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ACCOUNTING BASED RISK INDICATORS VERSUS PRICE:  
A COMPARATIVE STUDY OF LOCAL AND FOREIGN CAPITAL  
COMPANIES IN ISE

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## **ABSTRACT**

### **ACCOUNTING BASED RISK PREMIUM APPRECIATION OF ISE MARKET: A COMPARATIVE STUDY OF LOCAL AND FOREIGN CAPITAL COMPANIES IN TURKEY**

This study covers the accounting based risk premium appreciation of companies quoted to ISE. The sample of the study consisted of a total of 48 companies, being 36 local and 12 foreign capital enterprises, and their quarterly data of Prices and accounting based risk indicators. The purpose of this study is to investigate if ISE appreciates accounting based risk indicators, and furthermore existence of a distinction for local and foreign capital companies in terms of risk indicators and/or risk-return structures.

The sample has been filtered through major industry firms operating in Turkey, with both foreign and local capital participation. Accounting based risk indicators for the selected sample are computed using their quarterly financial statements reported to the ISE. Any relationship between risk indicators and price, consequently risk premiums of companies, are investigated by using linear regression models. The analyses are also carried out to identify and distinction on either the risk structure or risk-return patterns of local capital companies compared to foreign capital companies.

The results of the study demonstrated that some of the defined accounting based risk indicators, namely degrees of financial leverage and debt ratio, are appreciated in terms of return to investors by the ISE. Furthermore, foreign and local capital companies have different risk perceptions and structures, that is foreign capital companies have higher degrees of financial leverage values, against lower degrees of times interest earned and debt ratio risk indicators. Also, both debt ratio and degrees of financial leverage have effect on the price of local and foreign capital companies. Surprisingly, statistical model run with foreign company data is very well significant and representative of the overall sample.

It is concluded that accounting based risk indicators are valued in the ISE market and local and foreign capital companies differ in risk management terms depending on these risk measures.

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## LIST OF ABBREVIATIONS

CAPM	Capital Asset Pricing Methodology
ISE	Istanbul Stock Exchange
RFR	Risk Free Rate
DOL	Degrees of Operating Leverage
DFL	Degrees of Financial Leverage
DR	Debt Ratio
TIE	Times Interest Earned
EBIT	Earnings Before Interest and Tax
EPS	Earnings per Share
I	Interest



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## INTRODUCTION:

Risk is generally defined as the “chance that some unfavorable event will occur”. With this respect, it has always invoked dislikes in human being. However, there is an exceptional combination of risk that people may eagerly take given enough level of motivation: financial risk.

In terms of financial context, “*risk is the uncertainty of future outcomes of an investment*” (Reilly, Norton 1995). In parallel, this may be reworded as financial risk is the chance that a promised return will not be generated.

Investment is the deferral of current expenditures expecting higher purchasing power at the end of holding period. Financial investments take place with the expectation of investor with higher purchasing power at the end of investment horizon, that is holding period (Reilly, Norton 1995).

Speaking in nominal terms, difference between the value of the financial intermediary at the end and start of holding period is named the return for the investor. Within the context of Capital Asset Pricing Model (CAPM), return for any investment consists of three major components (Weston, Brigham 1993):

1. Risk free rate
2. Inflation
3. Risk premium.

Both risk free rate and inflation are indifferent of investment intermediary, and is the minimum but guaranteed amount of return that can be obtained for a specified holding period. It should be noted that this kind of investment instruments have no risk at all, that there is no doubt that the promised return will not be paid off.

The above summary of investment behavior ends up with the statement that every investor is after maximizing its excess return whilst minimizing its risk level.

One of the major risk components for investors is the business risk. “*Business risk*” is the uncertainty of income flows caused by the nature of a company’s business (Reilly, Norton

1995). The more uncertain the income flows of the company, the more uncertain the income flows to the investor. Therefore, the investor will demand a risk premium that is based on the uncertainty caused by the business of the company.

Mainly, business risk is the risk associated with the projections of a company's future returns on assets, which basically is the uncertainty of income flows caused by the nature of a firm's business (Weston, Brigham 1993).

Another type of risk that is equally weighted as business risk is the financial risk. "*Financial risk*" is the uncertainty introduced by the method by which the company finances its investments (Reilly, Norton 1995). If a company only uses common stock it incurs only business risk. If a company borrows money to finance its investments, it must pay fixed interest charges prior to providing income to the common stockholders, so the uncertainty of the returns to the investor increases. This increase in uncertainty because of fixed cost financing is called financial risk or financial leverage. An alternative description of financial risk is the risk resulting from the use of financial leverage, which is the extent to which fixed-income securities (debt and preferred stock) are used in a company's capital structure (Weston, Brigham 1993).

Most generally, investors try to evaluate the riskiness of their investment by various methods which generally depend on the market data. However, use of accounting data has not been a general attitude. Thus, theoretical studies have concentrated on risk evaluation methods depending on the market data, as well.

With an effort to minimize the deviations of estimates from the actual outcomes, research focused on accounting data to evaluate the riskiness of investments', that is companies' in fact. The main incentive behind this approach is that market based information for a company is of extrinsic nature, thus it may not very well reflect the real riskiness of a company at all. However, accounting based information is of intrinsic nature, thus more capable of measuring the risk inherent within the core of the company.

Although the above argument is open to discussions in various aspects, researchers have performed studies built upon accounting based data.

Kallunki investigated the market efficiency with respect to the accounting information as well as using accounting information in estimating the riskiness of a stock. He uses accounting

information of the real determinants of systematic risk to define abnormal returns and models a return model based on accounting based indicators (Kallunki 1996). Kallunki states that use of accounting variables as instrumental risk measures may be a promising method for addressing the estimation problems of systematic risk in thinly traded stock markets.

Building upon the above studies of Kallunki, Martikainen reports that there is a strong relationship between stock returns and accounting variables measuring company-specific characteristics, based on thinly-traded Finnish market such as Istanbul Stock Exchange (ISE) (Martikainen 1992). Thus, accounting-based method may produce more reliable risk estimates compared to the methods based on the pure market information, but the price reaction near the event is too strong to be able to be totally explained by errors in estimating abnormal returns.

As Kallunki (1996) reports, there is both theoretical and empirical evidence in the literature supporting the use of accounting variables as instrumental risk measures.

Market-based risk estimation is especially problematic in thinly traded markets. Depending on the studies of Hamada (1972), Lev (1974), Gahlon and Gentry (1982) and Chung (1989), accounting variables offer an alternative risk estimation approach for commonly used market-based methods.

Although there is strong theoretical evidence that accounting based risk estimators can be of valuable use for especially thinly traded stock markets such as ISE, another aspect of investments (companies) is added to the content of the study: ownership structure.

The purpose of this study is to analyze how ISE companies' prices are effected by accounting based risk measures. Moreover, to investigate if foreign and local capital companies exhibit different patterns for risk indicators and their price-risk behaviors differentiate with respect to source of capital. The sample of the study consisted of a total of 48 industry companies (36 local capital, 12 foreign capital) quoted to ISE as of 1992 and successively listed in the Major 500 Industrial Enterprises by Istanbul Chamber of Industry during 1993-1995 periods. ISE price and accounting based risk indicators for the above companies are analyzed for the 26 quarterly periods covering FYE 1991 to 3/1998.

The chapters of this study are organized as follows:

Chapter 1 provides information on the theoretical background of risk concept, CAPM, risk-return relationship, risk groups for assets, types of risks and accounting based risk indicators, as well as insight about foreign capital policies and encouragement in Turkey.

Chapter 2 describes the sample selection, time horizon determination, data collection as well as calculation of variables. Consequently, methodology applied in order to analyze the resulting data is described.

Chapter 3 contains the result of the study. The model prescribed in methodology is run for each hypothesis testing over three levels of data set: 1. *Raw Data*, 2. *Interim Data*, 3. *Final Data*. Outcomes of each run is briefed accordingly.

Conclusion section presents the interpretation of the summarized findings in the study. Limitations involved during the research and analyses as well as recommendations for future studies of similar subject are also portrayed in the conclusion part.

## **CHAPTER 1: RISK, RETURN AND FOREIGN CAPITAL COMPANIES IN TURKEY – THEORETICAL BACKGROUND**

This chapter briefs risk concept and research on investment risk, CAPM, risk and return, and accounting based risk measures, as well as background of foreign capital in Turkey.

### **1.1 Definition of Risk**

Risk has many different definitions as per various point of views, thus is not easy to give a brief and concise definitions that could fit for every possible usage. To start with, Webster's define risk as "*a hazard, a peril, exposure to loss or injury*".<sup>1</sup>

The above definition builds up a defensive and prudent perception for risk. However, provoked by return, investment risk is a kind of risk that people may most of the time be willing to take on, motivated by enough return level.

Thus, investment risk and return are always treated conjointly. And all the studies analyzing investment risk end up, or better to say, start with return against perceived risk level. Moreover, most of the investment theories are built upon this relationship and analyze their interaction, such as the CAPM.

### **1.2 Portfolio Theory**

The father of modern portfolio theory, Harry Markowitz, who won the Nobel Price in economics for his work. The primary lesson Markowitz tells is that, in general, risk can be reduced by combining assets into portfolios rather than holding them individually. Of course, the key to portfolio risk reduction is that the returns on most assets are not perfectly positively correlated (Reilly, Norton 1995). The implications of portfolio theory are:

1. investors should combine assets into portfolios to minimize risk
2. the riskiness of each individual asset should not be measured as if it were held in isolation, but rather by its contribution to the riskiness of a well-diversified portfolio.

Although portfolio theory as developed by Markowitz tells investors how to measure risk, it does not specify the relationship between risk and required rates of return. The Capital Asset Pricing Model, which was developed primarily by William Sharpe, who shared the 1990 Nobel Prize in Economics with Markowitz, specifies the risk-return relationship (Reilly, Norton 1995).

### **1.3 CAPM**

CAPM extends Portfolio Theory and develops a model for pricing risky assets. The CAPM relies on the perfect market assumption, along with some additional assumptions, and it specifies that the required rate of return on the market portfolio, and the volatility of the asset's returns relative to the returns of the market portfolio (Weston, Brigham 1992).

CAPM is a model based on the proposition that any asset's required rate of return is equal to the risk-free rate of return plus a risk premium, where risk reflects diversification. An asset held as a part of a portfolio is less risky than the same asset held in isolation. Consequently, the riskiness of the portfolio is less than the riskiness of individual assets, in line with the correlation among them (Weston, Brigham 1992).

Theoretically, there can be a set of assets, that is portfolios, whose expected returns are negatively correlated, constituting an unrisky portfolio. However, although comprised of very large number of assets, each and every portfolio has a substantial amount of risk. Thus, a certain portion of risk inherent in individual assets can be eliminated in a well-diversified portfolio, where some risk always remain. It is not possible to diversify the broad effects of market movements that is valid for all assets (Reilly, Norton 1995).

The part of the risk which can be eliminated by constituting asset portfolios is called the *company-specific* risk. The remaining part of risk which can not be eliminated is called *market* risk (Weston, Brigham 1992).

Company specific risk is caused by specific events that are unique to the company itself, and thus can be eliminated in diversified portfolios. However, market risk stems from factors that systematically effects the whole market such as inflation and recession. Therefore, market risk can not be eliminated no matter how well diversified any portfolio is. Relevant risk of an asset is

the riskiness of a specific asset that can not be eliminated, namely its market risk, which is contributing to the overall riskiness of the portfolio (Weston, Brigham 1992).

The tendency of an asset's return to move with the market is a measure of the asset's volatility relative to that of an average asset, which is a key element of CAPM (Reilly, Norton 1995).

### **1.3.1 Systematic (Market) Risk:**

Market risk (company-specific or unsystematic risk) is defined as the risk attributable to the whole market and that can not be diversified away. Market risk is caused by general movements in the stock market and reflects the fact that most stocks are systematically affected by certain economic events like recession and inflation (Weston, Brigham 1992).

Market risk is the only risk component that is relevant to a rational and diversified investor, considering that specific risk can totally be diversified away.

Market risk of a stock as defined in CAPM is fundamentally generated by certain characteristics of a company such as business risk, financial leverage and operating leverage. The intuition behind the connection between the business risk and market risk of a company is that fluctuations in macroeconomic circumstances cause fluctuations in the demand of a company's products. This in turn causes variability in the earnings of a company. Since the price of the stock can be regarded as the present value of future earnings of a company discounted by investor's required rate of return, the riskiness of a stock is related to the uncertainty of future earnings, i.e. variability of earnings (Gordon, Shapiro 1956).

Company-specific risk of an asset as defined by CAPM is a function of certain company-specific characteristics, such as business and financial risk. The business risk, or cyclical, refers to the sensitivity of the demand for company's output implies the high business risk (Weston, Brigham 1992).

### **1.3.2 Specific (Company-Specific) Risk:**

Intrinsic risk for an asset is arising from the nature of operations of a company. Intrinsic risk for an asset is named to be the Specific Risk (Weston, Brigham 1992).

Specific risk is the risk arising from the nature of operations of the specific company. In other words, specific risk is the risk arising from causes that are unique to the individual company.

Some examples of specific risk are the development of a company, particular events in a given sector, change of management. These are mainly attributable to the non-market related fluctuations. Therefore, company specific risk can be eliminated by diversification and most investors diversify, either by holding large portfolios or buying shares in mutual funds.

#### **1.4 Risk and Return**

Within the CAPM context, investors must be compensated for bearing risk-the greater the riskiness of a stock, the higher its required return. However, compensation is required only for risk which can not be eliminated by diversification. If risk premiums existed on stock with high diversifiable risk, well diversified investors would start buying these securities and bidding up their prices, and their final (equilibrium) expected returns would reflect only non-diversifiable market risk (Weston, Brigham 1992).

The equilibrium pricing models of assets such as the CAPM developed by Sharpe (1964) and Lintner (1965) as well as the multifactor models motivated by the theory of Ross (1976) define the asset's return as a function of its systematic risk.

For a given level of risk, CAPM asserts that the investor should be requiring for a certain rate of return. This required rate of return is determined by three variables (Weston, Brigham 1992).

1. Economy's Real Risk Free Rate (RFR); which is influenced by the investment opportunities in the economy (i.e. long run real growth rate)

Real Risk-Free Rate is the basic interest rate, assuming no inflation and no uncertainty about future flows. This is also called the pure time value of money. Real risk-free-rate of interest is the price charged for the exchange between current goods and future goods.



2. Variables Influencing Nominal RFR, which include short-run ease or tightness in the capital market and expected rate of inflation

3. Risk Premium on the Investment. Risk premium can be related to fundamental factors including business risk, financial risk, liquidity risk, etc.

### **1.5 Arbitrage Pricing Theory (APT)**

APT focuses on the major forces that move aggregates of assets in large portfolios, and is after an intuitive appreciation of their influence on portfolio returns by identifying these major forces. Thus, the ultimate goal behind APT is to acquire a better understanding of portfolio structuring and evaluation which will help to improve overall portfolio design and performance in terms of riskiness and overall return (Ross, Roll 1984).

CAPM states that asset returns are affected by systematic factors, which can not be eliminated at all. Major indicator for the systematic risk is defined to be the beta ( $\beta$ ), constituting the basics of CAPM. However, APT states that asset returns are also effected by influences that are not systematic to the economy as a whole. "Idiosyncratic" forces, that are valid for individual firms or particular industries but not directly related to overall economic conditions, are distinguished from systematic factors in describing the major market movements (Ross, Roll 1984).

APT differs from CAPM in the way that CAPM introduces  $\beta$  as the sole indicator of market risk, where APT asserts that there is more than one factor,  $\beta$  of CAPM, that influences overall behavior of the market. APT further extends the actual return for an investor as the expected return plus factor sensitivity times factor movement plus residual risk (Ross, Roll 1984).

The factors that are affecting the actual return of an asset under the APT is described as (Ross, Roll 1984) :

1. unanticipated inflation,
2. changes in the expected level of industrial production,
3. unanticipated shifts in the risk premium,
4. unanticipated movements in the shape of the term structure of interest rates.

Although APT has been gaining more strength against CAPM, still there exist theoretical arguments, which in the end avoid us to consider the multi-factorial market risk approach rather than  $\beta$  of CAPM. Consequently, this study has been based on the CAPM theory rather than APT.

### ***1.6 Accounting Based Risk Measures***

As a theory of financial market behavior, CAPM states only a necessary equilibrium relationship between the prices of securities given their stochastic characteristics over a period of time. It says little about how stock prices are determined by the real variables that financial managers must consider in evaluating strategic, operating and financial alternatives (Gahlon, Gentry 1982).

Within the context of CAPM, systematic risk of an asset is a function of exogenous variables, that is market behavior. However, it is arguable that the risk of any asset, that is company, should be evaluated regarding its real determinants of operation, which is defined as accounting variables.

Kallunki (1996) investigated the market efficiency with respect to the accounting information as well as using accounting information in estimating the riskiness of a stock. He uses accounting information of the real determinants of systematic risk to determine abnormal returns and models a return model based on accounting based indicators. Kallunki states that use of accounting variables as instrumental risk measures may be a promising method for addressing the estimation problems of systematic risk in thinly traded stock markets.

Building upon the above studies of Kallunki, Martikainen (1992) reports that there is a strong relationship between stock returns and accounting variables measuring company-specific characteristics, based on thinly-traded Finnish market such as ISE. Thus, accounting-based method may produce more reliable risk estimates compared to the methods based on the pure market information, but the price reaction near the event is too strong to be able to be totally explained by errors in estimating abnormal returns.

As Kallunki (1996) reports, there is both theoretical and empirical evidence in the literature supporting the use of accounting variables as instrumental risk measures.

Market-based risk estimation is especially problematic in thinly traded markets. Depending on the studies of Hamada (1972), Lev (1974), Gahlon and Gentry (1982) and Chung (1989), accounting variables offer an alternative risk estimation approach for commonly used market-based methods.

### **1.6.1 Risk Indicators**

Within the above context, there have been numerous studies about how the riskiness of an asset, or company, can be evaluated depending on the real-determinants, or internal corporate variables, of the company, namely accounting data.

CAPM asserts that the relevant risk variable for an asset should be its systematic risk, which is its  $\beta$  coefficient related to the market portfolio of all risky assets. In efficient markets, a relationship should exist between internal corporate risk variables and market determined risk variables such as  $\beta$ . Numerous studies have tested this relationship by examining internal corporate variables intended to reflect business risk and financial risk (Reilly, Norton 1995).

In terms of CAPM theory, market risk, or systematic risk of an asset is measured by  $\beta$ . There have been studies relating accounting based risk indicators with  $\beta$ , hence stating that these indicators can replace  $\beta$  under given conditions and assumptions.

There is strong analytical and theoretical evidence that especially Degree of Operating Leverage (*DOL*) and Degree of Financial Leverage (*DFL*) are real determinants of systematic risk of an asset, that is  $\beta$ . Moreover, Debt Ratio (*DR*) and Times Interest Earned (*TIE*) are commonly accepted risk indicators of a company.

Depending on these facts, this study has defined its accounting based risk indicators as *DOL*, *DFL*, *DR* and *TIE*.

Although APT defines unanticipated inflation, changes in the expected level of industrial production, unanticipated shifts in the risk premium and unanticipated movements in the shape of the term structure of interest rates as measures of risk, we do not depend on these factors considering relatively immature theoretical background of APT compared to CAPM.

Following are theoretical support for the captioned risk indicators. This brief is expected to prove and support that accounting based risk measures can define riskiness of assets with current literature.

#### 1.6.1.1 Degree of Financial Leverage:

Best definition of Financial Leverage is that it is a function of the ratio (tax adjusted) of fixed financing charges to net operating income. Conformably, definition of Operating Leverage is that it is a function of the ratio of fixed operating costs to gross contribution margin (McDaniel 1984).

Financial leverage takes over where operating leverage leaves off, further magnifying the effects on earnings per share changes in the level of sales. For this reason, operating leverage is sometimes referred to as the first-stage leverage, and financial leverage as second-stage leverage (Weston, Brigham 1992).

*DFL* is defined as the percentage change in earnings per share that result from a given percentage change in earnings per share that results from a given percentage change in earnings before interest and taxes (EBIT) (Weston, Brigham 1992).

$$DFL = \frac{\text{Percent Change in Earnings per Share (EPS)}}{\text{Percent Change in EBIT}} = \frac{\text{EBIT}}{\text{EBIT} - \text{Interest (I)}}$$

#### 1.6.1.2 Degree of Operating Leverage

On the company level, large capital expenditures associated with an operating leverage increase will increase stock riskiness. In these cases, cut-off rate used for capital budgeting decision, i.e. cost of capital, should allow for the increased risk. Use of current cost of capital as the cut-off rate would probably result in a decrease in stock prices (Lev 1974).

Lev<sup>18</sup> defines operating leverage is defined as the ratio of the fixed to variable operating costs; high operating leverage refers to a high share of fixed costs relative to variable costs. Given the substitutability among production factors, the degree of operating leverage can be substantially changed by managerial decisions (Lev 1974).

Financial and operating leverage magnify the variability of earnings originally due to business risk. In other words, a company can increase the level of its earnings by increasing the degree of operating and financial leverage, but as a result, the variability of earnings, too (Reilly, Norton 1995).

The variability of a company's operating profit also depends on its mixture of production costs. Total production costs of a company with no fixed production costs would vary directly with sales, and operating profits would be a constant proportion of sales. Realistically, firms always have some fixed production costs. Fixed production costs cause operating profits vary more than sales over the business cycle. During slow periods, profits decline by a larger percentile than the percentage of sale decline. In contrast, operating profits will increase proportionately more than sales. Employment of fixed production cost is referred to as operating leverage (Reilly, Norton 1995).

*DOL* is an index number which measures the effect of a change in sales on operating income, or EBIT. Operating Leverage affects earnings before interest and taxes (EBIT), whereas financial leverage affects earnings after taxes, or the earnings available to common shareholders (Weston, Brigham 1992).

*DOL* can be formulated as below, referring to Weston and Brigham.

$$DOL = \frac{Q \times (P - V)}{Q \times (P - V) - F}$$

where

Q : units sold,

P : price per unit

V : variable cost per unit

F : total fixed cost

### 1.6.1.3 Debt Ratio:

*DR* is the ratio of total debt to total assets. It measures the percentage of funds provided by creditors. Total debt includes both current liabilities and long term debt. Creditors prefer low debt ratios, because the lower the ratio, the greater the cushion against creditors losses in the event of liquidation. The owners, can benefit from leverage because it magnifies earnings (Weston, Brigham 1992).

*DR* can be formulated as below, referring to Weston and Brigham.

$$DR = \text{Total Debt} / \text{Total Assets}$$

### 1.6.1.4 Times Interest Earned:

*TIE* is determined by dividing earnings before interest and taxes (EBIT) by the interest charges. *TIE* measures the extend to which operating income can decline before the company is unable to meet its annual interest costs. Failure to meet this obligation can bring legal action by the company's creditors, possibly resulting in bankruptcy (Weston, Brigham 1992).

*TIE* can be formulated as below, referring to Weston and Brigham.

$$TIE = \text{EBIT} / \text{Interest Expense}$$

### 1.6.1.5 Theoretical Evidence of Accounting Based Risk Indicators:

Chung (1989) explicitly states that degrees of operating and financial leverage are major determinants of the systematic risk of common stocks, supported by analytical and empirical documentation.

variation in  $\beta$  can be explained by the cross-sectional difference in the demand  $\beta$  which represents the intrinsic business risk in the output market and the degrees of financial and operating leverage. Thus, degrees of financial and operating leverage are indicators of  $\beta$  itself. Systematic risk of a stock is connected to the certain characteristics of a company such as financial and operating leverage, as well as the business risk of a company. (see Hamada 1972, Lev 1974 and Chung 1989). Since accounting variables are measuring these company-specific characteristics, they can be regarded as alternative risk estimates in addition to the traditional market based ones.  $\beta$  is termed systematic or market risk and is the appropriate measure of the risk borne by the company's equity in the context of CAPM.

Hamada (1972) and Rubinstein (1973) linked the CAPM with the Modigliani and Miller's (1963) capital structure proposition and investigated the impact of financial leverage on  $\beta$ . Hamada's empirical findings showed that financial leverage explains 21 to 24 percent of the cross-sectional variation in  $\beta$ . Hill and Stone (1980), Chance (1982) and Mohr (1985) have provided additional empirical supports for the Hamada-Rubinstein risk decomposition approach.

Modigliani and Miller (1958) has demonstrated in their pioneering studies how the financial leverage increases the riskiness of a stock and consequently the investor's required rate of return, thus proving that financial leverage is an indicator of riskiness of an asset. Accordingly Chung (1989) demonstrates that the degree of financial leverage have a positive effect on the systematic risk.

Myers (1977) concludes that financial leverage and both the cyclical nature and volatility of operating earnings can be identified confidently as real determinants of  $\beta$ . Noting that both financial and operating leverage are direct determinants of operating earnings, they are considered as real determinants of  $\beta$ .

Brenner and Smidt (1978) developed a model that explores the relationship between a security's  $\beta$  and the characteristics of its underlying real assets. Their model specifies unit sales, fixed costs, contribution margin, and covariance of sales and significant influencing factors, of which leverage uses the first three variables for calculating the degree of financial leverage.

The development of the functional relationship to the company's existing degrees of financial leverage utilizes the investment opportunities approach to valuing the company's equity. Elementary discussions of this approach to valuation are presented by Brealey (1981) and Myers (1977) and by Mao (1969). More detailed discussions are presented by Miller and Modigliani (1961) and by Higgins (1974).

Recently, Gahlon and Gentry (1982) and Mandelker and Rhee (1984) investigated the joint impact of the degrees of operating and financial leverage on  $\beta$ . Gahlon and Gentry analytically demonstrated that  $\beta$  is a function of the degrees of financial and operating leverage, the coefficient of variation of the revenues, and the correlation coefficient between the cash flows to the owners and the aggregate dollar return to all capital assets.

Mandelker and Rhee (1984) provided empirical evidence that the degrees of operating and financial leverage explain a large portion of the cross-sectional variation in  $\beta$  at the portfolio level. In particular, they reported that the degrees of operating and financial leverage explain 38 to 48 percent of the cross-sectional variation in  $\beta$  when instrumental variables were employed in the portfolio grouping process.

Hamada (1972) empirically links corporation finance issues with portfolio and security analysis through the effect of a company's leverage on the systematic risk of its common stock. He attempts to tie together some notions associated with the field of corporate finance with those associated with security and portfolio analysis. Specifically, if Modigliani and Miller's (1961) corporate tax propositions are correct, then approximately 21 to 24 percent of the observed systematic risk of common stocks can be explained merely by the added financial risk taken on by the underlying company with its use of debt and preferred stock. Corporate leverage does count considerably.  $\beta$  is a positive linear function of business risk and financial leverage of a company.  $\beta$  has a weak role in the cross-section of returns, but company-specific variables such as leverage perform well.



Hamada (1972) and Chung (1989) demonstrate that systematic risk of a stock is positively connected to the degree of financial leverage of a company. Lev (1974) investigated the effect of company's operating leverage on the riskiness and, hence, market value of its shares. Also Lev showed analytically that the systematic risk is positively associated with the degrees of operating leverage (the level of fixed costs). Empirical findings generally confirmed this posited relationship. However the explanatory power of Lev's empirical model was relatively poor in some industries.

Systematic risk of higher operating leverage company is greater than that of the lower operating leverage company. Systematic risk of the common stocks are positively associated with the degree of operating leverage, or negatively associated with the company's level of variable costs. Brenner and Smidt (1978) developed a model that explores the relationship between a security's  $\beta$  and the characteristics of its underlying real assets. Their model specifies unit sales, fixed costs, contribution margin, and covariance of sales and significant influencing factors. Any standard textbook discussion of leverage uses the first three variables for calculating the degree of operating leverage.

McDaniel (1984) showed that DOL is a useful risk measure for decision maker cognizant of wealth position. McDaniel<sup>9</sup> states that operating leverage is an adequate measure of operating risk vis-à-vis coefficient of variation.

### ***1.7 Foreign Companies and Encouragement of Foreign Capital in Turkey***

In developing countries such as Turkey, local and foreign capital companies may exhibit different capital policies under same market conditions. Although this may not be the real case, investors may perceive this differentiation as a contributing factor to the riskiness of a company.

Establishing the most liberal foreign capital regulation of 1954's, Turkey has taken its place among the most liberal regulations of foreign capital, in line with the political and regulatory alignments starting early 1980's.

Foreign capital enterprises do have the same rights and working conditions with local enterprises, mainly to help development of the Turkish economy. Within this context, foreign capital companies are not limited to have certain minimum local partnership percentage, but rather have the right and freedom to easily transfer any amount of profit generated in Turkey to abroad.

By the help of above liberal approach and current encouraging regulations and legislation for foreign capital enterprises, 112 foreign capital companies were listed in the Major 500 Industrial Enterprises by Istanbul Chamber of Industry in 1994.. These companies generated 22.2% of total revenue, 27.8% of total exports and 26.5% of total employment generated by the overall 500 enterprises.

The liberal policy of Turkey for foreign capital had resulted in two major jumps during the last two decades (T.C. Başbakanlık Hazine Müsteşarlığı, (1995). Subsequent to the alignments in Foreign Capital Regulations that took place in 1980, foreign capital permission had increased to USD 337 mln in 1981 from USD 97 mln of 1980. Second jump was after another regulatory alignments in 1986, ending up with foreign capital permissions of USD 655 mln in 1987 from USD 364 mln of 1986. Final alignments of foreign capital regulations in 1992 resulted in a foreign capital permission over USD 2 bln, reaching a remarkable USD 3 bln in 1995.

The above development of foreign capital in Turkey may very well influence the risk perception of investor and become an indicator of riskiness as well.

The present legal framework for the foreign investment environment in Turkey includes (IBS 1998):

- Law concerning the Encouragement of Foreign Capital (Law No 6224, dated Jan 18, 1954, published in the Official Gazette on Jan 24, 1954).
- Foreign Capital Framework Decree (Decree No 95/6990, dated Jun 7, 1995, published in the Official Gazette on Jul 23, 1995).
- Communiqué concerning the Foreign Capital Framework Decree (Communiqué No 95/2, published in the Official Gazette on Aug 24, 1995).
- Decree 32 concerning the protection of the Value of Turkish Currency (Decree No 89/14391, published in the Official Gazette on Aug 11, 1989; amended by Decree No 91/1935).

- Decree concerning the State Aids for Investments (Decree No 94/6411, dated Dec 26, 1994, published in the Official Gazette on Jan 13, 1995; amended by Decree No 95/6569, dated March 8, 1995).
- Communiqué relating to the Decree Concerning State Aids for Investments (Communiqué No 2, published in the Official Gazette on Apr 4, 1995).

Within the above laws and decrees, company establishment procedures and road-map for the establishment of a company in Turkey are presented in Table 1 and Table 2, respectively.



**Table 1 Company Establishment Procedures**

### **COMPANY ESTABLISHMENT PROCEDURES**

- 1. Permit from the General Directorate of Foreign Investment (for foreign companies).**

This step and related requirements for foreign capital companies are set out in the diagram on the next page. After this step, both foreign and domestic companies follow the same general process, which is also detailed in the diagram.

- 2. Permit from the Ministry of Industry and Trade.**

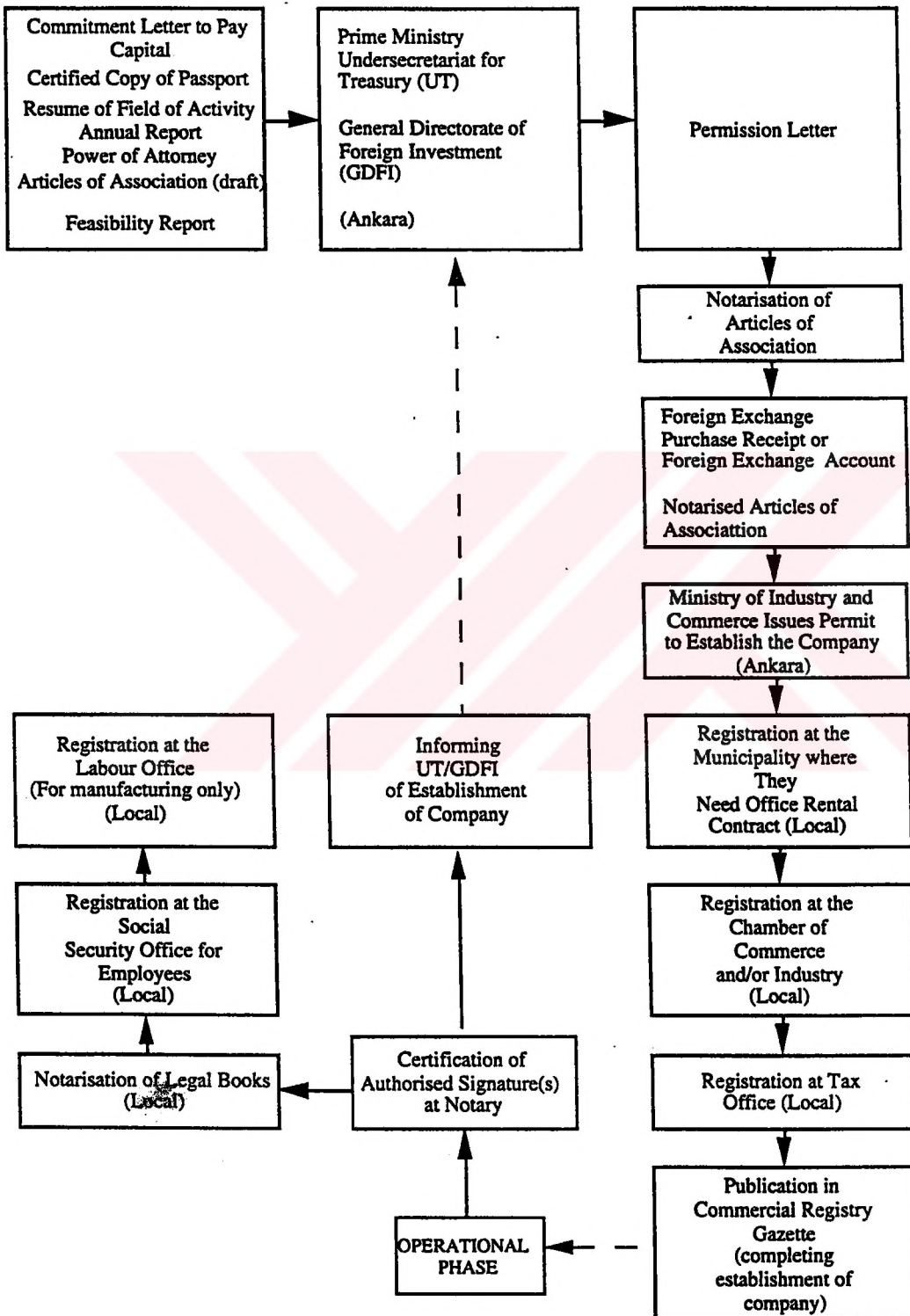
To form an Anonim Şirket, the articles of incorporation, indicating equity proportions, must be drawn up in conformity with the approved terms, including a description of capital, how it is to be supplied and the company's field of activity. Applications with notarised signatures should be sent to the Directorate of Companies of the General Directorate of Domestic Trade in the Ministry of Industry and Trade, with the following documentation:

- (a) six notarised copies of the articles of incorporation (two original and four photocopied);**
- (b) a bank letter certifying that 100% of the foreign partner's share has been deposited in a bank account in Turkey;**
- (c) permit from the related authorised bodies if the establishment of the company is subject to a private legislation due to its field of activity or its partners.**

- 3. Municipal approval of the workplace.**
- 4. Registration of the headquarters of the company with the nearest Commercial Registry Office.**
- 5. Announcement of the firm's incorporation in the *Commercial Registry Gazette*.**
- 6. Registration with the District Tax Office.**
- 7. Registration of notarised signature circular with the Commercial Registry Office.**
- 8. Registration of foreign capital with the General Directorate of Foreign Investment.**
- 9. Registration with the related chamber.**
- 10. Registration with the Social Insurance Institution (SSK) within a month's time after employees begin work.**
- 11. Registration with the Regional Labour Directorate within 15 days after employees begin work.**

**Table 2 Road-Map For The Establishment Of A Company In Turkey**

**ROAD MAP FOR THE ESTABLISHMENT OF A COMPANY IN TURKEY**



## **CHAPTER 2: DATA AND METHODOLOGY:**

In this chapter, data set, data collection, sample selection, definition of variables and methodology applied in analyzing any dependence of accounting based risk measures to price of companies in ISE, and distinction of risk aversiveness between local and foreign capital companies.

### **2.1 DATA:**

Purpose of the study is to identify any relationship between prices of ISE companies and accounting based risk measures. Furthermore, investigate if local and foreign capital companies exhibit a different pattern in terms of riskiness and consequently prices.

### **2.2 Sample Selection**

As indicated in the purpose, companies quoted to the ISE were analyzed. However, these companies were filtered through certain criteria as detailed below in order to achieve more meaningful and representative results. Therefore, companies that were considered stable, scalable and consistent in terms performance and equity structure were identified.

Prospect companies were expected to be of a stable and consistent nature. With this respect, it should be noted that the industry sector has been the driving force for the Turkish economy without exception, where service sector has been developing just over the last decade. Therefore, being more mature and in balance with the economic realities of the real economy, and avoid artificial implications of a growing sector in the study, first criteria for prospect companies was set as "*being an industry company*".

Second step was to eliminate volatile performance of relatively small scale companies by setting a "size constraint". Considering stability and consistency, being listed on the Major 500 Industrial Enterprises list by Istanbul Chamber of Industry successively during 1993-1995 period was the second criteria.

It should also be noted that during 1994, Turkey had experienced one of its major economic turmoil. So, companies that could survive and consistently perform during by being on the Major 500 Industrial Enterprises during, before and after the 1994 catastrophe.

Considering the purpose of the analysis, companies that had consistent equity structure in terms of *foreign* and *local* capital were identified. Capital formation was determined by the origin of the majority shareholder. Stability of capital structure is obtained through eliminating firms with foreign capital share diminishing to zero during the observation period. The logic behind is to discard the effect of any structural change of capital during the period. So, firms successively containing foreign capital share regardless of the percent are qualified. During sample selection, capital formation is grouped as foreign and local. Foreign capital firms are defined to be those having any percent of foreign share, regardless of the level. Local capital firms are those having no foreign source in their capital structure. Local capital is not sub-grouped to state and private ownership, observing only 7 state capital against 57 public capitaled firms, insufficient to study the effect.

### **2.3 Time Horizon Determination**

Time horizon for data analyses was more obligatory due to availability of data. Companies quoted to ISE were obliged to provide quarterly financial statements only by fiscal year ending 1991. Therefore, for consistency and availability reasons, time horizon for data analysis was set as FYE 1991 to March 1998.

### **2.4 Resulting Sample**

In summary, following algorithm was applied in order to identify the companies that would be analyzed:

Only industry firms were qualified

Companies listed on Major 500 Industrial Enterprises by Istanbul Chamber of Industry successively during 1993-1995 period were qualified.

Companies having uniform equity structure in terms of local and foreign capital participation were qualified. (Any diminishing characteristics during the period of analyses, i.e. firms with foreign capital participation in some year were acquired by local partner totally which

diminishes its foreign capital participation, or vice versa, were considered as a reason for non-qualifying.)

Companies quoted to ISE since FYE 1991 were qualified.

There were 114, 114 and 107 companies with foreign capital participation listed in the Major 500 Industrial Enterprises by Istanbul Chamber of Industry, respectively in 1993, 1994 and 1995, ending up with 155 different companies (Appendix 1 for list of foreign capital firms listed on ICI). Of these, only 75 had been listed in the Major 500 Industrial Enterprises by Istanbul Chamber of Industry successively during 1993, 1994 and 1995 and consistently maintained foreign capital.

There were 113, 115 and 113 ISE quoted companies listed in the Major 500 Industrial Enterprises by Istanbul Chamber of Industry, respectively in 1993, 1994 and 1995. 103 of which successively took place in the list; 84 being local and 19 foreign capital participation. However, only 34 out of 84 local capital companies were either quoted to ISE by FYE 1991 or quarterly data were available. For foreign capital companies, 13 out of 19 were either quoted to ISE by FYE 1991 or quarterly data were available. In the end, there were a total of 49 companies, 36 local and 13 foreign capital participation's, respectively, that were both quoted to the ISE since FYE 1991 and listed on the Major 500 Industrial Enterprises listed by Istanbul Chamber of Industry successively during 1993-1995 with available data. Türk Siemens Kablo A.Ş., a foreign capital company, was excluded from the data sheet as their fiscal year is different from the others, for comparativeness reasons. So data set ended up with a total of 48 companies, 36 local and 12 foreign as listed in Table 3.



**Table 3 List of Qualified Companies**

<b>FOREIGN CAPITAL FIRMS</b>		
<b>No</b>	<b>Company Name</b>	<b>Source of Capital</b>
	Aslan Çimento	Foreign
	Aygaz	Foreign
	Borusan Birleşik Boru	Foreign
	Brisa	Foreign
	Ereğli Demir Çelik	Foreign
	Goodyear Lastikleri	Foreign
	İzmir Demir Çelik	Foreign
	Konya Çimento	Foreign
	Netaş	Foreign
	Otosan	Foreign
	Peg Profilo	Foreign
	Tat Konserve	Foreign
	Tofaş Türk	Foreign
	Trakya Cam Sanayi	Foreign
	Turcas Petrolcülük	Foreign
	Türk Siemens	Foreign
	Türk Tuborg	Foreign
	UKİ Uluslararası Konf.	Foreign
	Vestel Elektronik	Foreign
<b>LOCAL CAPITAL FIRMS</b>		
	Adana Çimento	Local
	Ak-AI Tekstil	Local
	Akçimento	Local
	Aksa Akrilik	Local
	Aksu İplik Dokuma	Local
	Altınyıldız Mensucat	Local
	Arçelik	Local
	Ardem	Local
	Aselsan	Local
	Bağfaş	Local
	Banvit	Local
	Birlik Mensucat	Local
	Bolu Çimento	Local
	Bossa	Local
	Bursa Çimento	Local
	Çelik Halat	Local
	Çemtaş Çelik Makina	Local
	Çimentaş	Local
	Çimsa	Local
	Deva Holding	Local
	Döktaş Dökmüçlük	Local

<b>LOCAL CAPITAL FIRMS (cont)</b>		
<b>No</b>	<b>Company Name</b>	<b>Source of Capital</b>
	Eczacıbaşı İlaç	Local
	Edip İplik San.	Local
	Ege Biracılık	Local
	Ege Endüstri	Local
	Ege Seramik	Local
	Egeplast	Local
	Erciyas Biracılık	Local
	Feniş Alüminyum	Local
	Göлтаş Çimento	Local
	Gübre Fab	Local
	Güney Biracılık	Local
	Hektaş Ticaret	Local
	Hürriyet Gazetecilik	Local
	İzocam	Local
	Karsu	Local
	Kelebek Mobilya	Local
	Kepez Elektrik	Local
	Kereviş Gıda	Local
	Kordsa	Local
	Mardin Çimento	Local
	Maret	Local
	Marshall Boya	Local
	Mudurnu Tavukçuluk	Local
	Mutlu Akü	Local
	Olmaksa Mukavva	Local
	Otokar	Local
	Petkim	Local
	Petrol Ofisi	Local
	Pınar Et	Local
	Pınar Süt	Local
	Polylen	Local
	Raks Elektronik	Local
	Sabah Yayıncılık	Local
	Sarkuysan	Local
	Sifaş	Local
	Söktaş	Local
	Sönmez Filament	Local
	Sönmez Pamuklu	Local
	Tire Kutsan	Local
	Tüpraş	Local
	Türk Demir Döküm	Local
	Yasaş Yaşar Boya	Local
	Yünsa	Local

Equity structures of foreign capital companies during 1993-1995 period is listed in the Table 2 below.

**Table 4 Foreign Capital Participation Percentage For Foreign Capital Companies**

	1993		1994		1995	
	(%)	Slice	(%)	Slice	(%)	Slice
İzmir Demir Çelik	9%	0	9%	0	9%	0
Aslan Çimento	97%	9	97%	9	96%	9
Aygaz	35%	3	35%	3	35%	3
Borusan Birleşik Boru	10%	1	10%	1	20%	2
Brisa	36%	3	36%	3	36%	3
Ereğli Demir Çelik	0%	0	0%	0	0%	0
Goodyear Lastikleri	51%	5	51%	5	51%	5
Konya Çimento	51%	5	51%	5	51%	5
Netaş	52%	5	51%	5	51%	5
Otosan	30%	3	30%	3	30%	3
Peg Profilo	66%	6	20%	2	20%	2
Türk Siemens	55%	5	59%	5	59%	5
Türk Tuborg	7%	0	19%	1	19%	1
Tat Konserve	15%	1	15%	1	15%	1
Tofaş Türk	38%	3	38%	3	42%	4
Trakya Cam Sanayi	7%	0	10%	1	10%	1
Turcas Petrolcülük	46%	4	46%	4	43%	4
UKİ Uluslararası Konf.	20%	2	26%	2	46%	4
Vestel Elektronik	82%	8	88%	8	82%	8

Foreign capital companies with respect to their equity structure during 1993-1995 is listed in the Table 3 below.

**Table 5 Equity Structure Of Foreign Capital Companies**

FOREIGN CAPITAL PERCENT	1993	1994	1995
0-9%	4	2	2
10-19%	2	4	3
20-29%	1	2	2
30-39%	4	4	3
40-49%	1	1	3
50-59%	4	4	4
60-69%	1	0	0
70-79%	0	0	0
80-89%	1	1	1
90-99%	1	1	1
100%	0	0	0
Total	19	19	19

As could be read from Table 3, it could be observed that 3 companies had decreased their foreign capital participation in 1993, while another 3 increased. In 1994, decreases and increases were again equal at two. So, in two years, 10 companies preferred to change their capital formation in terms of origin, which is an indicator of high variability. This variability also supports our sample of 19 companies being relatively stable and representative.

## **2.5 Data Sub-grouping**

Initial analyses on the data indicated that there are outliers in the data. Therefore, an incremental approach for exclusion of outliers was implemented which resulted in three major sets of data.

### **2.5.1 Raw Data**

Initial data consisted of 1248 data, consisting of 26 periods (1/92-3/98) of observations for 48 companies. No elimination of outlying data or normalization of data was applied. This data was called the **Raw Data**.

Consisted of 1248 data with statistical variables as follows:

**Table 6 Statistics For Raw Data**

	<b>Price</b>	<b>DFL</b>	<b>DOL</b>	<b>DR</b>	<b>TIE</b>
<b># of Observations</b>	1,248	1,248	1,248	1,248	1,248
<b>Variance</b>	0.0269	418.9522	814.8254	0.0280	370,792.47
<b>Standard Deviation</b>	0.1640	20.4683	28.5451	0.1672	608.9273
<b>Min Value</b>	0.0018	1.0000	(3.5492)	0.0057	1.0000
<b>Max Value</b>	2.5896	691.8203	799.9890	1.0925	8,495.7339
<b>Average</b>	0.0716	3.5802	3.7767	0.5278	139.4895

### **2.5.2 Interim Data**

After running first set of analysis, variable containing major outliers set was determined as *TIE*. Therefore, first elimination criteria was defined as *TIE* value being less than 56.00. Range of *TIE* was changing from 8496 to 1.00. All data, that is 26 observations for a company, were excluded for any single outlying value of data. In the end, 15 companies, and consequently 390 observations, were excluded from the **Raw Data** set. This data set was called **Interim Data**. Consisted of 858 data with statistical variables as follows:

**Table 7 Statistics For Interim Data**

	<i>Price</i>	<i>DFL</i>	<i>DOL</i>	<i>TIE</i>	<i>DR</i>
<b># of Observations</b>	858	858	858	858	858
<b>Variance</b>	0.0326	600.3301	1,078.8880	28.4649	0.0261
<b>Standard Deviation</b>	0.1806	24.5016	32.8464	5.3352	0.1616
<b>Min Value</b>	0.0018	1.0183	(3.5492)	1.0000	0.0057
<b>Max Value</b>	2.5896	691.8203	799.9890	55.6868	1.0925
<b>Average</b>	0.0649	4.4616	3.8299	4.0380	0.5714

Analyses on the *Interim Data* run of regression indicated that there were some outliers in the independent variables of *DOL* and *DFL* as well. Besides, *Price* and *DR* variables seemed to be consistent within their set of variables, hence were considered to be stable in terms of variation within the context of analyses.

### **2.5.3 Final Data**

Consequently, upper limits of 30 for *DOL* and 20 for *DFL* were set as second and third sets of elimination of outliers. 8 companies, only 1 due to *DOL* constraint, and rest to that of *DFL*, were eliminated for their whole 26 periods' observations. This elimination process ended up exclusion of 208 observations, bringing down total number of observations from 858 to 650. This set of data was named *Final Data*.

**Table 8 Statistics For Final Data**

	<i>Price</i>	<i>DFL</i>	<i>DR</i>	<i>TIE</i>	<i>DOL</i>
<b># of Observations</b>	650	650	650	650	650
<b>Variance</b>	0.0420	4.9273	0.0243	35.2629	1.6665
<b>Standard Deviation</b>	0.2049	2.2198	0.1560	5.9383	1.2909
<b>Min Value</b>	0.0018	1.0183	0.0057	1.0000	(3.5492)
<b>Max Value</b>	2.5896	20.8958	1.0925	55.6868	18.0096
<b>Average</b>	0.0697	2.4250	0.5649	4.7522	1.8833

Companies that are eliminated in each data set with respect to the given criteria is listed in Table 7.

**Table 9** List of Companies Excluded in Interim Data and Final Data Stages

Company Name	Capital	Interim Data	Final Data	
		TIE	DOL	DFL
Adana Çimento	Local	X	X	
Ak-AI Tekstil	Local			
Aksa Akrilik	Local	X		
Arçelik	Local			
Aselsan	Local			
Aslan Çimento	Foreign		X	
Aygaz	Foreign	X		
Bagfas	Local			
Bolu Çimento	Local	X		
Brisa	Foreign	X		
Çelik Halat	Local			
Çimsa	Local			
Deva Holding	Local			X
Döktas Dökümcülük	Local			
Eczacıbaşı İlaç	Local			
Ege Biracılık	Local	X		
Ege Endüstri	Local			
Erciyas Biracılık	Local	X		
Eregli Demir Çelik	Foreign			X
Fenis Alüminyum	Local			
Goodyear Lastikleri	Foreign	X		
Gübre Fab	Local			
Güney Biracılık	Local	X		
Hektas Ticaret	Local	X		
İzmir Demir Çelik	Foreign			
İzocam	Local			
Kelebek Mobilya	Local			
Kepez Elektrik	Local			
Kordsa	Local			
Mardin Çimento	Local	X		
Maret	Local	X		
Marshall Boya	Local			
Olmaksa Mukavva	Local			X
Otosan	Foreign	X		
Peg Profilo	Foreign			X
Petkim	Local	X		
Pinar Et	Local			X
Polylen	Local			X
Sarkuysan	Local			
Sifas	Local			
Tofas Türk	Foreign	X		
Trakya Cam Sanayi	Foreign			
Tüpras	Local			
Türk Demir Döküm	Local			
Türk Tuborg	Foreign			X
Vestel Elektronik	Foreign			
Yasas Yasar Boya	Local			
Yünsa	Local			
<b>Total Excluded</b>	<b>23</b>	<b>15</b>	<b>1</b>	<b>7</b>

As could be observed from Table 7, first filter of companies with respect to *TIE* values, 15 companies, 10 being local and 5 being foreign capital, are excluded from the *Raw Data* set. Consequently, *Interim Data* set consisted of 26 local and 7 foreign capital companies.

Second filtering was with respect to *DOL* and *DFL* values, as *DR* values did not exhibit un-normal outliers. Thus, considering *DOL* value, only 1 foreign capital company was excluded from the *Interim Data* set. Considering *DFL* values, 3 foreign and 4 local capital companies are excluded accordingly. Consequently, *Final Data* set consisted of 22 local and 3 foreign capital companies.

Although it may sound as insufficient and not representative of the whole sample, considering that each company has 26 time series data for each variable, the statistical models are believed to have enough level of data.

## **2.6 Data Source**

Raw Data required for the analyses were the share prices in the ISE and quarterly financial statements for the 48 companies covering the period of analyses, FYE 1991 to 3/1998.

In order to normalize the effect of dividends in any form and capital increases, adjusted share prices were obtained from Ata Menkul Kıymetler A.Ş. Closing value of the first working day of each quarter were noted. (Appendix 2 for closing prices of companies quarterly from FYE 1991 to 3/1998).

Quarterly financial statements of companies were obtained from the Education Department of ISE. Financial risk indicators were calculated based upon quarterly financial statements.

## **2.7 Calculation of Variables:**

### **2.7.1 Degree of Operating Leverage (DOL):**

$DOL = \text{Gross Profit} / \text{Operating Income}$

$\text{Gross Profit} = \text{Net Sales} - \text{COGS}$

$\text{Operating Income} = \text{Gross Profit} - \text{Operating Expenses}$

Appendix 3 lists *DOL* calculated for 48 companies for 26 observations (quarterly data for period FYE 1991 to 3/1998).

### **2.7.2 Degree of Financial Leverage (DFL):**

$DFL = \text{EBIT} / (\text{EBIT} - \text{Interest Expenses})$

Appendix 4 lists *DFL* calculated for 48 companies for 26 observations (quarterly data for period FYE 1991 to 3/1998).

### **2.7.3 Debt Ratio (DR):**

$DR = \text{Total Debt} / \text{Total Assets}$

Appendix 5 lists *DR* calculated for 48 companies for 26 observations (quarterly data for period FYE 1991 to 3/1998).

### **2.7.4 Times Interest Earned (TIE):**

$TIE = \text{EBIT} / \text{Interest Expense}$

Appendix 6 lists *TIE* calculated for 48 companies for 26 observations (quarterly data for period FYE 1991 to 3/1998).



## **2.8 METHODOLOGY:**

The objective of the study is to analyze the relationship between the market price's of companies and their accounting based risk measures. Moreover, existence of any interdependence of accounting based risk measures to capital structure, being foreign and local, is also studied.

Multiple and simple linear regression method is utilized to analyze the relationships that are of concern. Market price of companies are set as the dependent variables, and risk indicators (namely *DFL*, *DOL*, *DR* and *TIE* ) as independent variables, in order to analyze the relationship between them. Furthermore, capital structure is set as dummy variable against risk indicators being independent, to further analyze if the latter are associated with the source of capital, being local and foreign.

In order to test the above relations, three null hypothesis were set:

**Null Hypothesis 1:** Price is not a function of risk indicators

**Null Hypothesis 2:** Local and Foreign Capitalized companies do not have different patterns of risk indicators

**Null Hypothesis 3:** Local and Foreign Capitalized companies do not have different price-risk structures.

In each of the model that was used to test the hypothesis, independent variables were used to predict the dependent variable. A regular regression analyses were conducted in order to identify the significant independent variables for the stated hypothesis, and then models were run with reduced number of significant variables in order to eliminate the noise of the insignificant ones. Therefore, there were numerous model runs in order to test a single model of any hypothesis.

The data is prepared and analyzed with the usage of Excel 7.0 for Windows 97. All the relevant tables, graphs, charts and statistics are prepared with the use of Excel 97. Unless otherwise stated, 95% significance level is chosen, alpha ( $\alpha$ ) is 5%, and p is 2.5%. Any p value lower than 0.025 indicates that the variable is significant, and therefore must be included in the model. Furthermore, F-test were utilized in order to analyze the results.

## **2.8.2 Model Runs**

With each data set, in order to test the hypothesis, a multiple linear regression model was run. In order to analyze the sole participant to the outcome, successive runs were made. Thus, regression models were for some many times with a given data set for a single hypothesis testing, depending on the number of meaningful variables.

### **2.8.2.1 First Run**

For each data set, above defined two regression models were run in order to test the consequent hypothesis. This **First Run** with independent variable of price with independent variable of *DFL*, *DR*, *DOL* and *TIE*, was called the Full Run for Price on Data Set Name. Results were evaluated in terms of significance and independent variables were identified.

### **2.8.2.2 Second Run**

**Second run** on the same data set was with the same dependent variable, that is price, and significant independent variables appeared in the results of first run. This second run was to rank the significance of the significant independent variables, if any.

### **2.8.2.3 Final Run**

**Final run** was the regression model run for the price being dependent variable, and single independent variable appearing in the Second Run.

Regression analyses models are named considering data set that they are based on. In example, model runs starting with 1 are based on **Raw Data** set, 2 on **Interim Data** set and 3 on **Final Data** set, respectively. However, no coding for order of run has been executed.

## **CHAPTER 3: RESULTS:**

The hypothesis stated in Chapter 2 are tested with multiple regression models as briefed in the methodology section. The statistical results of each run are presented in Appendix 7.

### ***3.1 Test of Hypothesis 1***

#### **Hypothesis 1: Price is a function of Risk Measures.**

In order to test the validity of the above hypothesis, multiple regression models were run as briefed in the Methodology.

#### **3.1.1 Run 1.1:**

##### **3.1.1.1 Run 1.1.1:**

First run was with the *Raw Data*, *Price* being dependent variable and *DFL*, *DOL*, *DR* and *TIE* being independent variables.

Summarizing the results, *Price* is a function of *TIE* with  $\alpha=5\%$ , and *DR* becomes meaningful with  $\alpha=15\%$ . Both independent variables effect the price in the same direction, meaning any increase in these risk indicators result in increased price. However, this model is only representative of almost 1.5% of the overall data.

##### **3.1.1.2 Run 1.1.2:**

In order to fine-tune the effect of meaningful independent variables, the model was run with independent variables being *TIE* and *DR* for *Price* being dependent variable.

*DR* has worsened its meaningfulness compared to the previous model, where *TIE* kept its previous level. However, the model is still representative of almost 1.5% of the whole data.

### **3.1.1.3 Run 1.1.3:**

*TIE* was kept as the sole independent variable against *Price* being the dependent variable, and the model was run again.

As the above model concludes, *TIE* is a meaningful indicator of *Price*, however, above model can only represent 1.1% of the overall data.

### **3.1.2 Run 1.2:**

#### **3.1.2.1 Run 1.2.1:**

Second run was with the *Interim Data*, *Price* being dependent variable and *DFL*, *DOL*, *DR* and *TIE* being independent variables.

With exclusion of outliers in *TIE* values, this variable lost its meaning in explaining the relationship with *Price*. Only variable capable of establishing a relationship with *Price* is *DR*. However, the above model can only represent only 1.8% of the overall data.

#### **3.1.2.2 Run 1.2.2:**

The model was run with single independent variable, *DR*, against *Price* in order to analyze their dependence more precisely.

With exclusion of other independent variables, *DR* lost its meaning in effecting *Price* to some extent, however, F test results improve considerably. It should be noted that the above model can only represent 1.5% of the overall data, as well.

### **3.1.3 Run 1.3:**

#### **3.1.3.1 Run 1.3.1:**

Third run was with the *Final Data*, *Price* being dependent variable and *DFL*, *DOL*, *DR* and *TIE* being independent variables.

In the final set, *TIE* totally can not influence *Price*, as claimed in *Raw Data* analyses. However, *DR* is still related with *Price*, as appeared in *Interim Data* analyses. Depending

on *Final Data*, *Price* is dependent on *DFL*, as well. Although reaching its highest value until now, the above model is only representative of 3.8% of the overall data.

#### 3.1.3.2 Run 1.3.2:

The model was run with *DR* and *DFL* being independent variables against *Price*.

*Price* is a function of both *DR* and *DFL*, however in different directions. *Price* increases for increasing *DR* value, however decreases for increasing *DFL* value. Considering the coefficients of the two independent variables, it can be concluded that unit increase in both variables result in increased prices. However, it should be noted that the above model is representative of only 3.4% of the overall data.

#### 3.1.3.3 Run 1.3.3:

In order to analyze the sole effect of *DFL* on *Price*, the model was run with only independent variable being *DFL*.

Comparing the results with that of Run 3.2, it is concluded that the effect of *DFL* on *Price* weakens when taken sole independent variables. Increasing P value and decreasing F test values support this statement. This model is representative of less than 1% of the overall data.

#### 3.1.3.4 Run 1.3.4:

In order to analyze the sole effect of *DR* on *Price*, the model was run with only independent variable being *DR*. Statistical analyses resulted as below:

Considering the above results, *Price* is a function of *DR* and is directly related with it. However, the above model is representative of only 2% of the overall data.

### **3.2 Test of Hypothesis 2:**

#### **Hypothesis 2: Local and Foreign Capitalized companies has different patterns of risk indicators**

In order to test the validity of the above hypothesis, multiple regression models with capital structure being dummy variable were run as briefed in the Methodology.

#### **3.2.1 Run 2.1:**

##### **3.2.1.1 Run 2.1.1:**

First run was with the **Raw Data**, Capital Structure being dependent variable and *DFL*, *DOL*, *DR* and *TIE* being independent variables.

*TIE* variable is differentiating with respect to the capital structure, being local or foreign, considering the above results. Noting that local companies were identified as "0" and foreign as "1", positive T Stat value signals that *TIE* is higher for foreign capital companies compared to the local ones.

##### **3.2.1.2 Run 2.1.2:**

In order to fine-tune the effect of capital structure on *TIE* values, the model was run with Capital Structure being dependent variable and *TIE* the independent one.

Capital structure is certainly differentiating *TIE* value considering the above statistical values, that is foreign capital firms have higher *TIE* values than local ones; however, the above model is representative of only less than 1% of the overall data.

#### **3.2.2 Run 2.2:**

##### **3.2.2.1 Run 2.2.1:**

Second run was with the **Interim Data**, Capital Structure being dependent variable and *DFL*, *DOL*, *DR* and *TIE* being independent variables.

With the exclusion of outliers in *TIE* value, Capital Structure has been more differentiative of the *TIE* values, however in the opposite direction. According to the *Raw Data* statistical tests, *TIE* was higher for foreign capital firms than local ones. However, considering the above statistics in *Interim Data*, this turned out just the opposite, saying local capital firms has higher *TIE* values than foreign ones.

Additionally, *Interim Data* set states that Capital Structure is differentiating *DR* as well. Foreign capital firms has lower *DR* values than local ones, as it is for *TIE*.

#### 3.2.2.2 Run 2.2.2:

In order to analyze to what extent capital structure differentiates *TIE* and *DR* ratios, second run was with the *Interim Data*, Capital Structure being dependent variable and *TIE* and *DR* being independent variables.

*DR* and *TIE* values are confidently different for local and foreign capital firms; higher for local and lower for foreign capital firms. Eliminating other independent variables has increased the representativeness and statistical significance of the model, although still not at the acceptable level.

#### 3.2.2.3 Run 2.2.3:

To determine the extend to which *TIE* differs solely with respect to capital structure, the model was run with Capital Structure being dependent and *TIE* being independent variable.

Above results confirm that *TIE* value has certainly different patterns for local and foreign capital firms, with higher values for local companies and lower values for foreign ones. However, the model is representative of almost 4% of the overall data.

#### 3.2.2.4 Run 2.2.4:

To determine the extend to which *DR* differs solely with respect to capital structure, the model was run with Capital Structure being dependent and *DR* being independent variable.

The above statistics deny that *DR* has different patterns for local and foreign capital firms.

### **3.2.3 Run 2.3:**

#### **3.2.3.1 Run 2.3.1:**

Third run was with the *Final Data*, dummy variable of capital structure being dependent variable and *DFL*, *DOL*, *DR* and *TIE* being independent ones.

With the exclusion of outliers in *DFL* and *DOL*, *TIE* and *DR* kept their meaning, with *DFL* added to them. Considering the statistical results, *TIE* and *DR* values are higher for local companies, where *DFL* is higher for foreign ones. The model is very well representative of 19% of the overall data.

#### **3.2.3.2 Run 2.3.2:**

In order to analyze to what extent the meaningful independent variables explain the differentiation between local and foreign capital firms, the model was run with the *Final Data*, dummy variable of capital structure being dependent variable and *DFL*, *DR* and *TIE* being independent ones.

With the exclusion of *DOL* variable, statistical significance and reliability of the model has enhanced considerably, where all independent variables, *DR*, *DFL* and *TIE* are confidently differing for local and foreign capital firms. *DR* and *TIE* are higher for local capital firms, where *DFL* is lower compared to the foreign capital ones. Again, the overall model is very well representative of 19% of the overall data.

#### **3.2.3.3 Run 2.3.3:**

In order to analyze if *DFL* is changing with respect to capital structure, the model was run with capital structure being independent variable, and *DFL* being the dependent one.

*DFL* is confidently higher for foreign capital companies, and lower for local ones. The above model is representing almost 10% of the overall data.



#### **3.2.3.4 Run 2.3.4:**

In order to analyze if *DR* is changing with respect to capital structure, the model was run with capital structure being independent variable, and *DR* being the dependent one.

*DR* is confidently higher for local capital companies, and lower for foreign ones. The above model is representing only 5% of the overall data.

#### **3.2.3.5 Run 2.3.5:**

In order to analyze if *TIE* is changing with respect to capital structure, the model was run with capital structure being independent variable, and *TIE* being the dependent one.

*TIE* is confidently higher for local capital companies, and lower for foreign ones. The above model is representing only 2.5% of the overall data.

### **3.3 Test of Hypothesis 3:**

**Hypothesis 3:** Local and Foreign Capitaled companies has different price-risk structures

In order to test the validity of the above hypothesis, multiple regression models with capital structure being dummy variable were run as briefed in the Methodology.

#### **3.3.1 Run 3.1:**

In order to test the validity of the above hypothesis, models were run for foreign and local capital companies' data separately. Thus, for each level of model run, we had two individual runs of which we could compare the results and decide whether the two sets are similar or not.

### 3.3.1.1 Run 3.1.1:

First set of run was with the *Raw Data*, *Price* being dependent variable and *DFL*, *DOL*, *DR* and *TIE* being independent variables for foreign and local capital companies' data, separately.

#### 3.3.1.1.1 Run 3.1.1.1:

The above model was run for local capital companies. However, none of the risk indicators seem to be meaningful in explaining the price for the local companies.

#### 3.3.1.1.2 Run 3.1.1.2:

The above model was run for foreign capital companies.

*Price* seems to be a function of *TIE* for foreign capital companies.

#### 3.3.1.1.3 Run 3.1.1.3:

The above model with data for foreign capital companies is run with *Price* being dependent variable and *TIE* being independent one, in order to analyze the sole effect of *TIE* value on *Price*.

The above model indicates that *Price* is a function of *TIE* for foreign capital companies, and above model is statistically significant and is representative of more than 20% of the overall data.

### 3.3.2 Run 3.2:

#### 3.3.2.1 Run 3.2.1:

Second set of run was with the *Interim Data*, *Price* being dependent variable and *DFL*, *DOL*, *DR* and *TIE* being independent variables for foreign and local capital companies' data, separately.

#### 3.3.2.1.1 Run 3.2.1.1:

The above model was run for local capital companies. Consequently, *Price* for local companies seem to be a function of *DR*.

#### 3.3.2.1.2 Run 3.2.1.2:

In order to analyze the sole effect of *DR* on *Price* for local companies, the model was run *Price* being dependent variable and *DR* being independent one with data set for local companies.

*Price* is a function of *DR* for local capital companies, considering the statistical results.

#### 3.3.2.1.3 Run 3.2.1.3:

The above model was run for foreign capital companies. Consequently, *Price* is a function of *DR* for foreign capital firms.

#### 3.3.2.1.4 Run 3.2.1.4:

In order to analyze the sole effect of *DR* on *Price* for foreign companies, the model was run *Price* being dependent variable and *DR* being independent one with data set for foreign companies.

*Price* is a function of *DR* for foreign capital companies, and the above model is representative of almost 10% of the overall data.

### **3.3.3 Run 3.3:**

#### 3.3.3.1 Run 3.3.1:

Third set of run was with the *Final Data*, *Price* being dependent variable and *DFL*, *DOL*, *DR* and *TIE* being independent variables for foreign and local capital companies' data, separately.

#### 3.3.3.1.1 Run 3.3.1.1:

The above model was run for local capital companies. *Price* seems to be a function of *DFL* and *DR* for local capital companies.

#### 3.3.3.1.2 Run 3.3.1.2:

In order to analyze the sole effect of *DFL* and *DR* on *Price* for local companies, the model was run with *Price* being independent variable and *DFL* and *DR* being dependent ones for local capital companies' set of data.

The above model signals that *Price* is a function of *DFL* and *DR*, however it is only representative of 3.3% of the overall data.

#### 3.3.3.1.3 Run 3.3.1.3:

In order to analyze the sole effect of *DFL* on *Price* for local companies, the model was run with *Price* being independent variable and *DFL* being dependent ones for local capital companies' set of data.

Considering the statistics of this run, *Price* is a function of *DFL* for local capital companies only when  $\alpha=0.15$ , that is with 85% probability.

#### 3.3.3.1.4 Run 3.3.1.4:

In order to analyze the sole effect of *DR* on *Price* for local companies, the model was run with *Price* being independent variable and *DR* being dependent ones for local capital companies' set of data.

The above model signals that *Price* is a function of *DR* for local companies, however it is only representative of 1.8% of the overall data.

### 3.3.3.2 Run 3.3.2:

#### 3.3.3.2.1 Run 3.3.2.1:

The model was run for foreign capital companies, with *Price* being dependent variable and *DFL*, *DOL*, *DR* and *TIE* being independent ones. As the test results dictate, *Price* seems to be a function of *DFL* and *DR* for foreign capital companies.

#### 3.3.3.2.2 Run 3.3.2.2:

In order to analyze the sole effect of *DR* and *DFL* to *Price* for foreign capital companies, the model was run with *Price* being independent variable and *DFL*, and *DR* being dependent ones.

*DFL* and *DR* are effecting *Price* for foreign capital companies, and the above model is very well representative of almost 40% of the overall data.

#### 3.3.3.2.3 Run 3.3.2.3:

In order to analyze the sole effect of *DR* on *Price* for foreign capital companies, the model was run with *Price* being independent variable and *DR* being dependent ones.

*Price* is a function of *DR* for foreign capital companies and the above model is representative of over 28% of the overall data.

#### 3.3.3.2.4 Run 3.3.2.4:

In order to analyze the sole effect of *DFL* on *Price* for foreign capital companies, the model was run with *Price* being independent variable and *DFL* being dependent ones.

*DFL* is a factor effecting *Price* for foreign capital companies, however the above model is only representative of 8.3% of the overall data.

## CONCLUSION

In terms of financial context, risk is the uncertainty of future outcomes of an investment. In nominal terms, difference between the value of the financial intermediary at the end and start of the holding period is named the return for the investor.

Within the context of CAPM, return for any investment consists of three major components: risk free rate, inflation and risk premium. The first two items are indifferent of the investment intermediary, where the difference in return is determined by the latter, risk premium. Basically, investors value two major types of risks for their return expectations: business and financial. In short, business risk is the uncertainty of income flows caused by the nature of the company's business, where financial risk is the uncertainty introduced by the method by which the company finances its investments.

Although CAPM states a necessary equilibrium relationship between the prices of securities given their stochastic characteristics over a period of time, it has been argued that the prices of assets should also take how the company evaluates its strategic, operating and financing alternatives. As an alternative, accounting based risk indicators are introduced to analyze the risk structure of companies, of which DOL, DFL, DR and TIE are analyzed in this study.

The aim of this study is to analyze the risk premium appreciation of ISE companies. The risk premium appreciation is measured as the price of the stock, and the risk level is determined by the accounting variables for the period ending that the specific price is observed. This study analyzed the risk premium behavior of ISE companies, with the distinction of capital structure being local and foreign.

The analyses are based on the price and accounting data during FYE 1991 and March 1998. The companies analyzed are filtered through certain criteria in order to have a stable and representative sample. Therefore, industry companies that are successively listed in the Major 5000 Industry Firms announced by ICI during 1993-1995 are selected as the target. Considering the capital structure, companies that are subject to the study are preferred to be of stable capital structure during the period 1993-1995. Explicitly, if any

company has changed its capital formation from one end- local- to the other end -foreign- during the above defined period, that company is identified to be instable in terms of equity structure and eliminated from the sample.

Multiple and linear simple regression method is utilized to test the below hypothesis,

Null Hypothesis 1: Price is not a function of risk indicators

Null Hypothesis 2: Local and Foreign Capitaled companies do not have different patterns of risk indicators

Null Hypothesis 3: Local and Foreign Capitaled companies do not have different price-risk structures.

Briefly, these hypothesis are determined to identify if price of ISE companies are in line with any accounting based risk measures defined within context of this study; if local and foreign capital companies have different risk structures; and if risk premium appreciation differs with respect to capital structure.

In order to test the above hypothesis, accounting based risk measure, namely DFL, DOL, DR and TIE are calculated for each company in the sample. Every company has 26 periods of data for each variable defined. Multiple regression models testing the above hypothesis are run for three data sets, considering the outliers in the sample. Thus, results may be analyzed under three captions. However, Final Data set is expected to have the most dependable outcome among all, considering minimized outliers in the data set.

Considering the outcome of the Raw Data runs,

1. Price is a dependent measure of TIE (Hypothesis 1 holds for TIE variable; but not for DR, DFL and DOL). (Re: Run 1.1.3) That is the higher TIE of a company, the higher its Price is.

2. Capital structure is certainly differentiating *TIE* value. That is foreign capital firms have higher *TIE* values than local ones. (Hypothesis 2 holds for TIE variable, but not DR, DFL or DOL.) (Re:Run 2.1.2)

3. For local companies, none of the risk indicators seem to be meaningful in explaining the price for the local companies. However, for foreign companies, *Price* is a function of *TIE* variable, and the regression model is statistically significant and representative of more

than 20% of the overall data (Re:Run 3.1.1.3). The higher TIE for a company, the higher its Price is.

Considering the outcome of the Interim Data runs,

1. Price is a dependent measure of DR rather than TIE that is the result of Raw Data run (Hypothesis 1 holds for DR variable rather than TIE; but not for TIE, DFL and DOL). (Re: Run 1.2.2). The higher DR for a company, the higher its Price is.
2. *TIE* variable has certainly different patterns for local and foreign capital firms, with higher values for local companies and lower values for foreign ones. (Hypothesis 2 holds only for TIE variable, but not for DR, DFL and DOL.) (Re:Run 2.2.3)
3. *Price* is a function of *DR* for local and foreign capital companies (Re:Run 3.2.1.2 and 3.2.1.4 respectively). The higher DR for a foreign or local company, the higher its price is.

Considering the outcome of the Final Data runs,

1. Price is a dependent measure of DFL and DR (Hypothesis 1 holds for DFL and DR variables; but not for TIE and DOL). (Re: Run 1.3.3 and 1.3.4) Price is positively associated with DR, but negatively with DFL of a company.
2. *DFL* is confidently higher for foreign capital companies, and lower for local ones. (Re: Run 2.3.3) *DR* is confidently higher for local capital companies, and lower for foreign ones. (Re:Run 2.3.4) *TIE* is confidently higher for local capital companies, and lower for foreign ones. (Re:Run 2.3.5) (Hypothesis 2 holds for DFL, DR and TIE, but not for DOL.)
3. Considering the statistics of this run, *Price* is a function of *DFL* for local capital companies only when  $\alpha=0.15$ , that is with 85% probability. (Re:Run 3.3.1.3), as well as DR even with 95% probability (Re:Run 3.3.1.4). However, *DFL* and *DR* are together effecting *Price* for foreign capital companies, and the model is very well representative of almost 40% of the overall data (Re:Run 3.3.2.2). Further, *DR* has a sole effect of 28% over the data, where *DFL* is at only 8.3% representativeness level. (Re: Run 3.3.2.3 and 3.3.2.4, respectively.) Price of a company is negatively associated with DFL, but positively with DR variables.

Summarizing the above results, mostly relying on the Final Data run,

1. Price of ISE companies are effected by DFL and DR risk variables; that is the market is appreciating basically financial risk of companies.



2. Accounting based risk indicators are very well different for local and foreign capital companies, except DOL. That is foreign capital companies have higher DFL values, against lower TIE and DR risk indicators.

3. Both DR and DFL have effect on the Price of Local and Foreign companies. More surprisingly, statistical model for estimating prices of foreign companies based on DFL and DR together is representative of almost 40% of the overall data, and states that the Price of a company is negatively associated with DFL, and positively with DR variables.

The limitations of this study are mainly attributable to the characteristics of data. Noting that basic data is obtained from ISE market, dependability and maturity of ISE is the major concern. Being an immature and developing market, ISE is still highly speculative. Moreover, changing legislation through out the period of the study may very well deviate the results of the analyses as well.

Furthermore, depending on the accounting variables in an hyperinflationary environment in Turkey may result in deficiency as well. It should be noted that Turkey has been reporting on a uniform chart of account basis only since 1994, and data earlier than this date may be incomparable due to accounting differences among companies.

It should also be noted that economic progress of Turkey during the period of analyses is very fluctuating with highly volatile growth rates as well as inflation and devaluation up and downs.

Major contribution of this study is to establish an accounting based risk indicator concept in an high volatile and speculative market in order to catch a point of consistency that may rather be observed rather in mature markets in terms of risk and return. Although, common perception about the ISE players and competitors is that they are more speculative than being stable, the result of this study has portrayed that in the long run, players and companies are aware of basic risk notions and that they differentiate riskier companies than the others by requesting higher returns on them.

Another outcome of the study is that foreign and local capital companies have different risk management perceptions in terms of financial intermediaries, which is proved by different patterns of accounting based risk indicators with respect to capital structure.

This study is believed to initiate an other risk concept that is consciously or unconsciously being appreciated by the investors in the ISE. Further analyses with lengthen time horizon, extended data and enriched risk and investment features will hopefully be based upon this starting point. Noting that the purpose of this analysis is only to investigate any relationship for the above arguments, further studies may attempt to build up a return model depending on these risk measures, as well.



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**APPENDIX 1**





**LIST OF MAJOR 500 INDUSTRIAL ENTERPRISES BY ISTANBUL CHAMBER OF INDUSTRY 1995-1994**

	COMPANY	1995			1994			94					
		RANK	CAPITAL			RANK	CAPITAL			RANK	CAPITAL		
			PUBLIC	LOCAL	FOREIGN		PUBLIC	LOCAL	FOREIGN		PUBLIC	LOCAL	FOREIGN
34	Undeclared	39		70%	30%								
35	Undeclared	117		70%	30%								
36	Undeclared	121		50%	50%								
37	Undeclared	469		25%	75%								
38	Undeclared	32		24%	76%								
39	Undeclared	13		3%	97%								
40	Undeclared	73		0%	100%								
41	Undeclared	344			100%								
42	ABB Elektrik	406		100%	0%	368		0%	100%	313		0%	100%
43	AEG Eti Elektrik	92		1%	99%	95		1%	99%	132	28%	1%	71%
44	Afyon Çimento									415		49%	51%
45	Akzo Nobel Kemipol Kimya San	396		49%	51%	441		49%	51%				
46	Alcatel Teletel Telekom	139		35%	65%	75		35%	65%	33	8%	27%	65%
47	Anadolu Cam Sanayi					331		94%	6%	236		94%	6%
48	Anadolu-Isuzu Otomotiv	156		65%	35%	200		80%	20%	66		88%	13%
49	Aslan Çimento	221		3%	97%	176		3%	97%	124		4%	96%
50	Austro-Türk Tütün					351		5%	95%	289		5%	95%
51	Aygaz	25		65%	35%	40		65%	35%	38		65%	35%
52	Bağta Bağkent Çimento	386		64%	36%	333		64%	36%				
53	Balıkesir Çimento									475		2%	98%
54	Balsu Gıda					498		53%	47%				
55	Barlan Metal Pazarlama	98		82%	18%	160		83%	17%				
56	BASF Sümerbank Türk Kimya					475	40%		60%	500	40%		60%
57	Bayer İlaç Fabrikaları	282			100%	262			100%				
58	Bayer Türk Kimya	261			100%	232			100%	234			100%
59	Beksa Çelik Kord San	364		50%	50%	356		50%	50%				
60	Beypl Beypazarı Tar. Üretim	458		88%	12%					467		88%	12%
61	Birleik Alman İlaç Fab.									199			100%
62	BMC	42		100%	0%	113		100%	0%	28		99%	1%
63	Borusan Birleik Boru	43		90%	10%	52		90%	10%	60		80%	20%
64	Bosch Sanayi ve Tic	165			100%	145			100%	306		20%	80%
65	Bozkurt Mensucat	157		83%	17%	151		85%	15%	177		88%	12%
66	BP Petrolleri	196			100%	251			100%	189			100%

**LIST OF MAJOR 500 INDUSTRIAL ENTERPRISES BY ISTANBUL CHAMBER OF INDUSTRY 1993-1994**

	COMPANY	1995			1994			94					
		RANK	CAPITAL			RANK	CAPITAL			RANK	CAPITAL		
			PUBLIC	LOCAL	FOREIGN		PUBLIC	LOCAL	FOREIGN		PUBLIC	LOCAL	FOREIGN
67	Brisa	24		64%	36%	31		64%	36%	36		64%	36%
68	Olba Geigy	155			100%	230			100%	120			100%
69	Coats Türkiye	237		25%	75%	281		25%	75%	157		25%	75%
70	Colgate-Palmolive	233		33%	67%	236		33%	67%	247		33%	67%
71	Corro-Coat Toz Boya									493			100%
72	Delphi Teknik Oto Yan Sanayi	292		33%	67%								
73	Demirer Kablo Tesisleri	239		91%	9%	248		91%	9%	282		91%	9%
74	Dimon Türk Tütün	449		0%	100%								
75	Dinarsu İmalat ve Ticaret	279		94%	6%	265		76%	24%	222		76%	24%
76	Doğu İlaç Fab.	343		49%	51%	375		49%	51%	305		49%	51%
77	Dusa Endüstriyel Plastik San	152		50%	50%					153		50%	50%
78	DYO Sadolin Matbaa Mürek	385		57%	44%	378		57%	44%	416		57%	44%
79	DYO ve Sadolin Sentetik Boya	227		57%	44%	266		57%	44%	204		57%	44%
80	Eczacıbaşı Baxter Hast Ürün	393		50%	50%	385		50%	50%				
81	Eczacıbaşı Yapı Gereçleri					140		99%	1%				
82	EKS Eczacıbaşı Karoseramik	275		97%	3%	277		96%	4%	315		95%	5%
83	Elbo Gaz Mam-Kont Cihazları	172		50%	50%	195		50%	50%				
84	Enta Entegre Tavukçuluk	369		95%	5%	387		95%	5%	240		95%	5%
85	Eretil Demir Çelik	7	52%	48%	0%	8	52%	48%	0%	8	52%	48%	0%
86	Erkablo	194			100%	275			100%	246			100%
87	Filiz Gıda	322		65%	35%	318		65%	35%				
88	FMC-Nuroi	54		49%	51%	33		49%	51%	78		49%	51%
89	Glaxo Sağlık Ürünleri	376			100%	2478			100%				
90	Goetze İstanbul Segman					317			100%	329		84%	16%
91	Goodyear Lastikleri	23		49%	51%	25		49%	51%	34		49%	51%
92	Körkireli Cam Sanayi	56		98%	2%	106		98%	2%	113		97%	3%
93	Kale Kalıp Mak ve Kalıpsan					480		80%	20%				100%
94	Kaplamin Ambalaj San					330		85%	15%	385		85%	15%
95	Konya Çimento	358		50%	51%	358		50%	51%	303		50%	51%
96	LeviStrauss İstanbul Konf San	283		49%	51%	263		49%	51%	321		49%	51%
97	Magnesit AŞ	334			100%	276			100%	394			100%
98	Mako Elektrik	166		57%	43%	194		53%	47%	103		53%	47%
99	MAN Kamyon ve Otobüs	228		70%	30%	362		100%	0%	134		100%	0%

	COMPANY	1995			1994			94					
		RANK	CAPITAL			RANK	CAPITAL			RANK	CAPITAL		
			PUBLIC	LOCAL	FOREIGN		PUBLIC	LOCAL	FOREIGN		PUBLIC	LOCAL	FOREIGN
100	Mannesmann-Sümerbank Boru				192	43%		57%	145	43%		57%	
101	Marsa Kraft Sabancı	26		50%	50%	30		50%	50%	45		50%	50%
102	Mercedes-Benz Türk	16	8%	21%	71%	32	8%	21%	71%	15	8%	21%	71%
103	Med Union Containers	163		85%	15%	123		85%	15%	201		85%	15%
104	Merloni-Elektrodomestici	242		31%	69%								
105	Mis Süt	101			100%	125			100%	99		85%	15%
106	Mobil Oil	284		0%	100%	175		0%	100%	165		1%	99%
107	Neta	71		48%	52%	49		49%	51%	20		49%	51%
108	Noksel Çelik Boru	493		60%	40%					426		60%	40%
109	Nursan Elektrik Donanım	473		80%	20%								
110	Öerikon Elektrik ve San	413		90%	10%								
111	Opel Türkiye (GM)	82			100%	97			100%	42			100%
112	Ortado Rulman Sanayi	244		91%	9%	291		91%	9%				
113	Otosan	15		70%	30%	39		70%	30%	13		70%	30%
114	Otoyol	74		73%	27%	132		73%	27%	52		73%	27%
115	Oyak Renault	9		43%	57%	11		43%	57%	6		43%	57%
116	PİMA Plastik İnşaat Mlz	235		81%	19%								
117	Packard Elektrik	127			100%	126			100%	158			100%
118	Peg Profilo	19		34%	66%	19		80%	20%	16		80%	20%
119	Pekel Teknik					182		46%	54%	140		46%	54%
120	Perfetti Gıda					455			100%	455			100%
121	Philsa	10		25%	75%	16		25%	75%	40		25%	75%
122	Profilo Telra Elektronik	51		80%	20%	46		80%	20%	75		80%	20%
123	RJ Reynolds	141			100%	164			100%				
124	Röche Müstahzarlar San	75			100%								
125	Sandoz	185			100%	157			100%	150			100%
126	Sanipak Sağık Ürünleri									130		50%	50%
127	Selkesan Kağıt ve Pak. Mlz	415		88%	12%								
128	Shell	216			100%	186			100%	159			100%
129	Simko Ticaret ve San	62		25%	75%	43		49%	51%	39		49%	51%
130	Sinmak Diki Makinalar									273		50%	50%
131	Spieler Tütün İhracat San	294			100%	424		0%	100%	328		0%	100%
132	Starwood Orman Ürünleri	278		98%	3%	301		93%	7%	230		99%	1%

**LIST OF MAJOR 500 INDUSTRIAL ENTERPRISES BY ISTANBUL CHAMBER OF INDUSTRY 1993-1995**

	COMPANY	1995			1994			94						
		RANK	CAPITAL			RANK	CAPITAL			RANK	CAPITAL			
			PUBLIC	LOCAL	FOREIGN		PUBLIC	LOCAL	FOREIGN		PUBLIC	LOCAL	FOREIGN	
133	Türk Henkel	110		0%	100%	129		0%	100%	125		50%	50%	
134	Türk Hoechst	145		1%	99%	107		1%	99%	109		0%	100%	
135	Türk Kablo Anonim	241		2%	99%	311		2%	98%	342		11%	89%	
136	Türk Pirelli	33		38%	62%	51		38%	62%	47		46%	54%	
137	Türk Siemens	57		45%	55%	109		41%	59%	82		41%	59%	
138	Türk Traktör ve Ziraat Mak A	29		75%	25%	74		75%	25%	44		75%	25%	
139	Türk Tuborg	182		93%	7%	172		81%	19%	147		81%	19%	
140	Tam Gıda San	361		94%	6%	361		94%	6%					
141	Tat Konserve	132		85%	15%	136		85%	15%	148		85%	15%	
142	Teknik Malzeme Tic A	352		60%	40%	435		60%	40%	262		60%	40%	
143	Tofaş Türk	6		62%	38%	9		62%	38%	4	4%	54%	42%	
144	Trakya Çimento	397		0%	100%	312		0%	100%					
145	Trakya Cam Sanayi	45		93%	7%	53		90%	10%	58		90%	10%	
146	Transtök Fran Donanım	405		20%	80%	428		88%	12%	243		88%	12%	
147	Turcas Petrolcülük	250		54%	46%	226		54%	46%	203		58%	43%	
148	Tusa Havacılık ve Uzay San	180	49%	2%	49%	181	49%	2%	49%	195	49%	2%	49%	
149	Tusa Motor San	488	54%		46%	426	51%	3%	46%					
150	UK Uluslararası Konfeksiyon	360		80%	20%	260		75%	26%	335		54%	46%	
151	Unikom Gıda	97		3%	97%	82		49%	51%	112		49%	51%	
152	Universal Yaprak Tütün San	6304		5%	95%	228		5%	95%	388		10%	90%	
153	Vestel Elektronik	47		18%	82%	67		12%	88%	61		18%	82%	
154	Volkswagen Elektrik Sistemleri	133			100%	143			100%					
155	Yibita Lafarge Çimento San					398	2%	64%	34%	487		50%	50%	
<b>TOTAL</b>				<b>114</b>				<b>114</b>				<b>107</b>		



**APPENDIX 2**

## END OF PERIOD USD/TRL CURRENCY RATES

<i>Period</i>	<i>1 USD =</i>
12-91	5,075 TL
3-92	6,241 TL
6-92	6,868 TL
9-92	7,317 TL
12-92	8,556 TL
3-93	9,451 TL
6-93	10,860 TL
9-93	12,082 TL
12-93	14,458 TL
3-94	22,138 TL
6-94	31,163 TL
9-94	34,039 TL
12-94	38,418 TL
3-95	41,726 TL
6-95	43,803 TL
9-95	48,883 TL
12-95	59,501 TL
3-96	70,574 TL
6-96	81,281 TL
9-96	91,328 TL
12-96	107,505 TL
3-97	127,050 TL
6-97	147,690 TL
9-97	173,210 TL
12-97	204,860 TL
3-98	241,630 TL

**TABLE : ADJUSTED PRICES OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	12-91	3-92	6-92	9-92	12-92
<b>Adana Çimento</b>	97	77	99	96	104
<b>Ak-AI Tekstil</b>	55	59	104	160	154
<b>Aksa Akrilik</b>	178	185	185	302	271
<b>Arçelik</b>	200	197	210	182	176
<b>Aselsan</b>	110	104	92	112	134
<b>Aslan Çimento</b>	897	753	670	567	681
<b>Aygaz</b>	572	564	568	468	481
<b>Bagfas</b>	186	147	138	95	102
<b>Bolu Çimento</b>	47	42	37	28	27
<b>Brisa</b>	68	62	52	62	66
<b>Çelik Halat</b>	94	98	138	104	111
<b>Çimsa</b>	112	99	94	99	95
<b>Deva Holding</b>	238	186	127	94	108
<b>Döktas Dökümcülük</b>	179	183	195	139	141
<b>Eczacibasi İlaç</b>	807	819	558	418	407
<b>Ege Biracılık</b>	252	318	628	704	749
<b>Ege Endüstri</b>	100	94	120	112	134
<b>Erciyas Biracılık</b>	233	276	333	574	559
<b>Eregli Demir Çelik</b>	679	507	690	484	398
<b>Fenis Alüminyum</b>	241	266	285	334	441
<b>Goodyear Lastikleri</b>	63	82	96	110	118
<b>Gübre Fab</b>	251	251	215	187	201
<b>Güney Biracılık</b>	224	297	396	455	415
<b>Hektas Ticaret</b>	31	28	26	20	26
<b>İzmir Demir Çelik</b>	33	27	23	16	15
<b>İzocam</b>	237	244	292	335	274
<b>Kelebek Mobilya</b>	37	37	33	56	41
<b>Kepez Elektrik</b>	1,677	1,409	3,061	2,252	2,283
<b>Kordsa</b>	190	174	182	132	85
<b>Mardin Çimento</b>	78	75	74	88	131
<b>Maret</b>	389	389	379	358	259
<b>Marshall Boya</b>	181	181	159	256	348
<b>Olmuksa Mukavva</b>	101	97	109	146	109
<b>Otosan</b>	585	538	909	787	944
<b>Peg Profilo</b>	195	162	147	118	93
<b>Petkim</b>	614	506	415	343	289
<b>Pinar Et</b>	40	40	38	42	33
<b>Polylen</b>	34	66	37	59	41
<b>Sarkuysan</b>	308	232	265	243	254
<b>Sifas</b>	150	112	60	70	45
<b>Tofas Türk</b>	238	298	365	375	547
<b>Trakya Cam Sanayi</b>	56	65	66	58	49
<b>Tüpras</b>	166	144	166	103	113
<b>Türk Demir Döküm</b>	219	210	289	257	277
<b>Türk Tuborg</b>	113	119	132	209	166
<b>Vestel Elektronik</b>	261	235	177	137	121
<b>Yasas Yasar Boya</b>	157	176	154	215	169
<b>Yünsa</b>	191	176	199	275	218

**TABLE : ADJUSTED PRICES OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	3-93	6-93	9-93	12-93
<b>Adana Çimento</b>	131	186	215	335
<b>Ak-AI Tekstil</b>	257	387	624	1,014
<b>Aksa Akrilik</b>	339	571	666	725
<b>Arçelik</b>	210	487	681	908
<b>Aselsan</b>	198	268	410	642
<b>Aslan Çimento</b>	1,031	2,044	1,991	3,537
<b>Aygaz</b>	588	846	958	1,627
<b>Bagfas</b>	184	484	701	1,069
<b>Bolu Çimento</b>	38	76	114	184
<b>Brisa</b>	131	198	277	474
<b>Çelik Halat</b>	219	441	582	642
<b>Çimsa</b>	141	316	411	721
<b>Deva Holding</b>	139	258	394	600
<b>Döktas Dökümcülük</b>	269	449	480	681
<b>Eczacibasi İlaç</b>	595	767	969	1,330
<b>Ege Biracılık</b>	1,078	1,747	2,023	1,977
<b>Ege Endüstri</b>	348	887	886	1,245
<b>Erciyas Biracılık</b>	683	1,216	1,179	1,280
<b>Eregli Demir Çelik</b>	377	790	1,561	2,656
<b>Fenis Alüminyum</b>	555	625	675	917
<b>Goodyear Lastikleri</b>	154	226	333	667
<b>Gübre Fab</b>	301	904	1,722	3,909
<b>Güney Biracılık</b>	810	1,174	1,196	1,289
<b>Hektas Ticaret</b>	39	87	102	161
<b>İzmir Demir Çelik</b>	22	73	104	197
<b>Izocam</b>	363	498	571	914
<b>Kelebek Mobilya</b>	49	180	191	283
<b>Kepez Elektrik</b>	4,863	8,747	8,008	11,396
<b>Kordsa</b>	99	152	218	366
<b>Mardin Çimento</b>	163	294	325	422
<b>Maret</b>	456	633	726	1,219
<b>Marshall Boya</b>	525	1,432	1,739	1,875
<b>Olmuksa Mukavva</b>	122	200	321	530
<b>Otosan</b>	2,099	4,430	4,430	8,216
<b>Peg Profilo</b>	108	292	449	757
<b>Petkim</b>	520	759	2,023	4,262
<b>Pinar Et</b>	39	107	140	195
<b>Polylen</b>	52	101	142	189
<b>Sarkuysan</b>	466	924	1,043	1,346
<b>Sifas</b>	53	135	201	296
<b>Tofas Türk</b>	1,675	2,547	2,593	3,912
<b>Trakya Cam Sanayi</b>	76	163	243	401
<b>Tüpras</b>	127	189	718	941
<b>Türk Demir Döküm</b>	388	565	769	925
<b>Türk Tuborg</b>	192	620	567	638
<b>Vestel Elektronik</b>	133	230	352	645
<b>Yasas Yasar Boya</b>	264	1,220	1,326	1,609
<b>Yünsa</b>	329	1,007	1,310	1,582



**TABLE : ADJUSTED PRICES OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	3-94	6-94	9-94	12-94
<b>Adana Çimento</b>	278	302	683	592
<b>Ak-AI Tekstil</b>	430	733	680	690
<b>Aksa Akrilik</b>	617	1,078	1,493	1,557
<b>Arçelik</b>	811	865	1,215	1,091
<b>Aselsan</b>	321	451	786	742
<b>Aslan Çimento</b>	2,547	2,484	3,902	4,309
<b>Aygaz</b>	1,003	1,277	1,487	1,353
<b>Bagfas</b>	359	573	771	721
<b>Bolu Çimento</b>	102	235	386	328
<b>Brisa</b>	332	403	924	687
<b>Çelik Halat</b>	681	549	823	840
<b>Çimsa</b>	746	784	1,075	1,215
<b>Deva Holding</b>	501	277	614	660
<b>Döktas Dökümcülük</b>	434	828	813	653
<b>Eczacıbaşı İlaç</b>	1,017	681	861	1,069
<b>Ege Biracılık</b>	2,483	3,219	4,828	3,674
<b>Ege Endüstri</b>	332	332	630	535
<b>Erciyas Biracılık</b>	1,079	2,409	3,734	3,252
<b>Eregli Demir Çelik</b>	1,615	2,547	2,572	2,790
<b>Fenis Alüminyum</b>	413	504	909	1,163
<b>Goodyear Lastikleri</b>	451	433	676	708
<b>Gübre Fab</b>	1,101	1,112	2,803	3,648
<b>Güney Biracılık</b>	1,196	2,548	2,838	2,613
<b>Hektas Ticaret</b>	57	74	133	173
<b>İzmir Demir Çelik</b>	162	142	328	233
<b>İzocam</b>	698	786	856	716
<b>Kelebek Mobilya</b>	241	292	537	437
<b>Kepez Elektrik</b>	4,866	6,505	6,838	5,504
<b>Kordsa</b>	172	446	729	609
<b>Mardin Çimento</b>	258	363	708	536
<b>Maret</b>	840	1,373	1,732	1,309
<b>Marshall Boya</b>	1,309	1,159	2,333	2,303
<b>Olmaksa Mukavva</b>	200	392	1,431	1,311
<b>Otosan</b>	5,430	3,537	6,716	4,973
<b>Peg Profilo</b>	469	430	436	756
<b>Petkim</b>	1,951	2,348	6,502	11,559
<b>Pinar Et</b>	140	120	236	197
<b>Polylen</b>	94	67	216	311
<b>Sarkuysan</b>	1,214	2,305	3,283	2,933
<b>Sifas</b>	124	75	391	429
<b>Tofas Türk</b>	2,502	2,252	2,092	2,775
<b>Trakya Cam Sanayi</b>	376	657	616	577
<b>Tüpras</b>	574	472	622	802
<b>Türk Demir Döküm</b>	721	461	726	773
<b>Türk Tuborg</b>	709	1,042	970	791
<b>Vestel Elektronik</b>	293	222	431	1,049
<b>Yasas Yasar Boya</b>	787	946	2,489	2,589
<b>Yünsa</b>	591	555	807	972

**TABLE : ADJUSTED PRICES OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	3-95	6-95	9-95	12-95
<i>Adana Çimento</i>	817	834	1,080	668
<i>Ak-AI Tekstil</i>	1,478	1,503	1,341	1,270
<i>Aksa Akrilik</i>	2,605	2,478	2,241	3,171
<i>Arçelik</i>	1,215	1,512	1,772	1,025
<i>Aselsan</i>	1,077	1,630	1,543	1,310
<i>Aslan Çimento</i>	4,065	4,390	4,065	4,000
<i>Aygaz</i>	3,526	5,063	4,868	4,965
<i>Bagfas</i>	1,729	1,926	2,137	1,902
<i>Bolu Çimento</i>	457	418	371	309
<i>Brisa</i>	1,495	1,739	1,891	1,739
<i>Çelik Halat</i>	1,103	1,268	1,153	1,268
<i>Çimsa</i>	1,392	1,907	1,746	1,713
<i>Deva Holding</i>	1,853	2,182	1,323	878
<i>Döktas Dökümcülük</i>	929	890	919	710
<i>Eczacıbaşı İlaç</i>	2,528	2,917	2,200	1,675
<i>Ege Biracılık</i>	6,957	8,286	6,733	6,915
<i>Ege Endüstri</i>	2,245	2,943	3,333	2,467
<i>Erciyas Biracılık</i>	5,540	8,697	7,324	6,294
<i>Eregli Demir Çelik</i>	5,405	4,970	5,512	4,518
<i>Fenis Alüminyum</i>	1,653	1,498	1,943	2,258
<i>Goodyear Lastikleri</i>	1,521	2,019	1,625	1,526
<i>Gübre Fab</i>	12,902	5,250	4,321	3,392
<i>Güney Biracılık</i>	3,469	4,415	3,399	3,359
<i>Hektas Ticaret</i>	490	809	873	963
<i>Izmir Demir Çelik</i>	382	380	283	249
<i>İzocam</i>	1,113	1,572	1,150	843
<i>Kelebek Mobilya</i>	679	1,918	1,086	784
<i>Kepez Elektrik</i>	6,755	29,605	19,597	23,767
<i>Kordsa</i>	1,175	1,905	1,352	1,219
<i>Mardin Çimento</i>	692	1,045	1,221	843
<i>Maret</i>	1,964	2,919	2,540	2,757
<i>Marshall Boya</i>	3,289	5,256	4,578	4,662
<i>Olmuksa Mukavva</i>	2,881	3,122	2,713	2,815
<i>Otosan</i>	6,002	8,859	10,931	8,745
<i>Peg Profilo</i>	1,197	1,921	2,525	2,030
<i>Petkim</i>	20,559	27,901	24,230	22,027
<i>Pinar Et</i>	346	346	356	375
<i>Polylen</i>	753	837	842	812
<i>Sarkuysan</i>	4,051	4,777	3,864	3,737
<i>Sifas</i>	938	1,064	927	732
<i>Tofas Türk</i>	3,275	3,412	2,688	2,203
<i>Trakya Cam Sanayi</i>	1,222	1,343	1,523	1,498
<i>Tüpras</i>	1,888	1,607	1,655	1,607
<i>Türk Demir Döküm</i>	1,015	1,337	1,431	1,092
<i>Türk Tuborg</i>	1,042	1,166	981	1,184
<i>Vestel Elektronik</i>	947	880	964	964
<i>Yasas Yasar Boya</i>	3,883	5,974	4,066	2,464
<i>Yünsa</i>	2,500	2,118	2,048	2,083

**TABLE : ADJUSTED PRICES OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	3-96	6-96	9-96	12-96
<i>Adana Çimento</i>	1,143	1,266	1,147	1,434
<i>Ak-AI Tekstil</i>	2,235	2,067	2,251	2,916
<i>Aksa Akrilik</i>	4,229	6,012	6,255	4,874
<i>Arçelik</i>	2,050	2,592	3,143	3,726
<i>Aselsan</i>	1,805	1,703	1,790	2,882
<i>Aslan Çimento</i>	11,951	10,732	11,707	20,732
<i>Aygaz</i>	8,654	8,059	11,306	15,310
<i>Bagfas</i>	2,606	2,502	1,897	2,750
<i>Bolu Çimento</i>	565	627	680	822
<i>Brisa</i>	3,252	4,272	5,675	6,249
<i>Çelik Halat</i>	2,009	1,953	1,852	2,891
<i>Çimsa</i>	2,910	3,073	2,320	3,258
<i>Deva Holding</i>	1,509	1,252	1,033	1,394
<i>Döktas Dökümcülük</i>	1,208	1,284	1,015	2,299
<i>Eczacibasi İlaç</i>	3,600	3,400	3,800	5,700
<i>Ege Biracılık</i>	9,462	13,647	10,190	12,250
<i>Ege Endüstri</i>	4,848	4,203	3,804	6,459
<i>Erciyas Biracılık</i>	9,842	10,913	11,150	11,150
<i>Eregli Demir Çelik</i>	7,591	8,671	9,548	12,665
<i>Fenis Alüminyum</i>	4,148	3,151	2,879	3,016
<i>Goodyear Lastikleri</i>	2,806	3,672	4,212	5,346
<i>Gübre Fab</i>	7,063	6,549	6,360	10,441
<i>Güney Biracılık</i>	6,475	7,984	6,618	5,221
<i>Hektas Ticaret</i>	1,412	1,219	1,344	1,413
<i>Izmir Demir Çelik</i>	374	362	305	374
<i>Izocam</i>	1,457	1,576	1,317	1,694
<i>Kelebek Mobilya</i>	1,267	1,520	3,310	3,065
<i>Kepez Elektrik</i>	36,693	72,794	63,029	99,870
<i>Kordsa</i>	2,304	2,425	2,611	4,057
<i>Mardin Çimento</i>	1,359	1,166	956	982
<i>Maret</i>	5,405	4,274	3,952	5,745
<i>Marshall Boya</i>	5,595	6,516	5,891	8,034
<i>Olmaksa Mukavva</i>	3,583	2,591	2,027	3,561
<i>Otosan</i>	22,291	24,641	23,745	40,321
<i>Peg Profilo</i>	4,060	4,651	6,288	6,903
<i>Petkim</i>	40,384	32,368	32,783	36,103
<i>Pinar Et</i>	582	533	486	605
<i>Polylen</i>	933	803	659	1,137
<i>Sarkuysan</i>	5,520	5,564	4,946	6,359
<i>Sifas</i>	927	798	609	1,132
<i>Tofas Türk</i>	3,136	2,516	2,026	2,777
<i>Trakya Cam Sanayi</i>	2,776	3,052	3,537	3,815
<i>Tüpras</i>	2,771	2,370	2,370	4,258
<i>Türk Demir Döküm</i>	1,638	1,398	1,215	2,740
<i>Türk Tuborg</i>	1,665	1,741	1,947	2,138
<i>Vestel Elektronik</i>	2,453	2,568	2,824	4,622
<i>Yasas Yasar Boya</i>	3,614	5,764	5,679	6,527
<i>Yünsa</i>	2,396	2,743	2,670	4,051

**TABLE : ADJUSTED PRICES OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	3-97	6-97	9-97	12-97	3-98
<i>Adana Çimento</i>	2,927	3,712	5,945	8,561	7,491
<i>Ak-AI Tekstil</i>	5,813	4,933	5,667	5,600	4,000
<i>Aksa Akrilik</i>	6,499	6,458	9,407	9,266	6,599
<i>Arçelik</i>	5,670	9,493	10,972	10,479	10,602
<i>Aselsan</i>	4,475	7,667	8,500	8,833	5,800
<i>Aslan Çimento</i>	24,147	45,854	74,147	80,977	72,196
<i>Aygaz</i>	27,794	29,412	30,392	38,235	33,333
<i>Bagfas</i>	3,355	4,204	6,656	17,225	28,610
<i>Bolu Çimento</i>	1,199	1,442	1,957	1,931	2,060
<i>Brisa</i>	8,212	7,001	10,501	14,372	12,500
<i>Çelik Halat</i>	4,413	4,243	5,530	7,533	5,721
<i>Çimsa</i>	6,278	6,744	11,375	11,213	12,919
<i>Deva Holding</i>	1,601	1,575	1,925	2,100	1,500
<i>Döktas Dökümcülük</i>	3,832	3,733	6,287	8,154	8,055
<i>Eczacibasi Ilaç</i>	7,200	7,500	10,500	9,900	9,600
<i>Ege Biracilik</i>	16,000	17,750	19,750	20,000	35,000
<i>Ege Endüstri</i>	9,511	9,069	14,407	19,838	25,507
<i>Erciyas Biracilik</i>	10,676	18,912	27,373	28,368	39,815
<i>Eregli Demir Çelik</i>	16,806	24,500	30,000	36,000	30,000
<i>Fenis Alüminyum</i>	3,811	4,277	5,304	4,876	4,192
<i>Goodyear Lastikleri</i>	8,424	6,480	8,794	10,761	13,886
<i>Gübre Fab</i>	14,001	11,118	9,487	13,589	18,036
<i>Güney Biracilik</i>	6,839	6,463	10,132	13,344	22,240
<i>Hektas Ticaret</i>	1,939	1,580	1,839	1,839	1,943
<i>Izmir Demir Çelik</i>	874	743	1,025	1,125	663
<i>Izocam</i>	2,705	2,356	3,798	3,750	3,461
<i>Kelebek Mobilya</i>	3,494	3,321	4,907	4,461	4,560
<i>Kepez Elektrik</i>	163,413	303,144	331,563	530,501	610,000
<i>Kordsa</i>	5,222	6,050	6,897	8,954	13,794
<i>Mardin Çimento</i>	1,572	1,720	2,592	2,827	3,440
<i>Maret</i>	7,468	6,013	8,222	9,081	7,854
<i>Marshall Boya</i>	16,737	18,267	22,951	28,103	31,382
<i>Olmuxsa Mukavva</i>	4,634	5,170	7,414	9,365	9,755
<i>Otosan</i>	68,098	73,594	125,015	174,550	143,886
<i>Peg Profilo</i>	7,860	8,358	11,692	11,443	9,851
<i>Petkim</i>	48,967	46,182	73,515	117,812	131,950
<i>Pinar Et</i>	1,131	952	1,400	1,992	1,905
<i>Polylen</i>	1,318	1,573	2,996	2,491	1,952
<i>Sarkuysan</i>	11,923	15,598	18,671	18,434	15,598
<i>Sifas</i>	1,184	1,300	3,120	3,180	2,850
<i>Tofas Türk</i>	5,816	7,200	11,000	13,000	12,500
<i>Trakya Cam Sanayi</i>	4,092	4,888	8,087	11,756	11,021
<i>Tüpras</i>	10,443	13,817	24,500	24,250	29,000
<i>Türk Demir Döküm</i>	3,954	3,633	5,736	5,616	4,206
<i>Türk Tuborg</i>	2,748	2,265	2,850	5,000	5,000
<i>Vestel Elektronik</i>	8,473	8,400	15,750	17,750	19,500
<i>Yasas Yasar Boya</i>	16,318	22,535	30,686	42,193	36,919
<i>Yünsa</i>	4,419	3,868	7,543	5,609	6,866

**TABLE : ADJUSTED PRICES (USD) OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	12-91	3-92	6-92	9-92	12-92
<i>Adana Çimento</i>	0.0191	0.0124	0.0144	0.0131	0.0121
<i>Ak-AI Tekstil</i>	0.0108	0.0094	0.0151	0.0219	0.0180
<i>Aksa Akrilik</i>	0.0350	0.0296	0.0269	0.0413	0.0317
<i>Arçelik</i>	0.0393	0.0316	0.0306	0.0248	0.0206
<i>Aselsan</i>	0.0217	0.0167	0.0134	0.0154	0.0157
<i>Aslan Çimento</i>	0.1768	0.1206	0.0976	0.0775	0.0796
<i>Aygaz</i>	0.1128	0.0904	0.0827	0.0639	0.0562
<i>Bagfas</i>	0.0366	0.0236	0.0201	0.0130	0.0119
<i>Bolu Çimento</i>	0.0092	0.0067	0.0054	0.0038	0.0032
<i>Brisa</i>	0.0135	0.0099	0.0076	0.0084	0.0077
<i>Çelik Halat</i>	0.0186	0.0157	0.0201	0.0142	0.0130
<i>Çimsa</i>	0.0220	0.0158	0.0136	0.0135	0.0111
<i>Deva Holding</i>	0.0469	0.0298	0.0185	0.0128	0.0126
<i>Döktas Dökümcülük</i>	0.0354	0.0293	0.0284	0.0190	0.0165
<i>Eczacıbaşı İlaç</i>	0.1590	0.1312	0.0812	0.0571	0.0475
<i>Ege Biracılık</i>	0.0496	0.0510	0.0915	0.0962	0.0875
<i>Ege Endüstri</i>	0.0198	0.0150	0.0174	0.0153	0.0157
<i>Erciyas Biracılık</i>	0.0458	0.0442	0.0485	0.0785	0.0653
<i>Eregli Demir Çelik</i>	0.1338	0.0812	0.1005	0.0661	0.0466
<i>Fenis Alüminyum</i>	0.0475	0.0426	0.0414	0.0456	0.0516
<i>Goodyear Lastikleri</i>	0.0124	0.0131	0.0140	0.0150	0.0137
<i>Gübre Fab</i>	0.0495	0.0402	0.0313	0.0255	0.0235
<i>Güney Biracılık</i>	0.0442	0.0475	0.0576	0.0622	0.0485
<i>Hektas Ticaret</i>	0.0060	0.0045	0.0037	0.0028	0.0030
<i>İzmir Demir Çelik</i>	0.0064	0.0044	0.0034	0.0022	0.0018
<i>İzocam</i>	0.0466	0.0390	0.0425	0.0458	0.0320
<i>Kelebek Mobilya</i>	0.0073	0.0060	0.0048	0.0077	0.0048
<i>Kepez Elektrik</i>	0.3304	0.2258	0.4457	0.3078	0.2669
<i>Kordsa</i>	0.0374	0.0279	0.0265	0.0180	0.0099
<i>Mardin Çimento</i>	0.0153	0.0121	0.0108	0.0121	0.0154
<i>Maret</i>	0.0766	0.0623	0.0551	0.0489	0.0303
<i>Marshall Boya</i>	0.0356	0.0289	0.0232	0.0349	0.0406
<i>Olmaksa Mukavva</i>	0.0200	0.0156	0.0159	0.0199	0.0128
<i>Otosan</i>	0.1153	0.0863	0.1324	0.1076	0.1104
<i>Peg Profilo</i>	0.0385	0.0259	0.0214	0.0161	0.0109
<i>Petkim</i>	0.1210	0.0810	0.0605	0.0469	0.0338
<i>Pinar Et</i>	0.0080	0.0065	0.0056	0.0057	0.0039
<i>Polylen</i>	0.0068	0.0106	0.0054	0.0080	0.0048
<i>Sarkuysan</i>	0.0607	0.0372	0.0386	0.0333	0.0297
<i>Sıfas</i>	0.0296	0.0179	0.0087	0.0096	0.0053
<i>Tofas Türk</i>	0.0469	0.0477	0.0531	0.0513	0.0640
<i>Trakya Cam Sanayi</i>	0.0111	0.0103	0.0095	0.0080	0.0057
<i>Tüpras</i>	0.0327	0.0230	0.0242	0.0141	0.0132
<i>Türk Demir Döküm</i>	0.0431	0.0336	0.0421	0.0351	0.0323
<i>Türk Tuborg</i>	0.0223	0.0190	0.0193	0.0286	0.0194
<i>Vestel Elektronik</i>	0.0514	0.0376	0.0258	0.0187	0.0141
<i>Yasas Yasar Boya</i>	0.0310	0.0282	0.0224	0.0293	0.0198
<i>Yünsa</i>	0.0377	0.0282	0.0290	0.0376	0.0255

**TABLE : ADJUSTED PRICES (USD) OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	3-93	6-93	9-93	12-93
<i>Adana Çimento</i>	0.0139	0.0172	0.0178	0.0232
<i>Ak-AI Tekstil</i>	0.0272	0.0357	0.0516	0.0701
<i>Aksa Akrilik</i>	0.0359	0.0526	0.0551	0.0501
<i>Arçelik</i>	0.0222	0.0448	0.0564	0.0628
<i>Aselsan</i>	0.0210	0.0247	0.0339	0.0444
<i>Aslan Çimento</i>	0.1091	0.1882	0.1648	0.2447
<i>Aygaz</i>	0.0622	0.0779	0.0793	0.1125
<i>Bagfas</i>	0.0194	0.0446	0.0580	0.0739
<i>Bolu Çimento</i>	0.0040	0.0070	0.0094	0.0127
<i>Brisa</i>	0.0139	0.0182	0.0229	0.0328
<i>Çelik Halat</i>	0.0231	0.0406	0.0482	0.0444
<i>Çimsa</i>	0.0149	0.0291	0.0340	0.0499
<i>Deva Holding</i>	0.0147	0.0237	0.0326	0.0415
<i>Döktas Dökümcülük</i>	0.0285	0.0414	0.0397	0.0471
<i>Eczacıbaşı İlaç</i>	0.0630	0.0706	0.0802	0.0920
<i>Ege Biracılık</i>	0.1141	0.1609	0.1675	0.1368
<i>Ege Endüstri</i>	0.0368	0.0817	0.0734	0.0861
<i>Erciyas Biracılık</i>	0.0722	0.1120	0.0976	0.0885
<i>Eregli Demir Çelik</i>	0.0399	0.0727	0.1292	0.1837
<i>Fenis Alüminyum</i>	0.0588	0.0575	0.0559	0.0634
<i>Goodyear Lastikleri</i>	0.0162	0.0208	0.0276	0.0461
<i>Gübre Fab</i>	0.0319	0.0832	0.1425	0.2703
<i>Güney Biracılık</i>	0.0857	0.1081	0.0990	0.0892
<i>Hektas Ticaret</i>	0.0041	0.0080	0.0084	0.0111
<i>Izmir Demir Çelik</i>	0.0023	0.0067	0.0086	0.0136
<i>Izocam</i>	0.0385	0.0458	0.0473	0.0632
<i>Kelebek Mobilya</i>	0.0052	0.0166	0.0158	0.0195
<i>Kepez Elektrik</i>	0.5145	0.8054	0.6628	0.7882
<i>Kordsa</i>	0.0105	0.0140	0.0180	0.0253
<i>Mardin Çimento</i>	0.0172	0.0271	0.0269	0.0292
<i>Maret</i>	0.0483	0.0583	0.0601	0.0843
<i>Marshall Boya</i>	0.0556	0.1318	0.1439	0.1297
<i>Olmuksa Mukavva</i>	0.0129	0.0184	0.0266	0.0366
<i>Otosan</i>	0.2221	0.4079	0.3666	0.5683
<i>Peg Profilo</i>	0.0114	0.0269	0.0372	0.0524
<i>Petkim</i>	0.0550	0.0698	0.1674	0.2948
<i>Pinar Et</i>	0.0041	0.0099	0.0116	0.0135
<i>Polylen</i>	0.0055	0.0093	0.0118	0.0131
<i>Sarkuysan</i>	0.0493	0.0851	0.0863	0.0931
<i>Sifas</i>	0.0057	0.0124	0.0166	0.0205
<i>Tofas Türk</i>	0.1772	0.2346	0.2146	0.2706
<i>Trakya Cam Sanayi</i>	0.0080	0.0150	0.0201	0.0277
<i>Tüpras</i>	0.0135	0.0174	0.0594	0.0651
<i>Türk Demir Döküm</i>	0.0411	0.0520	0.0636	0.0640
<i>Türk Tuborg</i>	0.0203	0.0571	0.0469	0.0441
<i>Vestel Elektronik</i>	0.0141	0.0212	0.0291	0.0446
<i>Yasas Yasar Boya</i>	0.0280	0.1123	0.1097	0.1113
<i>Yünsa</i>	0.0348	0.0927	0.1085	0.1094

**TABLE : ADJUSTED PRICES (USD) OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	3-94	6-94	9-94	12-94
<i>Adana Çimento</i>	0.0126	0.0097	0.0201	0.0154
<i>Ak-Al Tekstil</i>	0.0194	0.0235	0.0200	0.0180
<i>Aksa Akrilik</i>	0.0279	0.0346	0.0439	0.0405
<i>Arçelik</i>	0.0366	0.0278	0.0357	0.0284
<i>Aselsan</i>	0.0145	0.0145	0.0231	0.0193
<i>Aslan Çimento</i>	0.1150	0.0797	0.1146	0.1122
<i>Aygaz</i>	0.0453	0.0410	0.0437	0.0352
<i>Bagfas</i>	0.0162	0.0184	0.0226	0.0188
<i>Bolu Çimento</i>	0.0046	0.0075	0.0113	0.0085
<i>Brisa</i>	0.0150	0.0129	0.0272	0.0179
<i>Çelik Halat</i>	0.0308	0.0176	0.0242	0.0219
<i>Çimsa</i>	0.0337	0.0252	0.0316	0.0316
<i>Deva Holding</i>	0.0226	0.0089	0.0180	0.0172
<i>Döktas Dökümcülük</i>	0.0196	0.0266	0.0239	0.0170
<i>Eczacıbaşı İlaç</i>	0.0459	0.0218	0.0253	0.0278
<i>Ege Biracılık</i>	0.1122	0.1033	0.1418	0.0956
<i>Ege Endüstri</i>	0.0150	0.0106	0.0185	0.0139
<i>Erciyas Biracılık</i>	0.0487	0.0773	0.1097	0.0846
<i>Eregli Demir Çelik</i>	0.0729	0.0817	0.0756	0.0726
<i>Fenis Alüminyum</i>	0.0187	0.0162	0.0267	0.0303
<i>Goodyear Lastikleri</i>	0.0204	0.0139	0.0199	0.0184
<i>Gübre Fab</i>	0.0497	0.0357	0.0823	0.0950
<i>Güney Biracılık</i>	0.0540	0.0817	0.0834	0.0680
<i>Hektas Ticaret</i>	0.0026	0.0024	0.0039	0.0045
<i>İzmir Demir Çelik</i>	0.0073	0.0046	0.0096	0.0061
<i>İzocam</i>	0.0315	0.0252	0.0251	0.0186
<i>Kelebek Mobilya</i>	0.0109	0.0094	0.0158	0.0114
<i>Kepez Elektrik</i>	0.2198	0.2087	0.2009	0.1433
<i>Kordsa</i>	0.0078	0.0143	0.0214	0.0159
<i>Mardin Çimento</i>	0.0116	0.0117	0.0208	0.0139
<i>Maret</i>	0.0379	0.0440	0.0509	0.0341
<i>Marshall Boya</i>	0.0591	0.0372	0.0685	0.0599
<i>Olmuksa Mukavva</i>	0.0090	0.0126	0.0420	0.0341
<i>Otosan</i>	0.2453	0.1135	0.1973	0.1294
<i>Peg Profilo</i>	0.0212	0.0138	0.0128	0.0197
<i>Petkim</i>	0.0881	0.0753	0.1910	0.3009
<i>Pinar Et</i>	0.0063	0.0039	0.0069	0.0051
<i>Polylen</i>	0.0043	0.0021	0.0063	0.0081
<i>Sarkuysan</i>	0.0548	0.0740	0.0964	0.0764
<i>Sifas</i>	0.0056	0.0024	0.0115	0.0112
<i>Tofas Türk</i>	0.1130	0.0723	0.0615	0.0722
<i>Trakya Cam Sanayi</i>	0.0170	0.0211	0.0181	0.0150
<i>Tüpras</i>	0.0259	0.0152	0.0183	0.0209
<i>Türk Demir Döküm</i>	0.0326	0.0148	0.0213	0.0201
<i>Türk Tuborg</i>	0.0320	0.0334	0.0285	0.0206
<i>Vestel Elektronik</i>	0.0133	0.0071	0.0127	0.0273
<i>Yasas Yasar Boya</i>	0.0355	0.0304	0.0731	0.0674
<i>Yünsa</i>	0.0267	0.0178	0.0237	0.0253

**TABLE : ADJUSTED PRICES (USD) OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	3-95	6-95	9-95	12-95
<b>Adana Çimento</b>	0.0196	0.0190	0.0221	0.0112
<b>Ak-AI Tekstil</b>	0.0354	0.0343	0.0274	0.0213
<b>Aksa Akrilik</b>	0.0624	0.0566	0.0458	0.0533
<b>Arçelik</b>	0.0291	0.0345	0.0363	0.0172
<b>Aselsan</b>	0.0258	0.0372	0.0316	0.0220
<b>Aslan Çimento</b>	0.0974	0.1002	0.0832	0.0672
<b>Aygaz</b>	0.0845	0.1156	0.0996	0.0834
<b>Bagfas</b>	0.0414	0.0440	0.0437	0.0320
<b>Bolu Çimento</b>	0.0109	0.0095	0.0076	0.0052
<b>Brisa</b>	0.0358	0.0397	0.0387	0.0292
<b>Çelik Halat</b>	0.0264	0.0289	0.0236	0.0213
<b>Çimsa</b>	0.0334	0.0435	0.0357	0.0288
<b>Deva Holding</b>	0.0444	0.0498	0.0271	0.0148
<b>Döktas Dökümcülük</b>	0.0223	0.0203	0.0188	0.0119
<b>Eczacıbaşı İlaç</b>	0.0606	0.0666	0.0450	0.0282
<b>Ege Biracılık</b>	0.1667	0.1892	0.1377	0.1162
<b>Ege Endüstri</b>	0.0538	0.0672	0.0682	0.0415
<b>Erciyas Biracılık</b>	0.1328	0.1986	0.1498	0.1058
<b>Eregli Demir Çelik</b>	0.1295	0.1135	0.1128	0.0759
<b>Fenis Alüminyum</b>	0.0396	0.0342	0.0397	0.0379
<b>Goodyear Lastikleri</b>	0.0365	0.0461	0.0332	0.0257
<b>Gübre Fab</b>	0.3092	0.1198	0.0884	0.0570
<b>Güney Biracılık</b>	0.0831	0.1008	0.0695	0.0565
<b>Hektas Ticaret</b>	0.0118	0.0185	0.0179	0.0162
<b>İzmir Demir Çelik</b>	0.0091	0.0087	0.0058	0.0042
<b>İzocam</b>	0.0267	0.0359	0.0235	0.0142
<b>Kelebek Mobilya</b>	0.0163	0.0438	0.0222	0.0132
<b>Kepez Elektrik</b>	0.1619	0.6759	0.4009	0.3994
<b>Kordsa</b>	0.0282	0.0435	0.0276	0.0205
<b>Mardin Çimento</b>	0.0166	0.0239	0.0250	0.0142
<b>Maret</b>	0.0471	0.0666	0.0520	0.0463
<b>Marshall Boya</b>	0.0788	0.1200	0.0936	0.0784
<b>Olmuksa Mukavva</b>	0.0690	0.0713	0.0555	0.0473
<b>Otosan</b>	0.1438	0.2023	0.2236	0.1470
<b>Peg Profilo</b>	0.0287	0.0439	0.0517	0.0341
<b>Petkim</b>	0.4927	0.6370	0.4957	0.3702
<b>Pinar Et</b>	0.0083	0.0079	0.0073	0.0063
<b>Polylen</b>	0.0180	0.0191	0.0172	0.0137
<b>Sarkuysan</b>	0.0971	0.1091	0.0790	0.0628
<b>Sifas</b>	0.0225	0.0243	0.0190	0.0123
<b>Tofas Türk</b>	0.0785	0.0779	0.0550	0.0370
<b>Trakya Cam Sanayi</b>	0.0293	0.0307	0.0312	0.0252
<b>Tüpras</b>	0.0452	0.0367	0.0339	0.0270
<b>Türk Demir Döküm</b>	0.0243	0.0305	0.0293	0.0184
<b>Türk Tuborg</b>	0.0250	0.0266	0.0201	0.0199
<b>Vestel Elektronik</b>	0.0227	0.0201	0.0197	0.0162
<b>Yasas Yasar Boya</b>	0.0931	0.1364	0.0832	0.0414
<b>Yünsa</b>	0.0599	0.0483	0.0419	0.0350



**TABLE : ADJUSTED PRICES (USD) OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	3-96	6-96	9-96	12-96
<i>Adana Çimento</i>	0.0162	0.0156	0.0126	0.0133
<i>Ak-AI Tekstil</i>	0.0317	0.0254	0.0247	0.0271
<i>Aksa Akrilik</i>	0.0599	0.0740	0.0685	0.0453
<i>Arçelik</i>	0.0290	0.0319	0.0344	0.0347
<i>Aselsan</i>	0.0256	0.0209	0.0196	0.0268
<i>Aslan Çimento</i>	0.1693	0.1320	0.1282	0.1928
<i>Aygaz</i>	0.1226	0.0991	0.1238	0.1424
<i>Bagfas</i>	0.0369	0.0308	0.0208	0.0256
<i>Bolu Çimento</i>	0.0080	0.0077	0.0075	0.0076
<i>Brisa</i>	0.0461	0.0526	0.0621	0.0581
<i>Çelik Halat</i>	0.0285	0.0240	0.0203	0.0269
<i>Çimsa</i>	0.0412	0.0378	0.0254	0.0303
<i>Deva Holding</i>	0.0214	0.0154	0.0113	0.0130
<i>Döktas Dökümcülük</i>	0.0171	0.0158	0.0111	0.0214
<i>Eczacıbaşı İlaç</i>	0.0510	0.0418	0.0416	0.0530
<i>Ege Biracılık</i>	0.1341	0.1679	0.1116	0.1139
<i>Ege Endüstri</i>	0.0687	0.0517	0.0417	0.0601
<i>Erciyas Biracılık</i>	0.1395	0.1343	0.1221	0.1037
<i>Eregli Demir Çelik</i>	0.1076	0.1067	0.1045	0.1178
<i>Fenis Alüminyum</i>	0.0588	0.0388	0.0315	0.0281
<i>Goodyear Lastikleri</i>	0.0398	0.0452	0.0461	0.0497
<i>Gübre Fab</i>	0.1001	0.0806	0.0696	0.0971
<i>Güney Biracılık</i>	0.0917	0.0982	0.0725	0.0486
<i>Hektas Ticaret</i>	0.0200	0.0150	0.0147	0.0131
<i>Izmir Demir Çelik</i>	0.0053	0.0044	0.0033	0.0035
<i>Izocam</i>	0.0206	0.0194	0.0144	0.0158
<i>Kelebek Mobilya</i>	0.0180	0.0187	0.0362	0.0285
<i>Kepez Elektrik</i>	0.5199	0.8956	0.6901	0.9290
<i>Kordsa</i>	0.0327	0.0298	0.0286	0.0377
<i>Mardin Çimento</i>	0.0193	0.0143	0.0105	0.0091
<i>Maret</i>	0.0766	0.0526	0.0433	0.0534
<i>Marshall Boya</i>	0.0793	0.0802	0.0645	0.0747
<i>Olmuksa Mukavva</i>	0.0508	0.0319	0.0222	0.0331
<i>Otosan</i>	0.3159	0.3032	0.2600	0.3751
<i>Peg Profilo</i>	0.0575	0.0572	0.0689	0.0642
<i>Petkim</i>	0.5722	0.3982	0.3590	0.3358
<i>Pinar Et</i>	0.0083	0.0066	0.0053	0.0056
<i>Polylen</i>	0.0132	0.0099	0.0072	0.0106
<i>Sarkuysan</i>	0.0782	0.0685	0.0542	0.0591
<i>Sifas</i>	0.0131	0.0098	0.0067	0.0105
<i>Tofas Türk</i>	0.0444	0.0310	0.0222	0.0258
<i>Trakya Cam Sanayi</i>	0.0393	0.0375	0.0387	0.0355
<i>Tüpras</i>	0.0393	0.0292	0.0259	0.0396
<i>Türk Demir Döküm</i>	0.0232	0.0172	0.0133	0.0255
<i>Türk Tuborg</i>	0.0236	0.0214	0.0213	0.0199
<i>Vestel Elektronik</i>	0.0348	0.0316	0.0309	0.0430
<i>Yasas Yasar Boya</i>	0.0512	0.0709	0.0622	0.0607
<i>Yünsa</i>	0.0339	0.0337	0.0292	0.0377

**TABLE : ADJUSTED PRICES (USD) OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	3-97	6-97	9-97	12-97	3-98
<i>Adana Çimento</i>	0.0230	0.0251	0.0343	0.0418	0.0310
<i>Ak-AI Tekstil</i>	0.0458	0.0334	0.0327	0.0273	0.0166
<i>Aksa Akrilik</i>	0.0512	0.0437	0.0543	0.0452	0.0273
<i>Arçelik</i>	0.0446	0.0643	0.0633	0.0512	0.0439
<i>Aselsan</i>	0.0352	0.0519	0.0491	0.0431	0.0240
<i>Aslan Çimento</i>	0.1901	0.3105	0.4281	0.3953	0.2988
<i>Aygaz</i>	0.2188	0.1991	0.1755	0.1866	0.1380
<i>Bagfas</i>	0.0264	0.0285	0.0384	0.0841	0.1184
<i>Bolu Çimento</i>	0.0094	0.0098	0.0113	0.0094	0.0085
<i>Brisa</i>	0.0646	0.0474	0.0606	0.0702	0.0517
<i>Çelik Halat</i>	0.0347	0.0287	0.0319	0.0368	0.0237
<i>Çimsa</i>	0.0494	0.0457	0.0657	0.0547	0.0535
<i>Deva Holding</i>	0.0126	0.0107	0.0111	0.0103	0.0062
<i>Döktas Dökümcülük</i>	0.0302	0.0253	0.0363	0.0398	0.0333
<i>Eczacıbaşı İlaç</i>	0.0567	0.0508	0.0606	0.0483	0.0397
<i>Ege Biracılık</i>	0.1259	0.1202	0.1140	0.0976	0.1448
<i>Ege Endüstri</i>	0.0749	0.0614	0.0832	0.0968	0.1056
<i>Erciyas Biracılık</i>	0.0840	0.1281	0.1580	0.1385	0.1648
<i>Eregli Demir Çelik</i>	0.1323	0.1659	0.1732	0.1757	0.1242
<i>Fenis Alüminyum</i>	0.0300	0.0290	0.0306	0.0238	0.0173
<i>Goodyear Lastikleri</i>	0.0663	0.0439	0.0508	0.0525	0.0575
<i>Gübre Fab</i>	0.1102	0.0753	0.0548	0.0663	0.0746
<i>Güney Biracılık</i>	0.0538	0.0438	0.0585	0.0651	0.0920
<i>Hektas Ticaret</i>	0.0153	0.0107	0.0106	0.0090	0.0080
<i>İzmir Demir Çelik</i>	0.0069	0.0050	0.0059	0.0055	0.0027
<i>Izocam</i>	0.0213	0.0159	0.0219	0.0183	0.0143
<i>Kelebek Mobilya</i>	0.0275	0.0225	0.0283	0.0218	0.0189
<i>Kepez Elektrik</i>	1.2862	2.0526	1.9142	2.5896	2.5245
<i>Kordsa</i>	0.0411	0.0410	0.0398	0.0437	0.0571
<i>Mardin Çimento</i>	0.0124	0.0116	0.0150	0.0138	0.0142
<i>Maret</i>	0.0588	0.0407	0.0475	0.0443	0.0325
<i>Marshall Boya</i>	0.1317	0.1237	0.1325	0.1372	0.1299
<i>Olmuksa Mukavva</i>	0.0365	0.0350	0.0428	0.0457	0.0404
<i>Otosan</i>	0.5360	0.4983	0.7218	0.8520	0.5955
<i>Peg Profilo</i>	0.0619	0.0566	0.0675	0.0559	0.0408
<i>Petkim</i>	0.3854	0.3127	0.4244	0.5751	0.5461
<i>Pınar Et</i>	0.0089	0.0064	0.0081	0.0097	0.0079
<i>Polylen</i>	0.0104	0.0107	0.0173	0.0122	0.0081
<i>Sarkuysan</i>	0.0938	0.1056	0.1078	0.0900	0.0646
<i>Sifas</i>	0.0093	0.0088	0.0180	0.0155	0.0118
<i>Tofas Türk</i>	0.0458	0.0488	0.0635	0.0635	0.0517
<i>Trakya Cam Sanayi</i>	0.0322	0.0331	0.0467	0.0574	0.0456
<i>Tüpras</i>	0.0822	0.0936	0.1414	0.1184	0.1200
<i>Türk Demir Döküm</i>	0.0311	0.0246	0.0331	0.0274	0.0174
<i>Türk Tuborg</i>	0.0216	0.0153	0.0165	0.0244	0.0207
<i>Vestel Elektronik</i>	0.0667	0.0569	0.0909	0.0866	0.0807
<i>Yasas Yasar Boya</i>	0.1284	0.1526	0.1772	0.2060	0.1528
<i>Yünsa</i>	0.0348	0.0262	0.0435	0.0274	0.0284



**APPENDIX 3**

**TABLE : CALCULATED DOL VALUES OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	12-91	3-92	6-92	9-92	12-92
<i>Adana Çimento</i>	2.00	2.06	1.83	1.87	2.08
<i>Ak-AI Tekstil</i>	4.20	1.72	1.42	1.33	2.10
<i>Aksa Akrilik</i>	1.22	1.14	1.15	1.10	1.14
<i>Arçelik</i>	1.66	1.83	1.68	1.63	1.61
<i>Aselsan</i>	2.70	1.49	1.49	1.54	1.79
<i>Aslan Çimento</i>	1.98	9.91	2.28	2.21	2.11
<i>Aygaz</i>	1.95	2.86	2.11	2.20	1.83
<i>Bagfas</i>	1.38	1.77	2.77	2.18	1.64
<i>Bolu Çimento</i>	1.64	2.89	1.79	1.56	1.57
<i>Brisa</i>	1.97	1.97	1.96	1.78	1.70
<i>Çelik Halat</i>	2.16	1.62	1.66	1.57	1.67
<i>Çimsa</i>	1.43	1.96	1.39	1.33	1.31
<i>Deva Holding</i>	2.22	2.00	2.55	1.97	1.86
<i>Döktas Dökümcülük</i>	2.07	2.74	3.49	2.53	2.17
<i>Eczacibasi İlaç</i>	2.19	2.01	2.06	2.16	2.09
<i>Ege Biracılık</i>	1.78	2.90	1.61	1.52	1.70
<i>Ege Endüstri</i>	1.70	1.69	1.96	2.23	1.89
<i>Erciyas Biracılık</i>	1.70	1.69	1.96	2.23	1.89
<i>Eregli Demir Çelik</i>	1.40	4.35	1.51	1.38	1.42
<i>Fenis Alüminyum</i>	1.62	1.35	1.29	1.32	1.44
<i>Goodyear Lastikleri</i>	1.61	1.78	1.87	1.70	1.72
<i>Gübre Fab</i>	1.39	3.52	4.69	2.18	1.50
<i>Güney Biracılık</i>	1.93	12.29	4.33	2.38	2.03
<i>Hektas Ticaret</i>	2.27	5.02	2.53	2.58	3.04
<i>İzmir Demir Çelik</i>	1.59	1.50	2.03	2.05	2.55
<i>İzocam</i>	1.61	1.91	1.96	1.75	1.61
<i>Kelebek Mobilya</i>	2.93	3.26	3.41	3.37	5.97
<i>Kepez Elektrik</i>	1.66	1.27	1.24	1.27	2.77
<i>Kordsa</i>	1.85	2.50	2.36	2.60	2.67
<i>Mardin Çimento</i>	1.70	2.17	1.44	1.37	1.33
<i>Maret</i>	2.86	5.98	3.09	15.46	3.93
<i>Marshall Boya</i>	2.81	106.09	2.91	2.07	2.44
<i>Olmuksa Mukavva</i>	2.82	4.79	4.77	5.20	5.45
<i>Otosan</i>	1.86	1.52	1.56	1.62	1.47
<i>Peg Profilo</i>	1.59	1.68	1.68	1.83	1.85
<i>Petkim</i>	206.65	2.72	16.25	11.45	29.55
<i>Pinar Et</i>	1.81	1.50	1.82	1.64	1.58
<i>Polylen</i>	1.81	1.50	1.82	1.64	1.58
<i>Sarkuysan</i>	1.57	1.36	1.52	1.38	1.44
<i>Sıfas</i>	1.65	1.64	1.18	1.82	2.17
<i>Tofas Türk</i>	2.10	6.62	1.83	1.54	1.31
<i>Trakya Cam Sanayi</i>	1.95	2.46	2.26	2.17	1.78
<i>Tüpras</i>	2.64	4.89	(1.25)	(2.20)	8.53
<i>Türk Demir Döküm</i>	1.75	1.88	1.81	1.68	1.62
<i>Türk Tuborg</i>	1.58	2.45	1.40	1.43	1.53
<i>Vestel Elektronik</i>	1.32	1.94	1.56	1.69	1.66
<i>Yasas Yasar Boya</i>	2.36	6.27	1.94	1.71	1.82
<i>Yünsa</i>	1.37	1.39	1.23	1.30	1.26

**TABLE : CALCULATED DOL VALUES OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	3-93	6-93	9-93	12-93
<b>Adana Çimento</b>	8.90	4.23	2.06	1.97
<b>Ak-AI Tekstil</b>	1.71	1.51	1.46	1.46
<b>Aksa Akrilik</b>	1.12	1.15	1.14	1.17
<b>Arçelik</b>	1.66	1.98	1.88	1.96
<b>Aselsan</b>	2.10	1.70	1.78	1.76
<b>Aslan Çimento</b>	19.48	2.79	1.87	2.08
<b>Aygaz</b>	2.45	2.36	2.07	2.01
<b>Bagfas</b>	1.30	1.49	1.40	1.88
<b>Bolu Çimento</b>	6.86	2.94	1.66	1.69
<b>Brisa</b>	2.07	1.88	1.86	1.78
<b>Çelik Halat</b>	1.81	1.74	1.78	1.78
<b>Çimsa</b>	1.52	1.26	1.16	1.17
<b>Deva Holding</b>	1.84	1.57	1.74	1.81
<b>Döktas Dökümcülük</b>	2.03	1.90	1.75	1.87
<b>Eczacıbaşı İlaç</b>	1.72	1.57	1.74	1.83
<b>Ege Biracılık</b>	10.97	1.86	1.64	1.91
<b>Ege Endüstri</b>	1.85	1.60	1.56	1.70
<b>Erciyas Biracılık</b>	1.85	1.60	1.56	1.70
<b>Eregli Demir Çelik</b>	2.53	1.43	1.37	1.44
<b>Fenis Alüminyum</b>	2.36	2.53	1.89	1.62
<b>Goodyear Lastikleri</b>	1.71	1.60	1.51	1.47
<b>Gübre Fab</b>	1.49	1.56	1.53	1.61
<b>Güney Biracılık</b>	215.75	2.28	1.83	1.91
<b>Hektas Ticaret</b>	2.99	2.59	3.81	3.64
<b>Izmir Demir Çelik</b>	1.45	1.63	1.65	1.64
<b>Izocam</b>	1.70	1.57	1.52	1.60
<b>Kelebek Mobilya</b>	2.82	4.24	3.02	3.19
<b>Kepez Elektrik</b>	2.03	1.39	1.34	1.46
<b>Kordsa</b>	4.82	3.16	2.20	1.85
<b>Mardin Çimento</b>	2.34	1.59	1.36	1.35
<b>Maret</b>	12.52	8.80	3.82	3.10
<b>Marshall Boya</b>	4.58	2.10	2.18	2.45
<b>Olmaksa Mukavva</b>	3.69	7.87	2.87	2.73
<b>Otosan</b>	1.23	1.30	1.29	1.35
<b>Peg Profilo</b>	1.80	1.84	1.71	1.65
<b>Petkim</b>	0.92	1.52	2.58	44.34
<b>Pinar Et</b>	1.69	1.82	1.64	1.68
<b>Polylen</b>	1.69	1.82	1.64	1.68
<b>Sarkuysan</b>	1.51	1.38	1.32	1.33
<b>Sifas</b>	1.09	2.04	1.63	1.32
<b>Tofas Türk</b>	1.17	1.18	1.17	1.16
<b>Trakya Cam Sanayi</b>	2.01	1.96	1.87	1.77
<b>Tüpras</b>	(0.89)	0.17	(1.61)	(0.70)
<b>Türk Demir Döküm</b>	1.98	1.91	1.65	1.60
<b>Türk Tuborg</b>	1.95	1.59	1.50	1.78
<b>Vestel Elektronik</b>	1.78	1.75	2.01	2.45
<b>Yasas Yasar Boya</b>	2.71	1.98	1.68	1.92
<b>Yünsa</b>	1.36	1.29	1.27	1.29

**TABLE : CALCULATED DOL VALUES OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	3-94	6-94	9-94	12-94
<b>Adana Çimento</b>	1.59	1.44	1.47	1.69
<b>Ak-Al Tekstil</b>	2.15	1.57	1.59	1.45
<b>Aksa Akrilik</b>	1.19	1.20	1.14	1.11
<b>Arçelik</b>	1.83	1.71	1.45	1.66
<b>Aselsan</b>	1.50	1.58	1.50	1.54
<b>Aslan Çimento</b>	2.76	1.71	1.81	1.94
<b>Aygaz</b>	2.98	2.55	2.39	2.14
<b>Bagfas</b>	18.01	1.48	1.30	1.37
<b>Bolu Çimento</b>	1.32	1.21	1.24	1.30
<b>Brisa</b>	1.95	1.68	1.66	1.56
<b>Çelik Halat</b>	1.45	1.71	1.85	1.87
<b>Çimsa</b>	1.18	1.12	1.14	1.16
<b>Deva Holding</b>	2.09	2.55	1.57	1.66
<b>Döktas Dökümcülük</b>	3.59	2.32	2.68	1.89
<b>Eczacıbaşı İlaç</b>	1.66	1.54	1.48	1.51
<b>Ege Biracılık</b>	6.00	1.72	1.47	1.60
<b>Ege Endüstri</b>	515.24	2.93	2.08	1.77
<b>Erciyas Biracılık</b>	1.58	1.35	1.31	1.33
<b>Eregli Demir Çelik</b>	1.66	1.34	1.24	1.15
<b>Fenis Alüminyum</b>	1.49	1.49	1.66	1.58
<b>Goodyear Lastikleri</b>	1.68	1.55	1.35	1.42
<b>Gübre Fab</b>	1.62	1.42	1.27	1.27
<b>Güney Biracılık</b>	19.33	1.96	1.65	1.83
<b>Hektas Ticaret</b>	(0.72)	3.13	2.30	1.85
<b>İzmir Demir Çelik</b>	1.13	1.55	1.21	1.23
<b>İzocam</b>	2.01	1.77	1.64	1.72
<b>Kelebek Mobilya</b>	2.91	3.34	2.81	2.70
<b>Kepez Elektrik</b>	1.25	1.17	1.13	1.17
<b>Kordsa</b>	1.46	1.32	1.27	1.29
<b>Mardin Çimento</b>	1.41	1.24	1.27	1.34
<b>Maret</b>	3.73	2.58	2.34	2.23
<b>Marshall Boya</b>	4.00	1.65	1.51	1.76
<b>Olmaksa Mukavva</b>	2.12	1.74	1.50	1.44
<b>Otosan</b>	3.16	12.08	3.51	2.05
<b>Peg Profilo</b>	1.43	1.41	1.48	1.50
<b>Petkim</b>	1.57	1.30	1.21	1.15
<b>Pinar Et</b>	1.82	1.85	1.52	1.63
<b>Polylen</b>	1.26	1.21	1.17	1.16
<b>Sarkuysan</b>	1.20	1.15	1.17	1.15
<b>Sifas</b>	1.27	1.24	1.21	1.29
<b>Tofas Türk</b>	1.49	1.97	1.37	1.34
<b>Trakya Cam Sanayi</b>	1.57	1.50	1.47	1.46
<b>Tüpras</b>	0.67	0.57	0.47	0.36
<b>Türk Demir Döküm</b>	3.04	1.90	2.19	1.51
<b>Türk Tuborg</b>	1.84	1.55	1.36	1.54
<b>Vestel Elektronik</b>	1.57	1.38	1.53	1.61
<b>Yasas Yasar Boya</b>	3.31	2.28	1.61	1.92
<b>Yünsa</b>	1.30	1.08	1.07	1.07

<b>Aygaz</b>	1.78	2.13	2.27	2.14
<b>Bagfas</b>	1.33	1.50	1.66	1.78
<b>Bolu Çimento</b>	1.89	1.47	1.35	1.39
<b>Brisa</b>	1.42	1.38	1.33	1.34
<b>Çelik Halat</b>	2.15	2.10	1.80	2.04
<b>Çimsa</b>	1.70	1.58	1.34	1.33
<b>Deva Holding</b>	1.44	1.41	1.47	1.50
<b>Döktas Dökümcülük</b>	1.91	1.83	1.81	2.03
<b>Eczacibasi İlaç</b>	1.88	1.95	2.04	2.19
<b>Ege Biracilik</b>	3.03	1.71	1.53	1.80
<b>Ege Endüstri</b>	1.67	1.57	1.64	1.67
<b>Erciyas Biracilik</b>	1.80	1.37	1.28	1.35
<b>Eregli Demir Çelik</b>	1.08	1.08	1.10	1.25
<b>Fenis Alüminyum</b>	1.29	1.61	1.59	1.64
<b>Goodyear Lastikleri</b>	1.68	1.61	1.39	1.47
<b>Gübre Fab</b>	1.98	13.72	4.27	3.23
<b>Güney Biracilik</b>	3.87	1.90	1.66	2.02
<b>Hektas Ticaret</b>	1.22	1.23	1.24	1.23
<b>İzmir Demir Çelik</b>	1.57	1.73	2.30	2.40
<b>İzocam</b>	1.85	1.76	1.69	1.94
<b>Kelebek Mobilya</b>	3.18	3.66	2.96	3.66
<b>Kepez Elektrik</b>	1.11	1.08	1.07	1.09
<b>Kordsa</b>	1.37	1.55	1.51	1.52
<b>Mardin Çimento</b>	1.67	1.74	1.47	1.66
<b>Maret</b>	2.61	2.21	1.75	1.76
<b>Marshall Boya</b>	2.33	2.12	1.98	2.64
<b>Olmuksa Mukavva</b>	1.43	1.71	1.66	1.70
<b>Otosan</b>	1.68	1.40	1.31	1.29
<b>Peg Profilo</b>	1.49	1.51	1.50	1.54
<b>Petkim</b>	1.09	1.09	1.09	1.13
<b>Pinar Et</b>	2.55	2.05	1.84	2.04
<b>Polylen</b>	1.45	1.32	1.31	1.23
<b>Sarkuysan</b>	1.13	1.14	1.16	1.24
<b>Sifas</b>	1.41	1.32	1.43	1.39
<b>Tofas Türk</b>	7.65	3.33	1.92	1.86
<b>Trakya Cam Sanayi</b>	1.43	1.42	1.37	1.37
<b>Tüpras</b>	0.27	0.41	0.22	0.50
<b>Türk Demir Döküm</b>	1.83	1.80	1.68	1.73
<b>Türk Tuborg</b>	2.33	1.63	1.80	2.31
<b>Vestel Elektronik</b>	1.98	2.03	1.72	1.47
<b>Yasas Yasar Boya</b>	2.07	2.01	1.98	2.57
<b>Yünsa</b>	1.41	1.06	1.06	1.07

**TABLE : CALCULATED DOL VALUES OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	3-96	6-96	9-96	12-96
<b>Adana Çimento</b>	7.10	3.13	3.01	3.30
<b>Ak-AI Tekstil</b>	1.64	1.46	1.63	1.74
<b>Aksa Akrilik</b>	1.13	1.13	1.15	1.15
<b>Arçelik</b>	1.80	1.98	2.07	2.20
<b>Aselsan</b>	1.27	1.46	1.43	1.46
<b>Aslan Çimento</b>	0.24	799.99	10.06	18.31
<b>Aygaz</b>	1.83	1.90	2.32	2.65
<b>Bagfas</b>	1.42	1.57	1.88	1.87
<b>Bolu Çimento</b>	1.56	1.44	1.37	1.34
<b>Brisa</b>	1.23	1.23	1.28	1.30
<b>Çelik Halat</b>	1.64	1.55	1.65	1.56
<b>Çimsa</b>	1.90	1.40	1.33	1.30
<b>Deva Holding</b>	2.22	2.31	2.25	2.23
<b>Döktas Dökümcülük</b>	2.23	5.07	4.38	5.87
<b>Eczacıbaşı İlaç</b>	2.09	1.91	2.07	2.16
<b>Ege Biracılık</b>	4.80	2.63	1.87	2.50
<b>Ege Endüstri</b>	1.78	1.84	2.06	1.72
<b>Erciyas Biracılık</b>	1.83	1.54	1.41	1.41
<b>Eregli Demir Çelik</b>	1.16	1.14	1.22	1.20
<b>Fenis Alüminyum</b>	1.56	2.01	2.02	2.49
<b>Goodyear Lastikleri</b>	1.37	1.37	1.41	1.45
<b>Gübre Fab</b>	1.58	1.70	2.17	1.90
<b>Güney Biracılık</b>	6.66	2.73	2.00	2.41
<b>Hektas Ticaret</b>	1.25	1.22	1.28	1.36
<b>Izmir Demir Çelik</b>	1.58	1.48	1.51	2.14
<b>Izocam</b>	1.97	1.78	1.92	1.80
<b>Kelebek Mobilya</b>	3.22	3.69	3.47	3.00
<b>Kepez Elektrik</b>	1.11	1.10	1.12	1.13
<b>Kordsa</b>	1.48	1.52	1.46	1.43
<b>Mardin Çimento</b>	1.54	4.22	2.72	2.08
<b>Maret</b>	1.56	2.10	1.94	2.33
<b>Marshall Boya</b>	2.50	2.17	2.09	2.14
<b>Olmuksa Mukavva</b>	3.00	3.96	4.29	3.07
<b>Otosan</b>	1.28	1.18	1.20	1.25
<b>Peg Profilo</b>	1.34	1.36	1.39	1.40
<b>Petkim</b>	1.19	1.23	1.26	1.29
<b>Pinar Et</b>	2.02	1.91	1.76	1.74
<b>Polylen</b>	1.15	1.30	1.35	1.31
<b>Sarkuysan</b>	1.19	1.20	1.24	1.29
<b>Sifas</b>	1.17	1.26	1.29	1.33
<b>Tofas Türk</b>	2.17	1.71	2.27	2.54
<b>Trakya Cam Sanayi</b>	1.62	1.50	1.53	1.66
<b>Tüpras</b>	0.73	0.76	0.71	0.79
<b>Türk Demir Döküm</b>	1.95	1.85	1.75	1.81
<b>Türk Tuborg</b>	13.46	3.69	2.57	3.20
<b>Vestel Elektronik</b>	1.30	1.27	1.31	1.34
<b>Yasas Yasar Boya</b>	2.28	1.74	1.78	1.60
<b>Yünsa</b>	1.39	1.34	1.32	1.40



**TABLE : CALCULATED DOL VALUES OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	3-97	6-97	9-97	12-97	3-98
<b>Adana Çimento</b>	12.28	3.38	2.67	2.61	4.02
<b>Ak-AI Tekstil</b>	1.69	1.60	1.92	1.88	15.34
<b>Aksa Akrilik</b>	1.21	1.14	1.13	1.14	1.24
<b>Arçelik</b>	1.73	1.78	1.90	2.07	2.41
<b>Aselsan</b>	1.46	1.44	1.43	1.55	1.35
<b>Aslan Çimento</b>	29.42	2.65	2.34	2.16	21.71
<b>Aygaz</b>	2.35	2.26	2.62	2.13	2.15
<b>Bagfas</b>	1.66	1.71	1.51	1.53	1.94
<b>Bolu Çimento</b>	1.57	1.33	1.32	1.32	1.40
<b>Brisa</b>	1.39	1.44	1.40	1.38	1.66
<b>Çelik Halat</b>	2.12	1.71	1.87	1.68	2.11
<b>Çimsa</b>	1.38	1.27	1.23	1.24	1.83
<b>Deva Holding</b>	2.15	2.29	1.65	2.49	1.88
<b>Döktas Dökümcülük</b>	2.60	3.47	3.69	3.39	2.67
<b>Eczacıbaşı İlaç</b>	1.73	1.86	1.91	2.25	4.76
<b>Ege Biracılık</b>	5.96	1.44	1.26	1.55	2.23
<b>Ege Endüstri</b>	1.71	1.47	1.51	1.48	2.02
<b>Erciyas Biracılık</b>	1.76	1.44	1.34	1.40	1.61
<b>Eregli Demir Çelik</b>	1.23	1.19	1.15	1.15	1.22
<b>Fenis Alüminyum</b>	1.67	1.58	1.61	1.89	1.71
<b>Goodyear Lastikleri</b>	1.57	1.53	1.48	1.53	1.83
<b>Gübre Fab</b>	2.27	2.77	2.00	1.84	2.79
<b>Güney Biracılık</b>	22.72	2.08	1.53	1.73	2.33
<b>Hektas Ticaret</b>	1.43	1.37	1.57	1.68	1.93
<b>İzmir Demir Çelik</b>	2.37	2.08	2.30	2.36	7.72
<b>İzocam</b>	2.17	1.91	1.96	2.08	2.75
<b>Kelebek Mobilya</b>	4.57	3.75	2.92	2.98	2.67
<b>Kepez Elektrik</b>	1.19	1.17	1.23	1.29	1.26
<b>Kordsa</b>	1.46	1.48	1.47	1.46	1.75
<b>Mardin Çimento</b>	4.14	1.82	1.57	1.48	2.14
<b>Maret</b>	2.86	2.20	2.94	3.00	1.96
<b>Marshall Boya</b>	1.79	2.00	2.09	2.15	2.74
<b>Olmuksa Mukavva</b>	4.23	3.52	2.56	2.29	5.27
<b>Otosan</b>	1.57	1.37	1.38	1.51	2.07
<b>Peg Profilo</b>	1.40	1.35	1.37	1.45	1.42
<b>Petkim</b>	2.22	1.49	1.51	1.39	4.65
<b>Pinar Et</b>	2.32	1.80	1.65	1.90	1.82
<b>Polylen</b>	1.35	1.27	1.21	1.17	1.15
<b>Sarkuysan</b>	1.22	1.26	1.29	1.28	1.27
<b>Sifas</b>	1.33	1.27	1.26	1.28	1.40
<b>Tofas Türk</b>	9.03	7.49	9.33	10.16	4.70
<b>Trakya Cam Sanayi</b>	2.07	1.98	1.77	1.84	2.34
<b>Tüpras</b>	0.88	0.84	0.74	0.71	(3.55)
<b>Türk Demir Döküm</b>	2.88	2.90	2.27	2.19	4.25
<b>Türk Tuborg</b>	0.60	3.90	19.59	4.94	1.58
<b>Vestel Elektronik</b>	1.26	1.26	1.24	1.24	1.19
<b>Yasas Yasar Boya</b>	1.56	1.68	1.64	1.65	1.67
<b>Yünsa</b>	1.61	1.38	1.31	1.31	1.37



**APPENDIX 4**

**TABLE : CALCULATED DFL VALUES OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	12-91	3-92	6-92	9-92	12-92
<i>Adana Çimento</i>	1.01	1.02	1.01	1.01	1.02
<i>Ak-AI Tekstil</i>	1.14	1.04	1.03	1.03	1.04
<i>Aksa Akrilik</i>	1.00	1.00	1.00	1.00	1.00
<i>Arçelik</i>	1.13	1.24	1.26	1.29	1.28
<i>Aselsan</i>	1.43	1.34	1.99	2.18	2.14
<i>Aslan Çimento</i>	1.40	2.35	3.38	2.05	1.82
<i>Aygaz</i>	1.06	1.04	1.04	1.03	1.02
<i>Bagfas</i>	1.47	1.20	1.74	1.55	1.36
<i>Bolu Çimento</i>	1.10	1.40	1.08	1.03	1.02
<i>Brisa</i>	8.83	7.23	8.42	4.50	2.90
<i>Çelik Halat</i>	1.46	1.29	1.40	1.36	1.37
<i>Çimsa</i>	1.79	3.66	1.46	1.28	1.27
<i>Deva Holding</i>	3.53	11.00	6.54	19.15	12.70
<i>Döktas Dökümcülük</i>	1.08	1.10	1.08	1.08	1.05
<i>Eczacıbaşı İlaç</i>	1.48	6.93	6.58	4.17	3.16
<i>Ege Biracılık</i>	1.01	1.00	1.00	1.00	1.00
<i>Ege Endüstri</i>	2.93	1.81	1.81	1.93	1.68
<i>Erciyas Biracılık</i>	1.00	1.00	1.00	1.00	1.00
<i>Eregli Demir Çelik</i>	1.16	1.17	1.23	1.25	1.22
<i>Fenis Alüminyum</i>	4.72	5.49	3.32	3.65	5.38
<i>Goodyear Lastikleri</i>	1.32	1.13	1.21	1.14	1.11
<i>Gübre Fab</i>	20.90	6.74	2.55	3.48	8.23
<i>Güney Biracılık</i>	1.02	1.02	1.23	1.09	1.04
<i>Hektas Ticaret</i>	3.85	2.01	2.01	1.91	1.58
<i>İzmir Demir Çelik</i>	7.55	5.76	6.76	6.93	6.64
<i>Izocam</i>	1.04	1.04	1.05	1.04	1.04
<i>Kelebek Mobilya</i>	1.65	1.49	1.30	1.41	1.71
<i>Kepez Elektrik</i>	2.38	1.18	1.22	1.27	1.37
<i>Kordsa</i>	1.34	1.20	1.35	1.66	2.03
<i>Mardin Çimento</i>	1.00	1.00	1.00	1.00	1.00
<i>Maret</i>	1.10	1.04	1.02	1.07	1.31
<i>Marshall Boya</i>	1.22	1.97	1.20	1.17	1.16
<i>Olmuksa Mukavva</i>	1.87	1.36	1.33	1.39	1.59
<i>Otosan</i>	1.00	1.00	1.00	1.00	1.00
<i>Peg Profilo</i>	4.44	4.33	5.37	5.75	5.03
<i>Petkim</i>	1.52	1.75	1.89	1.88	1.80
<i>Pinar Et</i>	2.48	1.50	2.59	2.69	3.22
<i>Polylen</i>	2.70	6.80	4.46	4.23	8.53
<i>Sarkuysan</i>	1.39	1.72	1.48	1.37	1.44
<i>Sıfas</i>	6.41	3.08	3.32	3.50	2.64
<i>Tofas Türk</i>	1.15	1.88	1.36	1.13	1.04
<i>Trakya Cam Sanayi</i>	5.90	14.09	5.92	3.42	2.02
<i>Tüpras</i>	1.49	1.76	121.94	2.17	1.36
<i>Türk Demir Döküm</i>	1.20	1.23	1.26	1.19	1.17
<i>Türk Tuborg</i>	2.43	4.23	2.22	1.85	1.68
<i>Vestel Elektronik</i>	4.05	5.93	4.34	3.42	9.28
<i>Yasas Yasar Boya</i>	3.03	2.11	5.23	2.16	2.43
<i>Yünsa</i>	9.09	5.66	4.56	2.86	2.44

**TABLE : CALCULATED DFL VALUES OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	3-93	6-93	9-93	12-93
<i>Adana Çimento</i>	1.03	1.01	1.01	1.01
<i>Ak-AI Tekstil</i>	1.03	1.04	1.06	1.08
<i>Aksa Akrilik</i>	1.00	1.00	1.00	1.00
<i>Arçelik</i>	1.25	1.19	1.17	1.17
<i>Aselsan</i>	1.67	1.85	1.70	1.64
<i>Aslan Çimento</i>	2.25	26.23	1.85	1.89
<i>Aygaz</i>	1.02	1.02	1.03	1.03
<i>Bagfas</i>	1.04	1.03	1.04	1.04
<i>Bolu Çimento</i>	2.32	2.15	1.14	1.13
<i>Brisa</i>	3.89	2.81	2.77	2.22
<i>Çelik Halat</i>	1.47	1.69	1.70	1.83
<i>Çimsa</i>	2.94	1.35	1.20	1.20
<i>Deva Holding</i>	17.08	3.45	4.14	4.39
<i>Döktas Dökümcülük</i>	1.07	1.05	1.04	1.03
<i>Eczacıbaşı İlaç</i>	4.55	6.71	7.85	6.06
<i>Ege Biracılık</i>	1.00	1.00	1.00	1.00
<i>Ege Endüstri</i>	1.41	1.39	1.47	1.67
<i>Erciyas Biracılık</i>	1.02	1.01	1.00	1.00
<i>Eregli Demir Çelik</i>	2.41	2.74	2.55	2.07
<i>Fenis Alüminyum</i>	1.37	1.24	1.30	1.92
<i>Goodyear Lastikleri</i>	1.06	1.06	1.05	1.04
<i>Gübre Fab</i>	2.10	1.99	1.46	2.08
<i>Güney Biracılık</i>	1.04	1.03	1.01	1.01
<i>Hektas Ticaret</i>	1.58	1.22	1.19	1.28
<i>Izmir Demir Çelik</i>	3.29	2.76	2.32	3.06
<i>Izocam</i>	1.09	1.07	1.05	1.04
<i>Kelebek Mobilya</i>	1.30	1.33	1.53	1.33
<i>Kepez Elektrik</i>	1.19	1.13	1.16	1.22
<i>Kordsa</i>	4.46	8.53	7.02	2.96
<i>Mardin Çimento</i>	1.00	1.00	1.00	1.01
<i>Maret</i>	1.01	1.01	1.02	1.01
<i>Marshall Boya</i>	1.14	1.11	1.10	1.15
<i>Olmuxsa Mukavva</i>	1.74	2.63	5.92	14.29
<i>Otosan</i>	1.00	1.00	1.00	1.00
<i>Peg Profilo</i>	2.42	3.44	4.17	4.13
<i>Petkim</i>	1.38	1.53	1.59	1.77
<i>Pinar Et</i>	1.48	1.51	1.91	1.51
<i>Polylen</i>	10.08	1.66	2.28	53.49
<i>Sarkuysan</i>	1.33	1.34	1.26	1.25
<i>Sifas</i>	3.82	4.16	19.58	4.14
<i>Tofas Türk</i>	1.00	1.00	1.00	1.00
<i>Trakya Cam Sanayi</i>	1.58	1.59	1.42	1.34
<i>Tüpras</i>	2.19	2.08	1.32	1.34
<i>Türk Demir Döküm</i>	1.29	1.31	1.26	1.28
<i>Türk Tuborg</i>	2.02	1.81	1.44	1.37
<i>Vestel Elektronik</i>	6.12	5.32	8.98	7.77
<i>Yasas Yasar Boya</i>	2.75	1.44	1.65	1.28
<i>Yünsa</i>	1.80	1.82	1.84	2.21

**TABLE : CALCULATED DFL VALUES OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	3-94	6-94	9-94	12-94
<b>Adana Çimento</b>	1.00	1.02	1.01	1.02
<b>Ak-AI Tekstil</b>	1.15	1.16	1.20	1.10
<b>Aksa Akrilik</b>	1.00	1.00	1.00	1.00
<b>Arçelik</b>	6.46	6.65	4.23	3.06
<b>Aselsan</b>	4.64	3.70	2.63	2.08
<b>Aslan Çimento</b>	2.76	4.84	53.79	20.44
<b>Aygaz</b>	1.01	1.00	1.00	1.00
<b>Bagfas</b>	1.08	3.10	1.24	1.41
<b>Bolu Çimento</b>	2.26	1.29	1.28	1.28
<b>Brisa</b>	5.24	2.58	1.59	1.36
<b>Çelik Halat</b>	2.72	2.79	2.13	1.75
<b>Çimsa</b>	8.50	1.71	1.45	1.40
<b>Deva Holding</b>	2.87	4.25	7.21	5.67
<b>Döktas Dökümcülük</b>	1.09	1.08	1.10	1.08
<b>Eczacıbaşı İlaç</b>	2.76	4.05	7.23	51.74
<b>Ege Biracılık</b>	1.02	1.00	1.00	1.00
<b>Ege Endüstri</b>	3.69	5.87	691.82	3.81
<b>Erciyas Biracılık</b>	1.00	1.00	1.00	1.00
<b>Eregli Demir Çelik</b>	8.34	6.56	5.32	1.93
<b>Fenis Alüminyum</b>	2.83	4.29	3.28	4.41
<b>Goodyear Lastikleri</b>	1.03	1.07	1.05	1.03
<b>Gübre Fab</b>	5.03	3.79	4.55	2.75
<b>Güney Biracılık</b>	1.01	1.00	1.00	1.00
<b>Hektas Ticaret</b>	1.90	2.57	4.88	4.06
<b>Izmir Demir Çelik</b>	4.54	2.93	2.97	3.61
<b>Izocam</b>	1.34	1.21	1.17	1.20
<b>Kelebek Mobilya</b>	1.76	1.51	1.31	1.23
<b>Kepez Elektrik</b>	2.51	2.69	4.62	8.05
<b>Kordsa</b>	3.85	2.39	2.11	1.98
<b>Mardin Çimento</b>	1.01	1.01	1.01	1.01
<b>Maret</b>	1.00	1.00	1.00	1.00
<b>Marshall Boya</b>	6.43	1.44	1.28	1.26
<b>Olmuksa Mukavva</b>	3.40	38.52	2.34	1.63
<b>Otosan</b>	1.00	1.05	1.08	1.05
<b>Peg Profilo</b>	19.16	16.43	41.27	12.78
<b>Petkim</b>	2.56	3.59	4.91	1.80
<b>Pinar Et</b>	4.37	4.06	1.75	2.82
<b>Polylen</b>	3.69	3.97	11.12	10.81
<b>Sarkuysan</b>	2.31	1.60	1.47	1.33
<b>Sifas</b>	5.71	6.09	8.46	2.76
<b>Tofas Türk</b>	1.00	1.00	1.00	1.00
<b>Trakya Cam Sanayi</b>	1.52	1.44	1.28	1.24
<b>Tüpras</b>	1.93	1.38	1.50	1.56
<b>Türk Demir Döküm</b>	3.82	2.72	11.68	6.38
<b>Türk Tuborg</b>	2.74	5.36	1.50	1.65
<b>Vestel Elektronik</b>	1.82	3.24	4.79	14.65
<b>Yasas Yasar Boya</b>	1.42	1.14	1.05	1.14
<b>Yünsa</b>	3.42	1.32	1.24	1.19

**TABLE : CALCULATED DFL VALUES OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	3-95	6-95	9-95	12-95
<i>Adana Çimento</i>	1.03	1.02	1.02	1.03
<i>Ak-AI Tekstil</i>	1.02	1.23	1.34	1.42
<i>Aksa Akriilik</i>	1.00	1.03	1.06	1.08
<i>Arçelik</i>	3.07	2.09	1.68	1.53
<i>Aselsan</i>	1.32	1.28	1.29	1.52
<i>Aslan Çimento</i>	2.24	2.42	3.96	11.45
<i>Aygaz</i>	1.00	1.00	1.00	1.00
<i>Bagfas</i>	1.34	1.22	1.30	1.69
<i>Bolu Çimento</i>	1.32	1.08	1.05	1.04
<i>Brisa</i>	1.04	1.03	1.02	1.01
<i>Çelik Halat</i>	1.07	1.05	1.22	1.54
<i>Çimsa</i>	1.18	1.11	1.10	1.25
<i>Deva Holding</i>	2.17	1.98	2.50	2.62
<i>Döktas Dökümcülük</i>	1.25	1.13	1.21	1.30
<i>Eczacibasi İlaç</i>	4.75	2.20	1.81	2.00
<i>Ege Biracılık</i>	1.02	1.01	1.01	1.03
<i>Ege Endüstri</i>	1.32	1.24	1.28	1.39
<i>Erciyas Biracılık</i>	1.00	1.00	1.00	1.00
<i>Eregli Demir Çelik</i>	1.40	1.28	1.27	1.42
<i>Fenis Alüminyum</i>	2.53	1.97	1.42	2.08
<i>Goodyear Lastikleri</i>	1.07	1.07	1.02	1.02
<i>Gübre Fab</i>	1.94	1.69	1.52	1.58
<i>Güney Biracılık</i>	1.01	1.01	1.01	1.01
<i>Hektas Ticaret</i>	1.01	1.00	1.00	1.00
<i>İzmir Demir Çelik</i>	3.72	4.21	5.87	9.01
<i>İzocam</i>	1.16	1.22	1.23	1.29
<i>Kelebek Mobilya</i>	1.09	1.07	1.07	1.11
<i>Kepez Elektrik</i>	1.77	1.48	1.54	1.56
<i>Kordsa</i>	1.30	1.26	1.23	1.21
<i>Mardin Çimento</i>	1.01	1.01	1.01	1.01
<i>Maret</i>	1.00	1.00	1.04	1.03
<i>Marshall Boya</i>	1.12	1.15	1.12	1.17
<i>Olmuksa Mukavva</i>	1.11	1.16	1.12	1.17
<i>Otosan</i>	1.00	1.00	1.00	1.00
<i>Peg Profilo</i>	2.74	2.19	2.22	3.01
<i>Petkim</i>	1.05	1.03	1.02	1.02
<i>Pinar Et</i>	19.11	3.23	2.37	2.69
<i>Polylen</i>	1.72	2.09	3.20	5.50
<i>Sarkuysan</i>	1.19	1.15	1.15	1.22
<i>Sifas</i>	1.40	1.58	2.00	2.80
<i>Tofas Türk</i>	1.00	1.07	1.19	1.29
<i>Trakya Cam Sanayi</i>	1.08	1.15	1.13	1.14
<i>Tüpras</i>	1.37	1.35	1.56	1.32
<i>Türk Demir Döküm</i>	2.90	2.30	2.05	2.25
<i>Türk Tuborg</i>	3.97	3.12	2.25	4.74
<i>Vestel Elektronik</i>	17.68	9.66	3.50	2.54
<i>Yasas Yasar Boya</i>	1.32	1.50	1.61	2.95
<i>Yünsa</i>	2.30	1.07	1.07	1.08

**TABLE : CALCULATED DFL VALUES OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	3-96	6-96	9-96	12-96
<i>Adana Çimento</i>	1.03	1.02	1.03	1.05
<i>Ak-AI Tekstil</i>	1.35	1.22	1.17	1.14
<i>Aksa Akrilik</i>	1.04	1.05	1.05	1.05
<i>Arçelik</i>	1.59	1.41	1.38	1.31
<i>Aselsan</i>	1.51	1.41	1.44	1.48
<i>Aslan Çimento</i>	1.68	2.19	4.16	4.28
<i>Aygaz</i>	1.00	1.00	1.00	1.01
<i>Bagfas</i>	2.54	1.70	1.91	1.84
<i>Bolu Çimento</i>	1.04	1.02	1.02	1.02
<i>Brisa</i>	1.01	1.01	1.00	1.00
<i>Çelik Halat</i>	1.17	1.26	1.27	1.23
<i>Çimsa</i>	1.97	2.86	1.88	1.72
<i>Deva Holding</i>	1.75	1.75	1.80	2.16
<i>Döktas Dökümcülük</i>	1.52	1.90	1.98	1.05
<i>Eczacıbaşı İlaç</i>	2.02	1.67	1.66	1.83
<i>Ege Biracılık</i>	7.05	2.00	1.65	2.37
<i>Ege Endüstri</i>	1.65	1.53	1.56	1.48
<i>Erciyas Biracılık</i>	1.00	1.01	1.15	1.35
<i>Eregli Demir Çelik</i>	2.03	2.54	3.03	2.60
<i>Fenis Alüminyum</i>	1.96	2.01	1.66	1.61
<i>Goodyear Lastikleri</i>	1.02	1.02	1.03	1.03
<i>Gübre Fab</i>	3.52	3.45	2.50	2.01
<i>Güney Biracılık</i>	1.02	1.15	1.20	1.32
<i>Hektas Ticaret</i>	1.02	1.01	1.01	1.01
<i>Izmir Demir Çelik</i>	5.56	7.54	6.29	4.94
<i>Izocam</i>	2.87	2.04	2.00	1.75
<i>Kelebek Mobilya</i>	1.12	1.19	1.14	1.14
<i>Kepez Elektrik</i>	1.33	1.35	1.40	1.54
<i>Kordsa</i>	1.11	1.15	1.14	1.14
<i>Mardin Çimento</i>	1.03	1.07	1.15	1.10
<i>Maret</i>	1.08	1.01	1.01	1.01
<i>Marshall Boya</i>	1.14	1.12	1.12	1.14
<i>Olmuksa Mukavva</i>	2.00	5.04	28.10	18.47
<i>Otosan</i>	1.00	1.00	1.00	1.00
<i>Peg Profilo</i>	3.87	2.96	2.74	3.47
<i>Petkim</i>	1.01	1.01	1.01	1.01
<i>Pinar Et</i>	22.35	3.43	2.34	2.02
<i>Polylen</i>	7.22	17.50	17.17	17.33
<i>Sarkuysan</i>	1.22	1.22	1.21	1.09
<i>Sifas</i>	3.17	5.85	5.28	6.99
<i>Tofas Türk</i>	1.53	1.38	1.40	1.32
<i>Trakya Cam Sanayi</i>	2.21	1.31	1.37	1.69
<i>Tüpras</i>	1.15	1.15	1.18	1.07
<i>Türk Demir Döküm</i>	6.08	2.78	1.94	1.80
<i>Türk Tuborg</i>	19.44	11.23	7.11	11.31
<i>Vestel Elektronik</i>	2.70	2.34	2.19	1.93
<i>Yasas Yasar Boya</i>	3.14	1.43	1.61	1.39
<i>Yünsa</i>	2.59	2.28	2.19	2.47

**TABLE : CALCULATED DFL VALUES OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	3-97	6-97	9-97	12-97	3-98
<b>Adana Çimento</b>	6.93	1.21	1.15	1.13	1.09
<b>Ak-AI Tekstil</b>	1.10	1.09	1.09	1.14	2.73
<b>Aksa Akrilik</b>	1.05	1.05	1.04	1.05	1.11
<b>Arçelik</b>	1.49	1.36	1.42	1.41	1.97
<b>Aselsan</b>	1.43	1.59	2.08	2.24	2.39
<b>Aslan Çimento</b>	3.29	3.23	2.52	2.09	5.34
<b>Aygaz</b>	1.00	1.00	1.00	1.00	1.00
<b>Bagfas</b>	1.92	1.74	1.61	1.48	1.29
<b>Bolu Çimento</b>	1.01	1.03	1.05	1.05	1.03
<b>Brisa</b>	1.00	1.02	1.02	1.02	1.04
<b>Çelik Halat</b>	1.50	1.47	1.57	1.49	2.87
<b>Çimsa</b>	1.38	1.14	1.09	1.17	1.91
<b>Deva Holding</b>	2.37	3.17	11.93	34.45	3.75
<b>Döktas Dökümcülük</b>	1.48	1.21	1.34	2.21	1.86
<b>Eczacıbaşı İlaç</b>	1.79	1.92	2.49	2.89	7.68
<b>Ege Biracılık</b>	16.12	2.54	1.69	2.58	15.07
<b>Ege Endüstri</b>	1.82	1.51	1.60	1.48	1.30
<b>Erciyas Biracılık</b>	6.48	6.63	4.92	6.29	4.96
<b>Eregli Demir Çelik</b>	3.74	4.55	62.73	53.98	8.53
<b>Fenis Alüminyum</b>	1.47	6.38	6.50	7.38	5.80
<b>Goodyear Lastikleri</b>	1.03	1.11	1.17	1.18	1.38
<b>Gübre Fab</b>	3.60	3.82	4.10	2.64	1.82
<b>Güney Biracılık</b>	3.48	2.18	1.48	1.80	5.88
<b>Hektas Ticaret</b>	1.17	1.13	1.15	1.16	2.54
<b>Izmir Demir Çelik</b>	3.48	4.52	5.80	4.51	13.16
<b>Izocam</b>	2.37	1.90	1.85	1.94	3.70
<b>Kelebek Mobilya</b>	1.21	1.26	1.36	1.42	1.84
<b>Kepez Elektrik</b>	1.87	1.20	1.23	1.31	1.27
<b>Kordsa</b>	1.34	1.77	1.93	1.88	2.74
<b>Mardin Çimento</b>	1.30	1.12	1.10	1.09	1.01
<b>Maret</b>	1.00	1.06	1.17	1.24	1.57
<b>Marshall Boya</b>	1.02	1.14	1.13	1.31	1.31
<b>Olmaksa Mukavva</b>	9.31	2.63	1.80	1.67	11.74
<b>Otosan</b>	1.00	1.00	1.00	1.00	1.00
<b>Peg Profilo</b>	2.82	2.27	2.31	2.98	10.85
<b>Petkim</b>	1.01	1.01	1.01	1.01	1.01
<b>Pinar Et</b>	3.61	2.01	1.77	2.18	8.54
<b>Polylen</b>	5.22	12.22	16.69	22.65	24.67
<b>Sarkuysan</b>	1.04	1.11	1.17	1.24	1.35
<b>Sifas</b>	3.34	4.13	3.96	5.51	7.19
<b>Tofas Türk</b>	1.82	1.35	1.40	1.15	71.91
<b>Trakya Cam Sanayi</b>	2.51	2.42	2.10	2.29	5.16
<b>Tüpras</b>	1.05	1.10	1.14	1.18	1.24
<b>Türk Demir Döküm</b>	2.92	2.85	2.09	1.98	3.87
<b>Türk Tuborg</b>	13.40	8.72	5.38	8.38	7.05
<b>Vestel Elektronik</b>	1.83	1.67	1.96	1.96	2.20
<b>Yasas Yasar Boya</b>	1.25	1.38	1.39	1.47	1.43
<b>Yünsa</b>	2.41	2.05	2.03	2.22	2.05





**APPENDIX 5**

**TABLE : CALCULATED DR VALUES OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	12-91	3-92	6-92	9-92	12-92
<i>Adana Çimento</i>	0.39	0.55	0.50	0.44	0.38
<i>Ak-AI Tekstil</i>	0.48	0.60	0.48	0.47	0.53
<i>Aksa Akrilik</i>	0.36	0.46	0.45	0.35	0.37
<i>Arçelik</i>	0.58	0.70	0.63	0.60	0.58
<i>Aselsan</i>	0.64	0.66	0.68	0.69	0.68
<i>Aslan Çimento</i>	0.53	0.64	0.62	0.62	0.61
<i>Aygaz</i>	0.58	0.62	0.59	0.61	0.56
<i>Bagfas</i>	0.23	0.46	0.46	0.37	0.27
<i>Bolu Çimento</i>	0.49	0.54	0.56	0.39	0.37
<i>Brisa</i>	0.57	0.60	0.60	0.56	0.50
<i>Çelik Halat</i>	0.41	0.41	0.55	0.57	0.55
<i>Çimsa</i>	0.27	0.40	0.39	0.39	0.37
<i>Deva Holding</i>	0.54	0.67	0.67	0.70	0.72
<i>Döktas Dökümcülük</i>	0.39	0.52	0.46	0.42	0.39
<i>Eczacıbaşı İlaç</i>	0.50	0.63	0.66	0.59	0.55
<i>Ege Biracılık</i>	0.34	0.35	0.46	0.43	0.32
<i>Ege Endüstri</i>	0.47	0.46	0.46	0.46	0.45
<i>Erciyas Biracılık</i>	0.39	0.44	0.60	0.51	0.49
<i>Eregli Demir Çelik</i>	0.30	0.39	0.38	0.44	0.44
<i>Fenis Alüminyum</i>	0.71	0.75	0.75	0.74	0.71
<i>Goodyear Lastikleri</i>	0.64	0.66	0.72	0.69	0.63
<i>Gübre Fab</i>	0.65	0.63	0.64	0.69	0.63
<i>Güney Biracılık</i>	0.38	0.38	0.57	0.49	0.37
<i>Hektas Ticaret</i>	0.73	0.79	0.72	0.72	0.67
<i>İzmir Demir Çelik</i>	0.29	0.29	0.27	0.27	0.24
<i>Izocam</i>	0.37	0.59	0.57	0.42	0.37
<i>Kelebek Mobilya</i>	0.65	0.72	0.68	0.65	0.64
<i>Kepez Elektrik</i>	0.70	0.61	0.62	0.75	0.60
<i>Kordsa</i>	0.32	0.45	0.47	0.48	0.52
<i>Mardin Çimento</i>	0.30	0.61	0.53	0.41	0.29
<i>Maret</i>	0.16	0.22	0.22	0.17	0.12
<i>Marshall Boya</i>	0.39	0.58	0.58	0.50	0.45
<i>Olmuksa Mukavva</i>	0.33	0.36	0.42	0.48	0.51
<i>Otosan</i>	0.45	0.55	0.47	0.47	0.48
<i>Peg Profilo</i>	0.72	0.75	0.77	0.70	0.61
<i>Petkim</i>	0.21	0.27	0.27	0.31	0.28
<i>Pınar Et</i>	0.27	0.26	0.35	0.37	0.36
<i>Polylen</i>	1.03	1.03	1.05	0.83	0.78
<i>Sarkuysan</i>	0.48	0.54	0.53	0.56	0.53
<i>Sıfas</i>	0.81	0.84	0.85	0.67	0.70
<i>Tofas Türk</i>	0.53	0.62	0.48	0.53	0.48
<i>Trakya Cam Sanayi</i>	0.47	0.50	0.47	0.44	0.36
<i>Tüpras</i>	0.54	0.58	0.64	0.64	0.61
<i>Türk Demir Döküm</i>	0.62	0.66	0.61	0.59	0.63
<i>Türk Tuborg</i>	0.33	0.40	0.42	0.34	0.29
<i>Vestel Elektronik</i>	0.68	0.73	0.67	0.65	0.65
<i>Yasas Yasar Boya</i>	0.62	0.65	0.63	0.62	0.42
<i>Yünsa</i>	0.66	0.64	0.65	0.66	0.64

**TABLE : CALCULATED DR VALUES OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

<b>COMPANY</b>	<b>3-93</b>	<b>6-93</b>	<b>9-93</b>	<b>12-93</b>
<b>Adana Çimento</b>	0.54	0.51	0.52	0.37
<b>Ak-AI Tekstil</b>	0.60	0.55	0.53	0.45
<b>Aksa Akrilik</b>	0.52	0.41	0.32	0.27
<b>Arçelik</b>	0.66	0.60	0.60	0.59
<b>Aselsan</b>	0.69	0.72	0.68	0.71
<b>Aslan Çimento</b>	0.66	0.65	0.62	0.65
<b>Aygaz</b>	0.70	0.60	0.56	0.53
<b>Bagfas</b>	0.44	0.38	0.44	0.40
<b>Bolu Çimento</b>	0.36	0.48	0.29	0.33
<b>Brisa</b>	0.52	0.51	0.48	0.45
<b>Çelik Halat</b>	0.48	0.59	0.57	0.55
<b>Çimsa</b>	0.43	0.41	0.43	0.40
<b>Deva Holding</b>	0.75	0.73	0.73	0.70
<b>Döktas Dökümcülük</b>	0.54	0.47	0.42	0.40
<b>Eczacıbaşı İlaç</b>	0.61	0.60	0.57	0.54
<b>Ege Biracılık</b>	0.30	0.38	0.32	0.28
<b>Ege Endüstri</b>	0.59	0.61	0.56	0.53
<b>Erciyas Biracılık</b>	0.54	0.55	0.47	0.39
<b>Eregli Demir Çelik</b>	0.49	0.47	0.49	0.55
<b>Fenis Alüminyum</b>	0.71	0.73	0.73	0.78
<b>Goodyear Lastikleri</b>	0.67	0.69	0.66	0.62
<b>Gübre Fab</b>	0.66	0.60	0.74	0.68
<b>Güney Biracılık</b>	0.37	0.52	0.45	0.39
<b>Hektas Ticaret</b>	0.75	0.68	0.59	0.60
<b>Izmir Demir Çelik</b>	0.22	0.22	0.16	0.22
<b>Izocam</b>	0.67	0.58	0.42	0.36
<b>Kelebek Mobilya</b>	0.75	0.71	0.67	0.63
<b>Kepez Elektrik</b>	0.84	0.64	0.63	0.62
<b>Kordsa</b>	0.53	0.56	0.53	0.53
<b>Mardin Çimento</b>	0.60	0.56	0.45	0.28
<b>Maret</b>	0.26	0.20	0.22	0.24
<b>Marshall Boya</b>	0.01	0.49	0.50	0.54
<b>Olmuksa Mukavva</b>	0.60	0.60	0.60	0.60
<b>Otosan</b>	0.60	0.49	0.46	0.46
<b>Peg Profilo</b>	0.71	0.73	0.74	0.68
<b>Petkim</b>	0.30	0.31	0.28	0.31
<b>Pinar Et</b>	0.33	0.30	0.33	0.28
<b>Polylen</b>	0.79	0.87	0.82	0.82
<b>Sarkuysan</b>	0.56	0.53	0.50	0.42
<b>Sifas</b>	0.69	0.77	0.71	0.73
<b>Tofas Türk</b>	0.57	0.48	0.45	0.45
<b>Trakya Cam Sanayi</b>	0.43	0.40	0.38	0.30
<b>Tüpras</b>	0.62	0.68	0.66	0.63
<b>Türk Demir Döküm</b>	0.69	0.63	0.61	0.66
<b>Türk Tuborg</b>	0.40	0.45	0.34	0.29
<b>Vestel Elektronik</b>	0.68	0.60	0.61	0.63
<b>Yasas Yasar Boya</b>	0.41	0.51	0.52	0.31
<b>Yünsa</b>	0.67	0.65	0.65	0.67

**TABLE : CALCULATED DR VALUES OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	3-94	6-94	9-94	12-94
<b>Adana Çimento</b>	0.49	0.47	0.40	0.35
<b>Ak-AI Tekstil</b>	0.57	0.65	0.63	0.54
<b>Aksa Akrilik</b>	0.46	0.47	0.39	0.37
<b>Arçelik</b>	0.73	0.74	0.69	0.63
<b>Aselsan</b>	0.78	0.78	0.72	0.67
<b>Aslan Çimento</b>	0.77	0.83	0.78	0.72
<b>Aygaz</b>	0.62	0.53	0.57	0.52
<b>Bagfas</b>	0.60	0.60	0.49	0.49
<b>Bolu Çimento</b>	0.34	0.33	0.24	0.19
<b>Brisa</b>	0.37	0.32	0.32	0.39
<b>Çelik Halat</b>	0.47	0.46	0.39	0.42
<b>Çimsa</b>	0.58	0.47	0.43	0.36
<b>Deva Holding</b>	0.76	0.79	0.72	0.64
<b>Döktas Dökümcülük</b>	0.54	0.41	0.37	0.37
<b>Eczacibasi Ilaç</b>	0.71	0.77	0.66	0.53
<b>Ege Biracilik</b>	0.26	0.32	0.26	0.35
<b>Ege Endüstri</b>	0.74	0.75	0.65	0.61
<b>Erciyas Biracilik</b>	0.37	0.45	0.40	0.28
<b>Eregli Demir Çelik</b>	0.64	0.74	0.76	0.71
<b>Fenis Alüminyum</b>	0.80	0.83	0.84	0.38
<b>Goodyear Lastikleri</b>	0.67	0.70	0.67	0.57
<b>Gübre Fab</b>	0.74	0.76	0.69	0.33
<b>Güney Biracilik</b>	0.36	0.44	0.35	0.29
<b>Hektas Ticaret</b>	0.83	0.74	0.57	0.48
<b>Izmir Demir Çelik</b>	0.28	0.30	0.33	0.38
<b>Izocam</b>	0.62	0.52	0.44	0.36
<b>Kelebek Mobilya</b>	0.74	0.68	0.63	0.55
<b>Kepez Elektrik</b>	0.81	0.94	0.87	0.84
<b>Kordsa</b>	0.58	0.57	0.57	0.54
<b>Mardin Çimento</b>	0.57	0.51	0.43	0.30
<b>Maret</b>	0.31	0.29	0.31	0.23
<b>Marshall Boya</b>	0.63	0.56	0.42	0.33
<b>Olmuxsa Mukavva</b>	0.65	0.52	0.49	0.37
<b>Otosan</b>	0.64	0.58	0.38	0.33
<b>Peg Profilo</b>	0.80	0.81	0.80	0.78
<b>Petkim</b>	0.36	0.37	0.31	0.23
<b>Pinar Et</b>	0.53	0.50	0.48	0.47
<b>Polylen</b>	0.90	0.93	0.88	0.68
<b>Sarkuysan</b>	0.60	0.43	0.42	0.49
<b>Sifas</b>	0.88	0.89	0.47	0.66
<b>Tofas Türk</b>	0.59	0.43	0.39	0.33
<b>Trakya Cam Sanayi</b>	0.41	0.41	0.36	0.31
<b>Tüpras</b>	0.78	0.86	0.83	0.77
<b>Türk Demir Döküm</b>	0.77	0.84	0.75	0.59
<b>Türk Tuborg</b>	0.46	0.54	0.43	0.40
<b>Vestel Elektronik</b>	0.73	0.85	0.81	0.74
<b>Yasas Yasar Boya</b>	0.46	0.50	0.39	0.34
<b>Yünsa</b>	0.84	0.65	0.61	0.56

**TABLE : CALCULATED DR VALUES OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	3-95	6-95	9-95	12-95
<i>Adana Çimento</i>	0.59	0.50	0.40	0.21
<i>Ak-AI Tekstil</i>	0.65	0.61	0.56	0.47
<i>Aksa Akrilik</i>	0.51	0.50	0.52	0.35
<i>Arçelik</i>	0.70	0.65	0.58	0.58
<i>Aselsan</i>	0.67	0.65	0.60	0.61
<i>Aslan Çimento</i>	0.77	0.78	0.77	0.73
<i>Aygaz</i>	0.48	0.51	0.45	0.45
<i>Bagfas</i>	0.50	0.49	0.57	0.51
<i>Bolu Çimento</i>	0.17	0.25	0.19	0.18
<i>Brisa</i>	0.32	0.29	0.31	0.35
<i>Çelik Halat</i>	0.52	0.43	0.47	0.44
<i>Çimsa</i>	0.47	0.36	0.35	0.49
<i>Deva Holding</i>	0.53	0.54	0.57	0.28
<i>Döktas Dökümcülük</i>	0.44	0.49	0.52	0.54
<i>Eczacıbaşı İlaç</i>	0.50	0.45	0.43	0.36
<i>Ege Biracılık</i>	0.35	0.50	0.34	0.36
<i>Ege Endüstri</i>	0.60	0.53	0.48	0.47
<i>Erciyas Biracılık</i>	0.53	0.51	0.24	0.23
<i>Eregli Demir Çelik</i>	0.72	0.67	0.63	0.67
<i>Fenis Alüminyum</i>	0.40	0.46	0.48	0.35
<i>Goodyear Lastikleri</i>	0.55	0.65	0.55	0.54
<i>Gübre Fab</i>	0.44	0.33	0.56	0.46
<i>Güney Biracılık</i>	0.24	0.42	0.32	0.30
<i>Hektas Ticaret</i>	0.55	0.45	0.33	0.34
<i>Izmir Demir Çelik</i>	0.37	0.37	0.35	0.29
<i>Izocam</i>	0.56	0.53	0.50	0.47
<i>Kelebek Mobilya</i>	0.66	0.66	0.57	0.60
<i>Kepez Elektrik</i>	0.82	0.78	0.83	0.77
<i>Kordsa</i>	0.57	0.41	0.37	0.37
<i>Mardin Çimento</i>	0.54	0.40	0.31	0.26
<i>Maret</i>	0.28	0.28	0.33	0.34
<i>Marshall Boya</i>	0.49	0.41	0.36	0.28
<i>Olmuksa Mukavva</i>	0.40	0.30	0.29	0.35
<i>Otosan</i>	0.35	0.43	0.42	0.43
<i>Peg Profilo</i>	0.73	0.75	0.70	0.73
<i>Petkim</i>	0.21	0.20	0.20	0.23
<i>Pinar Et</i>	0.46	0.49	0.47	0.42
<i>Polylen</i>	0.73	0.71	0.75	0.74
<i>Sarkuysan</i>	0.58	0.36	0.34	0.38
<i>Sifas</i>	0.69	0.71	0.42	0.72
<i>Tofas Türk</i>	0.36	0.53	0.43	0.44
<i>Trakya Cam Sanayi</i>	0.36	0.35	0.26	0.33
<i>Tüpras</i>	0.74	0.78	0.76	0.79
<i>Türk Demir Döküm</i>	0.62	0.64	0.56	0.54
<i>Türk Tuborg</i>	0.50	0.53	0.46	0.44
<i>Vestel Elektronik</i>	0.77	0.79	0.78	0.81
<i>Yasas Yasar Boya</i>	0.53	0.62	0.53	0.44
<i>Yünsa</i>	0.53	0.57	0.57	0.62

**TABLE : CALCULATED DR VALUES OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	3-96	6-96	9-96	12-96
<i>Adana Çimento</i>	0.31	0.40	0.36	0.39
<i>Ak-AI Tekstil</i>	0.58	0.47	0.49	0.51
<i>Aksa Akrilik</i>	0.46	0.32	0.33	0.29
<i>Arçelik</i>	0.65	0.59	0.57	0.56
<i>Aselsan</i>	0.63	0.59	0.61	0.63
<i>Aslan Çimento</i>	0.92	0.91	0.73	0.68
<i>Aygaz</i>	0.53	0.48	0.45	0.41
<i>Bagfas</i>	0.64	0.51	0.69	0.60
<i>Bolu Çimento</i>	0.27	0.26	0.19	0.21
<i>Brisa</i>	0.44	0.32	0.29	0.30
<i>Çelik Halat</i>	0.40	0.37	0.40	0.38
<i>Çimsa</i>	0.56	0.46	0.39	0.33
<i>Deva Holding</i>	0.31	0.38	0.41	0.43
<i>Döktas Dökümcülük</i>	0.60	0.64	0.62	0.70
<i>Eczacibasi İlaç</i>	0.35	0.39	0.42	0.44
<i>Ege Biracılık</i>	0.43	0.46	0.42	0.40
<i>Ege Endüstri</i>	0.68	0.44	0.50	0.53
<i>Erciyas Biracılık</i>	0.46	0.53	0.55	0.56
<i>Eregli Demir Çelik</i>	0.66	0.71	0.71	0.72
<i>Fenis Alüminyum</i>	0.34	0.42	0.41	0.86
<i>Goodyear Lastikleri</i>	0.74	0.63	0.58	0.50
<i>Gübre Fab</i>	0.68	0.62	0.64	0.64
<i>Güney Biracılık</i>	0.39	0.54	0.46	0.45
<i>Hektas Ticaret</i>	0.56	0.46	0.37	0.36
<i>İzmir Demir Çelik</i>	0.24	0.20	0.20	0.24
<i>İzocam</i>	0.65	0.59	0.54	0.46
<i>Kelebek Mobilya</i>	0.69	0.68	0.64	0.58
<i>Kepez Elektrik</i>	0.80	0.73	0.72	0.71
<i>Kordsa</i>	0.53	0.47	0.43	0.43
<i>Mardin Çimento</i>	0.49	0.46	0.32	0.29
<i>Maret</i>	0.39	0.26	0.32	0.30
<i>Marshall Boya</i>	0.38	0.43	0.40	0.30
<i>Olmuksa Mukavva</i>	0.40	0.38	0.44	0.28
<i>Otosan</i>	0.54	0.44	0.44	0.44
<i>Peg Profilo</i>	0.75	0.78	0.69	0.72
<i>Petkim</i>	0.41	0.23	0.22	0.20
<i>Pinar Et</i>	0.42	0.43	0.42	0.38
<i>Polylen</i>	0.75	0.74	0.76	0.80
<i>Sarkuysan</i>	0.47	0.28	0.22	0.29
<i>Sifas</i>	0.73	0.75	0.74	0.81
<i>Tofas Türk</i>	0.44	0.40	0.35	0.38
<i>Trakya Cam Sanayi</i>	0.36	0.38	0.38	0.40
<i>Tüpras</i>	0.78	0.82	0.84	0.93
<i>Türk Demir Döküm</i>	0.61	0.60	0.57	0.56
<i>Türk Tuborg</i>	0.52	0.61	0.62	0.53
<i>Vestel Elektronik</i>	0.82	0.81	0.80	0.82
<i>Yasas Yasar Boya</i>	0.58	0.58	0.56	0.45
<i>Yünsa</i>	0.67	0.59	0.57	0.56

**TABLE : CALCULATED DR VALUES OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	3-97	6-97	9-97	12-97	3-98
<i>Adana Çimento</i>	0.41	0.38	0.36	0.27	0.35
<i>Ak-AI Tekstil</i>	0.57	0.51	0.54	0.54	0.58
<i>Aksa Akrilik</i>	0.44	0.32	0.34	0.32	0.47
<i>Arçelik</i>	0.59	0.53	0.54	0.52	0.60
<i>Aselsan</i>	0.66	0.68	0.70	0.66	0.70
<i>Aslan Çimento</i>	0.65	0.62	0.59	0.57	0.63
<i>Aygaz</i>	0.55	0.41	0.43	0.41	0.49
<i>Bagfas</i>	0.58	0.55	0.62	0.53	0.61
<i>Bolu Çimento</i>	0.32	0.26	0.21	0.21	0.36
<i>Brisa</i>	0.37	0.32	0.31	0.32	0.37
<i>Çelik Halat</i>	0.53	0.40	0.33	0.46	0.47
<i>Çimsa</i>	0.32	0.24	0.34	0.32	0.42
<i>Deva Holding</i>	0.48	0.42	0.49	0.48	0.55
<i>Döktas Dökümcülük</i>	0.72	0.69	0.60	0.62	0.63
<i>Eczacıbaşı İlaç</i>	0.48	0.52	0.53	0.57	0.59
<i>Ege Biracılık</i>	0.42	0.45	0.33	0.48	0.55
<i>Ege Endüstri</i>	0.64	0.62	0.59	0.48	0.64
<i>Erciyas Biracılık</i>	0.67	0.64	0.66	0.74	0.70
<i>Eregli Demir Çelik</i>	0.66	0.62	0.61	0.60	0.56
<i>Fenis Alüminyum</i>	0.84	0.86	0.86	0.86	0.84
<i>Goodyear Lastikleri</i>	0.70	0.66	0.62	0.63	0.75
<i>Gübre Fab</i>	0.74	0.62	0.73	0.65	0.68
<i>Güney Biracılık</i>	0.43	0.51	0.50	0.51	0.56
<i>Hektas Ticaret</i>	0.61	0.53	0.47	0.49	0.62
<i>Izmir Demir Çelik</i>	0.23	0.23	0.24	0.32	0.32
<i>Izocam</i>	0.64	0.59	0.55	0.55	0.67
<i>Kelebek Mobilya</i>	0.71	0.67	0.68	0.66	0.76
<i>Kepez Elektrik</i>	0.86	0.67	0.67	0.64	0.80
<i>Kordsa</i>	0.72	0.67	0.63	0.64	0.56
<i>Mardin Çimento</i>	0.37	0.36	0.30	0.27	0.46
<i>Maret</i>	0.42	0.42	0.41	0.37	0.44
<i>Marshall Boya</i>	0.48	0.42	0.44	0.40	0.59
<i>Olmuksa Mukavva</i>	0.30	0.23	0.32	0.30	0.37
<i>Otosan</i>	0.60	0.42	0.42	0.41	0.59
<i>Peg Profilo</i>	0.71	0.74	0.73	0.78	0.81
<i>Petkim</i>	0.34	0.18	0.20	0.19	0.33
<i>Pinar Et</i>	0.41	0.45	0.46	0.45	0.54
<i>Polylen</i>	0.78	0.82	0.77	0.78	0.86
<i>Sarkuysan</i>	0.42	0.40	0.38	0.41	0.50
<i>Sifas</i>	0.78	0.78	0.75	0.81	0.86
<i>Tofas Türk</i>	0.42	0.51	0.53	0.51	0.53
<i>Trakya Cam Sanayi</i>	0.45	0.41	0.41	0.39	0.46
<i>Tüpras</i>	1.08	1.09	0.97	0.94	0.86
<i>Türk Demir Döküm</i>	0.68	0.67	0.67	0.62	0.72
<i>Türk Tuborg</i>	0.54	0.60	0.60	0.57	0.59
<i>Vestel Elektronik</i>	0.79	0.68	0.75	0.79	0.80
<i>Yasas Yasar Boya</i>	0.55	0.63	0.59	0.55	0.57
<i>Yünsa</i>	0.57	0.54	0.55	0.58	0.60



**APPENDIX 6**



**TABLE : CALCULATED TIE VALUES OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	12-91	3-92	6-92	9-92	12-92
<i>Adana Çimento</i>	110.57	60.29	78.59	75.29	60.10
<i>Ak-AI Tekstil</i>	8.28	26.74	30.87	34.01	27.57
<i>Aksa Akrilik</i>	222.32	439.32	739.36	876.26	1,095.29
<i>Arçelik</i>	8.46	5.19	4.85	4.43	4.58
<i>Aselsan</i>	3.33	3.95	2.01	1.84	1.88
<i>Aslan Çimento</i>	3.47	1.74	1.42	1.95	2.22
<i>Aygaz</i>	17.32	28.05	29.51	30.52	47.99
<i>Bagfas</i>	3.13	6.07	2.36	2.80	3.80
<i>Bolu Çimento</i>	10.87	3.47	13.42	37.61	47.16
<i>Brisa</i>	1.13	1.16	1.13	1.29	1.53
<i>Çelik Halat</i>	3.16	4.50	3.50	3.81	3.68
<i>Çimsa</i>	2.27	1.38	3.18	4.63	4.72
<i>Deva Holding</i>	1.40	1.10	1.18	1.06	1.09
<i>Döktas Dökümcülük</i>	14.08	10.71	12.87	13.45	19.56
<i>Eczacıbaşı İlaç</i>	3.08	1.17	1.18	1.32	1.46
<i>Ege Biracılık</i>	151.74	3,935.67	5,387.96	2,058.93	826.80
<i>Ege Endüstri</i>	1.52	2.23	2.24	2.08	2.46
<i>Erciyas Biracılık</i>	276.66	326.63	610.17	804.04	598.13
<i>Eregli Demir Çelik</i>	7.16	6.92	5.27	4.95	5.46
<i>Fenis Alüminyum</i>	1.27	1.22	1.43	1.38	1.23
<i>Goodyear Lastikleri</i>	4.15	8.50	5.67	8.14	10.08
<i>Gübre Fab</i>	1.05	1.17	1.64	1.40	1.14
<i>Güney Biracılık</i>	48.45	52.25	5.41	11.71	28.86
<i>Hektas Ticaret</i>	1.35	1.99	1.99	2.10	2.74
<i>Izmir Demir Çelik</i>	1.15	1.21	1.17	1.17	1.18
<i>Izocam</i>	25.75	28.33	21.99	23.93	25.12
<i>Kelebek Mobilya</i>	2.54	3.04	4.33	3.45	2.41
<i>Kepez Elektrik</i>	1.72	6.52	5.57	4.73	3.72
<i>Kordsa</i>	3.90	5.92	3.89	2.50	1.97
<i>Mardin Çimento</i>	573.22	572.42	571.61	1,376.29	841.26
<i>Maret</i>	10.72	23.84	44.42	15.79	4.26
<i>Marshall Boya</i>	5.62	2.03	6.05	7.01	7.26
<i>Olmuksa Mukavva</i>	2.15	3.76	4.04	3.54	2.70
<i>Otosan</i>	299.20	853.01	1,147.13	507.57	446.24
<i>Peg Profilo</i>	1.29	1.30	1.23	1.21	1.25
<i>Petkim</i>	2.93	2.34	2.12	2.14	2.26
<i>Pinar Et</i>	1.67	3.00	1.63	1.59	1.45
<i>Polylen</i>	1.59	1.17	1.29	1.31	1.13
<i>Sarkuysan</i>	3.60	2.39	3.10	3.73	3.29
<i>Sıfas</i>	1.18	1.48	1.43	1.40	1.61
<i>Tofas Türk</i>	7.52	2.14	3.80	8.55	26.37
<i>Trakya Cam Sanayi</i>	1.20	1.08	1.20	1.41	1.98
<i>Tüpras</i>	3.06	2.31	1.01	1.85	3.76
<i>Türk Demir Döküm</i>	6.08	5.44	4.84	6.15	6.80
<i>Türk Tuborg</i>	1.70	1.31	1.82	2.18	2.47
<i>Vestel Elektronik</i>	1.33	1.20	1.30	1.41	1.12
<i>Yasas Yasar Boya</i>	1.49	1.90	1.24	1.86	1.70
<i>Yünsa</i>	1.12	1.21	1.28	1.54	1.70

**TABLE : CALCULATED TIE VALUES OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	3-93	6-93	9-93	12-93
<i>Adana Çimento</i>	39.05	76.18	184.25	118.45
<i>Ak-AI Tekstil</i>	32.48	26.36	18.19	13.08
<i>Aksa Akrilik</i>	1,252.65	2,796.71	2,112.78	2,337.62
<i>Arçelik</i>	5.02	6.31	6.91	6.95
<i>Aselsan</i>	2.49	2.18	2.43	2.56
<i>Aslan Çimento</i>	1.80	1.04	2.18	2.12
<i>Aygaz</i>	65.66	60.39	37.88	38.77
<i>Bagfas</i>	24.16	29.60	25.65	23.80
<i>Bolu Çimento</i>	1.76	1.87	7.92	8.59
<i>Brisa</i>	1.35	1.55	1.56	1.82
<i>Çelik Halat</i>	3.13	2.46	2.43	2.20
<i>Çimsa</i>	1.51	3.88	6.05	5.91
<i>Deva Holding</i>	1.06	1.41	1.32	1.30
<i>Döktas Dökümcülük</i>	16.24	20.11	25.48	32.05
<i>Eczacibasi İlaç</i>	1.28	1.18	1.15	1.20
<i>Ege Biracılık</i>	7,995.63	7,675.42	3,150.16	3,246.58
<i>Ege Endüstri</i>	3.45	3.58	3.14	2.49
<i>Erciyas Biracılık</i>	60.99	139.87	292.99	351.97
<i>Eregli Demir Çelik</i>	1.71	1.57	1.64	1.93
<i>Fenis Alüminyum</i>	3.70	5.09	4.33	2.09
<i>Goodyear Lastikleri</i>	16.87	16.60	22.79	27.01
<i>Gübre Fab</i>	1.91	2.01	3.16	1.92
<i>Güney Biracılık</i>	23.88	33.27	122.39	122.68
<i>Hektas Ticaret</i>	2.72	5.53	6.20	4.59
<i>Izmir Demir Çelik</i>	1.44	1.57	1.76	1.48
<i>Izocam</i>	12.11	14.91	21.04	25.87
<i>Kelebek Mobilya</i>	4.32	4.01	2.89	4.05
<i>Kepez Elektrik</i>	6.14	8.48	7.26	5.60
<i>Kordsa</i>	1.29	1.13	1.17	1.51
<i>Mardin Çimento</i>	579.53	210.95	1,599.77	177.13
<i>Maret</i>	116.65	69.97	51.66	91.80
<i>Marshall Boya</i>	8.32	10.50	11.00	7.74
<i>Olmuksa Mukavva</i>	2.36	1.61	1.20	1.08
<i>Otosan</i>	851.07	972.97	1,226.94	1,304.95
<i>Peg Profilo</i>	1.70	1.41	1.32	1.32
<i>Petkim</i>	3.65	2.89	2.69	2.31
<i>Pinar Et</i>	3.08	2.98	2.10	2.98
<i>Polylen</i>	1.11	2.52	1.78	1.02
<i>Sarkuysan</i>	4.06	3.98	4.81	5.06
<i>Sifas</i>	1.35	1.32	1.05	1.32
<i>Tofas Türk</i>	8,495.73	2,321.20	2,763.64	4,517.10
<i>Trakya Cam Sanayi</i>	2.73	2.71	3.39	3.94
<i>Tüpras</i>	1.84	1.92	4.12	3.98
<i>Türk Demir Döküm</i>	4.44	4.23	4.84	4.51
<i>Türk Tuborg</i>	1.98	2.24	3.29	3.68
<i>Vestel Elektronik</i>	1.20	1.23	1.13	1.15
<i>Yasas Yasar Boya</i>	1.57	3.26	2.54	4.60
<i>Yünsa</i>	2.24	2.21	2.18	1.82

**TABLE : CALCULATED TIE VALUES OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	3-94	6-94	9-94	12-94
<b>Adana Çimento</b>	89.80	61.14	98.76	55.77
<b>Ak-AI Tekstil</b>	7.88	7.33	5.90	10.76
<b>Aksa Akrilik</b>	837.03	2,211.88	2,709.23	2,982.13
<b>Arçelik</b>	1.18	1.18	1.31	1.49
<b>Aselsan</b>	1.27	1.37	1.61	1.93
<b>Aslan Çimento</b>	1.57	1.26	1.02	1.05
<b>Aygaz</b>	192.35	223.12	202.64	249.62
<b>Bagfas</b>	13.72	1.48	5.17	3.47
<b>Bolu Çimento</b>	1.79	4.48	4.56	4.56
<b>Brisa</b>	1.24	1.63	2.69	3.77
<b>Çelik Halat</b>	1.58	1.56	1.88	2.33
<b>Çimsa</b>	1.13	2.41	3.20	3.50
<b>Deva Holding</b>	1.53	1.31	1.16	1.21
<b>Döktas Dökümcülük</b>	11.94	13.32	11.16	13.43
<b>Eczacıbaşı İlaç</b>	1.57	1.33	1.16	1.02
<b>Ege Biracılık</b>	53.46	287.79	520.36	422.06
<b>Ege Endüstri</b>	1.37	1.21	1.00	1.36
<b>Erciyas Biracılık</b>	756.79	1,209.91	1,445.11	382.41
<b>Eregli Demir Çelik</b>	1.14	1.18	1.23	2.07
<b>Fenis Alüminyum</b>	1.55	1.30	1.44	1.29
<b>Goodyear Lastikleri</b>	35.39	15.78	19.68	31.22
<b>Gübre Fab</b>	1.25	1.36	1.28	1.57
<b>Güney Biracılık</b>	134.26	1,006.93	1,906.28	1,845.56
<b>Hektas Ticaret</b>	2.11	1.64	1.26	1.33
<b>Izmir Demir Çelik</b>	1.28	1.52	1.51	1.38
<b>Izocam</b>	3.90	5.81	7.01	5.96
<b>Kelebek Mobilya</b>	2.31	2.96	4.22	5.38
<b>Kepez Elektrik</b>	1.66	1.59	1.28	1.14
<b>Kordsa</b>	1.35	1.72	1.90	2.02
<b>Mardin Çimento</b>	160.73	160.58	161.73	108.14
<b>Maret</b>	442.36	619.75	884.39	848.35
<b>Marshall Boya</b>	1.18	3.26	4.61	4.91
<b>Olmaksa Mukavva</b>	1.42	1.03	1.75	2.59
<b>Otosan</b>	519.83	21.29	13.49	23.18
<b>Peg Profilo</b>	1.06	1.06	1.02	1.08
<b>Petkim</b>	1.64	1.39	1.26	2.25
<b>Pinar Et</b>	1.30	1.33	2.33	1.55
<b>Polylen</b>	1.37	1.34	1.10	1.10
<b>Sarkuysan</b>	1.76	2.68	3.12	4.05
<b>Sifas</b>	1.21	1.20	1.13	1.57
<b>Tofas Türk</b>	1,147.32	929.56	1,201.76	1,273.49
<b>Trakya Cam Sanayi</b>	2.93	3.29	4.61	5.25
<b>Tüpras</b>	2.07	3.61	3.00	2.79
<b>Türk Demir Döküm</b>	1.35	1.58	1.09	1.19
<b>Türk Tuborg</b>	1.58	1.23	3.00	2.54
<b>Vestel Elektronik</b>	2.22	1.45	1.26	1.07
<b>Yasas Yasar Boya</b>	3.38	7.91	20.75	8.29
<b>Yünsa</b>	1.41	4.13	5.18	6.21

**TABLE : CALCULATED TIE VALUES OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	3-95	6-95	9-95	12-95
<b>Adana Çimento</b>	36.73	48.86	42.79	32.13
<b>Ak-AI Tekstil</b>	51.93	5.32	3.97	3.37
<b>Aksa Akrilik</b>	3,321.37	37.73	18.59	12.78
<b>Arçelik</b>	1.48	1.92	2.48	2.89
<b>Aselsan</b>	4.12	4.54	4.43	2.93
<b>Aslan Çimento</b>	1.81	1.70	1.34	1.10
<b>Aygaz</b>	1,427.18	1,102.41	1,449.88	1,853.92
<b>Bagfas</b>	3.96	5.62	4.34	2.45
<b>Bolu Çimento</b>	4.12	13.16	21.53	25.18
<b>Brisa</b>	24.84	35.12	51.85	70.18
<b>Çelik Halat</b>	15.37	19.20	5.57	2.85
<b>Çimsa</b>	6.57	10.34	11.28	4.96
<b>Deva Holding</b>	1.85	2.02	1.67	1.62
<b>Döktas Dökümcülük</b>	5.01	8.92	5.73	4.30
<b>Eczacıbaşı İlaç</b>	1.27	1.83	2.23	2.00
<b>Ege Biracılık</b>	53.57	143.54	129.38	33.11
<b>Ege Endüstri</b>	4.10	5.16	4.55	3.59
<b>Erciyas Biracılık</b>	202.02	267.72	423.01	246.05
<b>Eregli Demir Çelik</b>	3.49	4.61	4.65	3.38
<b>Fenis Alüminyum</b>	1.65	2.04	3.36	1.92
<b>Goodyear Lastikleri</b>	15.94	15.97	51.07	58.69
<b>Gübre Fab</b>	2.06	2.44	2.93	2.72
<b>Güney Biracılık</b>	183.38	102.50	127.59	145.90
<b>Hektas Ticaret</b>	116.94	271.11	372.95	344.12
<b>Izmir Demir Çelik</b>	1.37	1.31	1.21	1.12
<b>Izocam</b>	7.22	5.57	5.39	4.48
<b>Kelebek Mobilya</b>	12.22	14.58	14.34	10.31
<b>Kepez Elektrik</b>	2.30	3.08	2.84	2.77
<b>Kordsa</b>	4.38	4.87	5.39	5.82
<b>Mardin Çimento</b>	75.09	154.53	166.86	146.70
<b>Maret</b>	996.72	488.02	27.69	36.79
<b>Marshall Boya</b>	9.55	7.89	9.30	6.84
<b>Olmaksa Mukavva</b>	9.81	7.21	9.14	6.76
<b>Otosan</b>	395.23	637.52	657.96	692.05
<b>Peg Profilo</b>	1.57	1.84	1.82	1.50
<b>Petkim</b>	21.45	38.37	46.19	48.15
<b>Pinar Et</b>	1.06	1.45	1.73	1.59
<b>Polylen</b>	2.40	1.91	1.45	1.22
<b>Sarkuysan</b>	6.35	7.49	7.72	5.58
<b>Sifas</b>	3.50	2.73	2.00	1.56
<b>Tofas Türk</b>	514.02	16.27	6.40	4.47
<b>Trakya Cam Sanayi</b>	12.86	7.89	8.52	8.38
<b>Tüpras</b>	3.70	3.88	2.79	4.10
<b>Türk Demir Döküm</b>	1.53	1.77	1.95	1.80
<b>Türk Tuborg</b>	1.34	1.47	1.80	1.27
<b>Vestel Elektronik</b>	1.06	1.12	1.40	1.65
<b>Yasas Yasar Boya</b>	4.09	2.99	2.64	1.51
<b>Yünsa</b>	1.77	15.99	15.29	12.80

**TABLE : CALCULATED TIE VALUES OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	3-96	6-96	9-96	12-96
<b>Adana Çimento</b>	31.12	44.70	40.40	19.99
<b>Ak-AI Tekstil</b>	3.86	5.50	6.72	8.19
<b>Aksa Akrilik</b>	27.32	20.78	20.56	20.24
<b>Arçelik</b>	2.70	3.42	3.66	4.23
<b>Aselsan</b>	2.96	3.45	3.28	3.08
<b>Aslan Çimento</b>	2.48	1.84	1.32	1.30
<b>Aygaz</b>	1,197.82	1,229.35	1,172.50	151.41
<b>Bagfas</b>	1.65	2.43	2.10	2.19
<b>Bolu Çimento</b>	23.58	46.67	52.82	64.29
<b>Brisa</b>	125.25	172.35	223.63	317.09
<b>Çelik Halat</b>	6.91	4.88	4.77	5.27
<b>Çimsa</b>	2.03	1.54	2.14	2.39
<b>Deva Holding</b>	2.33	2.33	2.25	1.86
<b>Döktas Dökümcülük</b>	2.93	2.11	2.02	20.77
<b>Eczacıbaşı İlaç</b>	1.98	2.50	2.52	2.20
<b>Ege Biracılık</b>	1.17	2.00	2.54	1.73
<b>Ege Endüstri</b>	2.55	2.87	2.79	3.08
<b>Erciyas Biracılık</b>	576.26	105.44	7.70	3.82
<b>Eregli Demir Çelik</b>	1.97	1.65	1.49	1.62
<b>Fenis Alüminyum</b>	2.04	1.99	2.51	2.63
<b>Goodyear Lastikleri</b>	63.54	44.88	39.15	40.63
<b>Gübre Fab</b>	1.40	1.41	1.67	1.99
<b>Güney Biracılık</b>	54.51	7.61	5.92	4.15
<b>Hektas Ticaret</b>	55.85	96.95	114.88	92.62
<b>Izmir Demir Çelik</b>	1.22	1.15	1.19	1.25
<b>Izocam</b>	1.54	1.96	2.00	2.33
<b>Kelebek Mobilya</b>	9.21	6.18	8.37	8.37
<b>Kepez Elektrik</b>	4.02	3.86	3.52	2.85
<b>Kordsa</b>	9.81	7.73	8.31	8.33
<b>Mardin Çimento</b>	40.48	14.44	7.82	11.02
<b>Maret</b>	13.73	76.84	118.90	139.51
<b>Marshall Boya</b>	8.31	9.19	9.48	8.03
<b>Olmuxsa Mukavva</b>	2.00	1.25	1.04	1.06
<b>Otosan</b>	1,149.18	1,325.96	1,225.98	1,429.95
<b>Peg Profilo</b>	1.35	1.51	1.58	1.41
<b>Petkim</b>	75.92	73.72	95.59	93.45
<b>Pinar Et</b>	1.05	1.41	1.75	1.98
<b>Polylen</b>	1.16	1.06	1.06	1.06
<b>Sarkuysan</b>	1.00	5.52	5.74	12.45
<b>Sifas</b>	1.46	1.21	1.23	1.17
<b>Tofas Türk</b>	2.89	3.65	3.47	4.14
<b>Trakya Cam Sanayi</b>	1.83	4.27	3.71	2.45
<b>Tüpras</b>	7.65	7.71	6.42	15.77
<b>Türk Demir Döküm</b>	1.20	1.56	2.07	2.25
<b>Türk Tuborg</b>	1.05	1.10	1.16	1.10
<b>Vestel Elektronik</b>	1.59	1.74	1.84	2.07
<b>Yasas Yasar Boya</b>	1.47	3.35	2.63	3.56
<b>Yünsa</b>	1.63	1.78	1.84	1.68

**TABLE : CALCULATED TIE VALUES OF COMPANIES  
FOR END OF PERIODS DURING 12/91-03/98**

COMPANY	3-97	6-97	9-97	12-97	3-98
<b>Adana Çimento</b>	1.17	5.77	7.63	8.66	12.67
<b>Ak-AI Tekstil</b>	11.16	12.41	12.66	8.23	1.58
<b>Aksa Akrilik</b>	22.04	21.96	24.36	22.45	10.09
<b>Arçelik</b>	3.03	3.79	3.37	3.45	2.03
<b>Aselsan</b>	3.31	2.70	1.93	1.81	1.72
<b>Aslan Çimento</b>	1.44	1.45	1.66	1.92	1.23
<b>Aygaz</b>	1,198.91	1,501.15	1,611.39	2,123.65	5,688.88
<b>Bagfas</b>	2.09	2.35	2.64	3.10	4.47
<b>Bolu Çimento</b>	130.11	33.39	19.88	20.51	37.19
<b>Brisa</b>	2,665.57	46.48	43.27	42.97	28.01
<b>Çelik Halat</b>	2.99	3.12	2.75	3.05	1.53
<b>Çimsa</b>	3.62	7.90	11.77	7.05	2.10
<b>Deva Holding</b>	1.73	1.46	1.09	1.03	1.36
<b>Döktas Dökümcülük</b>	3.10	5.85	3.98	1.82	2.16
<b>Eczacıbaşı İlaç</b>	2.27	2.09	1.67	1.53	1.15
<b>Ege Biracılık</b>	1.07	1.65	2.46	1.63	1.07
<b>Ege Endüstri</b>	2.22	2.95	2.67	3.11	4.32
<b>Erciyas Biracılık</b>	1.18	1.18	1.25	1.19	1.25
<b>Eregli Demir Çelik</b>	1.36	1.28	1.02	1.02	1.13
<b>Fenit Alüminyum</b>	3.14	1.19	1.18	1.16	1.21
<b>Goodyear Lastikleri</b>	33.50	10.17	6.77	6.52	3.66
<b>Gübre Fab</b>	1.38	1.35	1.32	1.61	2.21
<b>Güney Biracılık</b>	1.40	1.85	3.09	2.26	1.20
<b>Hektas Ticaret</b>	6.79	8.87	7.59	7.43	1.65
<b>İzmir Demir Çelik</b>	1.40	1.28	1.21	1.28	1.08
<b>İzocam</b>	1.73	2.10	2.18	2.06	1.37
<b>Kelebek Mobilya</b>	5.67	4.84	3.74	3.37	2.19
<b>Kepez Elektrik</b>	2.15	6.10	5.30	4.27	4.77
<b>Kordsa</b>	3.98	2.30	2.07	2.14	1.58
<b>Mardin Çimento</b>	4.32	9.67	10.60	12.39	126.96
<b>Maret</b>	1,798.23	18.82	6.73	5.11	2.76
<b>Marshall Boya</b>	55.69	8.07	8.77	4.21	4.26
<b>Olmaksa Mukavva</b>	1.12	1.61	2.24	2.50	1.09
<b>Otosan</b>	1,874.20	2,411.67	1,981.79	1,976.66	1,197.61
<b>Peg Profilo</b>	1.55	1.79	1.76	1.51	1.10
<b>Petkim</b>	73.99	93.59	97.68	111.54	91.22
<b>Pinar Et</b>	1.38	1.99	2.30	1.85	1.13
<b>Polylen</b>	1.24	1.09	1.06	1.05	1.04
<b>Sarkuysan</b>	27.90	10.38	6.95	5.25	3.89
<b>Sifas</b>	1.43	1.32	1.34	1.22	1.16
<b>Tofas Türk</b>	2.22	3.85	3.52	7.73	1.01
<b>Trakya Cam Sanayi</b>	1.66	1.70	1.91	1.78	1.24
<b>Tüpras</b>	20.41	10.93	8.19	6.58	5.09
<b>Türk Demir Döküm</b>	1.52	1.54	1.92	2.02	1.35
<b>Türk Tuborg</b>	1.08	1.13	1.23	1.14	1.17
<b>Vestel Elektronik</b>	2.21	2.50	2.04	2.04	1.83
<b>Yasas Yasar Boya</b>	5.02	3.62	3.57	3.13	3.33
<b>Yünsa</b>	1.71	1.95	1.97	1.82	1.95



**APPENDIX 7**

STATISTICAL RESULTS OF REGRESSION

RUN 1.1.1

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.125568577
<i>R Square</i>	0.015767467
<i>Adjusted R Square</i>	0.012600187
<i>Standard Error</i>	0.16299126
<i>Observations</i>	1248

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	4	0.529010127	0.132252532	4.97823465	0.000554158
<i>Residual</i>	1243	33.02172529	0.026566151		
<i>Total</i>	1247	33.55073542			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	0.035890455	0.015604003	2.300079916	0.021608715	0.005277342	0.066503568	0.005277342	0.066503568
<i>DFL</i>	-0.00019856	0.000226133	-0.878066787	0.380077165	-0.000642204	0.000245085	-0.000642204	0.000245085
<i>DOL</i>	1.70676E-05	0.000161909	0.105415182	0.916063378	-0.000300577	0.000334713	-0.000300577	0.000334713
<i>DR</i>	0.060574082	0.027984009	2.164596255	0.030608478	0.005672938	0.115475227	0.005672938	0.115475227
<i>TIE</i>	3.1187E-05	7.65873E-06	4.072084055	4.95403E-05	1.61615E-05	4.62125E-05	1.61615E-05	4.62125E-05



STATISTICAL RESULTS OF REGRESSION

RUN 1.1.2

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.123073482
<i>R Square</i>	0.015147082
<i>Adjusted R Square</i>	0.013564989
<i>Standard Error</i>	0.16291161
<i>Observations</i>	1248

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	2	0.50819574	0.25409787	9.574077869	7.47621E-05
<i>Residual</i>	1245	33.04253968	0.026540193		
<i>Total</i>	1247	33.55073542			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	0.036039967	0.015594935	2.311004601	0.020995321	0.005444715	0.066635218	0.005444715	0.066635218
<i>DR</i>	0.059033996	0.027870145	2.118180427	0.034357479	0.004356366	0.113711627	0.004356366	0.113711627
<i>TIE</i>	3.13078E-05	7.65352E-06	4.090632147	4.57838E-05	1.62925E-05	4.6323E-05	1.62925E-05	4.6323E-05

STATISTICAL RESULTS OF REGRESSION

RUN 1.1.3

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.10769356
<i>R Square</i>	0.011597903
<i>Adjusted R Square</i>	0.010804643
<i>Standard Error</i>	0.163139388
<i>Observations</i>	1248

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	1	0.389118168	0.389118168	14.62055464	0.000137973
<i>Residual</i>	1246	33.16161725	0.02661446		
<i>Total</i>	1247	33.55073542			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	0.067516084	0.004737684	14.250862	8.40561E-43	0.058221358	0.076810809	0.058221358	0.076810809
<i>TIE</i>	2.90096E-05	7.58683E-06	3.823683387	0.000137973	1.41252E-05	4.3894E-05	1.41252E-05	4.3894E-05

# STATISTICAL RESULTS OF REGRESSION

RUN 1.2.1

<i>Regression Statistics</i>	
Multiple R	0.135013082
R Square	0.018228532
Adjusted R Square	0.01362468
Standard Error	0.17937578
Observations	858

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	4	0.509586525	0.127396631	3.95940875	0.003432884
<i>Residual</i>	853	27.4458469	0.03217567		
<i>Total</i>	857	27.95543342			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	-0.02605859	0.02411927	-1.08040543	0.28026705	-0.073398656	0.021281475	-0.073398656	0.021281475
<i>DFL</i>	-0.000179262	0.000250969	-0.714279218	0.47524995	-0.000671852	0.000313327	-0.000671852	0.000313327
<i>DOL</i>	-2.77538E-05	0.000187183	-0.148271385	0.88216364	-0.000395146	0.000339639	-0.000395146	0.000339639
<i>DR</i>	0.149641275	0.038670389	3.869660411	0.000117296	0.073741019	0.225541531	0.073741019	0.225541531
<i>TIE</i>	0.001570143	0.001169172	1.342952689	0.179644514	-0.000724648	0.003864933	-0.000724648	0.003864933

STATISTICAL RESULTS OF REGRESSION

RUN 1.2.2

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.124023929
<i>R Square</i>	0.015381935
<i>Adjusted R Square</i>	0.01423168
<i>Standard Error</i>	0.179320579
<i>Observations</i>	858

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	1	0.430008659	0.430008659	13.3726333	0.000270911
<i>Residual</i>	856	27.52542477	0.03215587		
<i>Total</i>	857	27.95543342			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	-0.014329966	0.022509008	-0.636632494	0.524534456	-0.058509287	0.029849355	-0.058509287	0.029849355
<i>DR</i>	0.138625364	0.037908293	3.656861127	0.000270911	0.064221256	0.213029471	0.064221256	0.213029471

STATISTICAL RESULTS OF REGRESSION

RUN 1.3.1

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.194821757
<i>R Square</i>	0.037955517
<i>Adjusted R Square</i>	0.031942739
<i>Standard Error</i>	0.201569616
<i>Observations</i>	645

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	4	1.025911429	0.256477857	6.312476013	5.51106E-05
<i>Residual</i>	640	26.0033984	0.04063031		
<i>Total</i>	644	27.02930983			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	-0.000469706	0.035680828	-0.013164108	0.989500968	-0.070535304	0.069595892	-0.070535304	0.069595892
<i>DFL</i>	-0.010512503	0.003814654	-2.755820471	0.006021192	-0.01800325	-0.003021756	-0.01800325	-0.003021756
<i>DOL</i>	-0.01023614	0.006179888	-1.656363182	0.098138443	-0.02237144	0.001899161	-0.02237144	0.001899161
<i>DR</i>	0.203205257	0.05207942	3.901834087	0.000105573	0.10093813	0.305472383	0.10093813	0.305472383
<i>TIE</i>	3.08489E-05	0.001428429	0.021596399	0.982776638	-0.002774124	0.002835822	-0.002774124	0.002835822

STATISTICAL RESULTS OF REGRESSION

RUN 1.3.2

Regression Statistics					
Multiple R	0.183933249				
R Square	0.03383144				
Adjusted R Square	0.030821569				
Standard Error	0.201686307				
Observations	645				

ANOVA					
	df	SS	MS	F	Significance F
Regression	2	0.914440478	0.457220239	11.2401632	1.59214E-05
Residual	642	26.11486935	0.040677367		
Total	644	27.02930983			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-0.023003722	0.030193093	-0.761886883	0.446407313	-0.08229291	0.036285467	-0.08229291	0.036285467
DFL	-0.010805187	0.003620296	-2.984614089	0.002947302	-0.017914244	-0.00369613	-0.017914244	-0.00369613
DR	0.210485478	0.051520343	4.085482842	4.95543E-05	0.109316666	0.31165429	0.109316666	0.31165429

STATISTICAL RESULTS OF REGRESSION

RUN 1.3.3

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.093339738
<i>R Square</i>	0.008712307
<i>Adjusted R Square</i>	0.007170646
<i>Standard Error</i>	0.204132356
<i>Observations</i>	645

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	1	0.235487635	0.235487635	5.651248562	0.017734487
<i>Residual</i>	643	26.79382219	0.041670019		
<i>Total</i>	644	27.02930983			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	0.0905972	0.011909157	7.607356179	9.97874E-14	0.067211632	0.113982768	0.067211632	0.113982768
<i>DFL</i>	-0.008614608	0.003623793	-2.377235487	0.017734487	-0.015730515	-0.001498702	-0.015730515	-0.001498702

# STATISTICAL RESULTS OF REGRESSION

RUN 1.3.4

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.142918136
<i>R Square</i>	0.020425594
<i>Adjusted R Square</i>	0.01890215
<i>Standard Error</i>	0.202922735
<i>Observations</i>	645

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	1	0.552089699	0.552089699	13.40751313	0.000271224
<i>Residual</i>	643	26.47722013	0.041177636		
<i>Total</i>	644	27.02930983			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	-0.036340189	0.030043672	-1.209578804	0.226885081	-0.095335828	0.02265545	-0.095335828	0.02265545
<i>DR</i>	0.187711533	0.051264514	3.661627116	0.000271224	0.087045319	0.288377748	0.087045319	0.288377748



STATISTICAL RESULTS OF REGRESSION

RUN 2.1.1

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.110670394
<i>R Square</i>	0.012247936
<i>Adjusted R Square</i>	0.009069329
<i>Standard Error</i>	0.43121746
<i>Observations</i>	1248

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	4	2.866017053	0.716504263	3.853240392	0.004062627
<i>Residual</i>	1243	231.1339829	0.185948498		
<i>Total</i>	1247	234			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	0.190400293	0.041282697	4.612108893	4.39786E-06	0.109408779	0.271391807	0.109408779	0.271391807
<i>DFL</i>	0.000286356	0.000598268	0.478641314	0.632278001	-0.000887371	0.001460083	-0.000887371	0.001460083
<i>DOL</i>	0.00045795	0.000428354	1.069093948	0.285234905	-0.000382426	0.001298327	-0.000382426	0.001298327
<i>DR</i>	0.087984378	0.074035832	1.188402638	0.234901821	-0.057264712	0.233233468	-0.057264712	0.233233468
<i>TIE</i>	7.46338E-05	2.02623E-05	3.683381148	0.000240047	3.48817E-05	0.000114386	3.48817E-05	0.000114386

STATISTICAL RESULTS OF REGRESSION

RUN 2.1.2

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.099323535
<i>R Square</i>	0.009865165
<i>Adjusted R Square</i>	0.009070514
<i>Standard Error</i>	0.431217202
<i>Observations</i>	1248

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	1	2.30844852	2.30844852	12.41446586	0.000441441
<i>Residual</i>	1246	231.6915515	0.185948276		
<i>Total</i>	1247	234			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	0.240143948	0.012522855	19.17645349	5.03628E-72	0.215575722	0.264712175	0.215575722	0.264712175
<i>TIE</i>	7.0658E-05	2.00538E-05	3.523416788	0.000441441	3.1315E-05	0.000110001	3.1315E-05	0.000110001

# STATISTICAL RESULTS OF REGRESSION

RUN 2.2.1

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.223595276
<i>R Square</i>	0.049994847
<i>Adjusted R Square</i>	0.045539958
<i>Standard Error</i>	0.399626117
<i>Observations</i>	858

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	4	7.168958129	1.792239532	11.22246674	7.06108E-09
<i>Residual</i>	853	136.2249813	0.159701033		
<i>Total</i>	857	143.3939394			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	0.403758402	0.053734625	7.513933546	1.4495E-13	0.298290837	0.509225966	0.298290837	0.509225966
<i>DFL</i>	0.000207947	0.000559127	0.371913429	0.710049676	-0.000889479	0.001305373	-0.000889479	0.001305373
<i>DOL</i>	0.000747681	0.000417019	1.792919955	0.073339913	-7.08217E-05	0.001566184	-7.08217E-05	0.001566184
<i>DR</i>	-0.227324326	0.086152643	-2.638622774	0.008476124	-0.396420313	-0.058228339	-0.396420313	-0.058228339
<i>TIE</i>	-0.016229914	0.002604764	-6.230856682	7.28112E-10	-0.021342412	-0.011117416	-0.021342412	-0.011117416

# STATISTICAL RESULTS OF REGRESSION

RUN 2.2.2

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.215114051
<i>R Square</i>	0.046274055
<i>Adjusted R Square</i>	0.044043117
<i>Standard Error</i>	0.399939353
<i>Observations</i>	858

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	2	6.635419043	3.317709522	20.74197376	1.59804E-09
<i>Residual</i>	855	136.7585204	0.159951486		
<i>Total</i>	857	143.3939394			

	<i>Coefficients</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	0.400419836	7.453347328	2.23001E-13	0.29497437	0.505865302	0.29497437	0.505865302
<i>TIE</i>	-0.016347736	-6.284804015	5.22577E-10	-0.021453134	-0.011242339	-0.021453134	-0.011242339
<i>DR</i>	-0.214013598	-2.491875668	0.012895498	-0.382582976	-0.045444219	-0.382582976	-0.045444219

# STATISTICAL RESULTS OF REGRESSION

RUN 2.2.3

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.198362327
<i>R Square</i>	0.039347613
<i>Adjusted R Square</i>	0.038225355
<i>Standard Error</i>	0.401154482
<i>Observations</i>	858

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	1	5.642209194	5.642209194	35.06112818	4.6227E-09
<i>Residual</i>	856	137.7517302	0.160924918		
<i>Total</i>	857	143.3939394			

	<i>Coefficients</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	0.273532842	15.92234459	3.42926E-50	0.239814583	0.307251101	0.239814583	0.307251101
<i>TIE</i>	-0.015208262	-5.921243804	4.6227E-09	-0.020249408	-0.010167115	-0.020249408	-0.010167115

# STATISTICAL RESULTS OF REGRESSION

RUN 2.2.4

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.047057553
<i>R Square</i>	0.002214413
<i>Adjusted R Square</i>	0.001048776
<i>Standard Error</i>	0.408834116
<i>Observations</i>	858

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	1	0.317533452	0.317533452	1.899744639	0.168467038
<i>Residual</i>	856	143.0764059	0.167145334		
<i>Total</i>	857	143.3939394			

	<i>Coefficients</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	0.280187695	5.459787079	6.24801E-08	0.179462983	0.380912406	0.179462983	0.380912406
<i>DR</i>	-0.119123883	-1.378312243	0.168467038	-0.288758276	0.05051051	-0.288758276	0.05051051

STATISTICAL RESULTS OF REGRESSION

RUN 2.3.1

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.440471146
<i>R Square</i>	0.194014831
<i>Adjusted R Square</i>	0.188977424
<i>Standard Error</i>	0.293854612
<i>Observations</i>	645

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	4	13.30310064	3.325775159	38.51481904	6.67699E-29
<i>Residual</i>	640	55.26434122	0.086350533		
<i>Total</i>	644	68.56744186			

	<i>Coefficients</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	0.415262646	7.983264243	6.61931E-15	0.313118784	0.517406509	0.313118784	0.517406509
<i>DFL</i>	0.048790865	8.773560309	1.56329E-17	0.037870615	0.059711114	0.037870615	0.059711114
<i>DR</i>	-0.632644153	-8.332703227	4.82045E-16	-0.78173243	-0.483555875	-0.78173243	-0.483555875
<i>DOL</i>	-0.015199284	-1.687077534	0.09207573	-0.032890512	0.002491945	-0.032890512	0.002491945
<i>TIE</i>	-0.005600623	-2.689490773	0.007342637	-0.009689802	-0.001511443	-0.009689802	-0.001511443

# STATISTICAL RESULTS OF REGRESSION

RUN 2.3.2

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.436383347
<i>R Square</i>	0.190430425
<i>Adjusted R Square</i>	0.186641488
<i>Standard Error</i>	0.294277493
<i>Observations</i>	645

<b>ANOVA</b>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	3	13.05732711	4.352442369	50.2595891	3.49987E-29
<i>Residual</i>	641	55.51011475	0.086599243		
<i>Total</i>	644	68.56744186			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	0.381835491	0.048164443	7.927746442	9.93306E-15	0.287256331	0.47641465	0.287256331	0.47641465
<i>DFL</i>	0.048353328	0.005563068	8.691844858	2.97269E-17	0.037429287	0.059277368	0.037429287	0.059277368
<i>DR</i>	-0.621849902	0.075761835	-8.207957255	1.23748E-15	-0.770621282	-0.473078522	-0.770621282	-0.473078522
<i>TIE</i>	-0.005649943	0.002085201	-2.709543363	0.006917703	-0.009744594	-0.001555292	-0.009744594	-0.001555292



STATISTICAL RESULTS OF REGRESSION

RUN 2.3.3

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.318886048
<i>R Square</i>	0.101688312
<i>Adjusted R Square</i>	0.100291249
<i>Standard Error</i>	0.309504532
<i>Observations</i>	645

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	1	6.972507407	6.972507407	72.78719106	1.03531E-16
<i>Residual</i>	643	61.59493445	0.095793055		
<i>Total</i>	644	68.56744186			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	0.007257333	0.018056609	0.401921138	0.687875624	-0.028199757	0.042714422	-0.028199757	0.042714422
<i>DFL</i>	0.046875506	0.005494377	8.531540955	1.03531E-16	0.036086402	0.057664611	0.036086402	0.057664611

STATISTICAL RESULTS OF REGRESSION

RUN 2.3.4

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.231566121
<i>R Square</i>	0.053622869
<i>Adjusted R Square</i>	0.052151053
<i>Standard Error</i>	0.317676878
<i>Observations</i>	645

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	1	3.676782919	3.676782919	36.43315472	2.6698E-09
<i>Residual</i>	643	64.89065894	0.100918599		
<i>Total</i>	644	68.56744186			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	0.394600467	0.047033567	8.389762797	3.09166E-16	0.302242405	0.486958528	0.302242405	0.486958528
<i>DR</i>	-0.484417842	0.080254934	-6.035988297	2.6698E-09	-0.642011464	-0.326824219	-0.642011464	-0.326824219

# STATISTICAL RESULTS OF REGRESSION

RUN 2.3.5

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.162418719
<i>R Square</i>	0.02637984
<i>Adjusted R Square</i>	0.024865656
<i>Standard Error</i>	0.322216864
<i>Observations</i>	645

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	1	1.808798161	1.808798161	17.42182215	3.40597E-05
<i>Residual</i>	643	66.7586437	0.103823707		
<i>Total</i>	644	68.56744186			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	0.163342441	0.016254739	10.04891186	3.62999E-22	0.131423615	0.195261266	0.131423615	0.195261266
<i>TIE</i>	-0.008924689	0.00213819	-4.173945634	3.40597E-05	-0.013123372	-0.004726005	-0.013123372	-0.004726005

STATISTICAL RESULTS OF REGRESSION

RUN 3.1.1.1

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.055707009
<i>R Square</i>	0.003103271
<i>Adjusted R Square</i>	-0.001179851
<i>Standard Error</i>	0.178853571
<i>Observations</i>	936

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	4	0.092707405	0.023176851	0.724534722	0.575251242
<i>Residual</i>	931	29.78138645	0.0319886		
<i>Total</i>	935	29.87409386			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	0.041143826	0.019686867	2.089912317	0.03689653	0.002508019	0.079779632	0.002508019	0.079779632
<i>DFL</i>	-0.000191766	0.000252537	-0.759355659	0.44783205	-0.000687374	0.000303843	-0.000687374	0.000303843
<i>DOL</i>	-6.98979E-05	0.000295654	-0.236417743	0.813160533	-0.000650124	0.000510328	-0.000650124	0.000510328
<i>DR</i>	0.052816065	0.035326697	1.495075117	0.135233706	-0.016513169	0.122145299	-0.016513169	0.122145299
<i>TIE</i>	6.8515E-06	1.10956E-05	0.617495431	0.537058992	-1.49239E-05	2.86269E-05	-1.49239E-05	2.86269E-05

STATISTICAL RESULTS OF REGRESSION

RUN 3.1.1.2

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.461066536
<i>R Square</i>	0.212582351
<i>Adjusted R Square</i>	0.202322837
<i>Standard Error</i>	0.096713626
<i>Observations</i>	312

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	4	0.775239278	0.19380982	20.72051017	3.92857E-15
<i>Residual</i>	307	2.871532318	0.009353525		
<i>Total</i>	311	3.646771596			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	0.033850481	0.019114067	1.77097215	0.077557501	-0.003760634	0.071461595	-0.003760634	0.071461595
<i>DFL</i>	-0.00023369	0.000725338	-0.322180874	0.747534953	-0.001660952	0.001193572	-0.001660952	0.001193572
<i>DOL</i>	7.30438E-05	0.000121403	0.601666281	0.547840342	-0.000165842	0.00031193	-0.000165842	0.00031193
<i>DR</i>	0.058478344	0.034323408	1.703745274	0.0894406	-0.00906048	0.126017169	-0.00906048	0.126017169
<i>TIE</i>	6.35342E-05	7.08776E-06	8.963938517	3.13201E-17	4.95875E-05	7.7481E-05	4.95875E-05	7.7481E-05

STATISTICAL RESULTS OF REGRESSION

RUN 3.1.1.3

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.450801846
<i>R Square</i>	0.203222304
<i>Adjusted R Square</i>	0.200652053
<i>Standard Error</i>	0.096814859
<i>Observations</i>	312

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	1	0.741105326	0.741105326	79.06711564	5.05694E-17
<i>Residual</i>	310	2.90566627	0.009373117		
<i>Total</i>	311	3.646771596			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	0.064816499	0.005742101	11.28794126	5.52789E-25	0.053518075	0.076114923	0.053518075	0.076114923
<i>TIE</i>	6.23242E-05	7.00904E-06	8.891969166	5.05694E-17	4.85329E-05	7.61155E-05	4.85329E-05	7.61155E-05

STATISTICAL RESULTS OF REGRESSION

RUN 3.2.1.1

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.127049752
<i>R Square</i>	0.01614164
<i>Adjusted R Square</i>	0.010276612
<i>Standard Error</i>	0.199450096
<i>Observations</i>	676

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	4	0.437931399	0.10948285	2.752184817	0.027296854
<i>Residual</i>	671	26.69260864	0.039780341		
<i>Total</i>	675	27.13054004			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	-0.033077547	0.032252095	-1.025593734	0.305452702	-0.096404798	0.030249704	-0.096404798	0.030249704
<i>DFL</i>	-0.000192973	0.000282343	-0.683470861	0.49454529	-0.000747355	0.000361409	-0.000747355	0.000361409
<i>DOL</i>	-0.000194352	0.000380637	-0.510596926	0.609801262	-0.000941736	0.000553032	-0.000941736	0.000553032
<i>TIE</i>	0.001511585	0.001345446	1.123482682	0.261634342	-0.001130209	0.004153378	-0.001130209	0.004153378
<i>DR</i>	0.164010742	0.051310414	3.196441595	0.001456629	0.063262328	0.264759156	0.063262328	0.264759156

STATISTICAL RESULTS OF REGRESSION

RUN 3.2.1.2

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.114284922
<i>R Square</i>	0.013061043
<i>Adjusted R Square</i>	0.011596742
<i>Standard Error</i>	0.199317034
<i>Observations</i>	676

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	1	0.354353158	0.354353158	8.919643016	0.002923553
<i>Residual</i>	674	26.77618688	0.03972728		
<i>Total</i>	675	27.13054004			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	-0.019331151	0.029860481	-0.647382443	0.517604887	-0.077961906	0.039299603	-0.077961906	0.039299603
<i>DR</i>	0.149811026	0.050161445	2.986577141	0.002923553	0.051319534	0.248302519	0.051319534	0.248302519



STATISTICAL RESULTS OF REGRESSION

RUN 3.2.1.3

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.341147909
<i>R Square</i>	0.116381896
<i>Adjusted R Square</i>	0.096413125
<i>Standard Error</i>	0.063683561
<i>Observations</i>	182

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	4	0.094547221	0.023636805	5.828195309	0.000198376
<i>Residual</i>	177	0.717840479	0.004055596		
<i>Total</i>	181	0.8123877			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	-0.022022932	0.018355496	-1.199800456	0.231820356	-0.058246731	0.014200867	-0.058246731	0.014200867
<i>DFL</i>	0.000578246	0.00059914	0.96512573	0.33579862	-0.000604133	0.001760624	-0.000604133	0.001760624
<i>DOL</i>	6.55704E-05	8.02883E-05	0.816686691	0.415205325	-9.28752E-05	0.000224016	-9.28752E-05	0.000224016
<i>TIE</i>	0.00587686	0.003257158	1.804290453	0.072885876	-0.000551005	0.012304724	-0.000551005	0.012304724
<i>DR</i>	0.115127514	0.026357578	4.367909487	2.13141E-05	0.063111942	0.167143086	0.063111942	0.167143086

STATISTICAL RESULTS OF REGRESSION

RUN 3.2.1.4

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.308816546
<i>R Square</i>	0.095367659
<i>Adjusted R Square</i>	0.090341924
<i>Standard Error</i>	0.063897148
<i>Observations</i>	182

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	1	0.077475513	0.077475513	18.97586215	2.21931E-05
<i>Residual</i>	180	0.734912187	0.004082845		
<i>Total</i>	181	0.8123877			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	-0.003083832	0.014696824	-0.209829797	0.834037825	-0.032084054	0.025916391	-0.032084054	0.025916391
<i>DR</i>	0.108856651	0.024989307	4.356129262	2.21931E-05	0.059546986	0.158166316	0.059546986	0.158166316

# STATISTICAL RESULTS OF REGRESSION

**RUN 3.3.1.1**

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.195507957
<i>R Square</i>	0.038223361
<i>Adjusted R Square</i>	0.031377976
<i>Standard Error</i>	0.214153026
<i>Observations</i>	567

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	4	1.024328829	0.256082207	5.583814415	0.000205851
<i>Residual</i>	562	25.77417331	0.045861518		
<i>Total</i>	566	26.79850214			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	-0.015148678	0.044151504	-0.343106723	0.731646477	-0.101870832	0.071573476	-0.101870832	0.071573476
<i>DFL</i>	-0.014980166	0.005234802	-2.861648788	0.004371383	-0.025262337	-0.004697994	-0.025262337	-0.004697994
<i>DR</i>	0.253412138	0.067170136	3.772690579	0.000178633	0.121476908	0.385347367	0.121476908	0.385347367
<i>TIE</i>	-0.000183171	0.001550779	-0.118115568	0.906018291	-0.003229204	0.002862861	-0.003229204	0.002862861
<i>DOL</i>	-0.011518569	0.006706114	-1.717621868	0.086416475	-0.024690684	0.001653546	-0.024690684	0.001653546

STATISTICAL RESULTS OF REGRESSION

RUN 3.3.1.2

<i>Regression Statistics</i>	
Multiple R	0.182077293
R Square	0.033152141
Adjusted R Square	0.029723602
Standard Error	0.214335831
Observations	567

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	0.888427715	0.444213858	9.669467237	7.43011E-05
Residual	564	25.91007443	0.045939848		
Total	566	26.79850214			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	-0.04413057	0.037689444	-1.170900017	0.242133434	-0.118159464	0.029898324	-0.118159464	0.029898324
DFL	-0.014911622	0.005034618	-2.961818208	0.003187096	-0.024800523	-0.005022721	-0.024800523	-0.005022721
DR	0.263890087	0.066258455	3.982738312	7.70468E-05	0.13374648	0.394033695	0.13374648	0.394033695

STATISTICAL RESULTS OF REGRESSION

RUN 3.3.1.3

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.077201369
<i>R Square</i>	0.005960051
<i>Adjusted R Square</i>	0.004200689
<i>Standard Error</i>	0.217136561
<i>Observations</i>	567

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	1	0.159720449	0.159720449	3.387619408	0.06621193
<i>Residual</i>	565	26.63878169	0.047148286		
<i>Total</i>	566	26.79850214			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	0.095625837	0.013932847	6.863338028	1.77474E-11	0.068259329	0.122992345	0.068259329	0.122992345
<i>DFL</i>	-0.008965256	0.004870969	-1.84054867	0.06621193	-0.018532678	0.000602166	-0.018532678	0.000602166

STATISTICAL RESULTS OF REGRESSION

RUN 3.3.1.4

<i>Regression Statistics</i>					
<i>Multiple R</i>	0.134588044				
<i>R Square</i>	0.018113942				
<i>Adjusted R Square</i>	0.01637609				
<i>Standard Error</i>	0.21580504				
<i>Observations</i>	567				

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	1	0.485426502	0.485426502	10.42318189	0.001316617
<i>Residual</i>	565	26.31307564	0.046571815		
<i>Total</i>	566	26.79850214			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	-0.042721873	0.037944772	-1.125896171	0.260687478	-0.117251934	0.031808187	-0.117251934	0.031808187
<i>DR</i>	0.205692755	0.063711648	3.228495299	0.001316617	0.080552118	0.330833392	0.080552118	0.330833392

## STATISTICAL RESULTS OF REGRESSION

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.643495877
<i>R Square</i>	0.414086944
<i>Adjusted R Square</i>	0.381982119
<i>Standard Error</i>	0.015739325
<i>Observations</i>	78

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	4	0.012780664	0.003195166	12.8979661	5.40902E-08
<i>Residual</i>	73	0.018084023	0.000247726		
<i>Total</i>	77	0.030864687			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>
<i>Intercept</i>	-0.000511881	0.007860395	-0.065121547	0.948255233	-0.016177637	0.015153875	-0.016177637
<i>DFL</i>	-0.001667002	0.000667408	-2.497726335	0.014752784	-0.002997144	-0.000336859	-0.002997144
<i>DR</i>	0.056017294	0.009054541	6.186651977	3.22048E-08	0.037971607	0.07406298	0.037971607
<i>TIE</i>	0.001524558	0.00103069	1.479162886	0.143399267	-0.000529605	0.003578721	-0.000529605
<i>DOL</i>	0.000273979	0.002734977	0.10017596	0.920479241	-0.005176826	0.005724784	-0.005176826

STATISTICAL RESULTS OF REGRESSION

RUN 3.3.2.2

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.62968217
<i>R Square</i>	0.396499635
<i>Adjusted R Square</i>	0.380406292
<i>Standard Error</i>	0.015759378
<i>Observations</i>	78

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	2	0.012237837	0.006118918	24.6374935	5.96222E-09
<i>Residual</i>	75	0.01862685	0.000248358		
<i>Total</i>	77	0.030864687			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	0.005772082	0.004825733	1.196104754	0.23542346	-0.003841273	0.015385437	-0.003841273	0.015385437
<i>DFL</i>	-0.002017817	0.000538414	-3.747703308	0.000348486	-0.003090393	-0.00094524	-0.003090393	-0.00094524
<i>DR</i>	0.053900875	0.008636889	6.240774139	2.36705E-08	0.036695305	0.071106445	0.036695305	0.071106445



# STATISTICAL RESULTS OF REGRESSION

**RUN 3.3.2.3**

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.532430164
<i>R Square</i>	0.28348188
<i>Adjusted R Square</i>	0.27405401
<i>Standard Error</i>	0.017058378
<i>Observations</i>	78

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	1	0.008749579	0.008749579	30.06849687	5.24045E-07
<i>Residual</i>	76	0.022115107	0.000290988		
<i>Total</i>	77	0.030864687			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	-0.001643886	0.004764159	-0.345052776	0.731007833	-0.011132544	0.007844771	-0.011132544	0.007844771
<i>DR</i>	0.05106709	0.009312907	5.48347489	5.24045E-07	0.032518805	0.069615375	0.032518805	0.069615375

# STATISTICAL RESULTS OF REGRESSION

**RUN 3.3.2.4**

<i>Regression Statistics</i>	
<i>Multiple R</i>	0.288277318
<i>R Square</i>	0.083103812
<i>Adjusted R Square</i>	0.071039388
<i>Standard Error</i>	0.019296752
<i>Observations</i>	78

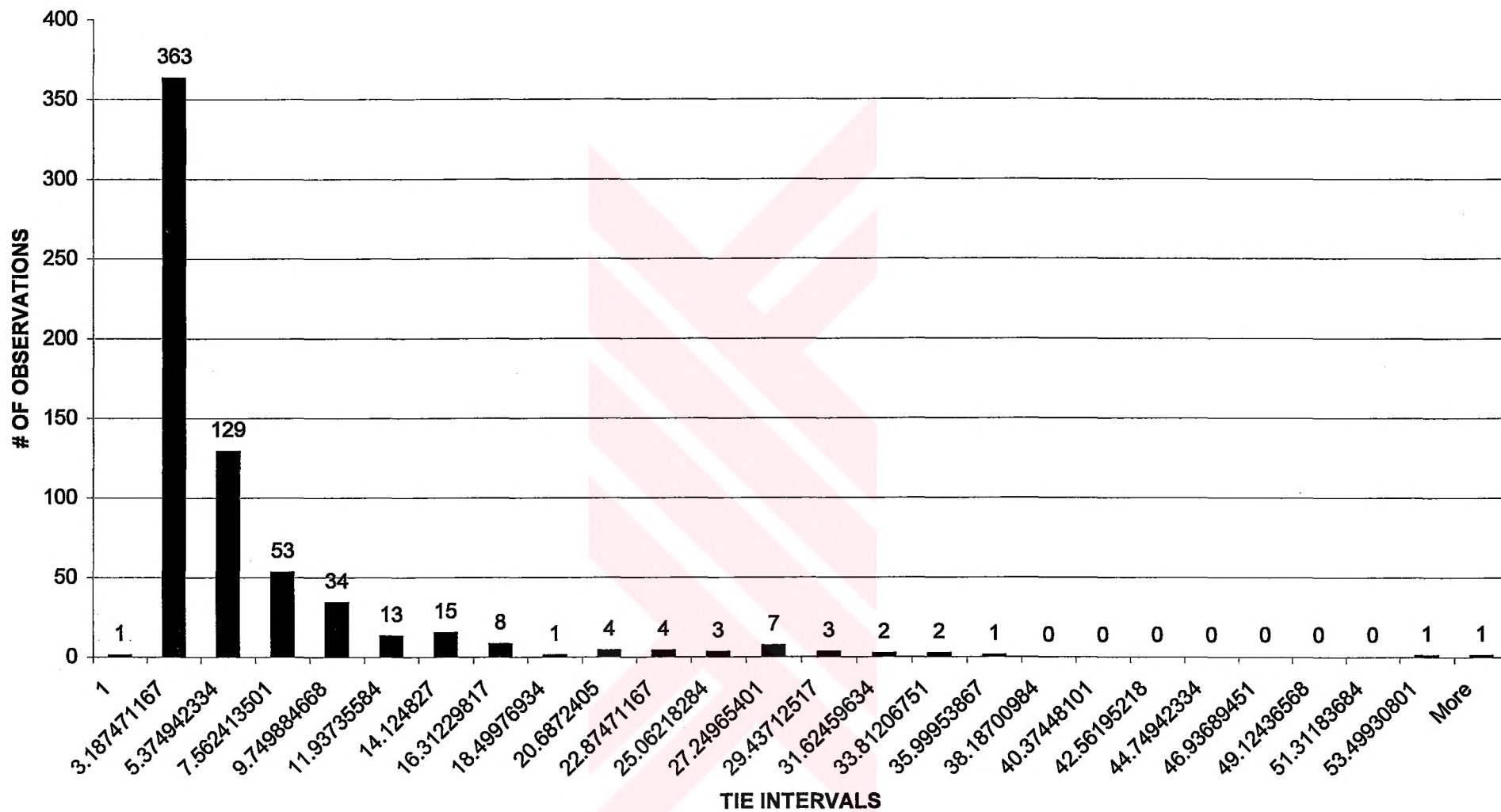
  

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
<i>Regression</i>	1	0.002564973	0.002564973	6.88833674	0.010483027
<i>Residual</i>	76	0.028299713	0.000372365		
<i>Total</i>	77	0.030864687			

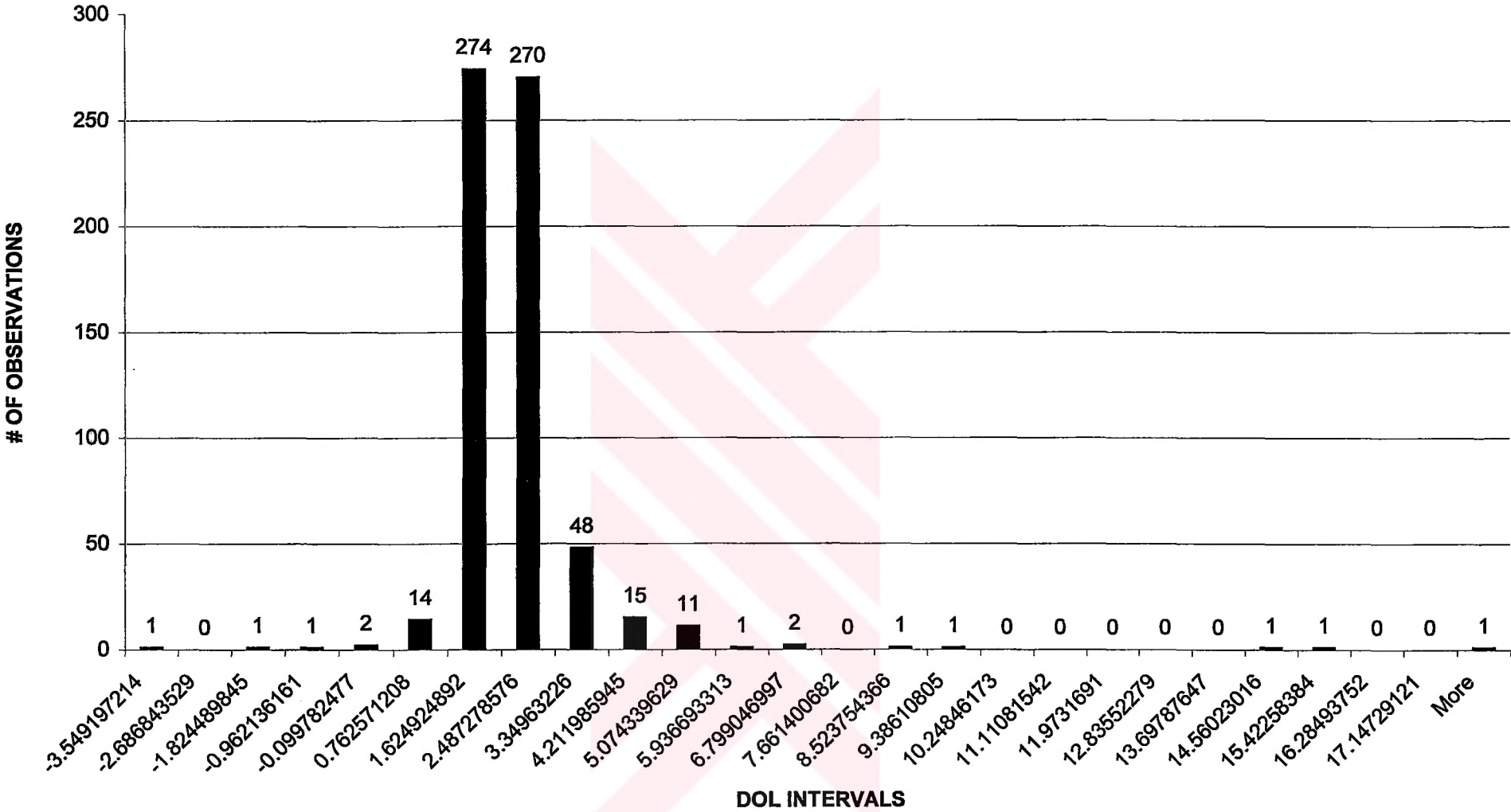
  

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
<i>Intercept</i>	0.029703814	0.003587167	8.280577279	3.19365E-12	0.022559343	0.036848286	0.022559343	0.036848286
<i>DFL</i>	-0.001723646	0.000656736	-2.624564105	0.010483027	-0.003031651	-0.000415641	-0.003031651	-0.000415641

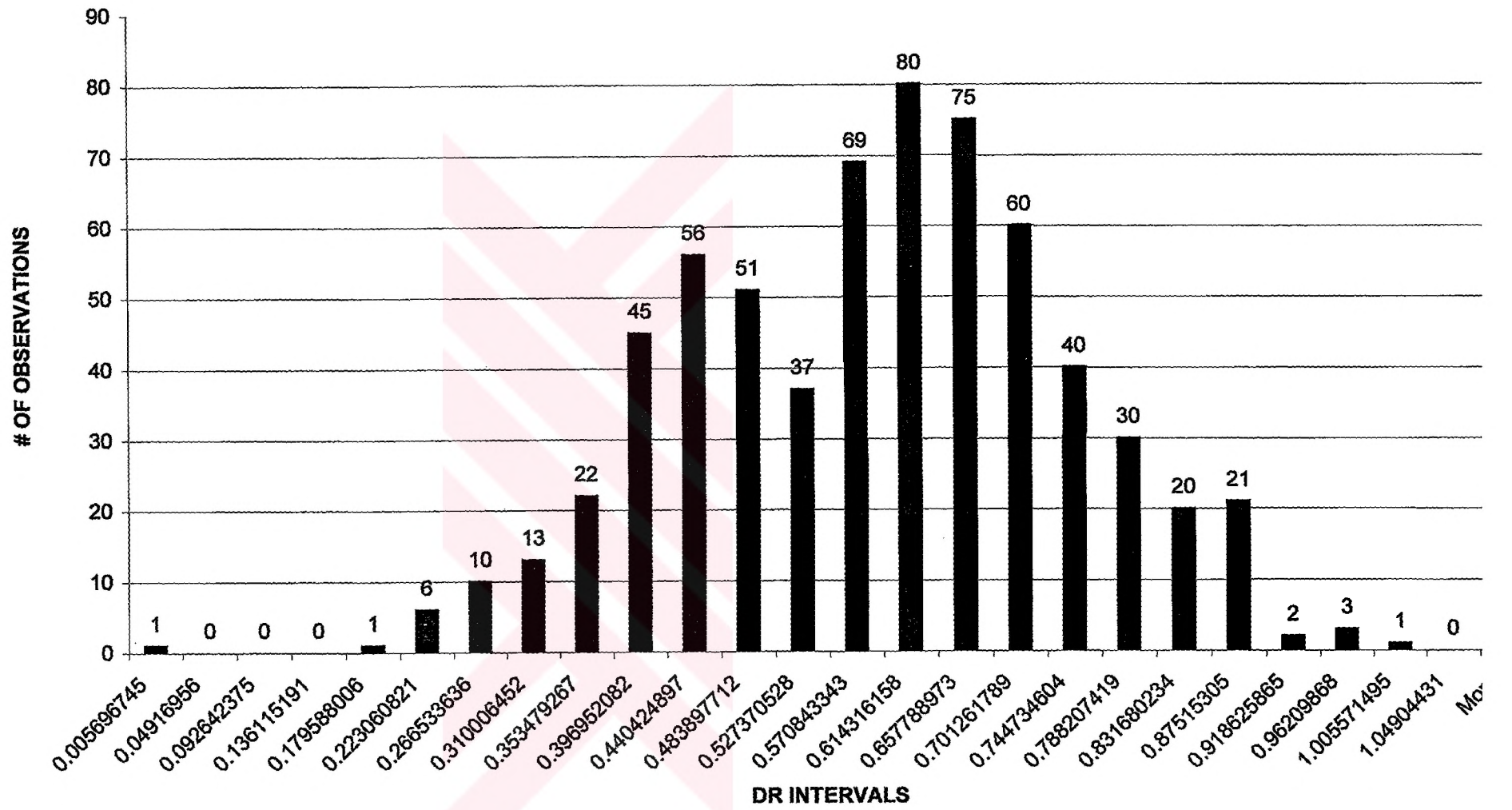
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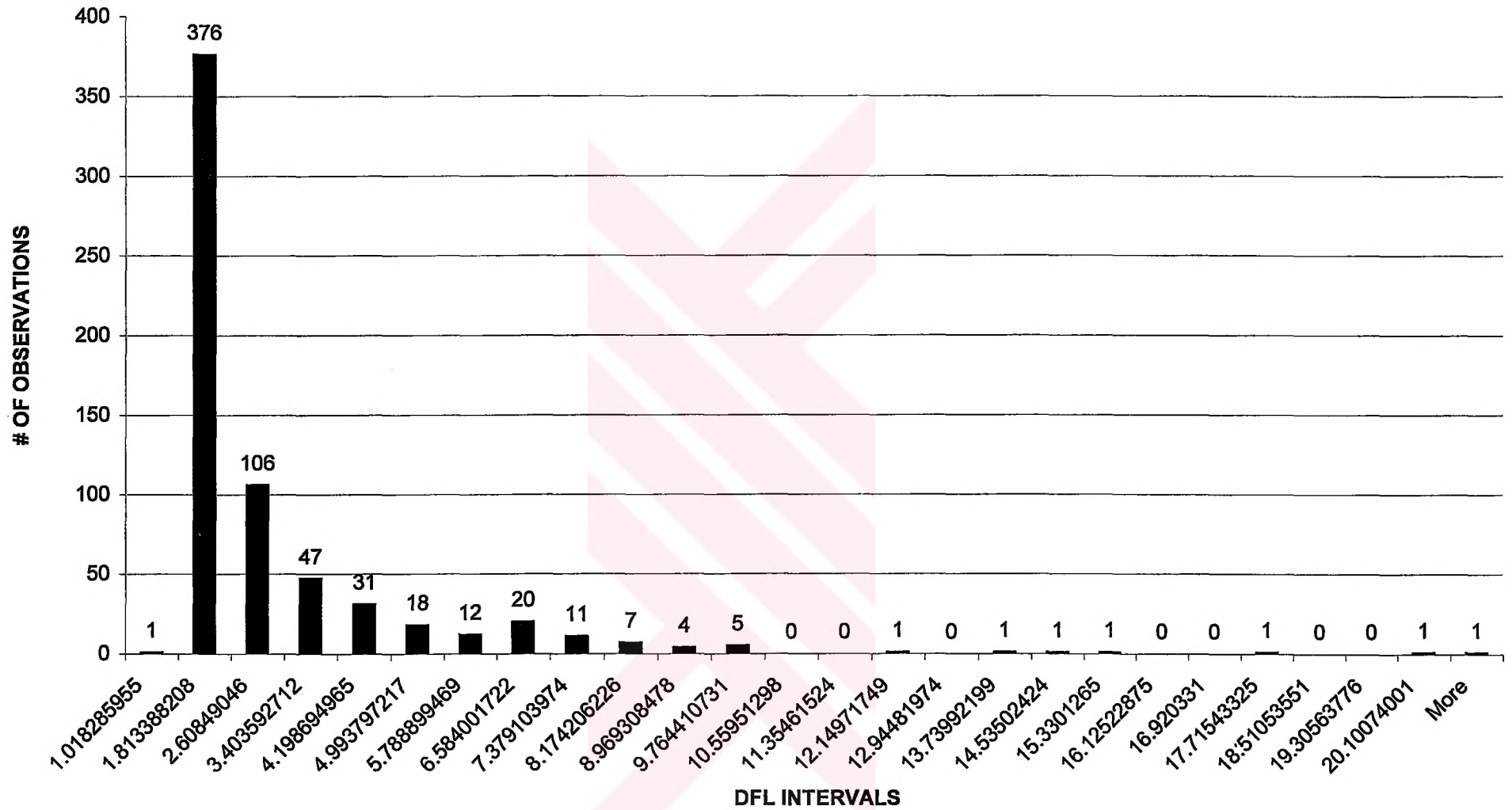
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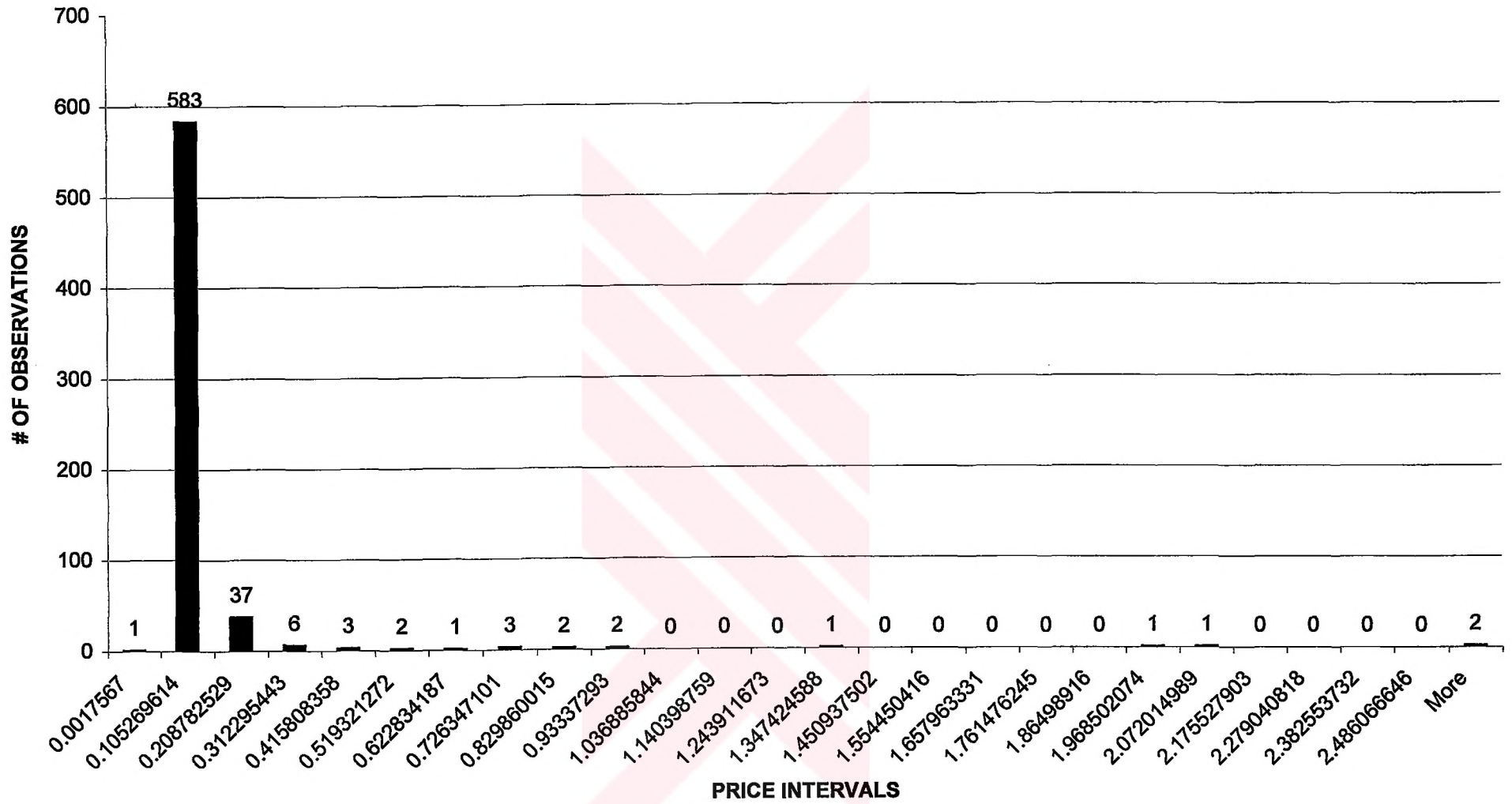
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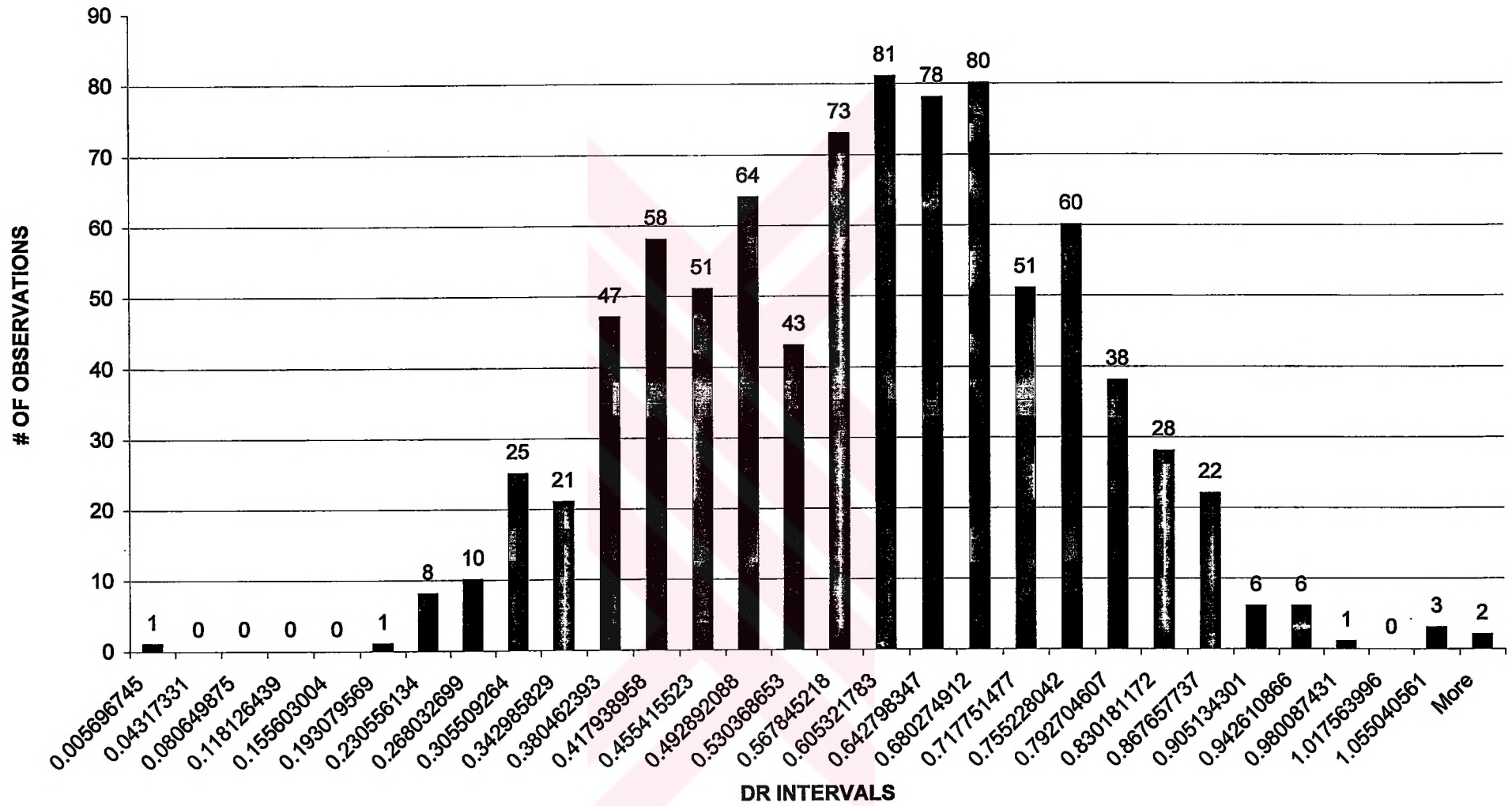
# DFL HISTOGRAM FOR FINAL DATA SET



# PRICE HISTOGRAM IN USD TERMS FOR FINAL DATA SET

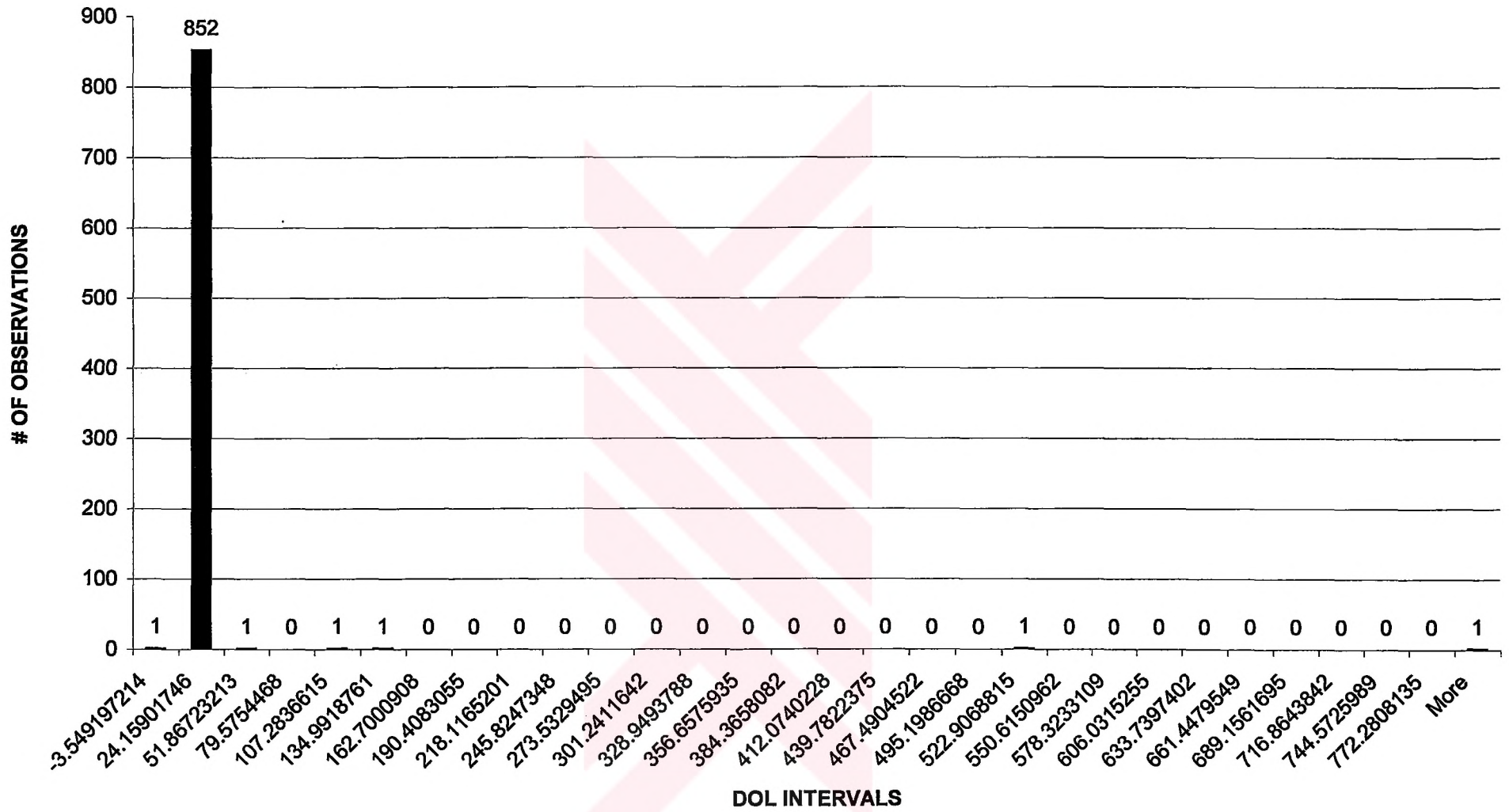


# DR HISTOGRAM FOR INTERIM DATA SET

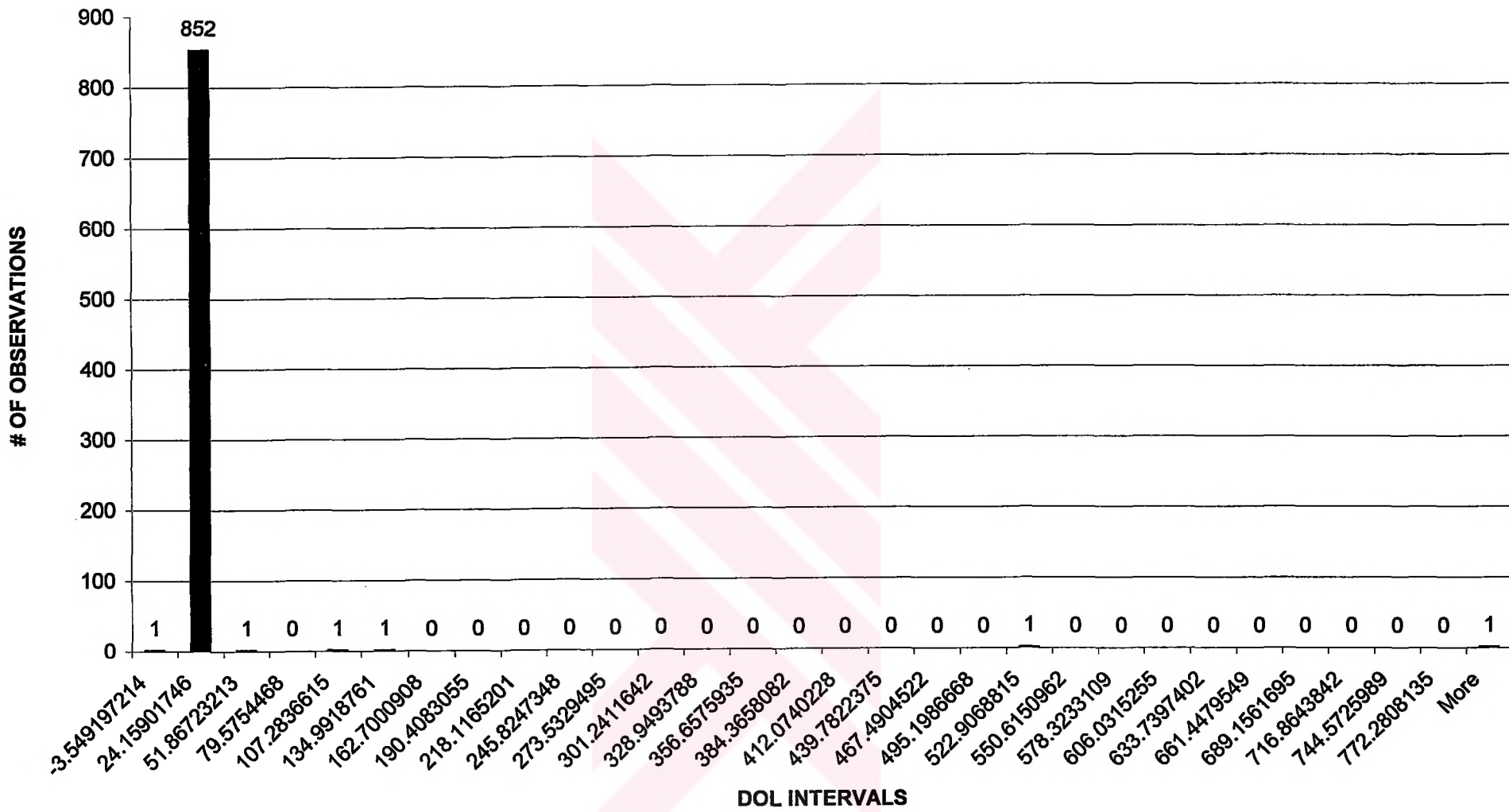




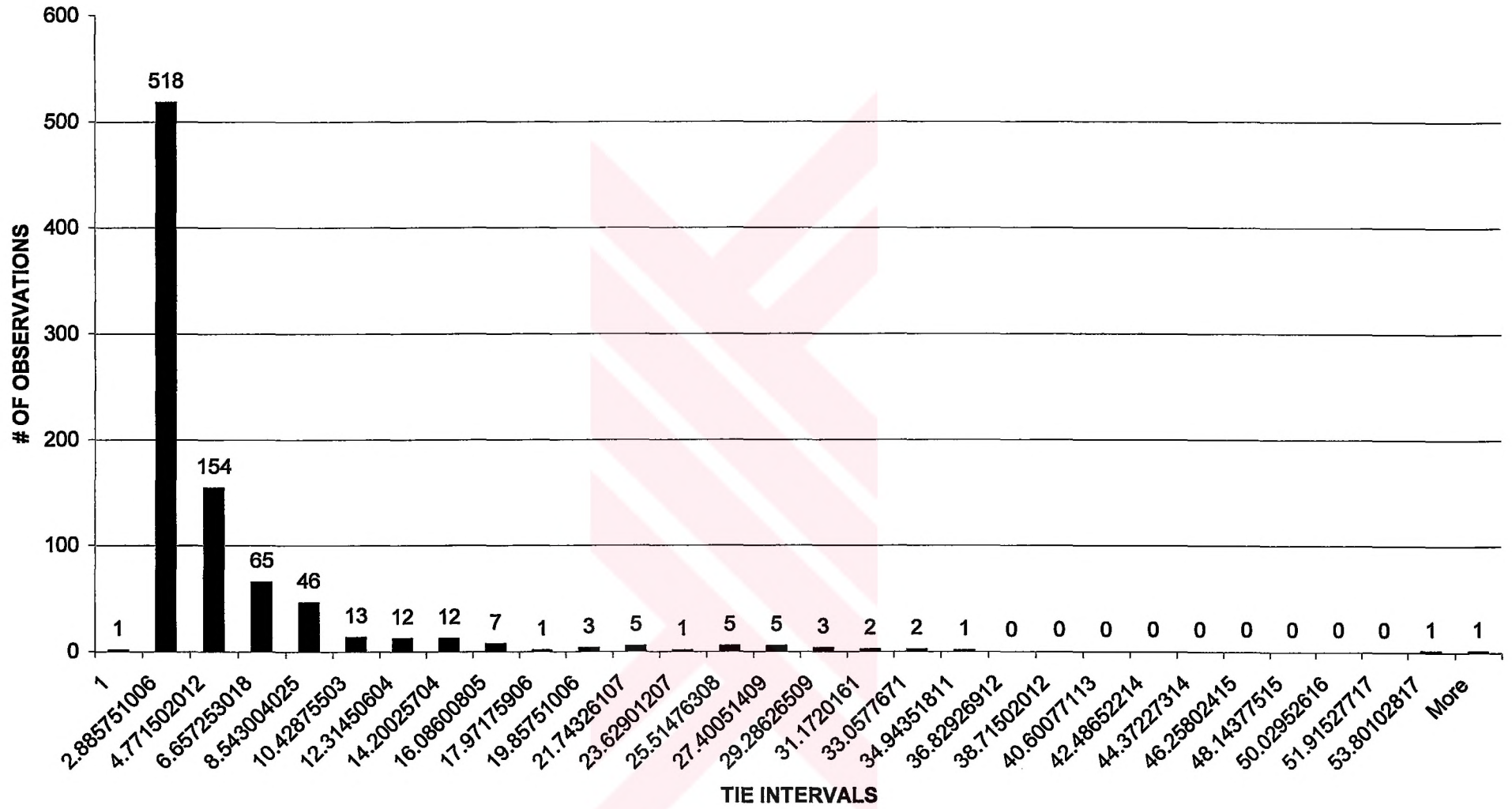
# DOL HISTOGRAM FOR INTERIM DATA SET



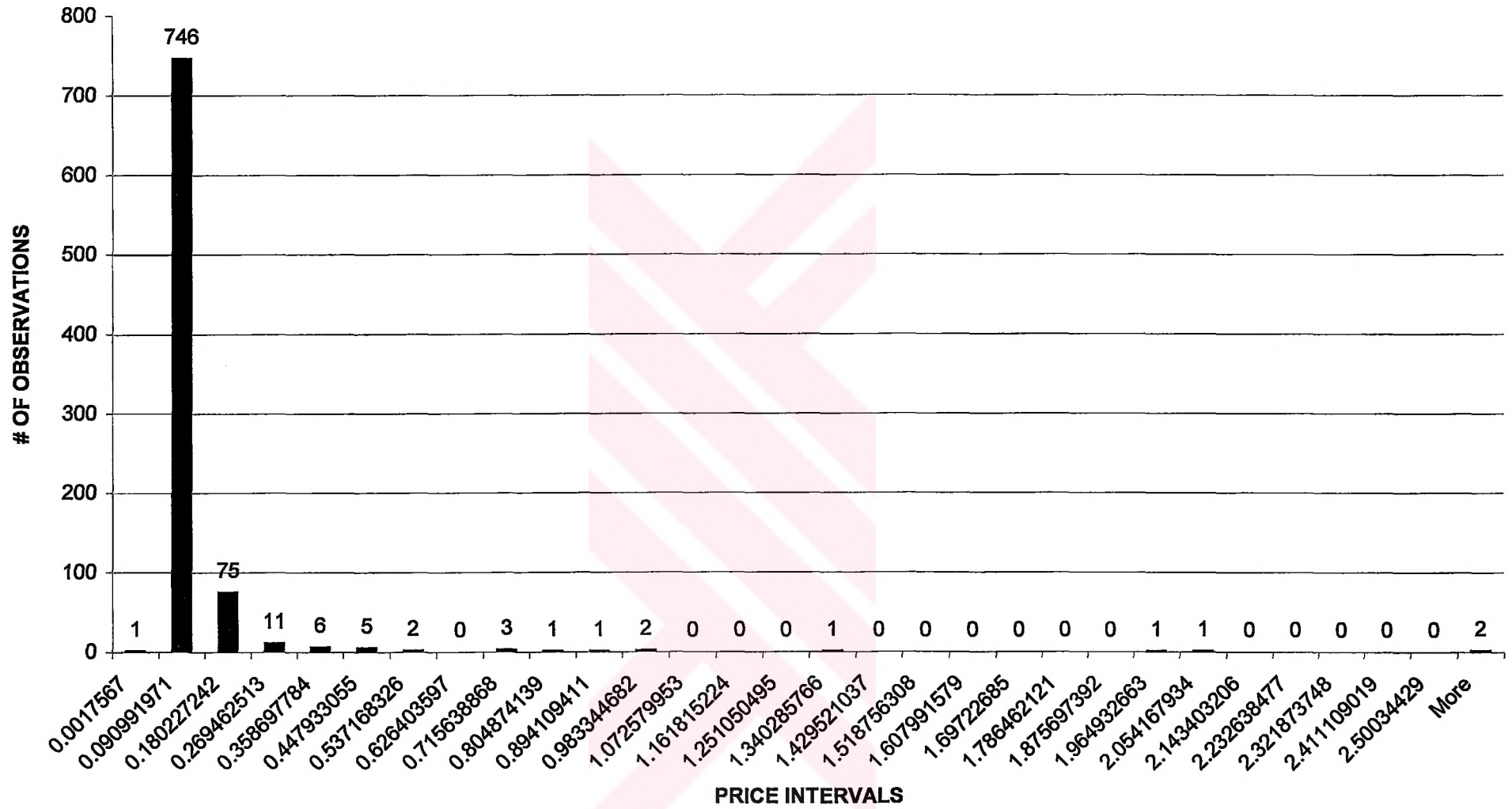
# DOL HISTOGRAM FOR INTERIM DATA SET



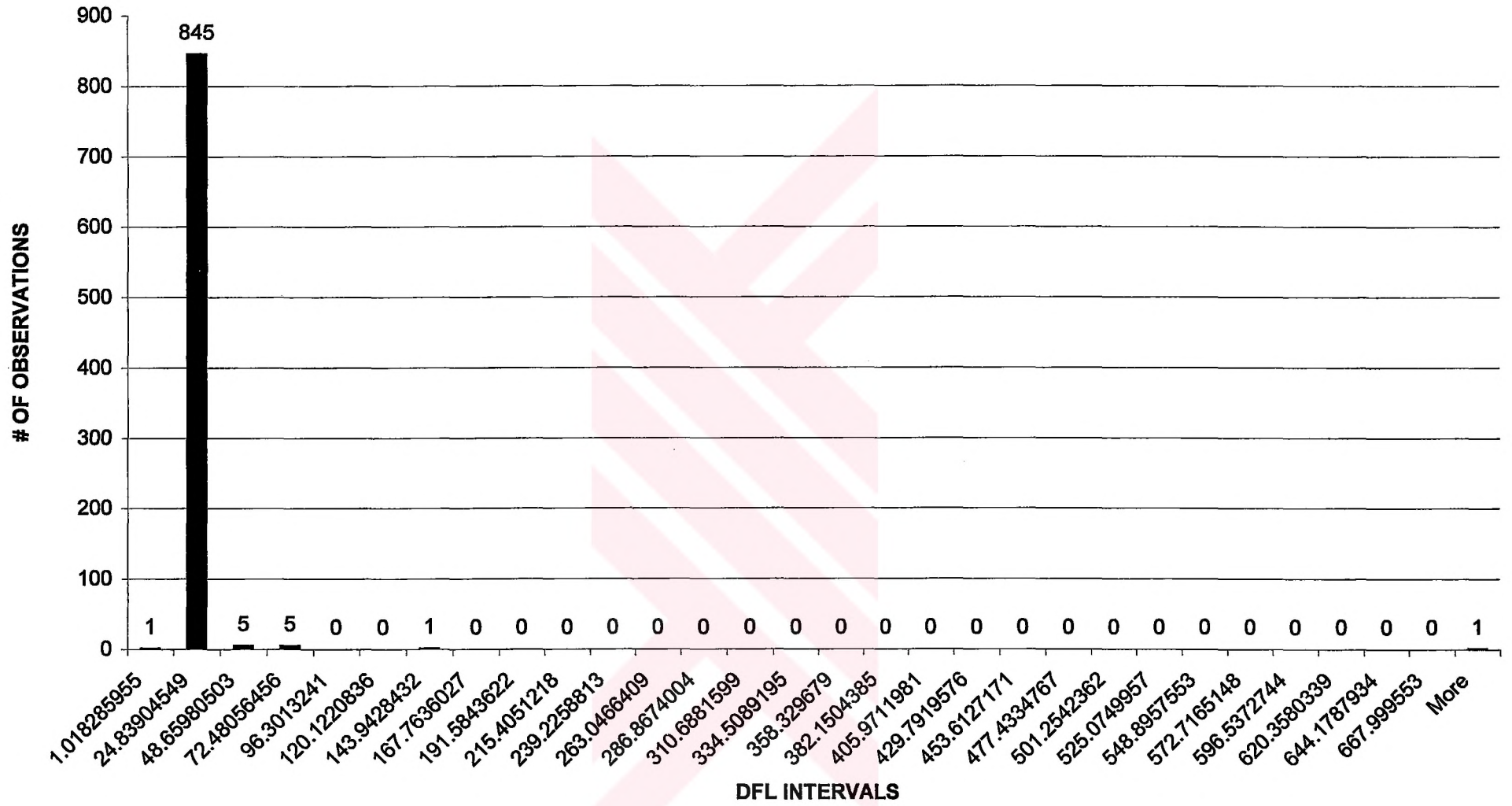
# TIE HISTOGRAM FOR INTERIM DATA SET



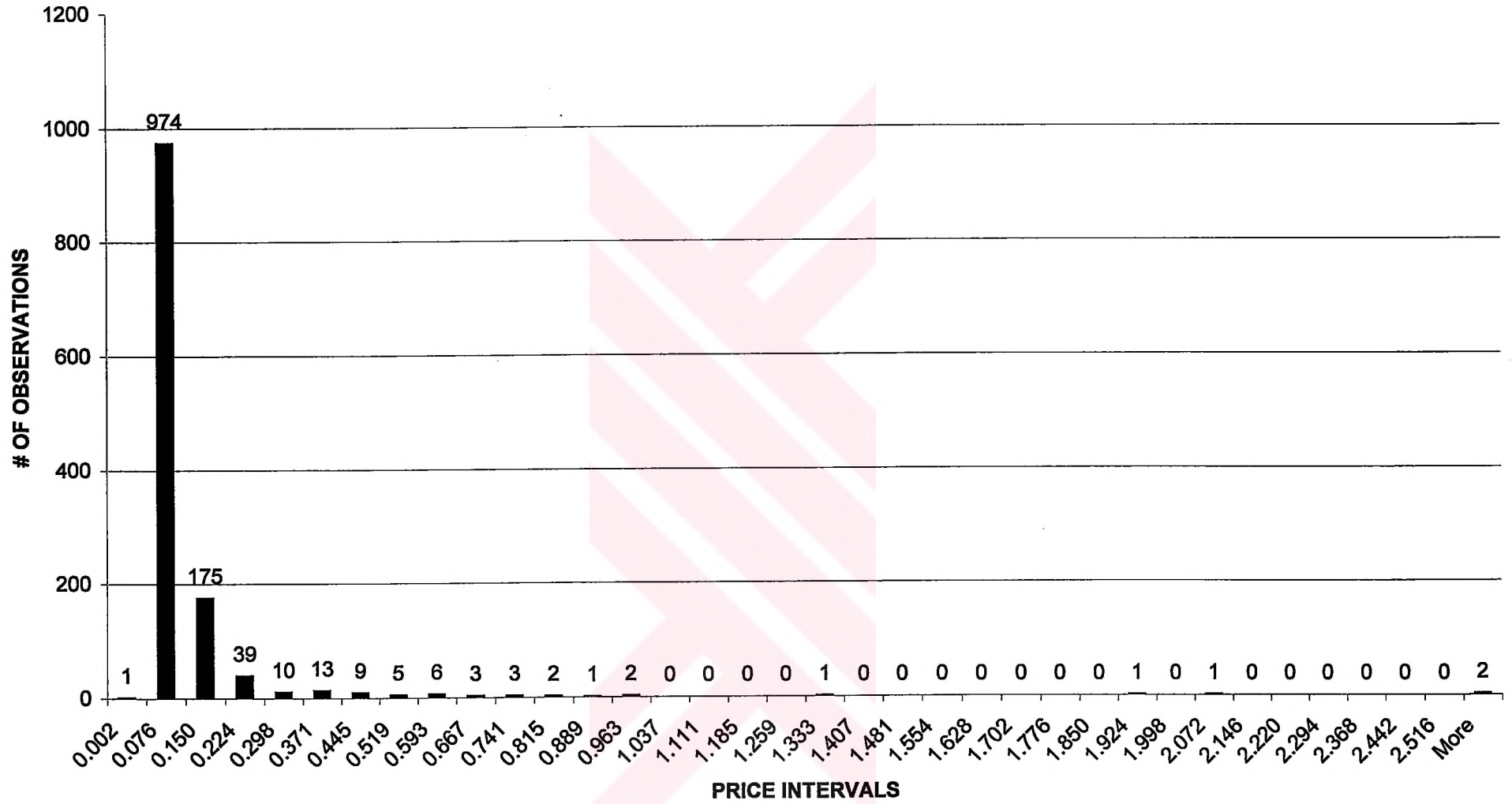
# PRICE HISTOGRAM IN USD TERMS FOR INTERIM DATA SET



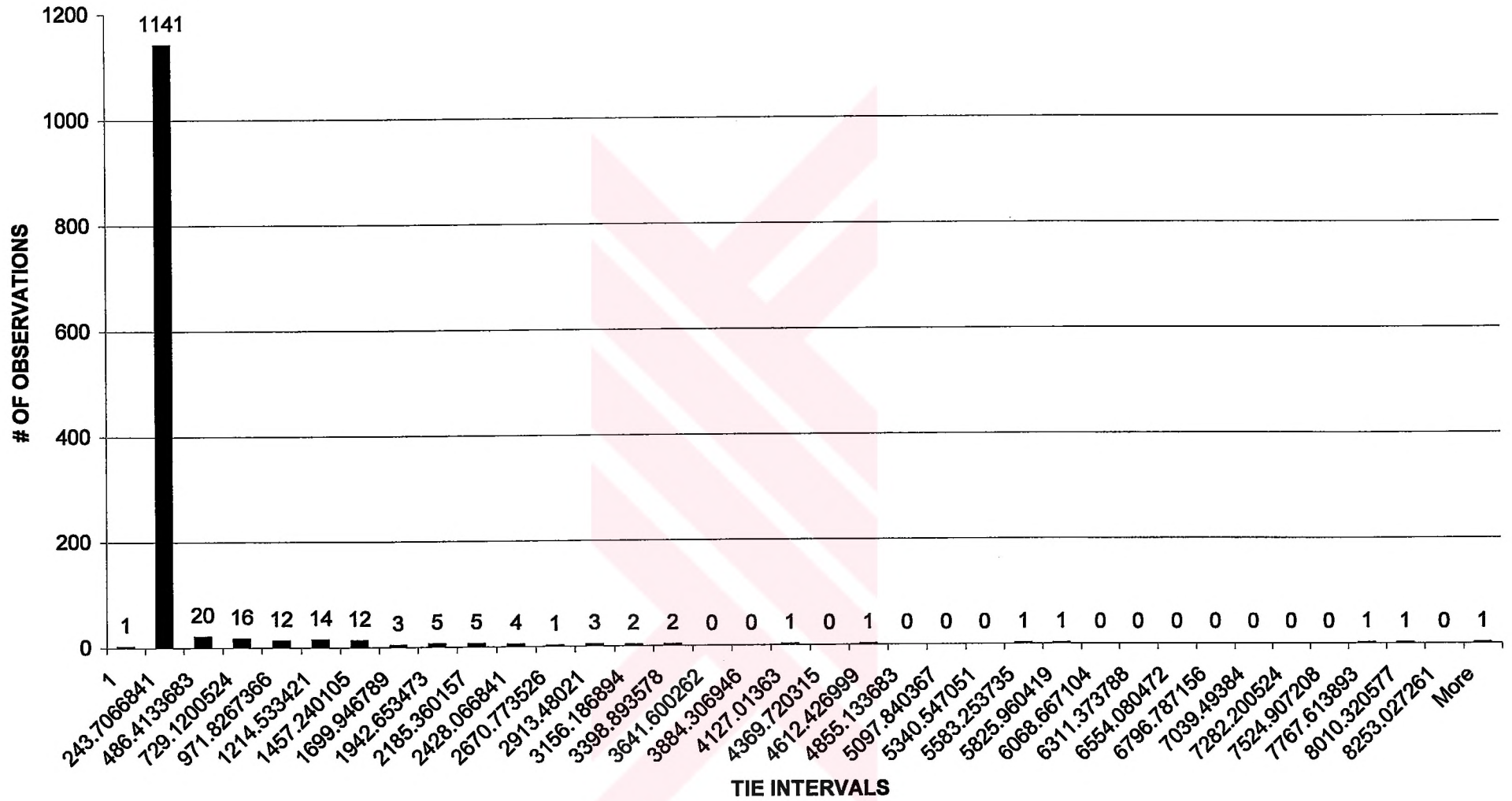
# DFL HISTOGRAM FOR INTERIM DATA SET



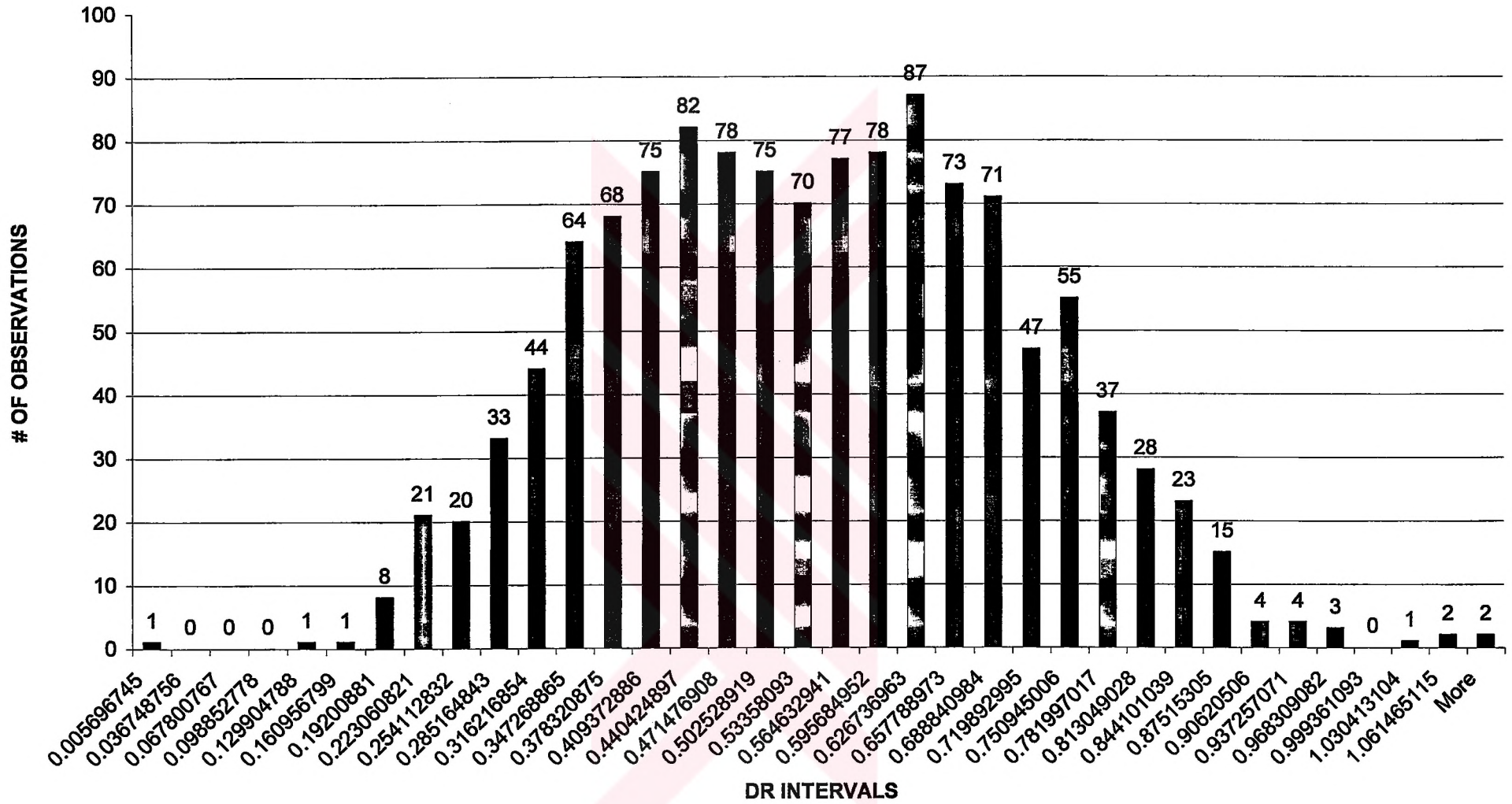
# PRICE HISTOGRAM IN USD TERMS FOR RAW DATA SET



# TIE HISTOGRAM FOR RAW DATA SET

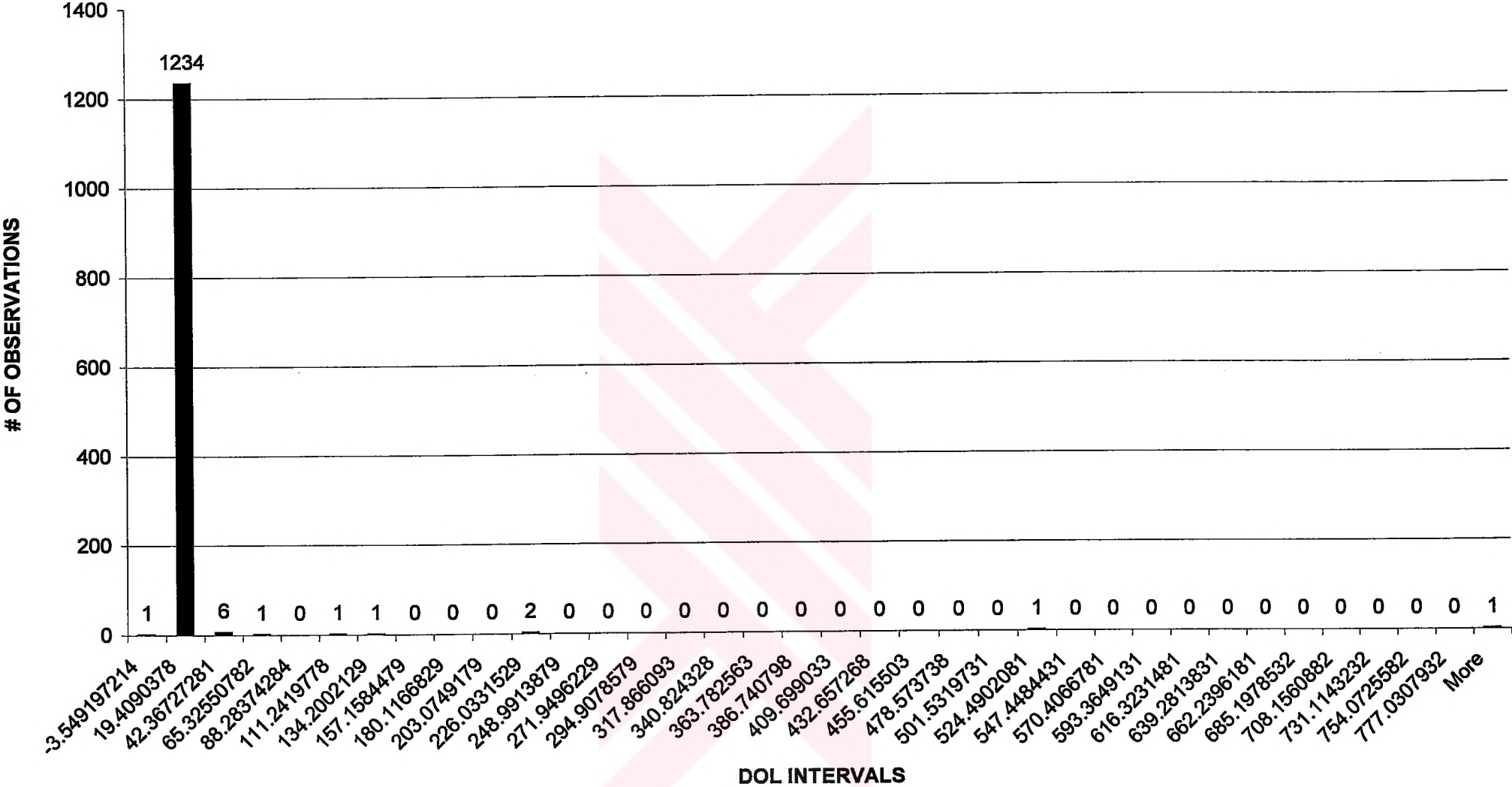


# DR HISTOGRAM FOR RAW DATA SET





# DOL HISTOGRAM FOR RAW DATA SET



# DFL HISTOGRAM FOR RAW DATA SET



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