INTRODUCTION

In this thesis we explore the traditional and widespread approach to credit risk assessment-credit rating systems. Most rating systems use both quantitative and qualitative evaluations. The final decision is based on many different attributes, but usually is not calculated using a formal model that would show how to weight all these attributes in a normative way. Basically, the systems are based on general considerations and on experience, and not on mathematical modeling. Therefore, the models rely on judgment of the rating evaluators.

Rating systems are usually applied to non-financial corporations; special approaches are employed for banks and other financial institutions.

The main problem faced by banks or rating agencies is obtaining information about companies that have not issued debt instrument. The data about these companies are unproven quality, or less reliable, and it can be a challenge to extract the minimum required information to execute the appropriate credit rating evaluation.

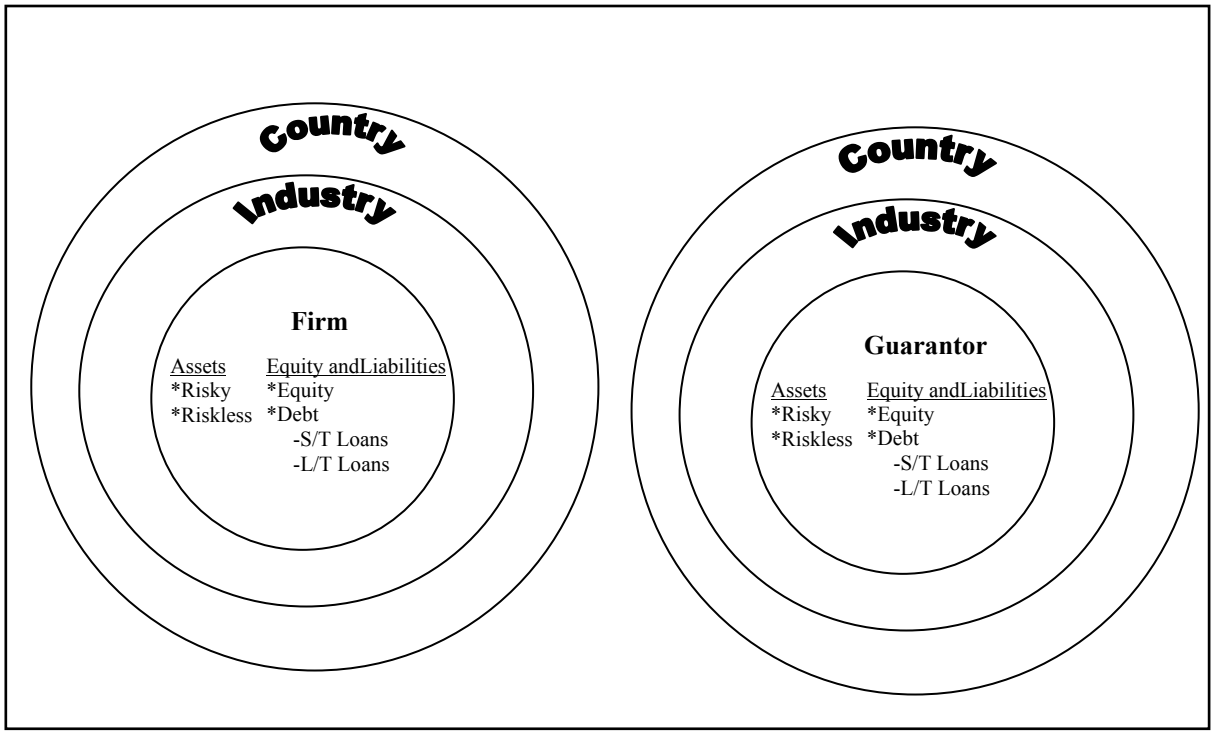
The credit analysts in a bank or rating agency must take into consideration many characteristics of a firm: financial as well as managerial, quantitative as well as qualitative. The analyst must ascertain the financial health of the firm, and determine if earnings and cash flows are enough to cover debt obligations (it shows the likelihood of default). They also have to analyze the quality of assets and efficiency in managing assets of the firm and liquidity position of firm (it shows severity of loss

given default), (Caouette, John B., Edward I. Altman, and Paul Narayanan, 67, 1998).

In addition, the analyst must take into account the features of the industry which the potential client belongs, and the status of the client within its industry. The effects of macroeconomic events on the firm and its industry ought to be considered, as well as the country risk of the borrower.

Crouhy, Galai and Mark(2001) have illustrated the environment of the borrower Figure 1 that the credit analyst must take into account in order to determine the creditworthiness of the borrower and in this way the interest spread that the bank should charge. A major consideration is the existence of a collateral or loan guarantor and the quality of the guaranty. This issue of guaranty is especially important for banks providing loans to small and medium-sized companies that cannot offer sufficient collateral.

Figure I.1 The environment of the Borrower



What is credit rating? Credit rating is classification. Credit rating is a ranking of creditworthiness. Rating credit is a process that distinguishes between 'good' and 'bad' credits, including all shades of grey in between. How fine the distinctions are depends on the credit culture of the institution and the intended usage. Consequently, it is a judgmental process of ranking and classifying credits into different levels of risk categories. Each level of the classification should represent a clear and exact statement of the creditworthiness of the firm being rated (Ong, Michael K., 3,2003).

Credit Rating is also a forward-looking process. Since a rating is determined at the beginning of the credit process, **credit rating is about using observable information to predict future outcomes of the credit granted.** Depending on the frequency of the rating updates, the ultimate goal of the credit rating process is to attempt an educated forecast of the potential loss (as quantified by the expected loss) as the credit deteriorates over the life of the loan until its ultimate failure or default. Therefore, credit rating is predictive process using known and current information to project potential future outcomes.

Even though the current focus on credit rating has reached high urgency, credit rating process is quite old. It has been an integral part of banks' risk management framework for some time now. Why then the sudden hype about it lately? The reasons, we have seen in recent and very disturbing credit events, are very plentiful. The crisis of confidence brought about by corporate mismanagement and scandalous accounting practices has spilled over into the global financial industry. The crisis calls to question not only accounting and unethical corporate practices, but also banks' practices in the extension and structuring of credits. The crisis also questions the timeliness of rating agencies' opinions and assessment of corporate debt. The regulators, in their safety and soundness program, have also joined in the fight and

also insisting on more clarity and transparency (e.g. Bank for International Settlements, Basel I, Basel II).

Why do credits need to be rated? Since credit ratings are fundamentally opinions, how should credits is rated? The world of assets requiring credit rating spans a very board spectrum of credit arena: corporate debt, bank loans, middle market loans, collateralized debt obligation, sovereign debt, credit cards, personal loans, mortgages, etc. How should each asset type be rated? How does one rate non-bank financial companies or individual project, for instance? There is no easy answer.

The key ingredients in credit ratings normally fall under two broad categories: Quantitative analyses (e.g. ratio analysis, cash flow analysis, macroeconomic variables, sovereign risk, and sector and industry analysis) and qualitative analysis (eg, financial strength assessment, management and corporate governance). Where ever the ratings are done, either externally or internally, it is always very important to strike a delicate balance between these two aspects of analysis(Dinwoodie, Chiristian M.,7,2003)

In this thesis, we have examined defining and estimated default in test group of firms registered in ISE(Istanbul Stock Exchange). For these purposes, we used two risk rating methods

1. Altman's Z-Score Model
2. 2.S&P's Key Ratios Method

The thesis started with Introduction which gave general ideas about Risk Rating environment ad definitions. Chapter 1 started with definitions and differences of Issuer Rating - Issue Specific Rating and Investment-Speculative Grades. Then we gave information about Rating Agencies, their rating processes, and grade definitions. In the last part of Chapter 1 we introduced to Internal Rating System of

Banks and its steps. Chapter 3 is about Credit Rating Methodologies and their rationality. The next Chapter covered our analyses about given test group and its result. The last Chapter indicated our finding and conclusions about them.

CHAPTER 1-CREDİT RATING SYSTEMS

1.1 Issuer/Issue-Specific Rating

Credit ratings are divided into two main categories: issuer rating, issue-specific rating. Issue- Specific credit rating is a current opinion of the creditworthiness of an obligor with respect to a specific financial obligation, a specific class of financial obligations, or a specific financial program; this may be a bank loan or a debt issue. This opinion may reflect the creditworthiness of guarantors, insurers or other forms of credit enhancement on the obligation and takes into account statutory and regulatory preferences (Dinwoodie, Chiristian M.,9,2003).

In response to a need for rating evaluations on a company when there is no public debt outstanding, rating agencies provides an issuer (counterparty) credit rating- an opinion of the obligor's overall capacity to meet financial obligations. This opinion focuses on the obligor's capacity and willingness to meet its financial commitments as they come due. The opinion is not specific to any particular financial obligation, as it does not take into account the specific nature or provisions of any particular obligation (Dinwoodie, Chiristian M.,9,2003).

Issuer credit rating does not take into account the specific nature or provisions of any particular obligation. Issuer credit ratings do not take into account statutory or regulatory preferences, nor the credit worthiness of guarantors, insurers.

Counterparty ratings, corporate credit ratings, and sovereign credit ratings are all forms of issuer credit ratings. Since a corporate credit rating provides an overall assessment of the creditworthiness of a company, it is used for a variety of financial and commercial purposes, such as negotiating long-term leases or minimizing the need for a letter of credit for vendors (Chrouhy, Michel, Dan Galai, and Robert Mark, 167, 2001).

1.2 Investment Speculative Grades

The term 'investment-grade' was originally used by various regulatory bodies to bring obligations' eligibility for investment by intuitions such as banks, insurance companies and saving and loan associations. Issues rated in the four highest categories, "AAA", "AA", "A", "BBB", are generally recognized as being investment grade. Debt rated "BB" or below is referred to as speculative grade. The term "junk bond" is merely a more disrespectful expression for this category of more risky debt. But these terms does not mean that rating agency considers which issues are right for investors. An investor with a particular risk preference may appropriately invest in securities that are not investment grade.

1.3 Rating Agencies

1.3.1 The External Agency Rating Process

The issuance of bonds by corporations is a twentieth-century phenomenon. It started at the beginning of the century, at approximately the same time that the first papers and articles were published on the analysis of accounting ratios, as a means of finding the financial strength of a company.

By the 1920s, this approach had been commercialized and specialized firms were offering their services, and promoting the merits of ratio analysis. This was also the

period when Moody's(1909),Standard &Poor's(1916), and other agencies started to rate public debt issues. Over the last 30 years, the introduction of new financial products has led to the development of new methodologies and criteria for credit rating: Stantard&Poor's (S&P) was the first rating company to rate mortgage-backed bonds (1975), mutual funds (1983), and asset-backed securities (1985)

A credit rating is not, in general, an investment recommendation concerning a given security. ***In the words of S&P,''A credit rating is S&P's opinion of the general creditworthiness of an obligor, or the creditworthiness of an obligor with respect to a particular debt security or other financial obligation, based on relevant risk factor.''. In Moody's words, a rating is "an opinion on the future ability and legal obligation of an issuer to make timely payments of principal and interest on a specific fixed-income security.''(S&P's website,2006)*** "Moody's ratings of industrial and financial companies have primarily reflected default probability, while expected severity of loss in the event of default has played an important secondary role. In the speculative-grade portion of the market, which has been developing into a distinct sector, Moody's ratings place more emphasis on expected loss than on relative default risk.''(Moody's website,2006)

Since S&P and Moody's are considered to have expertise in credit rating and are regarded as unbiased evaluators, their ratings are widely accepted by market participants and regulatory agencies. Financial institutions, when required to hold investment grade bonds by their regulators, use the ratings of credit agencies such as S&P and Moody's to determine which bonds are of investment grade.

The subject of a credit rating might be a company issuing debt obligations. In the case of such ''issuer credit ratings'', the rating is an opinion on the obligor's overall capacity to meet its financial obligations. The opinion is not specific to any particular

liability of the company, nor does it consider the merits of having guarantors for some of the obligations. In the issuer credit rating category are counterparty ratings, corporate credit ratings, and sovereign credit ratings.

Another class of rating is "issue-specific credit ratings". In this case, the rating agency makes a distinction, in its rating system and symbols, between long-term and short-term credits. The short-term ratings apply to commercial paper (CP), certificates of deposits (CDs), and put bonds. In rating a specific issue the attributes of the issuer, as well as the specific terms of the issue, the quality of the collateral, and the creditworthiness of the guarantors is taken into account.

The rating process includes quantitative, and legal analysis is mainly financial analysis and is based on the firm's financial reports. The qualitative analysis are concerned with the quality of management, and its capacity of adaptation to technological chances, regulatory changes, and labor relations.

Figure 1.1 illustrates the process of rating an industrial company. The process works through sovereign and macroeconomic issues, industry outlook and regulatory trends, to specific attributes (including quality of management, operating and financial positions), and eventually to the issue-specific structure of the financial instrument.

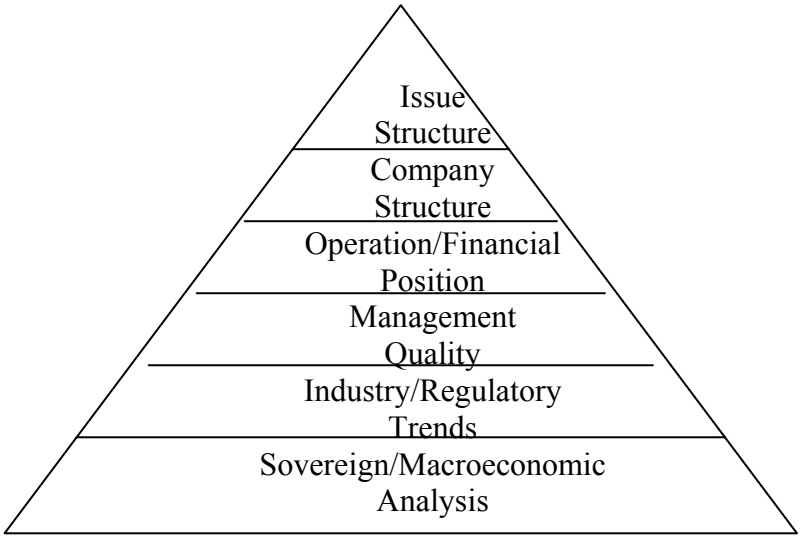
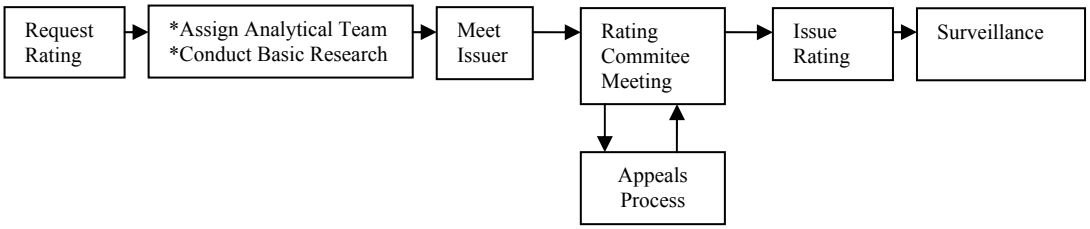


Figure 1.1-Moody's Rating Analysis of an Industrial Company

When rating a company, the nature of competition within its industry is a very important consideration. In trying to illustrate its evaluation process, S&P uses an example of a firm from the airline industry. For such a firm, the analysis concentrates on issues such as market position in specific markets locally and internationally , including barriers to entry, revenue generation (including pricing, utilization of capacity, service reputation, and productivity, cost control for labor, fuel, commissions), and the quality of the aircraft fleet.

The assessment of management, although subjective in nature, investigates how likely it is that it will achieve operational success, and its risk tolerance. The rating process includes meetings with the management of the issuer to review operating and financial plans, policies, and strategies. All the information is reviewed and discussed by a rating committee with appropriate expertise in the relevant industry, which then votes on the recommendation. The issuer can appeal against the rating before it is made public by supplying new information. The rating decision is usually issued four to six weeks after the agency is asked to rate a debt issue.(Chrouhy, Michel, Dan Galai, and Robert Mark, 264, 2001).

Usually the ratings are reviewed once a year based on new financial reports, new business information, and review meetings with management. A ‘’credit watch’’ or ‘’rating review’’ notice is issued if there is reason to believe that the review may lead to a credit rating change. A change of rating has to be approved by the rating committee. The rating process of S&P is described in Figure 2.2. (An almost identical process is used by all rating agencies.)



Source: S&P’s website,2006

Figure 1.2 Standad&Poor’s Debt Rating Process

1.3.2 Credit Ratings by S&P and Moody’s

Standard & Poor’s (S&P) is one of the major rating agencies in the world, operating in more than 50 countries. Moody’s operates mainly in the United States but has many branches internationally.

Table 1.1 and Table 1.2 provide the definitions of the ratings categories of S&P and Moody’s for long-term credit. We also show in Table 2.3 and Table 2.4 the short-term ratings of S&P’s and Moody’s, respectively. Moody’s short-term debt ratings employ three designations only, all judged to be investment grade.

If we focus on S&P (Table 1.1), we can see that the symbols are identical for issue and issuer credit ratings, and also that the definitions closely correspond to one

another. The categories are defined in terms of default risk and the likelihood of payment of the issuer. Issues rated in the four highest categories (i.e., AAA,AA; A, and BBB, of S&P and Aaa, Aa, A, and Baa of Moody's) are generally considered as being of investment grade, Some financial institutions, for special or approved investment programs, are required to invest only in bonds or debt instruments that are of investment grade. Obligations rated BB, B, CCC, CC, and C (Ba, B, Caa, Ca,and C of Moody's), are regarded as having significant speculative characteristics. BB (Ba of Moody's) is the least risky and C is the most risky within the speculative grade category. As can be seen in Tables 1.1 and 1.2, the rating categories used by S&P and Moody's are quite similar, though differences of opinion can lead in some cases to different ratings of specific debt obligations. Moody's applies numerical modifiers 1, 2, and 3 in each generic rating classifications from Aa through Caa. The modifier 1 indicates that the obligation ranks in the higher end of its generic rating classification ranks in the higher end of its generic rating category; the modifier 2 indicates a mid-range ranking; and the modifier 3 indicates a ranking at the lower end of that generic rating category. For example, B1 in Moody's rating system has an equivalent ranking to B+ in S&P's rating system.

Table 1.1-S&P Rating Category Definitions

AAA	An obligation rated AAA has the highest rating assigned by S&P's. The obligor's capacity to meet its financial commitment on the obligation is extremely strong.
AA	An obligation rated AA differs from the highest rated obligations only in small degree. The obligor's capacity to meet its financial commitment on the obligation is very strong.
A	An obligation rated A is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than obligations in higher rated categories. However, the obligor's capacity to meet its financial commitment on the obligation is still strong.
BBB	An obligation rated BBB exhibits adequate protection parameters. However, adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitment on the obligation.
BB	An obligation rated BB is les vulnerable to nonpayment than other speculative issues. However, it faces major ongoing uncertainties or exposure to adverse business, financial, or economic conditions which could lead to the obligor's inadequate capacity to meet its financial commitment on the obligation.
B	An obligation rated B is more vulnerable to nonpayment than obligations rated BB but the obligor currently has the capacity to meet its financial commitment on the obligation. Adverse business, financial, or economic conditions will likely impair the obligor's capacity or willingness to meet its financial commitment on the obligation.
CCC	An obligation rated CCC is currently vulnerable to nonpayment, and is dependent on favorable business, financial, and economic conditions for the obligor to meet its financial commitment on the obligation. In the event of adverse business, financial, and economic conditions, the obligor is not likely to have the capacity to meet its financial commitment on the obligation.
CC	An obligation rated CC is currently highly vulnerable to nonpayment.
C	The rating C may be used to cover a situation where a bankruptcy petition has been filled or similar action has been taken, but payments on this obligation are being continued.
D	The D rating, unlike other ratings, is not prospective; rather, it is used only where a default has actually occurred-and not where a default is only expected. S&P's changes ratings to D either: • On the day an interest and/or principal payment is due and is not paid. An exception is made if there is a grace period and S&P believes that a payment will be made, in which case the raing can be maintained; or • Upon voluntary bankruptcy filling or similar action. An exception is made is S&P expects that debt service payments will continue to be made on a specific issue. In the absence of a payment default or bankruptcy filling, a technical default is not sufficient for assigning a D rating.
+ or -	The ratings from AA to CCC may be modified by the addition of a plus or minus sign to show relative standing within the major rating categories.
R	The symbol is attached to the ratings of instruments with significant noncredit risks, it highlights risk to principal or volatility of expected returns which are not addressed in the credit rating. Examples include; obligations linked or indexed to equities, currencies, or commodities; obligations exposed to severe prepayment risk- such as interest- only or principal-only mortgage securities; and obligations with unusually risky interest terms, such as inverse floaters

Source: Reported from Corporate Ratings Criteria of S&P for 1988

Table 1.2-Moody's Rating Category Definitions

Aaa	Bonds which are rated Aaa are judged to be of the best quality. They carry the smallest degree of investment risk and are generally referred as "gilt edged". Interest payments are protected by a large or by an exceptionally stable margin and principal is secure. While the various protective elements are likely to change, such changes as can be visualized are most unlikely to impair the fundamentally strong position pf such issues.
Aa	Bonds which are rated Aa are Judged to be high quality by all standards. Together with the Aaa group they comprise what are generally known as high-grade bonds. They are rated lower than the best bonds because margins of protection may not be as large as in Aaa securities or fluctuation of protective elements may be of greater amplitude or there may be other elements presents which make the long-term risk appear somewhat larger than the Aaa securities.
A	Bonds Which are rated A possess many favorable investment attributes and are to be considered as upper medium-grade obligations. Factor giving security to principal and interest are considered adequate, but elements may be present which suggest a susceptibility to implement some time in the future.
Baa	Bonds which are rated Baa are considered as medium-grade obligations. Interest payments and principal security appear adequate for the present but certain protective elements may be lacking or may be characteristically unreliable over any great length of time. Such bonds lack outstanding investment characteristics and in fact have speculative characteristics as well.
Ba	Bonds which are rated Ba are judged to have speculative elements; their future cannot be considered as well-assured. Often the protection of interest and principal payments may be very moderate, and thereby not well safeguarded during both good and bad times over future. Uncertainty of position characterizes bonds in this class.
B	Bonds which are rated B generally lack characteristics of the desirable investment Assurance of interest and principal payments or of maintenance of other terms of the contract over any long period of time may be small.
Caa	Bonds which are rated Caa are of poor standing. Such issues may be in default or there may be present elements of danger with respect to principal or interest
Ca	Bonds which are rated Ca represent obligations which are speculative in a high degree. Such issues are often in default or have other marked shortcomings.
C	Bonds which are rated C are the lowest rated class of bonds, and issues so rated can be regarded as having extremely poor prospects of ever attaining any ral investment standing.

Source: Moody's website,2006

Table 1.3 The Short-term Credit Ratings of S&P

A-1	A short term obligation rated A-1 is rated in the highest category by S&P. The obligor's capacity to meet its financial commitment on the obligation is strong. Within this category, certain obligations are designated with a plus sign (+). This indicates that the obligor's capacity to meet its financial commitment on these obligations is extremely strong.
A-2	A short term obligation rated A-2 is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than obligations in higher rating categories. However, the obligor's capacity to meet its financial commitment on the obligation is satisfactory.
A-3	A short term obligation rated A-3 exhibits adequate protection parameters. However, adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitment on the obligation.
B	A short term obligation rated B is regarded as having significant speculative characteristics. The obligor currently has the capacity to meet its financial commitment on the obligation; however, it faces major ongoing uncertainties which could lead to the obligor's inadequate capacity to meet its financial commitment on the obligation.
C	A short term obligation rated C is currently vulnerable to nonpayment and is dependent upon favorable business, financial, and economic conditions for the obligor to meet its financial commitment on the obligation
D	The rating D is given where a short-term debt has actually defaulted

Source: Reported from Corporate Ratings Criteria of S&P for 1988

Table 1.4 The Short-term Credit Ratings of Moody's

Prime-1	Issuers rated Prime-1 have a superior ability for repayment of senior short-term debt obligations. Prime-1 repayment ability will often be evidenced by many of the following characteristics • Leading market positions in well-established industries. • High rates of return of funds employed. • Conservative capitalization structure with moderate reliance on debt and ample asset protection. • Broad margins in earnings coverage of fixed financial charges and high internal cash generation • Well established access to a range of financial markets and assured sources of alternate liquidity.
Prime-2	Issuers rated Prime-2 have a strong ability for repayment of senior short-term debt obligations. This will normally be evidenced by many of the characteristics cited above but to a lesser degree. Earnings trends and coverage ratios, while sound, may be more subject to variation. Capitalization characteristics, while still appropriate, may be more affected by external conditions. Ample alternate liquidity is maintained.
Prime-3	Issuers rated Prime-3 have an acceptable ability for repayment of senior short-term obligations. The effects of industry characteristics and market compositions may be more pronounced. Variability in earnings and profitability may result in changes in the level of debt protection measurements and may require relatively high financial leverage. Adequate alternate liquidity is maintained.

Source: Moody's website,2006

1.3.3 The Differences in Ratings

While the rating agencies use similar methods and approaches to rate debt, they sometimes come up with different ratings of the same debt investment. In their studies of the credit rating industry Cantor and Packer (1995) show that for 1168 firms rated by both Moody's and S&R at the end of 1993, only 53 percent of the firms rated AA or Aa and AAA or Aaa were rated the same by both agencies. For other investment-grade issues only 36 percent were rated in the same way, while 41 percent of those rated as below investment grade had been awarded the same ratings.

Table 2.5 is from Cantor and Packer (1995). It shows the differences between the ratings of the two agencies, S&P and Moody's, and those of the next two agencies in term of size and reputation, namely Duff&Phelps and Fitch (which later joined forces with another rating agency, IBCA). The table compares 298 firms rated jointly by Moody's, S&P, and Dufy&Phelps and 161 firms rated jointly by Moody's, S&P, and Fitch, tend to rate debt issues higher or the same as S&P and Moody's. In only 10 percent or less of the cases did they give a lower rating.

This issue of ratings differences is an important one. It raises two questions. First, to what extent is the rating quantitatively based and what is the role of judgment? The second question concerns the independence of the rating agencies. Since the rated companies pay to be rated, there is a perceived danger that business pressures will affect the process.

Table 1.5 Credit Rating Differences between Agencies

Credit Rating Differences Between Agencies

	Distribution of Duff & Phelps Ratings Relative to		Distribution of Fitch's Ratings Relative to	
	Moody's	S&P	Moody's	S&P
Rated higher (%)	47.6	39.9	55.3	46.6
Rated same (%)	42.3	46.5	37.9	43.5
Rated lower (%)	10.1	13.5	6.8	9.9
Average difference in matched rating	0.57	0.16	0.74	0.56

Source: Cantor and Packer (1995), Federal Revenue Bank of New York.

1.4. Introduction to Internal Risk Rating

In this section we look at an internal risk rating system. A typical risk rating system (RRS) will assign both an obligor rating to each borrower (or group of borrowers), and a facility rating to each available issue. A risk rating (RR) is designed to describe the risk of loss in a credit facility. A robust RRS should offer a carefully designed, structured, and documented series of steps for the assessment of each rating (Caouette, John B., Edward I. Altman, and Paul Narayanan, 65, 1998).

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1.4.1 Objectivity and Methodology

The goal is to generate accurate and consistent risk ratings, yet also to allow professional judgment to significantly influence a rating where this is appropriate. The expected loss is the product of an exposure (say, $100) and the probability of default (say, 2 percent) of an obligor (or borrower) and the Loss Rate Given Default

(LGD) (say, 50 percent), in any specific credit facility. In this example, the expected loss is $100 * .02 *.50 =$1.

A typical Risk Rating Methodology (RRM) initially assigns an obligor rating that identifies the expected probability of default by that borrower (or group) in repaying its obligations in the normal course of business. The RRS then identifies the risk of loss (principal or interest) by assigning an RR to each individual credit facility granted to an obligor. .(Chrouhy, Michel, Dan Galai, and Robert Mark, 271, 2001).

Risk ratings quantify the quality of individual facilities, credits, and portfolios. If RRs are accurately and consistently applied, then they provide a common understanding of risk levels and allow for active portfolio management. An RRS also provides the initial basis for capital charges used in various pricing models. The RRS can be used to rate credit risks in most of the major corporate and commercial sectors, but it is unlikely to cover all business sectors.

The use of internal rating systems raises lots of issues. For example: what is the meaning of being in risk rating category X? Does it mean that the obligors in this category have an expected default probability (EDP) within a pre-specified range? Or, is the rating associated with an expected loss given default? What is the time horizon over which these estimations are derived? For instance, for the rating system to be consistent with the credit migration approach (each rating class should correspond to a range of default probabilities over a one-year period) which credit rating analysts to modeling credit risk? (Hamilton, David, 3,1999)

The internal ratings approach has practical implications for supervisors. Some key considerations will have to be addressed when assessing a bank's rating system: is the number of gradations appropriate to distinguish among the range of risks? How

can the bank link the rating to a measurable credit loss? Are all the appropriate risk factors incorporated?

Notwithstanding these issues, the internal ratings approach is exciting because it would give permission to the adoption of full a credit risk modeling for banking in the future. The 1999 Basle consultative paper on a new capital adequacy framework (Basle, 1999) provides insight into the regulator's view of the role that an RRS can play in attributing regulatory capital.

A typical RRS, as shown in Table 1.6, includes a category 0 capture government debt (say, Canadian or U.S. federal government debt). Category 1 is reserved for the Highest credit quality of corporate debt. The risk grades below A (e.g., BBB) are often split into more categories (say, into 4and 5) to obtain greater resolution (Chrouhy, Michel, Dan Galai, and Robert Mark, 271, 2001).

Table 1.6 Risk Rating Continuum

Risk	RR	Corresponding Probable S&P or Moody's Ratings	
Sovereign	0	Not applicable	
Low	1	AAA	Investment Grade
	2	AA	
	3	A	
Average	4	BBB+/ BBB	
	5	BBB-	Below Investment Grade
	6	BB+ / BB	
	7	BB-	
High	8	B+ / B	
	9	B-	
	10	CCC+ / CCC	
	11	CC-	
	12	In Default	

The obligor rating represents the probability of default by a borrower in repaying its obligation in the normal course of business. The facility rating represents the expected loss of principal and/or interest on any business credit facility. It combines the likelihood of default by a borrower and the conditional severity of loss.

The steps in the RRS (nine, in the prototype system) typically start with a financial assessment of the borrower (initial obligor rating) which sets a floor on the obligor rating (OR). A series of further steps (four) arrive at a final obligor rating. Each one of Steps 2 to 5 may result in a downgrade of initial rating attributed Step1. These steps include analyzing the managerial capability of the borrower (Step 2), examining the borrower's absolute and relative position within the industry(Step 3),

reviewing the quality of the financial information (Step 4) and the country risk (Step 5). The process ensures that all credits are objectively rated using a consistent process to arrive at accurate ratings (Basel Committee on Banking Supervision,1999, "A New Capital Adequacy Framework").

Additional steps (steps 6 trough 9) are associated with arriving at a final facility rating, which may be above or below the final obligor rating. These steps include examining third-party support (Step 6), effect of maturity of the transaction (Step 7), reviewing how strongly the transaction is structured (Step 8), and assessing the amount of collateral (Step 9) The process, by steps, is described in detail in this chapter.

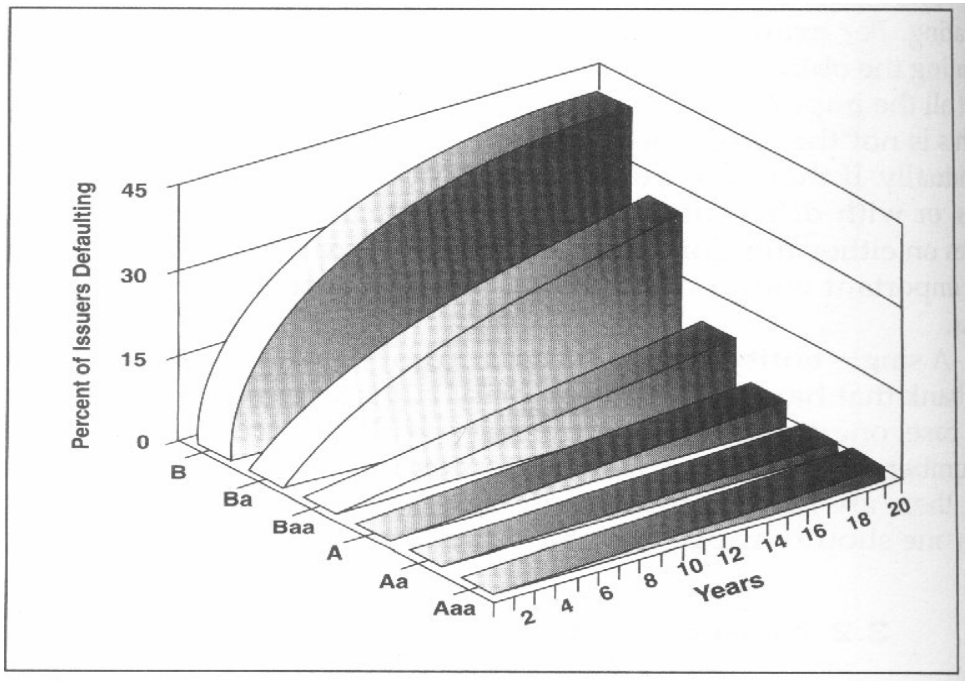
One needs to determine which entity (or group of entities) one is rating. For example, the analysis of a group credit involves calculating the obligor rating for the entire group of entities, provided that all the important entities and borrowers are cross-guaranteed. If this is not the case, then one should rate any such borrower individually. If there are businesses or companies in different industries, or with different financial characteristics, then one often focuses on either the dominant entity (if there is one) or a balance of the important components, with specific recognition of any weak links.

A single entity might have a number of credit facilities with the bank that have a different priority rules in case of bankruptcy. In this case, one must rate each facility with the credit. Conversely, If a number of facilities for a costumer have similar characteristics (i.e., there are no distinguishing risk factors between the facilities), then one should apply the same facility rating to each facility.

1.4.2 Measuring Default Probabilities and Recovery Rates

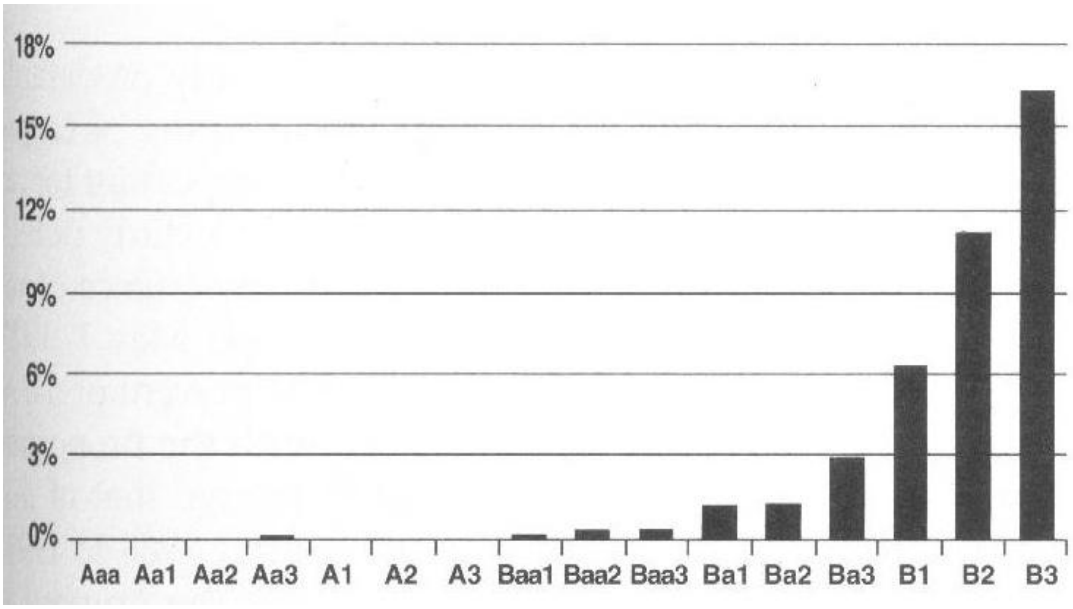
‘’How accurate are ratings?” asks Moody’s in its Credit Ratings and Research (1995, p.5). The answer is provided in Figure 2.3, which shows the average cumulative default rates for corporate bond issuers for each rating category over bond holding periods of one year up to 20 years after bond issuance. The data are for the period 1970 to 1994. It can be seen that the lower the rating, the higher the cumulative default rates. The Aaa and Aa bonds experienced very low default rates, and after 10 years less than 1 percent of the issues had defaulted. Approximately 40 percent of the B-rated issues, however, had defaulted after 10 years.

Figure 2.4 shows the average default rates within one year for different bond ratings during the period 1983 to1993. In one year over 16 percent of the B-rated bonds defaulted, while the rate is 3 percent for the Ba3 bonds, and almost zero for the Aaa, Aa, and A bonds.



Source: Moody’s Credit Ratings and Research, 1995

Figure 1.3 Cumulative Default Rates for Corporate Bonds, 1970-1994



Source: Moody's Credit Ratings and Research, 1995

Figure 1.4 One-Year Default Rates by Rating, 1983-1993

The techniques for rating credits are also experiencing change. Principal methods are as follow (Ong, M, Michael, Internal Rating System of Bank, 1999):

Fundamental Analysis

Fundamental analysis is the traditional method for assigning a credit rating and determining creditworthiness. It involves the consideration of quantitative and qualitative factors combined with the subjective view of the credit analyst to arrive at a rating.

Statistical Analysis

Three types of statistical analysis are used in practice: logistic regression, discriminant analysis and neural networks. Logistic regression is used for a binary

random variable (good credit/bad credit) and is used to determine the relationship between independent input variables (financial ratios) and resulting credit state. This type of regression analysis allows for a non-linear relationship between the input variables and the resulting credit state. As the input variables reach extreme values, the probability of bad credits increases non-linear fashion. Discriminant analysis is a regression approach that assumes that the regressors are normally distributed and, as in logistic regression, the output of the analysis is two states (good/bad credit). Neural networks are artificial intelligence systems that are designed to mimic human thought and learning. They are applied to credit risk modeling by creating an algorithm using credit inputs as variables that are weighted through a learning process and used to determine the output, that is, whether the counterpart is a good or bad credit. The neural networks model complex non-linear relationships and interdependencies among the variables.

Market-Based Models (Merton models)

Market-Based models are widely used as a basis for internal ratings. The Merton family of models represents a company's equity as a call option on its assets, where the exercise price equal to the face value of the firm's debt a maturity equal to the term of debt. The firm's liabilities are used to determine the default point. The firm's PD is based upon the difference between the company's equity value at a specified time horizon and the default point.

1.5 Steps of Internal Rating

1.5.1. Financial Assessment (STEP 1)

This step formalizes the thinking process associated with a good credit analyst (or good equity analyst) whose goal is to ascertain the financial health of an institution. For example, the credit analyst would study the financial reports to determine if the earnings and cash flows are sufficient to cover the debt. The credit analyst will study the degree to which the trends associated with these "financials'' are stable and positive. The credit analyst would also want to analyze the degree to which the assets are of high quality, and make sure that the obligor has substantial cash reserves (e.g., substantial working capital). The analyst would also want to examine the firm's leverage. Similarly, the credit analyst would also want to analyze the degree to which the firm had access to capital markets, and whether it has an appropriate capacity to borrow money.

The rating should reflect the financial position and performance of the company and its ability to withstand possibly unexpected financial setbacks. This is a key step in the credit assessment.

1.5.1.1 Procedure

The obligor will almost always be the borrower (or group of borrowers). Nevertheless, a guarantor, in certain circumstances (outlined below) may be substituted for and regarded as the obligor. For example, one may substitute a guarantor for the borrower where the credit risk lies solely on the guarantor (i.e., the borrower's position is not a meaningful factor) and the guarantor is a large national

(or international) entity warranting, say, an investment-grade rating (i.e., a risk rating (RR) of 4 or better).

Further, the debt needs to be structured so as to ensure that the bank will not be in an low-grade position to other obligations of the guarantor, and the bank must make sure that a ‘’clean 100 percent’’ guarantee is held. One needs to monitor the guarantor’s performance with the same care as if the guarantor were the direct borrower.

A prototype financial assessment table encompassing the risk ratings 4 and it is shown in Table 1.7. The three main assessment areas, as illustrated at the top of Table 1.7, are: (1) earnings (E) and leverage (LEV); and (3) financial size (FS), flexibility (F), and debt capacity (DC).

Table 1.7 Financial assessments for RR 4

RR	• Earnings • Cash Flow	• Asset Values(AV) • Liquidity(LIQ) • Leverage(LEV)	• Financial size (FS) • Flexibility(F) • Debt Capacity (DC)
4	• Very satisfactory earnings and cash flow with substantial extra coverage • Positive and quite consistent/stable trends	• Assets of above average quality • Good/liquidity/working capital • Better than average leverage • Appropriate matching of tenor of liabilities to assets	• General access (rated BBB+/BBB) to capital markets; may experience some barriers due to difficult market or economic conditions • Ready access to alternate financing trough banks or other financial institutions, if sought • Bank debt modest with large unused capacity

Source: Chrouhy, Michel, Dan Galai, and Robert Mark, 285, 2001

A measure for earnings/cash flow in column 1 would include interest coverage such as EBIT/interest expense and EBITDA/interest expense. A measure for leverage in column 2 would include the current ratio, which is defined as current assets divided by current liabilities. A measure for leverage in column 2 would also include debt-to-net-worth ratios such as total liability/equity or (total liabilities-short-term debt) / equity.

One would calculate an RR for each of the three assessment areas and then arrive at an assessment of the best overall risk rating. This is the initial obligor rating (OR). The remaining portions of a prototype financial assessment table for RR 4 are shown in Table 1.7

There will be cases and/or industries where one of the three main assessment areas should be more heavily (or lightly) weighted when arriving at the overall financial assessment. The use of judgment is essential. One should benchmark any assessment to those of other companies in the same industry grouping.

One needs to emphasize the current year's performance, with some recognition of the previous few years as appropriate when assessing the earnings and cash flow category. Cash flow is assessed using whatever methodology is most appropriate to the industry or individual situation (e.g., EBITDA). When assessing companies in cyclical industries one should adjust the financial results and key ratios so that the cyclical effects are incorporated. This is reasonable so long as downturns are within the scope of a normal cycle (i.e., not a remote fundamental correction). This means that strong performance during a very positive economic period should be modified downward somewhat (and vice versa during a weak period).

When assessing the financial size, flexibility, and debt capacity category, the size of market capitalization will also be an important factor. ''Access to capital markets'' in

this third assessment area refers to the demonstrated ability (or potential in the near-term) to issue public securities (equities or medium-to long-term debt instruments), which generally will have necessitated the assignment of a public rating. For private or smaller companies one should consider the ability to access these markets. If financial information /data are not available (such as for new ventures, projects, etc.) then "proforma" data are often acceptable.

1.5.1.2 Industry Benchmarks

The analysis of the competitive position and operating environment of a firm helps in assessing its general business risk profile.

This leads to the calibration of the quantitative information drawn from the financial ratios for the firm, using industry benchmarks. The ratios summarize information on the profitability and interest coverage of the issuer, on its capital structure (i.e., leverage), asset protection, and cash flow adequacy. The major ratios considered in S&P are given Table 1.8.

Table 1.8 S&P Key Ratios

1 EBIT interest coverage (x)
2 EBIDA interest coverage (x)
3 Funds from operations /total debt (%)
4 Free operating cash flow/total debt (%)
5 Pretax return on capital (%)
6 Operating income / sales (%)
7 Long-term debt/capital (%)
8 Total debt / capitalization (%)

In Table 1.9 S&P examined and listed the interaction between the general business risk assessment of a company and two selected financial ratios (ratios 3 and 8 in Table 1.8) in determining the rating categories. For example, a company with an excellent business position that takes on a debt-to-total-capitalization ratio (ratio 8 in Table 1.8) of 50 percent, and will be able to have quality for rating category A. By contrast a company with average business possibilities that takes on a debt-to-total-capitalization ratio of only 30 percent will be able to quality for rating category A.

Table 1.9 Guidelines for adjustments in Two Financial Ratios as a Function of the Business Risk Profile to Quality to a Given Rating Category

Funds from Operations / Total Debt Guidelines(%)	**Rating Category**				
Company Business Profile	**AAA**	**AA**	**A**	**BBB**	**BB**
Excellent Business Profile	80	60	40	25	10
Above average	150	80	50	30	15
Average	-	105	60	35	20
Below average	-	-	85	40	25
Vulnerable	-	-	-	65	45

Total Debt / Capitalization Guidelines(%)	**Rating Category**				
Company Business Profile	**AAA**	**AA**	**A**	**BBB**	**BB**
Excellent Business Profile	30	40	50	60	70
Above average	20	25	40	50	60
Average	-	15	30	40	55
Below average	-	-	25	35	45
Vulnerable	-	-	-	25	35

Source: S&P Corporate Ratings Criteria, 1998

Table 1.10 from S&P's Corporate Ratings Criteria provides data on average ratios for risk categories for three overlapping periods (1992 to 1994, 1993 to 1995, 1994 to 1996). The table indicates that the ordinal nature of the categories corresponds well, on average, to the financial ratios. For example, if we examine the EBIT

interest coverage ratio (i.e., EBIT divided by interest expense), then we would observe that the median for the AA credit class for the 1994 to 1996 period was 11.06, while the BB was 2.27. The ratio for the AA credit class ranged from a low of 11.06 to a high of 9.67 over the three year (1992 to 1994, 1993 to 1995, 1994 to 1996) three-year overlapping sample periods, while the ratio for the BB class ranged from 2.09 to 2.27.

Table 1.10 Key Industrial Financial Ratios For Rating Categories

U.S. Industrial Long-Term Debt Three-Year (1994 to 1996) Medians	AAA	AA	A	BBB	BB	B
1. EBIT interest coverage (×)	16.0	11.0	6.2	4.1	2.2	1.1
2. EBITDA interest coverage (×)	20.3	14.9	8.5	6.0	3.6	2.2
3. Funds from operations/total debt (%)	116.4	72.3	47.5	34.7	18.4	10.9
4. Free operating cash flow/ total debt (%)	76.8	30.5	18.8	8.4	2.4	1.2
5. Pretax return on capital (%)	31.5	23.6	19.5	15.1	11.9	9.1
6. Operating income/sales (%)	24.0	19.2	16.1	15.4	15.1	12.6
7. Long-term debt/capital (%)	13.4	21.9	32.7	43.4	53.9	65.9
8. Total debt/capitalization (%)	23.6	29.7	38.7	46.8	55.8	68.9
U.S. Industrial Long-Term Debt Three-Year (1993 to 1995) Medians	**AAA**	**AA**	**A**	**BBB**	**BB**	**B**
1. EBIT interest coverage (×)	13.5	9.6	5.7	3.9	2.1	1.1
2. EBITDA interest coverage (×)	17.0	12.8	8.1	6.0	3.4	2.1
3. Funds from operations/total debt (%)	98.2	69.1	45.5	33.3	17.7	12.8
4. Free operating cash flow/ total debt (%)	60.0	26.8	20.9	7.2	1.4	(0.9)
5. Pretax return on capital (%)	29.3	21.4	19.1	13.9	12.0	9.0
6. Operating income/sales (%)	22.6	17.8	15.7	13.5	13.5	12.3
7. Long-term debt/capital (%)	13.3	21.1	31.6	42.7	55.6	65.5
8. Total debt/capitalization (%)	25.9	33.6	39.7	47.8	59.4	69.5
U.S. Industrial Long-Term Debt Three-Year (1992 to 1994) Medians	**AAA**	**AA**	**A**	**BBB**	**BB**	**B**
1. EBIT interest coverage (×)	18.0	9.7	5.3	2.9	2.1	1.0
2. EBITDA interest coverage (×)	22.6	12.8	8.0	4.8	3.5	1.9
3. Funds from operations/total debt (%)	97.5	68.5	43.8	29.9	17.1	9.9
4. Free operating cash flow/ total debt (%)	51.0	29.7	20.2	6.2	3.4	1.1
5. Pretax return on capital (%)	28.2	20.6	16.7	12.7	11.6	8.3
6. Operating income/sales (%)	22.0	17.7	15.2	13.2	13.6	11.6
7. Long-term debt/capital (%)	13.2	19.7	33.2	44.8	54.7	65.9
8. Total debt/capitalization (%)	25.4	32.4	39.7	49.5	60.1	73.4

EBIT refers to earnings before interest and taxes.
EBITDA refers to earnings before interest, taxes, depreciation, and amortization.
Source: S&P *Corporate Ratings Criteria*, 1998.

1.5.1.3 Combining Balance Sheet, Income Statement, and Ratio Analyses

The analysis of loans for the purpose of arriving at a risk rating requires one to think through certain classic relationships between balance sheet, income statement, and ratio analysis. We will first examine a few of these relationships for purely illustrative purposes and then show how they might be useful in arriving at a risk rating.

Total assets (TA) are identically equal to total liabilities (TL) and net worth (NW).

1. TA=TL+NW

Current assets (CA) are identical to current liabilities (CL) and working capital (WC):

2. WC=CA-CL

Total assets are also composed of current assets (CA) and fixed assets (FA), which is :

3. TA=CA+FA

Total liabilities are composed of current liabilities (CL) plus long-term debt (LTD), as follows:

4. TL=CL+LTD

If we refer to LTD+NW as permanent capital, then by rearranging our terms the "working capital" can be shown to equal the permanent capital minus the fixed assets:

5. WC=LTD+NW-FA

Fixed worth (FW) is defined as fixed assets-long term debt:

6. FW=FA-LTD

Net worth can be expressed as working capital plus fixed worth.

7. NW=WC+FW

A working capital leverage ratio would express the riskness of the current capital structure. One would also analyze certain key ratios. For example, a ratio of current liabilities to working capital (called the working capital leverage ratio) is analogous to the leverage ratio of total liabilities to net worth.

8. Working capital leverage ratio=CL/WC.

The leverage ratio expresses the riskness of the overall capital structure, or how long-term debt is supported by equity:

9. Leverage ratio=TL/NW.

10. Current ratio = CA/CL.

A prototype high-level customer financial information (CFI) report for General Motors Acceptance Corporation which is shown in Table 1.11 . Such a report is typically produced to facilitate credit analysis (at, say, the senior credit committee meeting of the bank).The CFI report is divided into a balance sheet, income statement, and ratio analysis section. The ratio analysis section is further subdivided into leverage ratio and solvency ratio. An experienced credit analyst can quickly analyze such a report and get a "feel" for the financial assessment portion of the risk rating process, For example, one may analyze the leverage ratio (say, total liabilities/equity), solvency ratio (say, interest coverage), or other key financial analysis measures as part of arriving at the appropriate financial assessment.

Table 1.11 Example Customer Financial Information Report: Balance Sheet, Income Statement, and Ratio Data

General Motors Acceptance Corporation			
	Factors	**31/12/1997**	**31/12/1996**
Balance Sheet	Current Assets (CA)	44,658	41,598
	Current Liabilities (CL)	64,288	50,469
	Working Capital(WC=CA-CL)	-19,630	-8,871
	Fixed Assets	64,661	56,980
	Mortgages/other(LTD)	36,275	39,841
	Fixed Worth(FW=FA-LTD)	28,386	17,139
	Net Worth (NW=WC+FW)	8,756	8,268
Income Statement	Sales For Year	16,595	15,974
	Operating Profit (EBIT)	7,471	7,415
	Deprecation and amortization (DA)	4,735	4,668
	Bad Debts	523	669
	Income Taxes	913	837
	Net Profit/loss	1,301	1,241
	Dividends/drawings	750	1,200
	Sundry adjustments	-63	-42
	Net capital expenses	0	0
	Interest expense (I)	5,256	4,938
Ratios	*Leverage Ratios*		
	Total Liabilities/equity	11.49	10.92
	(Total liab-sub-debt)/equity	44.49	10.92
	Working Capital	0.69	0.82
	Solvency Ratios		
	Interest coverage(EBIT/I)	1.42	1.42
	Cash interest coverage(EBITDA/I)	2.32	2.37

Source: S&P Corporate Ratings Criteria, 1998

1.5.2. First Group of Adjustment Factor for Obligor Credit Rating

1.5.2.1 Management and Other Qualitative Factors (Step 2)

This second step considers the impact on an obligor rating of a variety of qualitative factors such as discovering unfavorable aspects of a borrower's management. We will assume for illustrative purposes that this Step 2 analysis has no effect on the RR if the obligor seems to reach an acceptable standard, but that it may bring about a downgrade if standards are not acceptable.

A typical Step 2 approach would require one to examine day-to-day account operations (AO) and assess management (AM), as well as perform an environmental assessment (EA) and examine contingent liabilities (CL), etc.

If one is examining the day-to-day AO, then one would ask a series of carefully structured questions. For example, if the financial and security reporting is on a timely basis, is it of accurate? Does it satisfactorily explain significant variations from projections? One would also ask if the company honors its obligations with creditors (legitimate disputes aside), as evidenced by a lack of writs, lawsuits, judgments, etc.

One would ask, in terms of performing a management assessment, if management skills are sufficient for the size and scope of the business. This would include examining if management has a satisfactory record of success as well as appropriate industry experience. One should also examine if management has adequate ‘’depth’’; for example, are succession plans in place?

One would ask a series of practical questions. For example: is there an informed approach to identifying, accepting, and managing risks? Does management stay current on how to conduct business operations, introducing and updating methods and technology when warranted? Does management address problems promptly, exhibiting the will to take hard decisions as necessary and with an appropriate balance of short-to long-term concerns? Is a reasonable business and financial plan in place, which does not depend on unrealistic levels of business growth or profitability improvement? One should ask from an EA point of view if management is aware of, monitors and complies with all relevant environmental regulations and practices. One should also examine any contingent liabilities, e.g., litigation, or warranty claims.

1.5.2.2 Industry Ratings Summary (Step 3A)

This portion of the step recognizes the very important effect of an industry rating based on the type of industry and the relative position of the borrower (i.e., their tier assessment) within their industry. Experience has shown that poorer-tier performers in weak, vulnerable industries are major contributors to credit losses.

Galai (1998) stated "To do this, the analyst needs to rate each industry type on, say, a scale of 1 to 5 (see Table 2.12). One should provide an industry may be broken down into a sub-industry grouping such as wood products. Similarly, the mining industry may be broken down into sub-industry groupings such as gold mines, base metal mines, etc. A rating is assigned to each of the industry groupings."

Table 1.12 Rating Competitiveness of an Industry

Industry Risk				
Minimal 1	Low 2	Medium 3	High 4	Very High 5
Competitiveness The potential of the industry to sell in its domestic market and/or external markets based only on. Cost structure(determines by factors such as economies of scale, capital intensity, input costs, location, infrastructure, and use of appropriate technology), internal reputation, and effectiveness in targeting market niches				
On balance, the combination of the relevant listed factors makes the industry very competitive	On balance, the combination of the relevant listed factors makes the industry somewhat competitive	On balance, the combination of the relevant listed factors have off-setting impacts on the competitiveness of the industry	On balance, the combination of the relevant listed factors makes the industry somewhat uncompetitive.	On balance, the combination of the relevant listed factors makes the industry somewhat very uncompetitive

Source: Chrouhy, Michel, Dan Galai, and Robert Mark, 285, 2001

To calculate the industry assessment, the analyst first assigns a score of, say, 1 (minimal risk) to 5 (very high risk) for each of a set of, say, eight criteria established by the bank. For example, one can describe the industry rating in terms of competitiveness (see Table 2.12 for detailed definitions), trade environment,

regulatory framework, restructuring, technological change, financial performance, long-term trends affecting demand, and vulnerability to macroeconomic environment.

The sum of the scores, which will range from 8 (most favorable) to 40 (least favorable), can then be converted to an industry rating. For example, the asset would be rated 1 if it has a score ranging from 8 to 11. Similarly, a total score of between 9 and 19 yields an industry score of 2; between 20 and 27 a score of 3; between 27 and 35 a score of 4; and a score of 5 for a total score of between 36 to 40.

Competitiveness (Table 2.12) can be defined as the potential of the industry to sell its products in its domestic market and/or external markets, given its cost structure (determined by factors such as economies of scale, capital intensity, input costs, location, infrastructure, and use of appropriate technology), international reputation, and effectiveness in targeting market niches.

The trade environment can be defined as all the institutional factors that affect way of commerce in goods and services, including trade agreements that have an impact (or potential impact) on the industry.

The regulatory framework can be defined as the legal/institutional setting including laws and regulations of applicable levels of government direct and indirect taxation, grant programs, trade finance, and subsidies. One needs to take into account present policies and trends, and the impact to both supply and demand.

Restructuring can be defined as the impact of the process of adjusting (often through a reduction in capacity or employees) to a change in market conditions, such as demand patterns, technology, number and quality of competitors, regulations.

Technological change can be defined as industry vulnerability to technological change that could result in changing costs, an alteration in the range of products or

services of the industry, or an alteration in the range/price of competitive products/services. Knowledge of previous technological change and current relevant global research and development efforts must be taken into account.

Financial performance can be defined as an assessment based on the present level, trends, and sustainability of standard ratios such as return on equity, interest coverage, current ratio, debt/equity, and debt/cash flow.

Long-term trends that affect demand include demographics (i.e., age structure, gender distribution, composition, and wealth distribution of the relevant market), vintage of durables and infrastructure (age of fleet and age and condition of roads, bridges, etc.) and lifestyle changes and consumer attitudes.

Vulnerability to macroeconomic environment describes how sensitive the industry is to economic downturns, fiscal policy, movements in interest rates and exchange rates, and other macroeconomic variables.

1.5.2.3 Tier Assessment (Step 3B)

The second part of step 3 involves establishing tier assessment (TA)-the relative position of each business within its own industry. This is an important survival factor, particularly during downturns. One can employ the criteria and process used to assess industry risk to determine a company's relative position in one of relative tiers-say, on a scale of 1 to 4 within an industry.

A business should be ranked against its relative competition. For example, if the company supplies a product/service that is subject to global competition, then it should be ranked on a global basis. If the company's competitors are by nature local or regional, as are many retail businesses, then it should be ranked on that basis, while recognizing that competition may increase. If a business is local but has no

local competitors, e.g., local cable operator, then it should be ranked against such companies in other areas, with some recognition of the benefit of the exclusivity of its market (assuming that this is likely to continue).

Tier1 players are major players with a dominant share of the relevant market (local, regional, domestic, international, or niche).They have a diversified and growing customer base with low production costs that are based on sustainable factors (such as a diversified supplier base, economies of scale, location and resource availability, continuous upgrading of technology, etc.). Such companies respond quickly and effectively to changes in the regulatory framework, trading environment, technology, demand patterns, and macroeconomic environment.

Tier 2 players are important or above-average industry players with a meaningful share of the relevant market (local, regional, domestic, international, or niche). Tier 3 players are average (or modestly below average) industry players, with a moderate share of the relevant market (local, regional, domestic, international, or niche). Tier 4 players are weak industry players and have a declining customer base. They have a high cost of production due to factors such as low leverage with suppliers, obsolete technologies, etc.

1.5.2.4 Industry/Tier Position (Step 3C)

This is the final part of the third step (Step 3C). If one can combine assessments of the health of the industry (i.e., industry rating) and the position of a business within its industry, then one can assess the position of a business within an industry, then one can assess the vulnerability of any company (particularly during recessions).

Low-quartile competitors within an industry class almost always have higher risk (modified by the relative health of the industry).

One needs to combine the industry rating and the tier assessment using the grid in Table 1.13 to determine the 'best possible'' Obligor Rating. The rating is ''best possible'' in the sense that it acts as a cap on the OR. While the rating can be lowered if the industry/tier assessment is weak, it will not be raised if it strong.

For example, if the industry rating assessment indicates that the industry rating is 2, and is considered to be tier 3, then the ''best possible'' obligor rating is 5. If Steps 1 and 2 had suggested a rating of 4 for a the firm , and if Step 3 would require that this rating is 5. The firms ratings is lowered to 5.

Table 1.13 Best Possible Obligor Rating (given Initial Industry and Tier Ratings)

		Industry Rating (From Step 3A)				
		1	**2**	**3**	**4**	**5**
Tier Assessment within industry (from step 3B)	**Tier 1**	2	3	4	5	6
	Tier 2	3	4	5	6	7
	Tier 3	4	5	6	7	8
	Tier 4	5	6	7	8	9

Source: Credit Suisse,Credir+: A Credit Risk Management Fremework.Credit Suisse Financal Products,1997

1.5.2.5 Financial Statement Quality (Step 4)

This fourth step recognizes the importance of the quality of the financial information provided to the analyst. Again, this step is not used to improve the rating, but to define the best possible OR:

The bank must always be fully satisfied as to the quality, adequacy, and reliability of the financial statement information irrespective of the RR. This includes consideration of the size and complexities of the borrower and its financial statements.

1.5.2.6 Country Risk (Step 5)

This fifth step adjusts for the effect of any country risk. Country risk is the risk that a counterparty, or obligor, will not be able to pay its obligations because of cross-border restrictions on the convertibility or availability of a given currency. It is also an assessment of the political and economic factors that allow an analyst to calculate a country risk rating. (Naturally, if the counterparty has all or most of its cash flow and assets in the local market, then one may skip this step.)

A table should be developed to determine whether a country rating will affect the OR. Country risk exists when more than a prescribed percentage (say 25 percent) of the obligor's (gross) cash flow or assets is located outside of the local market. Country risk may be mitigated by hard dollar cash flow received/earned by the counterparty. Hard dollar cash flow refers to revenue in a major (readily exchangeable) international currency (primarily U.S. dollars, U.K. pounds, Euros, and Japanese yen, as well as Canadian dollars).

If the obligor is strong, then short-term country risks (primarily risk of trade financing and trading products) may warrant a better rating than the country. One

may also mitigate country risk or improve the rating in a later step in the process. Obtaining political risk insurance may also (partially) mitigate country risk.

Again, Step 5 acts to limit the best possible rating. For example, if the client's operation has a country rating in the ''fair'' category, then the best possible OR is 5 (see Table 1.14). On the other hand, if the country is rated ''selectively acceptable,'' then the best possible obligor rating is 6.

Table 1.14 Adjustments for Country Risk

Division Country Rating	**Adjustment to Obligor Rating**
Excellent, very good, or satisfactory	None
Fair	Best possible obligor rating is 5
Selectively acceptable	Best possible obligor rating is 6
Marginal/deteriorating	Best possible obligor rating is 7

Source: Chrouhy, Michel, Dan Galai, and Robert Mark, Credit RatingsInternal Rating Systems 383, 2003

1.5.3 Second Group of Adjustment Factors for Facility Rating

1.5.3.1 Third-Party Support (Step 6)

This sixth step adjusts a facility rating (FR) where important third party support is held. (This step can therefore be skipped if the guarantor was substituted for the borrower at the outset.)

Considerable care and caution is necessary if ratings are to be improved because of the presence of a guarantor. In all cases, one must be convinced that the third party/owner is committed to on going support of the obligor. Based on the quality of the third-party support, the risk rating of the firm can be upgraded or downgraded.

Personal guarantors and other undertakings from individuals, and guarantees for less than 100 percent of the indebtedness, do not qualify for consideration in this category.

1.5.3.2 Term (Step 7)

This seventh step recognizes the increased risk associated with longer-term facilities and the lower risk of very short term facilities. A standard approach is to combine the facility rating (after any third-party support adjusment, in Step 6) with the remaining term to maturity in order to determine the adjustment to the facility rating.

1.5.3.3 Structure (Step 8)

This eighth step considers the effect of how strongly a facility is structured, its covenants, its conditions, etc., in order to prompt appropriate adjustments to the rating. The lending purposes and/or structure may influence (positively or negatively) the strength and quality of the credit. These may refer to the status of the borrower, the priority of the security, the covenants attached to a facility, etc. Take, for example, a facility that has been downgraded due to term of a loan. If the structure contains very strong covenants which mitigate the effect of the term to maturity of the facility, it may be appropriate to make an adjustment to offset (often partially) the effect of the term to maturity of the facility.

1.5.3.4 Collateral (Step 9)

This last ninth step recognizes if the presence of security should heavily affect the severity of loss, given default, in any facility. The quality and depth of security vary widely and will determine the extent of the benefit in reducing any loss.

Security should be valued as it would be in a liquidation scenario. In other words, if the business fails, what proceeds would be available. If the total security package includes components from various collateral categories, then one should generally use the worst category containing security on which any significant reliance is plated. The collateral category should reflect only the security held for the facility that is being rated. (Exceptions are where all security is held for all facilities, and where they are being rated as one total.) Documentation risk (the proper completion of security) is always a concern and should be considered when assessing the level of protection.

CHAPTER2-

CREDIT RATING METHODOLOGIES

2.1 Introduction to Credit Rating Models

In this chapter, we review the credit scoring techniques that have evolved over the last 25 years. These innovations were prompted by a number of secular forces (John B. Caouette,1998), including the following:

- Deregulation, which has stimulated financial innovation and enabled new entrants to provide services
- The expansion of the credit markets to include new borrowing sectors, both domestically and internationally
- A continuing shift from balance sheet lending to cash flow lending
- An increase in off-balance sheet risk
- Shrinking margins on loans, which have forced banks to explore less costly ways of measuring and managing credit risk
- Securitization, which has prompted the development of more efficient(and standardized) credit risk tools
- Advances in finance theory, which have provided new ways of looking at credit risk(McKinsey&Co. 1993)

Tools from statistics and operations research, such as survival analysis, neural networks, mathematical programming, deterministic and probabilistic simulation and game theory, have all contributed to the progress in credit risk management.

2.1.1 Variety in Models

Ratios, option theory, econometrics, expert systems are methods used in attempting to isolate a problem in a construct that can be studied, refined, tested, and if effective, profitably implemented. Many separate elements go into the construction of credit risk model. First, relationships must be assumed among the variables that seem to affect the risk of default. Then, to derive a formal model, a set of tools must be employed to estimate or simulate outcomes. A body of data is crucial at this point , because a model cannot be created without structure of data. Lastly, a series of tests must be applied to establish that the model does, indeed, perform as expected (Caouette, John B., Introduction Credit Risk Models, pp:103,1999).

In the measurement of credit risk, models may be classified along two different dimensions:

1. The techniques employed
2. The area of applications in the credit process.

2.1.2 Techniques

The following are more commonly used techniques:

- ***Econometric techniques***, such as linear and multiple discriminant analysis, multiple regressions, logit analysis, and probit analysis models use the probability of default, or the default premium, as a *dependent* variable whose variance is explained by a set of *independent* variables. The independent variables include financial ratios and other indicators as well as external variables that are used to measure economic conditions. (Lee [1980]).

- ***Neural networks*** are computer based systems that we use to try to mimic the functioning of human brain by emulating a network of interconnected neurons- the smallest decision making units in the brain. They use the same data in the econometric techniques but arrive at the decision model using alternative implementations of a trial and error method.
- ***Rule based or expert systems*** are used to try to mimic in a structured way the process that an experienced analyst uses to arrive at the credit decision. As the name indicates, such a system tries to copy the process used by a successful analyst so that his or her expertise is available to the rest of the organization. Rule-based systems are characterized by a set of decision rules, a knowledge base consisting of data such as industry financial ratios, and a structured inquiry process to be used by the analyst in obtaining data on a particular borrower (Aksel, Kaan.2006.)
- ***Optimization models*** are mathematical programming techniques that discover the optimum weights for borrower and loan attributes that minimize lender assessment error and maximize profits (for example McKinsey&Co. designed this kind of program).
- ***Hybrid Systems*** using direct computation, estimation, and simulation are driven in part by a direct causal relationship, the parameters of which are determined through estimation techniques. An example of this is Moody's KMV model, which uses an option theoretic formulation to explain default and then derives the form of relationship through estimation. Migration probability matrices are summaries that help to predict the tendency of credit to migrate to lower or higher quality based on historical migration patterns(KMV Corporation. 1995).

2.1.3. Domain of Application

Financial models are applied in variety of domains (Caouette,John B., Edward I. Altman and Paul Narayanan. 1998):

- ***Credit Approval:*** These kinds of models are used by themselves or together with a judgmental determination system for approving credit in the consumer lending business. They are generally not used in approving large corporate loans, but may be one of the inputs to a decision.
- ***Credit Rating Determination:*** Quantitative models are used in deriving "shadow" bond ratings for unrated securities and commercial loans. These ratings in turn influence portfolio limits and other lending limits used by the institution.
- ***Credit Pricing:*** Credit risk models may be used to suggest the risk premiums that should be charged in view of the probability of loss and the size of the loss, given the default. Using mark-to-market model, an institution may evaluate the costs and benefits of holding a financial asset. Unexpected losses implied by a credit model may be used to set the capital charge in pricing.
- ***Financial Early Warning:*** Credit models are used to flag potential problems in the portfolio to facilitate early corrective action.
- ***Common Credit Language:*** Credit models may be used to select assets from a pool to construct a portfolio acceptable to investors or to achieve the minimum credit quality needed to obtain the desired credit rating. Underwriters may use such models for *due diligence* on the portfolio.

- ***Collection Strategies:*** Credit models may be used in deciding on the best collection or workout strategy to pursue. If, for example, a credit model indicates that a borrower is experiencing short-term liquidity problems rather than a decline in credit fundamentals, then an appropriate workout may be devised.

Among these models, Credit Risk Models will be discussed further.

2.2 Credit Rating Models Based on Accounting Data and Market Values

2.2.1. Univariate Credit Scoring Systems

In recent decades quantitative systems for scoring credits have been developed. In univariate (pertaining to one variable) accounting-based credit scoring systems, the credit analyst compares various key accounting ratios of potential borrowers with industry or group norms and trends for these variables. Today, Dun&Brandstreet, Standard & Poor's, Moody's and Robert Morris Associates use this methodology to provide credit rating. The univariate approach enables an analyst starting an inquiry to determine whether a particular ratio for a potential borrower differs noticeably from the norm for its industry. In realty, however, the unsatisfactory level of one ratio is frequently ofset less harmful by the strength of some other measure. A firm, for example, may have a poor profitability ratio but above-average liquidity ratio. One limitation of the univariate approach is the difficulty of making trade-offs between such weak and strong ratios. Of course, a good credit analyst can make these adjustments.

2.2.2. Multivariate Credit Scoring Systems

Although univariate models are still in use today in many institutions, most academicians and an increasing number of practitioners seem to disapprove of ratio analysis as a means of assessing the performance of a business enterprise. Many respected theorists downgrade the arbitrary *rules of thumb* (such as company ratio comparisons) that are widely used by practitioners and favor instead the application of more rigorous statistical techniques. In some respects, however, these latter techniques should be viewed as a refinement of traditional ratio analysis rather than as radical departure from it. One of the classic studies of ratio analysis and bankruptcy was performed by Beaver (1967). Beaver found that a number of indicators could discriminate between matched samples of failed and no failed firms for as long as five years prior to failure. In a subsequent study, Deakin(1972) utilized the same 14 variables that Beaver analyzed but applied them within a series of multivariate discriminant models.

In general, ratios measuring profitability, liquidity, and solvency appeared to be most significant indicators in univariate studies. The order of their importance was unclear, however, because almost every study cited a different ratio as the most effective indicator of impending problems. An appropriate extension of univariate studies, therefore, was to build meaningful predictive model with combining several measures. In constructing a multivariate system, the key questions are

1. Which ratios are the most important in detecting bankruptcy potential?
2. What weights should be attached these selected ratios?
3. How should the weight values be objectively established?

We begin this discussion by presenting Altman's (1968) Z-score model and its extension. Zeta, which is an update and improvement of the original Z-score model,

is presented next. This is followed by a description of other developments including neural networks and artificial intelligence models.

2.2.2.1 Altman's Z-score Model

Altman's Z-score model is a multivariate approach built on the values of both ratio-level and categorical univariate measures (Altman,E.I. 1968). These values are combined and weighed to produce a measure (a credit risk score) that best discriminates between firms that fail and those that do not. Such a measure is possible because failing firms exhibit ratios and financial trends that are very different from those of companies that are financially good. In a bank utilizing such a model, loan applicants would either be reject or subjected to increased analysis if their scores fell below a critical benchmark. Altman based his multivariate model on the financial ratios show in Table 2.1 which depicts the univariate results. The basic Z-score model has endured to this day and has also been applied to private companies, non-manufacturing firms, and emerging market companies.

The Z-score model was constructed using multiple discriminant analysis, a multivariate technique that analyzes a set of variables to maximize the between-group variance while minimizing the within-group variance. This is typically a sequential process in which the analyst includes or excludes variables based on various statistical criteria. It should be noted that if the groups are not very different at the univariate level, a multivariate model will not be able to add much discriminatory power.

Table 2.1 Z-score Model Variable Group Means and F Ratios

Variable	**Bankrupt Group Mean**	**Nonbankrupt group mean**	**F ratio**
X_1, Working Capital/Total Assets (WC/TA)	-6,1%	41,4%	32.60
X_2, Retained Earnings/Total Assets (RE/TA)	-62,6%	35,5%	58,86
X_3, Earnings before Interest and Taxes/Total Assets (EBIT/TA)	-31,8%	15,4%	26,56
X_4, Market Value of Equity / Book Value of Total Liabilities (MVE/TL)	40,1%	247,7%	33,26
X_5, Sales / Total Assets (S/TA)	1,5 times	1,9 times	2,84

Source: Altman. 1968.

To arrive at a final profile of variables, the following procedures were utilized: (1) observation of statistical significance of various alternative functions, including determination of the relative contributions of each independent variable; (2) evaluation of intercorrelations among the relevant variables; (3) observation of the predictive accuracy of the various profiles; and (4) judgment of the analyst. From the original list of 22 variables, the final Z-score model chosen was the following 5-variable model.

$Z=V_1X_1 +V_2X_2+V_3X_3+V_4X_4+V_5X_5$

$Z=1.2X_1 +1.4X_2+3.3X_3+0.6X_4+0.999X_5$

X_1: Working Capital/Total Assets (WC/TA)

The ratio is measure of a firm's net liquid assets relative to its total capitalization. Working capital is defined as the difference between current assets and current liabilities. Normally, current assets of a firm with consistent operating losses will shrink as compared with its total assets.

X_2: Retained Earnings/Total Assets (RE/TA)

Retained earnings (also known as earned surplus) are the total amount of reinvested earnings and/or losses of a firm over its entire life. This measure of cumulative profitability over time is a used recently ratio. The age of a firm and its use of leverage are considered in this ratio. For instance, a relatively young firm will probably show a low RE/TA ratio because it has not had time to build up its cumulative profits. Therefore, it may be argued that young firm's change of being classified as bankrupt is relatively higher than that of another older firm. But, this is usually the situation in the real world. The frequency of failure is much higher in a firm's earlier years (40-50% of all firms fail in it's the first five years of t existence)

X_3: Earnings before Interest and Taxes/Total Assets (EBIT/TA)

This ratio is a measure of the true productivity of the firm's assets, independent of any tax shield. Since a firm's ultimate existence is based on earnings power of its assets, this ratio appears to be particularly appropriate for studies dealing with credit risk. Furthermore, insolvency in the bankrupt sense occurs when the total liabilities exceed a fair valuation of the firm's assets with value determined by the earning power of the assets.

X_4: Market Value of Equity / Book Value of Total Liabilities (MVE/TL)

Equity is measured by the combined market value of all shares of stock, preferred and common, whereas liabilities include both current and long-term items. The ratio shows how much a firm's assets can decline in value(as measured by market value of equity plus debt) before its liabilities exceed its assets, and it becomes insolvent. For example, a company with $1,000 of equity market value and debt of $500 could experience a two-thirds decrease in asset value (which is $1,000 +$500 =$1,500, thus 2/3 of assets is $500) before insolvency. However, the same firm with $250 in equity value will be insolvent if assets decrease only one-third in value. This ratio adds a market value dimension that other failure studies did not consider.

X_5, Sales / Total Assets (S/TA)

The total asset-turnover ratio is a standard financial ratio illustrating the sales generating ability of firms' assets. It is one measure of management's capacity to deal with competitive conditions.

2.2.2.1.1 Bond Rating Equivalents

One of the main reasons for building a credit scoring model for rated entities is to estimate the probability of default (PDF) and loss given a certain level of risk estimation (LGDs). Although we all are aware that the rating agencies are certainly not perfect in their credit risk assessments, in general it is felt that they do provide important and consistent estimates of default- mainly via their ratings. And, since there has been a long history and fairly large number of defaults which had ratings, we can profit from this history by linking our credit scores with these ratings and thereby deriving expected and unexpected PDs and perhaps LGDs. These estimates

can be made for a fixed period of time from the rating date, eg. one year, or on a cumulative basis over some investment horizon, eg. five years. And, they can be derived from the rating agencies themselves on an updated basis based on their so-called "static-pool" (S&P) or "dynamic-cohort" (Moody's) approaches. An alternative is to use Altman's "mortality rate" approach (Altman, 1989) that is based on the expected default from the original issuance date.

With respect to non-rated entities, one can calculate a score, based on some available model, and link it to a bond rating equivalent. The latter then can lead to the estimate of PD. For example in Table 2.2 Altman listed the bond rating equivalents for various Z-Score intervals based on average Z-Scores from 1995-1999 for bonds rated in their respective categories. For example, one observes that triple-A bonds have an average Z-Score of about 5.0, while single B-bonds have an average score of 1.70. The letter is in the distress zone and accounts for the largest of the "high-yield" categories.

Table 2.2 Average Z-scores by S&P bond rating 1995-1999

	Number of Firms	**Average**	**Standard deviation**
AAA	11	5,02	1,50
AA	46	4,30	1,81
A	131	3,60	2,26
BBB	107	2,78	1,50
BB	50	2,45	1,62
B	80	1,67	1,22

Source: S&P's website

2.2.2.1.2 Private Firm Z score Model

"What should we do to apply the model to firms in the private sector?" Credit analyst, private placement dealers, dealers, account auditors, and firms themselves are concerned that the original model is only applicable to publicly traded entities (since X_4 requires stock price data). And, to be perfectly correct, the Z-Score model is a publicly traded firm model and simple adjustments to measure the PD for private firm are not scientifically valid. For example, the most obvious modification is to substitute the book value of equity for the market value and then recalculate V_4X_4

Rather than simply insert a proxy variable into an existing model to calculate Z-Scores, Altman advocates a complete re-estimation of model, substituting the book values of equity for the Market Value X_4 (Altman,1995).

The result of our revised Z-Score model with a new variable is:

$Z'=0.717X_1 +0.847X_2+3.107X_3+0.420X_4+0.998X_5$

2.2.2.2 The ZETA credit risk model

In 1977 , Altman, Haldeman and Narayanan (1977) constructed a second-generation model with several enhancements to the original Z-Score approach. The purpose of this study was to construct, analyze and test a new bankruptcy classification model that considers explicitly recent developments with respect to business failures. The new study also incorporated refinements in the utilization of discriminant statistical techniques. The new model, which was called ZETA, was effective in classifying bankrupt companies up to five years prior to failure on a sample of corporations consisting of manufacturers and retailers. In addition to updating for newer bankruptcies across many industries and making adjustments of the financial data for relevant accounting changes (e.g. lease capitalization), the ZETA model tests

included non-linear (e.g. quadratic) as well as linear discriminant models. The non-linear model was more accurate in the original test sample results but less accurate and reliable in holdout or out-of-sample testing.

2.2.2.2.1 Macro Economic Impact Loss Estimation

All of the mentioned models are static in nature in that they can be applied at any point-in-time regardless of the current or expected performance of the economy and the economy's impact on the key risk measures:

1. Probability of default (PDs); and
2. Loss given default (LGDs).

Aggregate PDs vary over time so that a firm with a certain set of variables will fail more frequently in poor economic times and vice-versa in good periods. This systematic factor is not incorporated directly in the establishment of the scoring model in most cases. Some recent attempts have experimented with including variables that can capture these exogenous factors-like GDP growths. Since GDP growth will be the same for the good firms as well as the distressed ones in the model development phase, it is to add macro default measures for each year to capture a high or low risk environment and observe its explanatory power contribution in the failure classification model. Such attempts have only achieved modest success to date (Ong,Michael K.2001.).

2.2.2.2.2 Group Prior Probabilities, Error Costs and Model Efficiency

An alternative approach is to adjust the various scores for different risk categories by including explicit estimates for the prior PD and the possible costs of the model's

errors (Caouette, Altman and Narayanan. 1988.). That is, assuming multi-normal populations and a common covariance matrix, the optimal cutoff score could be calculated as:

$$Z_c = \ln \frac{q_1 c_1}{q_2 c_{11}}$$

where q_1, q_2 = prior probability of bankruptcy (q_1) or non-bankruptcy (q_2), and C_1, C_{11} = costs of Type I and II errors, respectively.

Further, if one wanted to compare the efficiency of the ZETA bankruptcy classification model with alternative strategies, the following cost function is appropriate for the expected cost of ZETA (EC_{ZETA}).

$$EC_{ZETA} = q_1(M_{12}/N_1)C_1 + q_2(M_{21}/N_2)C_{11}$$

Where M_{12}, M_{21} are the observed Type I and Type II errors (misses) respectively, and N_1, N_2 are the number of observations in the bankrupt (N_1) and non-bankrupt (N_2) groups

The 'correct' one-year estimate of q_1 for all firms is probably in the 0.02-0.06 range. Although the Z-Score model's parameters are based on data from one year prior to bankruptcy, it is not specifically a one-year prediction model (Altman, Haldeman and Narayanan. 1977.29-54).

2.2.2.3 The Expected Default Frequency (EDF) Model

KMV Corporation, purchased by Moody's in 2002, has created a procedure for estimating the PD of a firm that is based conceptually on Merton's (1974) option-theoretic approach. In three steps, it determines an EDF for a company. In the first step, the market value and volatility of the firm are estimated from the market value of its stock, the volatility of its stock, and the book value of its liabilities. In the second step, the firm's default point is calculated from the firm's liabilities coming due over time. Also, an expected firm value is determined from the current firm value. Using these two values plus the firm's volatility, a measure is constructed that represents the number of standard deviations from the expected firm value to the default point (the distance-to-default). Finally, a mapping is determined between the distance-to default and the default rate based on the historical default experience of companies with different distance-to-default values (Merton. 1974.).

In the case of private companies, for which stock price and default data are generally unavailable, KMV estimates the value and volatility of the private firm directly from its observed characteristics and values based on market comparables (KMV. 1995.).

The starting point of the KMV model is the proposition that when the market value of a firm drops below a certain level, the firm will default on its obligations. The value of the firm, projected to a given future date, has a probability distribution characterized by its expected value and standard deviation (volatility). The area under the distribution below the book liabilities of the firm is the PD.

For a firm with publicly traded shares, the market value of equity may be observed. The market value of equity may be expressed as the value of a call option, as follows:

Market value of equity = f(book value of liabilities, market value of assets, volatility of assets, time horizon)

KMV uses a special form of the options pricing approach that they do not disclose. To make their approach more concrete, the Black-Scholes options formula can be substituted for the function f. This results in the following expression:

$$E = VN(d_1) - De^{-T}N(d_2)$$

$$\sigma_e = \frac{N(d_1)V\sigma_a}{E}$$

$$d_1 = \frac{\ln(\frac{V}{D}) + (r + \frac{1}{2}\sigma_a^2)T}{\sigma_a\sqrt{T}}$$

$$d_2 = d_1 - \sigma_a\sqrt{T}$$

Where

E = the market value of equity

D= the book value of liabilities (strike price)

V = the market value of assets

T = the time horizon

r = the risk-free borrowing and lending rate

σ_a = the percentage standard deviation (volatility of the assets)

N = the cumulative normal distribution function whose value is calculated at d_1 and d_2.

The known variables are the market value of equity (E), volatility of equity (σ_e, estimated from historic data), book value of liabilities (D), and the time horizon (T). The two unknowns are the market value of the assets (V) and the volatility of the assets (σ_a). Because there are two equations with two unknowns, a solution can be found. This completes the first step.

Next, the expected asset value at the horizon and the default point are determined. An investor holding the asset would expect to get a payout plus a capital gain equal to the expected return. The expected return is related to the systematic risk of the asset. Using a measure of the asset's systematic risk, KMV determines an expected return based upon historic asset market returns. This is reduced by the payout rate determined from the firm's interest and dividend payments. The result is the expected appreciation rate, which when applied to the current asset value, gives the expected future value of the assets.

In the previous analysis it was assumed that the firm would default when its total market value falls below the book value of its liabilities. Based upon empirical analysis of defaults, KMV has found that the most frequent default point is at a firm value approximately equal to current liabilities plus 50% of long-term liabilities (25% was first tried but it did not work well).

Given the firm's expected value at the horizon and its default point at the horizon, KMV determines the percentage drop in the firm value that would bring it to the default point. By dividing the percentage drop by the volatility, KMV controls for the effect of different volatilities.

The number of standard deviations that the asset value must drop in order to reach the default point is called the ''distance-default''. Mathematically, this can be expressed as

$$Dis\tan ce - to - default = \frac{(\exp ected\ market\ value\ of\ assets - default\ po\text{int})}{(\exp ected\ market\ value\ of\ assets)(volatility\ of\ assets)}$$

The distance-to-default metric is a normalized measure and thus may be used for comparing one company with another. A key assumption of the KMV approach is that all the relevant information for determining relative default risk is contained in the expected market value of assets, the default point, and the asset volatility. Differences due to industry, national location, size, and so forth are assumed to be included in these measures, notably the asset volatility.

Distance-to-default is also an ordinal measure akin to a bond rating, but it still does not tell you what the default probability is. In order to extend this risk measure to a cardinal or a probability measure, KMV uses historical default experience to determine an expected default frequency as a function of distance-to-default. It does this by comparing the calculated distances-to-default and the observed actual default rate for a large number of firms from their proprietary database. A smooth curve fitted to those data yields the EDF as a function of the distance-to-default.

CHAPTER 3

RATING EXAMPLES OF COMPANİES REGİSTERED IN ISTANBUL STOCK

In this study we have chosen the companies that have gone bankrupt in ISE. We chose 8 default firms and 14 non-default firms from ISE in 1997-2001 periods. Their names and industries in which they operate are shown in Table 3.1. A firm is called as a default firm when it is taken into **ISE Watch-List**.

We chose 2 default firms and 3 non-default firms from Food Market, 3 default firms and 3 non default firms from Textile Industry, 1 default firms and 3 non default firms from Electronic Industry and 2 default firms and 5 non default firms from Machinery Sector. We exercised care in choosing pair of firms (default / non-default) which are nearly same economic scale and have similar financial indicators.

Next thing is to find appropriate method to describe and estimate default and rank firms in order of their probability of default.

Table 3.1 Chosen firm

Name	Market	Default	Default Date
Apeks	Food	1	July 2000
Mudurnu Tavuk	Food	1	Mar 2000
Firigo Pak Gıda	Food	0	-
Banvit	Food	0	-
Penguen Gıda	Food	0	-
Bisaş	Textile	1	July 99
Köytaş	Textile	1	Feb 99
Tümteks	Textile	1	Jan 99
Derimod	Textile	0	-
Bossa	Textile	0	-
Altınyıldız	Textile	0	-
Raks	Electronic	1	Aug 99
Arçelik	Electronic	0	-
Vestel	Electronic	0	-
Bosh Profilo	Electronic	0	-
Makina Takım	Machinery	1	June 01
Tezsan Takım	Machinery	1	Dec 99
Bosh Fren	Machinery	0	-
Mutlu Akü	Machinery	0	-
Parsan	Machinery	0	-
Ege Endüstrü	Machinery	0	-
F-M İzmir Piston	Machinery	0	-

3.1 Using methods and their rationality

We have reviewed two appropriate methods to examine firms' ratings or risk categories. They are respectively:

1. Altman's Z-Score

2. Key Ratios Approach

Altman's Z-score is a multivariate method. This method uses disciriminant analyses. Key Ratios method starts with univariate statistical method and then proceeds a find rating category with multivariate method. In this section we illustrate use of these methods.

3.1.1 Appropriate Form of Altman's Z-Score

Although all of our sample firms are registered in ISE, we used private firm's Z score model because ISE's market prices were too volatile and terms of our study (1997-2001) is a crisis period. Then, we added a constant (3.25) to account for emerging market (Ong, 2003,160). Our final Z-score equation is:

Z' = 3.25 + 0.717 (X1) +0.847(X2)+3.107(X3)+0.420(X4)+0.998(X5)

X1=WORKİNG CAPİTAL/TOTAL ASSETS

X2=RETAINED EARNİNGS/TOTAL ASSETS

X3=EARNINGS BEFORE INTEREST AND TAXES/TOTAL ASSETS

X4=BOOK VALUE OF EQUITY/BOOK VALUE OF LIABILITIES

X5=SALES/TOTAL ASSETS

Then, we used data from In-Depth Data Corp average based on over 750 US corporation with rated debt outstanding in 1995. Rating Equivalent based on emerging market score (Table 3.2) to change Z' score to equivalent rating.

Table 3.2 Rating Equivalent Based on Emerging Market (Z') score

Equivalent rating	Average Z' score
AAA	8.15
AA+	7.60
AA	7.30
AA-	7.00
A+	6.85
A	6.65
A-	6.40
BBB+	6.25
BBB	5.85
BBB-	5.65
BB+	5.25
BB	4.95
BB-	4.75
B+	4.50
B	4.15
B-	3.75
CCC+	3.20
CCC	2.50
CCC-	1.75
D	0

Source:In-Depth Data Corp. Average based on over 750 US corporates with rated debt outstanding in 1995

3.1.2 Appropriate form Key Ratios method

This method includes key ratios and their medians for each rating category, then combine all key ratio medians with appropriate coefficients to find a unique Risk Rating score.

In table 3.3, we gave major ratios defined by S&P's which are used in Internal Rating systems.

Table 3.3 Major Ratios

1	EBIT interest coverage (x)
2	EBITDA interest coverage(x)
3	Funds from operations/ total debt (%)
4	Free operating cash flow/total debt (%)
5	Pretax return on capital (%)
6	Operating income/sale (%)
7	Long-term debt/capital (%)
8	Total debt/capitalization

S&P's ratio definitions were given below:

$$EBIT\ \text{interest coverage} = \frac{Earnings\ from\ continuing\ operations\ before\ \text{interest and taxes}}{Gross\ \text{interst incurred before subtracting}\ (1)\ capitalized\ \text{interest and}\ (2)\ \text{interest income}}$$

$$EBITDA\ \text{interest coverage} = \frac{Earnings\ from\ continuing\ operations\ before\ \text{interest}, taxes, depreciation\ and\ amortization}{Gross\ \text{interst incurred before subtracting}\ (1)\ capitalized\ \text{interest and}\ (2)\ \text{interest income}}$$

$$Funds\ from\ operations / total\ debt = \frac{\begin{array}{l}Net\ income\ from\ continuing\ operations\ plus\ depreciation, amortisation, deferred\ taxes \\ and\ other\ non-cash\ items\end{array}}{\begin{array}{l}Long-term\ debt\ plus\ current\ maturities, commercial\ paper\ and\ other\ s \\ hort-term\ borrowings\end{array}}$$

$$Free\,operating\,cashflow/total\,debt = \frac{\begin{array}{l}Funds\ from\,operations - capital\,\exp enditures, \min us(\,plus)\,the\,increase(decrease)\\ in\,working\,capital\,(excluding\,changes\,in\,\,cash, marketable\,\,\sec urities\,and\,short - term\,debt\end{array}}{\begin{array}{l}Long - term\,debt\,plus\,current\,maturities, commercial\,\,paper\,and\,other\,s\\ hort - term\,borrowings\end{array}}$$

$$\Pr e - tax\,return\,on\,capital = \frac{\begin{array}{l}\Pr etax\,income\,\,from\,\,continuing\,\,\,operations + \text{int}\,erest\,\exp ense\end{array}}{\begin{array}{l}Sum\,of\,\,(1)average\,of\,\,beginning\,of\,\,year\,and\,end\,of\,\,year\,current\,maturities, longterm\,debt,\\ non - current\,deferrred\,taxes\,and\,equity\,and\,(2)average\,short - term\,\,borrowings\\ during\,\,year\,as\,\,disclosed\,in\,\,footnotes\end{array}}$$

$$Operating\,income/sales = \frac{\begin{array}{l};Sales - \cos t\,of\,\,goods\,manufactured\,(before\,depreciation\,and\,amortization), selling,\\ general\,and\,ad\,\min istrative\,and\,research\,\,and\,development\,\cos ts\end{array}}{Sales}$$

$$Long - term\,debt\,capitalisation = \frac{Long\,term\,debt}{Longterm\,\,debt + shareholders'equity\,(including\,\,preferred\,stock) + \min ority\,\,\text{int}\,erest}$$

$$Total\,debt\,capitalisation = \frac{Long\,term\,debt + current\,maturities, commercial\,\,paper\,and\,other\,short - term\,\,borrowings}{Longterm\,\,debt + shareholders'equity\,(including\,\,preferred\,stock) + \min ority\,\,\text{int}\,erst}$$

After finding value of each ratio for each financial statement period, we compared them with S&P's key industrial financial ratios for rating categories (Table 3.4) to find which rating rank is appropriate for each key ratio.

Table 3.4 Key industrial financial ratios for rating categories

US industrial long-term debt three-year (1998-2000) medians		**AAA**	**AA**	**A**	**BBB**	**BB**	**B**	**CCC**
1.a	EBIT interest coverage (x)	21.4	10.1	6.1	3.7	2.1	0.8	0.1
1.b	EBITDA interest coverage(x)	26.5	12.9	9.1	5.8	3.4	1.8	1.3
2.a	Funds from operations/ total debt (%)	84.2	25.2	15.0	8.5	2.6	-3.2	-12.9
2.b	Free operating cash flow/total debt (%)	128.8	55.4	43.2	30.8	18.8	7.8	1.6
3.a	Pretax return on capital (%)	34.9	21.7	19.4	13.6	11.6	6.6	1.0
3.b	Operating income/sale (%)	27.0	22.1	18.6	15.4	15.9	11.9	11.9
4.a	Long-term debt/capital (%)	13.3	28.2	33.9	42.5	57.2	69.7	68.8
4.b	Total debt/capitalization	22.9	37.7	42.5	48.2	62.6	74.8	87.7

Source S&P's Rating Categories

Last step is to find combined RR score and its Rating equivalent

$$\mathbf{RR=(a_1Ratio_1+ a_2Ratio_2+ a_3Ratio_3+ a_4Ratio_4+ a_5Ratio_5+ a_6Ratio_6+ a_7Ratio_7+ a_8Ratio_8)/4}$$

$$a_1+ a_2+ a_3+ a_4+ a_5+ a_6+ a_7+ a_8=4$$

Finding coefficients is a very subjective step. If we had statistically significant data to find coefficients, we could have used probit, logit etc. models. Since we did not, we interviewed three Banks'(Akbank, İş Bankası, TEB) financial analysts(6 people). We asked them to order ratios from the most important (score of 8) to least important (7,6,5,…,1). Their answers' weighted average results are listed in Table 3.5

Table 3.5 Ratio Coefficients

R_1	EBIT interest coverage (x)	0.6
R_2	EBITDA interest coverage(x)	0.9
R_3	Funds from operations/ total debt (%)	0.3
R_4	Free operating cash flow/total debt (%)	0.45
R_5	Pretax return on capital (%)	0.25
R_6	Operating income/sale (%)	0.25
R_7	Long-term debt/capital (%)	0.25
R_8	Total debt/capitalization	1
	TOTAL	**4**

Our final equation is:

$$\mathbf{RR=(0.6R_1+ 0.9R_2+ 0.3_3+ 0.45_4+ 0.25R_5+ 0.25R_6+ 0.25R_7+ 1R_8)/4}$$

And now it is possible turn to letter equivalent of RR using Table 3.6

Table 3.6 Risk Rating-RR Categories

Rating Categories	RR
AAA	1
AA	2
A	3
BBB	4
BB	6
B	8
CCC	10
D	12

Source:The Basel Accord

Some researches indicate expert risk rating models (using qualitative parameters) still overcome statistical methods (Aksel,Kaan, PWC,2006,pp:15). In the next stage, we investigated how to add our subjective opinion about the firm's risk position. We chose 3 parameters (Change in Working Capital, Change in Net Worth and Net Profit or Loss) and look at their changing directions. And gave them points from -3 to +3, and then summed total points and found adjusted score point. If this score is between 9-6, we upgraded the firm's rating two signs. For instance for a firm with B- rating and adjustment point 6, its new rating is B+. If adjustment point is between 5 to 3 we upgraded its rating one sign, and the score are between 2 to -2 rating did not change, if points were between -3 to -5 rating downgraded the score one sign and for points between -6 to -9, rating were downgraded two signs.

3.2 Data Collection and Analyses

We used sample firms' Balance Sheets, Income Statements and Foot notes to prepare Short Financial Information Report for each firm. These reports are different for Z-score model (Table 3.7) and Key Ratios Model (Table 3.8). Tables 3.7 and 3.8 are given Apeks in the sample as an example. The last five rows of the tables are devoted Rating scores and RR calculations. Other Financial Information Reports for the whole sample firms are given Appendix 1.

Table 3.7 Z-Score Model Financial Information Report for Apeks

Apeks YTL	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000
CURRENT ASSETS	2.277.602	4.016.463	5.368.627	6.173.382	5.045.723	4.381.574
LONG TERM ASSETS	1.205.096	1.676.435	1.873.598	2.252.747	2.370.088	2.423.569
CURRENT LIABILITIES	1.854.596	4.007.040	5.641.389	7.322.270	4.275.346	8.703.947
LONG-TERM LIABILITIES	204.387	60.862	18.958	276.580	1.141.108	516.548
EQUITY	1.423.715	1.624.996	1.581.878	827.279	-953.149	-2.415.352
TOTAL ASSETS	3.482.698	5.692.898	7.242.225	8.426.129	7.415.811	6.805.143
WORKING CAPITAL	423.006	9.423	-272.762	-1.148.888	770.377	-4.322.373
RETAINED EARNINGS	1.173.715	1.374.996	1.331.878	577.279	-1.203.149	-4.665.352
NET PROFİT BEFORE TAXES	531.626	98.730	-209.633	-1.987.222	-3046499	-5753872
FINANCIAL EXPENSES	0	0	-964.415	-2.081.150	-2.728.489	-1886740
EARNINGS BEFORE INTEREST AND TAXES	531.626	98.730	754.782	93.928	-318.010	-3.867.132
MARKET VALUE OF EQUITY	2.937.500	3.995.500	2.268.250	1.552.000	2.466.750	20.700.000
SALES	2.411.745	2.409.334	3.577.785	3.651.686	4.162.763	3.094.792
X1	0,1215	0,0017	-0,0377	-0,1363	0,1039	-0,6352
X2	0,337013143	0,2415283	0,1839045	0,0685106	-0,162241	-0,685563
X3	0,152647746	0,0173427	0,1042196	0,0111472	-0,042883	-0,568266
X5	0,692493291	0,4232175	0,4940174	0,4333765	0,5613362	0,4547725
X4'	0,691465155	0,3994678	0,2794666	0,108869	-0,175973	-0,261955
Z'	5,078336655	4,0997925	4,3129787	3,7231359	3,5401343	0,792156
Rating	BB+	B	B+	B-	B-	D
RR	5,5	8	7,5	8,5	8,5	12

Table 3.8 Key Ratios Model Financial Information Report for Apeks

	Apeks Financial Information Report	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000
	Balance Sheet						
	Current Assets (CA)	2.277.602	4.016.463	5.368.627	6.173.382	5.045.723	4.381.574
	Current Liabilities (CL)	1.854.596	4.007.040	5.641.389	7.322.270	7.227.852	8.703.947
	Working Capital (WC=CA-CL)	*423.006*	*9.423*	*-272.762*	*-1.148.888*	*-2.182.129*	*-4.322.373*
	Fixed Assets (FA)	1.205.096	1.676.435	1.873.598	2.252.747	2.370.088	2.423.569
	Long Term Debts(LTD)	204.387	60.862	18.958	60.862	1.141.108	516.548
	Fixed Worth (FW=FA-LTD)	*1.000.709*	*1.615.573*	*1.854.640*	*2.191.885*	*1.228.980*	*1.907.021*
	Net Worth(NW=WC+FW)	*1.423.715*	*1.624.996*	*1.581.878*	*1.042.997*	*-953.149*	*-2.415.352*
	Income Statement						
	Sales for year	2.411.745	2.409.334	3.577.785	3.651.686	4.815.502	3.094.792
	Operating Profit (EBITDA)	398.506	-298.563	-387.190	-73.226	83.390	-1.717.188
	Depreciation & Amortisation	37.799	59.580	58.209	70.182	131.421	96.498
	Bad Debts						
	Income Taxes	165119	-122290	42499	0	0	0
	Net Profit/loss	366.507	-23.560	-252.132	-993.611	-3.046.499	-2.876.936
	Dividends/drawings						
	Sundry adjustments (-net income)	-4.433	125.224	176.357	-44.714	-24.639	599.392
	Net capital Expenses						
	Interest Expense (I)	0	0	964.415	1.040.575	2.728.489	943.370
	Capitalised Interest(Inventories)	0	1.053.868	546.175	601.680	721.762	69.025
	Capitalised Interest(Fixed Assets)	245.332	228.544	259.259	16.926	32.858	0
	Interest Expense (COGS)	698.923	109.730	73.607	154.527	269.979	119.880
	Total Interest	944.255	1.392.142	1.843.456	1.813.708	3.753.088	1.132.275

		31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000
	1 EBIT Interest Coverage (x)	0,38	-0,26	-0,24	-0,08	-0,01	-26
	2 EBIDA Interest Coverage (x)	0,42	-0,21	-0,21	-0,04	0,02	-25
	3 Funds from operations/total debt (%)	19,35	-7,34	-6,84	-0,99	1,00	-19
	4 Free operating cash flow/total debt (%)	19,35	2,83	-1,86	10,87	13,34	5
	5 Pretax return on capital (%)	**15,26**	**-2,56**	**10,42**	**0,56**	**-4,29**	**-28**
	6 Operating Income /sales (%)	16,52	-12,39	-10,82	-2,01	1,73	-55
	7 Long-term Debt/capital(%)	12,55	3,61	1,18	5,51	607,10	-27
	8 Total debt/capitilisation (%)	59,12	71,46	78,16	87,62	112,85	135

		31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000
1,5	1 EBIT Interest Coverage (x)	B	CCC	CCC	CCC	CCC	D
	2 EBIDA Interest Coverage (x)	CCC	CCC	CCC	CCC	CCC	D
0,75	3 Funds from operations/total debt (%)	A	CCC	CCC	B	BB	D
	4 Free operating cash flow/total debt (%)	A	BB	BB	B	A	BB
0,5	5 Pretax return on capital (%)	BBB	CCC	BB	CCC	D	D
	6 Operating Income /sales (%)	BBB	D	D	D	D	D
1,25	7 Long-term Debt/capital(%)	AAA	AAA	AAA	AAA	D	D
	8 Total debt/capitilisation (%)	BB	B	B	CCC	D	D

		31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000
0,6	1 EBIT Interest Coverage (x)	8	10	10	10	10	12
0,9	2 EBIDA Interest Coverage (x)	10	10	10	10	10	12
0,3	3 Funds from operations/total debt (%)	3,00	10,00	10,00	8,00	6,00	12
0,45	4 Free operating cash flow/total debt (%)	3,00	6,00	6,00	6,00	3,00	6
0,25	5 Pretax return on capital (%)	4,00	10,00	6,00	10,00	12,00	12
0,25	6 Operating Income /sales (%)	4,00	12,00	12,00	12,00	12,00	12
0,25	7 Long-term Debt/capital(%)	1,00	1,00	1,00	1,00	12,00	12
1	8 Total debt/capitilisation (%)	6,00	8,00	8,00	10,00	12,00	12
4	**RR**	**6,075**	**8,6125**	**8,3625**	**8,9625**	**9,7875**	**11**
	Rating	**BB**	**B-**	**B**	**B-**	**CCC**	**D**

	Change in WC	0	-3	-3	-3	-3	-3
	Change in Net Worth	0	1	-1	-1	-3	-3
	Net Profit or Loss	0	-3	-3	-3	-3	-3
	Total	**0**	**-5**	**-7**	**-7**	**-9**	**-9**
	Adjusted Rating		**CCC+**	**CCC+**	**CCC**	**D**	**D**
	Adjusted RR	**6**	**9,5**	**9,5**	**10**	**12**	**12**

3.3 Discussion of Results

We prepared comparative charts to analyse

-Can these methods be used for default estimation in our sample groups?

- Which method is better ?

In this section, we discuss our findings with respect to sector bases and firm bases.

3.3.1 Food Sector Results

Apek's and Mudurnu's results are given Figure 3.1 and Figure 3.2 respectively. We drew three lines each firms. First line indicates sample firms Key Ratio Scores (RR), second is Adjusted Key Ratio Scores, and third shows RR equivalent of Z-score. We can easily see the change in RRs though time. We can also easily detect if something is getting worse through time for two firms (Apeks and Mudurnu), Key Ratio Models predicted default one year before they were taken into Watch-List. Z-score's prediction is less clear than others. In these cases therefore Key Ratio models proved to be superiors Z-score model in terms of prediction. Adjusted Key Ratio Model's prediction is nearly perfect. This model predicts the default nearly two years before bankruptcy. It shows us, that adding expert opinions supports model's prediction power.

3.3.2 Textile Sector Results

Textile sector's results more are doubtful than Food Sector's results (Figure 3.3 for Bisaş, Figure 3.4 for Köytaş and Figure 3.5 for Tümteks) . Z-score model could not predict probable defaults of Bisaş, Köytaş and Tümteks. Moreover, other methods did not discover defaults clearly. Therefore, selected key ratios and standard Z-score

model for private firms are not appropriate for our test sample. All of sample default firms went into high speculative risk zone in a short term (in six-week period). This is appropriate for the high volatile Textile Sector market returns. We conclude that there is a need find new ratios or/and new coefficients for textile sector to have more prediction capacity.

The last interesting result is that investors are skeptical in approaching textile sector. In this sector firms which were out of investment grade moved into bankruptcy zone in a short time.

3.3.3 Electronic Sector Results

Our test models couldn't predict Raks's bankruptcy (Figure 3.6) in Electronic Sector. Only one year before bankruptcy Raks had better risk position than Vestel and Bosch Profilo. This bankruptcy was due to high losses just after a big investment funded by debt.

3.3.4 Machinery Sector Results

Two firms have defaulted in this sector. Makina Takım was one of them. Our methods neither could predict default nor describe it. Because, Makina Takım one of holding firm of Transtürk Holding and it's default was a result of the Holding's financial lack of success. In case of Tezsan, our methods could not predict default one year before bankruptcy. But we our methods indicated that Tezsan was a high risk level firm.

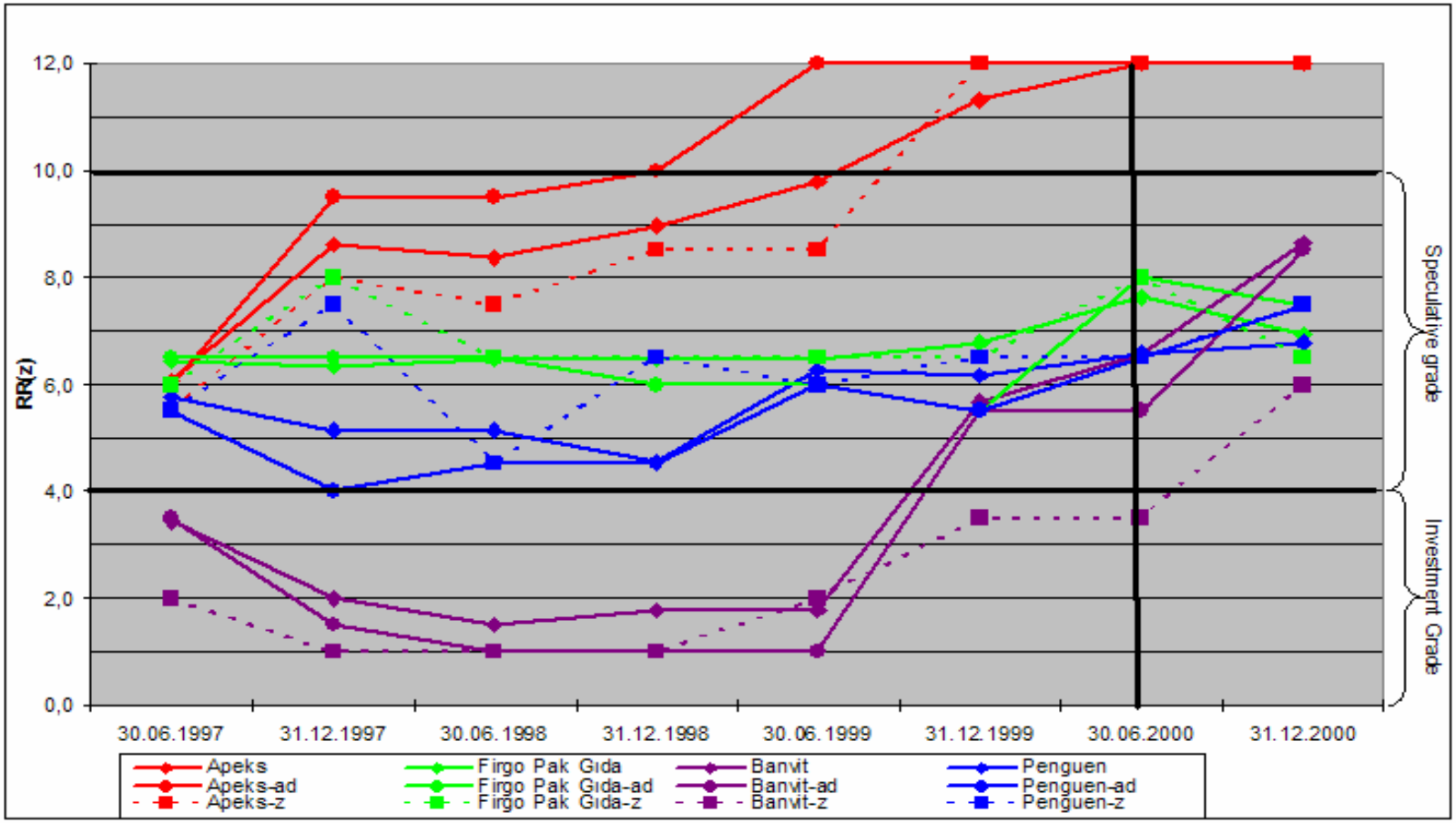


Figure 3.1 Apeks Risk Rating

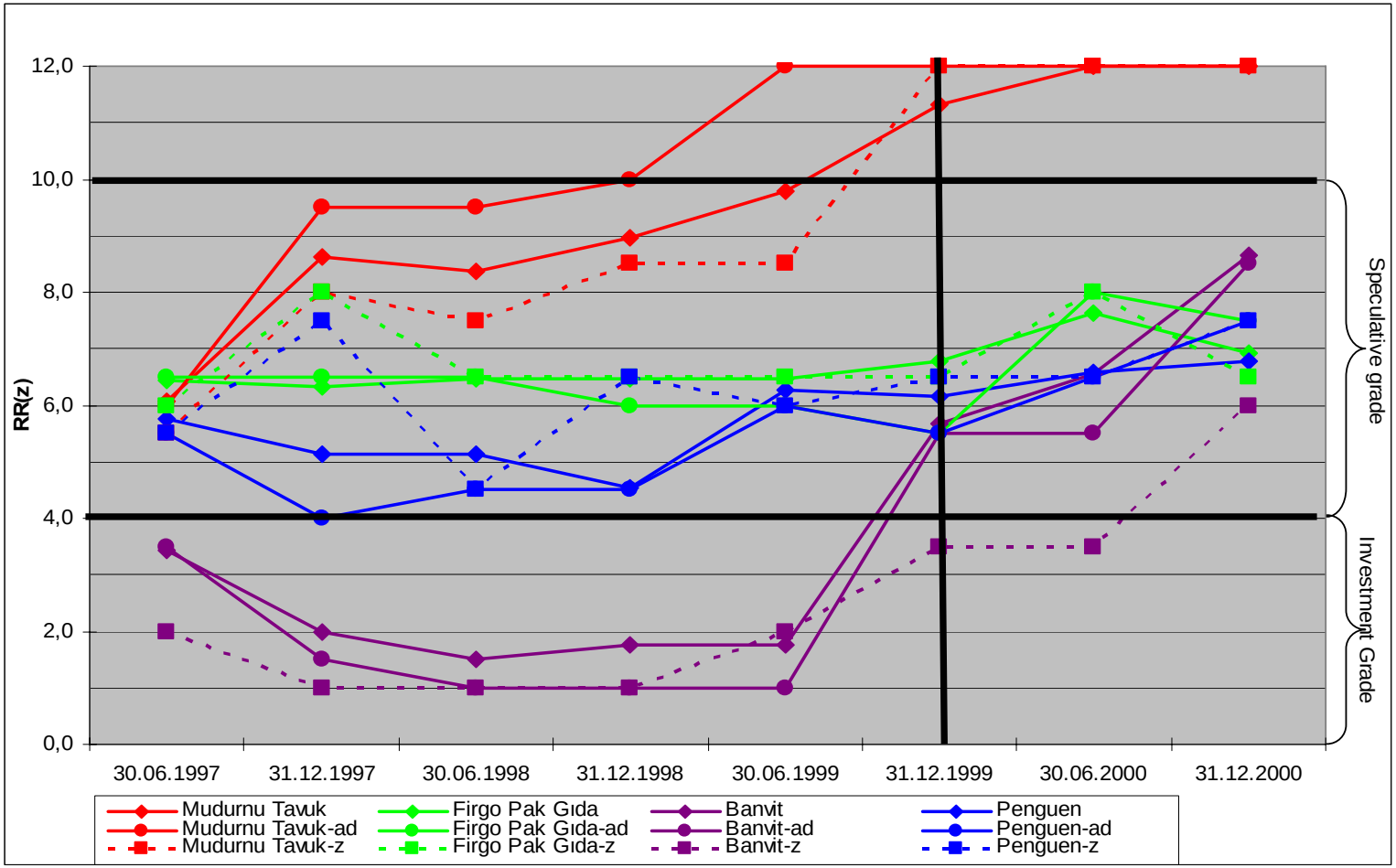


Figure 3.2 Mudurnu Risk Rating

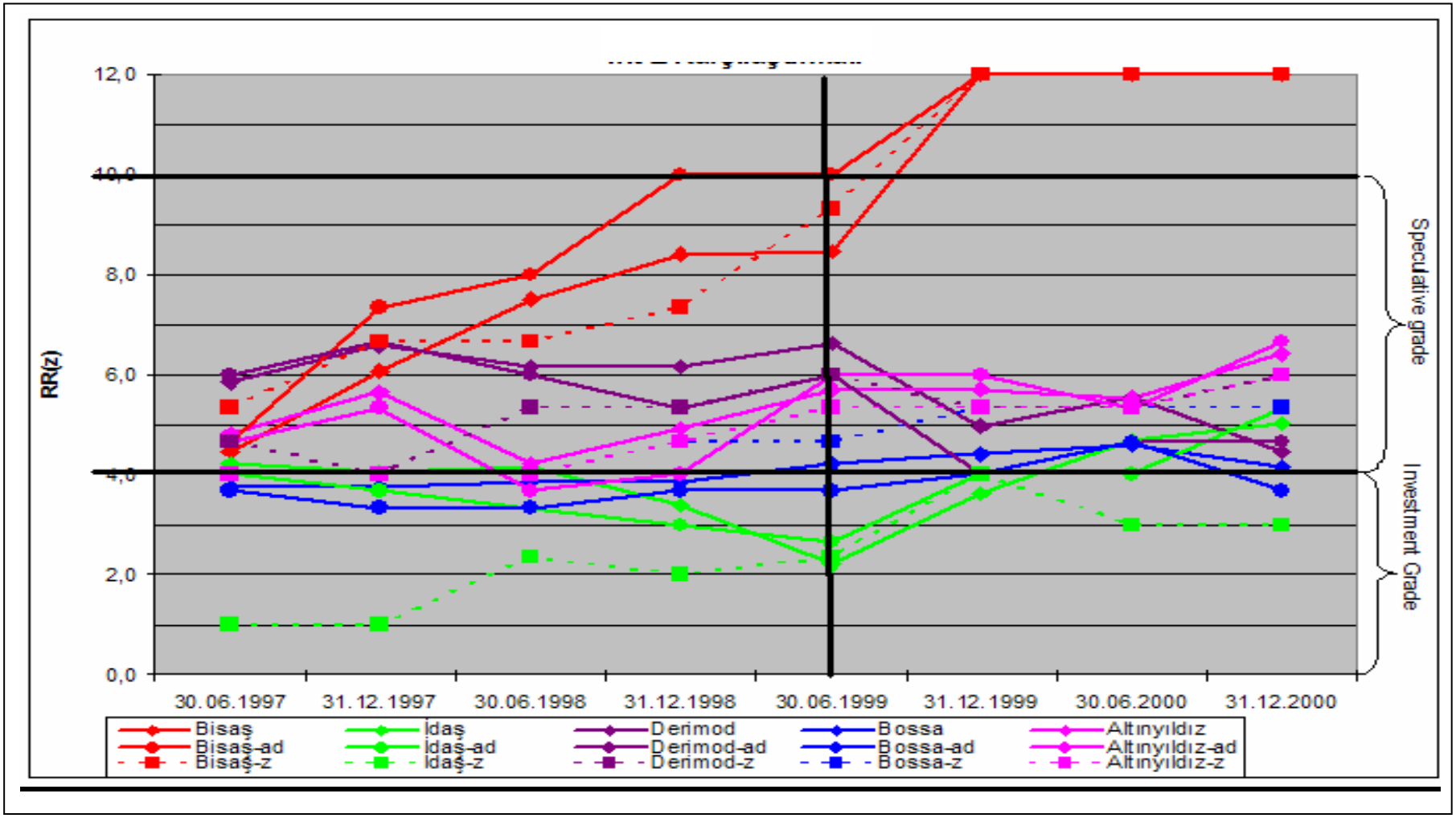


Figure 3.3 Bisaş Risk Ratings

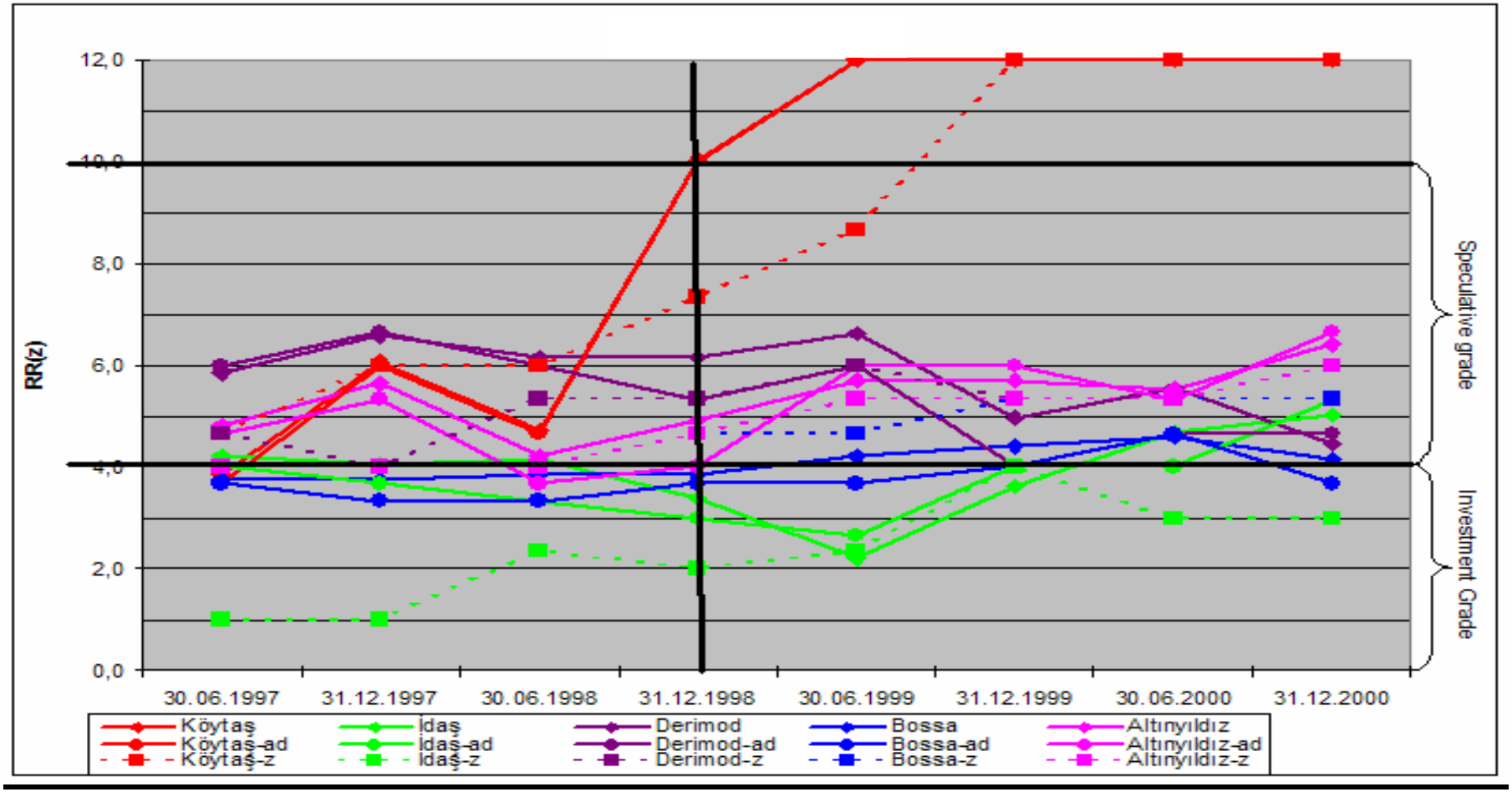


Figure 3.4 Köytaş Risk Ratings

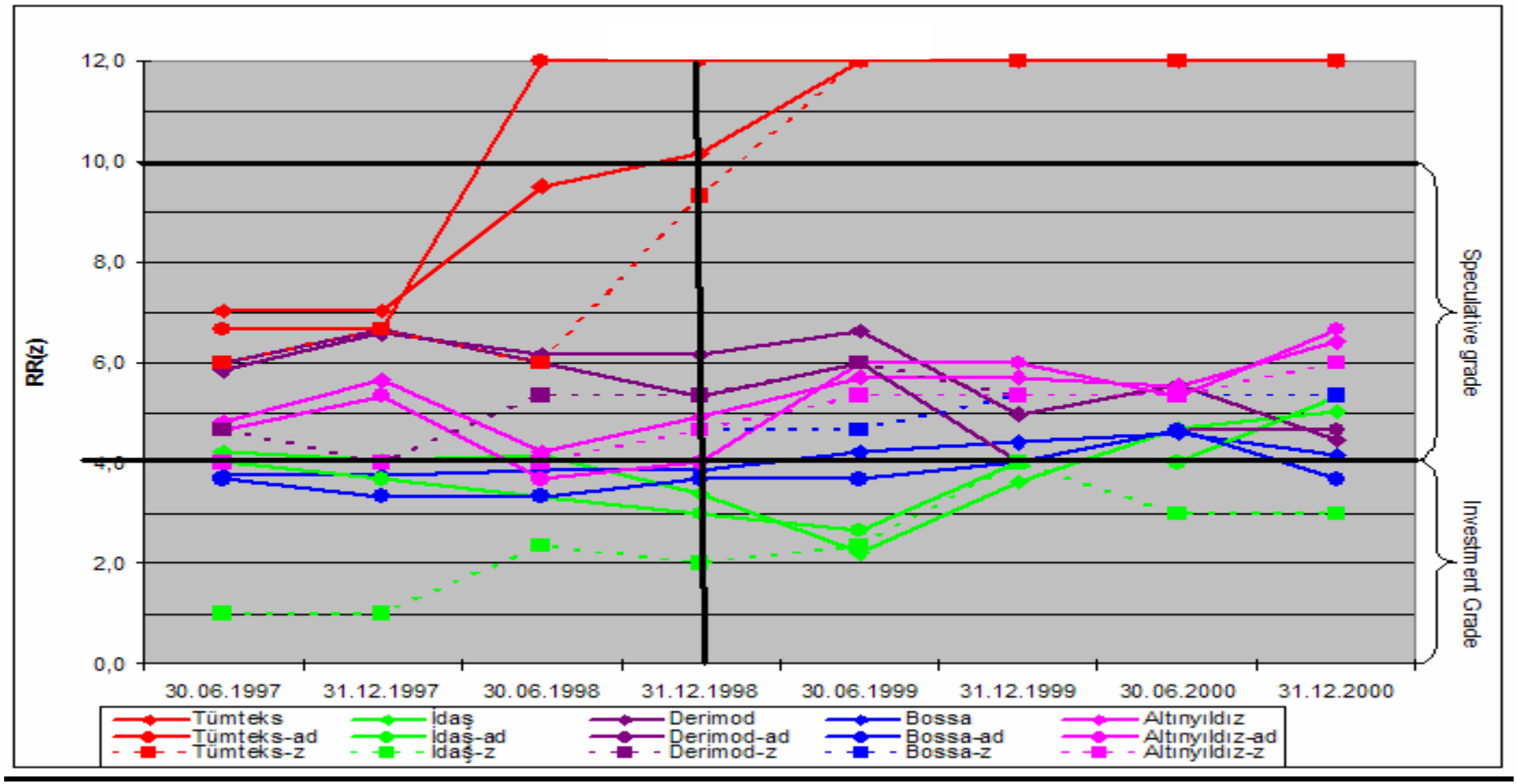


Figure 3.5 Tümteks Risk Ratings

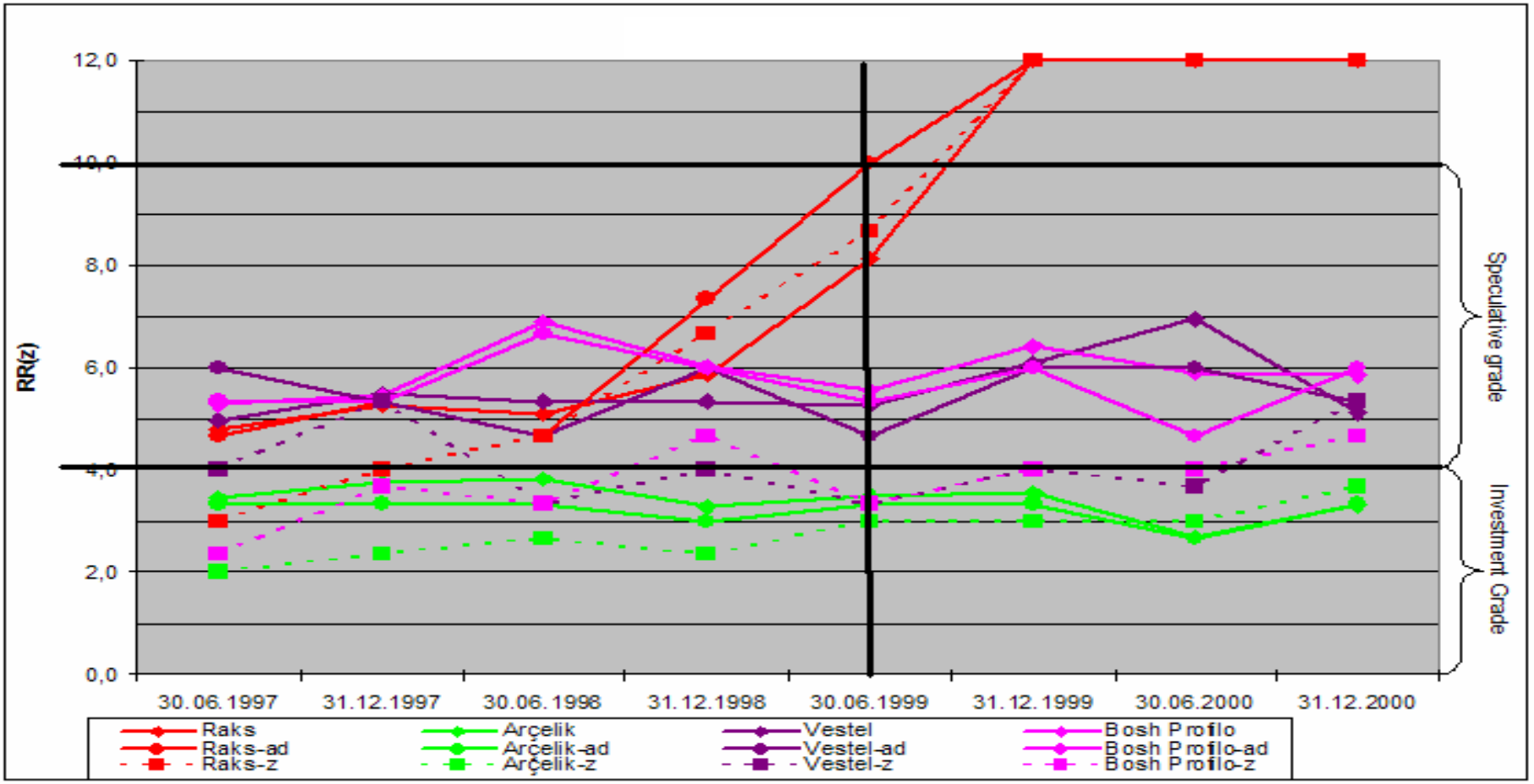


Figure 3.6 Raks Risk Rating

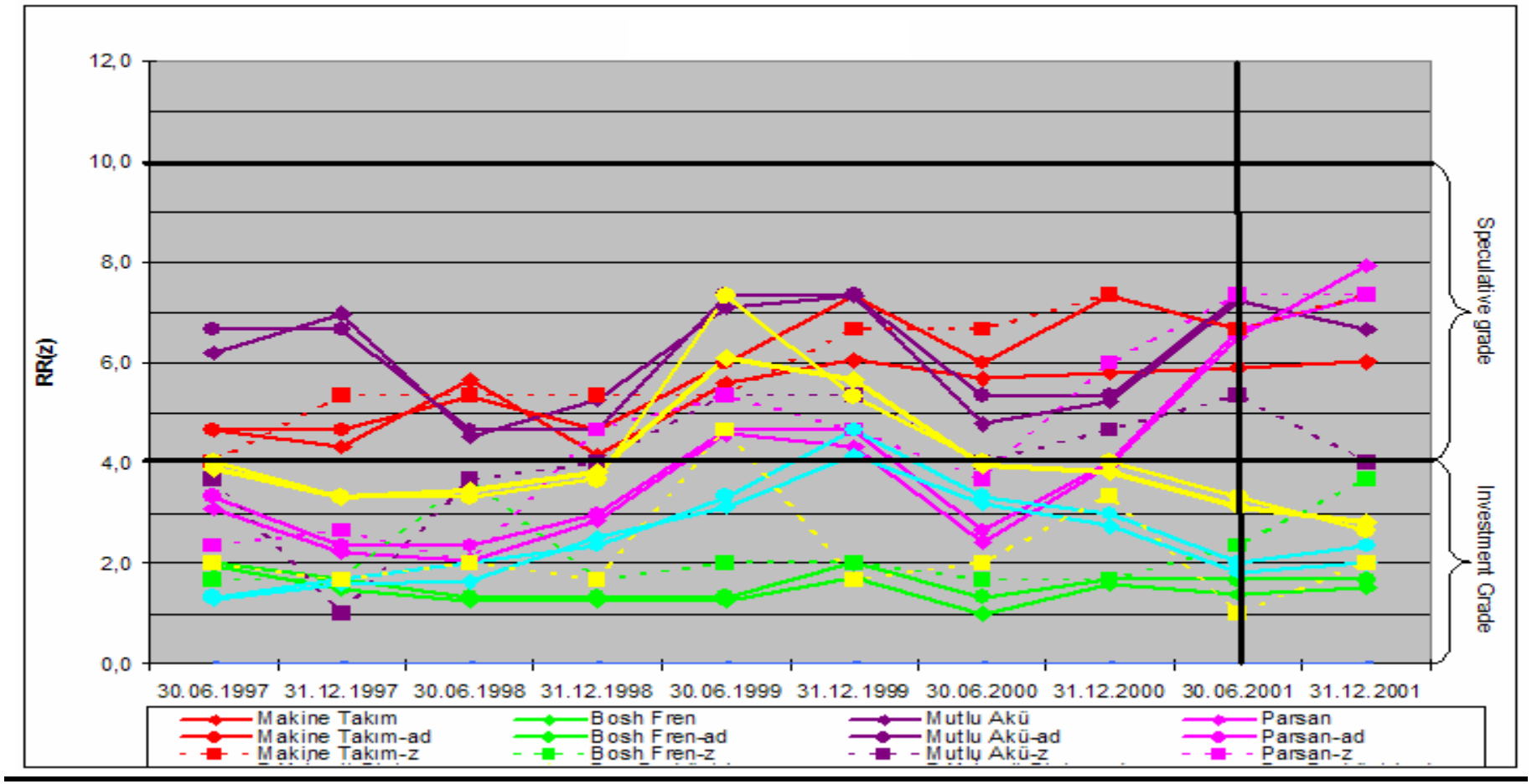


Figure 3.7 Makina Takım Risk Ratings

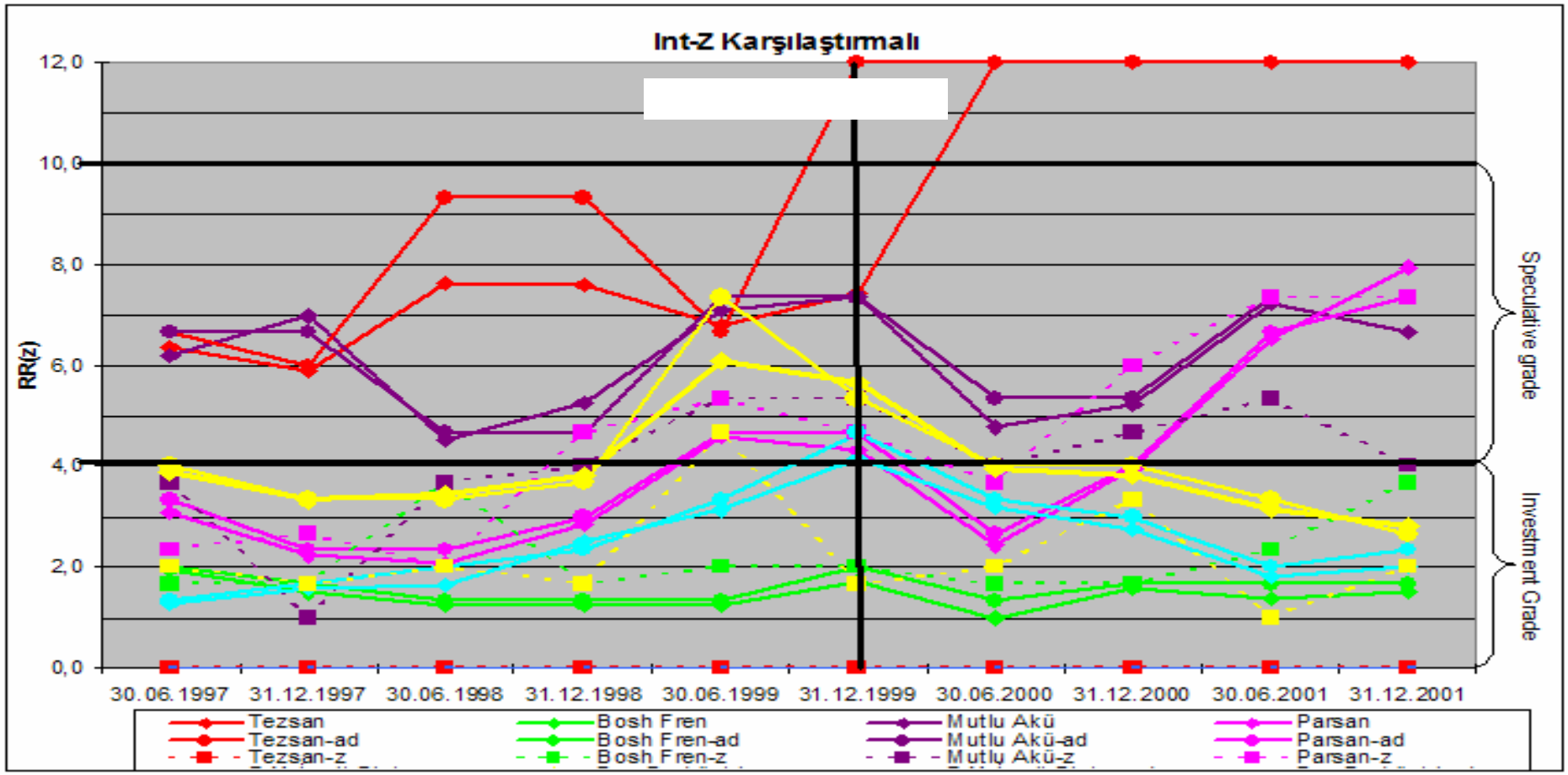


Figure 3.8 Tezsan Risk Ratings

CHAPTER 4 CONCLUSIONS

In this thesis we discussed risk rating systems and methodologies. Then we specifically examined three methods

1.Altman's Z-score Method

2. S&P's Key Ratios Method

3. Modified S&P's Key Ratios Method

Lastly, we tested appropriateness of these methods in Turkey's business environment. Our finding showed us that for all cases of sample groups Key Ratio's model or modified version of it are superior to Altman's Z-Score Model. In our opinion it is because Z-Score model is a strict model and it was originally developed for American Companies. But S & P's works with all companies around the world, therefore Key ratios model more appropriate for emerging markets like Turkey. S & P's method's modified version indicated best performance in terms of described and estimated bankruptcy, thus qualitative parameters, or experts opinions are still important in rating processes.

In all of defaulted firms of our sample group, we described default when they were put in the Watch List except Makina Takım which was a holding firm of Transtürk Holding. These results are important because it means that our ratios are significant in at least indicating default. But, we cannot say same thing for predicting the default. Our ratios are not significant to predict default.

In theory, to call a model appropriate for risk rating, it should be able to predict default at least one year before bankruptcy. Except for one case, we could not predict the default one year before. Therefore our three models do not seem to be appropriate for risk rating.

To find appropriate risk rating model we need a new approach given below. This outline would work better with widened test group for statically significant results.

1. Find new ratios, which are statistically more effective to describe the default (with univariate analysis and then logit analysis)
2. Find a single scoring model which includes ratios in first step and their coefficients (multivariate analysis-discriminant analysis or multi regression analyses)
3. Rank the ratings comparing with probability of default.
4. Prepare scorecards-Financial Information Reports
5. Making adjustments to reach final score of rating. Adjustments should include experts' opinions about firm. But they must be made carefully with least bias.

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APPENDICES

1. Z- SCORE CARDS

Table A1-1 Apeks Z-Score Card

Apeks YTL	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000
CURRENT ASSETS	2.277.602	4.016.463	5.368.627	6.173.382	5.045.723	4.381.574
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EQUITY	1.423.715	1.624.996	1.581.878	827.279	-953.149	-2.415.352
TOTAL ASSETS	3.482.698	5.692.898	7.242.225	8.426.129	7.415.811	6.805.143
WORKING CAPITAL	423.006	9.423	-272.762	-1.148.888	770.377	-4.322.373
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X4'	0,691465155	0,3994678	0,2794666	0,108869	-0,175973	-0,261955
Z'	5,078336655	4,0997925	4,3129787	3,7231359	3,5401343	0,792156
Rating	BB+	B	B+	B-	B-	D
RR	5,5	8	7,5	8,5	8,5	12

Table A1-2 Mudurnu Tavuk Z-Score Card

	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	31.06.2001
CURRENT ASSETS	2.952.461	4.335.906	6.114.471	9.662.614	17.459.566	26.281.709	17.622.097	5.208.679
LONG TERM ASSETS	2.758.254	3.444.931	4.429.904	5.583.208	8.007.392	11.374.028	15.818.275	18.349.610
CURRENT LIABILITIES	2.882.524	3.843.468	5.424.052	7.340.755	16.528.733	26.392.420	40.667.739	46.249.563
LONG-TERM LIABILITIES	540.377	740.500	783.644	2.173.839	3.005.730	2.317.791	6.308.608	6.786.197
EQUITY	2.287.814	3.196.869	4.336.679	5.731.228	5.932.495	8.945.526	-13.535.975	-29.477.471
TOTAL ASSETS	5.710.715	7.780.837	10.544.375	15.245.822	25.466.958	37.655.737	33.440.372	23.558.289
WORKING CAPITAL	69.937	492.438	690.419	2.321.859	930.833	-110.711	-23.045.642	-41.040.884
RETAINED EARNINGS	1.537.814	2.446.869	2.836.679	4.231.228	4.432.495	5.645.526	-16.835.975	-32.777.471
NET PROFİT BEFORE TAXES	591.500	1.512.102	1.620.661	1.646.548	850959	640908	-23039859	-35.753.422
FINANCIAL EXPENSES	-137.313	-311.468	-654.263	-1.434.844	-717.422	0	-5.252.328	-1990844
EARNINGS BEFORE INTEREST AND TAXES	728.813	1.823.570	2.274.924	3.081.392	1.568.381	640.908	-17.787.531	-33.762.578
MARKET VALUE OF EQUITY	0	0	0	0	0	0	0	0
SALES	6.413.532	12.003.664	15.995.161	12.003.664	23.751.265	33.235.364	34.735.542	5.768.618
X1	0,0122	0,0633	0,0655	0,1523	0,0366	-0,0029	-0,6892	-1,7421
X2	0,26928572	0,3144738	0,269023	0,2775336	0,1740489	0,1499247	-0,503462551	-1,391334956
X3	0,127622023	0,2343668	0,2157476	0,2021139	0,0615849	0,0170202	-0,531917857	-1,433150684
X4	0	0	0	0	0	0	0	0
X5	1,123069878	1,5427214	1,5169378	0,7873412	0,9326306	0,8826109	1,038730729	0,244865746
Z	5,185918515	6,0823415	5,9341101	5,2756177	4,6733901	4,3951441	1,001566708	-5,272919878
Rating								
X4'	0,668384508	0,6974021	0,6985972	0,6023618	0,3036938	0,3115799	-0,288144478	-0,555803688
Z'	5,284932693	6,1224597	6,0024525	5,2609926	4,6732873	4,4394692	1,592405981	-3,619406776
Rating	BB+	BBB+	BBB+	BB+	BB-	B+	D	D
	5,5	3,5	3,5	3,5	6,5	7,5	12	12

Table A1-3 Firigo Pak Z-Score Card

	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001	30.06.2005
CURRENT ASSETS	2.154.315	2.878.840	3.218.996	3.436.864	4.685.068	5.353.169	6.116.420	9.231.841	16.514.627
LONG TERM ASSETS	1.321.958	1.801.383	2.134.077	2.601.090	3.223.450	3.689.991	3.920.711	6.078.541	12.509.996
CURRENT LIABILITIES	2.104.778	2.885.107	3.190.445	3.334.042	4.570.098	5.059.504	7.073.164	12.176.917	7.017.182
LONG-TERM LIABILITIES	480.439	606.506	724.847	953.890	1.266.885	1.389.948	172.378	201.926	11.217.308
EQUITY	891.056	1.188.610	1.437.781	1.750.022	2.071.535	2.593.708	2.791.589	2.931.539	10.790.133
TOTAL ASSETS	3.476.273	4.680.223	5.353.073	6.037.954	7.908.518	9.043.160	10.037.131	15.310.382	29.024.623
WORKING CAPITAL	49.537	-6.267	28.551	102.822	114.970	293.665	-956.744	-2.945.076	9.497.445
RETAINED EARNINGS	651.056	948.610	1.197.781	550.022	871.535	1.393.708	1.591.589	1.731.539	-1.139.922
NET PROFİT BEFORE TAXES	166.309	135.398	70.009	85.558	108934	218324	-195130	-763324	453870
FINANCIAL EXPENSES	-302.891	-439.916	-514.889	-663.250	-847.031	-538.282	-441.955	-3.442.472	-919.578
EARNINGS BEFORE INTEREST AND TAXES	469.200	-304.518	584.898	748.808	955.965	756.606	246.825	2.679.148	1.373.448
MARKET VALUE OF EQUITY	0	0	0	0	0	0			0
SALES	2.978.943	3.359.332	3.848.879	4.767.834	6.344.180	6.683.442	6.407.602	11.568.310	23.588.296
X1	0,0143	-0,0013	0,0053	0,0170	0,0145	0,0325	-0,0953	-0,1924	0,3272
X2	0,187285636	0,2026848	0,2237558	0,0910941	0,1102021	0,1541174	0,1585701	0,1130957	-0,039274
X3	0,134972138	-0,0650648	0,109264	0,1240168	0,1208779	0,0836661	0,0245912	0,174989	0,0473201
X5	0,856935862	0,7177718	0,7190036	0,789644	0,8021958	0,7390605	0,6383898	0,755586	0,8126995
X4'	0,344673581	0,3404186	0,3672219	0,4081273	0,3548982	0,4021594	0,3852837	0,2368185	0,5917431
Z'	4,838191534	4,0778695	4,6546273	4,6841652	4,6789808	4,570261	4,1913011	4,6051006	4,6579813
Rating	BB	B	BB-	BB-	BB-	BB-	B	BB-	BB-
RR	6	8	6,5	6,5	6,5	6,5	8	6,5	6,5

Table A1-4 Banvit Z-Score Card

	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001	30.06.2005
CURRENT ASSETS	4.000.167	5.720.731	12.972.166	17.633.140	21.440.564	19.249.050	34.216.826	39.244.935	105.640.524
LONG TERM ASSETS	1.580.767	2.116.186	3.251.925	5.263.320	8.417.411	12.751.403	16.941.078	34.615.662	86.149.384
CURRENT LIABILITIES	3.007.084	3.449.749	6.034.995	7.843.459	9.996.305	10.370.431	15.346.334	29.458.789	76.237.149
LONG-TERM LIABILITIES	679.101	656.285	1.251.095	2.863.696	3.729.208	6.035.993	13.936.598	33.458.568	33.390.772
EQUITY	1.894.749	3.730.883	8.938.001	12.189.305	16.132.462	15.594.029	21.874.972	10.943.240	81.948.932
TOTAL ASSETS	5.580.934	7.836.917	16.224.091	22.896.460	29.857.975	32.000.453	51.157.904	73.860.597	191.789.908
WORKING CAPITAL	993.083	2.270.982	6.937.171	9.789.681	11.444.259	8.878.619	18.870.492	9.786.146	29.403.375
RETAINED EARNINGS	1.344.749	2.230.883	7.438.001	10.689.305	10.132.462	6.794.029	12.848.972	-9.426.603	1.948.932
NET PROFİT BEFORE TAXES	1.117.367	5.260.350	8.923.630	12.837.936	10810319	-1412496	2143066	-27561568	-14604498
FINANCIAL EXPENSES	-320.784	-348.090	-310.091	-423.424	-366.302	-933.836	-1.314.591	-28.001.706	-5.219.892
EARNINGS BEFORE INTEREST AND TAXES	1.438.151	4.912.260	9.233.721	13.261.360	11.176.621	-478.660	3.457.657	440.138	-9.384.606
MARKET VALUE OF EQUITY	0	0	0	0	0	0			0
SALES	13.911.650	21.423.980	29.854.575	42.812.100	53.656.376	65.261.856	84.069.932	94.843.532	152.393.849
X1	0,1779	0,2898	0,4276	0,4276	0,3833	0,2775	0,3689	0,1325	0,1533
X2	0,240954113	0,2846633	0,4584541	0,466854	0,3393553	0,2123104	0,251163	-0,12762695	0,01016181
X3	0,257690021	0,6268103	0,5691364	0,5791882	0,3743262	-0,014958	0,0675879	0,00595904	-0,0489317
X5	2,492710002	2,7337255	1,8401385	1,8698131	1,7970534	2,0394041	1,643342	1,28408835	0,79458742
X4'	0,51401354	0,9086342	1,2267212	1,1384261	1,1753631	0,9504831	0,7470212	0,17393038	0,7475188
Z'	7,085925768	8,7562661	8,0648768	8,0957383	7,262396	6,0168146	5,891013	4,60998441	4,32345592
Rating	AA	AAA	AAA	AAA	AA	BBB+	BBB+	BB	B+
RR	2	1	1	1	2	3,5	3,5	6	7,5

Table A1-5 Penguen Gıda Z-Score Card

	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001	30.06.2005
CURRENT ASSETS	6.773.809	9.459.734	14.601.523	15.673.265	19.519.003	21.586.629	26.691.836	33.223.937	32.789.294
LONG TERM ASSETS	1.283.089	1.834.449	2.132.207	2.594.926	3.902.656	5.193.653	6.497.551	7.995.587	34.968.390
CURRENT LIABILITIES	5.344.410	6.297.140	10.952.862	11.868.328	15.059.005	17.128.718	21.186.398	32.129.807	31.964.455
LONG-TERM LIABILITIES	1.036.209	917.854	571.166	578.749	1.805.890	1.758.570	3.055.939	4.082.757	4.011.247
EQUITY	1.676.279	4.079.189	5.209.702	5.821.114	6.556.764	7.892.994	8.947.050	5.015.451	31.781.982
TOTAL ASSETS	8.056.898	11.294.183	16.733.730	18.268.191	23.421.659	26.780.282	33.189.387	41.219.524	67.757.684
WORKING CAPITAL	1.429.399	3.162.594	3.648.661	3.804.937	4.459.998	4.457.911	5.505.438	1.094.130	824.839
RETAINED EARNINGS	1.276.279	3.559.189	4.689.702	1.661.114	2.396.764	3.732.994	4.787.050	846.960	-12.218.018
NET PROFİT BEFORE TAXES	562.282	941.716	1.151.265	322.822	510932	790302	409049	-11392120	-2994394
FINANCIAL EXPENSES	-1.271.222	-1.488.176	-2.807.163	-2.080.962	-3.730.386	-4.298.046	-3.425.014	-17.152.608	-3.153.066
EARNINGS BEFORE INTEREST AND TAXES	1.833.504	-546.460	3.958.428	2.403.784	4.241.318	5.088.348	3.834.063	5.760.488	158.672
MARKET VALUE OF EQUITY	0	0	0	0	0	0			0
SALES	6.727.135	7.500.442	12.698.950	12.064.866	15.884.722	9.395.123	20.929.091	24.436.486	41.748.910
X1	0,1774	0,2800	0,2180	0,2083	0,1904	0,1665	0,1659	0,0265	0,0122
X2	0,158408236	0,3151347	0,2802544	0,0909293	0,1023311	0,1393934	0,1442344	0,020547544	-0,1803193
X3	0,227569469	-0,0483842	0,2365538	0,131583	0,1810853	0,1900035	0,1155208	0,139751444	0,00234176
X5	0,834953477	0,6640978	0,7588834	0,6604303	0,6782065	0,3508224	0,6305959	0,592837656	0,61615019
X4'	0,262714166	0,5653766	0,452073	0,4676692	0,3887818	0,4178998	0,3690671	0,138500301	0,8834291
Z'	5,162058807	4,4675913	5,3259209	4,7407143	4,8759774	4,6033994	4,634368	4,370465644	4,09923181
Rating	BB+	B+	BBB-	BB-	BB	BB-	BB-	B+	B
RR	5,5	7,5	4,5	6,5	6	6,5	6,5	7,5	6

Table A1-6 Bisaş Z-Score Card

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
CURRENT ASSETS	915.382	1.388.871	1.731.903	1.900.139	2.104.691	695.770	1.542.736	2.287.870
LONG TERM ASSETS	1.234.570	2.194.493	2.702.056	3.235.029	3.911.896	4.605.604	5.298.443	5.813.919
CURRENT LIABILITIES	633.169	1.496.666	2.076.098	3.180.054	3.603.460	4.396.910	8.283.960	8.471.961
LONG-TERM LIABILITIES	256.319	768.919	1.168.608	1.175.064	1.755.260	2.043.291	574.048	1.116.087
EQUITY	1.260.464	1.317.779	1.189.253	610.847	657.867	-1.138.827	-2.394.289	-1.486.259
TOTAL ASSETS	2.149.952	3.583.364	4.433.959	5.135.168	6.016.587	5.301.374	6.841.179	8.101.789
WORKING CAPITAL	282.213	-107.795	-344.195	-1.279.915	-1.498.769	-3.701.140	-6.741.224	-6.184.091
RETAINED EARNINGS	1.052.464	1.109.779	789.253	210.847	-1.142.133	-2.938.827	-4.194.289	-3.286.259
NET PROFİT BEFORE TAXES	-162.746	-312.580	-1.393.522	-1.602.594	-3131730	-4044723	-4578200	-2321193
FINANCIAL EXPENSES	-125.328	-590.588	-1.714.544	-1.831.118	-2.428.522	-2.659.884	-4.032.378	-2.121.505
EARNINGS BEFORE INTEREST AND TAXES	-37.418	278.008	321.022	228.524	-703.208	-1.384.839	-545.822	-199.688
MARKET VALUE OF EQUITY	0	0	0	0	0	0		
SALES	2.140.724	2.861.685	4.716.278	5.270.889	3.959.050	2.856.938	1.652.182	4.031.467
X1	0,1313	-0,0301	-0,0776	-0,2492	-0,2491	-0,6981	-0,9854	-0,7633
X2	0,489529069	0,3097031	0,1780019	0,0410594	-0,189831	-0,554352	-0,613094	-0,4056214
X3	-0,017404109	0,077583	0,0724008	0,0445018	-0,116878	-0,261223	-0,079785	-0,0246474
X5	0,995707811	0,7986029	1,063672	1,0264297	0,6580226	0,5389052	0,2415054	0,497602073
X4'	1,417066897	0,5816507	0,366521	0,1402596	0,1227657	-0,176831	-0,270297	-0,15501164
Z'	5,2935579	4,773099	4,7855417	4,3276215	3,2557317	1,9318319	1,9037915	2,714075499
Rating	BB+	BB-	BB-	B+	CCC+	D	D	D
RR	5,33	6,66	6,66	7,33	9,33	12	12	12

Table A1-7 Köytaş Z-Score Card

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	31.03.1999	31.12.1999	30.06.2000	31.12.2000
CURRENT ASSETS	3.220.284	9.864.717	12.229.378	14.506.011	14.697.815	712.508	0	1.193.668
LONG TERM ASSETS	702.382	1.401.677	1.809.433	2.216.563	2.213.367	1.996.206	0	1.985.920
CURRENT LIABILITIES	2.043.915	3.446.711	3.167.116	5.224.545	5.426.506	2.108.203	0	2.354.720
LONG-TERM LIABILITIES	622.384	2.960.184	5.261.471	6.677.124	7.233.662	7.018.899	0	8.296.978
EQUITY	1.256.367	4.859.499	5.610.224	4.820.905	4.251.014	-6.418.388	0	-7.472.110
TOTAL ASSETS	3.922.666	11.266.394	14.038.811	16.722.574	16.911.182	2.708.714	0	3.179.588
WORKING CAPITAL	1.176.369	6.418.006	9.062.262	9.281.466	9.271.309	-1.395.695	0	-1.161.052
RETAINED EARNINGS	565.504	1.123.899	1.874.624	1.085.305	515.415	-10.153.988	0	-11.207.710
NET PROFİT BEFORE TAXES	811.224	1.039.147	1.895.224	-569.461	-647234	-12.301.221	0	-1.053.977
FINANCIAL EXPENSES	-91.254	-296.923	-535.066	-706.663	-509.158	-4.189.732	0	-1.319.273
EARNINGS BEFORE INTEREST AND TAXES	902.478	1.336.070	2.430.290	137.202	-138.076	-8.111.489	0	265.296
MARKET VALUE OF EQUITY	0	0	0	0	0	0		
SALES	4.417.050	6.473.978	5.640.235	8.957.551	1.172.956	2.352.200	0	0
X1	0,2999	0,5697	0,6455	0,5550	0,5482	-0,5153	0,0000	-0,3652
X2	0,144163179	0,0997568	0,1335315	0,0649006	0,0304778	-3,7486379	0	-3,52489379
X3	0,23006751	0,118589	0,1731122	0,0082046	-0,008165	-2,9945904	0	0,083437225
X5	1,126032652	0,5746273	0,4017602	0,5356562	0,0693598	0,86838256	0	0
X4'	0,471202592	0,7584796	0,6656186	0,4050613	0,3357786	-0,703223	0	-0,70149473
Z'	5,623632899	5,0034351	5,0443116	4,4331269	3,8537796	-9,0274388	0	-0,03279166
Rating	BBB-	BB	BB	B+	B-	D	D	D
RR	4,66	6	6	7,33	8,66	12	12	12

Table A1-8 Tümteks Z-Score Card

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	31.06.1999	31.12.1999	30.06.2000	31.12.2000
CURRENT ASSETS	8.554.368	14.051.339	19.904.557	15.690.253	10.853.664	1.142.652	772.668	608.748
LONG TERM ASSETS	3.204.961	4.458.593	5.358.907	5.764.256	7.306.463	8.402.662	10.620.434	11.015.026
CURRENT LIABILITIES	7.688.058	13.770.305	23.179.212	25.072.289	29.009.037	35.227.920	43.170.126	50.199.804
LONG-TERM LIABILITIES	2.219.634	2.577.030	3.475.017	3.749.426	4.319.830	7.266.666	7.744.596	6.830.282
EQUITY	1.851.637	2.162.597	-1.390.765	-7.367.206	-15.168.740	-32.949.272	-39.521.620	-45.406.312
TOTAL ASSETS	11.759.329	18.509.932	25.263.464	21.454.509	18.160.127	9.545.314	11.393.102	11.623.774
WORKING CAPITAL	866.310	281.034	-3.274.655	-9.382.036	-18.155.373	-34.085.268	-42.397.458	-49.591.056
RETAINED EARNINGS	1.301.637	1.464.580	-3.191.548	-9.167.989	-16.969.523	-34.750.055	-41.322.403	-47.207.095
NET PROFİT BEFORE TAXES	319.180	459.670	-8.663.900	-10.506.234	-17.645.716	-27.794.160	-16837752	-16.046.798
FINANCIAL EXPENSES	-2.405.720	-3.852.298	-10.878.636	-11.041.688	-16.680.538	-18.629.296	-16.527.004	-15.246.539
EARNINGS BEFORE INTEREST AND TAXES	2.724.900	4.311.968	2.214.736	535.454	-965.178	-9.164.864	-310.748	-800.259
MARKET VALUE OF EQUITY	0	0	0	0	0	0		
SALES	8.349.610	13.407.502	18.229.398	16.922.388	3.693.406	3.862.996	5.378.168	2.850.555
X1	0,0737	0,0152	-0,1296	-0,4373	-0,9997	-3,5709	-3,7213	-4,2663
X2	0,110689734	0,079124	-0,1263306	-0,4273222	-0,9344386	-3,6405356	-3,6269668	-4,06125369
X3	0,231722405	0,2329543	0,08766557	0,02495764	-0,0531482	-0,9601427	-0,0272751	-0,06884674
X5	0,710041364	0,724341	0,72157159	0,78875671	0,20337997	0,40470078	0,47205476	0,245234895
X4'	0,186888833	0,1322905	-0,052178	-0,255613	-0,4551232	-0,7753758	-0,7762317	-0,79618172
Z'	4,903651713	4,8301474	4,02065094	3,33187978	1,58840826	-5,2987918	-2,4298827	-3,55241157
Rating	BB	BB-	BB	CCC+	D	D	D	D
RR	6	6,66	6	9,33	12	12	12	12

Table A1-9 Derimod Z-Score Card

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	31.06.1999	31.12.1999	30.06.2000	31.12.2000
CURRENT ASSETS	3.003.479	3.063.079	3.117.916	4.613.284	4.129.858	4.655.992	5.332.734	7.342.614
LONG TERM ASSETS	392.690	523.318	672.509	880.672	881.955	982.472	1.125.055	1.176.372
CURRENT LIABILITIES	2.853.676	2.961.838	2.838.308	4.252.886	3.029.443	3.162.908	2.553.708	4.400.962
LONG-TERM LIABILITIES	31.674	42.300	40.096	36.168	576.227	692.128	305.454	265.841
EQUITY	510.819	582.259	912.021	1.204.902	1.406.143	1.783.428	3.598.627	3.852.183
TOTAL ASSETS	3.396.169	3.586.397	3.790.425	5.493.956	5.011.813	5.638.464	6.457.789	8.518.986
WORKING CAPITAL	149.803	101.241	279.608	360.398	1.100.415	1.493.084	2.779.026	2.941.652
RETAINED EARNINGS	385.819	457.259	412.021	704.902	906.143	1.283.428	599.083	852.183
NET PROFİT BEFORE TAXES	341.750	110.937	-462.638	-82.803	148.838	438.316	176954	184.039
FINANCIAL EXPENSES	-724.750	-1.117.931	-1.440.280	-1.600.411	-754.130	-744.852	-386.092	-139.453
EARNINGS BEFORE INTEREST AND TAXES	1.066.500	1.228.868	977.642	1.517.608	902.968	1.183.168	563.046	323.492
MARKET VALUE OF EQUITY	0	0	0	0	0	0	0	0
SALES	4.136.018	4.722.291	3.187.682	4.443.050	3.811.682	5.165.479	5.454.354	7.439.042
X1	0,0441	0,0282	0,0738	0,0656	0,2196	0,2648	0,4303	0,3453
X2	0,113604182	0,1274982	0,10870048	0,128305	0,18080144	0,22762015	0,09276906	0,100033384
X3	0,314030309	0,342647	0,25792411	0,27623228	0,18016794	0,20983871	0,08718866	0,037973064
X5	1,217848111	1,3167229	0,84098274	0,80871598	0,76053955	0,91611457	0,84461632	0,873230922
X4'	0,177038834	0,193819	0,31684955	0,28092488	0,38998106	0,46262292	1,25862998	0,825443671
Z'	5,643310081	5,8383287	5,16870799	5,18904951	5,04315868	5,39321107	5,27957393	4,918465371
Rating	BBB-	BBB	BB+	BB+	BB	BB+	BB+	BB
RR	4,66	4	5,33	5,33	6	5,33	5,33	6

Table A1-10 Bossa Z-Score Card

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	31.06.1999	31.12.1999	30.06.2000	31.12.2000
CURRENT ASSETS	18.544.784	23.889.342	33.738.946	47.607.588	52.735.398	73.554.542	77.921.060	88.057.600
LONG TERM ASSETS	6.925.684	8.892.335	11.113.684	12.777.961	14.184.147	16.395.530	21.997.431	24.148.082
CURRENT LIABILITIES	10.870.574	13.875.458	18.763.131	26.508.752	28.871.697	44.124.778	48.551.249	53.110.061
LONG-TERM LIABILITIES	2.956.117	3.577.601	5.574.164	5.935.414	7.030.282	7.666.880	9.913.750	10.468.112
EQUITY	11.643.777	15.328.618	20.515.335	27.941.383	31.017.566	38.158.414	41.453.492	48.627.509
TOTAL ASSETS	25.470.468	32.781.677	44.852.630	60.385.549	66.919.545	89.950.072	99.918.491	112.205.682
WORKING CAPITAL	7.674.210	10.013.884	14.975.815	21.098.836	23.863.701	29.429.764	29.369.811	34.947.539
RETAINED EARNINGS	7.143.777	7.903.061	11.515.335	18.941.383	13.017.566	20.158.414	23.453.492	30.627.509
NET PROFİT BEFORE TAXES	2.332.154	3.860.362	5.387.960	7.087.688	8.586.132	9.910.512	5476474	7.071.610
FINANCIAL EXPENSES	-3.162.578	-4.112.942	-5.839.598	-6.386.558	-9.235.976	-11.680.855	-9.752.700	-8.818.541
EARNINGS BEFORE INTEREST AND TAXES	5.494.732	7.973.304	11.227.558	13.474.246	17.822.108	21.591.367	15.229.174	15.890.151
MARKET VALUE OF EQUITY	0	0	0	0	0	0	0	0
SALES	30.357.178	36.503.449	47.664.998	48.809.701	51.611.748	60.573.814	80.820.842	86.231.020
X1	0,3013	0,3055	0,3339	0,3494	0,3566	0,3272	0,2939	0,3115
X2	0,280472938	0,2410817	0,25673712	0,3136741	0,19452562	0,2241067	0,23472624	0,272958628
X3	0,215729526	0,2432244	0,25032106	0,22313693	0,26632142	0,24003724	0,15241597	0,141616278
X5	1,19185788	1,1135321	1,06270241	0,80830102	0,77125073	0,67341596	0,80886772	0,768508497
X4'	0,84212318	0,8782769	0,84295872	0,8612144	0,86395143	0,73676757	0,70903092	0,764845964
Z'	5,917029035	5,9090991	5,8992222	5,62788416	5,63047592	5,40171285	5,23816585	5,232721064
Rating	BBB	BBB	BBB	BBB-	BBB-	BB+	BB+	BB+
RR	4	4	4	4,66	4,66	5,33	5,33	5,33

Table A1-11 Altınyıldız Z-Score Card

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	31.06.1999	31.12.1999	30.06.2000	31.12.2000
CURRENT ASSETS	7.302.517	8.784.036	12.478.625	19.177.491	25.394.933	30.822.914	35.051.768	52.086.158
LONG TERM ASSETS	3.203.620	4.115.032	5.960.494	7.022.410	8.547.935	12.036.900	15.361.577	17.358.724
CURRENT LIABILITIES	5.613.093	6.846.770	9.421.111	15.015.841	21.487.870	27.692.966	31.445.324	45.694.986
LONG-TERM LIABILITIES	799.227	1.013.100	1.156.925	1.497.254	1.992.601	3.268.015	4.450.131	6.740.933
EQUITY	4.093.817	5.039.198	7.861.083	9.686.806	10.462.397	11.898.833	14.517.890	17.008.963
TOTAL ASSETS	10.506.137	12.899.068	18.439.119	26.199.901	33.942.868	42.859.814	50.413.345	69.444.882
WORKING CAPITAL	1.689.424	1.937.266	3.057.514	4.161.650	3.907.063	3.129.948	3.606.444	6.391.172
RETAINED EARNINGS	3.489.622	4.435.003	5.444.302	7.270.025	8.045.616	9.482.052	12.101.109	14.592.182
NET PROFİT BEFORE TAXES	1.651.434	1.186.380	4.022.938	3.530.337	1.638.010	1.061.116	327682	634.616
FINANCIAL EXPENSES	-1.467.306	-2.704.133	-3.270.798	-3.605.837	-6.074.776	-8.712.217	-7.947.530	-7.996.586
EARNINGS BEFORE INTEREST AND TAXES	3.118.740	3.890.513	7.293.736	7.136.174	7.712.786	9.773.333	8.275.212	8.631.202
MARKET VALUE OF EQUITY	0	0	0	0	0	0	0	0
SALES	11.569.050	15.912.153	11.569.050	27.831.072	33.450.508	42.708.246	51.700.654	62.655.498
X1	0,1608	0,1502	0,1658	0,1588	0,1151	0,0730	0,0715	0,0920
X2	0,332150818	0,3438235	0,29525825	0,27748292	0,23703407	0,22123409	0,24003781	0,210126097
X3	0,296849356	0,3016119	0,39555773	0,27237408	0,22722847	0,22803022	0,16414725	0,124288526
X5	1,101170678	1,2335894	0,6274188	1,06225867	0,98549445	0,99646363	1,02553508	0,902233486
Z	5,988748943	6,1404855	5,7951009	5,79017987	5,45532454	5,39632418	5,23911893	4,967000913
Z'	5,936047734	6,0864073	5,78625976	5,75169603	5,40996496	5,35411982	5,20796261	4,916795424
Rating	BBB	BBB	BBB	BBB-	BB+	BB+	BB+	BB
RR	4	4	4	4,66	5,33	5,33	5,33	6

Table A1-12 Raks Z-Score Card

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	31.06.1999	31.12.1999	30.06.2000	31.12.2000
CURRENT ASSETS	9.933.519	16.769.046	23.727.078	12.769.332	16.282.351	2.765.937	3.290.052	7.698.966
LONG TERM ASSETS	7.254.067	9.167.605	12.875.840	23.911.015	27.204.727	31.738.278	37.952.624	43.496.240
CURRENT LIABILITIES	6.191.292	11.334.295	17.079.256	18.128.465	29.653.135	14.160.336	11.870.801	18.860.418
LONG-TERM LIABILITIES	4.072.169	5.828.120	7.242.614	7.453.213	7.183.544	34.483.097	49.551.333	57.714.034
EQUITY	6.924.125	8.774.236	12.281.048	11.098.669	6.650.399	-14.139.218	-20.179.458	-25.379.246
TOTAL ASSETS	17.187.586	25.936.651	36.602.918	36.680.347	43.487.078	34.504.215	41.242.676	51.195.206
WORKING CAPITAL	3.742.227	5.434.751	6.647.822	-5.359.133	-13.370.784	-11.394.399	-8.580.749	-11.161.452
RETAINED EARNINGS	5.954.255	7.804.366	11.311.178	5.655.469	1.207.199	-19.582.418	-25.622.658	-30.822.446
NET PROFİT BEFORE TAXES	3.811.746	2.811.582	3.661.010	-2.053.354	-15.640.474	-32.498.178	-22988308	-21.699.295
FINANCIAL EXPENSES	-4.991.012	-5.242.598	-7.938.024	-8.584.312	-17.654.390	-19.340.041	-19.159.528	-16.898.560
EARNINGS BEFORE INTEREST AND TAXES	8.802.758	8.054.180	11.599.034	6.530.958	2.013.916	-13.158.137	-3.828.780	-4.800.735
MARKET VALUE OF EQUITY	0	0	0	0	0	0	0	0
SALES	17.442.058	20.851.532	30.020.440	28.307.095	20.789.438	14.766.459	2.661.096	7.480.505
X1	0,2177	0,2095	0,1816	-0,1461	-0,3075	-0,3302	-0,2081	-0,2180
X2	0,346427648	0,3009011	0,30902394	0,15418254	0,02775995	-0,567537	-0,6212657	-0,60205727
X3	0,512157903	0,3105328	0,31688823	0,17805061	0,04631068	-0,3813487	-0,0928354	-0,09377314
X5	1,01480557	0,8039408	0,82016521	0,77172375	0,47806013	0,42796102	0,06452287	0,146117295
X4'	0,674638409	0,5112472	0,50493848	0,43385227	0,18053742	-0,2906706	-0,3285372	-0,33143229
Z'	6,586934234	5,636985	5,6571356	4,78143777	3,74987678	1,65269283	2,21258111	2,299009293
Rating	A	BBB-	BBB-	BB-	B-	D	D	D
RR	3	4	4,66	6,66	8,66	12	12	12

Table A1-13 Arçelik Z-Score Card

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	31.06.1999	31.12.1999	30.06.2000	31.12.2000
CURRENT ASSETS	53.253.059	72.662.360	102.783.487	115.017.837	215.426.736	312.293.701	395.235.927	503.800.642
LONG TERM ASSETS	17.904.213	25.465.481	32.553.811	42.541.550	58.874.915	94.310.002	115.335.516	133.038.279
CURRENT LIABILITIES	21.480.408	27.286.862	42.874.033	37.218.910	97.059.320	136.683.648	190.249.647	280.673.209
LONG-TERM LIABILITIES	16.462.125	23.598.180	28.997.512	34.232.744	46.043.972	65.882.471	69.538.543	65.745.293
EQUITY	33.214.739	47.242.799	63.465.753	86.107.733	131.198.359	204.037.584	250.783.253	290.420.419
TOTAL ASSETS	71.157.272	98.127.841	135.337.298	157.559.387	274.301.651	406.603.703	510.571.443	636.838.921
WORKING CAPITAL	31.772.651	45.375.498	59.909.454	77.798.927	118.367.416	175.610.053	204.986.280	223.127.433
RETAINED EARNINGS	23.089.739	37.117.799	43.146.126	65.857.733	109.678.359	163.637.584	190.183.253	229.820.419
NET PROFİT BEFORE TAXES	22.713.544	23.287.086	24.653.624	30.518.526	56.504.084	83.998.895	119806772	92.795.622
FINANCIAL EXPENSES	-8.138.610	-9.507.658	-16.610.006	-14.808.096	-26.288.736	-32.164.782	-23.040.084	-19.969.289
EARNINGS BEFORE INTEREST AND TAXES	30.852.154	32.794.744	41.263.630	45.326.622	82.792.820	116.163.677	142.846.856	112.764.911
MARKET VALUE OF EQUITY	0	0	0	0	0	0	0	0
SALES	133.286.404	165.285.988	236.226.936	274.200.747	393.606.380	569.304.286	798.801.912	864.876.778
X1	0,4465	0,4624	0,4427	0,4938	0,4315	0,4319	0,4015	0,3504
X2	0,324488817	0,378259611	0,3188044	0,41798673	0,39984579	0,40244981	0,37249097	0,360876843
X3	0,433576965	0,334204275	0,30489474	0,2876796	0,30183129	0,28569262	0,27977839	0,177069754
X5	1,873124141	1,684394422	1,7454681	1,74030093	1,43493989	1,40014535	1,56452525	1,358077764
X4'	0,875395931	0,928422128	0,88304423	1,20511882	0,91680881	1,00726412	0,96533739	0,838351351
Z'	7,429159702	7,011270955	6,89758377	7,09486238	6,65299074	6,60858658	6,68947326	6,064500828
Rating	AA	AA-	A+	AA-	A	A	A	BBB+
RR	2	2,33	2,66	2,33	3	3	3	3,66

Table A1-14 Vestel Z-Score Card

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	31.06.1999	31.12.1999	30.06.2000	31.12.2000
CURRENT ASSETS	33.773.507	72.496.518	94.896.398	123.903.135	169.600.837	245.093.517	381.982.111	466.180.586
LONG TERM ASSETS	2.400.729	9.806.192	22.365.112	21.684.838	24.165.953	38.688.940	46.322.221	69.906.577
CURRENT LIABILITIES	24.032.527	61.977.509	81.407.228	105.333.640	138.711.681	205.845.012	236.957.643	326.110.973
LONG-TERM LIABILITIES	578.940	3.246.049	10.166.278	7.606.013	8.055.937	5.241.662	5.330.578	5.001.237
EQUITY	11.562.769	17.079.152	25.688.004	32.648.320	46.999.172	72.695.783	186.016.111	204.974.953
TOTAL ASSETS	36.174.236	82.302.710	117.261.510	145.587.973	193.766.790	283.782.457	428.304.332	536.087.163
WORKING CAPITAL	9.740.980	10.519.009	13.489.170	18.569.495	30.889.156	39.248.505	145.024.468	140.069.613
RETAINED EARNINGS	2.236.465	8.073.279	16.682.131	23.642.447	37.993.299	55.363.171	265.985.206	44.751.330
NET PROFİT BEFORE TAXES	5.559.496	9.400.687	22.714.176	19.727.827	34.034.912	33.217.627	57482648	56.861.015
FINANCIAL EXPENSES	-3.698.800	-11.276.376	-28.793.102	-31.652.417	-51.007.456	-60.590.671	-54.988.834	-46.381.583
EARNINGS BEFORE INTEREST AND TAXES	9.258.296	20.677.063	51.507.278	51.380.244	85.042.368	93.808.298	112.471.482	103.242.598
MARKET VALUE OF EQUITY	0	0	0	0	0	0	0	0
SALES	45.852.268	80.089.938	176.051.312	188.437.980	259.803.468	312.451.808	446.878.552	496.586.703
X1	0,2693	0,1278	0,1150	0,1275	0,1594	0,1383	0,3386	0,2613
X2	0,061824803	0,098092505	0,142264337	0,16239286	0,19607745	0,19509018	0,62101918	0,083477712
X3	0,255936186	0,251231861	0,439251362	0,35291544	0,43889032	0,33056412	0,26259712	0,19258547
X5	1,267539361	0,973114227	1,501356344	1,29432381	1,34080493	1,1010258	1,04336687	0,926317094
X4'	0,469812263	0,261855571	0,280517861	0,28907757	0,32022849	0,34438831	0,76774723	0,619049817
Z'	5,752958169	5,286447978	6,433903056	5,98865489	6,36662901	5,78493556	6,1984037	5,290872834
Rating	BBB	BB+	A-	BBB	A-	BBB	BBB+	BB+
RR	4	5,33	3,33	4	3,33	4	3,66	5,33

Table A1-15 Bosh Profilo Z-Score Card

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	31.06.1999	31.12.1999	30.06.2000	31.12.2000
CURRENT ASSETS	21.700.967	36.104.081	57.907.162	83.856.381	98.544.421	120.926.283	167.013.312	227.831.919
LONG TERM ASSETS	3.088.550	5.310.986	9.261.150	15.745.097	17.885.606	27.141.123	30.948.972	35.169.398
CURRENT LIABILITIES	16.779.560	28.754.283	38.593.603	50.689.457	52.949.746	81.276.153	87.005.007	139.167.178
LONG-TERM LIABILITIES	1.677.535	3.481.421	16.343.967	29.591.610	39.599.530	35.183.242	71.281.103	73.587.706
EQUITY	6.332.422	9.179.363	12.230.742	19.320.411	23.880.751	31.608.011	39.676.174	50.246.433
TOTAL ASSETS	24.789.517	41.415.067	67.168.312	99.601.478	116.430.027	148.067.406	197.962.284	263.001.317
WORKING CAPITAL	4.921.407	7.349.798	19.313.559	33.166.924	45.594.675	39.650.130	80.008.305	88.664.741
RETAINED EARNINGS	2.431.645	3.974.785	5.320.431	11.209.380	14.424.976	16.861.619	11.307.486	20.523.541
NET PROFİT BEFORE TAXES	4.661.558	4.607.182	4.468.484	7.626.961	15.187.308	11.960.756	32.311.324	24.029.341
FINANCIAL EXPENSES	-5.924.414	-9.112.876	-18.325.528	-19.641.536	-27.031.866	-33.272.154	-26.405.214	-33.891.623
EARNINGS BEFORE INTEREST AND TAXES	10.585.972	13.720.058	22.794.012	27.268.497	42.219.174	45.232.910	58.716.538	57.920.964
MARKET VALUE OF EQUITY	0	0	0	0	0	0	0	0
SALES	50.533.010	65.340.182	113.655.932	131.316.892	173.627.620	199.675.877	266.152.152	309.610.964
X1	0,1985	0,1775	0,2875	0,3330	0,3916	0,2678	0,4042	0,3371
X2	0,098091665	0,095974371	0,079210432	0,11254231	0,12389395	0,11387799	0,0571194	0,078035887
X3	0,427034218	0,331281801	0,33935663	0,27377603	0,36261414	0,30548864	0,29660467	0,220230699
X5	2,038483041	1,577691085	1,692106421	1,31842313	1,49126153	1,34854714	1,34445889	1,177222105
X4'	0,343088769	0,28475764	0,222629832	0,24065962	0,25803282	0,271408	0,25066112	0,236170527
Z'	6,980726708	6,181960432	6,359865016	5,85156712	6,35901446	5,94745062	5,95676072	5,516132237
Rating	AA-	BBB+	A-	BBB	A-	BBB	BBB	BBB-
RR	2,33	3,66	3,33	4,66	3,33	4	4	4,66

Table A1-16 Makine Takım Z-Score Card

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	31.06.1999	31.12.1999	30.06.2000	31.12.2000	31.06.2001	31.12.2001
CURRENT ASSETS	3.848.792	5.073.086	8.085.934	11.651.456	14.560.217	17.538.221	20.037.833	18.318.455	28.276.479	28.771.198
LONG TERM ASSETS	674.388	2.139.365	2.395.469	6.071.064	6.783.836	13.316.219	22.199.288	21.995.553	22.693.109	20.590.235
CURRENT LIABILITIES	2.715.941	3.451.749	5.280.451	5.856.011	8.069.484	15.281.372	15.878.414	16.467.257	28.012.808	27.500.274
LONG-TERM LIABILITIES	269.892	323.934	1.160.414	1.862.354	2.796.830	4.458.529	6.179.666	4.520.838	4.881.188	5.500.236
EQUITY	1.537.347	3.436.768	4.040.538	10.004.155	10.477.739	11.114.539	20.179.041	19.325.913	18.075.592	16.360.923
TOTAL ASSETS	4.523.180	7.212.451	10.481.403	17.722.520	21.344.053	30.854.440	42.237.121	40.314.008	50.969.588	49.361.433
WORKING CAPITAL	1.132.851	1.621.337	2.805.483	5.795.445	6.490.733	2.256.849	4.159.419	1.851.198	263.671	1.270.924
RETAINED EARNINGS	272.161	560.824	632.192	1.119.939	1.273.344	1.546.649	1.754.087	552.406	-1.229.428	-3.155.882
NET PROFİT BEFORE TAXES	724.298	800.771	1.419.704	1.177.624	514.788	729.746	907.764	-994.243	-3.563.668	-3.708.288
FINANCIAL EXPENSES	-558.448	-810.874	-1.127.488	-2.455.444	-3.888.354	-6.043.297	-7.883.636	-6.493.240	-20.086.904	-19.109.893
EARNINGS BEFORE INTERES	1.282.746	1.611.645	2.547.192	3.633.068	4.403.142	6.773.043	8.791.400	5.498.997	16.523.236	15.401.605
MARKET VALUE OF EQUITY	0	0	0	0	0	0	0	0	0	0
SALES	5.530.198	5.454.417	8.977.646	10.369.036	10.937.342	11.956.008	16.996.506	15.295.109	8.881.028	8.548.722
X1	0,2505	0,2248	0,2677	0,3270	0,3041	0,0731	0,0985	0,0459	0,0052	0,0257
X2	0,060170278	0,077757755	0,060315589	0,06319299	0,05965802	0,05012728	0,04152951	0,013702582	-0,02412081	-0,06393416
X3	0,283593843	0,223453165	0,243020138	0,20499726	0,20629362	0,21951599	0,20814392	0,136404125	0,324178332	0,312016975
X5	1,22263496	0,756250129	0,856530943	0,58507684	0,51243042	0,38749716	0,40240683	0,379399364	0,174241707	0,173186261
X4'	0,514880437	0,910237433	0,627328472	1,29614951	0,9642404	0,56304938	0,91481403	0,920803579	0,549510373	0,495777883
Z'	5,798105681	5,308346566	5,36636103	5,30320674	5,07591107	4,65014189	4,78831116	4,483716035	4,645188442	4,564811922
Rating	BBB	BB+	BB+	BB+	BB+	BB-	BB-	B+	BB-	B+
RR	4	5,33	5,33	5,33	5,33	6,66	6,66	7,33	6,66	7,33

Table A1-17 Tezsan Takım Z-Score Card

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	31.06.1999	31.12.1999	30.06.2000	31.12.2000
CURRENT ASSETS	1.644.625	2.218.809	4.210.727	5.597.960	4.183.494	3.580.570	952.101	428.826
LONG TERM ASSETS	228.693	362.667	499.354	657.467	685.344	1.451.333	1.480.203	971.760
CURRENT LIABILITIES	1.401.766	1.896.217	4.291.815	5.758.417	4.025.253	4.548.859	1.949.948	2.003.565
LONG-TERM LIABILITIES	29.205	42.980	72.355	106.332	96.472	32.402	33.544	28.424
EQUITY	442.347	642.279	345.911	390.678	747.113	450.642	448.812	-631.403
TOTAL ASSETS	1.873.318	2.581.476	4.710.081	6.255.427	4.868.838	5.031.903	2.432.304	1.400.586
WORKING CAPITAL	242.859	322.592	-81.088	-160.457	158.241	-968.289	-997.847	-1.574.739
RETAINED EARNINGS	166.063	305.383	-88.158	-495.984	-172.416	-577.086	-756.686	-1.998.386
NET PROFİT BEFORE TAXES	208.410	290.577	-606.992	-703.266	461.188	-988.442	-359.198	-606.930
FINANCIAL EXPENSES	-358.756	-896.526	-1.951.970	-2.616.342	-3.451.990	-3.055.250	-937.054	-771.909
EARNINGS BEFORE INTEREST	567.166	1.187.103	1.344.978	1.913.076	3.913.178	2.066.808	577.856	164.979
MARKET VALUE OF EQUITY	0	0	0	0	0	0	0	0
SALES	2.729.650	3.900.924	4.994.288	6.375.977	1.194.389	2.943.822	4.001.954	2.012.519
X1	0,1296	0,1250	-0,0172	-0,0257	0,0325	-0,1924	-0,4102	-1,1243
X2	0,088646455	0,118297827	-0,01871688	-0,0792886	-0,0354121	-0,1146854	-0,3110984	-1,42682134
X3	0,302760129	0,459854362	0,285553051	0,3058266	0,80371908	0,41074083	0,23757557	0,117792838
X5	1,457120468	1,511121544	1,060340151	1,01927127	0,24531295	0,58503155	1,64533463	1,436912121
X4'	0,309123665	0,331208743	0,079261578	0,06661462	0,18126221	0,09836637	0,22627366	-0,3107315
Z'	5,942750102	6,515772045	5,200525712	5,15986503	6,0614166	4,91623625	5,16757823	2,904841836

Table A1- 18 Bosh Fren Z-Score Card

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	31.06.1999	31.12.1999	30.06.2000	31.12.2000	31.06.2001	31.12.2001
CURRENT ASSETS	1.244.315	2.165.940	3.144.265	4.194.395	6.123.622	7.824.557	9.127.575	8.919.844	9.621.863	9.149.180
LONG TERM ASSETS	607.884	746.747	1.001.806	1.381.656	1.668.264	2.059.199	2.426.384	2.680.033	4.333.221	6.918.874
CURRENT LIABILITIES	655.142	1.034.647	1.270.079	1.474.817	2.108.026	2.308.065	2.161.041	2.383.423	2.764.433	3.892.351
LONG-TERM LIABILITIES	157.782	209.528	298.136	411.518	549.232	662.798	976.721	1.173.788	1.518.985	1.901.889
EQUITY	1.039.275	1.668.512	2.577.856	3.689.716	5.134.628	6.912.893	8.416.197	8.042.666	9.671.666	10.273.814
TOTAL ASSETS	1.852.199	2.912.687	4.146.071	5.576.051	7.791.886	9.883.756	11.553.959	11.599.877	13.955.084	16.068.054
WORKING CAPITAL	589.173	1.131.293	1.874.186	2.719.578	4.015.596	5.516.492	6.966.534	6.536.421	6.857.430	5.256.829
RETAINED EARNINGS	522.444	1.025.477	522.444	2.556.116	3.685.479	5.098.613	6.075.846	5.238.217	5.991.856	6.294.312
NET PROFİT BEFORE TAXES	823.640	1.171.562	823.640	2.421.977	3.420.864	3.903.776	3.356.660	2.345.577	5.011.344	2.634.361
FINANCIAL EXPENSES	-55.186	-52.596	-55.186	-28.304	-24.514	-21.155	-12.458	-9.671	-11.514	-8.542
EARNINGS BEFORE INTEREST AND TAXES	878.826	1.224.158	878.826	2.450.281	3.445.378	3.924.931	3.369.118	2.355.248	5.022.858	2.642.903
MARKET VALUE OF EQUITY	0	0	0	0	0	0	0	0	0	0
SALES	3.843.876	5.140.742	3.843.876	8.530.404	9.413.436	10.956.747	15.790.180	21.913.494	10.664.698	17.106.915
X1	0,3181	0,3884	0,4520	0,4877	0,5154	0,5581	0,6030	0,5635	0,4914	0,3272
X2	0,282066884	0,352072502	0,12600942	0,45840972	0,47298934	0,51585784	0,52586702	0,451575219	0,429367247	0,391728333
X3	0,474477095	0,420284775	0,211965979	0,43942945	0,4421751	0,39710926	0,29159858	0,203040774	0,359930331	0,164481835
X5	2,075304004	1,764948311	0,927112922	1,52982891	1,20810751	1,10856106	1,36664671	1,889114341	0,764215966	1,064653816
X4'	1,278440543	1,341058935	1,643815421	1,95602372	1,93230315	2,32689727	2,68222924	2,26094713	2,257931867	1,773108121
Z'	7,799282654	7,457177493	5,955081449	7,70157817	7,41122896	7,40457522	7,52417561	7,502288522	6,795325265	6,134642795
Rating	AA+	AA+	BBB+	AA+	AA	AA	AA+	AA+	AA-	BBB+
RR	1,66	1,66	3,66	1,66	2	2	1,66	1,66	2,33	3,66

Table A1-19 Mutlu Akü Z-Score Card

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	31.06.1999	31.12.1999	30.06.2000	31.12.2000	31.06.2001	31.12.2001
CURRENT ASSETS	3.006.922	4.507.526	4.326.137	6.261.934	4.773.187	6.846.073	9.766.699	13.309.469	13.595.249	17.936.999
LONG TERM ASSETS	1.784.395	2.272.049	3.336.576	3.678.570	5.569.903	6.651.966	8.705.536	10.154.168	16.253.333	18.210.512
CURRENT LIABILITIES	2.083.226	3.140.877	2.759.980	4.007.587	2.826.613	4.463.896	6.119.542	8.663.887	11.041.907	12.066.675
LONG-TERM LIABILITIES	559.975	1.053.830	1.278.338	1.635.455	2.915.539	3.529.199	4.350.346	5.186.071	7.367.631	9.901.782
EQUITY	2.148.116	2.584.868	3.624.395	4.297.462	4.600.938	5.504.944	8.002.347	9.613.679	11.439.044	14.179.054
TOTAL ASSETS	4.791.317	6.779.575	7.662.713	9.940.504	10.343.090	13.498.039	18.472.235	23.463.637	29.848.582	36.147.511
WORKING CAPITAL	923.696	1.366.649	1.566.157	2.254.347	1.946.574	2.382.177	3.647.157	4.645.582	2.553.342	5.870.324
RETAINED EARNINGS	653.401	637.977	908.156	942.275	392.587	209.570	911.132	991.505	-607.756	1.229.673
NET PROFİT BEFORE TAXES	108.546	265.596	641.040	540.261	-560.984	-437.049	1.946.302	1.333.173	-2.628.926	1.188.898
FINANCIAL EXPENSES	-865.714	-2.075.964	-1.642.856	-1.541.179	-1.588.596	-1.558.431	-1.326.906	-1.390.419	-5.417.766	-5.103.760
EARNINGS BEFORE INTERES	974.260	2.341.560	2.283.896	2.081.440	1.027.612	1.121.382	3.273.208	2.723.592	2.788.840	6.292.658
MARKET VALUE OF EQUITY	0	0	0	0	0	0	0	0	0	0
SALES	7.835.968	21.264.440	11.544.590	14.363.912	11.205.548	18.013.612	27.788.848	35.105.045	38.710.206	62.695.772
X1	0,1928	0,2016	0,2044	0,2268	0,1882	0,1765	0,1974	0,1980	0,0855	0,1624
X2	0,136371899	0,094102801	0,118516249	0,09479147	0,03795645	0,01552596	0,0493244	0,042257089	-0,0203613	0,034018193
X3	0,203338665	0,345384482	0,298053183	0,20938979	0,09935251	0,0830774	0,1771961	0,116077145	0,093432914	0,174082747
X5	1,635451797	3,136544695	1,50659303	1,4449883	1,08338495	1,33453548	1,50435765	1,496146782	1,296885929	1,734442297
X4'	0,81269491	0,616221348	0,897501138	0,7615506	0,80125674	0,68871244	0,76432021	0,694130553	0,621365077	0,645427851
Z'	6,109020123	7,936434445	6,303510124	5,90541613	5,14352309	5,26893606	5,80625391	5,5730921	5,139649976	5,938181782
Rating	BBB+	AAA	BBB+	BBB	BB+	BB+	BBB	BBB-	BB+	BBB
RR	3,66	1	3,66	4	5,33	5,33	4	4,66	5,33	4

Table A1-20 Parsan Z-Score Card

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	31.06.1999	31.12.1999	30.06.2000	31.12.2000	31.06.2001	31.12.2001
CURRENT ASSETS	1.299.909	1.862.754	2.378.884	3.324.990	4.141.668	4.282.021	5.774.234	6.160.468	7.796.430	9.927.426
LONG TERM ASSETS	990.312	1.781.252	2.443.295	4.613.547	5.144.081	5.865.986	6.801.945	12.325.202	14.296.225	14.505.317
CURRENT LIABILITIES	732.830	933.521	678.830	2.740.981	3.485.313	3.527.489	3.882.488	8.501.805	12.087.699	7.485.189
LONG-TERM LIABILITIES	209.490	475.936	907.789	920.649	784.193	707.568	888.216	967.299	970.477	8.929.127
EQUITY	1.347.901	2.234.549	3.235.560	4.276.907	5.016.243	5.912.950	7.805.475	9.016.566	9.034.479	8.018.427
TOTAL ASSETS	2.290.221	3.644.006	4.822.179	7.938.537	9.285.749	10.148.007	12.576.179	18.485.670	22.092.655	24.432.743
WORKING CAPITAL	567.079	929.233	1.700.054	584.009	656.355	754.532	1.891.746	-2.341.337	-4.291.269	2.442.237
RETAINED EARNINGS	307.687	905.678	1.222.476	1.578.984	1.525.819	1.593.018	2.296.951	2.273.491	190.553	-1.673.600
NET PROFİT BEFORE TAXES	722.964	1.089.418	1.513.816	1.204.429	46.966	116.357	2.352.426	1.388.746	-6.437.776	-5.083.041
FINANCIAL EXPENSES	-277.688	-254.690	-295.190	-314.075	-1.536.168	-1.718.092	-725.338	-1.209.857	-9.699.732	-8.115.755
EARNINGS BEFORE INTEREST AND TAXES	1.000.652	1.344.108	1.809.006	1.518.504	1.583.134	1.834.449	3.077.764	2.598.603	3.261.956	3.032.714
MARKET VALUE OF EQUITY	0	0	0	0	0	0	0	0	0	0
SALES	3.740.646	4.902.063	7.494.342	7.252.313	7.486.306	8.236.459	14.902.844	16.343.637	15.385.376	16.861.806
X1	0,2476	0,2550	0,3525	0,0736	0,0707	0,0744	0,1504	-0,1267	-0,1942	0,1000
X2	0,13434817	0,248539108	0,25351112	0,19890113	0,16431835	0,15697841	0,182643	0,12298667	0,008625174	-0,06849824
X3	0,436923773	0,368854497	0,375142856	0,1912826	0,17049072	0,18076939	0,24472966	0,140573915	0,147648891	0,124124991
X5	1,633312244	1,345240101	1,554140151	0,91355788	0,80621456	0,81163316	1,18500572	0,884124676	0,696402311	0,690131517
X4'	1,430406868	1,585397071	2,039279751	1,16803364	1,17490009	1,39619136	1,63612645	0,952208995	0,691863779	0,488502049
Z'	7,129667115	6,797797194	7,290599713	5,46783624	5,26763298	5,39433237	6,14273574	4,982404096	4,562373109	4,543230008
Rating	AA-	A+	AA	BBB-	BB+	BBB-	BBB+	BB	B+	B+
RR	2,33	2,66	2	4,66	5,33	4,66	3,66	6	7,33	7,33

Table A1-21 Ege Endüstri Z-Score Card

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	31.06.1999	31.12.1999	30.06.2000	31.12.2000	31.06.2001	31.12.2001
CURRENT ASSETS	2.326.577	3.011.460	5.884.412	5.342.718	4.967.004	8.231.000	5.204.185	6.937.436	7.532.544	10.924.415
LONG TERM ASSETS	597.220	866.019	1.451.027	1.837.280	1.960.976	2.232.963	2.577.229	2.659.366	3.415.980	3.372.268
CURRENT LIABILITIES	1.639.066	1.592.369	4.176.272	3.033.559	3.601.899	6.078.309	2.234.054	3.186.307	1.926.042	3.444.377
LONG-TERM LIABILITIES	186.043	255.472	384.118	522.545	668.122	634.262	908.826	1.082.184	1.395.992	1.061.990
EQUITY	1.098.688	2.029.638	2.775.049	3.623.894	2.657.959	3.751.392	4.638.534	5.328.311	7.626.490	9.790.316
TOTAL ASSETS	2.923.797	3.877.479	7.335.439	7.179.998	6.927.980	10.463.963	7.781.414	9.596.802	10.948.524	14.296.683
WORKING CAPITAL	687.511	1.419.091	1.708.140	2.309.159	1.365.105	2.152.691	2.970.131	3.751.129	5.606.502	7.480.038
RETAINED EARNINGS	994.920	1.264.127	1.651.316	2.255.677	978.957	1.567.549	839.410	1.138.632	2.619.522	4.547.501
NET PROFİT BEFORE TAXES	994.920	1.455.439	2.684.568	1.811.576	-771.672	405.512	1.001.830	852.331	3.341.792	3.463.941
FINANCIAL EXPENSES	-511.338	-691.354	-836.286	-1.057.111	-2.124.444	-4.376.800	-1.345.744	-913.911	-2.497.556	-1.422.968
EARNINGS BEFORE INTEREST AND TAXES	1.506.258	2.146.793	3.520.854	2.868.687	1.352.772	4.782.312	2.347.574	1.766.242	5.839.348	4.886.909
MARKET VALUE OF EQUITY	0	0	0	0	0	0	0	0	0	0
SALES	5.035.432	7.446.363	15.216.652	16.131.886	8.555.656	23.924.574	15.549.398	15.174.594	17.815.774	20.483.442
X1	0,2351	0,3660	0,2329	0,3216	0,1970	0,2057	0,3817	0,3909	0,5121	0,5232
X2	0,340283542	0,326017755	0,225114816	0,31416123	0,14130482	0,14980452	0,10787371	0,118647024	0,239258004	0,318080844
X3	0,515171881	0,553656899	0,479978635	0,39953869	0,19526211	0,45702685	0,3016899	0,184044852	0,533345682	0,341821176
X5	1,722223533	1,920413495	2,074402364	2,24678141	1,23494236	2,28637792	1,99827409	1,581213617	1,627230666	1,432740867
X4'	0,601984868	1,098383465	0,608511333	1,019063	0,62246977	0,55886068	1,47588645	1,248289149	2,295729062	2,172551858
Z'	7,279069604	7,886652486	7,424755753	7,65834993	5,61155367	7,46089779	7,1665451	6,304909823	8,065099144	7,298935111
Rating	AA	AA+	AA	AA+	BBB-	AA+	AA	A-	AAA	AA
RR	2	1,66	2	1,66	4,66	1,66	2	3,33	1	2

Table A1-22 F-M İzmit Piston Z-Score Card

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	31.06.1999	31.12.1999	30.06.2000	31.12.2000	31.06.2001	31.12.2001
CURRENT ASSETS	1.334.362	1.464.135	1.482.274	1.464.135	2.562.996	3.096.233	3.841.162	4.806.540	6.480.557	8.688.088
LONG TERM ASSETS	544.214	1.320.828	1.154.151	1.320.828	1.556.387	1.855.751	2.251.669	2.533.434	3.697.447	3.662.294
CURRENT LIABILITIES	518.804	602.487	728.865	602.487	1.389.417	1.874.118	2.014.668	2.130.959	3.490.217	3.490.217
LONG-TERM LIABILITIES	216.876	284.597	421.074	533.244	754.237	938.087	1.305.506	1.597.331	1.859.733	2.233.121
EQUITY	1.142.896	1.683.217	1.486.486	1.649.232	1.975.729	2.139.779	2.772.657	3.611.684	5.513.446	6.627.044
TOTAL ASSETS	1.878.576	2.784.963	2.636.425	2.784.963	4.119.383	4.951.984	6.092.831	7.339.974	10.178.004	12.350.382
WORKING CAPITAL	815.558	861.648	753.409	861.648	1.173.579	1.222.115	1.826.494	2.675.581	2.990.340	5.197.871
RETAINED EARNINGS	375.833	782.713	272.326	175.521	222.445	68.223	233.727	662.325	1.762.828	2.548.769
NET PROFİT BEFORE TAXES	1.052.536	1.109.115	775.712	303.656	499.452	118.424	859.216	1.216.745	5.488.254	3.979.023
FINANCIAL EXPENSES	-4.778	-5.080	-6.000	-5.884	-5.432	-4.640	-3.248	-2.811	-1.386	-820
EARNINGS BEFORE INTEREST	1.057.314	1.114.195	781.712	309.540	504.884	123.064	862.464	1.219.556	5.489.640	3.979.843
MARKET VALUE OF EQUITY	0	0	0	0	0	0	0	0	0	0
SALES	2.879.188	3.572.877	5.111.656	5.084.448	6.316.332	6.357.565	10.649.976	11.787.172	17.262.514	17.225.637
X1	0,4341	0,3094	0,2858	0,3094	0,2849	0,2468	0,2998	0,3645	0,2938	0,4209
X2	0,200062707	0,281049694	0,103293665	0,06302454	0,05399959	0,0137769	0,03836099	0,090235333	0,173199775	0,206371673
X3	0,562827376	0,400075333	0,296504547	0,1111469	0,12256301	0,02485145	0,1415539	0,166152632	0,539363121	0,322244527
X5	1,532643875	1,282917224	1,938858871	1,82567883	1,53331992	1,28384199	1,74795198	1,605887432	1,696060839	1,39474528
X4'	1,553523271	1,897471942	1,292665089	1,45213259	0,92166413	0,76089012	0,83509388	0,968723999	1,030560286	1,157898415
Z'	7,661491844	7,030207522	6,941526352	6,30247313	5,79816067	5,11668124	6,03243574	6,113567469	7,408663051	6,606045475

3. FINANCIAL INFORMATION REPORTS

4. Table A2-1 Apeks Financial Information Report

	Apeks Financial Information Report	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000
	Balance Sheet						
	Current Assets (CA)	2.277.602	4.016.463	5.368.627	6.173.382	5.045.723	4.381.574
	Current Liabilities (CL)	1.854.596	4.007.040	5.641.389	7.322.270	7.227.852	8.703.947
	Working Capital (WC=CA-CL)	*423.006*	*9.423*	*-272.762*	*-1.148.888*	*-2.182.129*	*-4.322.373*
	Fixed Assets (FA)	1.205.096	1.676.435	1.873.598	2.252.747	2.370.088	2.423.569
	Long Term Debts(LTD)	204.387	60.862	18.958	60.862	1.141.108	516.548
	Fixed Worth (FW=FA-LTD)	*1.000.709*	*1.615.573*	*1.854.640*	*2.191.885*	*1.228.980*	*1.907.021*
	Net Worth(NW=WC+FW)	*1.423.715*	*1.624.996*	*1.581.878*	*1.042.997*	*-953.149*	*-2.415.352*
	Income Statement						
	Sales for year	2.411.745	2.409.334	3.577.785	3.651.686	4.815.502	3.094.792
	Operating Profit (EBITDA)	398.506	-298.563	-387.190	-73.226	83.390	-1.717.188
	Depreciation & Amortisation	37.799	59.580	58.209	70.182	131.421	96.498
	Bad Debts						
	Income Taxes	165119	-122290	42499	0	0	0
	Net Profit/loss	366.507	-23.560	-252.132	-993.611	-3.046.499	-2.876.936
	Dividends/drawings						
	Sundry adjustments (-net income)	-4.433	125.224	176.357	-44.714	-24.639	599.392
	Net capital Expenses						
	Interest Expense (I)	0	0	964.415	1.040.575	2.728.489	943.370
	Capitalised Interest(Inventories)	0	1.053.868	546.175	601.680	721.762	69.025
	Capitalised Interest(Fixed Assets)	245.332	228.544	259.259	16.926	32.858	0
	Interest Expense (COGS)	698.923	109.730	73.607	154.527	269.979	119.880
	Total Interest	944.255	1.392.142	1.843.456	1.813.708	3.753.088	1.132.275

	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000
1 EBIT Interest Coverage (x)	0,38	-0,26	-0,24	-0,08	-0,01	-26
2 EBIDA Interest Coverage (x)	0,42	-0,21	-0,21	-0,04	0,02	-25
3 Funds from operations/total debt (%)	19,35	-7,34	-6,84	-0,99	1,00	-19
4 Free operating cash flow/total debt (%)	19,35	2,83	-1,86	10,87	13,34	5
5 Pretax return on capital (%)	**15,26**	**-2,56**	**10,42**	**0,56**	**-4,29**	**-28**
6 Operating Income /sales (%)	16,52	-12,39	-10,82	-2,01	1,73	-55
7 Long-term Debt/capital(%)	12,55	3,61	1,18	5,51	607,10	-27
8 Total debt/capitilisation (%)	59,12	71,46	78,16	87,62	112,85	135

		31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000
1,5	1 EBIT Interest Coverage (x)	B	CCC	CCC	CCC	CCC	D
	2 EBIDA Interest Coverage (x)	CCC	CCC	CCC	CCC	CCC	D
0,75	3 Funds from operations/total debt (%)	A	CCC	CCC	B	BB	D
	4 Free operating cash flow/total debt (%)	A	BB	BB	B	A	BB
0,5	5 Pretax return on capital (%)	BBB	CCC	BB	CCC	D	D
	6 Operating Income /sales (%)	BBB	D	D	D	D	D
1,25	7 Long-term Debt/capital(%)	AAA	AAA	AAA	AAA	D	D
	8 Total debt/capitilisation (%)	BB	B	B	CCC	D	D

		31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000
0,6	1 EBIT Interest Coverage (x)	8	10	10	10	10	12
0,9	2 EBIDA Interest Coverage (x)	10	10	10	10	10	12
0,3	3 Funds from operations/total debt (%)	3,00	10,00	10,00	8,00	6,00	12
0,45	4 Free operating cash flow/total debt (%)	3,00	6,00	6,00	6,00	3,00	6
0,25	5 Pretax return on capital (%)	4,00	10,00	6,00	10,00	12,00	12
0,25	6 Operating Income /sales (%)	4,00	12,00	12,00	12,00	12,00	12
0,25	7 Long-term Debt/capital(%)	1,00	1,00	1,00	1,00	12,00	12
1	8 Total debt/capitilisation (%)	6,00	8,00	8,00	10,00	12,00	12
4	**RR**	**6,075**	**8,6125**	**8,3625**	**8,9625**	**9,7875**	**11**
	Rating	**BB**	**B-**	**B**	**B-**	**CCC**	**D**

	Change in WC	0	-3	-3	-3	-3	-3
	Change in Net Worth	0	1	-1	-1	-3	-3
	Net Profit or Loss	0	-3	-3	-3	-3	-3
	Total	**0**	**-5**	**-7**	**-7**	**-9**	**-9**
	Adjusted Rating		**CCC+**	**CCC+**	**CCC**	**D**	**D**
	Adjusted RR	**6**	**9,5**	**9,5**	**10**	**12**	**12**

Table A2-2 Mudurnu Financial Information Report

	Mudurnu Tavuk Financial Information Report	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001
	Balance Sheet								
	Current Assets (CA)	2.952.461	4.335.906	6.114.471	9.662.614	17.459.566	26.281.709	17.622.097	5.208.679
	Current Liabilities (CL)	2.882.524	3.843.468	5.424.052	7.340.755	16.528.733	26.392.420	40.667.739	46.249.563
	Working Capital (WC=CA-CL)	*69.937*	*492.438*	*690.419*	*2.321.859*	*930.833*	*-110.711*	*-23.045.642*	*-41.040.884*
	Fixed Assets (FA)	2.758.254	3.444.931	4.429.904	5.583.208	8.007.392	11.374.028	15.818.275	18.349.610
	Long Term Debts(LTD)	540.377	740.500	783.644	2.173.839	3.005.730	2.317.791	6.308.608	6.786.197
	Fixed Worth (FW=FA-LTD)	*2.217.877*	*2.704.431*	*3.646.260*	*3.409.369*	*5.001.662*	*9.056.237*	*9.509.667*	*11.563.413*
	Net Worth(NW=WC+FW)	*2.287.814*	*3.196.869*	*4.336.679*	*5.731.228*	*5.932.495*	*8.945.526*	*-13.535.975*	*-29.477.471*
	Income Statement								
	Sales for year	6.413.532	12.003.664	15.995.161	18.370.670	22.232.998	31.987.152	34.735.542	5.768.618
	Operating Profit (EBITDA)	728.813	3.026.962	3.637.909	2.529.424	3.211.194	640.908	-16.062.008	-14.155.915
	Depreciation & Amortisation	0	971.890	1.197.655	1.749.154	1.303.950	2.725.372	1.261.543	2.725.374
	Bad Debts	0	5.911	5.911	5.911	5.911	5.565	5.565	5.565
	Income Taxes	84.330	184.654	196.967	217.898	254.736	203.122	0	0
	Net Profit/loss	507.170	1.327.448	1.423.694	1.428.650	596.223	437.786	-23.039.859	-35.753.422
	Dividends/drawings								
	Sundry adjustments (-net income)	-181.662	-644.836	-337.712	-551.968	-323.044	-711.764	-1.006.347	10.182.945
	Net capital Expenses								
	Interest Expense (I)	137.313	311.468	654.263	1.434.844	717.422		5.252.328	1.990.844
	Capitalised Interest(Inventories)	0	0	0	17.532	0	0	0	0
	Capitalised Interest(Fixed Assets)	0	0	26.716	0	0	226.890	523.715	0
	Interest Expense (COGS)	0	231.502	165.330	173.386	338.863	4.738.704	463.980	0
	Total Interest	137.313	542.970	846.309	1.625.762	1.056.285	4.965.594	6.240.023	1.990.844

	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001
1 EBIT Interest Coverage (x)	5,31	3,78	2,88	0,48	1,81	-0,42	-2,78	-8,48
2 EBIDA Interest Coverage (x)	5,31	5,57	4,30	1,56	3,04	0,13	-2,57	-7,11
3 Funds from operations/total debt (%)	21,29	66,03	58,60	26,58	16,44	2,23	-34,19	-26,69
4 Free operating cash flow/total debt (%)	21,29	56,82	55,41	9,44	23,56	5,86	14,63	7,24
5 Pretax return on capital (%)	12,76	23,44	21,57	20,21	6,16	1,70	-53,19	-143,32
6 Operating Income /sales (%)	11,36	25,22	22,74	13,77	14,44	2,00	-46,24	-245,40
7 Long-term Debt/capital(%)	19,11	18,81	15,30	27,50	33,63	20,58	-87,29	-29,91
8 Total debt/capitilisation (%)	59,94	58,91	58,87	62,41	76,71	76,24	140,48	225,13

	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001
1 EBIT Interest Coverage (x)	A	BBB	BB	B	BB	CCC	CCC	D
2 EBIDA Interest Coverage (x)	A	BBB	BBB	B	BB	CCC	CCC	D
3 Funds from operations/total debt (%)	BBB	AA	AA	BBB	BB	CCC	D	D
4 Free operating cash flow/total debt (%)	AA	AAA	AAA	BBB	AA	BB	A	BBB
5 Pretax return on capital (%)	BBB	AA	AA	A	B	CCC	D	D
6 Operating Income /sales (%)	CCC	AA	AA	B	BB	CCC	D	D
7 Long-term Debt/capital(%)	AA	AAA	AAA	AAA	A	AA	D	D
8 Total debt/capitilisation (%)	BB	BB	BB	BB	B	B	D	D

		31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001
0,6	1 EBIT Interest Coverage (x)	3	4	6	8	6	10	12	12
0,9	2 EBIDA Interest Coverage (x)	3	4	4	8	6	10	12	12
0,3	3 Funds from operations/total debt (%)	4	2	2	4	6	10	12	12
0,45	4 Free operating cash flow/total debt (%)	2	1	1	4	2	6	3	4
0,25	5 Pretax return on capital (%)	4	2	2	3	8	10	12	12
0,25	6 Operating Income /sales (%)	10	2	2	8	6	10	12	12
0,25	7 Long-term Debt/capital(%)	2	1	1	1	3	2	12	12
1	8 Total debt/capitilisation (%)	6	6	6	6	8	8	12	12
4,00	**RR**	4,15	3,58	3,88	6,00	5,99	8,55	10,99	11,10
	Rating	**BBB**	**BBB+**	**BBB**	**BB**	**BB**	**B-**	**D**	**D**

	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001
Change in WC	0	2	2	2	-2	-3	-3	-3
Change in Net Worth	0	2	2	2	0	1	-3	-3
Net Profit or Loss	0	2	1	0	-1	0	-3	-3
Total	**0**	**6**	**5**	**4**	**-3**	**-2**	**-9**	**-9**
Adjusted Rating	BBB	A	BBB+	BB+	BB-	CCC+	D	D
Adjusted RR	4	3	3,5	5,5	6,5	9,5	12	12

Table A2-3 Firigo Pak Financial Information Report

	Firigo Pak Gıda Financial Information	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001
	Balance Sheet								
	Current Assets (CA)	2.154.315	2.878.840	3.218.996	3.436.864	4.685.068	5.353.169	6.116.420	9.231.841
	Current Liabilities (CL)	2.104.778	2.885.107	3.190.445	3.334.042	4.570.098	5.059.504	7.073.164	12.176.917
	Working Capital (WC=CA-CL)	*49.537*	*-6.267*	*28.551*	*102.822*	*114.970*	*293.665*	*-956.744*	*-2.945.076*
	Fixed Assets (FA)	1.321.958	1.801.383	2.134.077	2.601.090	3.223.450	3.689.991	3.920.711	6.078.541
	Long Term Debts(LTD)	480.439	606.506	724.847	953.890	1.266.885	1.389.948	172.378	201.926
	Fixed Worth (FW=FA-LTD)	*841.519*	*1.194.877*	*1.409.230*	*1.647.200*	*1.956.565*	*2.300.043*	*3.748.333*	*5.876.615*
	Net Worth(NW=WC+FW)	*891.056*	*1.188.610*	*1.437.781*	*1.750.022*	*2.071.535*	*2.593.708*	*2.791.589*	*2.931.539*
	Income Statement								
	Sales for year	2.978.943	3.359.332	3.848.879	4.767.834	6.344.180	6.683.442	6.407.602	11.568.310
	Operating Profit (EBITDA)	1.214.683	1.506.532	1.520.240	1.959.690	2.302.428	2.142.960	922.486	1.915.824
	Depreciation & Amortisation	204.271	314.570	321.503	440.924	559.181	589.608	675.661	971.182
	Bad Debts	371	0	3.118	684	684	0	0	0
	Income Taxes	9.297	81.436	25.167	0	55.584	140.266	12.565	0
	Net Profit/loss	157.012	53.962	70.009	85.558	53.350	78.058	-207.695	-1.526.648
	Dividends/drawings								
	Sundry adjustments (-net income)	-50.074	-150.738	-305.386	-280.666	-230.246	-161.220	-282.305	-314.216
	Net capital Expenses								
	Interest Expense (I)	302.891	439.916	514.889	663.250	847.031	538.282	441.955	3.442.472
	Capitalised Interest(Inventories)	0	0	0	0	0	0	0	0
	Capitalised Interest(Fixed Assets)	395.892	548.522	489.781	649.798	797.103	245.880	235.624	3.215.772
	Interest Expense (COGS)	574.995	616.648	613.839	769.958	869.025	796.746	774.166	4.123.074
	Total Interest	1.273.778	1.605.086	1.618.509	2.083.006	2.513.159	1.580.908	1.451.745	10.781.318
		31.12.1997	**30.06.1998**	**31.12.1998**	**30.06.1999**	**31.12.1999**	**30.06.2000**	**30.06.2000**	**30.06.2000**
	1 EBIT Interest Coverage (x)	0,79	0,74	0,74	0,73	0,69	0,98	0,17	0,09
	2 EBIDA Interest Coverage (x)	0,95	0,94	0,94	0,94	0,92	1,36	0,64	0,18
	3 Funds from operations/total debt (%)	46,99	43,15	38,83	45,70	39,45	33,23	12,73	15,48
	4 Free operating cash flow/total debt (%)	46,99	44,75	37,94	43,97	39,24	30,46	29,99	31,54
	5 Pretax return on capital (%)	13,50	12,29	11,40	12,40	12,09	8,37	2,46	12,51
	6 Operating Income /sales (%)	40,78	44,85	39,50	41,10	36,29	32,06	14,40	16,56
	7 Long-term Debt/capital(%)	35,03	33,79	33,52	35,28	37,95	34,89	5,82	6,44
	8 Total debt/capitilisation (%)	74,37	74,60	73,14	71,02	73,81	71,32	72,19	80,85
		31.12.1997	**30.06.1998**	**31.12.1998**	**30.06.1999**	**31.12.1999**	**30.06.2000**	**30.06.2000**	**30.06.2000**
	1 EBIT Interest Coverage (x)	B	B	B	B	B	B	CCC	CCC
	2 EBIDA Interest Coverage (x)	CCC	CCC	CCC	CCC	CCC	CCC	CCC	CCC
	3 Funds from operations/total debt (%)	A	A	A	A	A	BBB	B	BB
	4 Free operating cash flow/total debt (%)	A	AA	AA	AA	AA	AA	AA	AA
	5 Pretax return on capital (%)	BBB	BBB	BB	BB	BB	B	CCC	BBB
	6 Operating Income /sales (%)	AAA	AAA	AAA	AAA	AAA	AAA	BB	A
	7 Long-term Debt/capital(%)	AA	AA	AA	AA	AA	AA	AAA	AAA
	8 Total debt/capitilisation (%)	B	B	B	B	B	B	B	B
		31.12.1997	**30.06.1998**	**31.12.1998**	**30.06.1999**	**31.12.1999**	**30.06.2000**	**30.06.2000**	**30.06.2000**
1	1 EBIT Interest Coverage (x)	8	8	8	8	8	8	10	10
1	2 EBIDA Interest Coverage (x)	10	10	10	10	10	10	10	10
0	3 Funds from operations/total debt (%)	3,00	3,00	3,00	3,00	3,00	4,00	8,00	6,00
0	4 Free operating cash flow/total debt (%)	3,00	2,00	2,00	2,00	2,00	3,00	2,00	2,00
0	5 Pretax return on capital (%)	4,00	4,00	6,00	6,00	6,00	8,00	10,00	4,00
0	6 Operating Income /sales (%)	1,00	1,00	1,00	1,00	1,00	1,00	6,00	3,00
0	7 Long-term Debt/capital(%)	2,00	2,00	2,00	2,00	2,00	2,00	1,00	1,00
1	8 Total debt/capitilisation (%)	8,00	8,00	8,00	8,00	8,00	8,00	8,00	8,00
4	**RR**	6,45	6,3375	6,4625	6,4625	6,4625	6,775	7,6375	6,925
	Rating	BB-	BB-	BB-	BB-	BB-	BB-	B+	BB-
	Change in WC	0	-1	0	1	0	2	-1	-2
	Change in Net Worth	0	1	1	1	2	3	-1	0
	Net Profit or Loss	0	0	0	1	1	2	-1	-1
	Total	**0**	**0**	**1**	**3**	**3**	**7**	**-3**	**-3**
	Adjusted Rating	BB	BB-	BB-	BB	BB	BB+	B	B+
	Adjusted RR	**6,5**	**6,5**	**6,5**	**6**	**6**	**5,5**	**8,0**	**7,5**

Table A2- 4 Banvit Financial Information Report

	Banvit Financial Information Report	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001
	Balance Sheet								
	Current Assets (CA)	4.000.167	5.720.731	12.972.166	17.633.140	21.440.564	19.249.050	34.216.826	39.244.935
	Current Liabilities (CL)	3.007.084	3.449.749	6.034.995	7.843.459	9.996.305	10.370.431	15.346.334	29.458.789
	Working Capital (WC=CA-CL)	*993.083*	*2.270.982*	*6.937.171*	*9.789.681*	*11.444.259*	*8.878.619*	*18.870.492*	*9.786.146*
	Fixed Assets (FA)	1.580.767	2.116.186	3.251.925	5.263.320	8.417.411	12.751.403	16.941.078	34.615.662
	Long Term Debts(LTD)	679.101	656.285	1.251.095	2.863.696	3.729.208	6.035.993	13.936.598	33.458.568
	Fixed Worth (FW=FA-LTD)	*901.666*	*1.459.901*	*2.000.830*	*2.399.624*	*4.688.203*	*6.715.410*	*3.004.480*	*1.157.094*
	Net Worth(NW=WC+FW)	*1.894.749*	*3.730.883*	*8.938.001*	*12.189.305*	*16.132.462*	*15.594.029*	*21.874.972*	*10.943.240*
	Income Statement								
	Sales for year	13.607.785	21.423.980	29.042.360	42.812.100	52.028.168	63.096.808	81.128.351	94.843.532
	Operating Profit (EBITDA)	1.950.059	6.414.384	10.269.019	14.673.398	13.314.882	3.342.202	8.116.884	8.610.772
	Depreciation & Amortisation	511.908	805.944	1.035.298	1.412.038	2.870.865	3.820.862	4.659.227	8.170.634
	Bad Debts	0	0	0	0	0	2.532	2.532	5.909
	Income Taxes	298.323	1.842.640	2.337.960	4.405.848	3.181.070	0	1.238.576	0
	Net Profit/loss	819.044	3.417.710	6.585.670	8.432.088	7.629.249	-1.412.496	904.490	-27.561.568
	Dividends/drawings								
	Sundry adjustments (-net income)	160.429	-782.378	-1.094.959	-4.619.218	-2.502.841	-1.297.626	-3.490.098	-10.721.292
	Net capital Expenses								
	Interest Expense (I)	320.784	348.090	310.091	423.424	366.302	933.836	1.314.591	28.001.706
	Capitalised Interest(Inventories)	0	0	0	0	0	0	0	0
	Capitalised Interest(Fixed Assets)	0	0	0	0	0	0	0	0
	Interest Expense (COGS)	0	0	0	0	0	0	0	0
	Total Interest	320.784	348.090	310.091	423.424	366.302	933.836	1.314.591	28.001.706

	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001
1 EBIT Interest Coverage (x)	4,48	16,11	29,78	31,32	28,51	-0,51	2,63	0,02
2 EBIDA Interest Coverage (x)	6,08	18,43	33,12	34,65	36,35	3,58	6,17	0,31
3 Funds from operations/total debt (%)	52,90	156,22	140,94	137,04	97,01	20,37	27,72	13,69
4 Free operating cash flow/total debt (%)	52,90	125,10	76,90	110,40	84,95	36,01	-6,40	28,12
5 Pretax return on capital (%)	25,77	71,56	56,91	57,92	37,43	-1,50	6,76	0,60
6 Operating Income /sales (%)	14,33	29,94	35,36	34,27	25,59	5,30	10,00	9,08
7 Long-term Debt/capital(%)	26,38	14,96	12,28	19,02	18,78	27,91	38,92	75,35
8 Total debt/capitilisation (%)	66,05	52,39	44,91	46,76	45,97	51,27	57,24	85,18

	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001
1 EBIT Interest Coverage (x)	A	AAA	AAA	AAA	AAA	CCC	BB	CCC
2 EBIDA Interest Coverage (x)	BBB	AA	AAA	AAA	AAA	BB	BBB	CCC
3 Funds from operations/total debt (%)	AA	AAA	AAA	AAA	AAA	A	CCC	BBB
4 Free operating cash flow/total debt (%)	AA	AAA	AAA	AAA	AAA	AA	CCC	AA
5 Pretax return on capital (%)	AA	AAA	AAA	AAA	AAA	CCC	B	CCC
6 Operating Income /sales (%)	BBB	AAA	AAA	AAA	AAA	CCC	CCC	CCC
7 Long-term Debt/capital(%)	AA	AAA	AAA	AAA	AAA	AA	BBB	CCC
8 Total debt/capitilisation (%)	BB	BBB	A	BBB	BBB	BBB	BB	CCC

		31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001
0,6	1 EBIT Interest Coverage (x)	1	1	1	1	1	10	6	10
0,9	2 EBIDA Interest Coverage (x)	4	2	1	1	1	6	4	10
0,3	3 Funds from operations/total debt (%)	2	1	1	1	1	3	10	4
0,5	4 Free operating cash flow/total debt (%)	2	1	1	1	1	2	10	2
0,3	5 Pretax return on capital (%)	2	1	1	1	1	10	8	10
0,3	6 Operating Income /sales (%)	4	1	1	1	1	10	10	10
0,3	7 Long-term Debt/capital(%)	2	1	1	1	1	2	4	10
1	8 Total debt/capitilisation (%)	6	4	3	4	4	4	6	10
4	**RR**	3,425	1,975	1,5	1,75	1,75	5,675	6,55	8,65
	Rating	BBB+	AA	AAA-	AA+	AA+	BB+	BB-	B-
	Change in WC	0	1	1	1	2	0	3	0
	Change in Net Worth	0	1	1	1	1	0	3	-1
	Net Profit or Loss	0	1	1	1	0	-2	1	-1
	Total	**0**	**3**	**3**	**3**	**3**	**-2**	**7**	**-2**
	Adjusted Rating	BBB+	AA+	AAA	AAA	AAA	BB+	BB+	B-
	Adjusted RR	**3,5**	**1,5**	**1**	**1**	**1**	**5,5**	**5,5**	**8,5**

Table A2-5 Penguen Gıda Financial Information Report

	Penguen Gıda Financial Information Report	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001
	Balance Sheet								
	Current Assets (CA)	6.773.809	9.459.734	14.601.523	15.673.265	19.519.003	21.590.486	26.691.836	33.223.937
	Current Liabilities (CL)	5.344.410	6.297.140	10.952.862	11.868.328	15.059.005	17.128.718	21.186.398	32.129.807
	Working Capital (WC=CA-CL)	*1.429.399*	*3.162.594*	*3.648.661*	*3.804.937*	*4.459.998*	*4.461.768*	*5.505.438*	*1.094.130*
	Fixed Assets (FA)	1.283.089	1.834.449	2.132.207	2.594.926	3.902.656	5.189.796	6.497.551	7.995.587
	Long Term Debts(LTD)	1.036.209	917.854	571.166	578.749	1.805.890	1.758.571	3.055.939	4.082.757
	Fixed Worth (FW=FA-LTD)	*246.880*	*916.595*	*1.561.041*	*2.016.177*	*2.096.766*	*3.431.225*	*3.441.612*	*3.912.830*
	Net Worth(NW=WC+FW)	*1.676.279*	*4.079.189*	*5.209.702*	*5.821.114*	*6.556.764*	*7.892.993*	*8.947.050*	*5.006.960*
	Income Statement								
	Sales for year	6.320.377	7.500.442	12.698.950	12.064.866	15.884.722	18.790.246	20.929.091	24.436.486
	Operating Profit (EBITDA)	3.133.140	5.182.653	6.107.367	5.988.882	6.744.510	5.415.314	5.231.510	6.215.976
	Depreciation & Amortisation	288.039	498.784	502.939	950.144	243.811	326.966	412.176	583.028
	Bad Debts	56.864	56.864	47.122	52.523	52.523	83.699	63.620	167.771
	Income Taxes	47.046	261.964	138.019	66.706	204.459	487.410	263.349	0
	Net Profit/loss	515.236	679.752	1.013.246	256.116	306.473	790.302	145.700	-11.392.120
	Dividends/drawings								
	Sundry adjustments (-net income)	-52.165	-45.689	-75.659	-13.544	-11.767	167.762	226.317	-127.540
	Net capital Expenses								
	Interest Expense (I)	1.271.222	1.488.176	2.807.163	1.040.481	3.730.386	4.298.046	3.425.014	17.152.608
	Capitalised Interest(Inventories)	0	0	0	0	0	0	0	14.610.360
	Capitalised Interest(Fixed Assets)	0	0	0	0	131.362	0	70.000	
	Interest Expense (COGS)	1.011.597	2.299.666	1.646.000	2.648.498	2.259.381	0	985.271	0
	Total Interest	2.282.819	3.787.842	4.453.163	3.688.979	6.121.129	4.298.046	4.480.285	31.762.968
		31.12.1997	**30.06.1998**	**31.12.1998**	**30.06.1999**	**31.12.1999**	**30.06.2000**	**31.12.2000**	**30.06.2001**
	1 EBIT Interest Coverage (x)	1,25	1,24	1,26	1,37	1,06	1,18	1,08	0,18
	2 EBIDA Interest Coverage (x)	1,37	1,37	1,37	1,62	1,10	1,26	1,17	0,20
	3 Funds from operations/total debt (%)	49,10	71,83	53,00	48,11	39,99	28,67	21,58	17,17
	4 Free operating cash flow/total debt (%)	49,10	47,81	48,78	46,86	36,11	28,66	17,27	29,35
	5 Pretax return on capital (%)	22,76	21,51	23,66	7,46	18,11	20,82	11,55	13,98
	6 Operating Income /sales (%)	49,57	69,10	48,09	49,64	42,46	28,82	25,00	25,44
	7 Long-term Debt/capital(%)	38,20	18,37	9,88	9,04	21,59	18,22	25,46	44,92
	8 Total debt/capitilisation (%)	79,19	63,88	68,87	68,14	72,01	70,53	73,04	87,85
		31.12.1997	**30.06.1998**	**31.12.1998**	**30.06.1999**	**31.12.1999**	**30.06.2000**	**31.12.2000**	**30.06.2001**
	1 EBIT Interest Coverage (x)	B	B	B	B	B	B	B	B
	2 EBIDA Interest Coverage (x)	B	B	B	B	CCC	CCC	CCC	CCC
	3 Funds from operations/total debt (%)	AA	AA	AA	A	A	BBB	BB	AA
	4 Free operating cash flow/total debt (%)	AA	AA	AA	AA	AA	AA	A	AAA
	5 Pretax return on capital (%)	AA	AA	AA	B	A	A	BB	BBB
	6 Operating Income /sales (%)	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
	7 Long-term Debt/capital(%)	A	AAA	AAA	AAA	AA	AAA	AA	BBB
	8 Total debt/capitilisation (%)	B	BB	BB	BB	B	B	B	CCC
		31.12.1997	**30.06.1998**	**31.12.1998**	**30.06.1999**	**31.12.1999**	**30.06.2000**	**31.12.2000**	**30.06.2001**
0,6	1 EBIT Interest Coverage (x)	8	8	8	4	8	8	8	8
0,9	2 EBIDA Interest Coverage (x)	8	8	8	6	10	10	10	10
0,3	3 Funds from operations/total debt (%)	2	2	2	3	3	4	6	2
0,45	4 Free operating cash flow/total debt (%)	2	2	2	2	2	2	1	1
0,25	5 Pretax return on capital (%)	2	2	2	8	3	1	6	4
0,25	6 Operating Income /sales (%)	1	1	1	1	1	1	1	1
0,25	7 Long-term Debt/capital(%)	3	1	1	1	2	1	2	4
1	8 Total debt/capitilisation (%)	8	6	6	6	8	8	8	10
4	**RR**	5,75	5,125	5,125	4,525	6,275	6,1625	6,575	6,775
	Rating	BB	BB+	BB+	BBB-	BB-	BB	BB-	BB-
	Change in WC		2	1	0	1	0	2	-2
	Change in Net Worth		2	1	0	1	1	1	-1
	Net Profit or Loss		1	1	-2	1	2	-1	-1
	Total	**0**	**5**	**3**	**-2**	**3**	**3**	**2**	**-4**
	Adjusted Rating	BB+	BBB	BBB-	BBB-	BB	BB+	BB-	B+
	Adjusted RR	**5,5**	**4**	**4,5**	**4,5**	**6**	**5,5**	**6,5**	**7,5**

Table A2-6 Bisaş Financial Information Report

	Bisaş Financial Information Report	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
	Balance Sheet								
	Current Assets (CA)	915.382	1.388.871	1.731.903	1.900.139	2.104.691	695.770	1.542.736	2.287.870
	Current Liabilities (CL)	633.169	1.496.666	2.076.098	3.180.054	3.603.460	4.396.910	8.283.960	8.471.961
	Working Capital (WC=CA-CL)	*282.213*	*-107.795*	*-344.195*	*-1.279.915*	*-1.498.769*	*-3.701.140*	*-6.741.224*	*-6.184.091*
	Fixed Assets (FA)	1.234.570	2.194.493	2.702.056	3.235.029	3.911.896	4.605.604	5.298.443	5.813.919
	Long Term Debts(LTD)	256.319	768.919	1.168.608	1.344.267	1.755.260	2.043.291	951.508	1.116.087
	Fixed Worth (FW=FA-LTD)	*978.251*	*1.425.574*	*1.533.448*	*1.890.762*	*2.156.636*	*2.562.313*	*4.346.935*	*4.697.832*
	Net Worth(NW=WC+FW)	*1.260.464*	*1.317.779*	*1.189.253*	*610.847*	*657.867*	*-1.138.827*	*-2.394.289*	*-1.486.259*
	Income Statement								
	Sales for year	2.140.724	2.861.685	4.716.278	5.270.889	3.959.050	2.775.472	1.652.182	4.031.467
	Operating Profit (EBITDA)	301.630	1.526.231	2.638.832	819.713	680.426	-383.563	-673.436	575.653
	Depreciation & Amortisation	377.460	1.248.223	2.317.810	591.189	990.368	1.001.276	668.154	775.341
	Bad Debts	0	0	0	0	0	14.394	0	0
	Income Taxes	0	0	0	0	0	0	0	0
	Net Profit/loss	-162.746	-312.580	-1.393.522	-1.602.594	-3.131.730	-4.044.723	-4.578.200	-2.321.193
	Dividends/drawings								
	Sundry adjustments (-net income)	-38.412	-73.241	-155.804	-105.371	-83.324	430.199	-63.807	-92.057
	Net capital Expenses								
	Interest Expense (I)	62.664	590.588	1.714.544	1.831.118	2.428.522	2.659.884	4.032.378	2.121.505
	Capitalised Interest(Inventories)	0	0	0	0	0	0	0	0
	Capitalised Interest(Fixed Assets)	0	0	0	0	426.028	486.994	97.152	69.950
	Interest Expense (COGS)	0	0	0	0	0	0	0	0
	Total Interest	62.664	590.588	1.714.544	1.831.118	2.854.550	3.146.878	4.129.530	2.191.455

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
1 EBIT Interest Coverage (x)	-1,21	0,47	0,19	0,12	-0,11	-0,44	-0,32	-0,09
2 EBIDA Interest Coverage (x)	4,81	2,58	1,54	0,45	0,24	-0,12	-0,16	0,26
3 Funds from operations/total debt (%)	33,91	67,37	81,33	18,12	12,70	-5,96	-7,29	6,00
4 Free operating cash flow/total debt (%)	33,91	84,58	88,61	38,80	16,78	28,24	25,63	0,19
5 Pretax return on capital (%)	-4,66	7,76	7,24	4,45	-11,69	-26,12	-7,98	-2,46
6 Operating Income /sales (%)	14,09	53,33	55,95	15,55	17,19	-13,82	-40,76	14,28
7 Long-term Debt/capital(%)	16,90	36,85	49,56	68,76	72,74	225,91	-65,95	-301,50
8 Total debt/capitilisation (%)	41,37	63,23	73,18	88,10	89,07	121,48	135,00	118,34

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
1 EBIT Interest Coverage (x)	CCC	B	CCC	CCC	CCC	CCC	CCC	CCC
2 EBIDA Interest Coverage (x)	BBB	B	CCC	CCC	CCC	D	D	D
3 Funds from operations/total debt (%)	AA	AA	AA	BB	BB	CCC	CCC	CCC
4 Free operating cash flow/total debt (%)	AA	AAA	AAA	A	A	BBB	BBB	BBB
5 Pretax return on capital (%)	CCC	B	B	B	D	D	D	CCC
6 Operating Income /sales (%)	BBB	CCC	CCC	BB	A	D	D	BBB
7 Long-term Debt/capital(%)	AAA	A	BB	B	B	D	D	D
8 Total debt/capitilisation (%)	A	BB	B	CCC	CCC	D	D	D

		30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
0,6	1 EBIT Interest Coverage (x)	10	8	10	10	10	10	10	10
0,9	2 EBIDA Interest Coverage (x)	4	8	10	10	10	12	12	12
0,3	3 Funds from operations/total debt (%)	2	2	2	6	6	10	10	10
0,5	4 Free operating cash flow/total debt (%)	2	1	1	3	3	4	4	4
0,3	5 Pretax return on capital (%)	10	8	8	8	12	12	12	10
0,3	6 Operating Income /sales (%)	4	10	10	6	3	12	12	4
0,3	7 Long-term Debt/capital(%)	1	3	6	8	8	12	12	12
1	8 Total debt/capitilisation (%)	3	6	8	10	10	12	12	12
###	**RR**	4,46	6,08	7,51	8,41	8,48	12,00	12,00	12,00
	Rating	**BBB-**	**BB**	**B+**	**B-**	**B-**	**D**	**D**	**D**

	Change in WC	0	-3	-2	-3	-2	0	0	0
	Change in Net Worth	0	0	0	-2	-1	0	0	0
	Net Profit or Loss	0	-3	-3	-1	-3	0	0	0
	Total	**0**	**-6**	**-5**	**-6**	**-6**	**0**	**0**	**0**
	Adjusted Rating	BBB-	B+	B	CCC	CCC	D	D	D
	Adjusted RR	**4,66**	**7,33**	**8**	**10**	**10**	**12,0**	**12,0**	**12,0**

Table A2-7 Köytaş Financial Information Report

	Köytaş Financial Information Report	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
	Balance Sheet								
	Current Assets (CA)	3.220.284	9.864.717	12.229.378	14.506.011	0	712.508	0	1.193.668
	Current Liabilities (CL)	2.043.915	3.446.711	3.167.116	5.224.545	0	2.108.203	0	2.354.720
	Working Capital (WC=CA-CL)	*1.176.369*	*6.418.006*	*9.062.262*	*9.281.466*	*0*	*-1.395.695*	*0*	*-1.161.052*
	Fixed Assets (FA)	702.382	1.401.677	1.809.433	2.216.563	0	1.996.206	0	1.985.920
	Long Term Debts(LTD)	622.384	2.960.184	5.261.471	6.677.124	0	7.018.899	0	8.296.978
	Fixed Worth (FW=FA-LTD)	*79.998*	*-1.558.507*	*-3.452.038*	*-4.460.561*	*0*	*-5.022.693*	*0*	*-6.311.058*
	Net Worth(NW=WC+FW)	*1.256.367*	*4.859.499*	*5.610.224*	*4.820.905*	*0*	*-6.418.388*	*0*	*-7.472.110*
	Income Statement								
	Sales for year	4.417.050	6.473.978	11.280.470	8.957.551	0	2.352.200	0	0
	Operating Profit (EBITDA)	949.088	1.336.070	2.751.890	-1.135.178	0	-4.783.551	0	-155.586
	Depreciation & Amortisation	0	0	160.800	312.237	0	3.327.938	0	0
	Bad Debts	0	0	0	0	0	0	0	0
	Income Taxes	-175.898	-194.043	-579.276	0	0	0	0	0
	Net Profit/loss	635.326	845.104	1.315.948	-569.461	0	-12.301.221	0	-1.053.977
	Dividends/drawings								
	Sundry adjustments (-net income)	-46.610	-196.074	-530.873	-756.276	0	4.032.387	0	-420.882
	Net capital Expenses								
	Interest Expense (I)	91.254	296.923	535.066	706.663	0	4.189.732	0	1.319.273
	Capitalised Interest(Inventories)	0	0	0	0	0	0	0	0
	Capitalised Interest(Fixed Assets)	0	0	0	217.759	0	0	0	0
	Interest Expense (COGS)	0	0	0	27.054	0	566.364	0	0
	Total Interest	91.254	296.923	535.066	951.476	0	4.756.096	0	1.319.273
		30.06.1997	**31.12.1997**	**30.06.1998**	**31.12.1998**	**30.06.1999**	**31.12.1999**	**30.06.2000**	**31.12.2000**
	1 EBIT Interest Coverage (x)	10,40	4,50	4,84	-1,52		-1,71		-0,12
	2 EBIDA Interest Coverage (x)	10,40	4,50	5,14	-1,19		-1,01		-0,12
	3 Funds from operations/total debt (%)	35,60	20,85	32,65	-9,54		-52,41		-1,46
	4 Free operating cash flow/total debt (%)	35,60	-60,96	1,28	-11,38		-37,12		9,44
	5 Pretax return on capital (%)	14,04	8,41	9,06	0,82		-299,46		8,34
	6 Operating Income /sales (%)	21,49	20,64	24,40	-12,67		-203,36		
	7 Long-term Debt/capital(%)	33,13	37,86	48,40	58,07		1.168,82		1.005,86
	8 Total debt/capitilisation (%)	67,97	56,87	60,04	71,17		336,95		335,00
		30.06.1997	**31.12.1997**	**30.06.1998**	**31.12.1998**	**30.06.1999**	**31.12.1999**	**30.06.2000**	**31.12.2000**
	1 EBIT Interest Coverage (x)	AA	BBB	BBB	CCC	D	D	D	D
	2 EBIDA Interest Coverage (x)	AA	BB	BBB	D	D	D	D	D
	3 Funds from operations/total debt (%)	BBB	BB	BBB	CCC	D	D	D	D
	4 Free operating cash flow/total debt (%)	AA	D	BB	D	D	D	D	D
	5 Pretax return on capital (%)	BBB	B	BB	CCC	D	D	D	D
	6 Operating Income /sales (%)	AA	AA	AA	D	D	D	D	D
	7 Long-term Debt/capital(%)	A	A	BBB	BB	D	D	D	D
	8 Total debt/capitilisation (%)	B	BB	BB	B	D	D	D	D
		30.06.1997	**31.12.1997**	**30.06.1998**	**31.12.1998**	**30.06.1999**	**31.12.1999**	**30.06.2000**	**31.12.2000**
0,6	1 EBIT Interest Coverage (x)	2	4	4	10	12	12	12	12
0,9	2 EBIDA Interest Coverage (x)	2	6	4	12	12	12	12	12
0,3	3 Funds from operations/total debt (%)	4	6	4	10	12	12	12	12
0,5	4 Free operating cash flow/total debt (%)	2	12	6	12	12	12	12	12
0,3	5 Pretax return on capital (%)	4	8	6	10	12	12	12	12
0,3	6 Operating Income /sales (%)	2	2	2	12	12	12	12	12
0,3	7 Long-term Debt/capital(%)	3	3	4	6	12	12	12	12
1	8 Total debt/capitilisation (%)	8	6	6	8	12	12	12	12
4,00	**RR**	3,84	6,06	4,73	10,05	12,00	12,00	12,00	12,00
	Rating	**BBB+**	**BB**	**BBB-**	**CCC**	**D**	**D**	**D**	**D**
	Change in WC		1	1	0				
	Change in Net Worth		1	1	0				
	Net Profit or Loss		0	0	-2				
	Total	**0**	**2**	**2**	**-2**	**0**	**0**	**0**	**0**
	Adjusted Rating	BBB+	BB	BBB-	CCC	D	D	D	D
	Adjusted RR	**3,66**	**6**	**4,66**	**10**	**12**	**12,0**	**12,0**	**12,0**

Table A2- 8 Tümteks Financial Information Report

	Financial Information Report	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
	Balance Sheet								
	Current Assets (CA)	8.554.368	14.051.339	19.904.557	15.690.253	10.853.664	1.142.652	772.668	608.748
	Current Liabilities (CL)	7.688.058	13.770.305	23.179.212	25.072.289	29.009.037	35.227.920	43.170.126	50.199.804
	Working Capital (WC=CA-CL)	*866.310*	*281.034*	*-3.274.655*	*-9.382.036*	*-18.155.373*	*-34.085.268*	*-42.397.458*	*-49.591.056*
	Fixed Assets (FA)	3.204.961	4.458.593	5.358.907	5.764.256	7.306.463	8.402.662	10.620.434	11.015.026
	Long Term Debts(LTD)	2.219.634	2.577.030	3.475.017	3.749.426	4.319.830	7.266.666	7.744.596	6.830.282
	Fixed Worth (FW=FA-LTD)	*985.327*	*1.881.563*	*1.883.890*	*2.014.830*	*2.986.633*	*1.135.996*	*2.875.838*	*4.184.744*
	Net Worth(NW=WC+FW)	*1.851.637*	*2.162.597*	*-1.390.765*	*-7.367.206*	*-15.168.740*	*-32.949.272*	*-39.521.620*	*-45.406.312*
	Income Statement								
	Sales for year	8.349.610	13.407.502	18.229.398	16.922.388	3.693.406	3.862.996	5.378.168	2.850.555
	Operating Profit (EBITDA)	3.223.670	4.831.003	2.653.818	1.054.489	-539.575	-8.225.740	856.594	553.850
	Depreciation & Amortisation	0	519.035	439.082	519.035	728.556	939.124	1.167.342	1.354.109
	Bad Debts	0	0	0	7.386	7.386	488.231	488.231	488.231
	Income Taxes	-43.184	-124.923	0	0	0	0	0	0
	Net Profit/loss	275.996	334.747	-8.663.900	-10.506.234	-17.645.716	-27.794.160	-16.837.752	-16.046.798
	Dividends/drawings								
	Sundry adjustments (-net income)	-498.770	-1.061.242	2.101.640	131.435	-302.953	84.634	-687.254	-645.325
	Net capital Expenses								
	Interest Expense (I)	2.405.720	3.852.298	10.878.636	11.041.688	16.680.538	18.629.296	16.527.004	15.246.539
	Capitalised Interest(Inventories)	0	0	0	0	0	0	0	0
	Capitalised Interest(Fixed Assets)	0	0	2.126	1.511	0	0	0	0
	Interest Expense (COGS)	0	0	0	0	0	0	0	0
	Total Interest	2.405.720	3.852.298	10.880.762	11.043.199	16.680.538	18.629.296	16.527.004	15.246.539
		30.06.1997	**31.12.1997**	**30.06.1998**	**31.12.1998**	**30.06.1999**	**31.12.1999**	**30.06.2000**	**31.12.2000**
	1 EBIT Interest Coverage (x)	1,34	1,12	0,20	0,05	-0,08	-0,49	-0,02	-0,05
	2 EBIDA Interest Coverage (x)	1,34	1,25	0,24	0,10	-0,03	-0,44	0,05	0,04
	3 Funds from operations/total debt (%)	32,54	29,55	9,96	3,66	-1,62	-19,36	1,68	0,97
	4 Free operating cash flow/total debt (%)	32,54	33,13	23,30	24,85	24,70	18,13	18,01	13,58
	5 Pretax return on capital (%)	22,44	21,95	8,77	2,50	-5,31	-96,01	-2,73	-6,88
	6 Operating Income /sales (%)	38,61	36,03	14,56	6,23	-14,61	-212,94	15,93	19,43
	7 Long-term Debt/capital(%)	54,52	54,37	166,73	-103,64	-39,82	-28,29	-24,37	-17,71
	8 Total debt/capitilisation (%)	84,25	88,32	105,51	134,34	183,53	445,19	446,89	490,63
		30.06.1997	**31.12.1997**	**30.06.1998**	**31.12.1998**	**30.06.1999**	**31.12.1999**	**30.06.2000**	**31.12.2000**
	1 EBIT Interest Coverage (x)	B	B	CCC	CCC	CCC	CCC	CCC	CCC
	2 EBIDA Interest Coverage (x)	CCC	CCC	D	D	D	D	D	D
	3 Funds from operations/total debt (%)	BBB	BBB	B	CCC	D	D	D	D
	4 Free operating cash flow/total debt (%)	AA	AA	AA	AA	AA	A	A	A
	5 Pretax return on capital (%)	AA	AA	B	CCC	D	D	D	D
	6 Operating Income /sales (%)	AAA	AAA	BBB	CCC	D	D	BBB	A
	7 Long-term Debt/capital(%)	BB	BB	D	D	D	D	D	D
	8 Total debt/capitilisation (%)	CCC	CCC	D	D	D	D	D	D
		30.06.1997	**31.12.1997**	**30.06.1998**	**31.12.1998**	**30.06.1999**	**31.12.1999**	**30.06.2000**	**31.12.2000**
0,6	1 EBIT Interest Coverage (x)	8	8	10	10	10	10	10	10
0,9	2 EBIDA Interest Coverage (x)	10	10	12	12	12	12	12	12
0,3	3 Funds from operations/total debt (%)	4	4	8	10	12	12	12	12
0,5	4 Free operating cash flow/total debt (%)	2	2	2	2	2	3	3	3
0,3	5 Pretax return on capital (%)	2	2	8	10	12	12	12	12
0,3	6 Operating Income /sales (%)	1	1	4	10	12	12	4	3
0,3	7 Long-term Debt/capital(%)	6	6	12	12	12	12	12	12
1	8 Total debt/capitilisation (%)	10	10	12	12	12	12	12	12
4,00	**RR**	7,04	7,04	9,53	10,18	12,00	12,00	12,00	12,00
	Rating	**BB-**	**BB-**	**CCC**	**CCC**	**D**	**D**	**D**	**D**
	Change in WC		-2	-3					
	Change in Net Worth		1	-3					
	Net Profit or Loss		1	-3					
	Total	**0**	**0**	**-9**	**0**	**0**	**0**	**0**	**0**
	Adjusted Rating	BB-	BB-	D	D	D	D	D	D
	Adjusted RR	**6,66**	**6,66**	**12**	**12**	**12**	**12,0**	**12,0**	**12,0**

Table A2- 9 Derimod Financial Information Report

	Financial Information Report	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
	Balance Sheet								
	Current Assets (CA)	3.003.479	3.063.079	3.117.916	4.613.284	4.129.858	4.655.992	5.332.734	7.342.614
	Current Liabilities (CL)	2.853.676	2.961.838	2.838.308	4.252.886	3.029.443	3.162.908	2.553.708	4.400.962
	Working Capital (WC=CA-CL)	*149.803*	*101.241*	*279.608*	*360.398*	*1.100.415*	*1.493.084*	*2.779.026*	*2.941.652*
	Fixed Assets (FA)	392.690	523.318	672.509	880.672	881.955	982.472	1.125.055	1.176.372
	Long Term Debts(LTD)	31.674	42.300	40.096	36.168	576.227	692.128	305.454	265.841
	Fixed Worth (FW=FA-LTD)	*361.016*	*481.018*	*632.413*	*844.504*	*305.728*	*290.344*	*819.601*	*910.531*
	Net Worth(NW=WC+FW)	*510.819*	*582.259*	*912.021*	*1.204.902*	*1.406.143*	*1.783.428*	*3.598.627*	*3.852.183*
	Income Statement								
	Sales for year	4.136.018	4.722.291	3.187.682	4.443.050	3.811.682	5.165.479	5.454.354	7.439.042
	Operating Profit (EBITDA)	1.179.204	1.314.463	1.134.898	1.669.849	934.606	1.419.969	856.006	748.014
	Depreciation & Amortisation	112.704	85.595	157.256	152.241	189.042	236.801	292.960	352.974
	Bad Debts	0	0	30.689	15.737	3.190	0	0	0
	Income Taxes	134.530	54.849	0	27.524	112.682	256.873	104.030	152.336
	Net Profit/loss	207.220	56.088	-462.638	-110.327	36.156	181.443	72.924	31.703
	Dividends/drawings								
	Sundry adjustments (-net income)	-144.816	-245.320	-309.682	-396.534	-50.412	-26.363	-30.532	424.522
	Net capital Expenses								
	Interest Expense (I)	724.750	1.117.931	1.440.280	1.600.411	754.130	744.852	386.092	139.453
	Capitalised Interest(Inventories)	0	0	0	0	0	0	0	0
	Capitalised Interest(Fixed Assets)	0	0	0	0	0	0	0	0
	Interest Expense (COGS)	0	0	0	0	0	0	0	0
	Total Interest	724.750	1.117.931	1.440.280	1.600.411	754.130	744.852	386.092	139.453

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
1 EBIT Interest Coverage (x)	1,47	1,10	0,68	0,95	0,99	1,59	1,46	2,83
2 EBIDA Interest Coverage (x)	1,63	1,18	0,79	1,04	1,24	1,91	2,22	5,36
3 Funds from operations/total debt (%)	40,87	43,76	39,43	38,93	25,92	36,83	29,94	16,03
4 Free operating cash flow/total debt (%)	40,87	45,37	33,23	37,05	5,40	26,65	-15,04	12,54
5 Pretax return on capital (%)	31,40	34,26	25,79	27,62	18,02	20,98	8,72	3,80
6 Operating Income /sales (%)	28,51	27,84	35,60	37,58	24,52	27,49	15,69	10,06
7 Long-term Debt/capital(%)	5,84	6,77	4,21	2,91	29,07	27,96	7,82	6,46
8 Total debt/capitilisation (%)	84,96	83,76	75,94	78,07	71,94	68,37	44,27	54,78

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
1 EBIT Interest Coverage (x)	BB	B	B	B	B	BB	BB	BBB
2 EBIDA Interest Coverage (x)	B	CCC	CCC	CCC	CCC	B	B	BBB
3 Funds from operations/total debt (%)	A	A	A	A	BBB	A	BBB	BB
4 Free operating cash flow/total debt (%)	AA	AA	AA	AA	BBB	AA	CCC	A
5 Pretax return on capital (%)	AAA	AAA	AA	AA	A	AA	BB	CCC
6 Operating Income /sales (%)	AAA	AAA	AAA	AAA	AA	AAA	BBB	B
7 Long-term Debt/capital(%)	AAA	AAA	AAA	AAA	AA	AA	AAA	AAA
8 Total debt/capitilisation (%)	CCC	CCC	B	B	B	BB	A	BBB

		30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
0,6	1 EBIT Interest Coverage (x)	6	8	8	8	8	6	6	4
0,9	2 EBIDA Interest Coverage (x)	8	10	10	10	10	8	8	4
0,3	3 Funds from operations/total debt (%)	3	3	3	3	4	3	4	6
0,5	4 Free operating cash flow/total debt (%)	2	2	2	2	4	2	10	3
0,3	5 Pretax return on capital (%)	1	1	2	2	3	2	6	10
0,3	6 Operating Income /sales (%)	1	1	1	1	2	1	4	8
0,3	7 Long-term Debt/capital(%)	1	1	1	1	2	2	1	1
1	8 Total debt/capitilisation (%)	10	10	8	8	8	6	3	4
4,00	**RR**	5,84	6,59	6,15	6,15	6,64	4,96	5,56	4,48
	Rating	BB	BB-	BB	BB	BB-	BBB-	BB+	BBB-
	Change in WC		0	1	1	2	1	3	0
	Change in Net Worth		0	1	1	1	1	3	0
	Net Profit or Loss		-1	-3	1	1	1	-2	0
	Total	**0**	**-1**	**-1**	**3**	**4**	**3**	**4**	**0**
	Adjusted Rating	BB	BB-	BB	BB+	BB	BBB	BBB-	BBB-
	Adjusted RR	**6**	**6,66**	**6**	**5,33**	**6**	**4,0**	**4,66**	**4,66**

Table A2- 10 Bossa Financial Information Report

	Financial Information Report	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
	Balance Sheet								
	Current Assets (CA)	18.544.784	23.889.342	33.738.946	47.607.588	52.735.398	73.554.542	77.921.060	88.057.600
	Current Liabilities (CL)	10.870.574	13.875.458	18.763.131	26.508.752	28.871.697	44.124.778	48.551.249	53.110.061
	Working Capital (WC=CA-CL)	*7.674.210*	*10.013.884*	*14.975.815*	*21.098.836*	*23.863.701*	*29.429.764*	*29.369.811*	*34.947.539*
	Fixed Assets (FA)	6.925.684	8.892.335	11.113.684	12.777.961	14.184.147	16.395.530	21.997.431	24.148.082
	Long Term Debts(LTD)	2.956.117	3.577.601	5.574.164	5.935.414	7.030.282	7.666.880	9.913.750	10.468.112
	Fixed Worth (FW=FA-LTD)	*3.969.567*	*5.314.734*	*5.539.520*	*6.842.547*	*7.153.865*	*8.728.650*	*12.083.681*	*13.679.970*
	Net Worth(NW=WC+FW)	*11.643.777*	*15.328.618*	*20.515.335*	*27.941.383*	*31.017.566*	*38.158.414*	*41.453.492*	*48.627.509*
	Income Statement								
	Sales for year	30.357.178	36.503.449	47.664.998	48.809.701	51.611.748	60.573.814	80.820.842	86.231.020
	Operating Profit (EBITDA)	8.145.358	10.084.558	14.642.454	16.696.183	22.318.512	27.204.383	20.869.728	22.426.219
	Depreciation & Amortisation	2.637.750	2.096.401	3.403.442	3.207.890	4.486.450	5.566.830	5.583.518	6.489.486
	Bad Debts	0	0	0	0	0	0	0	0
	Income Taxes	1.171.672	2.033.829	3.303.704	3.700.385	3.490.146	3.676.249	2.944.424	2.700.059
	Net Profit/loss	1.160.482	1.826.533	2.084.256	3.387.303	5.095.986	6.234.263	2.532.050	4.371.551
	Dividends/drawings								
	Sundry adjustments (-net income)	-6.284	-217.131	-3.550.082	-6.917.130	-18.810.172	-19.352.451	-17.402.132	-16.965.077
	Net capital Expenses								
	Interest Expense (I)	3.162.578	4.112.942	5.839.598	6.386.558	9.235.976	11.680.855	9.752.700	8.818.541
	Capitalised Interest(Inventories)		0	0	0	0	0	0	0
	Capitalised Interest(Fixed Assets)	0	0	0	0	0	0	0	0
	Interest Expense (COGS)	12.876	14.853	11.454	14.047	9.954	46.186	57.036	46.582
	Total Interest	3.175.454	4.127.795	5.851.052	6.400.605	9.245.930	11.727.041	9.809.736	8.865.123

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
1 EBIT Interest Coverage (x)	1,73	1,94	1,92	2,11	1,93	1,85	1,56	1,80
2 EBIDA Interest Coverage (x)	2,57	2,44	2,50	2,61	2,41	2,32	2,13	2,53
3 Funds from operations/total debt (%)	58,91	57,78	60,16	51,46	62,17	52,53	35,70	35,27
4 Free operating cash flow/total debt (%)	58,91	44,38	39,78	32,59	54,46	41,78	35,80	26,50
5 Pretax return on capital (%)	21,57	24,32	25,03	22,31	26,63	24,00	15,24	14,16
6 Operating Income /sales (%)	26,83	27,63	30,72	34,21	43,24	44,91	25,82	26,01
7 Long-term Debt/capital(%)	20,25	18,92	21,37	17,52	18,48	16,73	19,30	17,71
8 Total debt/capitilisation (%)	54,29	53,24	54,26	53,73	53,65	57,58	58,51	56,66

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
1 EBIT Interest Coverage (x)	BB	BB	BB	BB	BB	BB	BB	BB
2 EBIDA Interest Coverage (x)	BB	BB	BB	BB	B	B	B	BB
3 Funds from operations/total debt (%)	AA	AA	AA	AA	AA	A	BBB	BBB
4 Free operating cash flow/total debt (%)	AAA	AAA	AA	AA	AAA	AA	AA	AA
5 Pretax return on capital (%)	AA	AA	AA	AA	AA	AA	BBB	BBB
6 Operating Income /sales (%)	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
7 Long-term Debt/capital(%)	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
8 Total debt/capitilisation (%)	BBB	BBB	BBB	BBB	BBB	BBB	BBB	BBB

		30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
0,6	1 EBIT Interest Coverage (x)	6	6	6	6	6	6	6	6
0,9	2 EBIDA Interest Coverage (x)	6	6	6	6	8	8	8	6
0,3	3 Funds from operations/total debt (%)	2	2	2	2	2	3	4	4
0,5	4 Free operating cash flow/total debt (%)	1	1	2	2	1	2	2	2
0,3	5 Pretax return on capital (%)	2	2	2	2	2	2	4	4
0,3	6 Operating Income /sales (%)	1	1	1	1	1	1	1	1
0,3	7 Long-term Debt/capital(%)	1	1	1	1	1	1	1	1
1	8 Total debt/capitilisation (%)	4	4	4	4	4	4	4	4
###	**RR**	3,76	3,76	3,88	3,88	4,21	4,40	4,60	4,15
	Rating	**BBB+**	**BBB+**	**BBB+**	**BBB+**	**BBB**	**BBB-**	**BBB-**	**BBB**

Change in WC		1	1	1	1	1	1	1
Change in Net Worth		1	1	1	1	1	0	1
Net Profit or Loss		1	1	0	1	1	-2	1
Total	**0**	**3**	**3**	**2**	**3**	**3**	**-1**	**3**
Adjusted Rating	BBB+	A-	A-	BBB+	BBB+	BBB	BBB-	BBB+
Adjusted RR	**3,66**	**3,33**	**3,33**	**3,66**	**3,66**	**4,0**	**4,7**	**3,7**

Table A2- 11 Altınyıldız Financial Information Report

	Financial Information Report	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
	Balance Sheet								
	Current Assets (CA)	7.302.517	8.784.036	12.478.625	19.177.491	25.394.933	30.822.914	35.051.768	52.086.158
	Current Liabilities (CL)	5.613.093	6.846.770	9.421.111	15.015.841	21.487.870	27.692.966	31.445.324	45.694.986
	Working Capital (WC=CA-CL)	*1.689.424*	*1.937.266*	*3.057.514*	*4.161.650*	*3.907.063*	*3.129.948*	*3.606.444*	*6.391.172*
	Fixed Assets (FA)	3.203.620	4.115.032	5.960.494	7.022.410	8.547.935	12.036.900	15.361.577	17.358.724
	Long Term Debts(LTD)	799.227	1.013.100	1.156.925	1.497.254	1.992.601	3.268.015	4.450.131	6.740.933
	Fixed Worth (FW=FA-LTD)	*2.404.393*	*3.101.932*	*4.803.569*	*5.525.156*	*6.555.334*	*8.768.885*	*10.911.446*	*10.617.791*
	Net Worth(NW=WC+FW)	*4.093.817*	*5.039.198*	*7.861.083*	*9.686.806*	*10.462.397*	*11.898.833*	*14.517.890*	*17.008.963*
	Income Statement								
	Sales for year	11.569.050	15.912.153	24.192.908	27.831.072	33.450.508	42.708.246	51.700.654	62.655.498
	Operating Profit (EBITDA)	3.118.740	3.509.753	8.779.898	8.750.240	9.651.164	13.132.848	11.321.388	12.825.394
	Depreciation & Amortisation	0	0	1.486.162	1.614.066	1.938.378	2.941.572	3.046.176	4.194.192
	Bad Debts	0	0	0	28.157	30.054	36.520	32.223	44.430
	Income Taxes	377.856	255.533	1.414.570	1.460.340	341.464	406.901	0	262.609
	Net Profit/loss	1.273.578	930.847	2.608.368	2.069.997	1.296.546	654.215	327.682	372.007
	Dividends/drawings								
	Sundry adjustments (-net income)	-666.706	-190.380	-1.256.546	-226.000	-284.930	-835.886	-3.395.390	-2.042.375
	Net capital Expenses								
	Interest Expense (I)	1.467.306	2.704.133	3.270.798	3.605.837	6.074.776	8.712.217	3.973.765	7.996.586
	Capitalised Interest(Inventories)	0	0	28.640	22.476	0	42.112	285.450	262.574
	Capitalised Interest(Fixed Assets)	0	0	0	0	0	0	0	0
	Interest Expense (COGS)	0	0	0	0	0	0	0	0
	Total Interest	1.467.306	2.704.133	3.299.438	3.628.313	6.074.776	8.754.329	4.259.215	8.259.160

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
1 EBIT Interest Coverage (x)	2,13	1,30	2,21	1,97	1,27	1,16	1,94	1,05
2 EBIDA Interest Coverage (x)	2,13	1,30	2,66	2,41	1,59	1,50	2,66	1,55
3 Funds from operations/total debt (%)	48,64	44,65	83,00	52,99	41,10	42,42	31,54	24,46
4 Free operating cash flow/total debt (%)	48,64	41,50	72,41	46,30	42,19	44,93	30,21	19,15
5 Pretax return on capital (%)	29,68	30,16	39,56	27,24	22,72	22,80	8,53	12,43
6 Operating Income /sales (%)	26,96	22,06	36,29	31,44	28,85	30,75	21,90	20,47
7 Long-term Debt/capital(%)	16,33	16,74	12,83	13,39	16,00	21,55	23,46	28,38
8 Total debt/capitilisation (%)	61,03	60,93	57,37	63,03	69,18	72,24	71,20	75,51

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
1 EBIT Interest Coverage (x)	BB	B	BB	BB	B	B	BB	B
2 EBIDA Interest Coverage (x)	B	CCC	BB	B	B	B	BB	B
3 Funds from operations/total debt (%)	A	A	AA	A	A	A	BBB	BB
4 Free operating cash flow/total debt (%)	AA	AA	AAA	AA	AA	AA	AA	A
5 Pretax return on capital (%)	AAA	AAA	AAA	AA	AA	AA	B	BB
6 Operating Income /sales (%)	AAA	AA	AAA	AAA	AAA	AAA	AA	AA
7 Long-term Debt/capital(%)	AAA	AAA	AAA	AAA	AAA	AAA	AA	AA
8 Total debt/capitilisation (%)	BB	BB	BB	BB	B	B	B	B

		30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
0,6	1 EBIT Interest Coverage (x)	6	8	6	6	8	8	6	8
0,9	2 EBIDA Interest Coverage (x)	8	10	6	8	8	8	6	8
0,3	3 Funds from operations/total debt (%)	3	3	2	3	3	3	4	6
0,45	4 Free operating cash flow/total debt (%)	2	2	1	2	2	2	2	3
0,25	5 Pretax return on capital (%)	1	1	1	2	2	2	8	6
0,25	6 Operating Income /sales (%)	1	2	1	1	1	1	2	2
0,25	7 Long-term Debt/capital(%)	1	1	1	1	1	1	2	2
1	8 Total debt/capitilisation (%)	6	6	6	6	8	8	8	8
4,00	**RR**	4,84	5,65	4,20	4,90	5,70	5,70	5,53	6,41
	Rating	BBB-	BB+	BBB	BBB-	BB	BB	BB+	BB-
	Change in WC		0	2	2	-1	0	1	1
	Change in Net Worth		3	1	1	0	0	1	1
	Net Profit or Loss		-1	2	0	0	-2	-1	0
	Total	**0**	**2**	**5**	**3**	**-1**	**-2**	**1**	**2**
	Adjusted Rating	BBB-	BB+	BBB+	BBB	BB	BB	BB+	BB-
	Adjusted RR	**4,66**	**5,33**	**3,66**	**4,00**	**6,00**	**6,00**	**5,33**	**6,66**

Table A2-12 Raks Financial Information Report

	Financial Information Report	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
	Balance Sheet								
	Current Assets (CA)	9.933.519	16.769.046	23.727.078	12.769.332	16.282.351	2.765.937	3.290.052	7.698.966
	Current Liabilities (CL)	6.191.292	11.334.295	17.079.256	18.128.465	29.653.135	14.160.336	11.870.801	18.860.418
	Working Capital (WC=CA-CL)	*3.742.227*	*5.434.751*	*6.647.822*	*-5.359.133*	*-13.370.784*	*-11.394.399*	*-8.580.749*	*-11.161.452*
	Fixed Assets (FA)	7.254.067	9.167.605	12.875.840	23.911.015	27.204.727	31.738.278	37.952.624	43.496.240
	Long Term Debts(LTD)	4.072.169	5.828.120	7.242.614	7.453.213	7.183.544	34.483.097	49.551.333	57.714.034
	Fixed Worth (FW=FA-LTD)	*3.181.898*	*3.339.485*	*5.633.226*	*16.457.802*	*20.021.183*	*-2.744.819*	*-11.598.709*	*-14.217.794*
	Net Worth(NW=WC+FW)	*6.924.125*	*8.774.236*	*12.281.048*	*11.098.669*	*6.650.399*	*-14.139.218*	*-20.179.458*	*-25.379.246*
	Income Statement								
	Sales for year	17.442.058	20.851.532	30.020.440	28.307.095	20.789.438	14.766.459	2.661.096	7.480.505
	Operating Profit (EBITDA)	8.802.758	8.054.180	13.516.776	8.365.314	4.122.468	-10.575.776	-492.222	-605.112
	Depreciation & Amortisation	0	0	1.917.742	1.834.356	2.108.552	2.582.361	3.336.558	4.195.623
	Bad Debts	0	0	0	2.285.675	1.109.000	9.074.557	9.956.872	8.677.503
	Income Taxes	1.210.306	1.090.298	1.558.278	101.916	0	0	0	0
	Net Profit/loss	2.601.440	1.721.284	2.102.732	-2.155.270	-15.640.474	-32.498.178	-22.988.308	-21.699.295
	Dividends/drawings								
	Sundry adjustments (-net income)	-1.006.734	-775.496	-1.244.104	1.277.182	-1.829.820	6.241.106	252.910	3.707.934
	Net capital Expenses								
	Interest Expense (I)	4.991.012	5.242.598	7.938.024	8.584.312	17.654.390	19.340.041	19.159.528	16.898.560
	Capitalised Interest(Inventories)	0	0	0	0	0	0	0	0
	Capitalised Interest(Fixed Assets)	0	0	0	0	0	0	0	0
	Interest Expense (COGS)	0	0	0	0	0	0	0	0
	Total Interest	4.991.012	5.242.598	7.938.024	8.584.312	17.654.390	19.340.041	19.159.528	16.898.560
		30.06.1997	**31.12.1997**	**30.06.1998**	**31.12.1998**	**30.06.1999**	**31.12.1999**	**30.06.2000**	**31.12.2000**
	1 EBIT Interest Coverage (x)	1,76	1,54	1,46	0,76	0,11	-0,68	-0,20	-0,28
	2 EBIDA Interest Coverage (x)	1,76	1,54	1,70	0,97	0,23	-0,55	-0,03	-0,04
	3 Funds from operations/total debt (%)	85,77	46,93	55,57	32,70	11,19	-21,74	-0,80	-0,79
	4 Free operating cash flow/total debt (%)	85,77	37,07	50,59	79,64	32,94	-25,80	-5,38	2,58
	5 Pretax return on capital (%)	51,22	31,05	31,69	17,81	4,63	-38,13	-9,28	-9,38
	6 Operating Income /sales (%)	50,47	38,63	45,03	29,55	19,83	-71,62	-18,50	-8,09
	7 Long-term Debt/capital(%)	37,03	39,91	37,10	40,17	51,93	169,50	168,70	178,49
	8 Total debt/capitilisation (%)	59,71	66,17	66,45	69,74	84,71	140,98	148,93	149,57
		30.06.1997	**31.12.1997**	**30.06.1998**	**31.12.1998**	**30.06.1999**	**31.12.1999**	**30.06.2000**	**31.12.2000**
	1 EBIT Interest Coverage (x)	BB	B	B	B	CCC	D	D	D
	2 EBIDA Interest Coverage (x)	B	B	B	CCC	CCC	D	D	D
	3 Funds from operations/total debt (%)	AA	AA	AA	BBB	B	D	D	D
	4 Free operating cash flow/total debt (%)	AAA	AA	AAA	AAA	AA	D	D	D
	5 Pretax return on capital (%)	AAA	AAA	AAA	A	B	D	D	D
	6 Operating Income /sales (%)	AAA	AAA	AAA	AAA	A	D	D	D
	7 Long-term Debt/capital(%)	A	BBB	A	BBB	BB	D	D	D
	8 Total debt/capitilisation (%)	BB	BB	BB	BB	CCC	D	D	D
		30.06.1997	**31.12.1997**	**30.06.1998**	**31.12.1998**	**30.06.1999**	**31.12.1999**	**30.06.2000**	**31.12.2000**
0,6	1 EBIT Interest Coverage (x)	6	8	8	8	10	12	12	12
0,9	2 EBIDA Interest Coverage (x)	8	8	8	10	10	12	12	12
0,3	3 Funds from operations/total debt (%)	2	2	2	4	8	12	12	12
0,45	4 Free operating cash flow/total debt (%)	1	2	1	1	2	12	12	12
0,25	5 Pretax return on capital (%)	1	1	1	3	8	12	12	12
0,25	6 Operating Income /sales (%)	1	1	1	1	3	12	12	12
0,25	7 Long-term Debt/capital(%)	3	4	3	4	6	12	12	12
1	8 Total debt/capitilisation (%)	6	6	6	6	10	12	12	12
4,00	**RR**	4,78	5,25	5,08	5,86	8,14	12,00	12,00	12,00
	Rating	**BBB-**	**BB+**	**BB+**	**BB**	**B**	**D**	**D**	**D**
	Change in WC			1	-3	-3			
	Change in Net Worth			1		-3			
	Net Profit or Loss			1	-3	-3			
	Total	**0**	**0**	**3**	**-6**	**-9**	**0**	**0**	**0**
	Adjusted Rating	BBB-	BB+	BBB-	B+	CCC	D	D	D
	Adjusted RR	**4,66**	**5,33**	**4,66**	**7,33**	**10**	**12,0**	**12,0**	**12,0**

Table A2- 13 Arçelik Financial Information Report

	Financial Information Report	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
	Balance Sheet								
	Current Assets (CA)	53.253.059	72.662.360	102.783.487	115.017.837	215.426.736	312.293.701	395.235.927	503.800.642
	Current Liabilities (CL)	21.480.408	27.286.862	42.874.033	37.218.910	97.059.320	136.683.648	190.249.647	280.673.209
	Working Capital (WC=CA-CL)	*31.772.651*	*45.375.498*	*59.909.454*	*77.798.927*	*118.367.416*	*175.610.053*	*204.986.280*	*223.127.433*
	Fixed Assets (FA)	17.904.213	25.465.481	32.553.811	42.541.550	58.874.915	94.310.002	115.335.516	133.038.279
	Long Term Debts(LTD)	16.462.125	23.598.180	28.997.512	34.232.744	46.043.972	65.882.471	69.538.543	65.745.293
	Fixed Worth (FW=FA-LTD)	*1.442.088*	*1.867.301*	*3.556.299*	*8.308.806*	*12.830.943*	*28.427.531*	*45.796.973*	*67.292.986*
	Net Worth(NW=WC+FW)	*33.214.739*	*47.242.799*	*63.465.753*	*86.107.733*	*131.198.359*	*204.037.584*	*250.783.253*	*290.420.419*
	Income Statement								
	Sales for year	133.286.404	165.285.988	236.226.936	274.200.747	393.606.380	569.304.286	798.801.912	864.876.778
	Operating Profit (EBITDA)	40.147.497	43.612.937	57.835.140	61.695.392	106.651.122	150.006.078	187.287.502	167.539.938
	Depreciation & Amortisation	9.103.020	10.681.963	16.264.784	16.049.005	23.322.168	33.464.136	43.619.976	47.970.088
	Bad Debts	78.541	0	0	0	0	1.120.373	1.120.373	2.963.844
	Income Taxes	5.001.604	4.885.425	4.960.992	4.871.898	11.391.224	22.744.946	37.056.234	29.478.902
	Net Profit/loss	17.711.940	18.401.661	19.692.632	25.646.628	45.112.860	61.253.949	82.750.538	63.316.720
	Dividends/drawings								
	Sundry adjustments (-net income)	-2.479.764	-2.994.356	-11.259.106	-6.137.324	-28.062.018	-29.674.095	-31.619.210	-12.113.233
	Net capital Expenses								
	Interest Expense (I)	8.138.610	9.507.658	16.610.006	14.808.096	26.288.736	32.164.782	23.040.084	19.969.289
	Capitalised Interest(Inventories)								
	Capitalised Interest(Fixed Assets)	1.296.717	3.694.094	182.098	677.989	2.891.616	3.709.758	0	0
	Interest Expense (COGS)	192.323	136.230	306.726	319.765	536.134	378.265	820.670	6.804.939
	Total Interest	9.627.650	13.337.982	17.098.830	15.805.850	29.716.486	36.252.805	23.860.754	26.774.228

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
1 EBIT Interest Coverage (x)	3,22	2,47	2,43	2,89	2,80	3,21	6,02	4,47
2 EBIDA Interest Coverage (x)	4,17	3,27	3,38	3,90	3,59	4,14	7,85	6,26
3 Funds from operations/total debt (%)	105,81	85,71	80,47	86,35	74,53	74,05	72,09	48,36
4 Free operating cash flow/total debt (%)	105,81	58,98	60,25	61,31	46,18	45,79	60,78	43,13
5 Pretax return on capital (%)	43,36	33,42	30,49	28,77	30,18	28,57	27,98	17,71
6 Operating Income /sales (%)	30,12	26,39	24,48	22,50	27,10	26,35	23,45	19,37
7 Long-term Debt/capital(%)	33,14	33,31	31,36	28,45	25,98	24,41	21,71	18,46
8 Total debt/capitilisation (%)	53,32	51,86	53,11	45,35	52,17	49,82	50,88	54,40

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
1 EBIT Interest Coverage (x)	BBB	BB	BB	BBB	BBB	BBB	A	BBB
2 EBIDA Interest Coverage (x)	BB	BB	BB	BB	BB	BB	A	BBB
3 Funds from operations/total debt (%)	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AA
4 Free operating cash flow/total debt (%)	AAA	AAA	AAA	AAA	AA	AA	AAA	AA
5 Pretax return on capital (%)	AAA	AAA	AAA	AA	AAA	AA	AA	A
6 Operating Income /sales (%)	AAA	AAA	AA	AA	AAA	AAA	AA	A
7 Long-term Debt/capital(%)	A	A	A	AA	AA	AA	AA	AAA
8 Total debt/capitilisation (%)	BBB	BBB	BBB	A	BBB	BBB	BBB	BBB

		30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
0,6	1 EBIT Interest Coverage (x)	4	6	6	4	4	4	3	4
0,9	2 EBIDA Interest Coverage (x)	6	6	6	6	6	6	3	4
0,3	3 Funds from operations/total debt (%)	1	1	1	1	1	1	1	2
0,45	4 Free operating cash flow/total debt (%)	1	1	1	1	2	2	1	2
0,25	5 Pretax return on capital (%)	1	1	1	2	1	2	2	3
0,25	6 Operating Income /sales (%)	1	1	2	2	1	1	2	3
0,25	7 Long-term Debt/capital(%)	3	3	3	2	2	2	2	1
1	8 Total debt/capitilisation (%)	4	4	4	3	4	4	4	4
4,00	**RR**	3,45	3,75	3,81	3,26	3,50	3,56	2,69	3,31
	Rating	**A-**	**BBB+**	**BBB+**	**A-**	**BBB+**	**BBB+**	**A+**	**A-**
	Change in WC		1	2	1	2	1	1	1
	Change in Net Worth		1	1	1	2	1	1	1
	Net Profit or Loss		1	0	1	1	1	0	-1
	Total	**0**	**3**	**3**	**3**	**5**	**3**	**2**	**1**
	Adjusted Rating	A-	A-	A-	A	A-	A-	A+	A-
	Adjusted RR	**3,33**	**3,33**	**3,33**	**3**	**3,33**	**3,3**	**2,7**	**3,3**

Table A2- 14 Vestel Financial Information Report

	Financial Information Report	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
	Balance Sheet								
	Current Assets (CA)	33.773.507	72.496.518	94.896.398	123.903.135	169.600.837	245.093.517	381.982.111	466.180.586
	Current Liabilities (CL)	24.032.527	61.977.509	81.407.228	105.333.640	138.711.681	205.845.012	236.957.643	326.110.973
	Working Capital (WC=CA-CL)	*9.740.980*	*10.519.009*	*13.489.170*	*18.569.495*	*30.889.156*	*39.248.505*	*145.024.468*	*140.069.613*
	Fixed Assets (FA)	2.400.729	9.806.192	22.365.112	21.684.838	24.165.953	38.688.940	46.322.221	69.906.577
	Long Term Debts(LTD)	578.940	3.246.049	10.166.278	7.606.013	8.055.937	5.241.662	5.330.578	5.001.237
	Fixed Worth (FW=FA-LTD)	*1.821.789*	*6.560.143*	*12.198.834*	*14.078.825*	*16.110.016*	*33.447.278*	*40.991.643*	*64.905.340*
	Net Worth(NW=WC+FW)	*11.562.769*	*17.079.152*	*25.688.004*	*32.648.320*	*46.999.172*	*72.695.783*	*186.016.111*	*204.974.953*
	Income Statement								
	Sales for year	45.852.268	80.089.938	176.051.312	188.437.980	259.803.468	312.451.808	446.878.552	496.586.703
	Operating Profit (EBITDA)	9.776.190	22.334.905	52.413.700	53.210.711	86.923.376	97.331.383	69.887.045	108.540.248
	Depreciation & Amortisation	517.894	541.503	906.422	1.830.467	1.881.008	3.523.085	3.705.314	5.297.650
	Bad Debts	528	530	0	637	54.725	0	0	0
	Income Taxes	2.011.242	1.789.747	5.681.942	4.251.394	5.333.210	4.297.715	11.455.140	14.432.504
	Net Profit/loss	3.548.254	7.610.940	17.032.234	15.476.433	28.701.702	28.919.912	46.027.508	42.428.511
	Dividends/drawings								
	Sundry adjustments (-net income)	-1.108.230	-2.679.699	-6.639.120	-10.085.620	-9.580.646	-21.491.134	-19.891.980	-24.865.626
	Net capital Expenses								
	Interest Expense (I)	3.698.800	11.276.376	28.793.102	31.652.417	51.007.456	60.590.671	54.988.834	46.381.583
	Capitalised Interest(Inventories)						5.442.589	424.226	736.133
	Capitalised Interest(Fixed Assets)	2.277.608	0	868.946	2.250.320	193.256	549.623	131.674	670.488
	Interest Expense (COGS)	0	1.116.339	0	0	0	0	0	0
	Total Interest	5.976.408	12.392.715	29.662.048	33.902.737	51.200.712	66.582.883	55.544.734	47.788.204

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
1 EBIT Interest Coverage (x)	1,55	1,76	1,74	1,52	1,66	1,41	1,19	2,16
2 EBIDA Interest Coverage (x)	1,64	1,80	1,77	1,57	1,70	1,46	1,26	2,27
3 Funds from operations/total debt (%)	39,72	34,24	57,24	47,11	59,23	46,11	28,84	32,78
4 Free operating cash flow/total debt (%)	39,72	33,05	53,99	42,62	50,83	42,15	-14,81	34,28
5 Pretax return on capital (%)	25,59	25,12	43,93	35,29	43,89	33,06	26,26	19,26
6 Operating Income /sales (%)	21,32	27,89	29,77	28,24	33,46	31,15	15,64	21,86
7 Long-term Debt/capital(%)	4,77	15,97	28,35	18,89	14,63	6,73	2,79	2,38
8 Total debt/capitilisation (%)	68,04	79,25	78,09	77,57	75,74	74,38	56,57	61,76

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
1 EBIT Interest Coverage (x)	BB	BB	BB	BB	BB	B	B	BB
2 EBIDA Interest Coverage (x)	B	B	B	B	B	CCC	CCC	B
3 Funds from operations/total debt (%)	A	BBB	AA	A	AA	A	BBB	BBB
4 Free operating cash flow/total debt (%)	AA	AA	AA	AA	AA	AA	CCC	AA
5 Pretax return on capital (%)	AA	AA	AAA	AAA	AAA	AAA	AA	A
6 Operating Income /sales (%)	AA	AAA	AAA	AAA	AAA	AAA	BB	AA
7 Long-term Debt/capital(%)	AAA	AAA	AA	AAA	AAA	AAA	AAA	AAA
8 Total debt/capitilisation (%)	BB	B	B	B	B	B	BB	BB

		30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
1	1 EBIT Interest Coverage (x)	6	6	6	6	6	8	8	6
1	2 EBIDA Interest Coverage (x)	8	8	8	8	8	10	10	8
0	3 Funds from operations/total debt (%)	3	4	2	3	2	3	4	4
0	4 Free operating cash flow/total debt (%)	2	2	2	2	2	2	10	2
0	5 Pretax return on capital (%)	2	2	1	1	1	1	2	3
0	6 Operating Income /sales (%)	2	1	1	1	1	1	6	2
0	7 Long-term Debt/capital(%)	1	1	2	1	1	1	1	1
1	8 Total debt/capitilisation (%)	6	8	8	8	8	8	6	6
##	**RR**	4,96	5,48	5,33	5,34	5,26	6,09	6,94	5,10
	Rating	**BB+**	**BB**	**BB+**	**BB**	**BB+**	**BB-**	**B+**	**BB+**
	Change in WC		1	1	1	1	1	3	-1
	Change in Net Worth		1	1	1	1	2	2	1
	Net Profit or Loss		1	1	-1	1	0	1	-1
	Total	**0**	**3**	**3**	**1**	**3**	**3**	**6**	**-1**
	Adjusted Rating		**BB+**	**BBB-**	**BB**	**BBB-**	**BB**	**BB**	**BB+**
	Adjusted RR	**6**	**5,33**	**4,66**	**6**	**4,66**	**6,0**	**6,0**	**5,3**

Table A2- 15 Bosh Profilo Financial Information Report

	Financial Information Report	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
	Balance Sheet								
	Current Assets (CA)	21.700.967	36.104.081	57.907.162	83.856.381	98.544.421	120.926.283	167.013.312	227.831.919
	Current Liabilities (CL)	16.779.560	28.754.283	38.593.603	50.689.457	52.949.746	81.276.153	87.005.007	139.167.178
	Working Capital (WC=CA-CL)	*4.921.407*	*7.349.798*	*19.313.559*	*33.166.924*	*45.594.675*	*39.650.130*	*80.008.305*	*88.664.741*
	Fixed Assets (FA)	3.088.550	5.310.986	9.261.150	15.745.097	17.885.606	27.141.123	30.948.972	35.169.398
	Long Term Debts(LTD)	1.677.535	3.481.421	16.343.967	29.591.610	39.599.530	35.183.242	71.281.103	73.587.706
	Fixed Worth (FW=FA-LTD)	*1.411.015*	*1.829.565*	*-7.082.817*	*-13.846.513*	*-21.713.924*	*-8.042.119*	*-40.332.131*	*-38.418.308*
	Net Worth(NW=WC+FW)	*6.332.422*	*9.179.363*	*12.230.742*	*19.320.411*	*23.880.751*	*31.608.011*	*39.676.174*	*50.246.433*
	Income Statement								
	Sales for year	49.963.520	65.340.182	113.655.932	131.316.892	173.627.620	199.675.877	266.152.152	309.610.964
	Operating Profit (EBITDA)	10.585.972	13.720.058	26.990.904	32.935.636	47.960.788	54.651.002	66.834.730	69.971.651
	Depreciation & Amortisation	0	0	4.196.892	5.667.139	5.741.614	9.418.092	8.118.192	12.050.687
	Bad Debts	428	428	428	428	423	394	322	322
	Income Taxes	1.868.764	1.667.645	1.338.902	1.513.854	3.980.774	2.762.378	13.332.858	8.978.073
	Net Profit/loss	1.725.166	2.939.537	3.129.582	6.113.107	11.206.534	9.198.378	18.978.466	15.051.268
	Dividends/drawings								
	Sundry adjustments (-net income)	1.067.628	444.914	1.865.646	-1.867.415	-11.458.246	-15.561.861	-15.498.892	-14.761.023
	Net capital Expenses								
	Interest Expense (I)	5.924.414	9.112.876	18.325.528	19.641.536	27.031.866	33.272.154	26.405.214	33.891.623
	Capitalised Interest(Inventories)								
	Capitalised Interest(Fixed Assets)	0	0	1.238.078	1.849.418	1.055.805	3.226.135	100.618	543,367
	Interest Expense (COGS)	0	0	0	0	0	0	0	0
	Total Interest	5.924.414	9.112.876	19.563.606	21.490.954	28.087.671	36.498.289	26.505.832	33.892.166

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
1 EBIT Interest Coverage (x)	1,79	1,51	1,17	1,27	1,50	1,24	2,22	1,71
2 EBIDA Interest Coverage (x)	1,79	1,51	1,38	1,53	1,71	1,50	2,52	2,06
3 Funds from operations/total debt (%)	57,35	42,56	49,13	41,03	51,82	46,93	42,22	32,89
4 Free operating cash flow/total debt (%)	57,35	35,03	27,35	23,77	38,39	52,03	16,73	28,82
5 Pretax return on capital (%)	38,40	33,13	33,94	27,38	36,26	30,55	29,66	22,02
6 Operating Income /sales (%)	21,19	21,00	23,75	25,08	27,62	27,37	25,11	22,60
7 Long-term Debt/capital(%)	20,94	27,50	57,20	60,50	62,38	52,68	64,24	59,42
8 Total debt/capitilisation (%)	74,46	77,84	81,79	80,60	79,49	78,65	79,96	80,89

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
1 EBIT Interest Coverage (x)	BB	BB	B	B	BB	B	BB	BB
2 EBIDA Interest Coverage (x)	B	B	CCC	B	B	CCC	B	B
3 Funds from operations/total debt (%)	AA	A	AA	A	AA	A	A	BBB
4 Free operating cash flow/total debt (%)	AAA	AA	AA	AA	AA	AA	A	AA
5 Pretax return on capital (%)	AAA	AAA	AAA	AA	AAA	AAA	AAA	AA
6 Operating Income /sales (%)	AA	AA	AA	AAA	AAA	AAA	AAA	AA
7 Long-term Debt/capital(%)	AA	AA	BB	BB	BB	BB	B	BB
8 Total debt/capitilisation (%)	B	B	CCC	B	B	B	B	B

		30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000
0,6	1 EBIT Interest Coverage (x)	6	6	8	8	6	8	6	6
0,9	2 EBIDA Interest Coverage (x)	8	8	10	8	8	10	8	8
0,3	3 Funds from operations/total debt (%)	2	3	2	3	2	3	3	4
0,5	4 Free operating cash flow/total debt (%)	1	2	2	2	2	2	3	2
0,3	5 Pretax return on capital (%)	1	1	1	2	1	1	1	2
0,3	6 Operating Income /sales (%)	2	2	2	1	1	1	1	2
0,3	7 Long-term Debt/capital(%)	2	2	6	6	6	6	8	6
1	8 Total debt/capitilisation (%)	8	8	10	8	8	8	8	8
4,00	**RR**	5,28	5,46	6,89	6,01	5,58	6,40	5,89	5,85
	Rating	**BB+**	**BB**	**B+**	**BB-**	**BB**	**BB-**	**BB**	**BB**
		BB+	BB		BB-	BB	BB-	BB	BB
				B+					
	Change in WC		1	2	2	2	2	3	1
	Change in Net Worth		1	1	1	1	2	1	1
	Net Profit or Loss		1	2	2	2	-1	2	-1
	Total	**0**	**3**	**5**	**5**	**5**	**3**	**6**	**1**
	Adjusted Rating	BB+	BB+	BB-	BB	BB+	BB	BBB-	BB
	Adjusted RR	**5,33**	**5,33**	**6,66**	**6,00**	**5,33**	**6,00**	**4,66**	**6,00**

Table A2-16 Makine Takım Financial Information Report

	Financial Information Report	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001	31.12.2001
	Balance Sheet										
	Current Assets (CA)	3.848.792	5.073.086	8.085.934	11.651.456	14.560.217	17.538.221	20.037.833	18.318.455	28.276.479	28.771.198
	Current Liabilities (CL)	2.715.941	3.451.749	5.280.451	5.856.011	8.069.484	15.281.372	15.878.414	16.467.257	28.012.808	27.500.274
	Working Capital (WC=CA-CL)	*1.132.851*	*1.621.337*	*2.805.483*	*5.795.445*	*6.490.733*	*2.256.849*	*4.159.419*	*1.851.198*	*263.671*	*1.270.924*
	Fixed Assets (FA)	674.388	2.139.365	2.395.469	6.071.064	6.783.836	13.316.219	22.199.288	21.995.553	22.693.109	20.590.235
	Long Term Debts(LTD)	269.892	323.934	1.160.414	1.862.354	2.796.830	4.458.529	6.179.666	4.520.838	4.881.188	5.500.236
	Fixed Worth (FW=FA-LTD)	*404.496*	*1.815.431*	*1.235.055*	*4.208.710*	*3.987.006*	*8.857.690*	*16.019.622*	*17.474.715*	*17.811.921*	*15.089.999*
	Net Worth(NW=WC+FW)	*1.537.347*	*3.436.768*	*4.040.538*	*10.004.155*	*10.477.739*	*11.114.539*	*20.179.041*	*19.325.913*	*18.075.592*	*16.360.923*
	Income Statement										
	Sales for year	5.530.198	5.454.417	8.977.646	10.369.036	10.937.342	11.956.008	16.996.506	15.295.109	8.881.028	8.548.722
	Operating Profit (EBITDA)	1.748.206	2.215.556	4.541.436	6.698.397	5.397.964	7.736.516	9.609.872	6.614.204	17.593.900	16.941.112
	Depreciation & Amortisation	133.188	116.456	181.888	420.056	635.466	783.794	818.472	1.115.207	1.831.418	1.539.507
	Bad Debts	8	8	8	8	8	8	8	8	8	8
	Income Taxes	271.630	285.774	476.076	218.063	207.978	303.036	492.888	0	0	0
	Net Profit/loss	452.668	514.997	943.628	959.561	306.810	426.710	414.876	-994.243	3.563.668	-3.708.288
	Dividends/drawings										
	Sundry adjustments (-net income)	-572.722	-802.233	-959.890	-3.845.934	-4.585.806	-5.795.099	-4.791.272	-3.792.880	-15.001.728	-15.843.607
	Net capital Expenses										
	Interest Expense (I)	558.448	810.874	1.127.488	2.455.444	3.888.354	6.043.297	7.883.636	6.493.240	20.086.904	19.109.893
	Capitalised Interest(Inventories)						34.642				
	Capitalised Interest(Fixed Assets)	33.614	40.939	123.112	131.605	743.744	793.737	207.737	312.639	2.100.560	1.357.050
	Interest Expense (COGS)	332.272	487.455	1.812.356	722.306	359.356	179.679	0	0	0	0
	Total Interest	924.334	1.339.268	3.062.956	3.309.355	4.991.454	7.051.355	8.091.373	6.805.879	22.187.464	20.466.943

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001	31.12.2001
1 EBIT Interest Coverage (x)	1,75	1,57	1,42	1,90	0,95	0,99	1,09	0,81	0,71	0,75
2 EBIDA Interest Coverage (x)	1,89	1,65	1,48	2,02	1,08	1,10	1,19	0,97	0,79	0,83
3 Funds from operations/total debt (%)	58,55	58,68	70,51	86,79	49,68	39,19	43,57	31,51	53,49	51,34
4 Free operating cash flow/total debt (%)	58,55	45,74	52,12	48,05	43,28	60,64	34,94	42,51	58,31	48,28
5 Pretax return on capital (%)	28,36	22,35	24,30	20,50	20,63	21,95	20,81	13,64	46,40	31,20
6 Operating Income /sales (%)	31,61	40,62	50,59	64,60	49,35	64,71	56,54	43,24	198,11	198,17
7 Long-term Debt/capital(%)	14,93	8,61	22,31	15,69	21,07	28,63	23,44	18,96	21,26	25,16
8 Total debt/capitilisation (%)	66,01	52,35	61,45	43,55	50,91	63,98	52,22	52,06	64,54	66,85

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001	31.12.2001
1 EBIT Interest Coverage (x)	BB	BB	B	BB	B	B	B	B	B	B
2 EBIDA Interest Coverage (x)	B	B	CCC	B	D	D	D	D	D	D
3 Funds from operations/total debt (%)	AA	AA	AA	AA	AA	A	A	BBB	AA	AA
4 Free operating cash flow/total debt (%)	AAA	AA	AA	AA	AA	AAA	AA	AA	AAA	AA
5 Pretax return on capital (%)	AAA	AA	AA	A	AA	AA	AA	BBB	AAA	AAA
6 Operating Income /sales (%)	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
7 Long-term Debt/capital(%)	AAA	AAA	AA	AAA	AA	AA	AA	AAA	AA	AA
8 Total debt/capitilisation (%)	BB	BBB	BB	A	BBB	BB	BBB	BBB	BB	BB

		30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001	31.12.2001
0,6	1 EBIT Interest Coverage (x)	6	6	8	6	8	8	8	8	8	8
0,9	2 EBIDA Interest Coverage (x)	8	8	10	8	12	12	12	12	12	12
0,3	3 Funds from operations/total debt (%)	2	2	2	2	2	3	3	4	2	2
0,45	4 Free operating cash flow/total debt (%)	1	2	2	2	2	1	2	2	1	2
0,25	5 Pretax return on capital (%)	1	2	2	3	2	2	2	4	1	1
0,25	6 Operating Income /sales (%)	1	1	1	1	1	1	1	1	1	1
0,25	7 Long-term Debt/capital(%)	1	1	2	1	2	2	2	1	2	2
1	8 Total debt/capitilisation (%)	6	4	6	3	4	6	4	4	6	6
4,00	**RR**	4,65	4,33	5,64	4,14	5,59	6,05	5,66	5,80	5,91	6,03
	Rating	BBB-	BBB-	BB	BBB-	BB	BB-	BB	BB	BB	BB-
	Change in WC		1	1	1	0	-3	2	-3	-3	0
	Change in Net Worth		1	1	1	0	0	0		0	0
	Net Profit or Loss		0	1	0	-2	-1	0	-3	0	-3
	Total	0	2	3	2	-2	-4	2	-6	-3	-3
	Adjusted Rating	BBB-	BBB-	BB+	BBB-	BB	B+	BB	B+	BB-	B+
	Adjusted RR	4,66	4,66	5,33	4,66	6,00	7,33	6,00	7,33	6,66	7,33

Table A2- 17 Tezsan Takım Financial Information Report

	Financial Information Report	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000
	Balance Sheet							
	Current Assets (CA)	1.644.625	2.218.809	4.210.727	5.597.960	4.183.494	3.580.570	952.101
	Current Liabilities (CL)	1.401.766	1.896.217	4.291.815	5.758.417	4.025.253	4.548.859	1.949.948
	Working Capital (WC=CA-CL)	*242.859*	*322.592*	*-81.088*	*-160.457*	*158.241*	*-968.289*	*-997.847*
	Fixed Assets (FA)	228.693	362.667	499.354	657.467	685.344	1.451.333	1.480.203
	Long Term Debts(LTD)	29.205	42.980	72.355	106.332	96.472	32.402	33.544
	Fixed Worth (FW=FA-LTD)	*199.488*	*319.687*	*426.999*	*551.135*	*588.872*	*1.418.931*	*1.446.659*
	Net Worth(NW=WC+FW)	*442.347*	*642.279*	*345.911*	*390.678*	*747.113*	*450.642*	*448.812*
	Income Statement							
	Sales for year	2.729.650	3.900.924	4.994.288	6.375.977	2.388.778	2.943.822	4.001.954
	Operating Profit (EBITDA)	445.970	1.187.103	1.605.024	2.173.122	3.913.390	2.066.808	578.173
	Depreciation & Amortisation	0	0	260.046	260.046	212,428	0	316,556
	Bad Debts	82	3.256	7.136	51.304	128.500	203.054	266.985
	Income Taxes	109.634	109.758	0	0	0	0	0
	Net Profit/loss	98.776	180.819	-606.992	-703.266	461.188	-988.442	-359.198
	Dividends/drawings							
	Sundry adjustments (-net income)	187.076	-38.331	-204.868	-143.257	-4.458.888	-2.706.572	-411.750
	Net capital Expenses							
	Interest Expense (I)	358.756	896.526	1.951.970	2.616.342	3.451.990	3.055.250	937.054
	Capitalised Interest(Inventories)							
	Capitalised Interest(Fixed Assets)	0	0	0	0	0	0	0
	Interest Expense (COGS)	0	0	0	0	0	0	0
	Total Interest	358.756	896.526	1.951.970	2.616.342	3.451.990	3.055.250	937.054

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000
1 EBIT Interest Coverage (x)	1,24	1,32	0,69	0,73	1,13	0,68	0,62
2 EBIDA Interest Coverage (x)	1,24	1,32	0,82	0,83	1,13	0,68	0,62
3 Funds from operations/total debt (%)	31,17	61,22	36,78	37,05	94,95	45,11	29,15
4 Free operating cash flow/total debt (%)	31,17	57,10	46,03	38,41	87,21	69,70	30,64
5 Pretax return on capital (%)	30,28	45,99	28,56	30,58	80,37	41,07	23,76
6 Operating Income /sales (%)	16,34	30,43	32,14	34,08	163,82	70,21	14,45
7 Long-term Debt/capital(%)	6,19	6,27	17,30	21,39	11,44	6,71	6,95
8 Total debt/capitilisation (%)	76,39	75,12	92,66	93,75	84,66	91,04	81,55

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000
1 EBIT Interest Coverage (x)	B	B	B	B	B	B	B
2 EBIDA Interest Coverage (x)	CCC	CCC	D	D	D	D	D
3 Funds from operations/total debt (%)	BBB	AA	BBB	A	AAA	A	BBB
4 Free operating cash flow/total debt (%)	AA	AAA	AA	AA	AAA	AAA	AA
5 Pretax return on capital (%)	AAA	AAA	AAA	AAA	AAA	AAA	AA
6 Operating Income /sales (%)	BBB	AAA	AAA	AAA	AAA	AAA	BB
7 Long-term Debt/capital(%)	AAA	AAA	AAA	AA	AAA	AAA	AAA
8 Total debt/capitilisation (%)	B	B	D	D	CCC	D	CCC

		30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000
0,6	1 EBIT Interest Coverage (x)	8	8	8	8	8	8	8
0,9	2 EBIDA Interest Coverage (x)	10	10	12	12	12	12	12
0,3	3 Funds from operations/total debt (%)	4	2	4	3	1	3	4
0,45	4 Free operating cash flow/total debt (%)	2	1	2	2	1	1	2
0,25	5 Pretax return on capital (%)	1	1	1	1	1	1	2
0,25	6 Operating Income /sales (%)	4	1	1	1	1	1	6
0,25	7 Long-term Debt/capital(%)	1	1	1	2	1	1	1
1	8 Total debt/capitilisation (%)	8	8	12	12	10	12	10
4,00	**RR**	6,35	5,90	7,61	7,60	6,78	7,43	12,00
	Rating	BB-	BB	B	B	B+	B	D
		BB-	BB					
				B	B	B+	B	
	Change in WC		1	-2	-3	2		
	Change in Net Worth		0	-2	-1	1		
	Net Profit or Loss		1	-2	-2	1		
	Total	**0**	**2**	**-6**	**-6**	**4**	**0**	**0**
	Rating	BB-	BB	CCC+	CCC+	BB-	D	D
	Adjusted RR	**6,66**	**6,00**	**9,33**	**9,33**	**6,66**	**12,00**	**12,00**

Table A2- 18 Bosh Fren Financial Information Report

	Financial Information Report	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001	31.12.2001
	Balance Sheet										
	Current Assets (CA)	1.244.315	2.165.940	3.144.265	4.194.395	6.123.622	7.824.557	9.127.575	8.919.844	9.621.863	9.149.180
	Current Liabilities (CL)	655.142	1.034.647	1.270.079	1.474.817	2.108.026	2.308.065	2.161.041	2.383.423	2.764.433	3.892.351
	Working Capital (WC=CA-CL)	*589.173*	*1.131.293*	*1.874.186*	*2.719.578*	*4.015.596*	*5.516.492*	*6.966.534*	*6.536.421*	*6.857.430*	*5.256.829*
	Fixed Assets (FA)	607.884	746.747	1.001.806	1.381.656	1.668.264	2.059.199	2.426.384	2.680.033	4.333.221	6.918.874
	Long Term Debts(LTD)	157.782	209.528	298.136	411.518	549.232	662.798	976.721	1.173.788	1.518.985	1.901.889
	Fixed Worth (FW=FA-LTD)	*450.102*	*537.219*	*703.670*	*970.138*	*1.119.032*	*1.396.401*	*1.449.663*	*1.506.245*	*2.814.236*	*5.016.985*
	Net Worth(NW=WC+FW)	*1.039.275*	*1.668.512*	*2.577.856*	*3.689.716*	*5.134.628*	*6.912.893*	*8.416.197*	*8.042.666*	*9.671.666*	*10.273.814*
	Income Statement										
	Sales for year	3.843.876	5.140.742	7.253.430	8.530.404	9.413.436	10.956.747	15.790.180	16.221.462	10.664.698	17.106.915
	Operating Profit (EBITDA)	809.666	1.454.315	2.253.951	2.727.219	3.807.928	1.699.093	3.938.124	3.106.374	6.043.880	4.511.392
	Depreciation & Amortisation	159.680	230.157	200.465	276.938	362.550	451.912	569.006	751.126	1.021.022	1.868.489
	Bad Debts	0	0	0	0	0	0	0	0	0	0
	Income Taxes	301.632	407.525	726.696	891.338	1.162.138	1.361.279	1.402.192	934.724	855.642	661.212
	Net Profit/loss	522.008	764.037	1.278.824	1.530.639	2.258.726	2.542.497	1.954.468	1.410.853	1.650.030	1.973.149
	Dividends/drawings										
	Sundry adjustments (-net income)	-69.160	-145.998	-565.710	-713.739	-2.233.986	-2.225.838	-1.576.206	-1.549.713	-7.117.404	-4.589.595
	Net capital Expenses										
	Interest Expense (I)	55.186	52.596	47.966	28.304	24.514	21.155	6.229	9.671	5.757	8.542
	Capitalised Interest(Inventories)										
	Capitalised Interest(Fixed Assets)	0	0	0	0	0	0	0	0	0	0
	Interest Expense (COGS)	0	0	0	0	0	0	0	0	0	0
	Total Interest	55.186	52.596	47.966	28.304	24.514	21.155	6.229	9.671	5.757	8.542

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001	31.12.2001
1 EBIT Interest Coverage (x)	11,78	23,27	42,81	86,57	140,55	58,95	540,88	243,54	872,48	309,40
2 EBIDA Interest Coverage (x)	14,67	27,65	46,99	96,35	155,34	80,32	632,22	321,21	1049,83	528,14
3 Funds from operations/total debt (%)	99,60	116,89	143,73	144,58	143,30	57,19	125,51	87,33	141,10	77,86
4 Free operating cash flow/total debt (%)	99,60	73,32	96,36	99,76	94,53	6,67	79,29	99,42	133,61	105,48
5 Pretax return on capital (%)	47,45	42,03	49,53	43,94	44,22	39,71	29,11	20,30	18,00	16,45
6 Operating Income /sales (%)	21,06	28,29	31,07	31,97	40,45	15,51	24,94	19,15	56,67	26,37
7 Long-term Debt/capital(%)	13,18	11,16	10,37	10,03	9,66	8,75	10,40	12,74	13,57	15,62
8 Total debt/capitilisation (%)	43,89	42,72	37,82	33,83	34,10	30,06	27,16	30,67	30,69	36,06

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001	31.12.2001
1 EBIT Interest Coverage (x)	AA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
2 EBIDA Interest Coverage (x)	AA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
3 Funds from operations/total debt (%)	AAA	AAA	AAA	AAA	AAA	AA	AAA	AA	AAA	AA
4 Free operating cash flow/total debt (%)	AAA	AAA	AAA	AAA	AAA	BBB	AAA	AAA	AAA	AAA
5 Pretax return on capital (%)	AAA	AAA	AAA	AAA	AAA	AAA	AAA	A	A	BBB
6 Operating Income /sales (%)	AA	AAA	AAA	AAA	AAA	BB	AAA	A	AAA	AAA
7 Long-term Debt/capital(%)	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
8 Total debt/capitilisation (%)	A	A	AA	AA	AA	AAA	AAA	AA	AA	AA

		30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001	31.12.2001
0,6	1 EBIT Interest Coverage (x)	2	1	1	1	1	1	1	1	1	1
0,9	2 EBIDA Interest Coverage (x)	2	1	1	1	1	1	1	1	1	1
0,3	3 Funds from operations/total debt (%)	1	1	1	1	1	2	1	2	1	2
0,45	4 Free operating cash flow/total debt (%)	1	1	1	1	1	4	1	1	1	1
0,25	5 Pretax return on capital (%)	1	1	1	1	1	1	1	3	3	4
0,25	6 Operating Income /sales (%)	2	1	1	1	1	6	1	3	1	1
0,25	7 Long-term Debt/capital(%)	1	1	1	1	1	1	1	1	1	1
1	8 Total debt/capitilisation (%)	3	3	2	2	2	1	1	2	2	2
4,00	**RR**	1,94	1,50	1,25	1,25	1,25	1,73	1,00	1,58	1,38	1,51
	Rating	**AA**	**AA+**	**AAA-**	**AAA-**	**AAA-**	**AA**	**AAA-**	**AA+**	**AA+**	**AA+**

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001	31.12.2001
Change in WC										
Change in Net Worth										
Net Profit or Loss										
Total	0	0	0	0	0	0	0	0	0	0
Rating	AA	AA+	AAA-	AAA-	AAA-	AA	AAA-	AA+	AA+	AA+
Adjusted RR	**2,00**	**1,66**	**1,33**	**1,33**	**1,33**	**2,00**	**1,33**	**1,66**	**1,66**	**1,66**

Table A2- 19 Mutlu Akü Financial Information Report

	Financial Information Report	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001	31.12.2001
	Balance Sheet										
	Current Assets (CA)	3.006.922	4.507.526	4.326.137	6.261.934	4.773.187	6.846.073	9.766.699	13.309.469	13.595.249	17.936.999
	Current Liabilities (CL)	2.083.226	3.140.877	2.759.980	4.007.587	2.826.613	4.463.896	6.119.542	8.663.887	11.041.907	12.066.675
	Working Capital (WC=CA-CL)	*923.696*	*1.366.649*	*1.566.157*	*2.254.347*	*1.946.574*	*2.382.177*	*3.647.157*	*4.645.582*	*2.553.342*	*5.870.324*
	Fixed Assets (FA)	1.784.395	2.272.049	3.336.576	3.678.570	5.569.903	6.651.966	8.705.536	10.154.168	16.253.333	18.210.512
	Long Term Debts(LTD)	559.975	1.053.830	1.278.338	1.635.455	2.915.539	3.529.199	4.350.346	5.186.071	7.367.631	9.901.782
	Fixed Worth (FW=FA-LTD)	*1.224.420*	*1.218.219*	*2.058.238*	*2.043.115*	*2.654.364*	*3.122.767*	*4.355.190*	*4.968.097*	*8.885.702*	*8.308.730*
	Net Worth(NW=WC+FW)	*2.148.116*	*2.584.868*	*3.624.395*	*4.297.462*	*4.600.938*	*5.504.944*	*8.002.347*	*9.613.679*	*11.439.044*	*14.179.054*
	Income Statement										
	Sales for year	7.835.968	10.632.220	11.544.590	14.363.912	11.205.548	18.013.612	27.788.848	35.105.045	38.710.206	62.695.772
	Operating Profit (EBITDA)	974.260	1.170.780	3.001.130	3.395.550	1.865.052	2.590.441	5.093.918	4.948.726	5.136.384	9.552.250
	Depreciation & Amortisation	0	0	717.234	1.314.110	1.094.002	1.469.059	1.820.710	2.225.134	2.347.544	2.784.025
	Bad Debts	0	0	0	0	0	0	0	0	0	0
	Income Taxes	69.836	128.665	100.684	235.964	0	26.459	543.180	551.239	0	665.730
	Net Profit/loss	38.710	4.133	540.356	304.297	-560.984	-463.508	1.403.122	781.934	-1.314.463	523.168
	Dividends/drawings										
	Sundry adjustments (-net income)	93.392	25.620	-839.344	-349.979	-514.488	-232.704	148.174	38.588	-964.982	-1.308.706
	Net capital Expenses										
	Interest Expense (I)	865.714	1.037.982	1.642.856	1.541.179	1.588.596	1.558.431	1.326.906	1.390.419	5.417.766	5.103.760
	Capitalised Interest(Inventories)										
	Capitalised Interest(Fixed Assets)	0	0	91.430	0	445.820	956.885	547.440	470.188	2.312.484	3.321.947
	Interest Expense (COGS)	0	0	0	0	0	0	0	0	0	475.567
	Total Interest	865.714	1.037.982	1.734.286	1.541.179	2.034.416	2.515.316	1.874.346	1.860.607	7.730.250	8.901.274

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001	31.12.2001
1 EBIT Interest Coverage (x)	1,13	1,13	1,32	1,35	0,38	0,45	1,75	1,46	0,36	0,76
2 EBIDA Interest Coverage (x)	1,13	1,13	1,73	2,20	0,92	1,03	2,72	2,66	0,66	1,07
3 Funds from operations/total debt (%)	36,86	27,91	74,32	60,17	32,48	32,41	48,65	35,73	27,90	43,48
4 Free operating cash flow/total debt (%)	36,86	17,35	69,38	47,98	37,84	26,96	36,57	28,52	39,27	28,38
5 Pretax return on capital (%)	20,33	17,27	29,81	20,94	9,94	8,31	17,72	11,61	13,75	17,41
6 Operating Income /sales (%)	12,43	11,01	26,00	23,64	16,64	14,38	18,33	14,10	13,27	15,24
7 Long-term Debt/capital(%)	20,68	28,96	26,07	27,57	38,79	39,07	35,22	35,04	39,18	41,12
8 Total debt/capitilisation (%)	55,17	61,87	52,70	56,77	55,52	59,22	56,68	59,03	61,68	60,77

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001	31.12.2001
1 EBIT Interest Coverage (x)	B	B	B	B	CCC	CCC	BB	BB	CCC	B
2 EBIDA Interest Coverage (x)	D	D	B	B	D	D	BB	BB	D	D
3 Funds from operations/total debt (%)	BBB	BBB	AA	AA	BBB	BBB	A	BBB	BBB	A
4 Free operating cash flow/total debt (%)	AA	A	AAA	AA	AA	AA	AA	AA	AA	AA
5 Pretax return on capital (%)	A	A	AAA	AA	BB	B	A	BB	BBB	A
6 Operating Income /sales (%)	B	CCC	AAA	AA	BBB	BB	A	BB	B	BB
7 Long-term Debt/capital(%)	AAA	AA	AA	AA	BBB	BBB	A	A	BBB	BBB
8 Total debt/capitilisation (%)	BBB	BB	BBB	BB	BB	BB	BB	BB	BB	BB

		30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001	31.12.2001
0,6	1 EBIT Interest Coverage (x)	8	8	8	8	10	10	6	6	10	8
0,9	2 EBIDA Interest Coverage (x)	12	12	8	8	12	12	6	6	12	12
0,3	3 Funds from operations/total debt (%)	4	4	2	2	4	4	3	4	4	3
0,45	4 Free operating cash flow/total debt (%)	2	3	1	2	2	2	2	2	2	2
0,25	5 Pretax return on capital (%)	3	3	1	2	6	8	3	6	4	3
0,25	6 Operating Income /sales (%)	8	10	1	2	4	6	3	6	8	6
0,25	7 Long-term Debt/capital(%)	1	2	2	2	4	4	3	3	4	4
1	8 Total debt/capitilisation (%)	4	6	4	6	6	6	6	6	6	6
4,00	**RR**	6,18	6,98	4,51	5,25	7,10	7,35	4,76	5,21	7,23	6,66
	Rating	BB-	B+	BBB-	BB+	B+	B	BB+	BB+	B+	B+

	Change in WC		1		2		2				
	Change in Net Worth		2		1		1				
	Net Profit or Loss										
	Total	0	3	0	3	0	3	0	0	0	0
	Rating	BB-	BB-	BBB-	BBB-	B+	B+	BB+	BB+	B+	B+
	Adjusted RR	6,66	6,66	4,66	4,66	7,33	7,33	5,33	5,33	7,33	7,33

Table A2- 20 Parsan Financial Information Report

	Financial Information Report	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001	31.12.2001
	Balance Sheet										
	Current Assets (CA)	1.299.909	1.862.754	2.378.884	3.324.990	4.141.668	4.282.021	5.774.234	6.160.468	7.796.430	9.927.426
	Current Liabilities (CL)	732.830	933.521	678.830	2.740.981	3.485.313	3.527.489	3.882.488	8.501.805	12.087.699	7.485.189
	Working Capital (WC=CA-CL)	*567.079*	*929.233*	*1.700.054*	*584.009*	*656.355*	*754.532*	*1.891.746*	*-2.341.337*	*-4.291.269*	*2.442.237*
	Fixed Assets (FA)	990.312	1.781.252	2.443.295	4.613.547	5.144.081	5.865.986	6.801.945	12.325.202	14.296.225	14.505.317
	Long Term Debts(LTD)	209.490	475.936	907.789	920.649	784.193	707.568	888.216	967.299	970.477	8.929.127
	Fixed Worth (FW=FA-LTD)	*780.822*	*1.305.316*	*1.535.506*	*3.692.898*	*4.359.888*	*5.158.418*	*5.913.729*	*11.357.903*	*13.325.748*	*5.576.190*
	Net Worth(NW=WC+FW)	*1.347.901*	*2.234.549*	*3.235.560*	*4.276.907*	*5.016.243*	*5.912.950*	*7.805.475*	*9.016.566*	*9.034.479*	*8.018.427*
	Income Statement										
	Sales for year	3.740.646	4.902.063	7.494.342	7.252.313	7.486.306	8.236.459	14.902.844	16.343.637	15.385.376	16.861.806
	Operating Profit (EBITDA)	1.000.652	1.344.108	2.932.546	2.357.774	2.580.132	3.211.118	4.638.990	4.543.573	5.127.630	5.229.279
	Depreciation & Amortisation	0	0	1.123.540	1.129.424	996.998	1.376.669	1.561.226	1.944.970	1.865.674	2.196.565
	Bad Debts	0	0	0	0	0	0	0	0	0	0
	Income Taxes	167.750	213.820	217.822	199.923	153.296	102.323	472.281	564.274	0	0
	Net Profit/loss	555.214	875.598	1.295.994	1.004.506	-106.330	14.034	1.407.864	824.472	-6.437.776	-5.083.041
	Dividends/drawings										
	Sundry adjustments (-net income)	-123.150	-185.015	-203.752	-290.154	-683.796	-1.166.923	-238.132	-187.635	-256.860	-660.690
	Net capital Expenses										
	Interest Expense (I)	277.688	254.690	295.190	314.075	1.536.168	1.718.092	725.338	1.209.857	9.699.732	8.115.755
	Capitalised Interest(Inventories)										
	Capitalised Interest(Fixed Assets)	0	0	0	0	0	0	0	0	0	0
	Interest Expense (COGS)	0	0	0	0	0	0	0	0	0	0
	Total Interest	277.688	254.690	295.190	314.075	1.536.168	1.718.092	725.338	1.209.857	9.699.732	8.115.755

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001	31.12.2001
1 EBIT Interest Coverage (x)	3,60	5,28	6,13	3,91	1,03	1,07	4,24	2,15	0,34	0,37
2 EBIDA Interest Coverage (x)	3,60	5,28	9,93	7,51	1,68	1,87	6,40	3,76	0,53	0,64
3 Funds from operations/total debt (%)	106,19	95,36	184,83	64,39	60,43	75,82	97,24	47,98	39,27	31,86
4 Free operating cash flow/total debt (%)	106,19	69,67	136,25	94,87	58,74	73,50	73,40	92,69	54,20	-9,16
5 Pretax return on capital (%)	43,69	36,89	37,51	19,13	17,05	18,08	20,72	14,06	14,76	12,41
6 Operating Income /sales (%)	26,75	27,42	39,13	32,51	34,46	38,99	31,13	27,80	33,33	31,01
7 Long-term Debt/capital(%)	13,45	17,56	21,91	17,71	13,52	10,69	10,22	9,69	9,70	52,69
8 Total debt/capitilisation (%)	41,15	38,68	32,90	46,12	45,98	41,73	37,93	51,22	59,11	67,18

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001	31.12.2001
1 EBIT Interest Coverage (x)	BBB	A	A	BBB	B	B	BBB	BB	CCC	CCC
2 EBIDA Interest Coverage (x)	BB	BBB	A	A	B	B	BBB	BB	D	D
3 Funds from operations/total debt (%)	AAA	AAA	AAA	AA	AA	AA	AAA	A	A	BBB
4 Free operating cash flow/total debt (%)	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AA	CCC
5 Pretax return on capital (%)	AAA	AAA	AAA	A	A	A	AA	BBB	BBB	BB
6 Operating Income /sales (%)	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
7 Long-term Debt/capital(%)	AAA	AAA	AA	AAA	AAA	AAA	AAA	AAA	AAA	BB
8 Total debt/capitilisation (%)	A	AA	AA	BBB	BBB	A	AA	BBB	BB	BB

		30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001	31.12.2001
0,6	1 EBIT Interest Coverage (x)	4	3	3	4	8	8	4	6	10	10
0,9	2 EBIDA Interest Coverage (x)	6	4	3	3	8	8	4	6	12	12
0,3	3 Funds from operations/total debt (%)	1	1	1	2	2	2	1	3	3	4
0,45	4 Free operating cash flow/total debt (%)	1	1	1	1	1	1	1	1	2	10
0,25	5 Pretax return on capital (%)	1	1	1	3	3	3	2	4	4	6
0,25	6 Operating Income /sales (%)	1	1	1	1	1	1	1	1	1	1
0,25	7 Long-term Debt/capital(%)	1	1	2	1	1	1	1	1	1	6
1	8 Total debt/capitilisation (%)	3	2	2	4	4	3	2	4	6	6
4,00	**RR**	3,08	2,23	2,06	2,85	4,58	4,33	2,44	3,96	6,53	7,94
	Rating	**A-**	**AA-**	**AA-**	**A**	**BBB-**	**BBB-**	**A+**	**BBB**	**BB-**	**B**
	Change in WC										3
	Change in Net Worth										
	Net Profit or Loss										
	Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
	Rating	A-	AA-	AA-	A	BBB-	BBB-	A+	BBB	BB-	B+
	Adjusted RR	**3,33**	**2,33**	**2,33**	**3,00**	**4,66**	**4,66**	**2,66**	**4,00**	**6,66**	**7,33**

Table A2-21 Ege Endüstri Financial Information Report

	Financial Information Report	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001	31.12.2001
	Balance Sheet										
	Current Assets (CA)	2.326.577	3.011.460	5.884.412	5.342.718	4.967.004	8.231.000	5.204.185	6.937.436	7.532.544	10.924.415
	Current Liabilities (CL)	1.639.066	1.592.369	4.176.272	3.033.559	3.601.899	6.078.309	2.234.054	3.186.307	1.926.042	3.444.377
	Working Capital (WC=CA-CL)	*687.511*	*1.419.091*	*1.708.140*	*2.309.159*	*1.365.105*	*2.152.691*	*2.970.131*	*3.751.129*	*5.606.502*	*7.480.038*
	Fixed Assets (FA)	597.220	866.019	1.451.027	1.837.280	1.960.976	2.232.963	2.577.229	2.659.366	3.415.980	3.372.268
	Long Term Debts(LTD)	186.043	255.472	384.118	522.545	668.122	634.262	908.826	1.082.184	1.395.992	1.061.990
	Fixed Worth (FW=FA-LTD)	*411.177*	*610.547*	*1.066.909*	*1.314.735*	*1.292.854*	*1.598.701*	*1.668.403*	*1.577.182*	*2.019.988*	*2.310.278*
	Net Worth(NW=WC+FW)	*1.098.688*	*2.029.638*	*2.775.049*	*3.623.894*	*2.657.959*	*3.751.392*	*4.638.534*	*5.328.311*	*7.626.490*	*9.790.316*
	Income Statement										
	Sales for year	5.035.432	7.446.363	15.216.652	16.131.886	8.555.656	11.962.287	15.549.398	15.174.594	17.815.774	20.483.442
	Operating Profit (EBITDA)	1.506.258	2.146.793	3.892.786	3.249.429	1.827.018	2.970.270	3.108.062	2.694.423	6.606.806	5.779.610
	Depreciation & Amortisation	0	0	371.932	380.742	474.246	579.114	760.488	928.181	767.458	892.701
	Bad Debts	0	0	0	0	0	0	0	0	0	0
	Income Taxes	329.362	334.913	466.814	98.338	0	0	0	52.193	134.934	0
	Net Profit/loss	665.558	1.120.526	2.217.754	1.713.238	-771.672	202.756	1.001.830	800.138	1.535.962	3.463.941
	Dividends/drawings										
	Sundry adjustments (-net income)	-221.400	-318.172	-591.454	-471.552	-1.393.658	-1.121.587	-1.581.550	-1.033.992	-2.987.804	-1.852.905
	Net capital Expenses										
	Interest Expense (I)	511.338	691.354	836.286	1.057.111	2.124.444	2.188.400	1.345.744	913.911	2.497.556	1.422.968
	Capitalised Interest(Inventories)										
	Capitalised Interest(Fixed Assets)	0	0	0	0	0	0	0	0	0	0
	Interest Expense (COGS)	0	0	0	0	0	0	0	0	0	0
	Total Interest	511.338	691.354	836.286	1.057.111	2.124.444	2.188.400	1.345.744	913.911	2.497.556	1.422.968

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001	31.12.2001
1 EBIT Interest Coverage (x)	2,95	3,11	4,21	2,71	0,64	1,09	1,74	1,93	2,34	3,43
2 EBIDA Interest Coverage (x)	2,95	3,11	4,65	3,07	0,86	1,36	2,31	2,95	2,65	4,06
3 Funds from operations/total debt (%)	82,53	116,18	85,36	91,38	42,79	44,25	98,89	63,12	198,88	128,25
4 Free operating cash flow/total debt (%)	82,53	76,59	79,02	74,48	64,90	32,52	72,88	44,83	143,03	86,68
5 Pretax return on capital (%)	51,52	55,37	48,00	39,95	19,53	22,85	30,17	18,40	38,07	34,18
6 Operating Income /sales (%)	29,91	28,83	25,58	20,14	21,35	24,83	19,99	17,76	37,08	28,22
7 Long-term Debt/capital(%)	14,48	11,18	12,16	12,60	20,09	14,46	16,38	16,88	15,47	9,79
8 Total debt/capitilisation (%)	62,42	47,66	62,17	49,53	61,63	64,15	40,39	44,48	30,34	31,52

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001	31.12.2001
1 EBIT Interest Coverage (x)	BBB	BBB	BBB	BB	B	B	BB	BB	BB	BBB
2 EBIDA Interest Coverage (x)	BB	BB	BBB	BB	D	CCC	B	BB	BB	BB
3 Funds from operations/total debt (%)	AA	AAA	AA	AA	A	A	AAA	AA	AAA	AAA
4 Free operating cash flow/total debt (%)	AAA	AAA	AAA	AAA	AAA	AA	AAA	AA	AAA	AAA
5 Pretax return on capital (%)	AAA	AAA	AAA	AAA	A	AA	AAA	A	AAA	AAA
6 Operating Income /sales (%)	AAA	AAA	AAA	A	AA	AAA	A	A	AAA	AAA
7 Long-term Debt/capital(%)	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
8 Total debt/capitilisation (%)	BB	BBB	BB	BBB	BB	BB	A	A	AA	AA

		30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001	31.12.2001
0,6	1 EBIT Interest Coverage (x)	4	4	4	6	8	8	6	6	6	4
0,9	2 EBIDA Interest Coverage (x)	6	6	4	6	12	10	8	6	6	6
0,3	3 Funds from operations/total debt (%)	2	1	2	2	3	3	1	2	1	1
0,45	4 Free operating cash flow/total debt (%)	1	1	1	1	1	2	1	2	1	1
0,25	5 Pretax return on capital (%)	1	1	1	1	3	2	1	3	1	1
0,25	6 Operating Income /sales (%)	1	1	1	3	2	1	3	3	1	1
0,25	7 Long-term Debt/capital(%)	1	1	1	1	1	1	1	1	1	1
1	8 Total debt/capitilisation (%)	6	4	6	4	6	6	3	3	2	2
4,00	**RR**	3,90	3,33	3,45	3,83	6,11	5,65	3,95	3,81	3,13	2,83
	Rating	**BBB**	**A-**	**BBB+**	**BBB**	**BB-**	**BB**	**BBB**	**BBB**	**A-**	**A**

	Change in WC		0	1	2	0	1	1			1
	Change in Net Worth		0	1	2	0	1	1			1
	Net Profit or Loss		0	1	-1	-3	1	1			1
	Total	**0**	**0**	**3**	**3**	**-3**	**3**	**3**	**0**	**0**	**3**
	Rating	BBB	A-	A-	BBB+	B+	BB+	BBB	BBB	A-	A+
	Adjusted RR	**4,00**	**3,33**	**3,33**	**3,66**	**7,33**	**5,33**	**4,00**	**4,00**	**3,33**	**2,66**

Table A2- 22 F-M İzmit PistonFinancial Information Report

	Financial Information Report	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001	31.12.2001
	Balance Sheet										
	Current Assets (CA)	1.334.362	2.136.188	1.482.274	1.464.135	2.562.996	3.096.233	3.841.162	4.806.540	6.480.557	8.688.088
	Current Liabilities (CL)	518.804	988.369	728.865	602.487	1.389.417	1.874.118	2.014.668	2.130.959	2.804.825	3.490.217
	Working Capital (WC=CA-CL)	*815.558*	*1.147.819*	*753.409*	*861.648*	*1.173.579*	*1.222.115*	*1.826.494*	*2.675.581*	*3.675.732*	*5.197.871*
	Fixed Assets (FA)	544.214	819.995	1.154.151	1.320.828	1.556.387	1.855.751	2.251.669	2.533.434	3.697.447	3.662.294
	Long Term Debts(LTD)	216.876	284.597	421.074	533.244	754.237	938.087	1.305.506	1.597.331	1.859.733	2.233.121
	Fixed Worth (FW=FA-LTD)	*327.338*	*535.398*	*733.077*	*787.584*	*802.150*	*917.664*	*946.163*	*936.103*	*1.837.714*	*1.429.173*
	Net Worth(NW=WC+FW)	*1.142.896*	*1.683.217*	*1.486.486*	*1.649.232*	*1.975.729*	*2.139.779*	*2.772.657*	*3.611.684*	*5.513.446*	*6.627.044*
	Income Statement										
	Sales for year	2.879.188	3.572.877	5.111.656	5.084.448	6.316.332	6.357.565	10.649.976	11.787.172	17.262.514	17.225.637
	Operating Profit (EBITDA)	1.057.314	1.114.195	1.122.230	655.910	732.714	444.395	1.136.864	1.552.236	5.489.640	4.541.367
	Depreciation & Amortisation	0	0	340.518	346.370	227.830	321.331	274.400	332.680	0	561.524
	Bad Debts	0	0	0	0	0	0	0	0	0	0
	Income Taxes	424.580	388.257	352.256	188.733	312.586	179.214	263.804	622.344	2.361.582	1.629.551
	Net Profit/loss	627.956	720.858	423.456	114.923	186.866	-60.790	331.608	594.401	3.126.672	2.349.472
	Dividends/drawings										
	Sundry adjustments (-net income)	-340.440	-332.815	19.856	-20.418	-256.848	-175.953	-640.674	-902.154	-2.805.856	-2.187.736
	Net capital Expenses										
	Interest Expense (I)	4.778	5.080	6.000	5.884	5.432	4.640	3.248	2.811	1.386	820
	Capitalised Interest(Inventories)										
	Capitalised Interest(Fixed Assets)	0	0	0	0	0	0	0	0	0	0
	Interest Expense (COGS)	0	0	0	0	0	0	0	0	0	0
	Total Interest	4.778	5.080	6.000	5.884	5.432	4.640	3.248	2.811	1.386	820

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001	31.12.2001
1 EBIT Interest Coverage (x)	221,29	219,33	130,29	52,61	92,95	26,52	265,54	433,85	3960,78	4853,47
2 EBIDA Interest Coverage (x)	221,29	219,33	187,04	111,47	134,89	95,77	350,02	552,20	3960,78	5538,25
3 Funds from operations/total debt (%)	143,72	87,53	97,59	57,75	34,18	15,80	34,24	41,63	117,69	79,35
4 Free operating cash flow/total debt (%)	143,72	61,43	131,89	48,22	19,63	14,08	16,04	18,86	96,25	52,75
5 Pretax return on capital (%)	56,28	37,69	29,65	11,11	12,26	2,49	9,83	16,62	53,94	32,22
6 Operating Income /sales (%)	36,72	31,18	21,95	12,90	11,60	6,99	10,67	13,17	31,80	26,36
7 Long-term Debt/capital(%)	15,95	14,46	22,07	24,43	27,63	30,48	32,01	30,66	25,22	25,20
8 Total debt/capitilisation (%)	39,16	43,06	43,62	40,78	52,04	56,79	54,49	50,79	45,83	46,34

	30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001	31.12.2001
1 EBIT Interest Coverage (x)	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
2 EBIDA Interest Coverage (x)	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
3 Funds from operations/total debt (%)	AAA	AA	AAA	AA	BBB	BB	BBB	A	AAA	AA
4 Free operating cash flow/total debt (%)	AAA	AAA	AAA	AA	A	A	A	A	AAA	AA
5 Pretax return on capital (%)	AAA	AAA	AAA	BB	BB	CCC	BB	A	AAA	AAA
6 Operating Income /sales (%)	AAA	AAA	AA	B	CCC	D	CCC	B	AAA	AAA
7 Long-term Debt/capital(%)	AAA	AAA	AA	AA	AA	AA	A	AA	AA	AA
8 Total debt/capitilisation (%)	AA	A	A	A	BBB	BB	BBB	BBB	BBB	BBB

		30.06.1997	31.12.1997	30.06.1998	31.12.1998	30.06.1999	31.12.1999	30.06.2000	31.12.2000	30.06.2001	31.12.2001
0,6	1 EBIT Interest Coverage (x)	1	1	1	1	1	1	1	1	1	1
0,9	2 EBIDA Interest Coverage (x)	1	1	1	1	1	1	1	1	1	1
0,3	3 Funds from operations/total debt (%)	1	2	1	2	4	6	4	3	1	2
0,45	4 Free operating cash flow/total debt (%)	1	1	1	2	3	3	3	3	1	2
0,25	5 Pretax return on capital (%)	1	1	1	6	6	10	6	3	1	1
0,25	6 Operating Income /sales (%)	1	1	2	8	10	12	10	8	1	1
0,25	7 Long-term Debt/capital(%)	1	1	2	2	2	2	3	2	2	2
1	8 Total debt/capitilisation (%)	2	3	3	3	4	6	4	4	4	4
4,00	**RR**	1,27	1,58	1,63	2,50	3,14	4,16	3,20	2,75	1,81	2,00
	Rating	**AAA-**	**AA+**	**AA+**	**A+**	**A-**	**BBB-**	**A-**	**A**	**AA**	**AA-**
	Change in WC			-2							
	Change in Net Worth			-1							
	Net Profit or Loss										
	Total	**0**	**0**	**-3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	Rating	AAA-	AA+	AA	A+	A-	BBB-	A-	A	AA	AA-
	Adjusted RR	**1,33**	**1,66**	**2,00**	**2,33**	**3,33**	**4,66**	**3,33**	**3,00**	**2,00**	**2,33**