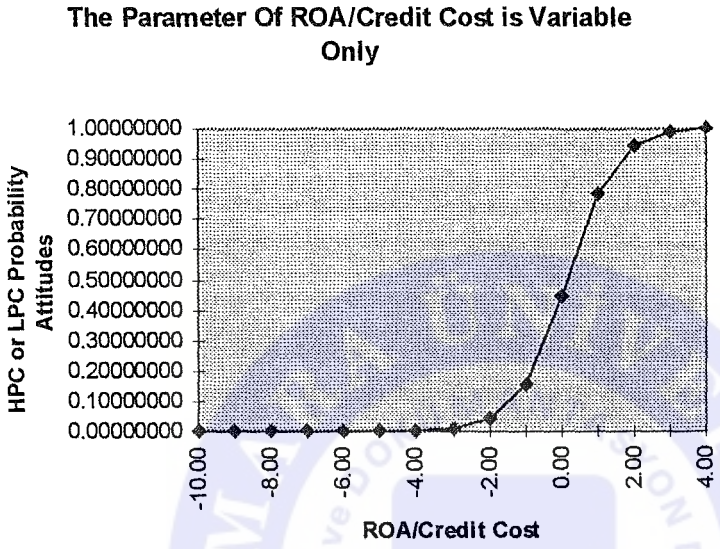

Figure 7. ROA / Credit Cost Variable Effect On The HPC Probability..

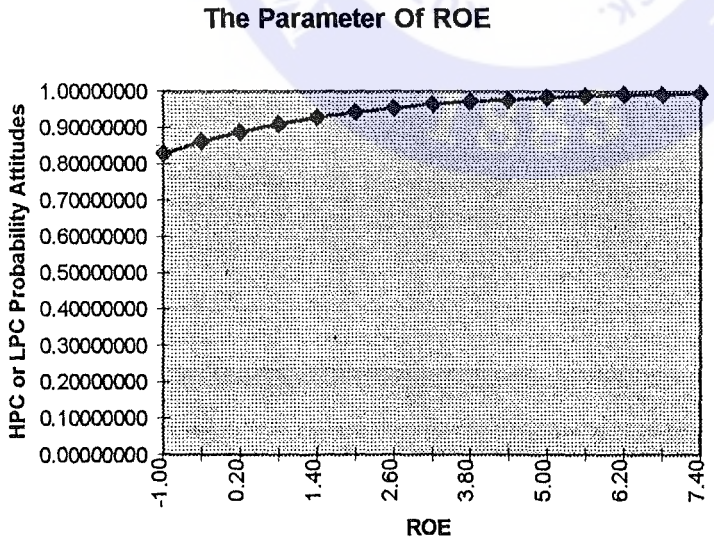

Figure 8. ROE Variable Effect On The HPC Probability.

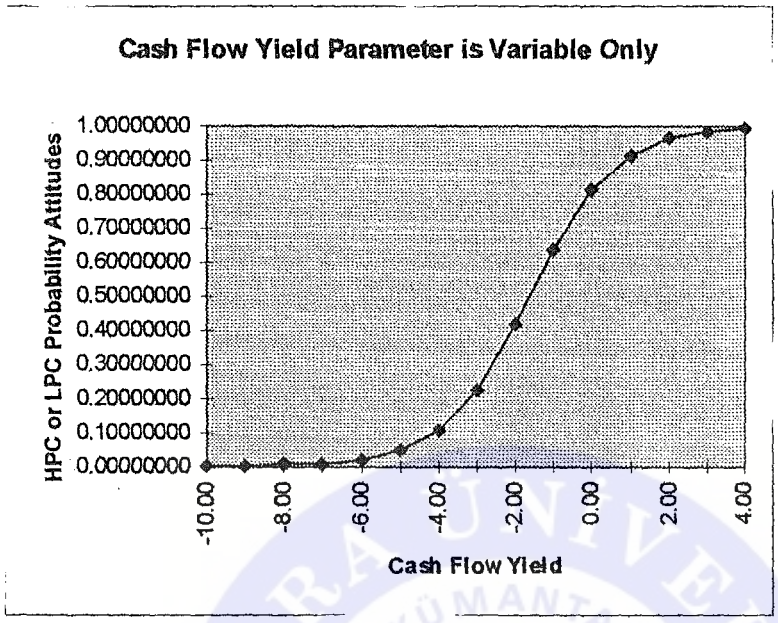

Figure 9. Cash Flow Yield Variable Effect On The HPC Probability.

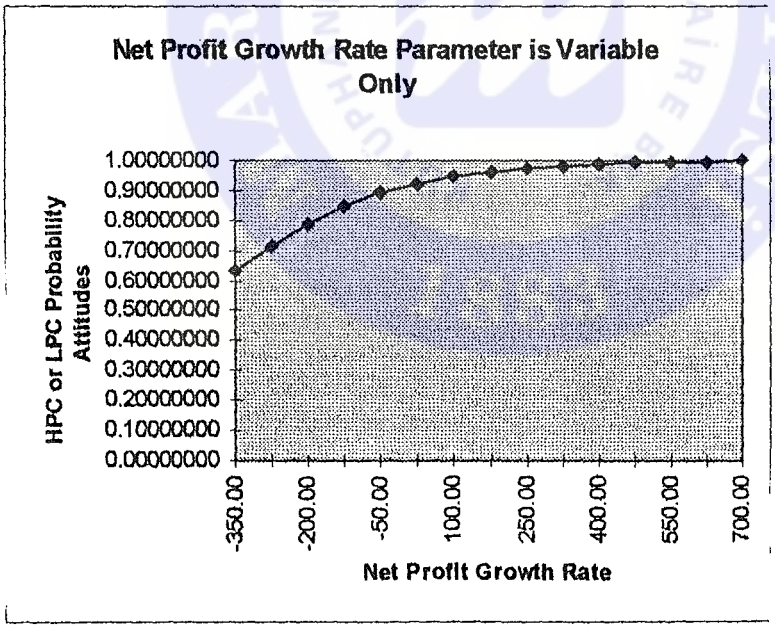

Figure 10. Net Profit Growth Rate Variable Effect On The HPC Probability.

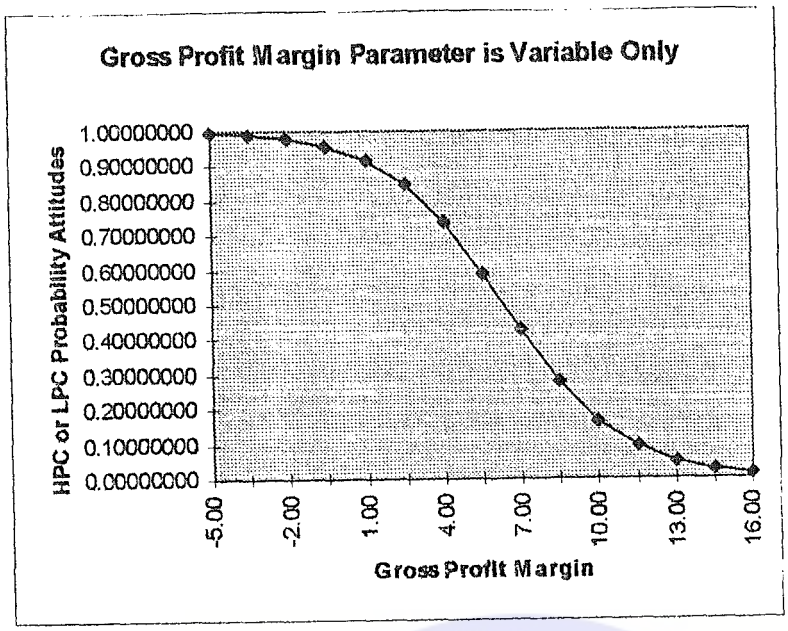

Figure 11. Gross Profit Margin Variable Effect On The HPC Probability..

The parameter of ROA / Credit Cost is the most sensitive variable to determine High Performance or Low Performance Companies. If the ROA / Credit Cost variable is greater than 1 (ROE, cash flow yield, net profit growth rate, and gross profit margin is kept constant as 1.) then the company shows high performance. If the ratio is less than 0 than the company shows low performance. (As shown in figure 7.)

The other parameter ROE, has insufficiency to describe the trait of companies as high or low performance alone. The Studies of Wabe and Camara[58] notify that "at all levels of capital intensity, developing countries have a higher level of capital utilization, than do the industrialized countries". Also the productivity of capital services in developing countries is less than half that achieved in comparable developed countries." The designed parameters are constructed in a developing country of Turkey. So that it is observed that the effect of ROE on the company attitudes is so small. Because in the developing countries the standard deviation of capital utilization is not so high. (As shown in figure 8.)

Cash flow yield parameter is deterministic also to define HP or LP spirit of the companies. Cash flow yields ratio covers the non-cash provisions and net income performances against debt positioning. From cash flow point of view ,values less than –1 will define low performance corporate while remaining other variables are constant. On the other hand if the ratio is greater than 1 it will define . (As shown in figure 9.)

On the contrast, the net profit growth rate variable is not very satisfactory to determine the company features. Even though growth rate drop down in a tremendous amount and the company traits decrease less than 0.6 probability. (As shown in figure 10.)

The last one is gross profit margin. Graph implements that if the gross profit margin increases more than ROE, net profit growth rate, ROA / credit cost , and cash

[58] Stuart Wabe And Gutierrez Camara "Capital Utilization, Capital Intensity And Factor Productivity : A Comparison Of Factories in Developing and Industrialized Countries." Journal Of Economic Studies. Volume 10 March, 1982.

flow yield that means it will be an agreement of being LP company. If there is some growth on gross profit that is arising from decreasing cost of good sold, as well as increasing quality that improvement should be observed on the ROE, cash flow yield, ROA / credit cost or net profit growth rate. Otherwise it will be a negative feedback to the company. (As shown in figure 11.)

3.4. Analyzing Data

3.4.1. Data Sources

The data sources of the research are transpired on four different stages. For the first of that is: all non-financial companies are selected to search. The companies of Istanbul Stock Exchange are used to represent the parameters during 1989 and 1995 period. In this parameter design (a) statements of income (b) statements of balance sheet (c) statements of cash flows of companies are searched.

The ex-ante parameter testing procedure for accuracy and reliability is realized in two different capital markets of NASDAQ and ISE. The same form of data is obtained from NASDAQ during the interval between 1995 and 1996. The designed parameters are tested in the leading years 1996 on ISE also. In this research year ended forecast account of corporate are used.

The second is the preparation of quarterly financial statement tables. In order to accomplish the seasonal synchronization between yearly ended accounting information and quarterly financial statements. This is realized by 31.12.19xx – 31.03.19xx or 31.12.19xx – 31.09.19xx. The price and earning comparisons of the common stocks are accomplished with two different kinds of approaches. The first one depends on pre-earning announcements and the second one is the post-earning announcements. Although pre-earning announcement prices (PREAP i.e. 31.12.19xx forecasting) have proposed to reach as if all market have knowledge about year ended information[59] But, at the date of forecasting investors do not have accurate knowledge about real profits. Because of that reason observed that, investor will not have knowledge about real profit accounts. In order to prevent that contradiction, post-earning announcement prices (POEAP) method is used. In this research year ended forecast account of each corporate is not used.

The third is the testing of short term company and market's buying propensity. Daily and eight month' data are used. It is started at 27.02.1997 – and ended at 27.10.1997

The forth is the testing of long term company and market's buying propensity. This is realized with in the interval of 1991 and 197

The daily US dollar and stock prices are used to accomplish long term propensity of market.

[59] R.Ball and P Brown, " An Empirical Evaluation of Accounting Income Numbers." , Journal of Accounting Research, 1968.

3.4.2. Financial Framework

According to the main purpose of the article seven different groups of financial indicators are searched. Details of these seven groups of financial ratio are configured as (a) liquidity, (b) turnover, (c) financial structure, (d) profitability, (e) credibility and other indicators which clarifies the attributes of companies, (f) debt indicators (g) growth rate. In liquidity three, turnover six, financial structure six, profitability four, credibility and other indicators clarifying company attributes six, debt indicators five, growth rate four financial ratios are tested during designing phase of the parameters.

In detail these ratios are listed as the following[15].

(a) : Current Ratio
Acid - test Ratio
Liquidity Ratio

(b) : Receivables Turnover
Inventories Turnover
Assets Turnover
Rounding Capital Turnover
Obligatory Turnover

(c) : Long Term Assets / Owner's Equity
Interest Coverage
Principle Coverage
Operating Leverage
Financial Leverage

(d) : Gross Profit Margin
Return On Equity
Return On Asset
Net Profit Margin

(e) : Owner's Profit / Asset's Profit
Working Capital / Net Sales
Credit Cost Change
Return On Asset / Credit Cost
Obligatory Turnover
Cost Of Good Sold / Net Sales

(f) : Short Term Debt / Total Debts
Short Term Debt / Owner's Equity
Total Debt / Owner's Equity
Total Debt / Total Liability
Long Term Debt / Long Term Funds
Cash Flow Yield

(g) : Equity Growth Rate
Sales Growth Rate
Assets Growth Rate
Net Profit Growth Rate

Totally 34 parameters of 186 companies are tested between 1989 and 1995. During the interval between 1989 and 1995 totally 771 periods and alternative traits are observed to clarify the situations of companies.

Asset returns and inflation study suggested that human capital might have been a hedge against inflation[60]. They have searched real estate, government bonds - bills and common stocks. Alternative assets against common stocks they will be at least partial hedges against expected inflation. But on the other hand, the negative relationship of common stock with respect to inflation rates does not account for a large portion of variation in common stock returns.

Linther, Jaffe and Mandelker, Body and Nelson have observed negative relationship between the returns to common stocks and expected inflation rates[61].

Fisher's study realized that the real and monetary sectors of the economy are largely independent. Thus, he hypothesized that the expected real return is determined by real factors, like the productivity of capital, investor time preference,etc.

Keim[62] is searched the market values and extremely returns relation for NYSE and AMEX for 1963 – 1979 (17 years; 1,500 – 2,000 company). They have found that, the relation between extreme incomes and size is negative. Those of firm size and price rate of return relation is increased during January. Almost 50% of stock's yearly market value and size dependent price acceleration is accomplished in January.

Blume and Stambaugh[63], has demonstrated that, the size effect of the firms are dominated in the daily return data.

Cook and Rozeff[64] has evaluated the effects of results arising from P/E ratio, size effects or both. The consequences of the research is concentrated on the both of size, P/E and January effects of the firms.

3.5. Hypothesis Study:

The level of significance is accepted as 0.005. The testing mechanism is based on Spearkman rank correlation. According to that testing procedure if the number of company tested is greater than 13 then correlation coefficient will be at least 0.745 to accomplish a correlation between two population.

Thus, in the described criteria of Spearkman rank correlation testing of P (I) function (Formula 10-11) and equation of real conditions (Formula 8-9) will be concluded more systematic manner like the following.

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[60] E.F. Fama, G.W.Scwert. "Asset Returns and Inflation.", Journal of Financial Economics, 1977. 115-146.

[61] Linther, John, "The valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets.", Journal of Finance. May, 259-280.
Nelson, Charles, " Inflation and Rates of Return on Common Stocks." Journal of Finance. May, 1976.

[62] Keim D. "Size Related Anomalies and Stock Return Seasonally, Further Empirical Evidence, Journal of Financial Economics, Pp: 13 – 32, 12 1983.

[63] Blume M, and Stambaugh R " Biases in Computed Returns: An Application to the Size Effect." Journal of Financial Economics, pp 387 – 404,

[64] Cook and Rozeff, "Size and Earnings/Price Ratio Anomalies." The Journal of Portfolio Management. pp: 27 – 33, Spring 1991.

{ - 0.745 < Correlation (Formula 8 & Formula 10) < 0.745 } Concluded as H_0

{ Correlation (Formula 8 & Formula 10) > 0.745 Or
Correlation (Formula 9 & Formula 11) < - 0.745 } Concluded as H_1

{ - 0.745 < Correlation (Formula 9 & Formula 11) < 0.745 } Concluded as H_0

{ Correlation (Formula 9 & Formula 11) > 0.745 Or
Correlation (Formula 9 & Formula 11) < - 0.745 } Concluded as H_1

H_0 : There is no association between results of Formula 8 and Formula 10 (Short Term)
H_0 : There is no association between results of Formula 9 and Formula 11 (Long Term)

H_1 : There is an association between results of Formula 8 and Formula 10 according to two tail test. (Short Term)
H_1 : There is an association between results of Formula 9 and Formula 11 according to two tail test. (Long Term)

Testing of the correlation between two population is employed by Spearkman rank correlation. The parameters of Spearkman rank correlation are n , r_s, and r_o. Where n is the number of observations, r_s is the Spearkman rank correlation test coefficient for specified n and level of significance. On the other hand r_o is the correlation value to test comparison of two population.

Two tail test will prospect more accurate result. According to this method in the condition of $r_o > r_s$ and $r_o < - r_s$ we can talk about the association of two population.

The companies in the ISE are analyzed according to real company attitudes and econometric results of the model. This comparison is realized with two different situations of the same companies for the specified time intervals.

3.6. Difficulties, Limitations and Assumptions

1. The qualitative variables have contribution to define the forecasting attitudes of companies. In this study they have not supplemented the forecasting power with endogenous or exogenous variables. Assumed that there is no specific effect of these qualitative to define the company attitude.

2. The bivariate logit model has developed as multivariate, nested logit, conditional logit etc. In state of all these modal approaches the bivariate logit model is to be considered.

3. In the continues time period the generated parameters should be revised. Mensah has searched all the previous studies starting from Altman. Mensah at 1984 has scrutinized Blum (1974), Elam (1975), Booth (1983), Hamilton (1987), Gombola (1987), Fulmer (1984). All of these researchers has tried to enlighten the same subject with different methods. The wide time interval conclude interference on the decisions of the corporate. The source of this interference arise from unstable economical conditions of country. For example 1994 economic crises, Gulf crises and political or economical decisions following to crises, has effected some sectors seriously. Altman on his study has searched the companies between 1945 and 1965. Taking a cross section on the time period will reduce the difficulties and interference. But the parameters should be regenerated and substituted to the current period to provide a sound forecasting.

4. The lack of parameter addition opportunity has enforced logit model to operate in cross sectional performance.

5. Assumed that the error terms have constant variance. Because of the log transformation the heteroskedastisity is canceled.

6. The errors are normally distributed, with a mean of zero.

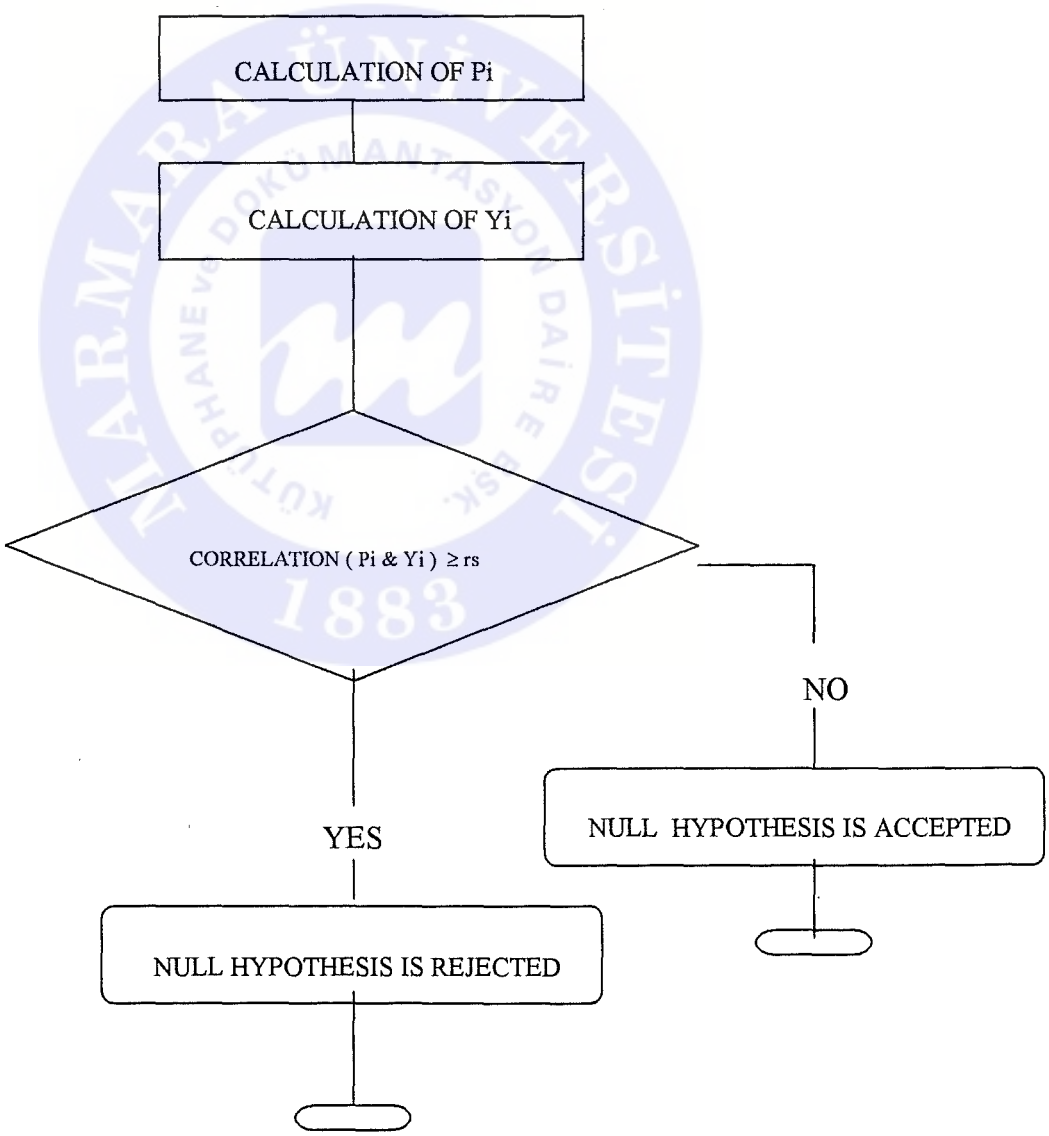
7. The errors are independent.

IV TESTING OF DESIGNED PARAMETERS

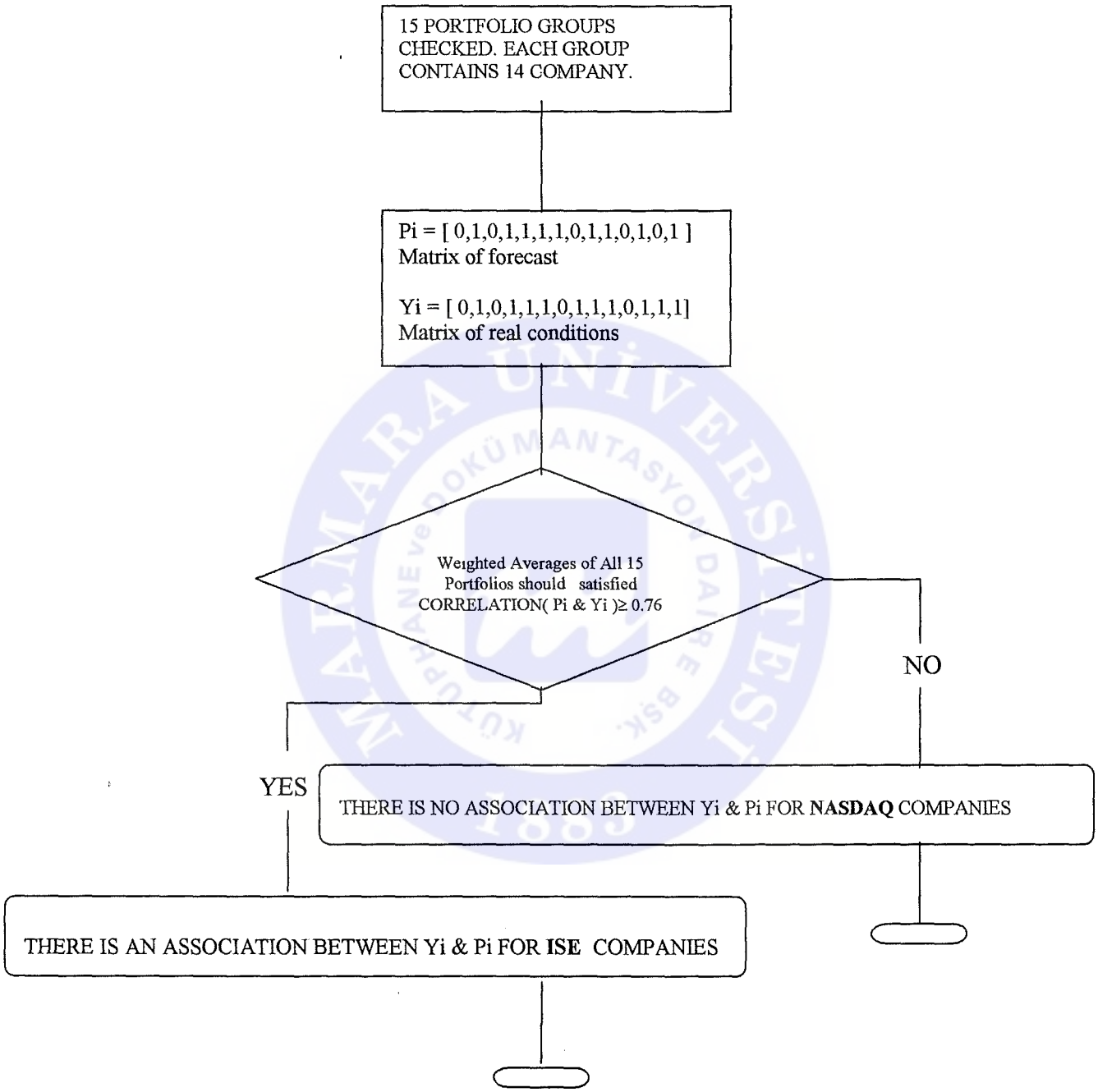
4.1.1. Validation Test of Results

In order to test the short term high performance corporate definitions the companies listed in
Appendix 3 are checked for correlation between real and forecasted company attitude definitions. Let us say that real company attitude is denoted with Yi and forecasted with Pi.

The validity test transpired on each 14 company groups. The correlation analysis check is used the Spearkman's correlation analysis and its specific threshold values.



The above flowchart explain the validity testing procedure of results. More detailed and testing procedure of result obtained by using all ISE companies listed in Appendix 3. During that testing stage ex-ante method is used. That's why it is testing on a preceding period of parameters initially designed.



The weighted average of each 15 portfolio group and its Pi and Yi correlation is **0.82.** In this case **Pi** will be forecasted short term high performance ISE companies and Yi real corporate attitudes of those companies. The **Pi** and **Yi** correlation is **0.83** for long term high performance company attitudes definitions. The percent of correct forecasts in

overall is % 92 percent for short term company attitude definition and % 91 for long term company attitude clarifications.

This correlation test is repeated for another capital market. **Pi** and **Yi** correlation is obtained as **0.74** for 14 groups of NASDAQ companies listed on Appendix 2.

4.1.2.Definition of Residuals and Error Terms:

In this thesis study we have a single regressand (0,1) with a single Pi and Qi = 1 – Pi, than a natural definition of scalar residual is;

$$ei = Yi - Pi$$

$$RSS = \sum (Yi - Pi)^2$$

By this point of view the residual for the overall average **short term high performance company attitude definition** the residual will be "ei = 1 – 0.92 = 8%.". And this residual term will be "ei = 1 – 0.91 = 9% " for the long term **high performance company attitude definitions**.

When we specify a regression model, we must specify two things; the regression function and at least some of the properties of error terms. We have already seen how important the second of these can be. The errors terms of the function will have the characteristics of independent and variance. There are several meanings of the word independence in the literature on statistics and econometrics. For the two random variables, stochastically independent, linearly independent, un-correlated or orthogonal terminology is used.

When the error terms are independent and have the same means and variance sometimes said to be white noise. This white noise terminology is taken from engineering literature.

Notice the important distinction between error terms and residuals. Any linear or nonlinear regression generates a vector of residuals, whether it makes sense or not. Residuals will have certain properties simply as a result of how they are obtained, regardless of how the data were actually generated. Error terms, on the other hand, are unobservable (but estimable) quantities about which we have make certain assumptions as part of the specification of the model. We will of course often want to test those assumptions and will often do so by calculation test statistics that depend on the residuals.

The independent assumption is commonly violated when one uses time series data; successive error terms and giving rise to serial correlation.

The different variances may cause to happen the phenomenon of heteroskedasticity. The opposite of heteroskedasticity is said to be homoskedaticity. In the logit regression the heteroskedasticity term is neglected because of a definite log transformation.

4.1.2. The Effects of Multicolinearity in Model.

High correlation between independent variables on the regression equation eplain The small values Say that X1 is very nearly a linear combination of X2 (assume the small t values that r = 0.97). In multiple regression models, it is desirable for each independent variable , X, to be highly correlated with Y, but it is not desirable for the X's to be highly correlated with each other.

One method of eliminating correlated predictor variables is to use a stepwise selection procedure. Essentially, it selects variables one at a time and generally does not insert into the regression equation a variable that is highly correlated with a variable already in the equation.

Whenever you perform a multiple regression analysis, it is always a good idea to examine the pair wise correlation between all of your variables, including the dependent variable. In this way, you often can detect easily the two independent variable that are contributing to the multicollinearity problem.

4.1.4. Comparison of ISE and NASDAQ.

It has proven that the bankruptcies are very different in the Japanese in comparison to its western equivalents[65]. These kinds of managerial differences shifted the country economies to extremely different platforms. In this thesis , the designed parameters are tested on an extremely different environment. This hundred percent of ex-ante testing for designed parameters will enlighten the specific and general discrimination. It is known that, size effect, E/P, BE/ME, are general concept for financial literature. On the other hand, the company attitude definitions are strongly dependent to economic conditions of country. Therefore, it is specific.

4.1.3.1. Parameters Reliability and Consistency Test in ISE by Comparing Other Capital Market Companies

The reliability and accuracy tests of two different Capital Market's companies are realized according to their Real Logical Conditional Outputs and Econometric Model Generated outputs. In order to realize this test ISE and NASDAQ companies are used.

In the dichotomous analysis stage three portfolios are taken into consideration. These three different portfolios are tested for dichotomous case. In this analysis the same companies are tested in the same time intervals. The result of each dichotomous case are compared for overall portfolio weightily.

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[65] Suzuki.S. and Wright R. " Financial Structure and Bankruptcy Risk in Japanese Companies." Journal of International Business Studies. Spring, pp: 97-110, 1985.

Table 9. Logical Regression Results Designed in ISE Companies Compared with NASDAQ Companies[66].

	Portfolio Formula 6 and 7 Correlation	Overall Weightily Averaged Correlation	Capital Markets
Dichotomous Alternative		0.95	ISE
Portfolio1	095		
Portfolio2	0.94		
Portfolio3	0.96		
Dichotomous Alternative		0.7483	NASDAQ
Portfolio1	1		
Portfolio2	0.6614		
Portfolio3	0.6667		

As shown in the following table the null hypothesis is accepted for NASDAQ applications and the accuracy test is failed. But in the case of ISE null hypothesis is rejected and accuracy, reliability test is satisfied. So, the designed parameters are sensitive to the companies of ISE. On the other hand the designed parameters of HPC are meaningless for NASDAQ. Thus, the accuracy test demonstrated that the obtained results are not in the region of acceptance for the NASDAQ case.

[66] The Significance of Rank (Spearman) Correlation Coefficient is accepted to be 0.7610 in the case of 14 observations and 0.001 significance level.

V. MANIPULATIONS ON FINANCIAL STATEMENTS

Realization of any investor's transaction, there are some definite alternative approaches to identify their trades.

1. Transactions depending on fundamental and technical analysis.
2. Transactions using insider information.
3. Transactions on the control of manipulations.

On the other hand, the market supervision system has three different alternative employment to accomplish.

1. To prevent unjust buying and selling.
2. To watch the operations on the market and to determine any alternative insider information and manipulation.
3. To search the securities which violate the general capital market laws.

5.1. Efficient Market Theory

The Efficient Market Hypothesis is graded into three alternatives. These are; weak form, semi-weak form, and strong form.

5.1.1. Weak Form:

All of the information relating to the past is reflected to its lasting prices. The researches have notified that, there is no relation between rate of return on a period and one period before than that period. According to that form, there is no result and reason relation between the past trend and future prices[67].

5.1.2. Semi-weak Form:

Market values of today, includes not only the past price information, but also financial statement information, and other insider informations[68].

[67] [1] Fama, E, "Efficient Capital Markets. A Review of Theory and Empirical Work." Journal Of Finance. Vol. 23.
[68] [2] Malkiel, B, "Efficient Market Hypothesis.", In the new palpgare: A Dictionary of Economics, Edt. M. Milgate, P.Newman, the MacMillian, Vol.2, London 1987.

5.1.3. Strong Form:

In this form the common stock contains all legal and illegal information. The strong form neglects all the profit expectations from insider information trading. Also on the strong form market, the balance sheet and income statement items announcements do not effect directly the prices of common stock. But researches demonstrated that, from insider trading extremely high values of profits are obtained. Those high level of profit making capability of insider information trading is refuted strong form market theory in practice.

5.2. Testing of Designed Parameters In Audited and Non-audited Financial Statements Information

In the section III, testing of design parameters are accomplished regarding to time preference of investors. Also, on the other section IV, testing of design parameters are realized by comparing with developed markets and ISE. But on the other hand, testing of audited and non-audited corporate profiles will be worthwhile for individual and institutional investors.

5.2.1. Empirical Study About Audited and Non-audited Information

The long term and short term company profiles have criticized to the high performance and low performance companies. The passive (i.e. buy and hold.) and active (i.e. speculative.) trading investor behaviors are searched. In the absence of future and option markets, the volatility on the capital market has some series drawbacks[69]. Comparison of financial information regarding to their declared periods will assist to determine the manipulations in the market. So, this research has covered the same number of periods and the same companies. Keeping constant the periods and companies will conclude regulatory effectiveness on the companies and the power of manipulators in the capital market.

[69] D.E. Fisher, R.J. Jordan, "Security Analysis and Portfolio Management." Prentice Hall Inc, pp: 1-81, 1987.

Table 10. Logical Regression Output of Audited and Non-audited Company Profiles

	Percent Correct		
Company Profiles	**0**	**1**	**Overall**
ST Audited	85.57	93.10	90.62
ST Non-audited	90.18	93.02	91.7
LT Audited	79.82	89.01	85.57
LT Non-audited	85.25	89.17	87.19

Forecasting of HPC (i.e. the probability of being 1 for designed parameter function.) either audited or non-audited financial statement information will not deviate from each other. That means if the company has an attitude of high performance, its year ended audited and quarterly non-audited financial statement information will be in consistent. But on the other hand, if the company is not a HPC (i.e. the company is a LPC.) its audited year ended financial statement information has lack of defining its existing attitude.

According to Turkish uniform accounting system, and using the insight of corporate accounting records, the research has proved by guiding lights of audited/non-audited financial statement comparisons. It is well known expenditure types is classified as eight different groups:

1. Raw material and other material.
2. Wages and other labor expenses.
3. Salaries and other staff expenses.
4. External services.
5. Various expenses.
6. Tax and fiscal duties.
7. Depreciation and amortization.
8. Financial expense.

The most manipulative expenditure items are external services, various expenses, tax duties, depreciation and amortization and financial expenses. The low performance company has a bright preference of manipulations on items in the year ended financials to change its existing attitudes. Since, this type of companies do not have consistent profits from ordinary operations they used extraordinary revenues and losses items to implement themselves as a HPC. The LPC has camouflaged their financial expenses in order to implement themselves as a profit center company according to the year ended financial statements information.

Because most of the forecasts relating to the companies are concentrated on the year ended period in the market. Observed that, LPC has tried to implement themselves more powerful than they have really existing in the year ended announcements. The price and earning relations of companies has explained by PREAP and POEAP types of approaches. The PREAP usage will create an unbalance between prices and earning announcements of companies. This unbalance in extreme cases can cause investors to be in buy climax or selling panic. The price acceleration caused by announcement is known as information effect. (IE)

On the year ended periods one more important comparison factor between companies is dividend. Profit distribution of company directly depend on the profit for the yearly period. The managerial approach of the public company will try to enhance share premium of the capital reserves items on balance sheet. So, the company management will try to be on the side of shareholder. That's why, they will announce a dividend (i.e. cash outflow for the company) and capital increase (i.e. cash inflow for the company) which neutralize the effects on the company accounts.

The January effect is the most important factor let financial statements information manipulated for LPC in the year ended period. Prior researches, especially a recent paper by Jaffe, Keim, and Westerfield[70] (1989) indicates that the relationship between equity returns and fundamental variables is different in the U.S. for January versus non-January months. On the other hand Chan, Hamao, and Lakonishok has observed the same monthly change on the Japanese market. They defined that, there is two main phenomenon in the January effect in the Japanese market. One is: small stocks achieve substantially higher returns than large stocks. Second is: with large positive book to market ratios earn a premium 1.10% over firms with low, positive book to market ratios. These issues will be addressed by introducing a dummy variable for January and non-January months.

The January effect[71] in practice has explained detail at the title of Lynch's sticky wicket by Peter Lynch. According to Lynch: " In the late fall, which is always I begin to do my Barron's Howard, annual tax selling by disheartened investors drives the prices of smaller issues to pathetic lows. You could make a nice living buying stocks from the low list in November and December during the tax-selling period, and then holding them through January, when prices always seem to rebound. This January effect[72], as it is called, is especially powerful with smaller companies, which over the last 60 years have risen 6.86 percent in price in that one month, while stocks in general have risen only 1.6 percent."

Because of listed reasons on the previous paragraphs, the LPC misinformed the public on the year ended period accounts. Thus, the regulatory rules of SEC should be enhanced to judge the criminal balance sheet announcements. Because, non-audited balance sheet announcements has significant power to forecast LPC. It indicates that, on this period companies are implemented their more natural financial attitudes. In the first quarter or in the third quarter there will not have dividends, January effects or profit forecasts and yearly performance comparison.

The regulatory mechanisms of the SEC is so insufficient to determine the manipulations to judge the criminal announcements. Although there are rules and regulations to clarify that games but, it is not effective to prevent the manipulation including declaration. So, the punishments of misinformation should be so influential that, the distribution, usage and intention to that kind of financial statement information announcements should be prevented for LPCs.

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[70] Jaffee J, Keim D, and Westerfield R, "Earning Yields, Market Values, and Stock Return." The Journal of Finance. V:44, No:1, March, 1989.

[71] Joseph Lakonisshok and R.A. Haugen, Dow Jones Irwin. " The Incredible January Effect: The Stock Market's Unsolved Mystery.", 1988.

[72] De Bondt and Thaler, "Does the Stock Market Overact?", Journal of Finance, July, 1985.

5.3. Market's Short Term Buying Propensity (MSTBP) and Forecasted STHPC

The short term buying propensity of market is measured by daily exploratory study on ISE companies. Findings of short term HPC in capital market, a daily exploration is accomplished in ISE between February 27,1997 and October 27, 1997by running program on the appendix I. During that 8 month period 250 companies are checked to define the daily stocks which has propensity to buy. Volatility based system[73] (i.e. the average true range.) will propose two directional alternative movements like up or down. By the contribution of other price indicators the volatile and upward movement characterized companies will be selected from overall capital market.

Speculative trading will need to have short term investment decisions. The volatility based systems analysis will define short term improvements in the stock prices. In order to define the volatility based system, primarily true range concept should be clarified. The definition of true range is composed of by the biggest of the following items.

1. Today's high and low difference.
2. Yesterday's close and today's high difference.
3. Yesterday's close and today's low difference.

In order to trade on volatility based system, at first average true range concept should be identified for the tested time intervals. After that definition, number of days to evaluate and comparison with real time true range and cumulative true range and a specified period average true range should be defined. That specified period is 3 week (neglecting Saturday and Sunday) and 15 days. The daily TR (true range) is checked whether it is greater than ATR (Average True Range) or not. That volatility based price movement trend is checked with a threshold limited increase around average true range. In practice it is observed that if the price moves upper or lower than %150 of average true range than it will easily accepted as a breakout. In other words, if today's true range is higher than 150% of 15 days average true range, there is a definite volatility on the explored company. This daily observed extraordinary higher volatility is complied with price rate of change, direction of movement etc And the direction of breakout is determined whether it will be upper or lower.

In this exploratory study, the volatile and upward movement companies are detected. The purpose of that searching is to have decision about premiums of common stocks. The MSTBP (market's short term buying propensity) and STHPC (short term high performance company) should have a statistical relation. Also what percentage of MSTBP is STHPC and what percentage is STLPC (short term low performance company).

The normal distribution of MSTBP is separated into three part such as; extremely low, cumulative around mean and extremely high. If the number of breakout is in the region of extremely low, than it is assumed to have market's short term buying rejected (MSTBR). On the other hand, if the number of breakout is in the region of cumulative around mean or extremely high, than it is assumed to have MSTBP. As it is observed on

[73] Joseph Granville. "Granville's New Strategies of Daily Market Timing for Maximum Profit.", pp: 239-246, 1989.

the normal distribution of MSTBP, the mod of breakout on the eight months daily tested period are listed as the following table: On the market's evaluation table MSTBP is denoted as 1, and MSTBR as 0.

Table 11. Market's Evaluation Criteria For Short Term Price Movements.

Market's Evaluation	Mod of Break out	Regions on Normal Distribution
0	1,2 or 3	Extremely Low.(Region 1).
1	Between 3 and 9	Around Mean. (Region 2).
1	Between 10 and 24	Extremely High. (Region 3).

Table 12. MSTBP and STLPC Comparison.

The Measuring Type	Correlation STHPC & MSTBP	Percent Of STHPC in MSTBP	Percent Of STLPC in MSTBP	Percent Of STLPC in Region 3.	Percent Of MSTBP Companies
Short Term	0.0286	75.35% 107/142 Firm.	24.65% 35/142 Firm.	20.45% 9/44 Firm	86% In Overall.

If the market's preference is MSTBR, while the company situation is forecasted as STHPC than, the company is cheap. And it has capability to increase its remaining price levels.

If the market's choice is MSTBP, while the company attitude is forecasted as STHPC or, market's evaluation is MSTBR, while the company is STLPC than the level of company is where it must be.

If the market's preference is MSTBP, while the company attitude is STLPC than, there is a manipulative price movement on the stock.

The comparison table of MSTBP and STLPC states that, 1 of every 4 MSTBP company is manipulative in ISE. Plus the fact that, 1 of every 5 extremely bought stocks are manipulative.

5.4. Market's Long Term Buying Propensity (MLTBP) and Forecasted LTHPC

In order to measure the market's long term buying propensity Dow and Elliot Wave Theories are taken into consideration. Dow theory says that; long term upward movement of a stock can be composed of 2.5 middle term upward movements. This theory states that, peak of a middle term upward movement is higher then its preceding middle term upward movement. The climbing time taken to arrive peak of any middle term upward wave is longer than its falling time taken from that peak. According to that theory the life of any upward movement is 2.5 time taken to accomplish any middle term wave.

Elliot wave theory states that, any upward movement contains 3 peaks and 2 corrections to that peaks. On this theory the peaks are numbered 1,3 and 5 while the corrections are numbered as 2 and 4. The correction 2 will be %33 or %50 of peak. And the second peak which is starting from correction base 2 should pass over the peak 1. And according to Elliot theory, forecasted peak 3 will be stated at a level starting from correction base 2 in such a way that, the height of peak 3 will reach 1.618 of peak 1.

Plus the fact that, correlation between selected stock and USD will give a precise decision about MLTBP.

The theories Dow, Elliott or stock - USD correlation estimations will propose about the same companies during the testing stage of MLTBP. The statistical relation between forecasted LTHPC and MLTBP will give precise decisions about evaluations of market. Decisional deviation of market from forecasted LTHPC, will generate an analytical output in this way ,it will define, whether manipulation power of manipulators are effective on speculative or buy and hold trading strategy.

Table 13. MLTBP and LTLPC Comparison.

Measuring Type	Correlation LTHPC and MLTBP	Percent Of LTHPC in MLTBP	Percent Of LTLPC in MLTBP	Percent Of LTHPC in MLTBR.	Percent Of MLTBP Companies
Long Term	0.2908	90.28% 65/72 Firms	9.22% 7/72 Firms	65.57% 40/61 Firms	54.15% In overall.

If the market's preference is MLTBR (market's long term buying rejected) company, while corporate situation is forecasted as LTHPC than, the company is cheap. And it has capability to increase its existing price levels. In ISE, the long term point of view will be equivalent to investor's buy and hold trade tactic. Thus, 65% of ISE stocks are cheaper than it should have.

If the market's choice is MLTBP, while the company attitude is forecasted as LTHPC or, market's evaluation is MLTBR, while the company is LTLPC than, the levels of company is where it was assumed to have.

If the market's preference is MLTBP, while the company attitude is LTLPC than, there was a manipulative price movement on the specified stock. In comparison to short term company evaluation for long term company evaluation the percent of alternative manipulative long term buying of market is very low. In other words, less than 1 of every 10 trades on the buy and hold tactics will be manipulative in the ISE.

The percent of LTHPC is so high that in MLTBR companies, ISE and other international finance markets (IFM) is needed to be compared. Observed that, the institutional investors in Turkish financial market is not so desirous to trade on capital

market. That's why the long term market's evaluation for the common stocks in ISE is quite inadequate in comparison to its international equivalents.

VI. ALTERNATIVE BEHAVIORS OF INVESTORS

In order to have an objective point of view an global economy comparison will give a bright feature. In the European Union area, the leading country in institutional investments is the United Kingdom where such assets totaled around $ 1,800 billion in 1995 and is followed by France and Germany each over $ 1,000 billion, and the Netherlands with $ 620 billion. Insurance companies accounts for most of the investment in the United Kingdom and Germany in 1995 while pension funds are traditional dominant in the Netherlands. Institutional investors are far from negligible in Canada with a total of $ 493 billion in 1995 followed by Switzerland at $ 388 billion (1994 figure) and Luxembourg at $ 370 billion. Total assets of institutional investors in Australia, Korea, and Sweden stood at around $ 250 billion.

Table 14. Institutional Investors In IFM[74].

Country	1990	1991	1992	1993	1994	1995
		(As a percent of GDP)				
Australia	47.5	56.5	60.6	75.5	74.1	75.9
Austria	24.5	26.2	24.4	27.8	31.4	35.2
Belgium	44.8	49.4	47.1	56.2	59.4	53.6
Canada	58.6	64.2	66.9	76.9	80.9	87.9
Czech Republic		-	-	25.3	24	-
Denmark	57..4	61.5	55.7	63	67.7	66.8
Finland	33.2	37.1	35.9	44.3	55.7	50
France	52.9	60.1	58.3	69.7	72.5	75.3
Germany	36.5	38.3	33.8	38.3	44.2	46.1
Greece	6.5	8.8	8.5	14.3	18.9	23
Hungary	-	2.5	2.7	3.4	4	4.5
Italy	13.3	15.3	12.5	17.7	19.6	20.6
Japan	81.7	79.3	78.1	81.4	84.9	77.4
Korea	48.1	47.8	52.3	56.7	57.5	57.7
Luxembourg	926.9	1237.5	1630.5	2166.5	2170	2132.8
Mexico	8.6	9.5	5.6	7.3	3.5	3.9
Netherlands	133.4	141.8	131.5	147.4	155.6	158.4
Norway	36	38	32.7	39.7	43.1	42.6
Poland	-	-	-	0.5	1.9	1.6
Portugal	9.2	15.3	17.7	26.2	33.1	35.3
Spain	16.3	23.3	23.1	30.3	36.9	38.3
Sweden	85.7	93.7	75.7	102.6	105.4	114.8
Switzerland	120.2	93.7	75.7	102.6	105.4	114.8
Turkey	**0.6**	**0.5**	**0.5**	**0.9**	**1.0**	**0.7**
United Kingdom	114.5	126.2	115.3	163.8	149.6	162.3
United States	127.4	139.6	145.7	155.2	153.5	170.8

[74] Financial Market Trend, No:67, June 1997.

In 1995, assets of institutional investors as a share of national income varied widely among OECD countries. The United States, the United Kingdom, the Netherlands, Switzerland and Sweden occupy the highest position ranging between 110 and 170 percent of GDP. Asset holding of institutional investors in Canada, Japan, Australia and France stood at 88 percent, 77 percent, 76 percent and 75 percent of GDP respectively. An exceptionally high rate was observed in Luxembourg due to its position as an International center for collective investment business.

Table 15. Portfolio Diversification Of Institutional Investors

	1990	1991	1992	1993	1994	1995
Australia						
Bonds	38	36	39	36	36	34
Loans	12	10	9	7	7	6
Shares	39	44	42	47	47	50
Others	11	10	10	9	10	10
Austria						
Bonds	51	51	49	50	50	49
Loans	24	24	25	22	22	22
Shares	5	5	5	6	7	9
Others	20	20	21	21	21	21
Belgium						
Bonds	49	52	55	56	55	59
Loans	16	15	13	10	10	10
Share	19	20	19	20	22	19s
Others	16	13	13	14	13	13
Canada						
Bonds	50	49	48	47	46	45
Loans	16	16	15	14	12	11
Shares	20	21	21	22	23	24
Others	8	8	7	7	7	8
Denmark						
Bonds	65	62	62	61	62	64
Loans	4	4	4	3	2	2
Shares	20	23	25	28	28	28
Others	10	11	9	8	8	7
Finland						
Bonds	13	15	18	26	32	42
Loans	68	67	65	55	41	35
Shares	17	17	15	16	25	20
Others	2	2	3	3	2	3
France						
Bonds	65	67	66	68	66	65
Loans	4	5	8	4	5	6
Shares	22	19	18	22	22	22
Others	9	9	8	6	7	7

Table 15. Portfolio Diversification Of Institutional Investors continued.

	1990	1991	1992	1993	1994	1995
Germany						
Bonds	39	41	42	43	42	43
Loans	47	45	43	40	40	40
Shares	9	10	10	12	12	12
Others	5	5	4	5	6	5
Greece						
Bonds	49	50	54	54	73	72
Loans	0	0	0	0	0	0
Shares	11	12	8	11	9	6
Others	40	38	38	35	18	21
Hungary						
Bonds		26	31	53	68	72
Loans		11	8	4	5	6
Shares		13	12	8	4	3
Others		50	49	35	23	19
Italy						
Bonds	69	68	71	71	65	67
Loans	2	2	2	1	1	1
Shares	16	13	12	14	18	17
Others	13	17	16	14	16	15
Japan						
Bonds	22	22	23	24	25	29
Loans	27	29	28	26	26	25
Shares	23	22	19	19	19	18
Others	28	28	30	30	29	29
Korea						
Bonds	31	29	34	37	36	35
Loans	36	35	32	31	32	31
Shares	19	16	14	12	14	13
Others	15	20	20	19	17	21
Luxembourg						
Bonds	5	3	2	1	0	4
Loans	60	58	53	45	43	39
Shares	0	0	0	0	0	0
Others	35	39	45	54	56	57
Mexico						
Bonds	80	73	61	77	69	67
Loans	1	1	2	1	3	2
Shares	16	21	30	15	20	21
Others	4	5	8	7	9	10

Table 15. Portfolio Diversification Of Institutional Investors continued.						
	1990	1991	1992	1993	1994	1995
Netherlands						
Bonds	17	19	23	25	25	27
Loans	54	50	46	39	39	35
Shares	14	15	16	20	21	23
Others	15	15	15	15	16	15
Spain						
Bonds	45	46	46	49	49	42
Loans	6	5	3	3	3	3
Shares	11	7	6	6	6	6
Others	38	42	45	43	41	49
Sweden						
Bonds	57	59	62	60	58	57
Loans	12	10	10	8	7	7
Shares	28	29	27	31	34	35
Others	2	1	1	1	1	1
Switzerland						
Bonds	40	44	39	42	38	44
Loans	37	30	36	25	37	0
Shares	16	14	18	22	20	50
Others	7	12	6	11	6	5
Turkey						
Bonds	**77**	**76**	**81**	**78**	**83**	**83**
Loans	**0**	**1**	**1**	**0**	**0**	**0**
Shares	**13**	**14**	**10**	**16**	**10**	**7**
Other	**9**	**9**	**9**	**5**	**7**	**10**
United Kingdom						
Bonds	14	13	14	14	15	16
Loans	2	1	1	1	1	1
Shares	66	69	68	70	68	69
Others	18	16	16	15	15	15
United States						
Bonds	44	43	43	43	42	40
Loans	16	14	13	12	12	12
Shares	23	26	28	31	31	36
Others	16	17	16	15	15	13

The economical crises of Turkey in 1994, has narrowed the industry sector supply and demand equilibrium. Because of that crises most of the industry company is turned to stand by their production units and consequently they have created negative earnings at the end of 1994. Jaffe, Keim, and Westerfield, has found that, without regarding their sizes, the negative earning effects (NEE) of the firms between 1951 and 1986 has created positive influences on the stock prices. After the studies of Jaffe, Keim, and Westerfield, Ettredge and Fuller[75] has researched the subject more strictly. The research

[75] Ettrenge M. and Fuller R., " The Negative Earnings Effect.", Journal of Portfolio Management, pp: 27-33, Spring 1991.

of Ettredge and Fuller implied that, the following 12 month after negative earning declaration is created a Cumulative Abnormal Returns (CAR) which is quite high and positive.

As shown in the portfolio compositions of institutional investors table between 1994 and 1995 shares percent is decreased 10 to 7 while in the other countries increased or kept as constant.

On the 1994 economic crises interest rates of treasury bills are increased so high that they have provided about %35 real profits at the end of the maturity. These extremely high risk free earning rate is decreased the percent of shares in overall financial instruments.

The lack of alternative market in ISE , such as futures or options, the individual and institutional investors could not transact in the capital markets as it is accomplished in the western equals.

VII. FINDINGS

7.1. Summary of Findings in ISE

The designed parameters are mainly tested in two different capital market of ISE and NASDAQ. (The companies used during parameters designing and testing stage of ISE, the Appendix 3 is referred. The NASDAQ companies used to test the parameters is listed in the Appendix 2.) Plus the fact that, preferences arising from speculative or buy and hold investment decision strategies, enforced to create short and long term corporate definitions. Naturally, while the speculative investor is needed to have short term corporate attitudes definition, the buy and hold strategy following investor is needed to have long term identification.

7.1.1. Summary of Findings in Short Term

1. In the ISE the importance of debt indicators are effective to determine the company attitudes.
2. Gross profit margin that is defining cost operation in the net sales is a deterministic fact on the HP or LP companies.
3. How high the profit before taxes against the company's equity is an important key point for the analysis in ISE. This ratio signifies the profit responsibilities of companies via their equity. Assume that owner's equity is very high and yearly profit growth is sufficient large for overall market. Even though equity and profit growth is sufficient high, if ROE remaining small and decreasing continuously, than it is fault on the condition of company and this should be reflected to its attitude simultaneously. That why ROE is so important in ISE.
4. Profit before extraordinary items and tax plus financial expenses concluded as profit including other operations. This profit defines the profit including participation, affiliated companies and other operating income. The ratio of ROA defines profitability of total assets. On the other hand the credit cost is the ratio of financial expenses to the total financial loans. It is obvious that in a high inflationary environment the cost of credit is very important. Determination of HP or LP company ROA / Credit Cost ratio has an important effect.
5. The cash flow yield is a ratio of provisions plus net income to total debts. Net income is not enough to determine the power of weak financial situation of a company. In the industrial companies there is some provisions like retirement pay and depreciation. These provisions disguise the attitude of companies.

That 's why to keep track of provisions as a plus fact of net income will carry great importance on ISE.

6. In the high inflationary environment the companies should overcome yearly inflation rate in order to satisfy opportunity cost of the alternative risk free gain. So, the net profit growth rate should be greater than or equal to yearly declared inflation rate. This ratio measures the conclusions of the companies directly.

7.1.2. Summary of Findings in Long Term

1. In the long term company attitude definitions, ISE has great importance. ROE parameter is used in both long term and short term.
2. Profit margin is deterministic parameter of company attitude definitions for both short term and long term. In stead of gross profit margin parameter of short term, net profit margin will be an important parameter for long term.
3. According to the long term parameter designing results, the operating leverage parameter has found as important. In contrast to the short term parameters, long term parameters are dependent to operational efficiency. The effect of these parameters are very important for long term corporate attitude definitions.
4. Net profit growth rate is found as important parameter for both short and long term point of view. But for long term point of view, the importance of net profit is quite small in comparison to short term.

7.2. Summary of Findings in NASDAQ

1. Financial leverage on the NASDAQ has little impact on the determination of HP or LP company. Including financial leverage solution results are meaningless.
2. Operating leverage has high potential on the determination of company attitudes.
3. The effects of debt indicators with in the overall corporate attitude definitions are small.
4. Productivity is dominant factor.

7.3. Summary of Findings in Comparison to ISE and NASDAQ

1. The statistical model studies for Country Risk identifies significantly independent exploratory variables, such as external debt to GNP, debt service ratio, level of debt relation to exports, income per capita, level of reserves in relation to imports, current account of the balance of payments. The different

country risks of different countries will conclude different financial structure and its analysis[76]. Aydoğan and Güney on their study defined a market average P/E only specific to ISE. US is a developed country. So low external debt to GNP ratio, high income per capita , debt service ratio, reserves to imports describes a stabilized country. But Turkey is a developing country. So that the importance of debt indicators is dominated and according to the creditworthiness companies it is risky than US.

2. In the real conditions of company attitude definitions leverage are composed of two different types; such as financial and operating. Although in Turkey operating and financial leverage carries the same importance to determine the company attitudes but in US the financial leverage do not carry the same importance. In other words it is not so meaningful to forecast the company attitudes including financial leverage criteria in US.

3. Operating activity has more importance in US against Turkey. Because in developed countries productivity of Capital and Labor is quite high against developing countries. In US operating leverage concludes a direct success for the companies. It is known that in the developed countries cost of credit is low. Low credit rates implies that US companies has a potential to borrow. But in developed countries yearly standard deviations of credit cost is very high. In order to talk about a continues financial configurations of companies the company risks should be similar.

7.4. Summary of Findings in Manipulations of Financial Statements

1. Manipulation on the short term trading is more intensive than long term.

2. The incident of manipulations for long term high performance companies are quite seldom.

3. In the short term upward price movements, the percent of LPC intensity is very high.

4. In the long term upward price trends, the percent of LPC intensity is quite low.

5. The long term price trends are notified that, the most of LTHPCs do not have enough propensity to buy in the market.

6. Overall MBP on short term is 1.5 times greater than long term.

7. In the short term price movement analysis, MSTBP is categorized into three regions. 20% of the extremely high priced common stocks is LPCs.

[76] Kürşat Aydoğan & Alparslan Güney. "P/E Ratio & Dividend Yield As Forecasting Tools In ISE." Bilkent Unv. June 1996.

8. More than half of the LTHPCs could not find any buyer or seller in the market.

7.5. Alternative Behaviors of Investors

1. The percent of institutional investments in GDP is increased with getting global economy for International Finance Market..

2. The portfolio compositions of institutional investors demonstrates the intentions to

the risk. Naturally, this risk should be in acceptance region. But the last year statistics of ISE implement that, shares are decreasing while the bonds and loans are increasing or keeping in constant. After 1994, NEE concepts are surprised for investors. Especially in ISE, the rapid growths are created many fictive price movements. So the risk is so increased that, it has reached to a level of rejection. Because of that reason shares are decreased in comparison to other financial instruments.

3. Market's are preferred to trade in short term comparison to long term. In other words markets are found more safe themselves during the trade of speculative in comparison to buy and hold.

VIII. CONCLUSION

The comparison of real conditions and econometric model forecasts are on the designed parameters of corporate is transpired in ISE companies. And than both of ISE and NASDAQ companies are tested in ex-ante sampling. It is concluded that the ISE and NASDAQ results are to much deviated from each other. This deviation of results could be interpreted in such a way that, the designed parameters are valid only in the designed environment for specific applications.

The industrialized and developing country comparison of Wabe & Camara proposed that "output per input of capital services in some developing countries half that of comparable industrialized countries." Because of macroeconomic differences between ISE and NASDAQ, financial structures of individual market's companies have been developed variously in the continuous time. It is also known that, this difference is usually taken into account in the evaluation of consultant groups for country creditworthiness.

The market specific conditions like being High Performance or Low Performance company will be definite in a market specific threshold. On the market average situations, it is proposed that investor's taking position or clearing position will be determined.

ISE companies are exactly approved the designed model in the case of dichotomous. Thus, it is concluded that this parameters are valid only in ISE. On the other hand NASDAQ companies and its financial ratios are meaningless for the definition of an HPC designed in the ISE.

Thus, the vise versa of the conclusion is correct. Most of the critical financial research designed US can be applied to Turkish capital market fundamentally but not one to one and verbatim. In order to use any financial design we should make a system test to realize its accuracy. The system test is like a system fuse. This test will clarify the market specific conditions obviously.

The short term company preferences of investors are effected from insider information, and manipulations. But the long term company preferences are not effected from rumor. Because very small percent of long term buying propensity is constituted by long term low performance company. The long term buying decisions of buy and holders are concentrated on the long term high performance companies. The long term investments include market, industry and economic risks so the rumor or insider information effects are minimized. And long term investors will try to insight about long term high performance companies.

The transaction volume of market is effected form both of LPCs and HPCs. 20% of the extremely broken out stocks are LPC. And %8 of the long term upward trend stocks is assembled with LPCs.

% 86 of the daily broken out companies during 27 February 1997 and 27 October 1997 is short term companies designed by econometric model. But on the other hand, this ratio is % 54 for long term point of view. This propensity difference signifies the followings: a) In ISE the short term investors are constructed a more volatile short term

environment, comparison to long term. b) Indefiniteness of long term economic or market conditions are forced investors to stay at short term time intervals.

Thus, determining corporate attitudes have a definite benefits to enlighten the decisions of investors. The deterministic capability of model is more efficient for short term in comparison to long term. Plus the fact those deterministic characters of model, the study has demonstrated the manipulations on the short term sharp price movements.

The audited and non-audited financial statement information are created quite different conclusions for LPCs and HPCs. Low performance companies have set forth an extraordinary deviated results between audited and non-audited financial statement announcement periods, whereas high performance companies have demonstrated consistent conclusions during that specified periods. Thus, high performance companies do not conceal their original financial statements in the audited announcement periods. Because high performance companies do not need to dazzle. On the other hand, low performance companies have implemented themselves more powerful than originally they have. Whereby they attempt to fascinate the individual and institutional investors. For example, most of the low performance company conclusions are obtained in the regional market of ISE. But they are found as highly volatile and upward moved stocks as well. In the yearly performance evaluation of fundamental analysts, those of the companies have been replaced in a powerful financial situation. The competition between corporate are not so clear in the non-audited period as it is defined on the audited period. Thus, more relaxed market conditions has enhanced the ability of foreseeing about company attitudes. In this respect, to analyze the low performance companies on non-audited period will be more logical approach.

As a matter of fact that, the effect of regulatory mechanisms should augment the consistencies of both low and high performance companies on the audited period. And it should increase the forecasting power of the company attitude forecast methods. The companies have mostly effected from market conditions such as competition, economic fluctuations, and industrial priorities, although they have anticipated to be effected from regulatory mechanisms. In this respect, the regulatory mechanism expected to be an authority on the system. Unfortunately it has responded as neutral and behaved entirely passive to the all manipulations.

APPENDIX 1

COMPUTER PROGRAM USED FOR DETERMINATION OF BREAK OUT IN A SELECTED COMPANY.

```
Dim Average_True_Range ( ) as integer, True_Range ( ) as integer,
I as integer, SUM as integer, IND as integer

" Obtaining Daily Stock Prices From Distribution System of ISE."

H ( I )    = High                  " Highest Value of Today "
L ( I )    = Low                   " LowestValue of Today "
L( I -1 ) = Ref ( Low,-1)          " Lowest Value of Yesterday "
C ( I -1 )= Ref (close, -1)        " Highest Value of Yesterday "

"Alternative True Ranges are Defined. And denoted by 1 , 2 or 3 individually."

True_Range_1   = H ( I ) – L ( I -1 )
True_Range_2   = L ( I ) – C ( I -1 )
True_Range_1   = H ( I ) – C ( I -1 )

IND=IND + I
IND=I

" Nested If Statement is Constructed to Find out the Highest True Range of Alternatives True
Ranges "

If ( True_Range_1 > True_Range_2 ) Then

        If ( True_Range_1 > True_Range_3 ) Then

                True_Range(I) = True_Range_1
                End If
Else
        If ( True_Range_2 > True_Range_3 ) Then
                True_Range(I) = True_Range_2
                Else
                        True_Range(I) = True_Range_3
                        End If

End If

" Determination of Break out for the Selected Company "

If ( True_Range(I) > ( 1.5*Average_True_Range( 9 ) )) Then

MsgBox " =  THIS SHOWS A DEFINITE BREAK OUT FOR THE SELECTED STOCKS  ="

Else

MsgBox " =  THIS IS AN IMPLICATION OF STABILITY OR GOING DOWN  FOR THE
            SELECTED STOCK="

End If
```

APPENDIX 1 Continued.

" 9 Days Moving Average of True Ranges."

```
Function Average_True_Range ( Io )
        SUM as integer, True_Range ( ) as integer, J as integer

        SUM = SUM + True_Range(I)

        If ( I = Io ) Then

        Average_True_Range = SUM / 9

        End If

                If ( I > Io ) Then

                J = I – Io

                Average_True_Range = (SUM – True_Range(J)) / 9

                End If

End Function
```

APPENDIX 2

LIST OF COMPANIES USED IN NASDAQ

Mcafee
Informix
HBOC
The Home Depat, Inc and Subsidary
Fore Sytems, Inc.
Gateway 2000 Inc.
Gartner Group Inc.
Cascade Communication Corp
Quantum Corporation
Ascen
Price Costra Inc.
Andrew
3 Com Corporation
American Power Conversion Corp. & Subsidary.
Xilimx Inc.
Microsoft Corporation.
Intel Corporation.
Molex Incorporation.
Cisco System Inc.
RPM Inc & Subsidiaries.
Healthcare Compare Corp.
Tellabs.
MCI Telecommunications Corporation.
The Craaker Barrel Shareholders
Quadracom Home
The Physicians Corporation
Sun Microsystems Inc.
Dell Computer Corporation.

APPENDIX 3 CONTINUED

Metaş
Good-Year
Gorbon Işıl
Gübre Fabrikaları
Gümüşsuyu
Güney Biracılık
Haznedar Tuğla
Hektaş
Hürriyet Gazetecilik
İhlas Ev Aletleri
İhlas Finans
İhlas Holding
İntema
İntermedya
İstanbul Motor Piston
İzmir Demir Çelik
İzocam
Kaplamin
Karsu Tekstil
Kartonsan
Kav Orman
Kelebek Mobilya
Kent Gıda
Kepez Elektrik
Kerevitaş Gıda
Konfrut Gıda
Koniteks
Konya Çimento
Kordsa
Köytaş
Tansaş
Tat Konserve
Tezsan
THY
Tire Kutsan
Tofaş Oto Ticaret
Tofaş Otomobil Fab.
Trakya Cam
Transtürk Holding
Tuborg
Tukaş
Tümteks
Ünye Çimento
Uşak Seramik

Migros
Milliyet Gazetecilik
Milpa
Mudurnu Tavukçuluk
Mutlu Akü
Net Turizm
Netaş
Okan Tekstil
Olmuksa
Otokar
Otosan
Oysa Niğde Çimento
Parsan
Peg Profilo
Petkim
Petrokent
Petrol Ofisi
Pimaş
Pınar Et
Pınar Su
Pınar Süt
Pınar Un
Polylen
Raks Elektronik
Raks Ev Aletleri
Sabah Pazarlama
Sabah Yayıncılık
Sarkuysan
SASA
Sifaş
Şişe Cam
Söksa
Söktaş
Sönmez Filament
Sönmez Pamuklu
T. Demirdöküm
Vestel
Viking Kağıt
Yasaş
Tüpraş
Turcas Petrolcülük
UKİ Mensucat
USAŞ
Yataş
Yünsa

APPENDIX 3

LIST OF COMPANIES USED IN ISE

Abana Elektromekanik
Adana Çimento
Adel Kalemcilik
Afyon Çimento
Akal Tekstil
Akçansa
Akın Tekstil
Aksa Akrilik
Aksu İplik
Aktaş Elektrik
Alarko Sanayi
Alcatel Teletaş
Altınyıldız
Altınyunus Çeşme
Anadolu Biracılık
Anadolu Cam
Anadolu Gıda
Arçelik
Ardem
Aselsan
Aslan Çimento
Aygaz
Bağfaş
Banvit
Batı Çimento
Beko
Birlik Mensucat
Bisaş Tekstil
Bolu Çimento
Borova Yapı
Borusan Boru
Bosh Fren
Bossa
Brisa
Esem Spor Giyim
Factofinans
Feniş Aliminyum
Frigo Pak
Gediz İplik
Gentaş
Gima
Göltaş
Bugün Yayıncılık
Burçelik
Bursa Çimento
ÇBS Boya
ÇBS Printaş
Çelebi Hava
Çelik Halat
Çemtaş
Ceytaş
Çimentaş
Çimsa
Çukurova Elektrik
Çumra Kağıt
Dardanel
Denizli Cam
Derimod
Ditaş Doğan
Doğusan
Döktaş
Duran Ofset
Eczacıbaşı İlaç
Eczacıbaşı Yapı
Edip İplik
Ege Biracılık
Ege Endüstri
Ege Gübre
Ege Plast
Ege Profil
Ege Seramik
Emek Sigorta
Eminiş Ambalaj
Emsan Beş Yıldız
Emsan Paslanmaz
Enka Holding
Erbosan
Erciyas Biracılık
Ereğli Demir Çelik
Esbank
Kütahya Porselen
Lüks Kadife
Makina Takım
Mardin Çimento
Maret
Marmaris Altınyunus
Marmaris Martı
Marshall
Merko Gıda
Çarşı

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