

***Is Financial Statement Information  
About Future Earnings Changes  
Impounded In Returns?***

***A Thesis Submitted For The Degree Of Doctor Of Philosophy***

***By***

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## ABSTRACT

The thesis provides empirical evidence on the predictive ability and information content of UK financial statement report numbers. Specifically, I investigate the Ou and Penman (1989a) finding for the US that financial statement numbers convey information about the sign of the one year ahead earnings change, and that this is not reflected in current stock returns.

The main motivation, however, of the thesis is the suggestion by Greig (1992) that the Ou and Penman results are driven by variations in accounting ratios across industries. In addition, it is further examined whether the Ou and Penman results are valid only for negative and/or positive values of the earnings changes and whether the Ou and Penman lagged impounding is confined to large and/or companies.

The thesis complements the existing U.K. literature by offering this predictive perspective on, and interpretation of, the incremental information content of financial statement accounting numbers.

The main results of the thesis provide evidence for a "predictive information link" between some annual report numbers and future earnings changes. However, these annual report numbers capture the *temporary* and not *permanent* changes in current earnings, thus for the market to look for the incremental information about future earning changes in accounting numbers is not worthy in terms of money and costs. Only, in the stores industry, the  $\% \Delta$  in current ratio indeed captures permanent changes in current earnings. The thesis also provides evidence for a "lagged impounding" phenomenon for some of the numbers as well as a "size effect". The incremental information of these accounting numbers is not impounded in current returns. The financial statement information of large companies is earlier reflected in current returns than the information of small companies.

The predictive information link is established by fitting binary one-year ahead earnings change prediction models as well as regression models to annual report data for the period 1980-88. The lagged impounding phenomenon and size effect are established by running multivariate regression earnings information models over the period 1980-88.

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Binary specification is formed based on the mean of the % $\Delta$  operating profit

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*Dedicated to my parents, Philippos and Irene  
and my sister Constantina*

## INTRODUCTION

Research on the usefulness of accounting in equity valuation has emerged from the early work of Ball and Brown (1968) and Beaver (1968) who have shown that accounting numbers supply information for security market investment decisions. Beaver, Lambert and Morse (1980) and Beaver, Lambert and Ryan (1987) and others have also documented that stock prices lead accounting earnings; that is, stock prices can outperform current earnings in predicting next year's earnings. By contrast, the Ou and Penman (1989a), hereinafter OP, controversy has shown that financial statement numbers convey information about the sign of the one year ahead earnings change, and that this is not reflected in current stock returns.

Specifically, the OP conclusions have important implications:

- ◆ first, because their results are interpreted as evidence that fundamental analysis works - the summary measure ( $Pr$ ) derived from accounting descriptors in the balance sheet contains information concerning the direction of the changes in one-year earnings per share which is not captured in stock returns;
- ◆ second, a delayed stock price reaction to the release of financial statement information may call into question the use of market reaction to evaluate accounting disclosure as in the early work of Ball and Brown (1968).

In addition, the OP conclusion that the market does not fully exploit financial statement information when predicting earnings is closely related to post-earnings announcement drift studies, such as Foster (1974), Freeman and Tse (1989), Bernard and Thomas (1989) and the underreaction findings of Bernard and Thomas (1990) and Abarbanell and Bernard (1992).

However, OP give little or no explanation for their findings. First, there is no economic rationale given to explain why some financial statement numbers predict earnings changes. Secondly, no suggestion is offered as to why there is lagged impounding of the information. OP test for risk but this does not provide an explanation.

These issues of OP findings are dealt with in later work by Holthausen and Larcker (1992), Greig (1992), Stober (1992) and Woodmore (1991). Holthausen and Larcker (1992) find that lagged impounding is period specific, which may explain why

market agents fail to identify the predictive power of some accounting descriptors. Similar time specific results are reported by Woodmore (1991) on Australian data.

Greig (1992) suggests that variations in risk and other economic characteristics between different industries are driven the OP findings. Since the distribution of the accounting descriptors vary according to industry, the Pr measure may capture industry specific characteristics and consequently when this measure is used to take long and short positions in a portfolio, it is possible that returns to the portfolio will be influenced by variations in the risk characteristics of the positions taken. Stober (1992) results are consistent with this interpretation.

The objective of this thesis is to investigate whether UK annual financial statements contain information about future earnings' direction and size changes; if they do, whether this information is impounded in the UK current year's stock returns or in the following year's stock returns. There are two significant features of the approach used in the thesis. First, in order to assess whether the OP results might be driven by variations across different industries, the analysis is performed on two industry sectors: stores and chemicals. A second feature, is that the techniques used by Holthausen and Larcker (1992) and Grieg (1992) are combined. The Holthausen and Larcker (1992) technique is followed by investigating the relationship between the accounting descriptors and stock returns directly, rather than indirectly, through the summary measure Pr, as in OP. The Grieg's regression estimation instead of constructing portfolio is being used.

It is further examined whether the predictive information link between the financial statement numbers and future earnings changes is only valid for the negative of positive values of the earnings changes. Last, it is examined whether the predictive ability of the financial statements numbers is driven by either or both large and small companies.

The main results of the thesis provide evidence for a predictive information link between some financial statement report numbers and future earnings changes. However, this predictive ability of the accounting numbers is not consistent over time. It is time-specific. Thus, the financial statement numbers capture only the temporary and not the permanent changes in current earnings. The thesis also provides evidence that the information contained by the financial statements is not always impounded in

the current year's stock returns; that is, there exists a lagged impounding phenomenon in the U.K market as the one reported by Ou and Penman for the U.S.A market. This lagged impounding phenomenon is confined to large companies while there is mixed evidence on whether this lagged impounding is valid only for the positive and/or negative values of the earnings changes.

The thesis is organised as follows:

- Chapter 1** reviews the swings in mood in the Capital Markets Research beginning with the Ball and Brown (1968) through early 1990's, to explain why the Ou and Penman (1989a) controversy can be regarded as the most challenging evidence against the maintained market efficiency hypothesis.
- Chapter 2** explores the background of the research and describes the data that have been used in the empirical tests carried out in this thesis.
- Chapter 3** investigates whether U.K. stores and chemicals annual financial statement report numbers contain information concerning the direction and size of one-year ahead earnings changes. It provides empirical evidence for a predictive information link between these financial statement numbers and future earnings changes.
- Chapter 4** investigates the incremental information content of annual financial statement numbers, for stores and chemicals, over earnings during the period 1980-1988 and the subperiods. It also examines whether the ability of financial numbers to contain information about future earnings concerning the direction and size of its next year's earnings change is driven by sudden economic changes (outliers).
- Chapter 5** examines whether the information about future earnings changes contained in the annual accounting descriptors, is reflected in the current year's stock returns or in the following year's stock returns.
- Chapter 6** examines whether the accounting descriptors' predictive ability

concerning future earnings changes is valid only for a particular distribution of the earnings changes. Specifically, an investigation is carried out to test whether the lagged impounding phenomenon is valid only for negative and/or positive values of earnings changes. This is also linked with the activities of financial analysts.

### **Chapter 7**

examines whether the impounding of the accounting information in the following year's stock returns, is caused by the way the market processes information. More specifically, an investigation is undertaken in examining whether the lagged impounding phenomenon is valid for large companies or small companies.

### **Chapter 8**

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## **CHAPTER ONE**

### **Overview Of Market-Based Accounting Research**

## 1.1 INTRODUCTION

Launched by Ball and Brown in 1968, Market Based Accounting Research (MBAR) "the most ambitious research effort in accounting history" [*Lev and Ohlson (1982) p. 249*], examines one of the most fundamental roles of accounting data: the relation between publicly disclosed accounting information and the value of a firm.

The impetus for this line of research came from the modern capital market disciplines - for example, informationally efficient capital markets, capital asset pricing theory, etc., which provided a widely acceptable and empirically testable link between accounting information and its uses. However, accounting was not and is not only beneficiary but, to a modest extent, a benefactor as well. According to Lev and Ohlson (1982) in both quantity and quality, MBAR is undoubtedly a unique research endeavour in accounting.

The purpose of the chapter is to explain, through summarising the swings in mood in capital markets research beginning with the arrival of Ball and Brown(1968) and ending with the Ou and Penman (1989a) [*hereinafter called OP*] controversy which is the most challenging evidence against market efficiency. I also suggest what might be causing this controversy in the U.K. stock market.

The controversy involves the proposition that the information in published financial statements can be used to predict future EPS and that from these predictions investors can form portfolios that yield abnormal returns. The controversy is relatively new and is interesting because it explores complex relationships between historical accounting data and future earnings.



## 1.2 THE ROLE OF ACCOUNTING IN EQUITY VALUATION

### *Basic research on the Earnings/Price Relation*

Research on the usefulness of accounting in equity valuation has emerged from the early work of Ball and Brown (1968) who indicate that positive earnings forecast (sign) errors<sup>1</sup> are associated with positive unsystematic returns. Conversely, negative earnings forecast errors are associated with negative unsystematic returns<sup>2</sup>. Their analysis has led to an informational perspective on accounting data. This research paradigm considers earnings and other accounting descriptors as explanations of market returns (or unexpected returns). A key concept focuses on unexpected earnings, normalized by the beginning of period stock price, as the primary independent variable<sup>3</sup> [J. A. Ohlson (1992)].

Ball and Brown (1968) has been extended to examine more subtle hypotheses such as relative association among alternative forecast errors [Beaver and Dukes (1972)] or marginal effects of multiple signals [Brown and Kennelly (1972), Gonedes (1972), Foster (1975) and Griffin (1976)]. However, it took eleven years before the literature considered the magnitude of unexpected earnings as well. It was Beaver, Clarke and Wright (1979) who extended the Ball and Brown's study by incorporating both the sign and magnitude<sup>4</sup> of the forecast error in their analysis. They concluded that by ignoring the magnitude of the forecast error some of the earnings information content is not reflected. However, they avoided imposing a specific functional form on the price-earnings relation (reliance on rank correlation rather than product moment

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<sup>1</sup> They study forecast errors because the forecast error is a transformation of past and current earnings per share; the reason being that it constitutes a signal from an information system.

<sup>2</sup> May (1971) using a combination of Beaver's and Ball and Brown's technique, confirmed the association between quarterly earnings announcements and stock price changes. Martin [1971] constructed a model based on accounting variables to explain variability in earnings-price ratios. He found that accounting information is useful for investment decision making.

<sup>3</sup> Ball-Brown (1968) did not normalize their measures of unexpected earnings with initial security price. This normalisation procedure has become common during recent years. Christie (1987) supports this procedure.

<sup>4</sup> The purpose of the empirical analysis is to assess whether the distribution of security returns conditional upon the signal realization (forecast error) differs from the unconditional (or marginal) contribution. "The reason a dependency exists is rested upon the premise that prices and earnings both are the result of mapping from a common underlying set of events [Gonedes (1975)]

correlations).

Beaver, Lambert and Morse [BLM] (1980) were the first to propose a functional form for the price-earnings relation<sup>5</sup>. Ohlson (1989c) criticised the paper on the ground that it adds little or no insight beyond the Modigliani-Miller dividend valuation model; he argues the literature might be more fortunate if it was built on more general foundation provided by Garman and Ohlson (1980) as the BLM model is "limited because of the absence of a useful distinction between ungarbled earnings and dividends"<sup>6</sup> [Ohlson (1989c), p. 110]. The current literature on "earnings response coefficients" can be viewed as relaxing the restrictive conditions in BLM. However, BLM contribute because they derive the empirical relations from a model that relates security value from a concept of earnings.

A number of papers rely on identical or similar concepts of valuation like the BLM. The BLM study has been extended directly by Collins, Kothari and Rayburn (1987)<sup>7</sup> who find that price leads earnings to a greater extent for large firms [*similar results are reported by Freeman (1987)*] and by Beaver, Lambert and Ryan (1987) who assess the information content of security prices with respect to accounting earnings in a reverse regression than that of BLM. They conclude that price changes

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<sup>5</sup> BLM (1980) view observed earnings ( $y_t$ ) as a mixture of ungarbled earnings ( $X_t$ ) and earnings with no pricing implication ( $\epsilon_t$ ). They make the valuation assumption for each security (where price is a multiple of ungarbled earnings) and derive the relationship that the percentage change in price equals the percentage change in expected ungarbled earnings. More formally, BLM assume that  $y_t$  follows a first order moving average coefficient and  $E(a_t) = 0$ . They derive the empirical relation between price and observed earnings as follows:

$$\Delta \frac{r_t}{P_{t-1}} = \frac{\Delta E(A_{t+k})}{E(X_{t+k} - X_{t-1})} = (1-\theta)\Delta Y_t + (1-\theta)\theta a_{t-1} - e_{t-1}$$

$E(x_{t+k})$  can be thought as permanent earnings and  $\Theta a_t + \epsilon_t$  as the transitory component of observed earnings. A simplified case occurs when  $a_{t-1}$ ,  $\epsilon_t$  and  $\epsilon_{t-1}$  equals zero. Then the percentage change in price becomes directly proportional to the percentage change in earnings, where  $(1-\Theta)$  is the proportionality factor.

<sup>6</sup> The BLM model is limited because of the absence of a useful distinction of  $x_t$  (ungarbled earnings) and  $d_t$  (dividends). Ungarbled earnings cannot embody the relevant attributes for determining value unless one defines ungarbled earnings as a function of an observable variable, independent of value (price). Dividends, on the other hand, are observable variables whose relevance is derived from non-arbitrage conditions. Ohlson dividend capitalization model is expressed as:

$$P_t = (1+R)^{-1} E(\bar{P}_{t+1} + \bar{d}_{t+1} - n_t)$$

where  $R$  equals the security's expected rate of return and  $n_t$  is the information set at time  $t$ . Combining with BLM specifications, Ohlson relates ungarbled earnings to expected dividends through a constant  $\gamma$ , which represents the payout coefficient associated with expected ungarbled earnings, that is, expected dividends are the expected ungarbled earnings scaled by the constant  $\gamma$ . [Cho and Jung (1991) p. 90]

They explore the information content of prices with respect to firm size and its relation to the predictive accuracy of price-based earnings forecasts.

reflect information earlier than earnings do.

### 1.3 EARNINGS RESPONSE COEFFICIENTS STUDIES

In the early 1980's, a new line of research, dealing once more with the issue Ball and Brown (1968), introduces firm characteristics to explain cross-sectional differences in the return/earnings relation.

The factors examined by these studies include size [*Atiase (1985)*], predictability of earnings [*Pincus (1983)*], prior information disclosure environment [*McNichols and Manegold (1983)*]. Although these studies help in understanding differences in the return/earnings relation across firms, they are not in general based on a theoretical formulation of the return/earnings relation.

A step towards improving the specification of the P/E relation is made in the earnings response coefficient research arena<sup>8</sup>. This came from finance in the form of the CAPM (Capital Asset Pricing Model)<sup>9</sup>. The Capital Market Research (usually cross-sectional) regression employed is

$$UR_{it} = a + bUA_{it}P_{it-1} + U_{it} \quad [1.2]$$

where  $UR_{it}$ =unexpected return for firm  $i$  at period  $t$ ;  $UA_{it}$ =unexpected realization of an accounting number;  $P_{t-1}$ =price at the beginning of the return period. The slope coefficient is the "earnings response coefficient" which is a Ball and Brown API (Abnormal Performance Index). ERC studies rely on a formal functional formulation between returns and earnings. Empirical studies of ERC can be classified into two groups: [1] studies on ERC determinants and [2] studies on the informativeness of

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<sup>8</sup> The underlying assumption of a constant response coefficient in cross-sectional studies, i.e. investors react identically to earnings of all firms, is obviously unrealistic. This assumption might be more tenable for time-series returns/earnings regressions, since investors reaction to earnings of the same firm over time might be more stable than across different firms. The earnings response coefficient (ERC) is defined as the effect of a dollar of unexpected earnings on stock returns and typically measured as a slope coefficient in the regression of abnormal stock returns on the appropriately scaled unexpected earnings.

<sup>9</sup> CAPM expresses mean returns in terms of expected returns on the market portfolio, the return on risk-free asset and the firm's beta. The empirical representation of CAPM is the market model.

earnings. ERC determinant studies typically measure ERC as an association of earnings and returns over a long-term window, and their main focus is to identify factors affecting ERC. Earnings informativeness studies examine the effect of a certain event on the change in ERC. ERC is measured over a short-term window and ERC is used as a measure of earnings informativeness. Former studies are regarded as association studies while the latter as event studies. In the following section, we will be concerned with the former class of studies but not the latter as it is not our main concern.

## ***Studies on ERC determinants***

### ***Persistence***

Earnings persistence measures the degree to which current period earnings shocks persist in the future and affect future earnings expectations. Persistence is usually measured by estimating an ARIMA time series earnings process. Kormendi and Lipe (1987), Easton and Zmijewski (1989a), Collins and Kothari (1989), Lipe (1990) report that persistence is significantly positively associated with ERC. Penman [1992] considers the same theme, but it is different from the previous research in the characterization of "persistence" and in the specification of the earnings variable for which pricing multipliers [Penman uses  $P_r$  values similar to the ones used in Ou and Penman (1989)] are estimated in that it does not consider earnings persistence as a permanent, firm specific characteristic of the earnings process and correspondingly earnings response coefficient to be estimated as firm-specific constants. The paper shows that accounting information contributes to the evaluation of persistence and the pricing of earnings innovations and therefore, persistence measures and pricing multipliers do change over time. He concluded that financial statements provide relevant information for the evaluation of earnings changes. Contemporaneous financial statement information indicates the persistence of earnings in the future and leading financial statement information indicates the extent to which earnings have

been anticipated. Further, earnings persistence in general is not a fixed characteristic of firms, but changes over time to become more like that of the typical firm; earnings change multipliers are mean-reverting.

### **Beta**

The systematic risk, beta, is a determinant of the firm's expected rate of return. Since stock price is assumed to be discounted value of expected future dividends, there exists a negative association between the ERC, systematic risk and risk-free rate of return<sup>10</sup>. Collins and Kothari (1989) and Lipe (1990) report significant negative association between beta and ERC. Easton and Zmijewski (1989a) report a significant partial correlation between ERC and beta. Like beta, a negative association is expected for the risk-free rate of return.

### **Earnings Predictability**

According to Lipe (1990), earnings predictability is the ability of past earnings to predict future earnings and is reflected in the variance of the earnings shocks in the earning process. Earnings predictability is expected to be positively related with the ERC (as variance of earnings shocks decreases, earnings predictability increases and earnings information becomes more useful in predicting future earnings, resulting in the increase of ERC) [Lipe (1990)].

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<sup>10</sup> This is implied from the CAPM (capital asset pricing model) where the firm's expected rate of return is a function of the firm's systematic risk (beta) and risk-free interest rate.

## **Size**

Easton and Zmijewski (1989a) investigate the correlation between firm size and ERC. The correlation is not significant in every case they examine. Collins and Kothari (1989), in order to control for differential information environment, use size as additional variable and find that the size has no incremental explanatory power over risk in explaining cross-sectional variation in the return/earnings relation.

## **Concluding Remarks**

Nonetheless, ERC research is still in its infancy. The functional form of the return/earnings relation is extremely restrictive and ERC is measured based on the strong assumption of cross-sectional constancy and/or intertemporal stability of the coefficients. Also, construct validity of theoretical determinants and relations among empirical proxies are not known fully.

According to Bernard (1989) ERC must be used "as a means to another end, such as assessing the improvement of earnings quality by the introduction of certain accounting standards", as soon as, we understand what an ERC is and what factors determine it.

## 1.4 VOLUNTARY DIFFERENCES AND CHANGES IN ACCOUNTING TECHNIQUES: EFFECTS ON INVESTORS, FIRMS AND MANAGERS

The subsequent literature of Ball and Brown (1968) assumed that accounting numbers supply information for security market investment decisions and used this "information perspective" to investigate the relation between accounting numbers and stock prices. This line of research was strictly concerned with whether investors were able to "see through" the veil of accounting techniques changes<sup>11</sup>. The rationale was that rational individuals were not concerned with the "packaging" of information, that is, their beliefs were unaffected by the form of disclosure. Hence, if there were no effects on firms' cash flows then it followed that market values should be unperturbed by firms' choices (cross-sectional differences) or changes in accounting techniques (time-series). The first class of studies to be examined is stipulated by the no impact of accounting changes on cash flows. The next set of studies analyses changes in accounting techniques when cash-flow impacts are present.

### ***Accounting Cross-Sectional Differences***

#### ***No cash flow effect***

Beaver and Dukes (1972) examined the association between stock returns and earnings based on both the "deferral" and the "flow through" method of accounting for the interperiod tax allocation. They reported security returns more highly associated with earnings based on the "deferral" method. However, a direct test of investors to adjust for alternative accounting methods was provided by Beaver and Dukes (1973). In this study firms used accelerated depreciation for tax purposes, and for reporting purposes they used either accelerated or straight line depreciation. They reported that investors

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<sup>11</sup>This is known as the "naive investor" or "functional fixation" hypothesis.

could penetrate the veil depreciation accounting, once the earnings of the straight-line depreciation firms were adjusted to accelerated depreciation since the means of the P/E ratios of the two samples were identical. Similar results were reported by Good and Meyer (1973) and Eskew (1975)<sup>12</sup>. Archibald (1967,1977) examined the stock prices of firms that changed from accelerated to straight line depreciation and concluded that no significant price reaction occurred during the month of earnings announcement.

In 1972, Ball examined the capital market reaction to 267 changes over the 1947-1960 period. The conclusion was that changes in accounting techniques did not appear to be associated with market adjustments in a consistent direction for the average firm. Firms making accounting changes had experienced negative abnormal security returns in the one-year period preceding the accounting change. Harrison (1977,1978) compared the market performance of firms making discretionary as well as nondiscretionary accounting changes with the performance of similar firms that made no accounting changes. Firms which made discretionary changes resulting in earnings increases experienced returns below those of the control group. Moreover, differential security rates of returns between the two samples persisted beyond the disclosure date of the accounting change.

The overall conclusion was that investors were not "fooled" by the switches in accounting techniques.

### ***Direct Cash Flow Effect***

Direct cash-flow effects are generally due to the tax implications of the accounting change. Sunder (1973,1975) reported that firms switching to the LIFO inventory method, i.e decreasing their reported earnings but increasing after-tax cash flows during inflationary periods, experienced positive excess returns in the 12 months

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<sup>12</sup> Good and Meyer(1973) find that high and low P/E ratios diminish when earnings are adjusted for differences in accounting methods used for depreciation and extraordinary items. Eskew(1975) report that investors in oil and gas stocks adjust for differences between the "full-cost" and "successful-efforts" methods in accounting.



preceding the announcement of the change. However, for a relatively small sample of firms that switch from LIFO to FIFO Sunder (1975) did not detect the expected negative market reaction. Nevertheless, Sunder's results may have another explanation: as firms tended to switch to LIFO, they incurred the consequent reported-earnings decrease during unusually good earnings periods. So Sunder's observations might be due to the good fortunes of the firms and not to the LIFO switch. Abdel-Khalik and McKeown (1978) classified the LIFO-switching firms into two groups according to the sign of the unexpected earnings change. Firms with positive unexpected earnings that switched to LIFO perform better than a control group, while the firms with negative unexpected earnings that switched to LIFO performed worse than a control group i.e experienced lower stock returns. Findings suggested that investor reaction was associated with the earnings performance of the switching firms rather than with the accounting-method switch. Ricks (1982b) controlling for the fact that adopting firms generally exhibited unusual earnings increases during the examined period 1974-1975 - Sunder did not control for - found that the LIFO adopting firms experience significantly lower residual returns than a control group during the month of the change announcement. Moreover, he found that when earnings of LIFO firms were adjusted to a FIFO basis, the postswitch P/E ratios of LIFO firms were lower than those of the control group. Brown (1980) reported results consistent with Ricks'.

### ***Concluding Remarks***

The literature concludes that the market "sees through" the accounting to the fundamental variables. But one might ask "What does it see?". The answer might be that it sees through to the cash flows. But what does this mean? Surely, it does not mean dividends. Does it mean cash flows from operations? Free cash flows? But if what is meant is "the present value of future cash flows", there is still confusion between unobservable future cash payoffs and observable information that projects them. Cash flows are, however, the ex post payoffs to wealth (assets). For valuation, one seeks descriptions of ex ante flows - assets that generate cash - and accounting

(at least nominally and probably in reality) provides that in a balance sheet. This is a possible justification for the Ou and Penman use of balance sheet numbers in predicting stock returns.

## 1.5 EVIDENCE SUGGESTING MARKET INFORMATIONAL INEFFICIENCY

The inefficiency in OP to be considered here has a history in the recent literature of market informational inefficiency.

By the mid-1980's, some academics began to realise how little we know about stock market efficiency. Claims by Shiller (1981) that speculative asset prices appear to be much too volatile to be accounted in terms of this efficiency were brought forward. However, Merton (1987), Kleidon (1988), and Cochrane (1991) argued that the tests on volatility are not informative about market efficiency and that volatility tests are another way to show that expected returns vary through time.

The stock market crash of 1987 also shook the faith of some believers [*J.V. Horne (Hector 1987)*]<sup>13</sup>. Fama (1988), though, argued that the crash has "the look of a permanent adjustment in response to changes in fundamental values". However, the late 1980's found Fama, Fama and French (1988) questioning even the weak form of efficiency: predicting future stock returns based on past stock returns. Their findings evidenced significant serial correlation in returns, when the returns were measured over long (3 to 10) years intervals. Campbell and Shiller (1988b) found that E/P ratios, especially when past earnings (E) were averaged over 10-30 years had reliable forecast power that also increased with the return horizon. Unlike the long-horizon autocorrelations in Fama and French (1988b) the long horizon forecast power of D/P and E/P was reliable for periods after 1940. The findings might not necessarily reject efficiency but they did not support it either.

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<sup>13</sup> Professor J. V. Horne argues that "the crash makes us realize that prices are not entirely efficient. I think by and large all of us in finance are somewhat more humble".

Further research carried on examining whether stock returns were also predictable over short horizons (at least for small firms) based on historical stock returns. In recent work, Lo and MacKinlay (1988) found that weekly returns on portfolios of NYSE stocks grouped according to size showed reliable positive autocorrelation. The autocorrelation was stronger for portfolios of small stocks. This suggested that results may be due to the nonsynchronous effect (Fisher 1966). Lo and MacKinlay emphasized that spurious positive autocorrelation in portfolio returns induced by nonsynchronous closing trades for securities in the portfolio was likely to be more important for portfolios tilted toward small stocks. To mitigate the nonsynchronous trading problem, Conrad and Kaul (1988) examined the autocorrelation of Wednesday - to - Wednesday returns for size-grouped portfolios of stocks that traded on both Wednesdays. They found that weekly returns were positively autocorrelated and more so for portfolios of small stocks.

All four results suggested that, because of the variance reduction obtained from diversification portfolios, indications of time variation in weekly expected returns than individual stocks were produced. Their results also suggested that returns are more predictable for small stock portfolios. The evidence, however, was clouded by the fact that the predictability of portfolio returns was in part due to nonsynchronous trading effects that, especially for small stocks, were not completely mitigated by using stocks that trade on successive Wednesdays.

French and Roll (1986) established that stock prices were more variable when the market is open. This was due to a market inefficiency hypothesis that the higher variance of price changes during trading hours was partly transitory, the result of noise trading by uninformed investors (Black 1986). Under this hypothesis, pricing errors due to noise trading were eventually reversed and this induces negative autocorrelation in daily returns.

The odd marriage between psychology and finance can be easily mirrored by DeBondt and Thaler (1985,1987). They mounted an aggressive empirical attack on market efficiency directed at unmasking irrational bubbles. They found that some periods tended to have strong returns relative to the market during the following years,

especially in January of the following years. Conversely, the stocks identified as extreme winners tended to have weak returns relative to the market in subsequent years. They attributed these results to market overreaction to extreme bad or good news about firms. Chan (1988) and Ball and Kothari (1989) argued that the winner-loser results were due to failure to risk-adjust returns (Debondt and Thaler disagree). Zarowin (1989) found no evidence for the Debondt-Thaler (1987) hypothesis that the winner-loser effect was due to overreaction to extreme changes in earnings. He argued that the winner-loser effect was related to the size effect of Banz (1981); that is, small stocks often losers had higher expected returns than large stocks. Another explanation consistent with an efficient market was that there was a risk factor associated with the relative economic performance of firms (a distressed firm effect) that was compensated in a rational equilibrium pricing model [*Chan and Chen (1991)*].

### ***Anomalous earnings-price evidence***

The late 1970's and early 1980's also witnessed some accounting anomalies - the size effect, the P/E effect, what appeared to be a delayed reaction to earnings announcements and the unexploited implications of financial statement information for future earnings and abnormal returns.

#### ***The Price/Earnings Effect***

Basu (1977) reported that investors would consistently receive excess returns by investing in low E/P shares. Even after various adjustments for risks, the low P/E stocks were still superior performers to high P/E ratios. Subsequent, questions about the validity of the P/E were raised by other academic researchers in studies of the firm size effect - [*Reinganum (1981) and Banz (1981)*] who suggested that such results so exist but are derived from size.

In response to the questions raised, Basu conducted a study to re-examine the relationship between the P/E ratio, the size effect, and returns on NYSE stocks for the

period 1963-80. He found that the stocks of low P/E firms generally had higher risk-adjusted returns than firms with high P/E ratios. This P/E ratio effect, furthermore, was significant even after differences in firm size were adjusted for. Controlling for differences in both risk and P/E ratios, Basu found that the size effect virtually disappeared. In view of some research suggesting that the P/E effect was confined to low-beta-risk securities, a study by D. Goodman (1985) examined the P/E anomaly with respect to both total risk and systematic risk. The results indicated that the P/E effect was not confined to low-beta-risk securities of the risk measure used. Low P/E securities provided significant positive excess returns across all risk levels.

The P/E ratio anomaly remains unexplained. Until it is refuted, however, it appears to be a potential strategy of investment producing returns superior to other alternatives used.

### ***Quarterly Earnings Information***

Jones and Litzenberger (1970), Brown and Kennelly (1972), Forster (1974), Joy, Litzenberger and McEnally (1977), Watts (1978), Foster, Olsen and Shevlin (1984), Rendleman, Jones and Latane (1987), Bernard and Thomas (1989,1990), Freeman and Tse (1989) and Bartov (1992) and others observed the "drift" in quarterly earnings.

Bernard and Thomas (1990) investigate the market's reaction to quarterly earnings announcements. They found that for a given quarter, the market reacts as if it has the naive expectation that the announcement will be equal to the earnings of the same quarter of the previous year [*Len Skerratt (1994) p. 29*]. Specifically, Bernard and Thomas document the autocorrelations of seasonally differenced quarterly earnings (quarterly earnings minus the same quarter in the previous year)

<i>lag1</i>	<i>lag2</i>	<i>lag3</i>	<i>lag4</i>
0.34	0.19	0.06	-0.24

and the three day abnormal returns for good news portfolios constructed t quarters

previously	<i>t=1</i>	2	3	4
	0.76	0.44	0.13	-0.22

The similarity between the autocorrelations and the market reactions suggests that the market has naive expectations about the earnings announcements, i.e. the market seems to naively expect that earnings will be equal to those in the same quarter of the previous year.

*Why does this happen?* Analysts might cause this "inefficiency" through their buy/hold/sell recommendations. They may have incentives to play down changes in earnings [Trueman (1994)]. Moreover, although agents may have information, their major objective may be to anticipate changes in the beliefs of others.

### ***Annual Report Information***

Ou and Penman (1989a,b) pose the question of what role financial variables play in assets valuation and propose a more general version of this hypothesis. They hypothesize there is underutilised information about future earnings contained in a variety of financial statement variables, not just in current earnings. However, there is no theoretical support for the OP proposition. OP did this intentionally, explaining that this is the way investors might use the accounting information. A potential approach to give support to the OP results could be found in the Ohlson's 1991 model (*see equation 2.2 p.25 of the thesis*); however at present it gives a rationale for total book value, rather than a particular accounting descriptor.

They develop a LOGIT model for predicting changes in annual EPS one year ahead, using publicly-available financial statement information. They select 28 financial-statement variables (16 in one subperiod and 18 in the other, with only six in common) from 68 variables. The model parameters then are fitted to subsequent (i.e. out-of-sample) values of firms' financial statement variables to generate predictions of future earnings. Predictions are based on the estimated LOGIT probability of a future earnings increase, denoted  $Pr$ . This variable is ranked in pooled cross-section and time-series and extreme observations are selected by a trading rule. Ou and Penman use a strategy of long positions in the 45.3% of stocks with the highest predicted probability of an earnings increase and short positions in the lowest 10.8%

weighted to produce zero net investment. They report estimated out-of-sample abnormal returns from this strategy over 1973-83. These average +8.3% in the first year after the EPS predictions are made, +6.2% in the second year and 6.3% in the third. Ou and Penman conclude that financial statements capture fundamentals that are not reflected in prices.

Ou and Penman's results are replicated, albeit with some qualifications and with a more sceptical interpretation in three studies: Greig (1992), Holthausen and Larcker (1992), and Stober (1992) for U.S.A data while Woodmore (1991) investigates the issue for the Australian market.

## 1.6 HOW THE MARKET PROCESSES INFORMATION

### *Introduction*

Overlooking capital markets research, the underreaction to financial statements seems to be the most challenging evidence against market efficiency. The underreaction to financial statements is an interesting empirical irregularity. The obvious question posed is Why does it exist and whether there is anything systematic about it. The answer might lie in the way the market processes information. For example, the answer might lie in the incentives of analysts who, for example, like to maintain good relations with managers - or in psychological forces that are not likely to be strongly influenced by incentives - for example, analysts' personal theories of earnings. A second possible explanation might involve transaction costs as well as firm size.

### *Analysts' Forecasts*

An emerging theme of this line of research is to investigate what information appears to be impounded in analysts' forecasts. The motivations are closer to a decision context since they include uncovering the sources of analysts' forecast superiority

relative to mechanical models - for example, Brown, Griffin, Hagerman and Zmijewski - and testing for whether analysts appear to make full and rational use of all information available to them. Brown, Hagerman, Griffin and Zmijewski (1987) find that analysts' forecasts are better if based on Value Line since they have highest association with abnormal returns and relation of abnormal returns with unexpected earnings based on size and recent forecasts are better.

An example of research into the factors which generally determine, or at least are generally associated with, analyst earnings forecasts superiority is Bhushan (1989) who finds that number of analysts following is positively related to firm size, return variability of firm, squared correlation between firm's return and market return and inversely related to the number of lines of the business. Atiase (1985), and Freeman (1987), also examining the cross-sectional variation in the information content of earnings announcements, find an inverse relation between information content and firm size and researchers have linked this finding to differences in analyst following of firms. Many of these studies argue that larger firms are followed by more analysts, which results in greater private information acquisition about these firms [*Brown, Richardson and Swager (1987)*]. However, financial analysts' superiority is weaker for certain industries (i.e. petroleum) and for particular periods.

Also recent investigations of information used by analysts have begun to focus on whether analysts' forecasts and forecast revisions appear to impound all the information in prior stock price changes and earnings releases, and whether forecasts contain information even when they are associated in time with either other forecasts or firm-specific disclosures. With regard to competing disclosures, Lys and Sohn (1990) conclude that analysts' forecasts are based on information partly independent across analysts and partly independent of corporate disclosures. Both Klein (1990) and Abarbanell (1991) confirm Lys and Sohn's results.

A related series of studies examining how analysts respond to earnings information instead of share price change information, in making and revising forecasts [*Mendenhall (1991), Abarbanell and Bernard (1991)*] find that analysts underreact to earnings information in forming their forecasts. Analysts set overly



optimistic estimates of the next period's annual EPS and forecast errors display significantly positive serial correlation. These results hold for short-term as well as for longer term IBES consensus forecasts. The findings suggest that analysts are able to differentiate partially between permanent and temporary components in previous period earnings. Also the overestimation bias and serial correlation are not uniform across firms; furthermore, the results support the view that analysts do not utilize available information efficiently when setting forecasts.

Understanding analysts' incentives in forecasting earnings might call for the need to examine what the analysts do. Brett Trueman (1994) argues that under certain circumstances an analyst prefers to release a forecast that is close to prior earnings expectations, even if issuing a more extreme forecast is justified by his private information. Such action positively impacts investors' assessment of the analyst's forecasting ability and so enables him to charge a higher fee for his forecasts. Second, the likelihood that the analyst releases a forecast similar to those previously announced by other analysts is greater than could be justified by his own information. Such action is a manifestation of herding behaviour and is undertaken in order to favourably affect investors' assessment of the analyst's forecasting ability.

### ***The Size Effect***

One area where a growing stream of evidence has arisen to suggest an apparent inefficiency is the "firm size effect".

In a well publicized study, Bantz (1981) finds that the stocks of small NYSE firms earned higher risk-adjusted returns than the stocks of large NYSE firms. Bantz finds a negative association between average returns to stocks and the market value of the stocks after controlling for risk.

This empirical finding prompted a number of researchers, amongst which Reinganum (1981), to see whether there is any interrelationship between the "size effect" and other empirical anomalies apparent in stock return data. Reinganum

concludes: "after controlling returns for any P/E effect, a strong firm size effect still emerged. But after controlling returns for any market value effect, a separate P/E effect was not found".

The papers by Bantz (1981) and Reinganum (1981) have drawn a lot of attention and a number of papers have analyzed the statistical tests used in these two papers. According to Schwert (1983) papers trying to analyze "size effect" fall into three categories: [1] "papers that look for an explanation of the findings of Bantz (1981a) and Reinganum (1981) in measurement of statistical testing errors; [2] papers that provide more detailed characterization of the "size effect"; and [3] papers that propose an economic explanation of the evidence."

In the first group of "size effect" as a statistical artifact, Roll (1981) argues that the stocks of small firms are traded less frequently than those of large firms, thus estimates of systematic risk from daily stock returns will be biased downward. However "both Roll and Reinganum (1982) conclude that the bias in risk estimates due to non-synchronous trading cannot explain the magnitude of the risk-adjusted returns found by Reinganum (1981a).

In 1983, Basu re-examines Reinganum's (1981a) results using both different sample period and different way for forming portfolios of stocks on both size and earnings/price ratios. Basu (1983) results contradict Reinganum's (1981a) conclusion that the "size effect" subsumes the E/P effect. He argues that there is indeed some interaction between size and E/P ratios: the magnitude of risk-adjusted returns is largest for small firms with high E/P ratios.

In the second group, having observed that small firms have higher returns than large firms and that returns in January are higher than in any other month of the year, Keim (1983) finds that the January effect has been due primarily to the behaviour of small firms and the size effect has been concentrated mainly in the month of January. Further examination of this interrelationship between the size effect and the January effect has shown that it is concentrated in the first five trading days in January.

Brown, Kleidon and Marsh (1983) examine the behaviour of "size effect" over time, throughout the sample period 1967-79 and find a negative excess return between

1969-73 for small stocks and a positive excess return for the period 1974-79.

Attempts to explain this interrelationship between the "January effect" and the "size effect" appearing to have some merit have to do with "tax selling" [Roll (1977, Reinganum (1983), Lakonishok and Smidt (1986)].

Keim and Stambaugh (1984) extend the previously mentioned studies of the day-of-the-week effect back to 1928 and negative Monday returns are documented over the 55-year period. However, there is no systematic relationship between portfolio size and the size of the Monday return.

A second explanation is that small stocks may be relatively riskier in January, thus they should have a relatively higher average return in January. Two studies lending support to this argument are Rogalski and Tinic (1986) and Arbel (1985).

In 1987, Freeman argues that the market seems to impound information about large firms much quicker than about small firms. This means there is greater scope for insider dealing with small firms. Consequently, investors may be reluctant to invest in smaller companies, making a bias towards larger companies. According to CKR and Freeman, the benefits of shareholders of small firms are much larger than those of larger firms.

Also, Atiase (1985) and Bhushan (1989) find an inverse relation between information content and firm size; and researchers have linked this finding to differences in analyst following of firms. Many of these studies argue that larger firms are followed by more analysts, which results in greater private information acquisition about these firms.

Other papers have examined the magnitude of transaction costs for stocks of firms in different size categories [*Stoll and Whaley (1983), and Schultz (1983)*]. Stoll and Whaley (1983) examining monthly returns of NYSE-listed stocks from 1960 to 1979 for ten portfolios ranked on market value of the stocks, find that small stocks tend to have lower prices and higher bid-ask spreads, so transaction costs are relatively high for these stocks. They estimate risk-adjusted returns to the small firm portfolio net of transaction costs and find that a round-trip transaction every three months is sufficient to eliminate the "size effect". However, Schultz (1983) examining daily

returns to NYSE-listed and AMEX-listed stocks from 1963 to 1979 finds similar results to those of Stoll and Whaley (1983). However, he also estimates average transaction costs for each month and finds no evidence of seasonality that could explain the "January size effect" found by Keim (1983). Schultz's conclusion is that transaction costs cannot explain the high average returns to small firms' stocks.

## 1.7 CONCLUDING REMARKS

In the late 1960's and early 1970's, the belief that the market is efficient is very strong and we experience a number of event studies investigating what information accounting pertains. However, by the mid 1980's, academics realise how little we know about market efficiency and the appearance of market anomalies - E/P ratio, size effect, the crash of 1987, volatility - and perhaps the most challenging evidence against efficiency, the underutilisation of financial statements, shake the faith in market efficiency. The question becomes then whether the market is efficient or not.

Thus, entering the late 1980's and early 1990's the question posed is no longer whether the market is efficient, but how the market processes information (i.e impounding of information in current prices or not impounding). A turn to the traditional issues is witnessed, with emphasis on the relation between earnings and prices and the information content of earnings and non-earnings data.

It is high time, the issue of why the price is used as a measure of value was questioned. Lev and Ohlson (1982) call for more research on asset valuation by fundamental variables and reveal their surprise for why the MBAR has been almost exclusively concerned with the association between financial data and stock-price changes (returns) while ignoring the more basic question of asset valuation by fundamental (accounting variables).

The issue of valuation by fundamental variables is obviously of considerable importance both in examining what the marginal contribution of accounting information in general and for specific data, relative to other information sources to determining capital is. Every day thousands of investors ask themselves what price they should pay for firms or shares of firms. Presumably, they attempt to know how to utilise the information found in financial statements in making these pricing decisions. An understanding of how one can use the financial statement information in assessing how much a firm is worth would clearly be an important contribution. Ou and Penman (1989) financial statement analysis, although crude, focus on our thinking of how accounting information can be used by investors.

**CHAPTER TWO**  
**Background of the Research And Definition Of The**  
**Accounting Descriptors**

## 2.1 INTRODUCTION

The purpose of this chapter is to explain how the hypotheses tested in the subsequent chapters are developed and what data have been used in the empirical tests.

In the previous chapter, we note that Lev and Ohlson (1982) propose a return to fundamentals. Lev and Ohlson (1982) call for more research on asset valuation by fundamental variables and reveal their surprise for why the MBAR has been almost exclusively concerned with the association between financial data and stock-price changes (returns), while ignoring the more basic question of asset valuation by fundamental (accounting variables).

Bernard (1989) argues that in the work of Penman, Ohlson and others, research can help us understand what can be learned from accounting and how the accounting system serves to enhance financial statement analysis<sup>1</sup>.

## 2.2 GRAVITATION TO FUNDAMENTALS

Ou and Penman (1989a) attempt to focus our thinking of how to infer investment worth from accounting data, exploiting the aggregation and measurement properties of accounting. Specifically, they address the exact relationship between investment worth and accounting data.

The following section provides an explanation of how the book value in accounting data can be regarded as being relevant to fundamental analysis which OP carried out for the U.S.A market.

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<sup>1</sup> The price of securities in terms of expected payoffs is well established of course, but how price is determined in terms of the existing information that conditions those expectations is not well established. This is fundamental or financial statement analysis.

## ***How Accounting data is regarded as fundamentals***

The justification by OP of the use of accounting data in fundamental analysis is through the use of accounting as a value measurement system.

In 1979, Beaver and Demski (BD) attempt to see how economic income might be useful to investors. Then they try to assess the role of income measurement using time state preference theory. The upshot of the BD analysis is that if the real asset markets are competitive and perfect, then investors by observing values recorded in the real market can easily work out the value of the corporation and its economic income. This means that the firm does not need to disclose its economic income to the financial markets. Thus, in these circumstances, economic income is redundant; or at least, the rationale for disclosing must rely on "cost effective" communication, that is, economies of scale in information production. Essentially, the argument is that perfect and competitive markets assume perfect information. In this world, there is little room for accounting; investors are assumed to have no information problem. This is like trying to analyse the demand for cars, making the assumption that nobody needs to travel.

From the BD paper, it looks as if accounting (based on economic income) is either redundant or useless. However, this assumes that accounting is concerned with valuation. Peasnell (1982) argues that valuation is something which gets done in markets and that the role of accounting is to supply the markets with the necessary information. This notion is taken up wholeheartedly by Demski and Sappington (1990). Demski and Sappington suggest (although they do not see it like this) that accounting information can be used to assess the longevity of earnings (i.e. the extent to which earnings might be repeated in perpetuity). However, they do say that accounting has an informational role as well as a valuation capacity. This is in effect, a justification for the financial statement analysis. That is, accounting numbers can provide information about the future of the enterprise dependent on various states of the economy. The longevity of earnings is just one example of what DS have in mind. The view that accounting should shed light on the persistence of earnings is taken up by Ohlson in a number of papers (1991). James Ohlson links fundamentals with



market values while Ou and Penman paper (1989a) is the implementation<sup>2</sup>.

If investment worth cannot be assessed by deferring to price, then the following equation might give an understanding of how accounting operates as a value measurement system.

$$P_t = \sum_{\tau=1}^{\infty} \rho^{-\tau} E(d_{t+\tau} | Z_t) \quad [2.1]$$

where  $P_t$  is the price at time  $t$ ,  $d_{t+\tau}$  is the dividends paid at  $t+\tau$ ,  $E$  the expectation operator,  $Z_t$  the information at date  $t$  and  $\rho$  the rate at which expected future dividends are discounted (plus one). This is the dividend capitalisation formula of Williams (1938). Rubinstein (1976) provides the generalisation of this formula using minimal assumptions. This representation directs the task of financial statement analysis. The financial analysis question is how accounting might be helpful in escaping the dividend conundrum.

Accounting has two features that might help escape the dividend conundrum<sup>3</sup>: it is a system recording transactions bound by rules independent of stock prices and dividends; it is connected to future dividends, the target attribute of equation 2.7.<sup>4</sup> On face value, accounting is a system of measuring value and value accretion. Accounting is not just a signal but a measure of change in value. Ohlson (1988,1991a) has produced a breakthrough. Ohlson has shown

$$P_t = y_t + \sum_{j=1}^{\infty} E_t[x_{t+j}^a] R_f^{-j} \quad [2.2]$$

where  $y_t$  is the book value of assets,  $x_t^a$  is the excess earnings on the book value of assets in place at  $t-1$  and  $R_f$  is the 1+ the risk free rate. The condition to get from equation 2.1 to 2.2 is that earnings are calculated using clean-surplus accounting. That

<sup>2</sup> However, Ou and Penman (1989a) use individual ratios and not what Ohlson's theory supports, the total assets.

<sup>3</sup> Observed dividends are uninformative so that observing relationships between dividends and (accounting) information will not indicate value relevance.

<sup>4</sup> The calculation of earnings does not involve dividends. Dividends are at the discretion of management but earnings are not. Closing book values are not affected by current dividends but it is from the post-closing book values that subsequent dividends are paid. Thus the link to future dividends is explicit in accounting. The breakthrough is that it drives us out of the dividend conundrum.

is, changes in owners' equity due to reasons other than capital contributions and dividends are run through the income statement and dividends are against owner's equity but not earnings. In this model the value of the firm is related to

- ◇ the book value of existing assets and
- ◇ the excess earnings on the current capital stock (as measured by the book value).

This approach identifies that different points in time will give rise to different excess earnings; it takes account of the fact that earnings will not be sustainable in perpetuity. Value is based on projections of future accounting earnings from current information. Unlike dividends and cash flows earnings aggregate in a value sense. One does not have to worry about timing since the task is to predict the total earnings that a firm will deliver to the horizon and not earnings of the following year. Thus "manipulation" of income using accounting policies is of no concern if it just results in timing differences working their way out by period  $t+j$ .

This reflects the aggregation property of accounting which the formula captures. One "capitalises" aggregated future earnings [Ohlson (1990)] as the present value of earnings is not equal to the present value of dividends in [2.1] except in the case of 100% dividend payout every period. Future dividends do not have to be predicted. The relationship lies in that if dividends are paid out in the future, expected subsequent earnings are reduced. Dividends appear in the formula because they affect future earnings and, although by themselves, they are irrelevant for value<sup>5</sup>. One can consider future earnings as if no dividends are paid earnings reflect earnings as if all dividends are reinvested in the firm.

The Capital Markets Research argues that accounting earnings are not value relevant but information about value attributes (future dividends) [Ball and Brown (1968)]. Equation 2.1 says that adding earnings adds value and over a long horizon,

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<sup>5</sup> In 1961, in the context of the debate concerning whether the value of the firm is related to earnings, dividends or both, Modigliani and Miller show how to value a company consisting entirely of equity shares. They conclude that the value of the company is not related to dividends. They define the value of the company as

$$V_t = D_t + V_{t+1} - (I_t - (X_t - D_t)) / (1 + r)$$

$$V_t = V_{t+1} + (X_t - I_t) / (1 + r)$$

The MM61 paper was not designed with accounting theory in mind. Therefore, it does not deal with the general setting of the informational needs of investors. For some time the notion of economic income, as the measure which accounting measures should try to reflect, has been proposed by accountants.

this is dollar for dollar. This involves earnings as a measure of change in value and this view of accounting as a system for aggregating value is supported by Easton and Harris (1991), Easton, Harris and Ohlson (1991) and Ohlson and Penman (1991).

In the OP model, the link between market value and book value is through the earnings number. The book value of assets provides information about future earnings, which in turn generates value.

However, using the earnings number might be problematic. In OP(1989) paper, three problems can be identified with the use of earnings:

- ◇ OP use individual ratios and not Ohlson's suggestion of the total assets [see equation 2.2].
- ◇ OP use earnings as an intermediate step to predict earnings one-year ahead. Holthausen and Larcker (1992) argue that earnings are only weakly correlated with returns [Larcker 1989]] and therefore, they examine the ability of accounting information to generate profitable trading strategies by a model directly predicting the sign of subsequent one year excess return measures<sup>6</sup>.
- ◇ OP carry out a financial statement analysis. Carrying out a financial statement analysis, there is always the problem that financial ratios might be misleading, if the ratio assumptions are not satisfied. This makes the financial statement analysis not working. Thus, attention should be drawn on what assumptions ratios have to satisfy and the possible problems encountered when dealing with accounting ratios.

The basic assumption of ratio analysis is that of strict proportionality between the numerator and the denominator [Lev and Sunder (1979)]. The strict proportionality is assumed both in comparisons of ratios across firms at a point in time as well as over time. X and Y are strictly proportional i.e  $Y=BX$  and the ratio becomes  $Y/X=B$ .

However, the strict proportionality is violated if (i) there is an intercept term, a, and  $a \neq 0$  so that  $Y/X=b+a/x$  e.g an element of firm's profit may be unrelated to the sales element so the profit/sales ratio is not an adequate description of the relationship

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<sup>6</sup> Holthausen and Larcker(1989) model might be more susceptible to simply detecting misspecification in the excess return measures.

between profit and sales. Whittington (1980) and Barnes (1982) identify the nature and likelihood of misinformation arising from (i) and suggested that regression analysis should be used. McDonald and Morris (1984,1985) present evidence that the proportionality assumption is not violated and the ratio model was to be preferred. McLeay and Fieldsend (1987) conclude that it "remained tenable" allowing for size and sector effects identified by Lee (1985) and Buijink and Jegars(1986); (ii) where there is an error term,  $e$ , in which cases  $y=a+bx+e$  i.e the variance  $u$  changes over time (heteroscedasticity).

Much of the analysis of the distribution of financial ratios focuses on the normal distribution because

- ◇ it is described by only two statistics i.e mean and standard completely specify the distribution;
- ◇ many statistical tools available for analysing financial statement data are based on the assumption that data are normally distributed.

However, reasons exist for expecting non-normality. These involve [a] skewness in the distribution if strict proportionality does not hold; [b] some financial ratios e.g current ratio, have technical limits preventing a normal distribution from being a literal description; [c] some financial ratios have economic limits resulting in fewer observations in either the lower or upper end of the distribution than under normal distribution.

Since the earnings figure and ratio analysis might be problematic why not using the Discounted Cash Flow analysis (DCF). As Copeland, Koller and Murrin argue "the DCF approach captures all the elements that affect the value of the company in a comprehensive yet straightforward manner". But how does one define cash flows? Dividends are the cash flows paid to shareholders, but we cannot deal with these. What is meant, is firms' internal cash flows? But where do we observe these? In the financial statements. But where and what number? Is it the cash flows from operations? No, because it does not take out investment (like earnings do through depreciation). Is it "free cash flow? (operating cash flow minus investment)". This takes care of investment but the calculations to get to the number from the published financial statements are not trivial. Accounting obscures the real cash flows with

accrual noise. This is the problem with accounting.

However, on the other hand, free cash flow concerns the distribution of wealth rather than its generation. It is the maximum dividend a firm pays after providing for investment. Like dividends it is uninformative and as Paton (1963) said "cash flow is an illusion".

Cash flows do not aggregate like a value measure should. DCF has no way of handling stocks at the end of the period that generate subsequent cash flows i.e no prediction over finite period. Accounting does this automatically as book values at the end of a period are aggregations of prior earnings (ex-dividend) that represent a stock of value (assets) capable of generating future earnings and dividends.

If accept these deficiencies then DCF analysis works as an ex ante valuation model. However, to develop a fundamental analysis one has to discover empirical relationships between current information (for example, at period  $t$ ) and future value attributes at  $t+\tau$  for all  $\tau > 0$ . If those attributes are future cash flows this is not possible as Ohlson (1990) points out, realized cash flows at  $t+\zeta$  reflect not only cash flows projected at time  $t$  but also cash flows from investments made between  $t$  and  $t+\tau$ . Ex post there is no way of disentangling them.

Again as ex post cash flows are uninformative, it is the same as forecasting dividends: value can be expressed as the present value of future cash flows but observed cash flows are uninformative about value. Accounting takes out this problem by distinguishing wealth appreciation from dividends and adjusting for financing through the per-share calculation.

## 2.3 RETURN TO FUNDAMENTALS

The equation 2.2 focuses our thinking: where will accumulated earnings (book values) be in 5, 10 or 15 years? The task is one of efficiently summarising information that gives answer to this question. To do this, a large array of data - sales, depreciation..., as well as information outside the financial reports will have to be evaluated. Not only will we have to identify what pieces of information need to be considered but also the weights to apply to the pieces to project what is essentially a point estimate of future earnings. These weights may differ under different circumstances - firms, industries, economy and this aggregation might not be easy. So how can it be achieved?

One can turn to the aggregation and measurement properties of accounting. Financial statements involve a great deal of information about a company. Accounting procedures aggregate a large amount of information (transactions) into summary measures. They are, at least, at face value, value measures. One might start with these numbers and add other information only if it indicates value (expected future earnings or book values) not captured by these measures.

But why choosing earnings? Since the task is the prediction of future earnings, current earnings may well be a good indicator of future earnings. What follows is an approach to financial statement analysis that takes this summary measure as a starting point and thus exploits accounting aggregation [*Ou and Penman(1989)*].

### ***Ou and Penman Financial Statement Analysis***

Ou and Penman (1989a) examine the information in the balance sheet about future profits whether or not such information is impounded in prices. The study can be interpreted in terms of both (i) permanence of earnings and also (ii) information about the excess opportunities from future investment.

OP develop a LOGIT model for predicting changes in annual EPS one year ahead using publicly available financial statement information. They construct a Pr measure from non-earnings numbers in the financial statement (e.g the balance sheet and footnotes). They select 28 financial statement variables (16 in one subperiod and

18 in the other, with only six in common) from a wide set of 68 variables, purely on the basis of their ability to predict earnings. Those selected include return on assets, return on equity,  $\Delta^7$  in return on opening equity, debt/equity ratio,  $\% \Delta^8$  in dividend per share and  $\% \Delta$  in inventories. The model parameters are then fitted to subsequent, that is, out of sample, values of firms' financial to generate predictions of future earnings. Predictions are based on the estimated LOGIT probability of a future earnings ( $E_t$  at period  $t$ ) increase, denoted  $Pr$ . More importantly, this information in  $Pr$  is over and above that contained in  $E_{t-1}$  (earnings at period  $t-1$ )<sup>9</sup>.

## Concluding Remarks

The OP analysis raises two issues:

- ◇ First, there is no theory to explain the role of annual financial statement numbers in predicting future earnings. How is it that nonearning numbers information is useful for predicting future earnings changes? What is the economic rationale for the nonearning numbers being identified? Why OP use individual ratios while Ohlson argues that it is the aggregated total assets variable that should be used?

These questions are dealt with in chapters 3 and 4. A possible explanation for why the nonearning numbers information is useful for predicting future earnings changes might relate to the economics of the firm. Consider the U.K. economy in recent years. Manufacturers are complaining that stocks are rising because consumers are failing to purchase goods i.e changes in stocks may contain information about future sales (and therefore profits). This means that the balance sheet may contain information about the

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<sup>7</sup>  $\Delta$  = absolute change;

<sup>8</sup>  $\% \Delta$  = percentage change.

<sup>9</sup> This superiority of  $Pr$  over  $E_{t-1}$  is inferred because (i) Ou and Penman find that  $Pr$  outperforms  $P_{t-1}$  in predicting and (ii) we know (from Beaver, Lambert, Ryan) that  $P_{t-1}$  has more information about  $E_t$  than  $E_{t-1}$ .

persistence of current earnings. Research and Development may be a signal about future excess profits. In a market where product differentiation is important (chemicals, cars), research and development may be a way to identify companies which are developing their products. Thus the balance sheet contains information about future excess profits.

- ◇ Second, OP find that financial statement numbers information is not impounded in prices as soon as the financial statements [FS] are made public i.e excess returns can be made using trading strategy based on previous FS numbers. Why is it that the information is only impounded when the earnings are realised? Why is there lagged impounding? Why is there a difference between the information captured by  $P_t$  and the information set captured by  $P_{t-1}$ ? OP test for risk and size but still the answer is not known<sup>10</sup>.

Chapters 5, 6, and 7 provide the answer to the above issue. The explanations of why the financial statement information is not impounded in current prices but in the following year's stock returns are, first, that financial statements capture the "temporary" changes in current earnings and not the "permanent" changes and thus the market consider unworthy in terms of costs and time looking for this lagged impounding effect in the financial statements. In other words, the ability of the accounting descriptors to contain information about future earnings changes is time-specific; second, the lagged impounding phenomenon is not valid for a particular distribution of the financial ratios, that is, negative and/or positive values. Third, large firms' information of the financial statement reports, concerning future earnings changes, is reflected in next period's return, while the information of small firms is impounded in the current year's return.

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<sup>10</sup> Ou and Penman (1989b) attempt to relate their work to well-known anomalies, like the Earnings/price anomaly in their subsequent paper. However, the paper is quite complicated and difficult to understand.



## 2.4 THE DATA

Published annual accounting data available from **DATASTREAM**<sup>11</sup> and **EXSTAT** databases, for the period 1980-88, are used. Datastream is mainly used but where information is not available or missing from datastream, data from exstat are used to complete the data set.

However, special formulas are used by Datastream to calculate ratios while data in exstat are recorded as appeared in the financial statements. In order to avoid having any discrepancies in the way ratios are calculated, the data extracted from Exstat are treated with the same formulas as used by Datastream.

Two industries, *Stores and Chemical*, are examined: [1] across industry and over time; [2] pooled over firms and time.

### ***Industry Classification***

An important assumption of industry ratio analysis is that significant differences in the distributions of industry ratios exist. Greig (1992) explores an alternative interpretation of the Ou and Penman (1989a) result based on the above assumption. More fundamentally, Greig suggests that variations in the risk and other economic characteristics between different industries may account abnormal returns. Since the distribution of the descriptors will vary according to industry, the Pr summary measure may capture industry specific characteristics [Greig (1992), p. 415]. Consequently, when these summary measures are used to take long and short positions in industries means that Pr measure is sorting in part on industry rather than the future earnings signal inherent in the accounting data.

In order to assess whether the OP results might be driven by variations across different industries, I perform the analysis for two different industry sectors, *stores and chemicals*. These are chosen because of their distinctive economic characteristics;

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<sup>11</sup> Datastream is an extensive on-line system of databases covering, inter alia, domestic (United Kingdom) and international company accounts.

the stores industry is largely driven by high volume in a low margin business with homogeneous products and little in way of research and development. The chemical industry, by contrast, is more oligopolistic and undertakes significant research and development. The sample of the Stores industry is comprised of 40 companies of which 15 are found on the FTSE100 index; the CHEMICAL industry is comprised of 29 companies of which 10 are found on the FTSE100 index.

From the 68 ratios used by OP (1989) paper only 51 have been used either because of the

- ◇ non-availability of data;
- ◇ different definitions used from that of Ou and Penman;
- ◇ a ratio is defined as missing if it has many observations missing.

Some of the accounting ratios which are not considered due to the non-availability of data are replaced by some other ratios which believed to give similar information. For example, in the place of research and development, capital expenditure is used instead. The overall number of ratios used increases to 83, considering the  $\Delta$  and  $\% \Delta$ <sup>12</sup> of the accounting descriptors considered.

### ***The classification of financial ratios***

In Chapter 3, the financial statement analysis carried for U.K. data over the period 1980-88, for both industries Stores and Chemical, is presented. Financial statement analysis embraces a number of ratios to evaluate the financial aspects, e.g risk, return, liquidity etc.

Ratios entail the division of one or more items on the financial statements by another related item or items and have been recognised as useful indicators of financial performance and are routinely computed and published by financial analysis firms. These ratios become "benchmarks" against which to compare a firm's results to evaluate its effectiveness.

More than 30 different ratios or variations of ratios have been discussed in the

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<sup>12</sup> $\Delta$  = absolute change of the accounting descriptor;  
 $\% \Delta$  = percentage change of the accounting descriptor;

financial analysis literature and therefore, it is thought appropriate, to present here, first how the ratios used by Ou and Penman (1989) might be classified and compare these ratios with the ratios used in chapter's 3 financial statement analysis. However, it should be noted that OP do not classified the ratios.

The intended use of each ratio is discussed (although, a fuller interpretation is provided in chapter 3) while the calculation of the ratios as supplied by Datastream is discussed briefly in the next section. Ou and Penman ratios might be classified into five groups:

- ◇ Profitability and Return
- ◇ Long-term Solvency and Stability
- ◇ Short-term Solvency and Liquidity
- ◇ Efficiency
- ◇ Shareholders' Investment Ratios

### ***Profitability and return***

Profitability ratios are designed for the evaluation of the firm's operational performance. The ratios yield an indicator of the firm's efficiency in using the capital committed by stockholders and lenders.

#### Return on opening/closing equity

Return on equity signifies the percentage rate of return on shareholders' funds. It measures the efficiency with which common shareholders' equity is being employed within the firm. Regardless of a company's total liability and capital employed, this ratio compares the company's net profit solely with the owner's investment.

#### Return on total assets

Return on total assets ratio indicates the company's efficiency/industry in the use of its economic resources. The return on total assets of a company will get higher as the assets become older because the denominator will decrease each year due to the increase in accumulated depreciation. Second, in case of price increases due to

inflation will result in a company using recently purchased assets showing a relatively lower return on these assets.

### Depreciation/fixed assets

The depreciation to fixed assets ratio indicates whether the return on the assets gets higher because of the age of the assets, because as the assets become older the denominator will decrease due to increase in accumulated depreciation.

### Gross margin ratio

The gross margin ratio is merely a firm's gross profit expressed as a percent of sales. It helps management to measure the operational efficiency of production and sales as a change or difference in gross profit ratio can signal

- ◇ differing selling prices - raised or discounting;
- ◇ different product costs, which may or may not indicate different quality.

### Operating profit to sales

The operating profit to sales ratio is simply the firm's net income expressed as a percent of sales. It indicates the final result of management's profit directed activities.

### Pretax income to sales

The pretax income to sales ratio indicates how much of the income before tax is earned from each dollar of sales.

### Net Profit Margin

The net profit margin represents the average profit margin received by a company on sales.

## ***Long-term solvency and stability***

The main objective of long-term solvency is to indicate the firm's ability to meet both the principal and interest payments on long-term obligations. These measures stress the long-run financial and operating structure of the firm.

### **Debt/Equity ratio**

The debt to equity ratio indicates a company's capital structure. It indicates whether a company is highly geared (debt) or not. The more highly geared a company, the higher the risk that little will be available to distribute by way of dividend to the ordinary shareholders. The reason being debt carries a fixed rate of interest (or fixed rate of dividend if in the form of preference shares) and a given (large) amount must be paid out from profits to holders of debt before arriving at a residue available for distribution to the holders of equity.

### **Long-term debt to equity**

The long-term debt is concerned with a company's long-term structure. A company consists of fixed assets and net current assets e.g. working capital. These assets must be financed by long-term capital of the company which is either share capital and reserves or long-term debt capital i.e. creditors falling due more than one year.

### **Times Interest earned**

The times interest earned shows whether the company has enough profits before interest and tax to pay its interest costs comfortably, or whether its interest costs are high in relation to the size of its profits, so that a fall in PBIT (profit before interest and tax) would then have a significant effect on profits available for ordinary shareholders.

### **Repayment of LT debt as % of total LT debt**

The repayment of Lt debt as % of total LT debt indicates to the long-term lender how secure are the interest payments.

### Issuance of LT debt as % of total LT debt

The issuance of LT debt as % of total LT debt indicates whether the company is highly geared or not - a company having large proportion of borrowings is "highly geared" whereas a company financed predominantly by shareholders' funds or equity has "low gearing".

### Cash Flow to total debt

It is the ratio of a company's net cash flow to its total debt. Obviously, a company needs to be earning enough cash from operations to be able to meet its foreseeable debts and future commitments and the cash flow and changes in cash flow ratio provide a useful indicator of a company's cash position.

### ***Short-term solvency and liquidity***

Neither profitability nor gearing addresses directly the key of liquidity and the general objective of short-term solvency(liquidity) ratios is to indicate the firm's ability to meet its short-term financial obligations.

### Current Ratio

The current ratio is the "standard" test of liquidity. The idea behind this ratio is that a company should have enough current assets that give a promise of "cash to come" to meet its future commitments to pay off its current liabilities.

### Quick Ratio

However, not all companies are able to convert all their current assets into cash very quickly. In particular, for example, some manufacturing companies might hold large quantities of raw materials stocks which must be used in production to create finished goods stocks. Finished goods stocks might be warehoused for a long time or sold on lengthy credit. In such businesses, where stock turnover is slow, most stocks are not very "liquid assets" because the cash cycle is so long. For these reasons, an additional liquidity ratio, known as quick or acid test ratio, is calculated.

### Change in total uses of funds/Change in sources of funds/Change in funds

A company can obtain liquid assets from sources other than sales, such as the issue of shares for cash, a new loan or the sale of fixed assets. But a company cannot rely on these at all times and in general, obtaining liquid funds depends on making sales and profits. Even so, profits do not always lead to increases in liquidity. This is mainly because funds generated from trading may be immediately invested in fixed assets or paid out as dividends. A useful ratio derived from the funds statements is

$$\diamond \text{ funds generated from operation/total sources of funds}$$

### **Efficiency**

Efficiency ratios usually consist of the sales figure in the numerator and the balance of an asset, for example, inventory, accounts receivable, in the denominator. The objective is to indicate various aspects of operational efficiency.

#### Inventory Turnover

The inventory control revolves around the delicate balance of not wanting to maintain too much or too little stock at any one time. Obviously, a company wants to maintain sufficient stock and raw materials to ensure continual steady production and the ability to meet customer requirements. Conversely, the stock levels must be at such a level to minimise costs, for example, storage costs.

#### Days sales in accounts receivables

The days sales in accounts receivables represents the average time it takes debtors to actually pay for purchases. Collection period is a good credit control indicator because it shows how quickly a company receives cash from its debtors, therefore improving company liquidity, asset turnover and ultimately return on capital employed.

#### Sales/total assets

The sales to total assets ratio indicates the degree of achievement of generating revenue from the firm's assets. To use gross sales would result in including some

revenues not actually earned i.e some subsequently "cancelled" by sales returns or reduced by sales discounts.

### Sales/working capital

The sales to working capital ratio indicates how much working capital is needed to finance sales over and above that capital invested in fixed assets. It is unwise to set target levels for working capital turnover as it is the direct result of maintaining optimum levels for each of the underlying net current assets items. If this ratio is subject to an upward trend, then this suggests overtrading, which means sales are increasing without adequate capital to support them and vice versa.

### Sales/fixed assets

The sales to fixed assets represents the utilisation of fixed assets or those sales produced by the available fixed assets. As a rule, it indicates the efficiency in the use of fixed assets and an improvement in this ratio should mirror by an eventual improvement in the return on capital employed.

### Sales/cash

The sales to cash ratio depends on each individual company's cash management policy.

### Working capital/total assets

A company that has large volume of stocks and debtors might be over-investing in working capital and so tying up more funds in the business than it needs to. This would suggest poor management of debtors(credit) or stocks by the company.

## ***Shareholders' investment ratios***

Ratios helping equity shareholders and other investors to assess the value and quality of an investment in the ordinary shares of a company.



Change in dividend per share

The dividend per share indicates the fixed rate of interest in pence received by and it is clearly an item of some interest to shareholders.

Cash dividends as % of cash flows

In the financial statement analysis carried out in chapter 3, similar ratios to the ones OP (1989) are employed. A comparison of the financial ratios used in the OP (1989) paper and in this thesis is illustrated in the following table:

**Table 2.1: A comparison of the ratios used in the OP analysis with the ratios used in this study.**

<b>Ratios used by OP</b>	<b>This study</b>
Current ratio	yes
%Δ in current ratio	yes
Quick ratio	yes
%Δ in quick ratio	yes
Days sales in accounts receivables	yes
%Δ in accs. receivables	yes
Inventory/turnover	yes
%Δ in inventory/turnover	yes
Inventory/total assets	yes
%Δ in inventory/total assets	yes
%Δ in inventory	yes
%Δ in sales	yes
%Δ in depreciation	yes
%Δ in DPS	yes
Depreciation/plant assets (instead fixed assets were used)	yes
%Δ in depreciation/fixed assets	yes
Return on opening equity	yes
%Δ in capital expenditure to total assets	yes
%Δ in capital expenditure/total assets with one year lag	No because it resulted in the loss of many observations
Debt/equity	yes
%Δ in debt/equity	yes
LT debt to equity	No because of too many missing observations
%Δ on LT debt to equity	No because of too many missing observations
Equity to fixed assets	yes
%Δ in equity to fixed assets	yes
Times interest earned	yes
%Δ in time interest earned	yes
Sales to total assets	yes
%Δ to sales to total assets	yes
Return on total assets	yes
Return on closing equity	yes
Gross margin ratio	Non-availability of data
%Δ in gross margin ratio	Non-availability of data
Operating profit to sales	yes

%Δ on operating profit to sales	yes
Pretax income to sales	Non-availability of data
%Δ in pretax income to sales	Non-availability of data
Net profit margin	yes
%Δ in net profit margin	yes
Sales to total cash	yes
Sales to accs. receivables	Non-availability of data
Sales to inventory	yes
%Δ to sales to inventory	yes
Sales to working capital	yes
%Δ to sales to working capital	yes
Sales to fixed assets	yes
%Δ in production	Non-availability of data
%Δ in research and development	Non-availability of data
%Δ in research and development/sales	Non-availability of data
%Δ in advertising expense	Non-availability of data
%Δ in advertising expense/sales	Non-availability of data
%Δ in total assets	yes
Cash flow to total debt	yes
Working capital to total assets	yes
%Δ in working capital to total assets	yes
Operating income to total assets	Non-availability of data
%Δ in operating income to total assets	Non-availability of data
%Δ in total uses of funds	yes
%Δ in sources of funds	yes
Repayment of long debt as %Δ of total debt	Non-availability of data
Issuance of LT debt as %Δ of total LT debt	Non-availability of data
Purchase of treasury stock as %Δ of stock	Non-availability of data
%Δ in funds	yes
%Δ in LT debt	Non-availability of data
Cash dividend as %Δ of cash flows	Non-availability of data
%Δ in working capital	yes
Net income over cash flows	Non-availability of data

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## ***Formulas for the calculation of ratios used in this study***

There is no general agreement about the precise definitions (formulas) for the calculation of ratios. Also, sometimes the way an accounting ratio is defined might alter the empirical results. For example, Greig (1992) attempts to use exactly the same definition of variables on the same data set OP (1989a) use, but obtains very different results. Greig attributes this to a slightly different definition of an accounting descriptor. In order to avoid the problem in this study, the ratios based on accounting variables definitions in Datastream are defined as follows [the Datastream number is included in brackets]:

Current ratio:	current assets[376]/current liabilities[389]
Quick ratio:	total current assets[376] - total stock and work in progress[364]/total current liabilities[389]
Days sales in accs receivables:	total stock and work in progress[364]/total sales[104] * 365
inventory turnover:	total sales[104]/total stock and work in progress[364]
inventory/total assets:	total stock and work in progress[364]/work in progress + debtors[367] + cash and equivalent and any other current asset[375] + total fixed assets(gross)[330] - depreciation of fixed assets[338]
total sales:	domestic sales[101] + exports[102] + overseas sales[103] - inter company sales[108] + associate company sales[109] + value added tax-gross[123] + other duties and taxes[125]
depreciation:	provisions for amount written off[818] and depreciation of fixed assets and assets leased in[334].
dividend per share:	figures are adjusted for subsequent scrip and rights issue[190]
return on opening equity:	earned for ordinary-full tax or earned for ordinary-adjusted / equity capital and reserves - total intangibles + [total deferred tax or deferred tax]
capital expenditure:	capital expenditure contracted[292]
debt/equity:	trade debtors[287] + instalment credit[368] + due from associates and unconsolidated subsidiaries[660] + HP creditors + taxation

	recoverable + prepayments, accrued income and debtors[378] - bad debt reserve[662] / equity issued for cash[412] + equity issued for acquisition[414]
equity/fixed assets:	equity issued for cash[412] + equity for acquisition[414] / total fixed assets(gross)[330] - depreciation of fixed assets[338]
	times interest earned:pre-tax profit[400] / total interest charges[153]
sales/total assets	:domestic sales[101] + exports[102] + overseas sales[103] - inter company sales[108] + associate company sales[109] + value added tax-gross[123] + other duties and taxes[125] + total fixed assets(gross)[330] - depreciation of fixed assets[338]
return on total assets:	net profit after tax[175] - minority interest[232] - preference dividend[181]/ total assets[376+330]
return on closing equity:	earned for ordinary-full tax or earned for ordinary-adjusted / equity capital and reserves[305] -total intangibles + [total deferred tax or deferred tax]
operating profit(before depr)/sales:	net profit derived from normal trading activities before depreciation and operating provisions[137] / domestic sales[101] + exports[102] + overseas sales[103] -(inter company sales[108] + associate company sales[109] + value added tax-gross[123] + other duties and taxes[125]
net profit margin:	after tax profit[175] / total sales[104] * 100
sales to total cash	:domestic sales[101] + exports[102] + overseas sales[103] - inter company sales[108] + associate company sales[109] + value added tax-gross[123] + other duties and taxes[125]/short term loans and deposits[263] + other liquid assets + current investments
sales to inventory:	domestic sales[101] + exports[102] + overseas sales[103] - inter company sales[108] + associate company sales[109] + value added tax-gross[123] + other duties and taxes[125]/total stock and work in progress[364]
sales to working capital:	domestic sales[101] + exports[102] + overseas sales[103] - inter company sales[108] + associate company sales[109] + value added tax-gross[123] + other duties and taxes[125]/current assets[376] - current liabilities[389]
cash flow to total debt:	sales[104] * cash flow margin[719] / total

	debtors[370]
total uses of funds:	total of funds used and the movements In working capital[460]
total sources of funds:	total funds generated from operations[405] + funds raised by capital issues[411] + funds raised from other sources[426]
funds from operations:	pre-tax profits[400] + depreciation[402]+ other adjustments[404] + special provisions[591] + amortisation of intangibles[975]

## 2.5 ESTIMATION ISSUES USING RATIOS

A number of practical problems when carrying out a ratio analysis have to be faced.

The problems are various:

Ratio Selection: A logical relationship between the numerator and denominator must exist and the ratios must be formed only by elements based on common values. Analysts must have in mind what they want to get from each ratio.

Negative numbers: existence of negative numbers can be problematical when transforming the original data to approximate better to a normal distribution. Certain transformations such as logs are impossible for negative numbers and others potentially misleading.

The option an analyst has when facing negative numbers are:

- ◇ delete the observation from the sample;
- ◇ examine reasons for the negative denominators and make subsequent adjustments;
- ◇ use an alternative ratio capturing similar aspects.

### Extreme/Outlier observation

An outlier is an observation appearing to be inconsistent with the remainder of that set of data. To decide whether an observation is an outlier a useful first step is to determine whether the outlier arises due to computation reasons.

- ◇ is the extreme value due to a recording error? Compare the numbers in the computation of the financial ratio with the numbers in the annual reports.
- ◇ is the extreme value due to the denominator of the ratio approaching zero in a particular year? Values of prior years can provide useful evidence in deciding if this situation exists.

A useful second step is to examine the accounting classification, the accounting methods and the economic and structural change as reasons for the extreme

observations.

An analyst when faced with outliers not caused by recording errors can

- ◇ delete the outlier on the grounds it represents a "true outlier".
- ◇ retain the outlier on the grounds it represents an extreme state of the underlying characteristic.
- ◇ making adjustments for the economic or accounting factors that cause the outlier.
- ◇ "winsorising" the sample, for example, changing the value of the extreme observation to the value of the nearest observation not viewed as "suspect".
- ◇ "trimming" the sample by deleting the top N and the bottom N observations.

Unavailable data: financial reports are often severely delayed and financial information regarding unquoted companies may not be included on available databases. In addition, large organisations with a wide range of activities in different industries may not present completely segmental information and therefore, a comparison with other firms of interest may not be feasible.

### Normality

Much of the analysis of the distribution of financial ratios focuses on the normal distribution. If normality is rejected, the options available are the following:

- ◇ impose normality on the data. This can be achieved by ranking all the observations in the data examined and then converting these ranks to points on a standardised normal distribution:
- ◇ attempt to transform data such that a normal distribution assumption is descriptive;
- ◇ attempt to impose normality by deleting observations that deviate most from normality;
- ◇ attempt to impose normality by resetting extreme observations to less extreme values;
- ◇ recognise non-normality without attempting to identify the specific non-

normal distribution;

◇ winsorising or trimming impose normality.

Ezzamel, Molinero and Beecher identify that even after removing the outlier many distributions still appear to be non-normal. On the basis of this they conclude that non-proportionality is the reason why normality could not be achieved. Deakin (1976), for U.S manufacturing firms over 1953-73 and other in U.S.A, tests the normality assumption. Deakin concludes that the normality assumption was untenable for 11 well-known ratios, except for the debt/total asset ratio. If, however, normal distribution is not valid for the data examined then [a] impose normality on the data; [b] seek a more suitable ratio model. Concerning the former, the traditional approach is to transform the data so it eventually conforms. Frecka and Hopwood (1983) use Deakin's original ratios and find that by deleting outliers normality could be achieved for most ratios of the manufacturing firms and specific industry groupings. This also greatly reduces variances and increases their stability over time (skewness and Kurtosis measures are used). Concerning the alternative (retaining their information by using a suitable ratio model) advances have been made by McLeay (1986a). He looks at the theoretical models of distribution and making certain assumptions found that they fitted his data from French companies. Bougen and Drury (1980) for U.K data concludes that nonnormality exists because of the existence of extreme observations and the differing levels of skewness. Buckmaster and Saniga (1984) conclude that "the current ratio has a J-shape distribution" rather than the conclusion of most prior research that the current ratio does "not have a normal distribution".

A high degree of correlation among financial ratios of a given firm can be expected since [a] many ratios have common components; [b] some financial statement items tend to move in the same direction as other items. This expectation was confirmed by the somewhat scanty evidence available e.g short-term liquidity ratios in a sample of petroleum and steel firms were found to be highly correlated. This evidence is consistent with a smaller set of ratios being able to capture much of the information contained in the numerous financial ratios that can be calculated.

Ratio distribution tend to be correlated over time for [a] firms set and attempt



to maintain optimal ratio levels relative to some industry target e.g industry mean; [b] industry and economy-wide events affecting all firms within an industry.

## **2.6 CONCLUDING REMARKS**

This chapter explains how the different hypotheses in the following chapters are developed and defines the accounting descriptors used in the empirical tests. It draws attention on the sensitivity of the results to different accounting descriptors' definitions and the problems faced when carrying out a ratio analysis.

## **CHAPTER THREE**

**Do The Annual Financial Statement Report Numbers Contain  
Information About Future Earnings Changes?  
Evidence For The U.K.**

### 3.1 INTRODUCTION

The primary purpose of this chapter is to examine whether annual financial statement report numbers might capture those attributes of firms which reflect some regularity in the earnings generating process. Specifically, an investigation is made whether annual financial statement numbers convey information about earnings changes one period ahead, which is not reflected in current earnings<sup>1</sup>.

This research tests whether the U.K. financial statement numbers exhibit information about future earnings changes during the period 1980-88. In addition, the sign of the estimated coefficients is compared with the OP estimated coefficients, in order to examine whether the same relationships exist for the U.K., as for the U.S.A, between the accounting descriptors and the future earnings changes.

This is important since Greig (1992), despite using the models reported by OP (1989a) and the COMPUSTAT variables definitions supplied by Penman in correspondence, finds that the distribution of the  $Pr_{it}$ <sup>2</sup> values is skewed towards the lower  $Pr_{it}$  values: 40.9% of the observations are in the  $Pr_{it}>0.6$  portfolios and 17.1% in the  $Pr_{it}<0.4$  portfolio. The comparable numbers for OP are 45.7% and 10.3% respectively. Greig(1992) argues as an explanation for this difference in  $Pr_{it}$  distribution "a possibility is an unknown difference in defining, one or more of the accounting variables".

The information perspective of accounting implies that the contemporaneous association between financial statement accounting numbers and stock returns can be viewed as resulting from a predictive information link between these accounting numbers and some unobservable, value-relevant attributes of the firm. Evidence suggests that future earnings are value relevant. The findings of the Ball and Brown (1968), Beaver and Morse (1978) and Beaver, Lambert and Morse (1981) are all consistent with the notion that the stock prices reflect information regarding future

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<sup>1</sup> Much prior research had identified nonearning items that are marginally useful in explaining contemporaneous stock returns. Examples include Lipe(1986) on components of earnings, Gonedes(1974) on several financial ratios and others.

<sup>2</sup>  $Pr_{it}$  is a measure for the assessment of the relative ability of firms to generate earnings in the subsequent year. It is so called in Ou and Penman(1989a).

earnings. Moreover, the efforts made by financial analysts, investors and management seem to indicate that future earnings are value relevant.

Financial statement report numbers may convey predictive information about future earnings for at least two reasons: first, some financial statement numbers may help to identify the "transitory" component of current earnings which does not persist in the long run. Second, financial statement data may reflect managerial decisions that have implications for future earnings.

The chapter is organised as follows: section 3.2 explains the experimental design; section 3.3 presents the empirical results for Stores and Chemical Industries separately and then together; section 3.4 contains the conclusions.

## 3.2 EXPERIMENTAL DESIGN

### *Introduction*

As in the OP study, earnings changes are predicted with a logit model<sup>3</sup>. The binary model mitigates the estimation problem of outliers, so common in accounting data series, since it specifies that extreme changes in earnings have no greater influence on the model parameter estimates than any other observation.

To identify which accounting descriptors exhibit information about future earnings changes, each descriptor is included as the sole explanatory variable in a univariate logit model. To test the ability of the accounting descriptors to jointly describe one-year ahead future earnings, we include all the descriptors whose estimated coefficients are significant at the 0.10 level in the univariate logit model, in a multivariate logit model. However, since logit analysis throws away information<sup>4</sup>, univariate and stepwise regressions are employed as well. The analysis is carried out for the stores and chemical industries separately and then together. The estimation

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<sup>3</sup> The Logit procedure of LIMDEP is used.

<sup>4</sup> Holthausen and Larcker(1992) argue that OP way of estimating multivariate logit models might have eliminated financial statement items providing significant marginal explanatory power.

method is cross-section; that is each coefficient is assumed to be constant over the period.

In each logit model, the dependent variable is specified in two ways: first, the distribution of the %  $\Delta$  operating profit earnings is partitioned by the mean; secondly, the distribution is partitioned by the mean of the %  $\Delta$  operating profit, but outliers are deleted from the sample data, to examine whether the ability of the accounting descriptors to describe subsequent earnings changes is caused by the outliers<sup>5</sup>. It has been documented in the segmental reporting literature that financial statements do have information only when there are radical economic changes. In the segmental reporting literature, these economic conditions are described as outliers.

In OP study, a drift is estimated<sup>6</sup>. In this research, no drift is estimated because of the short-time series of the data available. Partitioning by the mean is an attempt to overcome the problem of inflation<sup>7</sup>.

### 3.3 THE OP RESULTS

Ou and Penman (1989) use published accounting data to estimate the probability of one year - ahead earnings increase, labelled Pr, for the eleven years 1973-83. For a given firm-year observation

$$\hat{Pr}_i = [1 + \exp(-\Theta X_i)]^{-1} \quad [3.1]$$

where  $X_i$ =set of accounting variables in the annual financial statements,  $\Theta$ =set of estimated coefficient weights applied to those variables.

To estimate the coefficients a binary dependent variable specification is used to indicate an increase or decrease in the following year's operating profit.

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<sup>5</sup> An observation is an outlier if the value in the operating profit > 10 and < -10. An outlier can be defined as a sudden change in the economic conditions.

<sup>6</sup> Ou and Penman denote the change in earnings for year t+1  $\Delta X_{i,t+1} = EPS_{i,t+1} - EPS_{i,t} - \text{drift}_{i,t+1}$ . This is because earnings increases tend to exceed earnings decreases, in inflationary conditions.

<sup>7</sup> Partitioning by the mean does not have equal number of 0,1. Partitioning by the median, equal number of 0,1 is achieved. However, I did not partition by the median because the LIMDEP package used in the analysis does not provide the median.

Ou and Penman denote the change in earnings for year  $t+1$ , as  $\Delta\text{EPS}_{it+1} = \text{EPS}_{it+1} - \text{EPS}_{it} - \text{drift}_{it+1}$ . Drift is estimated because earnings increases tend to exceed earnings decreases, in inflationary conditions. In estimating the Pr, OP define the earnings as the primary earnings-per-share before extraordinary items. An earnings change is classified as 1 if the  $\Delta X_{t+1}$  in EPS exceeds the most recent-four-year average and 0 otherwise. The drift is estimated as the mean earnings per share change over the four years prior to year  $t+1$ .

OP used annual financial statement data over the periods 1965-72 and over 1973-77 [*the drift was estimated during 1961-64 period*]. Their analysis was conducted in 3 stages. **In the first stage**, sixty eight (68) financial statement ratios are selected on the basis of their ability to predict the direction of the annual change in the following year. These accounting ratios which are eligible for inclusion in the final version of the model are determined by running univariate legit on the comprehensive set of 68 accounting ratios and selecting those significant at the 10% level.

The first model over 1965-72 retains 34 accounting ratios. These 34 variables and their estimated coefficients are used to estimate Pr for the years 1973-77. The second model over 1973-77 retains 34 variables and is used to calculate Pr for the years 1978-83. 34 or 50% of the coefficient estimates of the 68 ratios, in both periods 1965-72, 1973-77, have p-values less than 0.10. The estimates within each estimation period are not from independent observations, however. The reason being the overlapping between estimation and prediction periods. Of the 34 descriptors with p-values less than 0.10 in the first period, 32 have the same sign on the estimated coefficient in the second period and of these 32 only 6 did not have p-value less than 0.10. Similar consistency is observed for descriptors with p-values less than 0.10 in the second period. This indicates they captured attributes of firms that demonstrate some regularity in generating earnings and that predictive ability will hold up outside of the estimation periods. Ou and Penman distance themselves from rationalising the signs of the coefficient estimates.

**In the second stage**, to test the ability of the accounting descriptors to jointly describe future earnings changes, OP reduce the set of the 34 retained ratios further. OP include in a multivariate model all ratios whose coefficients are significant at 0.10

level in the univariate analysis. They then drop all variables for which coefficient estimates in the multivariate estimation are not significant at the 0.10 level, leaving 19 variables for 1965-72 and 18 for 1973-77 period.

**In the third stage**, they investigate each of the remaining variables stepwise deleting descriptors not significant at the 0.10 level. In this stage, 3 descriptors are dropped in the 1965-72 and none in the 1973-77 period. The final models (with 16 descriptors in the first estimation and 18 in the second are summarised below [*Ou and Penman (1989), p. 307, table 3*]:

<i>Accounting Descriptors</i>	<i>1965-1972 estimation</i>		<i>1973-1977 estimation</i>	
	<i>Maximum likelihood estimate of the coefficient</i>	<i>chi-square (p-value)</i>	<i>Maximum likelihood estimate of the coefficient</i>	<i>chi-square (p-value)</i>
%Δ current ratio			-1.2105	69.14 (0.00)
%Δ quick ratio			0.8185	53.13 (0.000)
%Δ in inventory turnover	0.1663	2.72 (0.100)		
Inventory/total assets			-1.077	35.21 (0.000)
%Δ in inventory/total assets	-0.1231	3.45 (0.063)	-0.7256	36.30 (0.000)
%Δ inventory			0.2945	18.65 (0.000)
%Δ sales			0.4846	21.77 (0.000)
%Δ depreciation	-0.5107	40.61 (0.000)		
Δ dividend per share	-3.0754	129.68 (0.000)	-1.5189	72.14 (0.000)
%Δdepreciation/plant assets	0.5613	23.39 (0.000)		
Return on opening equity			-1.9197	44.84 (0.000)
Δ in return on opening equity			0.4124	10.13 (0.002)
%Δ in capital expenditure/total assets	-0.0659	9.92 (0.002)		
%Δ in capital expenditure/total assets with one year lag	-0.0758	16.10 (0.000)	-0.0288	4.32 (0.0334)
Debt/equity			-0.0334	6.84 (0.009)
%Δ debt/equity	0.1514	7.25 (0.007)		
%Δ in sales/total assets	0.5754	13.15 (0.000)		
Return on total assets	-4.2089	8.62 (0.003)	-11.3727	90.95 (0.00)
Return on closing equity	-3.0088	28.97 (0.000)		
Gross margin ratio	0.8152	23.64 (0.00)		
% in pretax income/sales			0.0141	2.87 (0.090)
sales to total cash			-0,003	3.81 (0.051)
%Δ total assets			-0.9628	37.19 (0.000)
Cash flow to debt	0.3282	3.47 (0.062)		
Working capital/total assets			0.9571	28.39 (0.000)
Operating income/total assets	-0.2726	4.10 (0.43)	3.5859	43.76 (0.000)
Repayment of LT debt as % of total LTdebt	0.5079	24.35 (0.000)	0.0576	3.87 (0.49)
Cash dividend/cash flows	2.4112	159.01 (0.000)		
Intercept	0.5162	95.57 (0.000)	0.7416	104.28 (0.000)



The various test statistics indicate significant ability of the descriptors to jointly describe subsequent earnings changes. At first glance, there does not appear to be much consistency in the descriptors included in the models for the two periods. Of the 28 descriptors in either period, only 6 appear in both models. However, these are multivariate models and the inclusion of a particular variable and the sign on its estimated coefficient will depend on variables already in the model at the relevant step in the step-wise procedure. Moreover, many of the descriptors capture similar operating characteristics. For example, inventory, sales, etc., appear in more than one descriptor.

The six descriptors that appear in both models are

- ◇  $\Delta$  dividend per share;
- ◇ % change in capital expenditures/total assets with one year lag;
- ◇ return on total assets;
- ◇ operating income/total assets;
- ◇ repayment of LT debt as % of total LT debt intercept.

and the intercept.

### 3.4 THE RESULTS OF THIS RESEARCH

In order to assess whether the OP results might be driven by variations across different industries, an analysis is performed for two different industry sectors, stores and chemicals, first separately and then together.

#### *Stores Industry*

Binary specification (0,1) is formed based on the mean of the % $\Delta$  operating profit

#### *Univariate Logit Analysis*

To determine which accounting descriptors predict the direction of future earnings

changes in the following year, each descriptor is included as the sole explanatory variable in a univariate LOGIT earnings change prediction model. The appendix to this chapter, table A1 presents the coefficient estimates for stores industry for all 83 accounting descriptors for the period 1980-88, along with a t-statistic (and p-value) relevant for the hypothesis that the coefficient is zero. During the period 1980-88, twenty (20) accounting descriptors coefficients are significant at the 0.10 level [*have p-value less than 0.10*] and in a second stage, are included in the multivariate analysis. While Ou and Penman distance themselves from the data, so as not to develop "stories" that rationalize the signs of the coefficients estimates, I do not. I attempt to give a plausible explanation for the results. However, this may not be the only possible explanation; that is, the analysis here is indicative.

**Table 3.1: Stores Industry**  
**Comparison between OP's study with this research's**  
**accounting variables coefficients signs examining their relationship with the % $\Delta$  in**  
**operating profit.**

<i>Accounting Descriptors</i>	<i>Ou and Penman</i>		<i>This research's</i>
	<i>accounting coefficient</i> 1965-72	<i>accounting coefficient</i> 1973-77	<i>accounting coefficient</i> 1980-88
current ratio	0.00290	-0.0009	-0.29050
$\Delta$ current ratio			-0.29011
% $\Delta$ current ratio	0.00370	-0.0701	-0.30722
depreciation/fixed assets	1.47880	0.8490	1.51300
$\Delta$ inventory/turnover			-0.11289
inventory			-0.00011
$\Delta$ inventory			-0.00007
% $\Delta$ sales	-0.1134	-0.2816	-1.97990
$\Delta$ return on opening equity	-0.0362	-0.3660	-0.11289
% $\Delta$ return on opening equity			-0.01221
debt/equity	0.01450	0.02960	-0.31522
times interest earned	-0.0001	0.00030	-0.25205
return on total assets	-6.4210	-6.7617	-6.52920
$\Delta$ return on closing equity			0.01496
net profit margin	-2.3731	-1.7202	-0.08444
Operating profit/sales	-0.9918	-1.2560	-16.5360
$\Delta$ sales/working capital			0.00660
% $\Delta$ sales/working capital	-0.0005	-0.0016	0.17118
$\Delta$ total assets			-0.00000
cash flow/total debt	-0.2258	-0.0538	-0.00000
total income/cash flow	-0.0073	-0.0019	-0.46940

$\Delta$  = the absolute change of an accounting variable;

% $\Delta$  = the percentage change of an accounting variable.

### ***Rationalization of the coefficients signs (analysis is indicative)***

The financial descriptors exhibiting information about future earnings can be grouped into liquidity and efficiency, profitability, long-term solvency and stability ratios.

#### **◆ Liquidity and Efficiency**

The current ratio, the %  $\Delta$  in current ratio, the  $\Delta$  in sales/working capital, the  $\Delta$  in inventory turnover, the inventory, the  $\Delta$  in inventory and the %  $\Delta$  in sales fall into the liquidity and efficiency group:

#### **Current ratio, $\Delta$ current ratio and % $\Delta$ current ratio**

OP report a positive relationship for the years 1965-72 while a negative relationship for the years 1973-77. In this study, the current ratio,  $\Delta$  and the %  $\Delta$  current ratio have a negative coefficient while %  $\Delta$  operating profit has a positive coefficient during the 1980-88 period.

The decrease in the  $\Delta$  and %  $\Delta$  in current ratio might be attributed to the fact that the stores industry might invest profits from trading in fixed assets or to profits being paid out as dividends. Thus an increase in profits does not necessarily lead to an increase in liquidity. This conclusion is further supported by negative relationship the cash flow/total debt ratio also exhibits with the %  $\Delta$  in operating profit and the positive relationship the depreciation/fixed assets exhibits with the %  $\Delta$  in operating profit.

#### **Depreciation/Fixed Assets**

OP report a positive coefficient. In this study, there also exists a positive relationship between depreciation to fixed assets and %  $\Delta$  operating profit during 1980-88. This might be attributed to an increase of investment in fixed assets [dealing with stores industry] in the early years of the assets age, for example the opening of a new shop or to the accumulated depreciation increase when the assets age gets larger and larger.

*Δ inventory turnover*

OP use % Δ inventory turnover in their analysis. In this study, the Δ inventory turnover exhibits a negative relationship with % Δ operating profit. However, Δ inventory ratio does not account for the sales variable and therefore, we cannot draw any conclusion about the company's position.

*% Δ sales*

OP report a negative coefficient. In this study, the % Δ sales is also negatively related with % Δ operating profit. However, this ratio does not account for the cost of the goods sold, and it might refer to firms financing their working capital requirements through debt.

*Δ Sales/Working Capital and % Δ sales/working capital*

OP report a negative coefficient. A positive relationship is found for the U.K. data. The Δ sales/working capital and % Δ sales/working capital give the additional information missing from the Δ inventory turnover and % Δ sales variables. The Δ and % Δ sales/working take account both of the sales and the working capital requirements.

## ◆ Profitability

The return on opening equity, the Δ and the % Δ in return on opening equity, the operating profit/sales, the return on closing equity, the return on total assets and the net profit margin ratios fall into the profitability group:

*Return on opening equity, Δ return to opening equity and % Δ return to opening equity*

Ou and Penman report negative coefficient. In this study, these return accounting descriptors exhibit a negative relationship with % Δ operating profit variable. This might be attributed to the fact that the industry might have generated a lot of sales by keeping prices down and accepting low profit margin per £1 of sales. It reveals

economic rationale.

### Operating profit to sales

The operating profit to sales variable has a negative coefficient while the %  $\Delta$  in operating profit has a positive coefficient. This might be explained by the fact that the industry might have had to boost sales by keeping prices low and therefore accepting low profit margin per £1 sales. Ou and Penman report a negative sign.

### Net Profit Margin

The net profit margin has a negative coefficient while the %  $\Delta$  in operating profit has a positive coefficient. Low margin might be due to new product launching or a management decision to increase their number of customers and ultimately market shares by pulling prices down. Ou and Penman report a negative sign.

### Return on total assets

The return on total assets ratio has a negative coefficient while the %  $\Delta$  in operating profit has a positive coefficient. This suggests that the industry has difficulties in its assets generating sales. This might be attributed to the fact that the industry might have generated sales by keeping prices down and accepting low profit margin per £1 of sales because of recession in the market. Ou and Penman report a negative relationship as well.

### ◆ Long term solvency and stability

The income to cash flow, the debt to equity, the times interest earned and the cash flow to debt ratio fall under long term solvency and stability category.

### Income to Cash Flow(total cash flow to total debts) and cash flow to total debt

Ou and Penman report a negative sign. Income to cash flow exhibits a negative relationship with %  $\Delta$  operating profit for the U.K. This might be attributed to decrease in long term debt. The industry does not seem to be high geared.

### Times Interest Earned

Ou and Penman report a positive coefficient. Times interest earned exhibits a negative relationship with  $\% \Delta$  operating profit variable. This indicates that the industry is not highly geared.

### Debt/Equity

Ou and Penman report a negative coefficient. A negative relationship is reported in this study as well. However, it should have been a positive relationship in order to give the same signal like the times interest earned ratio and the income to cash flow ratio that the industry is not highly geared. The explanation for the negative relationship exhibited might lie in the reason that the debt/equity might not capture permanent changes.

However, it must be noticed that many of the accounting descriptors capture similar operating characteristics. For example, sales, inventory appear in more than one descriptor.

### **Multinomial Logit Analysis**

In order to test the ability of the 20 retained accounting descriptors [*whose coefficients are significant at the 0.10 level in the univariate logit model*] to jointly describe subsequent future earnings changes, we run a multivariate model. All descriptors whose coefficients in the multivariate estimation are not significant at the 0.10 level are also identified in table 3.2.

**Table 3.2: Multinomial Logit Estimation For The Stores Industry Examining Whether The Accounting Descriptors Selected Jointly Describe Future Earnings Changes For The Period 1980-88.**

<i>Accounting descriptors</i>	<i>accounting coefficient</i>	<i>Standard Error</i>	<i>t-ratio</i>	<i>prob( t &gt;=x)</i>
current ratio	0.71865E-01	0.7982E-01	0.900	0.36792
$\Delta$ current ratio	0.42375E-01	0.1833	0.231	0.81713
% $\Delta$ current ratio	-2.0165	1.194	-1.689*	0.09116
$\Delta$ inventory/turnover	0.40967	0.2254	1.818*	0.06908
inventory	0.10384E-04	0.9288E-05	1.118	0.26355
$\Delta$ inventory	-0.25816E-05	0.3597E-04	-0.072	0.94279
% $\Delta$ sales	0.17022	0.1583	1.075	0.28218
depreciation/fixed assets	2.6009	3.890	0.669	0.50378
$\Delta$ return on opening equity	-0.50392E-01	0.3643E-01	-1.383	0.16654
% $\Delta$ return on opening equity	0.53375	0.3905	1.367	0.17165
times interest earned	-0.42690E-02	0.3245E-02	-1.316	0.18828
return on total assets	3.9681	8.691	0.457	0.64796
$\Delta$ return on total assets	-6.2357	8.427	-0.740	0.45931
operating profit/sales	7.9061	3.810	2.075*	0.03799
net profit margin	-0.92549E-02	0.4371E-01	-0.212	0.83232
$\Delta$ sales/working capital	0.89607E-03	0.3003E-02	0.298	0.76544
% $\Delta$ sales/working capital	-0.15220	0.1057	-1.439	0.15004
$\Delta$ total assets	0.21092E-05	0.1062E-04	0.199	0.84261
cash flow/total debt	-0.10677E-04	0.2543E-04	-0.420	0.67460
total income/cash flow	-0.38890	0.2270	-1.713*	0.08668

\* The p-values of the t-statistic are all significant at the 0.10 level.

In the multinomial analysis, over the period 1980-88, the % $\Delta$  in current ratio, the  $\Delta$  in inventory turnover, the operating profit/sales ratio and the total income/cash flow ratio contain information for the direction of future earnings' changes. All accounting descriptors belong to different ratio groups. For example, the current ratio belongs to liquidity group, the  $\Delta$  inventory turnover to the efficiency group, total income/cash flow to the leverage group while the operating profit/sales to the profitability group. Noteworthy is that the " $\Delta$  inventory turnover" variable is also reported by OP to contain information about future earnings in the period 1965-72.

**Binary specification (0,1) is formed based on the mean of %  $\Delta$  operating profit with outliers being deleted.**

### ***Univariate Logit Analysis***

For this alternative method, we examine whether the ability of the accounting descriptors to contain future earnings changes is caused by outliers<sup>8</sup>. For example, the

<sup>8</sup> An observation which appears to be inconsistent with the remainder of the set of data.

inclusion in net income of a large write-down for a plant closing is an outlier. The appendix to this chapter, table A1a presents the coefficient estimates for stores industry for all 83 accounting descriptors for the period 1980-88, along with a t-statistic (and p-value) relevant for the hypothesis that the coefficient is zero. During the period 1980-88, the accounting descriptors which have p-value less than 0.10 and are also found in the first univariate logit method, where outliers are not deleted, are the %  $\Delta$  in current ratio, inventory, times interest earned and return on total assets. The findings suggest that some financial statement numbers' ability to contain information about future earnings is not due to outliers.

Tests of whether the ability of the accounting descriptors might be due to outliers are also presented in the univariate regression estimation.

### ***Multinomial Logit Analysis***

To test whether the accounting descriptors [*whose coefficients are significant at the 0.10 level in the univariate logit analysis*] jointly describe future earnings changes even when outliers are deleted, we carry out a multivariate analysis. In the multivariate analysis in table 3.3, the accounting descriptors which still exhibit information about future earnings changes are the  $\Delta$  current ratio and the sales/working capital variables. The  $\Delta$  current ratio variable is found to appear in the multinomial model of both methods (*first, where outliers are included and second where outliers are deleted from the sample*).

***Table 3.3: Multinomial Logit Estimation For The Stores industry Examining Whether The Accounting Descriptors Selected Jointly Describe Future Earnings Changes For The Period 1980-88.***

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob t <math>\geq</math>x</i>
debtors ratio	21.218	45.67	0.749	0.36378
% $\Delta$ net profit margin	0.14504E-03	0.2237E-03	0.789	0.45221
cash flow/total debt	0.60123E-03	0.2546E-03	1.471	0.15465
sales	-0.99924E-03	0.54578-03	-1.709	0.08748

Once univariate and multinomial logit estimations are carried out, OP investigate the remaining variables step-wise deleting descriptors not significant at the 0.10 level. We



carry, instead, out univariate and stepwise regression estimations for all 83 accounting variables.

## **Regression Analysis**

### ***Univariate Regression Analysis***

To further test first, whether with no outliers results change and second, whether accounting descriptors can predict the size of the %  $\Delta$  operating profit or just the sign, each descriptor is included as the sole explanatory variable in a regression earnings model and outliers observations are deleted from the %  $\Delta$  operating profit variable.

The accounting descriptors which contain information about future earnings are the  $\Delta$  inventory turnover, return on closing equity, the  $\Delta$  return on closing equity, the working capital/total assets and the  $\Delta$  in working capital/total assets variables [*see appendix to this chapter table A1c*]. It is noteworthy, that the  $\Delta$  in inventory/turnover is reported in OP results as one of the six descriptors which contain future earnings. However, none of these accounting descriptors are found to contain information about future earnings changes in the univariate logit estimations. This might be attributed to the different methodologies used.

### ***Stepwise Regressions***

To test whether the accounting descriptors jointly describe future earnings changes even when outliers are deleted and whether the accounting descriptors can jointly predict the size of the %  $\Delta$  operating profit or just the sign, the % $\Delta$  of all the accounting descriptors considered are included in the stepwise regression. In the period 1965-72, OP results suggest that the %  $\Delta$  in inventory turnover, %  $\Delta$  in capital expenditure/total assets, are among the six accounting descriptors, which indicate significant ability to jointly describe subsequent earnings changes. In this study, the stepwise regression table 3.4 shows that the two variables mentioned in OP study, the %  $\Delta$  in capital expenditure/total assets and the %  $\Delta$  in inventory/turnover exhibit

significant ability to jointly describe subsequent earnings changes for the U.K data. Apart from the two variables already mentioned, the %  $\Delta$  in inventory and the %  $\Delta$  in sales/cash also jointly describe subsequent earnings changes for the U.K data.

**Table 3.4: Stepwise Regression Analysis For The Stores Industry Examining Whether The %  $\Delta$  Of The Accounting Descriptors Jointly Describe Future Earnings Changes For The Period 1980-88.**

<i>Accounting Variable</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-ratio</i>	<i>Prob<math>t \geq x</math></i>
% $\Delta$ capital expenditure/total assets	0.30814E-01	0.7171E-02	4.297*	0.00004
% $\Delta$ sales/cash	0.24721E-01	0.7615E-02	3.246*	0.00156
% $\Delta$ inventory/turnover	1.7502	0.4662	3.754*	0.00028
% $\Delta$ inventory	1.1530	0.4675	2.466*	0.01525

\* The p-values of the t-statistic are all significant at the 0.10 level.

### **Concluding Remarks**

The findings, via logit, suggest that some financial statement report numbers exhibit information concerning the direction of one - year ahead earnings changes. However, the predictive ability of some of these financial statement numbers disappears once outliers are deleted from the sample. Only three accounting descriptors exhibit predictive ability of future earnings changes even when outliers are deleted. These accounting descriptors are the %  $\Delta$  current ratio, inventory and times interest earned variables.

To further test whether the predictive ability of some accounting descriptors about future earnings changes is due to outliers and further whether the accounting descriptors can predict the size of the %  $\Delta$  operating profit and not just the sign, a univariate regression model is run. Different descriptors are found to describe earnings changes one year ahead. It is noteworthy, that the  $\Delta$  inventory/turnover variable is found to exhibit information about future earnings changes. The same variable is reported by OP (1989) as one of the accounting descriptors containing information about future earnings changes.

Having examined the stores industry, I examine in the following section the chemical industry. The same tests are also applied here.

## Chemical Industry

**Binary specification (0,1) is formed based on the mean of the % $\Delta$  operating profit**

### Univariate Logit Analysis

To test which accounting descriptors exhibit information about future earnings changes for the chemical industry, each descriptor is included as the sole explanatory variable in univariate logit model. In the univariate logit estimation [see appendix to this chapter table A2a], some of the accounting descriptors describing future earnings changes one year ahead for the chemical industry, are the same descriptors which exhibit information about future earnings changes for the stores industry. Fourteen (14) accounting variables whose coefficient estimates are significant at the 0.10 level are reported. The results are given in table 3.5.

**Table 3.5: Chemical Industry**  
**Comparison between Ou and Penman's with this research's accounting variables coefficients sign examining their relationship with the %  $\Delta$  operating profit.**

Accounting Descriptors	Ou and Penman Coefficients		This research's coefficients
	1965-72	1973-77	1980-1988
debtors ratio	0.0001	-0.0001	0.02739
$\Delta$ debtors ratio			0.01979
% $\Delta$ debtors ratio	-0.065	-0.0090	1.50200
return on opening equity	-2.929	-2.9960	-0.8773
$\Delta$ return on opening equity			-0.4830
% $\Delta$ return on opening equity	-0.036	-0.3660	-0.4348
sales/total assets	-0.024	-0.0444	-0.8060
return on total assets	-6.421	-6.7617	-0.0548
% $\Delta$ return on total assets			-0.4239
sales/fixed assets	0.0001	-0.0008	-0.8060
$\Delta$ sales/fixed assets			-1.2308
% $\Delta$ total assets	-0.469	-1.1751	1.0217
operating profit/sales			-7.5399
sales			-0.4239

### ***Rationalisation of the accounting coefficients signs<sup>9</sup> (analysis is indicative)***

The sales/total assets ratio, the  $\Delta$  net operating profit margin and  $\% \Delta$  net operating profit, the operating profit/sales, the  $\% \Delta$  sales, the sales/fixed assets, the return on total assets and the return on closing equity,  $\Delta$  the return on closing equity and  $\% \Delta$  in closing equity variables exhibit same coefficient sign like the stores industry. The accounting descriptors which contain information about the chemical industry and differ in sign from stores industry descriptors are the debtors ratio and the  $\% \Delta$  total assets.

#### **Debtors ratio [average days in accounts receivables]**

OP report a positive relationship in the period 1965-72 but a negative one in the period 1973-77. In this study, for the period 1980-88 a positive relationship exists between  $\% \Delta$  in operating profit and debtors ratio. This might be due to the industry allowance of generous credit terms to win customers. This ratio indicates the cost of growth.

#### **$\% \Delta$ in total assets**

A positive relationship exists between  $\% \Delta$  total assets and  $\% \Delta$  operating profit variables. This might be considered as a signal of inside information. The reason being that managers seeing how well a firm is doing, would like the market to know as well and disclose the news to the market through this ratio.

### ***Multinomial Logit Analysis***

To test the ability of the accounting descriptors to jointly describe future earnings changes, I reduce the set of the fourteen (14) retained ratios [*whose coefficients are statistically significant in the univariate estimation*], by including them, in a

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<sup>9</sup> In this section, only the variables whose coefficient estimates differ from the ones already reported for the stores industry, are explained.

multivariate model. The results are given in table 3.6.

**Table 3.6 Multinomial Logit Estimation For The Chemical Industry Examining Whether The Accounting Descriptors Selected Jointly Describe Future Earnings Changes For The Period 1980-88.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob t &gt;=x</i>
Debtors ratio	0.17409E-01	0.6744E-02	2.581*	0.00984
Δdebtors ratio	0.34805E-01	0.2950E-01	1.180	0.23805
Δ%debtors ratio	-2.9098	2.518	-1.156	0.24781
Return on opening equity	-0.67929	0.2923	-2.324*	0.02013
Δreturn on opening equity	-0.19206	0.3588	-0.535	0.59247
Δ%return on opening equity	-0.47410	0.4243	-1.117	0.26386
Sales/total assets	-1.3123	0.3570	-3.676*	0.00024
Return on total assets	0.80416E-01	0.5349E-01	1.503	0.13275
Δ%return on total assets	0.35809E-01	0.3121	0.250	0.00230
operating profit/sales	0.23145E-01	0.1241	0.489	0.45600
Δnet profit margin	0.78942	0.4789	0.745	0.89600
%Δtotal assets	0.96300	0.5630	0.456	0.7912

The debtors ratio, the return on opening equity and the sales/total assets accounting variables still contain information about future earnings. The information contained in these three accounting descriptors cannot be attributed to the ratios being within the same category of ratios as all three explain different groups of ratios. The debtors ratio indicates long-term solvency and stability, the return on opening equity indicates profitability and the sales/total assets liquidity and efficiency.

**Binary specification (0,1) is formed based on the mean of the %Δ operating profit with outliers being deleted**

### **Univariate Logit Analysis**

In this alternative method, we test whether the ability of the accounting descriptors to describe future earnings changes is caused by the outliers. In the appendix to this chapter, table A2b presents the coefficient estimates for chemical industry for all 83 accounting descriptors for the period 1980-88, along with a t-statistic (and p-value) relevant for the hypothesis that the coefficient is zero. The accounting variables having information about future earnings are the debtors ratio, the Δ debtors ratio, the Δ sales,

the debt/equity, the  $\Delta$  depreciation/fixed assets, the sales/total assets, the  $\Delta$  sales/total assets, the  $\% \Delta$  sales/total assets and the  $\% \Delta$  total assets.

For the chemical industry, the debtors ratio, the  $\Delta$  debtors ratio, the sales/total assets and the  $\% \Delta$  total assets variables capture information for future earnings and this informational ability is not due to outliers.

### **Multinomial Logit Analysis**

In the multinomial analysis where outliers are deleted, the accounting descriptors that still contain information about future earnings is the debtors ratio, the  $\% \Delta$  capital expenditure, the sales/total assets and the  $\% \Delta$  total assets. The debtors ratio, sales/total assets and the  $\% \Delta$  total assets capture information about future earnings changes in both binary specification methods used [*the first specification with outliers considered and the second specification where outliers are deleted*]. Results are presented in table 3.7.

**Table 3.7: Multinomial Logit Estimation For The Chemical Industry Examining Whether The Accounting Descriptors Selected Jointly Describe Subsequent Earnings Changes For The Period 1980-88.**

<i>Accounting Descriptors</i>	<i>Accounting Coefficients</i>	<i>Standard Error</i>	<i>t-ratio</i>	<i>prob( t &gt;=x)</i>
Debtors ratio	0.14838E-01	0.5294E-02	2.803*	0.00507
$\Delta$ debtors ratio	0.55782E-02	0.2677E-01	0.208	0.83491
$\% \Delta$ debtors ratio	-1.8477	2.104	-0.878	0.37975
$\Delta$ sales	-0.49853E-06	0.2824E-05	-0.177	0.85988
$\Delta$ depreciation/fixed assets	0.85062	1.549	0.549	0.58282
$\% \Delta$ capital expenditure	-0.12366	0.7003E-01	-1.766*	0.07743
sales/total assets	-0.81750	0.2856	-2.863	0.00420
$\Delta$ sales/total assets	0.45479	1.563	0.291	0.77103
$\% \Delta$ sales/total assets	-1.2764	2.125	-0.601	0.54806
$\% \Delta$ total assets	2.3374	1.205	1.940*	0.05239
$\Delta$ working capital	-0.37206E-05	0.4125E-05	-0.902	0.36705

\* The p-values of the t-statistic are all significant at the 0.10 level.

Notice that these accounting descriptors capture similar operating characteristics. For example, total assets appear in more than one descriptor.

## Regression Analysis

### *Univariate Regression Analysis*

To further test whether the ability of some accounting descriptors to predict future earnings changes one year ahead are due to outliers, and whether the accounting descriptors can predict the size of the  $\% \Delta$  operating profit or just the sign, a univariate regression model is run [in the appendix to this chapter, see table A2b]. The univariate model captures different accounting descriptors, from the ones reported in the univariate logit model, to exhibit information about future earnings changes. The accounting descriptors which contain information about future earnings changes are the  $\Delta$  current ratio, the  $\% \Delta$  current ratio, the debtors ratio, the  $\% \Delta$  capital expenditure, the sales/total assets, the  $\% \Delta$  sales/total assets, the  $\% \Delta$  total assets, the  $\Delta$  working capital and the  $\% \Delta$  working capital. The sales/total assets and the  $\% \Delta$  total assets are the accounting descriptors however, which contain information about future earnings in both univariate logit and regression models. For these two accounting descriptors it might be argued that they are indeed revealing information about future earnings and are not just an effect caused by outliers.

### *Stepwise Regression Analysis*

In the stepwise regression, during the period 1980-88, the  $\% \Delta$  debtors ratio, the  $\% \Delta$  depreciation, the  $\% \Delta$  capital expenditure, the  $\% \Delta$  capital expenditure/total assets, the  $\% \Delta$  return on closing equity and the  $\% \Delta$  operating profit/total assets variables capture information about future earnings. The results are presented in table 3.8.

**Table 3.8 Stepwise Regression Analysis For The Chemical Industry Examining Whether The  $\% \Delta$  Accounting Descriptors Jointly Describe Subsequent Earnings Changes For The Period 1980-88.**

<i>Accounting Variables</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-ratio</i>	<i>prob t &gt;=x</i>
$\% \Delta$ debtors ratio	0.59678	0.1427	4.183	0.00005
$\% \Delta$ depreciation	0.45117	0.9076E-01	4.971	0.00000
$\% \Delta$ capital expenditure	-0.68730E-01	0.2458E-01	-2.796	0.00597
$\% \Delta$ capital expenditure/total assets	0.74673E-01	0.3530E-01	2.115	0.03635
$\% \Delta$ return on closing equity	-0.46554	0.1007	-4.625	0.00001
$\% \Delta$ operating profit/sales	0.65018	0.1528	4.254	0.00004

The %  $\Delta$  capital expenditure variable is also reported to capture information about future earnings changes in the multinomial analysis.

### **Concluding Remarks**

The findings, via logit, suggest that some financial statement report numbers exhibit information concerning the direction of one - year ahead earnings changes. However, the predictive ability of some of these financial statement numbers disappears once outliers are deleted from the sample. Only, four accounting descriptors persist to exhibit predictive ability of future earnings changes in both binary specification methods [*first, where outliers are considered and second, where outliers are deleted*]. These accounting descriptors are the debtors ratio, the %  $\Delta$  debtors ratio, the sales/total assets and the %  $\Delta$  total assets variables.

To further test whether the predictive ability of some accounting descriptors about future earnings changes is due to outliers and further whether the accounting descriptors can predict the size of the %  $\Delta$  operating profit and not just the sign, each accounting descriptor is included as the sole explanatory variable in a univariate regression model. Different descriptors are found to describe earnings changes one year ahead. Only, the sales/total assets and the %  $\Delta$  total assets variables also exhibit information about future earnings changes in both the univariate logit and regression analysis. The two accounting variables mentioned do capture information about future earnings changes and this ability of theirs is not caused by outliers.

Having examined the chemical and stores industries separately, I examine in the following section the stores and chemical industries together. The same tests are also applied here.



## ***Stores and Chemical Industries Together***

**Binary Specification (0,1) is formed based on the mean of the % $\Delta$  operating profit**

### ***Univariate Logit Analysis***

To examine which accounting descriptors exhibit information about future earnings changes for the stores and chemical industries together, each descriptors is included as the sole explanatory variable in the univariate logit model. A direct comparison with the OP results can be made when stores and chemical industries are tested together for the whole period 1980-88. During this period, 19 accounting descriptors [*see appendix to this chapter, table A3a*] exhibit information concerning the direction of future earnings changes.

Examining the Stores and Chemical Industries together, the 19 descriptors whose coefficient estimates are significant at the 0.10 level are retained. Notice that all the accounting descriptors exhibit same signs with the accounting descriptors coefficient signs OP report. Moreover, attention must be drawn on what Greig (1992) argues that the "Pr" measure might capture industries characteristics.

No attempt is made here to explain the relationship between the accounting descriptors and the %  $\Delta$  in operating profit since analytical explanation has been provided when the two industries are tested separately.

**Table 3.9: Stores and Chemical Industries Tested Together**  
**Comparison between Ou and Penman's paper with this research's accounting variables**  
**coefficients signs examining their relationship with the %  $\Delta$  operating profit.**

<i>Accounting Descriptors</i>	<i>Ou and Penman coefficients</i>		<i>This research's coefficients</i>
	<i>1965-72</i>	<i>1973-77</i>	<i>1980-1988</i>
$\Delta$ current ratio			-19.952
$\Delta$ inventory turnover			-1.2477
% $\Delta$ inventory turnover	0.10740	0.49170	0.00640
depreciation			-0.0001
% $\Delta$ depreciation	-0.0999	-0.2108	0.38498
% $\Delta$ dividend per share	-2.7033	-1.05693	0.05409
capital expenditure/total assets			0.00000
% $\Delta$ return on opening equity			0.00000
debt/equity	0.0145	0.0296	-0.1926
% $\Delta$ debt/equity			0.11877
$\Delta$ times interest earned			0.01474
% $\Delta$ return on closing equity			0.06972
net profit margin	-2.3731	-1.7202	-0.1066
$\Delta$ sales/cash			0.28540
% $\Delta$ sales cash			-0.1699
$\Delta$ sales/inventory			0.02556
$\Delta$ total assets			-0.4704
working capital/total assets	-0.2258	-0.0538	-0.0146
$\Delta$ working capital			-21.049

### **Multinomial Logit Analysis**

In the second stage, in order to test whether the accounting descriptors [*whose coefficient are significant at 0.10 level in the univariate analysis*] jointly describe the subsequent earnings changes, we run a multinomial logit model. Throughout the period 1980-88, the net profit margin, the %  $\Delta$  working capital and the depreciation variables contain information about future earnings changes. The results are shown in table 3.10.

Ou and Penman report that the %  $\Delta$  dividend per share, the %  $\Delta$  capital expenditure/total assets with one year lag, the return on total assets, the operating income over total assets, the repayment of long term debt as % of total LT debt and the intercept jointly describe the direction of future earnings changes.

**Table 3.10: Multinomial Logit Estimation For The Stores and Chemical Industries Examining Whether The Accounting Descriptors Selected Jointly Describe Future Earnings Changes For The Period 1980-88.**

<i>Accounting Descriptors</i>	<i>Accounting Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob t &gt;=x</i>
$\Delta$ current ratio	0.00019E-01	0.5615E-02	2.0981	0.00984
$\Delta$ inventory/turnover	-0.64559	0.6213	-1.874	0.00013
% $\Delta$ inventory/turnover	0.122690	0.4512	1.0230	0.49978
depreciation	-0.12336	0.7898	-1.456	0.23947
% $\Delta$ depreciation	-1.97890	1.4560	-1.786	0.02321
% $\Delta$ dividend per share	-0.64560	0.4223	-1.521	0.11013
% $\Delta$ return on opening equity	-0.26360	0.4562	-0.256	0.45890
capital expenditure/total assets	-0.65206	0.4528	-0.478	0.99237
debt/equity	-0.67259	0.8563	-1.674	0.00013
% $\Delta$ debt/equity	0.122245	0.4522	1.0870	0.56978
$\Delta$ times interest earned	-0.16536	0.6898	-1.656	0.04547
% $\Delta$ return on closing equity	-0.12780	0.9543	-2.347	0.06186
net profit margin	-1.7893	0.4560	-1.456	0.14074
$\Delta$ sales/cash	0.33210	0.46333	1.465	0.51200
% $\Delta$ sales/cash	-0.62260	0.5223	-1.331	0.11013
$\Delta$ sales/inventory	-0.65206	0.4788	-0.478	0.87237
$\Delta$ total assets	-0.12780	0.9543	-2.347	0.06186
working capital/total assets	-1.78931	0.4560	-1.456	0.14074
$\Delta$ working capital	0.45701E-01	0.3163E-01	1.456	0.66001

**Binary specification (0,1) is formed based on the mean of the % $\Delta$  operating profit with outliers being deleted**

### **Univariate Logit Analysis**

To examine whether the accounting descriptors' ability to contain information about future earnings is caused by outliers, we delete outliers from the dataset and each descriptor is included as the sole explanatory variable in the univariate logit estimation [see appendix to this chapter, table A3b]. The findings suggest that the debtors ratio, the sales, the %  $\Delta$  in net profit margin and the cash flow/total debt are the descriptors still exhibiting information about future earnings changes. Notice that different accounting descriptors, altogether, have been found to exhibit information about future earnings changes in the univariate logit estimation where outliers are not deleted. Evidence suggests that the accounting descriptors' ability to contain information about subsequent earnings changes is caused by the outliers.

## Multinomial Logit Analysis

To examine whether the accounting descriptors' ability whose coefficient is significant at the 0.10 level in the univariate analysis, jointly describe subsequent earnings changes and whether this predictive ability is due to outliers or not, we run a multinomial logit model. The results are shown in table 3.11.

**Table 3.11: Multinomial Logit Estimation For The Stores and Chemical Industries Examining Whether The Accounting Descriptors Selected Jointly Describe Future Earnings Changes During The Period 1980-88.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t  ≥ x)</i>
debtors ratio	0.16898E-02	0.1235E-02	1.368	0.17123
cash flow./total debt	0.95668E-01	0.5385E-01	1.777	0.07564
Δuses	-0.86884E-01	0.6520E-01	-1.333	0.18268

The only variable exhibiting information about future earnings changes is the Δ uses.

## Regression Analysis

### *Univariate Regression Analysis*

To further examine whether accounting descriptors' ability to contain information about future earnings is indeed caused by outliers and whether the accounting descriptors can predict the size of the % Δ operating profit or just the sign, a univariate regression estimation is run. In the univariate regression analysis [see A3c] the accounting descriptors which contain information about future earnings are the % Δ inventory/total assets, the % Δ sales, the Δ depreciation/fixed assets, the return on opening equity, the % Δ return on opening equity, the times interest earned and the return on closing equity. None of the above accounting descriptors are reported to capture information about future earnings when the stores and chemical industries are examined separately. None appears to contain information about future earnings changes under the two univariate logit models [first model with outliers and second model without outliers] explained in previous sections. Moreover none is the same as the ones presented by OP [Ou and Penman (1989), p. 307].

## Stepwise Regression

In the stepwise regression, during the period 1980-88, the % $\Delta$  quick assets ratio, the % $\Delta$  depreciation/fixed assets and the % $\Delta$  capital expenditure variables jointly exhibit information concerning the direction of future earnings changes. The results are presented in table 3.12.

**Table 3.12 Stepwise Regression Analysis For The Stores and Chemical Industry Examining Whether The %  $\Delta$  Accounting Descriptors Jointly Describe Subsequent Earnings Changes For The Period 1980-88.**

<i>Accounting Variables</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-ratio</i>	<i>prob( t <math>\geq</math>x)</i>
% $\Delta$ quick assets ratio	0.22676	0.1227	3.283	0.00045
% $\Delta$ depreciation/fixed assets	0.07217	0.9446E-01	4.771	0.00010
% $\Delta$ capital expenditure	-0.65550E-01	0.2008E-01	-2.456	0.00697

## 3.5 CONCLUDING REMARKS

This chapter takes an earnings change prediction approach to investigate whether U.K stores and chemical industries annual financial statement report numbers contain information concerning the direction (via logit) and size (via regression) of one-year ahead earnings changes. It provides empirical evidence for a predictive information link between these financial statement numbers and future earnings changes.

### *Stores Industry*

The findings (via logit) suggest that some financial accounting variables exhibit information concerning the direction of next year's earnings changes. However, the ability of some of these accounting variables to describe future earnings changes disappears once outliers [*these may be extraordinary items*] are deleted from the sample. For example, the inclusion in net income of a large write-down for a plant closing can cause an outlier.

The accounting descriptors which are robust to all the logit tests carried out

[with and without outliers] are the following:

- ◆ %  $\Delta$  current ratio;
- ◆ inventory;
- ◆ times interest earned; and
- ◆ return on total assets.

In the multinomial analysis, the only accounting variable which captures information about future earnings changes is the

- ◆ %  $\Delta$  current ratio.

The %  $\Delta$  current ratio appears in both multivariate logit models run [with outliers and without outliers].

The findings (via regression) suggest that the accounting descriptors can predict the size of the %  $\Delta$  operating profit as well as the sign. However, different accounting variables from the ones reported in the logit models are found to capture information concerning the size and sign of the %  $\Delta$  operating profit one-year ahead in the regression model. This might be attributed to the different methodologies used.

It is noteworthy that the accounting variable

- ◆  $\Delta$  inventory/turnover,

found to exhibit information about future earnings changes sign and size, is also reported by OP (1989a) as one of six descriptors to describe the sign of the future earnings changes for the periods 1965-72 and 1973-77.

### ***Chemical Industry***

The findings (via logit) suggest that some financial accounting variables exhibit information concerning the direction of next year's earnings change. However, the ability of some of these accounting variables to describe future earnings changes disappears once outliers [*these may be extraordinary items*] are deleted from the sample.

The accounting variables which are robust to all the logit tests carried out [with and without outliers] and predict next year's earnings changes are

- ◆ the sales/total assets;
- ◆ the %  $\Delta$  total assets;
- ◆ the debtors ratio; and
- ◆ the sales/total assets.

In the multinomial analysis, the accounting variables which jointly describe future earnings changes are the

- ◆ debtors ratio; and
- ◆ the sales/ total assets.

These two accounting variables appear in both multinomial logit models employed [*with and without outliers*].

The findings (via regression) suggest that the accounting descriptors can predict the size of the %  $\Delta$  operating profit as well as the sign. The two accounting variables which exhibit information about the size and sign of the %  $\Delta$  operating profit one-year ahead are the following:

- ◆ sales/total assets; and
- ◆ %  $\Delta$  total assets.

Ohlson (1991) recommends the aggregated total assets as the accounting descriptor which can shed light on the valuation concept<sup>10</sup>.

### ***Stores and Chemical Industries Together***

The findings (via logit) suggest that, when industries are aggregated, some financial accounting variables exhibit information concerning the direction of next year's earnings change. However, the ability of all these accounting variables to describe future earnings changes one-year ahead disappears once outliers [*these may be extraordinary items*] are deleted from the sample.

The findings (via regression) suggest that the accounting descriptors can predict the size of the %  $\Delta$  operating profit as well as the sign. The accounting variables which exhibit information about the size and sign of the %  $\Delta$  operating

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<sup>10</sup> The predictive information link between financial statement numbers and stock returns.

profit one-year ahead are the following:

- ◆  $\Delta$  inventory/total assets;
- ◆ %  $\Delta$  sales;
- ◆  $\Delta$  depreciation/fixed assets;
- ◆ the return on opening equity;
- ◆ the %  $\Delta$  return on opening equity;
- ◆ the times interest earned and
- ◆ the return on closing equity.

None of the above accounting descriptors are reported to capture information about the sign and size of the future earnings when the stores and chemical industries are examined separately. None appears to contain information about future earnings changes under the two univariate logit models [*first model with outliers and second model without outliers*]. Moreover none is the same as the ones presented by OP [Ou and Penman (1989), p. 307].

### **Concluding Remarks**

Overall the findings suggest that the power of the tests to predict the sign (via logit) and size (via regression) when the industries are aggregated is poor. When industries are tested separately, the findings reveal that different accounting descriptors describe future earnings sign and size changes in different industries. However, it must be noticed that the times interest earned variable exhibits information about the direction (via logit) of future earnings changes in the stores industry while when the two industries stores and chemical are aggregated, the times interest earned variable predicts the size (via regression) of the future earnings changes.

Overall the findings are in accordance with Greig's (1992) argument that "the summary measure "Pr" of the OP analysis is a function of accounting ratios. Ratios vary systematically across firms as a function of future earnings changes and also vary systematically cross-sectionally as a function of risk, size and determinants of expected returns [ Greig (1992), p. 415]. In other words, economic



factors cause the link between financial statement numbers and future earnings changes.

But the question asked now is whether the overall results are a consequence of a systematic relationship between these industry accounting descriptors and future earnings changes and whether expert analysts and investors can detect this relationship. The answer might lie on whether these accounting descriptors capture the "temporary" or " permanent" changes in current earnings. The permanent component will persist over time while the transitory will be only time-specific.

Thus the consistency of the accounting descriptors' coefficient signs and size across time and across industry needs to be tested. These issues are dealt with in chapter 4.

## **CHAPTER FOUR**

**Do Accounting Descriptors Capture the *Temporary* or  
*Permanent* changes in current earnings?**

**Evidence For The U.K.**

## 4.1 INTRODUCTION

In chapter 3, evidence suggests that some financial statement report numbers describe next year's earnings changes. But are the overall results a consequence of a systematic relationship between these financial statement numbers and future earnings? And how can expert analysts and investors detect this relationship if it is not stable over time? These are some of the questions raised by the findings in chapter 3.

The purpose of this chapter is to examine the consistency of the coefficient signs of the accounting descriptors containing information about future earnings, across time and across industries. Specifically, an investigation is carried out, to examine whether accounting descriptors exhibiting such informational characteristic about future earnings, capture the *temporary* or *permanent* change in current earnings.

The chapter is organised as follows: section 4.2 describes the hypotheses tested; section 4.3 explains the experimental design; section 4.4 presents the accounting descriptors coefficients signs which contain information about future earnings via univariate and multinomial logit estimations; section 4.4 also presents the accounting descriptors coefficients signs which contain information about future earnings via univariate regression estimation. section 4.5 contains the conclusion.

## 4.2 HYPOTHESES TESTED

To examine whether the accounting descriptors containing information about future earnings capture the temporary or permanent changes in current earnings, two hypotheses are tested:

- ◆  $H_1$ : The accounting descriptors containing information about future earnings capture the temporary changes in current earnings i.e do not exhibit the same informational characteristic over all sub-periods and the period 1980-88.

- ◆ H<sub>2</sub>: The accounting descriptors containing information about future earnings capture the permanent changes in current earnings i.e exhibit the same informational characteristic over all sub-periods and the period 1980-88.

### 4.3 EXPERIMENTAL DESIGN

The logit earnings change prediction models are estimated, first, based on a pooled data set of 69 companies, from stores and chemical industries, over the sub-periods 1980-84, 1981-85, 1982-86, 1983-87 and 1984-88; second, on a data set of 40 companies of the stores industry over the sub-periods 1980-84, 1981-85, 1982-86, 1983-87 and 1984-88; third, on a data set of 29 chemical companies of the chemical industry again over the sub-periods 1980-84, 1981-85, 1982-86, 1983-87 and 1984-88.

In the first stage, each descriptor is included as the sole explanatory variable in a LOGIT change earnings prediction model. In a second stage, in order to examine whether the accounting descriptors jointly describe subsequent earnings changes, all descriptors whose coefficient estimates are found significant at the 0.10 level in the univariate logit estimation, are included in a multinomial logit model.

Univariate regression estimations are run as well since it is believed that the binary specification of the logit analysis throws away information. The estimates within each estimation period are not from independent observations, however.

In each logit model, the dependent variable is specified in two ways: first, the distribution of the %Δ operating profit is partitioned by the mean; second, the distribution of the %Δ operating profit is partitioned by the mean, but outliers are deleted in order to examine whether the ability of the accounting descriptors to contain information about future earnings is driven by outliers [*these might be extraordinary items*].

The following equation is employed for testing the two hypotheses over the sub-periods 1980-84, 1981-85, 1982-86, 1983-87 and 1980-84:

$$\% \Delta \text{Operatingprofit}_{it} = a_0 + a_1 X_{it} + u_{it} \quad [4.1]$$

Under efficient market hypothesis, the null hypothesis accepts that  $a_1=0$ , that is, that accounting descriptors do not contain information about future earnings. The alternative hypothesis accepts that  $a_1 \neq 0$ , that is, that accounting descriptors exhibit information about future earnings changes.

## 4.4 IDENTIFICATION OF ACCOUNTING DESCRIPTORS WHICH CONTAIN INFORMATION ABOUT FUTURE EARNINGS

### *Stores Industry*

Binary specification (0,1) is formed based on the mean of the % $\Delta$  operating profit

### *Univariate logit analysis*

To Identify which accounting descriptors exhibit information about future earnings changes, each descriptor is included as the sole explanatory variable in the univariate logit analysis. The coefficient estimates for all 83 accounting descriptors are reported in the appendix to this chapter, table A1, along with a t-statistic (and p-value). In the sub-period 1980-84, nineteen (19) of the coefficient estimates have p-values less than 0.10. Similar consistency is observed (in the first period) for descriptors with p-values less than 0.10 in the subsequent periods. In the sub-period 1981-85, sixteen (16) of the coefficient estimates have p-values less than 0.10 [see appendix to this chapter, table A1a], during the sub-period 1982-86, fourteen (14) of the coefficient estimates [see table A1b], during the sub-period 1983-87, fourteen (14) have p-values less than 0.10 [see appendix to this chapter, table A1c] while in the sub-period, 1984-88, again fourteen (14) descriptors have p-value less than 0.10 [see appendix to this chapter, table A1d]. The consistency of the sign and the significance levels of the estimated coefficients on the descriptors over the six estimation periods requires emphasis though. The results are shown in table 4.1.

**Table 4.1 Univariate Logit Estimation For The Stores Industry Examining Whether The Accounting Descriptors Exhibit Information About Future Earnings\* Changes For The Periods 1980-84, 1981-85, 1982-86, 1983-87, 1984-88 and 1980-88.**

<i>Accounting Descriptors</i>	<i>1980-84</i>	<i>1981-85</i>	<i>1982-86</i>	<i>1983-87</i>	<i>1984-88</i>	<i>1980-88</i>
Current ratio	-0.30833 <sup>a</sup> (-2.140) <sup>b</sup>	-0.29595 (-2.088)	-0.32479 (-2.185)	-0.25398 (-1.760)		-0.29045 (-2.187)
Δ current ratio	-0.24500 (-2.175)	-0.28792 (-2.077)	-0.30088 (-2.249)	-0.27433 (-2.227)		-0.30092 (-2.132)
%Δ current ratio	-0.27368 (-2.051)	-0.27300 (-2.046)	-0.30470 (-2.216)	-0.29100 (-2.149)	3.46420 (-2.684)	-0.30722 (-2.093)
inventory/turnover				-0.45734 (-2.058)		
Δ inventory/turnover				-0.01241 (-1.897)	-0.11289 (1.786)	
inventory					-0.01792 (-1.854)	-0.01100 (-2.184)
Δ inventory			-0.00041 (-2.091)			-0.07916 (-2.676)
%Δ inventory	-3.3802 (-1.813)		-3.7282 (-2.234)			
sales				-0.03818 (1.864)	-0.073597 (-2.463)	
%Δ sales			-2.5477 (-1.803)			-1.9799 (-1.858)
depreciation					-0.022539 (-2.006)	
depreciation/fixed assets	1.4642 (2.227)	12.163 (2.551)	11.541 (2.397)	8.3557 (1.809)		1.5130 (2.279)
return on opening equity	-0.02252 (-1.830)					
Δ return on opening equity	-0.05259 (-2.286)					-0.012213 (-2.191)
%Δ return on opening equity	-0.38494 (-2.522)	-0.22115 (-2.034)	-0.26588 (-2.346)	-0.19191 (-1.695)		-0.28221 (-2.726)
capital expenditure						-0.030407 (-1.639)
debt /equity					-0.55093 (-1.685)	-0.31522 (-1.909)
times interest earned	-0.40924 (-2.292)	-0.35766 (-2.233)	-0.36101 (-2.237)	-0.19962 (-1.638)	-0.19180 (-2.003)	-0.25205 (-2.954)
%Δ times interest earned					-2.0284 (-2.029)	
Δ sales/total assets	0.21279 (1.888)	0.17383 (1.686)				
return on total assets	-11.808 (-2.513)	-12.379 (-2.596)	-5.9662 (-1.778)		-5.4656 (-2.525)	-6.5292 (-3.122)
return on closing equity	-0.033437 (-2.409)	-0.03307 (-2.392)	-0.03478 (-2.296)	-0.03052 (-1.931)	-0.00519 (1.838)	
Δ return on closing equity		-0.02811 (-1.635)			0.001883 (1.995)	0.014969 (1.981)
%Δ return on closing equity		-0.26778 (-1.633)	-0.14352 (-2.368)			
operating profit/sales	-0.34488 (-3.351)			-11.926 (-2.379)	-12.716 (-3.091)	-3.1747 (-4.065)
net profit margin	-0.26227 (-2.913)	-0.15176 (-2.258)	-0.10633 (-1.816)	-0.74037 (-1.678)		-0.8444 (-2.274)
%Δ sales/cash		0.069032 (1.739)		-1.8030 (-1.869)		
Δ sales/inventory	0.045225 (1.877)	0.04395 (1.845)				
Δ sales/working capital					0.002192 (2.081)	0.066043 (1.895)

%Δ sales/working capital			0.21386 (2.055)	0.17118 (2.287)
Δ total assets				-0.026038 (-1.804)
%Δ total assets	-3.3632 (-1.797)		-3.7994 (-2.277)	
cash flow/total debt	-0.00000 (-1.780)	-0.00000 (-1.977)		-0.04299 (-1.919)
Δ working capital/total assets			-5.4412 (-1.725)	
total income/cash flow			-0.34030 (-1.848)	

a The maximum likelihood estimate of the coefficient on the accounting descriptor.

b The p-values of the t-statistic are all significant at the 0.10 level.

\* The tests for the period 1980-88 are carried out in chapter 3. However, the accounting coefficients, the standard error, the t-statistic and p-values for the period 1980-88 are displayed in the appendix to this chapter, table A1e.

Of the accounting descriptors displayed in the table 4.1, only the %Δ in current ratio and the times interest earned variables contain information about future earnings over all periods examined. The current ratio, the Δ current ratio, the depreciation/fixed assets, the %Δ return on opening equity and the net profit margin variables exhibit information about future earnings over the periods 1980-87 and 1980-88. In either case, this indicates that we have captured attributes of firms that demonstrate some regularity in generating earnings. However, evidence suggest that the ability of the accounting descriptors to contain information about future earnings changes are time-specific. Only in the case of the %Δ in current ratio and the times interest earned variables, the findings suggest that these two accounting descriptors capture the permanent changes in current earnings.

### ***Multinomial Analysis***

To examine the significant ability of the accounting descriptors to jointly describe subsequent earnings changes, we carry out a multinomial logit analysis by including only the accounting descriptors whose coefficient estimates are significant at the 0.10 level in the univariate analysis.

**Table 4.2: Multinomial Logit Estimation For The Stores Industry Examining Whether The Accounting Descriptors Jointly Exhibit Information About Future Earnings\* Changes For The Periods 1980-84, 1981-85, 1982-86, 1983-87, 1984-88 and 1980-88.**

<i>Accounting Descriptors</i>	<i>1980-84</i>	<i>1981-85</i>	<i>1982-86</i>	<i>1983-87</i>	<i>1984-88</i>	<i>1980-88</i>
current ratio	-3.1802 <sup>a</sup> (-1.736) <sup>b</sup>					
%Δ current ratio			-0.04999 (-4.244)			
operating profit/sales	-123.96 (-1.929)					
depreciation/fixed assets		0.28282 (6.534)				
return on closing equity		-0.00604 (-2.297)				
%Δ sales/cash		0.01050 (3.725)				
%Δ inventory			-0.14776 (-1.674)			

a The maximum likelihood estimate of the coefficient on the accounting descriptor.

b The p-values of the t-statistic are all significant at the 0.10 level.

\* The accounting coefficients, t-statistic and p-values for the sub-periods 1980-84, 1981-85, 1982-86, 1983-87 and 1980-84 are all reported in tables A2, A2a, A2b, A2c, A2d, A2e in the appendices.

There does not appear to be much consistency in the accounting descriptors included in the models for all the six periods. Accounting descriptors capture only the "temporary" changes in current earnings. However, these are multinomial models and the inclusion of a particular variable and the sign of the estimated coefficient will depend on variables already in the model at the relevant step in the step-wise procedure.



**Binary specification (0,1) is formed based on the mean of the % $\Delta$  operating profit with outliers being deleted.**

### ***Univariate Logit Analysis***

In this alternative method, we test whether the ability of the accounting descriptors to exhibit information about future earnings changes is driven by the outliers. Thus outliers are deleted from the % $\Delta$  operating profit variable. The coefficient estimates for all 83 accounting descriptors are given in the appendix to this chapter, table A4, along with a t-statistic (and p-value). In the sub-period 1980-84, six (6) of the coefficient estimates have p-values less than 0.10. Similar consistency is observed (in the first period) for descriptors with p-values less than 0.10 in the subsequent periods. In the sub-period 1981-85, seventeen (17) of the coefficient estimates have p-values less than 0.10 [see appendix to this chapter, table A4a]. During the sub-period 1982-86, fourteen (19) of the coefficient estimates have p-values less than 0.10 [see appendix to this chapter, table A4b]. In the sub-period 1983-87, fourteen (14) have p-values less than 0.10 [see appendix to this chapter, table A4c] while during the sub-period, 1980-84, fourteen (14) variables have p-value less than 0.10 [see appendix to this chapter, table A4d]. The consistency of the sign and the significance levels of the estimated coefficients on the descriptors over the six estimation periods requires emphasis. The results are shown in table 4.3.

**Table 4.3 Univariate Logit Estimation For The Stores Industry Examining Whether The Accounting Descriptors Exhibit Information About Future Earnings\* Changes For The Periods 1980-84, 1981-85, 1982-86, 1983-87, 1984-88 and 1980-88**

<i>Accounting Descriptors</i>	<i>1980-84</i>	<i>1981-85</i>	<i>1982-86</i>	<i>1983-87</i>	<i>1984-88</i>	<i>1980-88</i>
current ratio		-0.15932 <sup>a</sup> (-1.603) <sup>b</sup>				-0.29045 (-2.187)
Δ current ratio		-1.0157 (-2.328)				-0.28036 (-2.103)
%Δ current ratio		-2.5171 (-2.797)	-1.8805 (-2.502)	-1.4951 (-2.222)		-0.30722 (-2.093)
inventory/turnover			-0.12073 (-2.503)	0.07457 (-1.771)		
inventory		-0.0000 (-2.621)	-0.0000 (-2.314)	-0.0000 (-2.160)	-0.0000 (-2.456)	-0.00011 (2.184)
Δ inventory						-0.00079 (-1.676)
%Δ inventory				1.2573 (1.773)	-0.0000 (-2.320)	
sales		-0.0000 (-2.677)	-0.0000 (-2.474)	-0.0000 (-2.407)		
%Δ sales		2.0979 (2.042)	1.5190 (1.686)			-1.9799 (-1.858)
depreciation		0.0000 (-2.091)	-0.0000 (-2.096)	-0.0000 (-2.117)	-0.0000 (-2.270)	
Δ dividend per share			-0.59045 (-2.305)	-0.51468 (-2.181)		
capital expenditure			-0.0000 (-1.808)	-0.0000 (-1.681)	-0.0000 (-1.665)	-0.00304 (-1.639)
capital expenditure/total assets	-28.817 (1.885)	-0.00031 (-2.361)	-14.831 (-1.835)			
depreciation/fixed assets						1.5130 (2.279)
Δ depreciation/fixed assets				-17.279 (-2.043)		
%Δdebt /equity				0.84313 (2.066)		
Δ return on opening equity						-0.01221 (-2.191)
%Δ return on opening equity						-0.28221 (-2.726)
times interest earned			-0.02711 (-2.167)	-0.03044 (-2.107)		-0.25205 (-2.954)
%Δ sales/total assets		2.1957 (2.613)	1.1688 (1.793)			
return on total assets				-8.6703 (-2.402)		-6.5292 (-3.122)
sales/cash	-0.00031 (-2.361)					
net profit margin						-0.08444 (-2.274)
Δ operating profit/sales		-9.8628 (-1.933)				
%Δoperating profit/sales		2.1958 (2.103)	1.7118 (1.954)			
Δ total assets		-0.0000 (-1.812)				
sales/working capital					0.01524 (2.069)	

$\Delta$ sales/working capital	0.00660 (1.895)			
% $\Delta$ sales/working capital	0.41548 (1.772)	0.47137 (1.984)	0.49471 (1.987)	0.17118 (-1.804)
working capital/total assets			-1.0749 (-1.840)	
$\Delta$ working capital/total assets	-3.5235 (-1.717)	-4.7847 (-2.072)	-6.0356 (-3.0840)	
cash flow/total debt				-0.0000 (-1.919)
$\Delta$ uses	0.0000 (2.116)	-0.0000 (-2.332)	0.0000 (1.887)	
$\Delta$ funds	0.0000 (1.850)	-0.00000 (-1.833)	-0.0000 (-1.795)	-0.0000 (-1.740)
$\Delta$ working capital		-0.0000 (-2.242)		
total income/cash flow				-0.46940 (-1.716)

a The maximum likelihood estimate of the coefficient on the accounting descriptor.

b The p-values of the t-statistic are all significant at the 0.10 level.

\* The tests for the period 1980-88 are carried out in chapter 3. However, the accounting coefficients, the standard error, the t-statistic and p-values for the period 1980-88 are displayed in the appendix to this chapter, table A4e.

The majority of the accounting descriptors displayed in the table 4.3, have the same sign on the estimated coefficient in all periods examined. This indicates that we have captured attributes of firms that demonstrate some regularity in generating earnings. However, it must be emphasized that none of the accounting descriptors contains information about future earnings over all periods examined. This indicates that the accounting descriptors capture only the temporary changes in current earnings. The current ratio and the times interest earned descriptors no longer exhibit information about the future earnings changes over all periods. The findings suggest that these two accounting descriptors' ability to contain information about future earnings is driven indeed by outliers.

### **Multinomial Logit Analysis**

The multinomial models of all the six periods examined are summarised in table 4.4. The various test statistics indicate significant ability of the descriptors to jointly describe subsequent earnings changes even when outliers are deleted, over some periods. However, there does not appear to be much consistency in the descriptors included in the models for all the six periods.

**Table 4.4: Multivariate Logit Estimation For The Stores Industry Examining Whether The Accounting Descriptors Jointly Exhibit Information About Future Earnings\* Changes For The Periods 1980-84, 1981-85, 1982-86, 1983-87, 1984-88 and 1980-88.**

<i>Accounting Descriptors</i>	<i>1980-84</i>	<i>1981-85</i>	<i>1982-86</i>	<i>1983-87</i>	<i>1984-88</i>	<i>1980-88</i>
sales/cash	-0.00098 <sup>a</sup> (-1.709) <sup>b</sup>					
sales		-0.0000 (-1.772)				
Δ net profit margin		0.77959 (1.871)				
Δ working capital/total assets			-8.2726 (-2.236)			

a The maximum likelihood estimate of the coefficient of the accounting descriptor.

b The p-values of the t-statistic are all significant at the 0.10 level.

\* The accounting coefficient, t-statistic and p-values are reported in the tables A4i, A4ai, A4bi, A4ci, A4di, A4ei.

Results indicate that the accounting descriptors found to contain information about future earnings in the univariate models, do not jointly describe subsequent earnings changes. Again, it must be mentioned that these are multinomial models and the inclusion of a particular variable and the sign on its estimated coefficient will depend on variables already in the model at the relevant step in the step-wise procedure.

## Regression Analysis

### *Univariate Regression Analysis*

To further examine whether the accounting descriptors' ability to contain information about future earnings changes is caused by outliers and whether the accounting descriptors predict the size of the % Δ operating profit and not just the sign, each accounting descriptor is included as the sole explanatory variable in a univariate regression model.

**Table 4.5: Univariate Regression Estimation For The Stores Industry Examining Whether The Accounting Descriptors Exhibit Information About Future Earnings\* Changes For The Periods 1980-84, 1981-85, 1982-86, 1983-87, 1984-88 and 1980-88**

<i>Accounting Descriptors</i>	<i>1980-84</i>	<i>1981-85</i>	<i>1982-86</i>	<i>1983-87</i>	<i>1984-88</i>	<i>1980-88</i>
$\Delta$ quick assets ratio			-0.62782 <sup>a</sup> (-1.690) <sup>b</sup>			
$\Delta$ debtors ratio			-0.00568 (-2.190)			
% $\Delta$ inventory			0.48276 (1.7020)	0.50704 (1.797)		
$\Delta$ inventory/turnover			0.07107 (2.2130)	0.06646 (2.171)	0.09632 (2.622)	0.0742 (2.168)
return on opening equity			0.005211 (1.7430)			0.005746 (2.170)
% $\Delta$ return on opening equity			0.054150 (2.2430)			
$\Delta$ return on total assets			-1.7945 (-1.680)			
return on closing equity				0.004530 (3.102)		0.004536 (2.935)
$\Delta$ return on closing equity	0.0090004 (1.646)					0.00729 (1.666)
% $\Delta$ debt/equity	0.79593 (2.308)					
% $\Delta$ sales/working capital	0.10945 (1.819)					
working capital/total assets						0.29364 (-1.6720)
$\Delta$ working capital/total assets						-1.2115 (-1.8320)

a The maximum likelihood estimate of the coefficient on the accounting descriptor.

b The p-values of the t-statistic are all significant at the 0.10 level.

c The accounting coefficients, t-statistic and p-values for the period 1980-84, 1981-82, 1982-86, 1983-87, 1984-88 and 1980-88 are displayed in the tables A7, A7a, A7b, A7c, A7d, A7e.

None of the accounting descriptors exhibits information about future earnings changes over all periods. The findings suggests that outliers drive the accounting descriptors' ability to contain information about future earnings changes. It is noteworthy that different accounting descriptors are captured to have information about future earnings changes under the univariate logit and regression analyses.

In the next section, I apply the same tests over the same six periods examined for the stores industry, to examine the consistency of the coefficients signs of the accounting descriptors containing information about future earnings changes in the chemical industry.

## Chemical Industry

Binary specification (0,1) is formed based on the mean of the % $\Delta$  operating profit

### *Univariate Logit Analysis*

We examine which accounting descriptors exhibit information about future earnings changes by including each accounting descriptor as the sole explanatory variable in the univariate logit model. The coefficient estimates for all 83 accounting descriptors are given in tables in the appendices along with a t-statistic (and p-value). In the sub-period 1980-84, eleven (11) of the coefficient estimates have p-values less than 0.10 [*see appendix to this chapter, table A2*]. Similar consistency is observed (in the first sub-period) for descriptors with p-values less than 0.10 in the subsequent periods. In the sub-period 1981-85, thirteen (13) of the coefficient estimates have p-values less than 0.10 [*see appendix to this chapter, table A2a*], in the sub-period 1982-86, thirteen (13) of the coefficient estimates have p-values less than 0.10 [*see appendix to this chapter, table A2b*]. In the sub-period 1983-87, eleven (11) have p-values less than 0.10 [*see appendix to this chapter, table A2c*] while in the sub-period, 1984-88, sixteen (16) variables have p-value less than 0.10 [*see appendix to this chapter, table A2d*]. The consistency of the sign and the significance levels of the estimated coefficients on the descriptors over the six estimation periods requires emphasis, once more. The results are shown in table 4.6.

**Table 4.6 Univariate Logit Estimation For The Chemical Industry Examining Whether The Accounting Descriptors Exhibit Information About Future Earnings Changes\* For The Periods 1980-84, 1981-85, 1982-86, 1983-87, 1984-88 and 1980-88.**

<i>Accounting Descriptors</i>	<i>1980-84</i>	<i>1981-85</i>	<i>1982-86</i>	<i>1983-87</i>	<i>1984-88</i>	<i>1980-88</i>
debtors ratio	-0.004472 (3.257)	-0.001947 (1.802)	0.017939 (1.692)	0.01774 (1.777)	0.024607 (2.574)	0.027391 (3.657)
Δdebtors ratio					0.022677 (2.212)	0.01979 (2.457)
%Δdebtors ratio			2.0060 (1.876)		1.6198 (2.143)	1.5020 (2.419)
%Δinventory		-2.6144 (-1.997)				
%Δ capital expenditure		-0.64631 (-1.836)				
%Δ dividend per share	-1.1465 (-1.658)					
sales				-0.013155 (-1.9650)		
inventory/total assets			-4.2927 (-1.6670)			
return on opening equity	-1.1638 (-2.606)	-1.6281 (-3.189)	-1.5574 (-3.1930)	-0.90643 (-2.628)	-0.60937 (-2.1910)	-0.87730 (-3.423)
Δ return on opening equity				-1.6578 (-2.013)		-0.48296 (-1.863)
%Δ return on opening equity	-0.67111 (-1.934)	-0.72790 (-2.056)				-0.43477 (-1.819)
return on total assets	-0.065857 (-2.092)	-0.07938 (-2.339)	-0.13786 (-3.4890)	-0.70226 (-2.361)	-0.05700 (-1.9940)	-0.054876 (-2.656)
Δ return on total assets			-0.13018 (2.0560)			
%Δ return on total assets	-0.83705 (1.980)	-0.74483 (-1.904)				-0.42390 (-1.782)
return on closing equity	-1.1596 (-2.596)	-1.6233 (-3.180)	-1.5484 (-3.1820)		-0.60937 (-2.1910)	-0.87090 (-3.404)
Δ return on closing equity				-1.6578 (-2.013)		-0.48666 (-1.873)
%Δ return on closing equity	-0.68890 (-1.964)	-0.74094 (-2.075)				-0.44203 (-1.837)
sales/total assets	-0.82463 (-1.983)			-1.0009 (-2.063)		-0.80603 (-2.577)
Δ sales/total assets			-1.9242 (-2.1410)		-1.8434 (-1.8910)	
operating profit/sales		-12.017 (-2.234)	-23.536 (-3.2960)		-7.9215 (-1.7870)	-7.5399 (-2.271)
%Δoperating profit/sales			-2.4724 (-1.8930)	-2.2110 (-1.817)		
net profit margin			-0.29397 (-2.9650)	-0.12939 (-1.888)		
Δ net profit margin	-0.22771 (-1.946)	-0.21738 (-1.768)	-0.97277 (-1.976)			-0.14260 (-1.726)
%Δ net profit margin	-0.63010 (-1.796)	-0.71351 (-1.922)				
%Δ total assets					2.3582 (2.937)	1.0217 (2.229)
working capital	0.001369 (1.878)	0.001046 (1.638)				
cash flow/total debt					-0.02223 (-2.1140)	

a The maximum likelihood estimate of the coefficient on the accounting descriptor.

b The p-values of the t-statistic are all significant at the 0.10 level.

\* The tests for the period 1980-88 are carried out in chapter 3. However, the accounting coefficients, the standard error, the t-statistic and the p-values for the period 1980-88 are shown in the appendix to this chapter, table A2e.

The results in table 4.6 indicates that we have captured attributes of firms that demonstrate some regularity in generating earnings. Moreover, the debtors ratio, the return on opening equity and the return on total assets exhibit the same informational characteristic for future earnings over all periods examined. This indicates that the three accounting descriptors mentioned, capture the permanent change in current earnings.

### **Multinomial Logit Analysis**

The multinomial models of all the six periods examined are summarised in table 4.7. The various test statistics indicate significant ability of the descriptors to jointly describe subsequent earnings changes in some periods. However, there does not appear to be much consistency in the descriptors included in the models for the six periods.

**Table 4.7: Multinomial Logit Estimation For The Chemical Industry Examining Whether The Accounting Descriptors Jointly Exhibit Information About Future Earnings Changes\* For The Periods 1980-84, 1981-85, 1982-86, 1983-87, 1984-88 and 1980-88.**

Accounting Descriptors	1980-84	1981-85	1982-86	1983-87	1984-88	1980-88*
debtors ratio				0.017244 (1.639)		0.017409 (2.581)
$\Delta$ debtors ratio					0.004269 (2.164)	
% $\Delta$ operating profit/sales				-4.6158 (-2.127)		
sales/total assets						-1.3123 (-3.676)
return on opening equity						-0.67929 (-2.324)

a The maximum likelihood estimate of the coefficient on the accounting descriptor.

b The p-values of the t-statistic are all significant at the 01.0 level.

\* The accounting coefficient, t-statistic and p-values are displayed in tables A2i, A2ai, A2bi, A2ci, A2di, A2ei.

However, these are multinomial models and the inclusion of a particular variable and the sign on its estimated coefficient will depend on variables already in the univariate model.



**Binary specification (0,1) is formed based on the mean of the % $\Delta$  operating profit with outliers being deleted.**

### ***Univariate Logit Analysis***

To examine whether the accounting descriptors' ability to exhibit information about future earnings changes is driven by outliers, outliers are deleted from the sample data and each accounting descriptor is included as the sole explanatory variable in a univariate logit model.

The debtors ratio, the return on opening equity and the return on total assets capture permanent changes in current earnings. The results are shown in table 4.8.

The coefficient estimates for all 83 accounting descriptors are given in tables in the appendices along with a t-statistic (and p-value). In the sub-period 1980-84, seven (7) of the coefficient estimates have p-values less than 0.10 [*see appendix to this chapter, table A4*]. Similar consistency is observed (in the first sub-period) for descriptors with p-values less than 0.10 in the subsequent periods. In the sub-period 1981-85, six (6) of the coefficient estimates have p-values less than 0.10 [*see appendix to this chapter, table A4a*]. During the sub-period 1982-86, eleven (11) of the coefficient estimates have p-values less than 0.10 [*see appendix to this chapter, table A4b*]. In the sub-period 1983-87, fifteen (15) have p-values less than 0.10. During the sub-period [*see appendix to this chapter, table A4c*], 1984-88, ten (10) variables have p-value less than 0.10 [*see table A4d*]. The consistency of the sign and the significance levels of the estimated coefficients on the descriptors over the six estimation periods requires emphasis again.

**Table 4.8 Univariate Logit Estimation For The Chemical Industry Examining Whether The Accounting Descriptors Exhibit Information About Future Earnings\* Changes For The Periods 1980-84, 1981-85, 1982-86, 1983-87, 1984-88 and 1980-88.**

<i>Accounting Descriptors</i>	<i>1980-84</i>	<i>1981-85</i>	<i>1982-86</i>	<i>1983-87</i>	<i>1984-88</i>	<i>1980-88</i>
quick assets ratio			-2.0981 <sup>a</sup> (-2.047) <sup>b</sup>	-0.30830 (-2.134)		
debtors ratio	0.03079 (2.603)			0.0217 (2.164)	0.02539 (2.602)	0.02980 (3.831)
Δdebtors ratio				0.02071 (1.759)	0.019144 (2.023)	0.01229 (1.784)
%Δdebtors ratio				2.0000 (2.024)		
inventory/turnover	-0.09893 (-1.698)					
inventory/total assets					-3.7524 (-1.656)	
Δ sales						-0.0000 (-1.880)
Δ depreciation/fixed assets		-4.2918 (1.635)				0.06260 (1.885)
return on opening equity		-0.54607 (-1.944)	-0.72407 (-2.467)	-0.57431 (-2.188)	-0.51698 (-2.233)	
Δ return on opening equity				-1.2963 (-1.634)		
debt/equity	-0.88979 (-1.620)	-0.16485 (-2.498)				-0.077329 (-1.921)
Δdebt /equity			0.36452 (2.088)	-0.001982 (-1.689)		
return on total assets			-0.04906 (-1.923)		-0.44261 (-1.728)	
sales/total assets	-0.93264 (-2.317)	-0.91986 (-2.513)				-1.0410 (-3.421)
Δ sales/total assets				-0.26784 (-2.239)		-0.95051 (-2.208)
%Δ sales/total assets				-1.8013 (-1.851)		-1.4698 (-2.308)
operating profit/sales	10.804 (2.183)					
%Δoperating profit/sales				-2.1938 (-1.902)	-2.2960 (-1.993)	
net profit margin			-0.023694 (-1.872)			
Δ sales/working capital			0.010711 (1.808)			
%Δworking capital/total assets			-0.15525 (-1.752)			
%Δ total assets			0.16056 (1.645)	2.2707 (2.550)	2.1704 (2.768)	1.7093 (2.842)
Δ working capital						0.00000 (1.662)
cash flow/total debt			-0.004131 (-1.864)		-0.016937 (-1.780)	

a The maximum likelihood estimate of the coefficient on the accounting descriptor.

b The p-values of the t-statistic are all significant at the 0.10 level.

\* The tests for the period 1980-88 are carried out in chapter 3. However, the accounting coefficients, the standard error, the t-statistic and p-values for the period 1980-88 are shown in the appendix to this chapter, table A2e.

Results indicate that we have captured attributes of firms demonstrating some regularity in generating earnings. However, none of the accounting descriptors exhibit the same informational characteristic about future earnings over all the periods

examined. This indicates that the accounting descriptors only capture the temporary changes in the current earnings and that the outliers have driven the empirical results reported in the univariate logit analysis where outliers are not deleted.

### **Multinomial Logit Analysis**

The multinomial models of all the six periods examined are summarised in table 4.9. The various test statistics indicate significant ability of the descriptors to jointly describe subsequent earnings changes, even when outliers are deleted. There does not appear to be much consistency in the descriptors included in the models for the six periods. Once again, evidence suggests that the accounting descriptors capture the "temporary" and not "permanent" changes in current earnings.

**Table 4.9: Multinomial Logit Estimation For The Chemical Industry Examining Which Accounting Descriptors Jointly Exhibit Information About Future Earnings Changes For The Periods 1980-84, 1981-85, 1982-86, 1983-87, 1984-88 and 1980-88.**

Accounting Descriptors	1980-84	1981-85	1982-86	1983-87	1984-88	1980-88*
debtors ratio	0.005280 (3.395)			0.023704 (2.345)		0.0072944 (8.098)
quick assets ratio			0.22104 (2.330)	-2.1734 (-2.560)		
Δ capital expenditure			-0.0000 (-1.931)			
Δ depreciation/fixed assets						0.060739 (1.897)
%Δ operating profit/sales				-3.6337 (-1.865)	-3.1217 (-2.083)	-0.36359 (-2.422)
return on closing equity				-0.77695 (-2.156)	-0.71366 (-2.238)	
debt/equity						-0.01044 (-2.165)
Δ debt/equity			0.06525 (2.111)			

a The maximum likelihood estimate of the coefficient on the accounting descriptor.

b The p-values of the t-statistic are all significant at the 0.10 level.

\* The accounting coefficient, t-statistic and p-values are displayed in tables A4i, A4ai, A4bi, A4ci, A4di, A4ei .

The % Δ operating profit/sales variable predicts future earnings changes over the period 1983-88 while the return on closing equity variable predicts future earnings changes over the period 1983-88 and 1980-88.

## Regression Analysis

### *Univariate Regression Analysis*

To further examine whether the accounting descriptors' ability to exhibit information about future earnings changes is caused by the outliers and whether the accounting descriptors can predict the size of the %  $\Delta$  operating profit variable or just the sign, each accounting descriptor is included as the sole explanatory variable in a univariate regression model. The results are shown in table 4.10.

**Table 4.10: Univariate Regression Estimation For The Chemical Industry Examining Whether The Accounting Descriptors Exhibit Information About Future Earnings Changes For The Periods 1980-84, 1981-85, 1982-86, 1983-87, 1984-88 and 1980-88.**

<i>Accounting Descriptors</i>	<i>1980-84</i>	<i>1981-85</i>	<i>1982-86</i>	<i>1983-87</i>	<i>1984-88</i>	<i>1980-88</i>
$\Delta$ current ratio	0.16075 (2.555)	0.09472 (2.040)	0.06848 (2.135)	0.068468 (2.159)		
% $\Delta$ current ratio	0.58865 (2.938)	0.66233 (3.372)	0.45409 (5.987)	0.43867 (6.137)		
quick assets ratio			-0.32893 (-2.439)	-0.25208 (-2.071)		
% $\Delta$ quick assets ratio			-0.30258 (-3.055)	-0.20787 (-1.778)		
Debtors ratio	0.006469 (2.136)					
% $\Delta$ debtors ratio					0.79490 (1.844)	
sales					-0.0000 (-2.210)	
inventory					-0.0000 (-2.095)	-0.11660 (-2.258)
capital expenditure					-0.0000 (-1.636)	
% $\Delta$ capital expenditure			-0.020341 (-3.574)	-0.016431 (-2.490)		-0.0000 (-1.636)
% $\Delta$ capital expenditure/total assets			-0.030684 (-3.572)			
return on opening equity			-0.12034 (-2.226)	-0.10930 (-2.586)	-0.10349 (-2.350)	
$\Delta$ return on opening equity	-0.05895 (-2.437)			-0.25901 (-1.908)		-0.10349 (-2.350)
% $\Delta$ return on opening equity			-0.072509 (-3.216)	-0.17358 (-1.915)		
% $\Delta$ net profit margin					0.62588 (3.058)	
return on total assets				-0.010993 (-1.637)		-0.33423 (-1.942)
% $\Delta$ return on total assets			-0.089078 (-2.854)			-0.10178 (-3.198)
debt/equity				-0.008303 (-3.930)	-0.089945 (-3.637)	

%Δ debt/equity			-11.783 (-2.945)		-0.00899 (-3.367)
return on closing equity		-0.00926 (-2.223)	-0.10930 (-2.586)	-0.10349 (-2.350)	
Δ return on closing equity			-0.25879 (-1.907)		
%Δ return on closing equity		-0.07276 (-3.259)	-0.17493 (-1.929)		-0.10349 (-2.350)
Δ inventory/total assets		-4.3523 (-2.057)	-4.7010 (-2.327)	-11.660 (-2.538)	
%Δ inventory/total assets		-0.21287 (-2.329)	-0.22684 (-2.395)		
sale/total assets		-0.27012 (-1.861)	-0.23329 (-1.662)		
Δ sales/total assets		-0.41739 (-2.372)	-0.32276 (-2.450)		
%Δ sales/total assets		-0.10669 (-3.023)	-0.10591 (-3.254)	-0.10178 (-3.198)	
sales/cash	-0.00051 (-2.300)				
Δ sales/working capital		0.011536 (1.963)			
%Δ sales/working capital		-0.00718 (-1.705)	-0.0075604 (-1.932)	-0.0074618 (-11.204)	
Δ working capital	0.00000 (2.292)	0.00000 (2.043)	0.00000 (5.692)	0.00000 (2.281)	
%Δ working capital	0.30380 (2.308)	0.31939 (2.517)	0.27153 (5.972)		
Δ times interest earned	-3.3786 (-3.036)				
% Δ times interest earned	-0.81200 (-2.009)				

a The maximum likelihood estimate of the coefficient on the accounting descriptor.

b The p-values of the t-statistic are all significant at the 0.10 level.

\* The accounting coefficient, t-statistic and p-values are displayed in tables A8, A8a, A8b, A8c, A8d, A8e.

Results indicate that the accounting descriptors demonstrate some regularity in generating earnings. Moreover, the Δ current ratio, the %Δ current ratio and the Δ working capital exhibit some regularity in containing information about future earnings over the period 1980-87. The return on opening equity, the Δ inventory/total assets, the % Δ sales/total assets exhibit some regularity in containing information about future earnings over the period 1982-87 while the % Δ working capital exhibits this characteristic over the period 1980-86. However, the findings suggest that the ability of the accounting descriptors to exhibit information about future earnings changes is time-specific.

## Stores and Chemical Industries Together

Binary specification (0,1) is formed based on the mean of the % $\Delta$  operating profit

### ***Univariate Logit Analysis***

To identify which accounting descriptors predict the direction of one-year ahead future earnings, each accounting descriptor is included as the sole explanatory variable in a univariate logit model. The coefficient estimates for all 83 accounting descriptors are shown in the appendix to this chapter, table A3, along with a t-statistic (and p-value). In the sub-period 1980-84, of the coefficient estimates have p-values less than 0.10. Similar consistency is observed (in the first sub-period) for descriptors with p-values less than 0.10 in the subsequent periods. In the sub-period 1981-85, eleven (11) of the coefficient estimates have p-values less than 0.10 [*see appendix to this chapter, table A3a*]. During the sub-period 1982-86, eleven (11) of the coefficient estimates have p-values less than 0.10 [*see appendix to this chapter, table A3b*]. In the sub-period 1983-87, twenty four (24) have p-values less than 0.10 [*see appendix to this chapter, table A3c*] while in the sub-period, 1984-88, seventeen (17) variables have p-value less than 0.10 [*see appendix to this chapter, table 3Ad*]. The consistency of the sign and the significance levels of the estimated coefficients on the descriptors over the six estimation periods are displayed in table 4.11.

**Table 4.11 Univariate Logit Estimation For The Stores and Chemical Industries Examining Whether The Accounting Descriptors Exhibit Information About Future Earnings\* Changes The Periods 1980-84, 1981-85, 1982-86, 1983-87, 1984-88 and 1980-88.**

<i>Accounting Descriptors</i>	<i>1980-84</i>	<i>1981-85</i>	<i>1982-86</i>	<i>1983-87</i>	<i>1984-88</i>	<i>1980-88</i>
current ratio			0.0000 <sup>a</sup> (1.735) <sup>b</sup>			
Δ current ratio				-26.216 (-2.435)	-21.336 (-2.143)	-17.952 (-1.957)
Δquick assets ratio			-2.0467 (-1.845)	-1.9094 (-2.028)		
inventory				-0.0000 (-1.717)		
%Δ inventory				0.06957 (2.288)	0.043921 (1.636)	
Δ inventory turnover						-1.2477 (-2.170)
%Δ inventory/turnover					0.018411 (1.979)	0.006456 (1.913)
%Δinventory/total assets				0.53499 (1.927)		
Δ sales		3.4059 (2.175)				
%Δ sales		-0.0000 (-1.997)				
depreciation		-2.6852 (-2.129)				-0.00014 (-1.931)
%Δdepreciation			0.38047 (2.242)	0.33979 (2.071)	0.51967 (2.506)	0.38498 (2.339)
%Δ dividend per share		0.04422 (1.907)				0.05408 (2.641)
depreciation/fixed assets		1.4408 (2.578)				
Δ depreciation/fixed assets				0.68763 (2.364)		
capital expenditure/total assets			-0.00002 (-2.514)			-0.0000 (-2.234)
%Δ return on opening equity		0.0000 (1.778)	0.0000 (1.699)	0.0000 (2.100)		0.00000 (2.141)
debt/equity					-0.25813 (-1.976)	-0.19262 (-2.203)
Δdebt /equity				-2.9956 (-2.359)		
%Δ debt/equity				0.14761 (2.339)	0.14815 (1.684)	0.11877 (2.154)
times interest earned					0.01441 (1.854)	
Δ times interest earned						0.014743 (2.828)
return on total assets		-0.19784 (-2.175)		-0.55381 (-2.493)		
Δ return on total assets				2.3704 (2.216)		
%Δ return on total assets					-0.96824 (-1.708)	
return on closing equity		-0.03443 (-2.523)	-0.035184 (-2.408)	-0.03271 (-2.130)		
Δ return on closing equity				-0.27938 (-2.634)		
%Δ return on closing equity				0.098628 (1.974)		0.06971 (2.603)

$\Delta$ operating profit/sales				1.5300 (-2.726)	
net profit margin	-0.10516 (-2.494)	-0.11441 (-2.393)	-0.09529 (-2.566)	-0.08995 (-2.337)	-0.10665 (-3.698)
$\Delta$ total assets			-0.83278 (-2.020)		
$\Delta$ net profit margin		2.1637 (1.964)	1.5495 (1.866)		
$\Delta$ sales/cash		0.29725 (2.139)	0.23001 (2.063)	0.38178 (3.229)	0.28540 (2.814)
% $\Delta$ sales/cash				-1.5855 (-2.531)	
cash flow/total debt			0.14956 (2.273)		
$\Delta$ sales/inventory					0.02556 (1.895)
$\Delta$ sales/working capital			0.0000 (1.701)		
$\Delta$ total assets					-0.47036 (-1.843)
working capital/total assets				-0.01143 (-2.067)	-0.01455 (-2.382)
$\Delta$ working capital/total assets	0.0000 (1.772)	0.0000 (2.069)			
$\Delta$ funds			-1.0342 (-3.283)		
$\Delta$ uses			-0.82750 (-3.405)	-0.93469 (-2.268)	
$\Delta$ working capital	-26.597 (-4.115)	-15.265 (-3.148)	-14.614 (-3.486)	-16.106 (-4.030)	-21.049 (-5.558)

a The maximum likelihood estimate of the coefficient on the accounting descriptor.

b The p-values of the t-statistic are all significant at the 0.10 level.

\* The tests for the period 1980-88 are carried out in chapter 3. However, the accounting coefficients, standard error, t-statistic and p-values are shown in the appendix to this chapter, table A3e.

The  $\Delta$  current ratio variable predicts the future earnings changes one-year ahead during the period 1983-88. The net profit margin variable predicts future earnings changes one-year ahead during the period 1982-88. The accounting descriptors demonstrate some regularity in generating future earnings but none of the accounting descriptors exhibit the same characteristic over all the periods examined. This indicates that the accounting descriptors only capture the temporary changes in current earnings.

### **Multinomial Logit Analysis**

The multinomial models of all the six periods examined are summarised in table 4.12. The various test statistics indicate significant ability of the descriptors to jointly describe subsequent earnings changes. However, there does not appear to be much consistency in the descriptors included in the models for the six periods.



**Table 4.12: Multinomial Logit Estimation For The Stores and Chemical Industries Examining Whether The Accounting Descriptors Jointly Exhibit Information About Future Earnings\* Changes During The Periods 1980-84, 1981-85, 1982-86, 1983-87, 1984-88 and 1980-88.**

<i>Accounting Descriptors</i>	<i>1980-84</i>	<i>1981-85</i>	<i>1982-86</i>	<i>1983-87</i>	<i>1984-88</i>	<i>1980-88</i>
current ratio		0.01230 (1.671)	0.023119 (1.981)			
Δ current ratio				0.02540 (1.798)	0.42540 (1.898)	0.0000 (2.098)
%Δ inventory				-0.67459 (-1.874)		
Δ inventory/turnover						-0.64559 (-1.874)
Δ sales	0.03520 (1.681)					
%Δ depreciation			-1.97890 (-1.666)			-1.97890 (-1.786)
Δ capital expenditure/total assets					-0.17890 (-2.897)	
%Δ return on opening equity				-0.17890 (-2.897)		
%Δ dividend per share	-0.66629 (-2.521)					
return on closing equity	-1.4523 (-2.456)	-1.47410 (-3.356)	-0.12780 (-2.347)			
Δ return on closing equity				-1.56999 (-1.785)		
%Δ return on closing equity						-0.12780 (-2.347)
Δ net profit margin				-1.97490 (-1.676)		
Δ return on total assets				-0.12000 (-2.347)		
%Δ return on total assets					-0.12000 (-2.347)	
Δ total assets						-0.12780 (-2.347)
debt/equity				-1.00890 (-1.666)		-0.67259 (-1.674)
Δ times interest earned						-0.16536 (-1.656)
cash flow/total debt				-0.12780 (-2.347)		
working capital/total assets					-0.66780 (-2.648)	

a The maximum likelihood estimate of the coefficient on the accounting descriptor.

b The p-values of the t-statistic are all significant at the 0.10 level.

\* The accounting coefficient, t-statistic and p-values are displayed in tables A3i, A3ai, A3bi, A3ci, A3di, A3ei.

Evidence suggests that the accounting descriptors displayed in table 4.12 jointly capture temporary and not permanent changes in current earnings.

**Binary specification (0,1) is formed based on the mean of the % $\Delta$  operating profit with outliers being deleted.**

### ***Univariate Logit Analysis***

To examine whether the accounting descriptors' ability to predict the direction of one-year ahead future earnings changes is caused by outliers, each accounting descriptor is included as the sole explanatory variable in a univariate logit model, but outliers are deleted. The coefficient estimates for all 83 accounting descriptors are given in the appendix to this chapter, table A6, along with a t-statistic (and p-value). In the sub-period 1980-84, four (4) of the coefficient estimates have p-values less than 0.10. Similar consistency is observed (in the first sub-period) for descriptors with p-values less than 0.10 in the subsequent periods. In the sub-period 1981-85, three (3) of the coefficient estimates have p-values less than 0.10 [see appendix to this chapter, table A6a]. During the sub-period 1982-86, thirteen (13) of the coefficient estimates have p-values less than 0.10 [see appendix to this chapter, table A6b]. In the sub-period 1983-87, five (5) have p-values less than 0.10 [see appendix to this chapter, table A6c]. During the sub-period, 1984-88, twelve (12) variables have p-value less than 0.10 [see appendix to this chapter, table A6d]. The consistency of the sign and the significance levels of the estimated coefficients on the descriptors over the six estimation periods requires emphasis. The results are shown in table 4.13.

**Table 4.13 Univariate Logit Estimation For The Stores and Chemical Industries Examining Whether The Accounting Descriptors Exhibit Information About Future Earnings\* Changes For The Periods 1980-84, 1981-85, 1982-86, 1983-87, 1984-88 and 1980-88.**

<i>Accounting Descriptors</i>	<i>1980-84</i>	<i>1981-85</i>	<i>1982-86</i>	<i>1983-87</i>	<i>1984-88</i>	<i>1980-88</i>
$\Delta$ current ratio			-13.499 (-1.977)			
quick assets ratio	0.47433 (1.639)		-0.41266 (-1.758)			
debtors ratio					0.00591 (2.067)	0.004520 (2.213)
inventory					-0.0000 (-2.892)	
% $\Delta$ inventory/turnover				0.009640 (1.665)		
inventory/total assets	-1.9551 (-2.227)		1.3395 (1.858)			
$\Delta$ inventory/total assets	1.0240 (1.664)	0.88901 (1.678)				
sales					-0.0000 (-3.166)	-0.0000 (-1.703)
depreciation			-0.0000 (-1.929)	-0.0000 (-2.024)	-0.0000 (-2.713)	
$\Delta$ depreciation			1.1014 (1.985)	0.83059 (1.821)	0.49985 (1.786)	
$\Delta$ depreciation/fixed assets				0.55017 (1.712)	1.3721 (2.940)	
times interest earned	0.043819 (2.399)					
debt/equity		-0.76091 (-1.930)				
$\Delta$ debt /equity					-1.3550 (-1.773)	
$\Delta$ return on total assets			-1.1655 (-2.286)			
% $\Delta$ net profit margin			-2.4797 (-2.056)	-1.7153 (-1.669)		-1.5192 (-1.743)
sales/working capital					0.05142 (2.069)	
$\Delta$ working capital/total assets					-0.0000 (-2.193)	
$\Delta$ working capital			-3.10000 (-1.734)		-6.3740 (-2.724)	
cash flow/total debt						0.07822 (2.056)

a The maximum likelihood estimate of the coefficient on the accounting descriptor.

b The p-values of the t-statistic are all significant at the 0.10 level.

\* The tests for the period 1980-88 are carried out in chapter 3. However, the accounting coefficient, standard error, t-statistic and p-values are shown in appendix to this chapter, table A6e.

The depreciation and  $\Delta$  depreciation variables predict the direction of one-year ahead future earnings during the period 1982-88. The accounting descriptors demonstrate some regularity in generating earnings. However, none exhibits this informational characteristic over all the periods examined. Results suggest that accounting descriptors capture only the temporary changes in current earnings. Specifically, the

results suggest that the accounting descriptors found to generate earnings in the binary specification models where outliers are not deleted, are driven by outliers.

### **Multinomial Logit Analysis**

The final models of all the six periods examined are summarised in table 4.14. The various test statistics indicate significant ability of the descriptors to jointly describe subsequent earnings changes. There does not appear to be much consistency in the descriptors included in the models for the six periods. The findings, once more, indicate that the accounting descriptors capture "temporary" changes in current earnings.

**Table 4.14: Multinomial Logit Estimation For The Stores and Chemical Industries Examining Whether The Accounting Descriptors Selected Exhibit Information About Future Earnings\* Changes During The Periods 1980-84, 1981-85, 1982-86, 1983-87, 1984-88 and 1980-88**

<i>Accounting Descriptors</i>	<i>1980-84</i>	<i>1981-85</i>	<i>1982-86</i>	<i>1983-87</i>	<i>1984-88</i>	<i>1980-88*</i>
debtors ratio					0.01222 <sup>a</sup>	
					(2.624) <sup>b</sup>	
sales					-0.00000	
					(-2.861)	
capital expenditure					0.000106	
					(2.496)	
Δ working capital					-19.104	
					(-4.031)	
inventory					0.000028	
					(2.267)	
Δ_return on closing equity					0.32635	
					(1.761)	
cash flow/total debt						0.095668
						(1.777)

a The maximum likelihood estimate of the coefficient on the accounting descriptor.

b The p-values of the t-statistic are all significant at the 0.10 level.

\* The accounting coefficient, t-statistic and p-values are displayed in tables A6i, A6ai, A6bi, A6ci, A6di, A6ei

## Regression Analysis

### *Univariate Regression Analysis*

To examine whether the ability of the accounting descriptors to exhibit information about future earnings is caused by outliers and whether the accounting descriptors predict the size of the %  $\Delta$  operating profit variable or just the sign, a univariate regression estimation is carried out. The results are shown in table 4.15.

**Table 4.15 Univariate Regression Estimation For The Stores and Chemical Industries Examining Whether The Accounting Descriptors Selected Exhibit Information About Future Earnings\* Changes During The Periods 1980-84, 1981-85, 1982-86, 1983-87, 1984-88 and 1980-88.**

<i>Accounting Descriptors</i>	<i>1980-84</i>	<i>1981-85</i>	<i>1982-86</i>	<i>1983-87</i>	<i>1984-88</i>	<i>1980-88</i>
current ratio			0.0000 (1.851)	0.0000 (1.836)		
$\Delta$ current ratio	6.2873 (2.013)	6.2873 (2.013)				
$\Delta$ dividend per share					-0.45002 (-1.701)	
$\Delta$ depreciation			0.35487 (1.722)			
% $\Delta$ depreciation		-1.4790 (-1.882)	-0.15589 (-1.877)			
$\Delta$ depreciation/fixed assets			0.19938 (1.990)	0.27750 (2.773)		
sales					-0.0000 (-2.017)	
inventory		0.23962 (2.335)	0.20052 (3.004)		-0.0000 (-1.848)	
capital expenditure/total assets		0.0000 (2.703)				
$\Delta$ capital expenditure/total assets	-0.0000 (3.614)		0.0000 (2.467)			
% $\Delta$ capital expenditure/total assets	0.00000 (2.703)		-0.03386 (-2.263)			
return on opening equity			0.00511 (2.024)		0.00661 (2.906)	
% $\Delta$ return on opening equity		0.0000 (3.614)	2.467 (0.0000)	0.0000 (2.354)		
$\Delta$ net profit margin			0.45198 (1.659)			
return on total assets	0.47396 (1.746)		-0.036189 (-2.523)			
return on closing equity			0.005112 (2.024)		0.00450 (3.420)	
$\Delta$ return on closing equity					0.04700 (2.520)	

%Δ inventory/total assets		0.20052 (3.004)	0.16822 (2.607)	0.16587 (2.278)
Δ inventory/turnover		-0.00823 (-4.086)		
Δ sales/total assets	0.47396 (1.746)			
sales/working capital		-0.00396 (-2.125)		
%Δ sales/inventory				0.02951 (1.772)
working capital/total assets			0.003189 (1.688)	
Δ working capital/total assets				-0.0000 (-2.098)
Δ funds		-0.035113 (-2.804)		
Δ uses		-0.035512 (-2.928)		
cash flow/total debt		0.039695 (2.763)	0.038443 (2.710)	0.04119 (2.604)
total income/cash flow		0.05979 (2.724)	0.046815 (2.534)	0.02779 (1.699)
working capital		-0.44318 (-2.086)		
% Δ working capital	-0.14750 (-2.526)			
Δ total assets	0.47396 (1.746)			

a The maximum likelihood estimate of the coefficient on the accounting descriptor.

b The p-values of the t-statistic are all significant at the 0.10 level.

\* The accounting coefficient, t-statistic and p-values are displayed in tables A9, A9a, A9b, A9c, A9d, A9e.

Accounting descriptors demonstrate some regularity in generating earnings. The % Δ return on opening equity predicts earnings changes over the period 1981-87, while the % Δ inventory/total assets, the cash flow/total debt and the total income/cash flow variables predicts earnings changes over the period 1982-88.

## 4.5 CONCLUDING REMARKS

This chapter takes an earnings change prediction approach to investigate the incremental information content of financial statement report numbers over current earnings, during the periods 1980-84, 1981-85, 1982-86, 1983-87 and 1984-88. It provides empirical evidence for an unsystematic relationship between these financial statement report numbers and future earnings changes over the periods examined.

### *Stores Industry*

The findings (via logit) suggest that a firm's financial statement report numbers predict the direction of one-year ahead earnings changes over the periods 1980-84, 1981-85, 1982-86, 1983-87, 1984-88 and 1980-88. The accounting descriptors which predict future earnings changes over all the periods examined are

- ◆ the %  $\Delta$  current ratio and
- ◆ the times interest earned variable.

However, the predictive information link between these two financial descriptors and future earnings changes disappears when the outliers are deleted from the sample.

The findings (via regression) suggest that a firm's financial statement report numbers predict the size as well as the sign of the %  $\Delta$  operating profit variable. However, this predictive ability of the accounting descriptors is not systematic. It is time-specific.

### *Chemical Industry*

The findings (via logit) suggest that a firm's financial statement report numbers predict the direction of one-year ahead earnings changes over the periods 1980-84, 1981-85, 1982-86, 1983-87, 1984-88 and 1980-88. The accounting descriptors which predict future earnings changes over all the periods examined are

- ◆ debtors ratio;

- ◆ the return on opening equity and
- ◆ the return on total assets.

However, the predictive information link between these two financial descriptors and future earnings changes disappears when the outliers are deleted from the sample.

The findings (via regression) suggest that a firm's financial statement report numbers predict the size as well as the sign of the %  $\Delta$  operating profit variable. However, this predictive ability of the accounting descriptors is not systematic. It is time-specific.

### ***Stores and Chemical Industries Together***

The findings (via logit) suggest that a firm's financial statement report numbers do not predict the direction of one-year ahead earnings changes over the periods 1980-84, 1981-85, 1982-86, 1983-87, 1984-88 and 1980-88.

The findings (via regression) suggest that a firm's financial statement report numbers predict the size as well as the sign of the %  $\Delta$  operating profit variable. However, this predictive ability of the accounting descriptors is not systematic. It is time-specific.

### ***Concluding Remarks***

Overall the findings (via logit) suggest that a firm's financial statement report numbers predict the direction of one-year ahead earnings changes over the periods 1980-84, 1981-85, 1982-86, 1983-87, 1984-88 and 1980-88. However, there is not a systematic relationship link between the financial statement report numbers and future earnings changes. The predictive ability of the financial statement report numbers regarding future earnings changes is time-specific. The findings are in accordance with Woodmore (1991)<sup>1</sup> and Holthausen and Larcker (1992)<sup>2</sup>.

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<sup>1</sup> Woodmore (1991) study is based on data from the Australian Graduate School of Management's Centre For Research in Finance database for the period 1972-1985. He could not develop a stable model either to predict abnormal returns directly as in Holthausen and Larcker (1992) or indirectly as in OP (1989a). He suggested that the OP results are time-specific.



The accounting descriptors, under the LOGIT methodology, are found to predict the sign of the %  $\Delta$  operating profit more systematically than under the REGRESSION methodology. In addition, under the regression analysis, the accounting descriptors do not seem so systematic in predicting the size of the %  $\Delta$  operating profit.

The accounting variables exhibiting incremental information content over current earnings in stores industry differ from those exhibiting incremental information content over current earnings in chemical industry. The findings suggest that future earnings changes vary systematically cross-sectionally as a function of risk, size and determinants of expected returns. Last, the findings suggest poor power of the tests when the stores and chemical industries are aggregated. "However, if a general model is not a good representation for all firms ( to the extent to which different characteristics generate future earnings in different firms in different ways ), we again introduce a conservative bias to the tests" [*Ou and Penman (1989a), p. 299*].

Overall the findings are in accordance with Greig (1992) who argues that the economic factors are causing the information link between the financial statement numbers and future earnings changes.

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<sup>2</sup> Holthausen and Larcker (1992) attempted to predict abnormal returns directly but found that the OP "Pr" measure did not work in the 1973-83 period.

## **CHAPTER FIVE**

# **Is Financial Statement Information About Future Earnings Changes Impounded In Current Stock Returns? Evidence For The U.K.**

## 5.1 INTRODUCTION

In chapters 3 and 4, evidence suggests that the annual financial statement numbers contain information concerning the sign and size of earnings changes one-year ahead. The objective of this chapter is to examine whether the market seems aware of the full implications of current financial accounting information for predicting future earnings changes. Specifically, an investigation is carried out to examine whether financial statement information concerning future earnings changes is impounded in this year's returns or next year's returns [*the lagged impounding phenomenon as reported by Ou and Penman (1989a) for the U.S.A market*] for the U.K market.

OP extending the prior work of McKibben (1972) argue that the market does not fully exploit financial statement information when predicting earnings (and returns). Their empirical results suggest that their Pr strategy generates abnormal returns up to 36 months after the financial statement items required to calculate Pr are available. The OP hypothesis is closely related to earlier postannouncement drift studies, which show that their income variables can predict stock returns. For example, Ball and Brown (1968) and Foster (1974) are the first to note that even after earnings announcements, estimated abnormal returns are predictable based on previously announced earnings. Freeman and Tse (1989) and Bernard and Thomas (1989, 1990) among others, confirm that the market underestimates the implications of previous earnings for future earnings.

The chapter is organised as follows. Section 5.2 explains the experimental design; Section 5.3 describes the hypotheses tested; section 5.4 the econometric issues; section 5.5 comments on the empirical results while 5.6 contains the conclusion.

## 5.2 EXPERIMENTAL DESIGN

A regression methodology, similar to that of Greig (1992), is adopted in this analysis: regression with individual firm-years observations as the unit of observation. Ou and Penman methodology of construction of portfolios was dropped for various reasons

(as explained shortly afterwards).

There are several advantages to using firm-year observations. First, it provides an alternative test to the relation between  $Pr_{it}$  and stock returns independent of portfolios. Lo and MacKinlay (1991) and Larcker (1989) discuss the possible biases in statistical tests that arise when testing the relation using portfolios. Lys and Sabino (1991) also examine the choice between using portfolios and individual observations as alternative research methods. Ou and Penman themselves, pointed out that the portfolio grouping has the potential to inflate the rank-order correlations, relative to the rank-order correlations that would be observed if all of the observations were treated *individually*. It is unclear why portfolios are used in the OP analyses and what impact this procedure has on the econometric properties of the statistical tests. Some possible explanation might be that the portfolio grouping is the approach commonly used by prior researchers. In the OP paper, the cross-sectional analyses in table 2 as well as tables 5, 6 and 7, are based on rank-order correlations where the total sample of firms is collapsed into ten portfolios that are decreasing in the value of  $Pr$  i.e portfolio 1 consists of all firms in a given year with  $Pr$  values between 0.90 and 1.00 and portfolio 10 consists of all firms in a given year with  $Pr$  values between 0.00 and 0.10. The median value of  $Pr$  within each of these ten portfolios is used as the observation value for  $Pr$ . The median value for percentage change in one-step-ahead earnings for the firms in each portfolio is used as the observation for the one-step-ahead earnings. The grouping method used by OP may cause the most extreme "measurement errors" in  $Pr$  to be forced into portfolios 1 and 10. If the measurement errors in  $Pr$  are related to the measurement errors in the percentage change in one-step-ahead earnings, the correlations between the median values of these two measures will be inflated.

Second, using firm-year observations facilitates the introduction of additional and potential explanatory variables, especially size.

Third, the portfolio approach requires several arbitrary decisions. Should a single cutoff or multiple cutoffs be used? How are the cutoff points determined? Should the portfolios be based on absolute values or relative ranks? The use of

individual firm-year observations in a regression framework avoids these issues.

Finally, the use of a single regression using individual firm observations facilitates the decomposition of the relation between  $Pr_{it}$  and subsequent stock returns into cross-sectional and cross-temporal effects.

### 5.3 HYPOTHESES TESTED

The Holthausen and Larcker approach is adopted by investigating the relationship between the accounting descriptors and stock returns directly. This contrasts with OP in which the descriptors generate values of  $Pr$ , which in turn are used to form an investment strategy. The rationale for this is that the OP experimental design is based on generating superior investment performance from buying (selling) those stocks where the earnings are predicted to increase (decrease). The motivation here is slightly different. It examines whether there is lagged impounding; that is whether investors underreact to financial statement information. Since the descriptor is the information that investors receive, then it seems sensible to focus on this variable in the analysis.

The Greig regression estimation is followed instead of constructing portfolios. Regression models using firm-year observations given in the following equations are used.

$$Change_{i,t+1} = a_0 + a_1 X_{i,j,t} + a_3 R_{i,t} + e_{i,t} \quad [5.1]$$

$$Change_{i,t+1} = a_4 + a_5 X_{i,j,t} + a_6 R_{i,t+1} + e_{i,t} \quad [5.2]$$

where

$Change_{i,t+1}$  = the percentage change in earnings per share (prior to extraordinary items) for company  $i$ , between year  $t$  and year  $t+1$ .

$R_{i,t}$  = the proportionate change in share price for company  $i$ , between 3 months after the year end  $t-1$  and 3 months after the year end  $t$ .

The general advantages of using firm year observations over portfolio construction are well documented [*refer to the previous section*].

However, there are particular advantages which are relevant to the investigation of lagged impounding. The first advantage is that the method is well suited to the main issue of whether accounting descriptors contain information about earnings change which is not already captured by returns.

Secondly, it seems to be a way of dealing with Greig criticism of OP. The essence of this is that the variation in the descriptors ( $X_{i,j,t}$ ) around the all industry average is likely to be associated with industry characteristics, including risk; however, industry risk differences will also be reflected in the variation of returns ( $R_{i,t}$  and  $R_{i,t+1}$ ). In this context, therefore, the advantage of using regression is that it estimates the impact of each descriptor, conditional on the relationship between returns and changes in earnings per share. Therefore, if the variation in a descriptor does pick up industry characteristics which relate to risk, then the descriptor is unlikely to be significant with returns included in the equation. This discussion also extends to risk differences within industries, which impact on the descriptors.

In addition, what really matters is not the covariation of  $X$  with  $R$ , but how relate to the change in earnings per share. Greig's criticism makes the assumption that the characteristics which partition industry groupings are also those which contain information about earnings change. The regression framework deals with this by assessing the marginal impact of the descriptor in predicting changes in earnings, over and above the information contained in returns.

The contribution of a descriptor to the prediction of the earnings change can be evaluated by the values of the coefficients in equations 5.1 and 5.2. One scenario is that  $a_1=0$ . In this case, then the information contained in the descriptor concerning the future change in profit is captured in contemporaneous returns; that is, the descriptor does not provide explanatory power about future profits over and above contemporaneous returns. This is the case when the market is efficient with respect to the information; in addition,  $a_2$  is likely to be significant since the Beaver, Lambert and Ryan (1987) evidence suggests that returns contain information about future

profits.

A second possibility is that  $a_1 \neq 0$ ,  $a_4 = 0$  and  $a_5 \neq 0$ . In this case, the descriptor contains information that is not captured in contemporaneous returns, but is captured in next period's returns. This is the case of lagged impounding. The coefficient  $a$  is likely to be significant as suggested above<sup>1</sup>.

A third and more ambiguous situation, "other effects", is when  $a_1 \neq 0$  and  $a_4 = 0$ . In this case, the information contained in the descriptor is not impounded in contemporaneous nor when the earnings is announced. The market efficiency explanation for this is about transitory earnings and therefore the effect may not be sufficiently large to be detectable in the returns. The alternative explanation is that there is lagged impounding of the descriptor in the first period and of earnings in the second

## 5.4 EMPIRICAL RESULTS

### *Stores and Chemical Industries Together*

#### **1980-1988 PERIOD**

To examine whether the accounting descriptors' information concerning the direction and sign of the future earnings changes is impounded in this year's or next year's stock returns, each descriptor is included with the this year's return and next year's return in a univariate regression model.

The appendix to this chapter, table A1 presents the coefficient estimates for all 83 accounting descriptors for the period 1980-88, along with a t-statistic (and p-value) relevant for the EMH  $H_0$  that the coefficient is zero and for the OP hypothesis  $H_1$  that

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<sup>1</sup> Notice that in both the market efficiency and the lagged impounding, it is not required that the descriptor should, by itself, be significant in explaining returns. This is because I am concerned with the marginal contribution of the descriptor to the information already impounded in returns. In this sense, this is a more powerful test for lagged impounding than OP, who required each descriptor to be significant by itself and also with other (pairwise) significant descriptors. OP fully recognised this, but wanted to take a conservative approach in developing their investment strategy.

the coefficient is not zero at 10% significance level.

The majority of the financial statement variable indicate that the accounting descriptors' information concerning the sign and size of future earnings changes is reflected in this year's stock returns, thus supporting the maintained hypothesis of market efficiency, that all information is impounded instantaneously in current stock returns once the financial reports are made publicly available.

None of the findings support the OP hypothesis; that is, that the accounting descriptors' information concerning the sign and size of future earnings changes is reflected in next year's stock returns.

However, the findings suggest that some accounting descriptors' information concerning the sign and size of future earnings changes, for example, the  $\% \Delta$  sales, the  $\% \Delta$  debt/equity, the  $\% \Delta$  operating profit/sales, the  $\% \Delta$  working capital/total assets and the  $\Delta$  total assets variables, is partly reflected in this year's stock returns and fully in next year's return.

The evidence also reveals that the information about future earnings sign and size contained by some accounting descriptors is neither reflected in this year's stock returns nor in next year's returns. Perhaps further tests extending to the information reflected in the stock returns two year's ahead might show whether the financial statement information is fully reflected in stock returns. The accounting variables exhibiting information beyond one year ahead, are the  $\% \Delta$  inventory/total assets, the return on opening equity, return on closing equity, the  $\% \Delta$  funds. These accounting descriptors are labelled on the table A1 [*see appendix to this chapter*] as "other" effects.

### **1980-1984 PERIOD**

Throughout the period 1980-84, the findings suggest that the information concerning the sign and size of future earnings changes, contained by most of the accounting descriptors is impounded in this year's stock returns. Only three accounting descriptors' information about future earnings is not reflected in this year's stock



returns but in next year's returns. The three accounting descriptors exhibiting this informational characteristic are the  $\% \Delta$  debtors, the  $\% \Delta$  sales and the  $\Delta$  sales/working capital variables. Evidence also suggests that the information about future earnings changes contained in some accounting descriptors is neither impounded in this year's nor next year's stock returns. These cases are labelled as "others". The results are shown in table 5.1.

**Table 5.1** *Multivariate Regression Estimation For The Stores and Chemical Industries Together Examining Whether The Accounting Descriptors' Information About Future Earnings' Sign and Size Changes Is Impounded In This Year's Or Next Year's Stock Returns Throughout The Period 1980-84.*

<i>Accounting Descriptors</i>	<i>OP</i>	<i>OTHER<sup>a</sup></i>	<i>ao</i>	<i>x<sub>it</sub></i>	<i>R<sub>t</sub></i>	<i>R<sub>t+1</sub></i>
$\% \Delta$ debtors ratio	*		0.282	-2.176	1.586	
$\% \Delta$ debtors ratio			-1.380	-1.272		5.096
$\Delta$ inventory/turnover		+	-0.614	-3.330	2.408	
$\Delta$ inventory/turnover			-1.755	-2.774		3.549
$\% \Delta$ sales	*		0.540	-8.127	1.239	
$\% \Delta$ sales			-0.413	-1.173		3.754
$\% \Delta$ depreciation		+	0.065	-1.833	1.586	
$\% \Delta$ depreciation			-1.335	-2.142		3.306
$\% \Delta$ return on opening equity		+	-0.074	2.880	1.573	
$\% \Delta$ return on opening equity			-1.279	2.777		3.106
$\Delta$ sales/working capital	*		0.139	-2.010	1.787	
$\Delta$ sales/working capital			-1.406	0.678		3.211
$\% \Delta$ working capital			-0.037	1.903	1.735	
$\% \Delta$ working capital			-1.282	2.682		3.245

<sup>a</sup> these are referred as "other effects" in the analysis. Theoretical explanations as provided by a number of studies [Stober (1992), Ball (1992)] are offered for these "other effects".

$ao$  is the constant of the accounting coefficients;

$X_{it}$  is the coefficient of the accounting descriptor;

$R_t$  is this year's stock return;

$R_{t+1}$  is next year's stock return.

### 1981-1985 PERIOD

To examine whether the accounting descriptors' information concerning the direction and sign of the future earnings changes is impounded in this year's or next year's stock returns, each descriptor is included with the this year's return and next year's return in a univariate regression model.

The majority of the financial statement variable indicate that the accounting descriptors' information concerning the sign and size of future earnings changes is reflected in this year's stock returns, thus supporting the maintained hypothesis of market efficiency, that all information is impounded instantaneously in current stock

returns once the financial reports are made publicly available.

One of the accounting descriptor supports the OP hypothesis; that is, that the accounting descriptors' information concerning the sign and size of future earnings changes is reflected in next year's stock returns. The accounting descriptor exhibiting this lagged impounding phenomenon is the %  $\Delta$  uses variable. The results are shown in table 5.2.

**Table 5.2** *Multivariate Regression Estimation For The Stores and Chemical Industries Together Examining Whether The Accounting Descriptors Information About Future Earnings' Sign And Size Changes Is Impounded In This Year's Stock Returns Or In Next Year's Stock Returns Throughout The Period 1981-85.*

<i>Accounting Descriptors</i>	<i>OP</i>	<i>OTHER<sup>a</sup></i>	<i>a<sub>0</sub></i>	<i>x<sub>it</sub></i>	<i>R<sub>t</sub></i>	<i>R<sub>t+1</sub></i>
% $\Delta$ debtors ratio		+	1.239	-8.480	0.925	
% $\Delta$ debtors ratio			0.232	-15.28		3.154
$\Delta$ inventory/turnover		+	-0.021	-3.053	1.947	
$\Delta$ inventory/turnover			-0.536	-1.996		3.034
% $\Delta$ inventory/turnover		+	0.827	1.412	1.139	
% $\Delta$ inventory/turnover			-0.250	2.122		2.994
% $\Delta$ inventory/total assets		+	0.729	2.346	1.118	
% $\Delta$ inventory/total assets			-1.131	2.493		3.269
% $\Delta$ sales		+	0.865	-10.133	1.100	
% $\Delta$ sales			-0.012	-18.86		3.230
% $\Delta$ return on opening equity		+	0.771	2.037	1.082	
% $\Delta$ return on opening equity			-0.238	1.931		2.835
% $\Delta$ sales/total assets		+	1.021	-2.592	1.051	
% $\Delta$ sales/total assets			0.125	-2.198		3.225
% $\Delta$ operating profit/sales		+	0.972	-2.998	1.059	
% $\Delta$ operating profit/sales			0.072	-1.768		3.214
% $\Delta$ working capital/total assets		+	0.975	-4.822	1.062	
% $\Delta$ working capital/total assets			-0.078	-3.195		3.214
% $\Delta$ funds		+	0.800	1.103	0.998	
% $\Delta$ funds			0.530	3.749		2.728
% $\Delta$ uses		*	0.694	-2.284	1.600	
% $\Delta$ uses			0.280	-1.371		2.639
% $\Delta$ working capital			-0.037	1.903	1.735	
% $\Delta$ working capital			-1.282	2.682		3.245
total income/cash flow		+	3.345	2.730	0.934	
total income/cash flow			-0.199	1.733		3.305

a these are referred as "other effects" in the analysis. Theoretical explanations as provided by a number of studies [Stober(1992), Ball(1992)] are offered for these "other effects".

$a_0$  is the constant of the accounting coefficients;

$X_{it}$  is the coefficient of the accounting descriptor;

$R_t$  is this year's stock return;

$R_{t+1}$  is next year's stock return;

### 1982-1986 PERIOD

To examine whether the accounting descriptors' information concerning the direction and sign of the future earnings changes is impounded in this year's or next year's

stock returns, each descriptor is included with the this year's return and next year's return in a univariate regression model.

The majority of the financial statement variable indicate that the accounting descriptors' information concerning the sign and size of future earnings changes is reflected in this year's stock returns, thus supporting the maintained hypothesis of market efficiency, that all information is impounded in current stock returns once the financial reports are made publicly available.

Only one of the accounting descriptor supports the OP hypothesis; that is, that the accounting descriptors' information concerning the sign and size of future earnings changes is reflected in next year's stock returns. The accounting descriptor exhibiting this characteristic is the %  $\Delta$  return on opening equity.

The findings also suggest that the information about future earnings changes contained by some accounting descriptors, is neither reflected in this year's stock return nor in next year's stock return. These are referred as "other" effects. The results are shown in table 5.3.

**Table 5.3** *Multivariate Regression Estimation For The Stores and Chemical Industries Together Examining Whether The Accounting Descriptors Information About Future Earnings' Sign and Size Changes Is Impounded In This Year's Stock Returns Or In Next Year's Stock Returns Throughout The Period 1982-86.*

<i>Accounting Descriptors</i>	<i>OP</i>	<i>OTHER<sup>a</sup></i>	<i>a<sub>0</sub></i>	<i>x<sub>it</sub></i>	<i>R<sub>t</sub></i>	<i>R<sub>t+1</sub></i>
% $\Delta$ inventory/total assets		+	3.430	3.117	1.233	
% $\Delta$ inventory/total assets			2.139	3.132		3.333
% $\Delta$ return on opening equity	*		3.802	2.370	0.532	
% $\Delta$ return on opening equity			2.618	-0.626		2.574
return on total assets		+	6.215	-2.250	1.813	
return on total assets			5.461	-2.480		2.887
sales/working capital		+	3.510	-2.216	1.242	
sales/working capital			2.132	-1.699		2.545
cash flow/total debt		+	2.961	2.828	1.125	
cash flow/total debt			1.660	2.910		3.335
$\Delta$ funds		+	6.130	-2.322	1.679	
$\Delta$ funds			5.338	-3.128		2.896
$\Delta$ uses		+	6.108	-2.733	1.839	
$\Delta$ uses			5.457	-2.828		2.750
working capital		+	3.483	-2.117	1.344	
working capital			2.357	-1.872		2.448

<sup>a</sup> these are referred as "other effects" in the analysis. Theoretical explanations as provided by a number of studies [Stober (1992), Ball (1992)] are offered for these "other effects".

$a_0$  is the constant of the accounting coefficients;

$X_{it}$  is the coefficient of the accounting descriptor;

$R_t$  is this year's stock return;

$R_{t+1}$  is next year's stock return;

**1983-1987 PERIOD**

To examine whether the accounting descriptors' information concerning the direction and sign of the future earnings changes is impounded in this year's or next year's stock returns, each descriptor is included with the this year's return and next year's return in a univariate regression model.

The majority of the financial statement variable indicate that the accounting descriptors' information concerning the sign and size of future earnings changes is reflected in this year's stock returns, thus supporting the maintained hypothesis of market efficiency, that all information is impounded instantaneously in current stock returns once the financial reports are made publicly available.

The findings also suggest that the information about future earnings changes contained by some accounting descriptors, is neither reflected in this year's stock return nor in next year's stock return. These are referred as "other" effects. The results are shown in table 5.4.

**Table 5.4** *Multivariate Regression Estimation For The Stores and Chemical Industries Together Examining Whether The Accounting Descriptors Information About Future Earnings' Sign And Size Changes Is Impounded In This Year'S Stock Return Or In Next Year's Stock Return Throughout The Period 1983-87.*

<i>Accounting Descriptors</i>	<i>OP</i>	<i>OTHER</i>	<i>a<sub>0</sub></i>	<i>x<sub>it</sub></i>	<i>R<sub>t</sub></i>	<i>R<sub>t+1</sub></i>
%Δ quick assets ratio		+	7.143	-2.896	0.940	
%Δ quick assets ratio			5.543	-3.004		1.051
%Δ inventory/total assets		+	2.532	2.879	2.994	
%Δ inventory/total assets			2.345	2.878		3.290
Δ depreciation/fixed assets		+	2.176	2.365	2.319	
Δ depreciation/fixed assets			1.825	2.545		2.848
%Δ return on opening equity		+	2.205	2.302	2.287	
%Δ return on opening equity			1.903	2.295		2.651
%Δ return on total assets		+	3.106	4.244	1.794	
%Δ return on total assets			2.982	2.544		1.571
Δ return on closing equity		+	3.826	2.333	1.950	
Δ return on closing equity			4.170	2.991		2.903
cash flow/total debt		+	2.312	2.875	2.964	
cash flow/total debt			2.105	2.913		3.349
%Δ funds		+	3.105	4.084	1.794	
%Δ funds			2.982	2.504		1.570
Δ uses		+	5.961	-2.704	1.402	
Δ uses			5.608	-2.420		0.929

a these are referred as "other effects" in the analysis. Theoretical explanations as provided by a number of studies [Stober (1992), Ball (1992)] are offered for these "other effects".

$a_0$  is the constant of the accounting coefficients;

$X_{it}$  is the coefficient of the accounting descriptor;

$R_t$  is this year's stock returns;

$R_{t+1}$  is the next year's stock returns.

**1984-1988 PERIOD**

To examine whether the accounting descriptors' information concerning the direction and sign of the future earnings changes is impounded in this year's or next year's stock returns, each descriptor is included with the this year's return and next year's return in a univariate regression model.

The majority of the financial statement variable indicate that the accounting descriptors' information concerning the sign and size of future earnings changes is reflected in this year's stock returns, thus supporting the maintained hypothesis of market efficiency, that all information is impounded instantaneously in current stock returns once the financial reports are made publicly available.

The findings also suggest that the information about future earnings changes contained by some accounting descriptors, is neither reflected in this year's stock return nor in next year's stock return. The results are shown in table 5.5.

**Table 5.5** *Multivariate Regression Estimation For The Stores and Chemical Industries Together Examining Whether The Accounting Descriptors Information About Future Earnings' Sign and Size Changes Is Impounded In This Year's Stock Returns Or In Next Year's Stock Returns Throughout The Period 1984-88.*

<i>Accounting Descriptors</i>	<i>OP</i>	<i>OTHER<sup>a</sup></i>	<i>ao</i>	<i>xit</i>	<i>Rt</i>	<i>Rt+1</i>
%Δ inventory/total assets		+	0.521	2.087	2.611	
%Δ inventory/total assets			2.929	2.322		2.634
return on opening equity		+	0.092	2.087	2.608	
return on opening equity			2.571	2.400		2.003
debt/equity		+	0.789	-1.992	2.655	
debt/equity			2.442	-1.058		1.762
Δ debt/equity		+	0.453	-2.394	2.636	
Δ debt/equity			2.855	-1.015		2.449
%Δ debt/equity		+	0.354	2.449	2.698	
%Δ debt/equity			2.846	0.428		2.581
%Δ sales/total assets		+	0.534	-3.472	2.643	
%Δ sales/total assets			2.898	-0.905		2.564
return on closing equity		+	0.058	3.062	2.540	
return on closing equity			2.394	2.863		1.540
%Δ operating profit/sales		+	0.482	-6.681	2.649	
%Δ operating profit/sales			2.878	-0.779		2.566
%Δ sales/inventory		+	0.281	2.000	2.470	
%Δ sales/inventory			2.288	1.543		1.851
cash flow/total debt		+	0.538	2.677	2.394	
cash flow/total debt			2.528	2.742		3.143
%Δ working capital/total assets		+	0.465	-6.918	2.655	
%Δ working capital/total assets			2.863	-0.737		2.581
%Δ funds		+	0.685	-2.268	2.361	
%Δ funds			3.535	-1.467		1.119

$\Delta$ uses			1.149	-2.084	1.925	
$\Delta$ uses	+		4.025	-1.541		0.974

a these are referred as "other effects" in the analysis. They are reported and theoretical explanations as provided by a number of studies [Stober (1992), Ball (1992)] are offered for these "other effects".

$a_0$  is the constant of the accounting coefficients;

$X_{it}$  is the coefficient of the accounting descriptor;

$R_t$  is this year's stock returns;  $R_{t+1}$  is next year's stock returns.

## Stores Industry

### 1980-1988 PERIOD

To examine whether the accounting descriptors' information concerning the direction and sign of the future earnings changes is impounded in this year's or next year's stock returns, each descriptor is included with the this year's return and next year's return in a univariate regression model.

The appendix to this chapter, table A2 presents the coefficient estimates for all 83 accounting descriptors for the period 1980-88, along with a t-statistic (and p-value) relevant for the EMH  $H_0$  that the coefficient is zero and for the OP hypothesis  $H_1$  that the coefficient is not zero at 10% significance level.

The majority of the financial statement variable indicate that the accounting descriptors' information concerning the sign and size of future earnings changes is reflected in this year's stock returns, thus supporting the maintained hypothesis of market efficiency, that all information is impounded instantaneously in current stock returns once the financial reports are made publicly available.

The findings also suggest that the information about future earnings sign and size contained by some accounting descriptors is neither reflected in this year's stock returns nor in next year's returns. Perhaps further tests extending to the information reflected in the stock returns two year's ahead might show whether the financial statement information is fully reflected in stock returns. These are reported as "other" cases.

**1980-1984 PERIOD**

To examine whether the accounting descriptors' information concerning the direction and sign of the future earnings changes is impounded in this year's or next year's stock returns, each descriptor is included with the this year's return and next year's return in a univariate regression model.

The majority of the financial statement variable indicate that the accounting descriptors' information concerning the sign and size of future earnings changes is reflected in this year's stock returns, thus supporting the maintained hypothesis of market efficiency, that all information is impounded instantaneously in current stock returns once the financial reports are made publicly available.

A number of the accounting descriptors however, indicate that the information they contain regarding future earnings changes is impounded in next year's stock returns. The accounting descriptors exhibiting this characteristic are the %  $\Delta$  sales, the depreciation/fixed assets, the  $\Delta$  depreciation/fixed assets, the %  $\Delta$  sales/total assets, the  $\Delta$  sales/cash and the %  $\Delta$  sales/inventory.

The findings also suggest that the information about future earnings sign and size contained by some accounting descriptors is neither reflected in this year's stock returns nor in next year's returns. Perhaps further tests extending to the information reflected in the stock returns two year's ahead might show whether the financial statement information is fully reflected in stock returns. These are referred as "other" cases. The accounting descriptors exhibiting this characteristic are the %  $\Delta$  dividend per share,  $\Delta$  debt/equity, %  $\Delta$  debt/equity, the sales/working capital and the  $\Delta$  working capital/total assets. The results are shown in table 5.6.

**Table 5.6** *Multivariate Regression Estimation For The Stores Industry Examining Whether The Accounting Descriptors Information About Future Earnings' Sign And Size Changes Is Impounded In This Year's Stock Returns Or In Next Year's Stock Returns Throughout The Period 1980-84.*

<i>Accounting Descriptors</i>	<i>OP</i>	<i>OTHER<sup>a</sup></i>	<i>a<sub>0</sub></i>	<i>X<sub>it</sub></i>	<i>R<sub>t</sub></i>	<i>R<sub>t+1</sub></i>
%Δ sales	*		-0.111	2.791	1.285	
%Δ sales			-1.724	0.646		4.562
%Δ dividend per share		+	-0.653	-2.524	1.912	
%Δ dividend per share			-2.128	-3.709		3.363
depreciation/fixed assets	*		0.498	-2.598	1.321	
depreciation/fixed assets			-1.073	-0.956		4.420
Δ depreciation/fixed assets	*		0.492	-2.598	1.321	
Δ depreciation/fixed assets			-1.072	-0.952		4.415
Δ debt/equity		+	-0.054	1.640	1.102	
Δ debt/equity			-1.420	2.032		2.488
%Δ debt/equity		+	-0.285	2.329	1.022	
%Δ debt/equity			-1.602	2.443		2.501
%Δ sales/total assets	*		-0.123	2.500	1.288	
%Δ sales/total assets			-1.744	0.850		4.578
Δ sales/cash	*		-0.396	-2.259	1.377	
Δ sales/cash			-2.106	-1.190		4.699
%Δ sales/inventory	*		-0.107	2.141	1.291	
%Δ sales/inventory			-1.751	0.823		4.596
sales/working capital		+	-0.394	3.214	1.373	
sales/working capital			-2.022	1.789		4.665
Δ working capital/total assets		+	-0.190	-2.235	1.272	
Δ working capital/total assets			-1.605	-2.050		3.107

a these are referred as "other effects" in the analysis. Theoretical explanations as provided by a number of studies [Stober (1992), Ball (1992)] are offered for these "other effects";

$a_0$  is the constant of the accounting coefficients;

$X_{it}$  is the coefficient of the accounting descriptor;

$R_t$  is this year's stock return;

$R_{t+1}$  is next year's stock returns.

## 1981-1985 PERIOD

To examine whether the accounting descriptors' information concerning the direction and sign of the future earnings changes is impounded in this year's or next year's stock returns, each descriptor is included with the this year's return and next year's return in a univariate regression model.

The majority of the financial statement variable indicate that the accounting descriptors' information concerning the sign and size of future earnings changes is reflected in this year's stock returns, thus supporting the maintained hypothesis of market efficiency, that all information is impounded instantaneously in current stock returns once the financial reports are made publicly available.

A number of the accounting descriptors however, indicate that the information



they contain regarding future earnings changes is impounded in next year's stock returns. The accounting descriptors exhibiting this characteristic are the sales/total assets and %  $\Delta$  working capital/total assets.

The findings also suggest that the information about future earnings sign and size contained by some accounting descriptors is neither reflected in this year's stock returns nor in next year's returns. Perhaps further tests extending to the information reflected in the stock returns two year's ahead might show whether the financial statement information is fully reflected in stock returns. These are referred as "other" cases. The accounting descriptors exhibiting this characteristic are the %  $\Delta$  sales, %  $\Delta$  dividend per share,  $\Delta$  depreciation/fixed assets, %  $\Delta$  sales/total assets,  $\Delta$  operating profit/sales,  $\Delta$  sales/cash, sales/inventory, %  $\Delta$  sales/inventory, sales/working capital,  $\Delta$  sales/working capital, the %  $\Delta$  working capital/total assets, cash flow/total debt and %  $\Delta$  working capital. The results are shown in table 5.7.

**Table 5.7** *Multivariate Regression Estimation For The Stores Industry Examining Whether The Accounting Descriptors Information About Future Earnings' Sign and Size Changes Is Impounded In This Year's Stock Returns Or In Next Year's Stock Returns Throughout The Period 1981-85.*

<i>Accounting Descriptors</i>	<i>OP</i>	<i>OTHER<sup>a</sup></i>	<i>ao</i>	<i>X<sub>it</sub></i>	<i>R<sub>t</sub></i>	<i>R<sub>t+1</sub></i>
% $\Delta$ sales		+	0.889	2.372	0.704	
% $\Delta$ sales			-0.081	2.969		2.647
% $\Delta$ dividend per share		+	-0.022	-2.345	1.590	
% $\Delta$ dividend per share			-0.594	-2.440		2.435
$\Delta$ depreciation/fixed assets		+	0.813	-5.996	0.771	
$\Delta$ depreciation/fixed assets			-0.107	-8.440		2.657
sales/total assets	*		0.609	2.145	0.781	
sales/total assets			-0.256	1.518		2.630
% $\Delta$ sales/total assets		+	0.882	1.963	0.708	
% $\Delta$ sales/total assets			-0.098	2.417		2.659
$\Delta$ operating profit/sales		+	1.049	-1.772	0.797	
$\Delta$ operating profit/sales			0.424	-2.045		2.461
$\Delta$ sales/cash		+	0.608	-6.038	0.854	
$\Delta$ sales/cash			-0.324	-10.087		2.657
sales/inventory		+	0.514	2.569	0.794	
sales/inventory			-0.350	2.211		2.668
% $\Delta$ sales/inventory		+	0.896	1.911	0.708	
% $\Delta$ sales/inventory			-0.097	2.537		2.661
sales/working capital		+	0.668	2.793	0.801	
sales/working capital			-0.242	3.052		2.657
$\Delta$ sales/working capital		+	0.816	1.443	0.819	
$\Delta$ sales/working capital			-0.431	2.317		2.448
% $\Delta$ sales/working capital		+	0.664	1.759	0.810	
% $\Delta$ sales/working capital			-0.509	2.072		2.417
cash flow/total debt		+	0.828	-7.402	0.778	
cash flow/total debt			-0.092	-12.870		2.656
% $\Delta$ working capital		+	0.832	-1.254	0.781	

%Δ working capital		-0.353	-2.151		2.419
Δ working capital/total assets	*	0.693	-2.002	0.789	
Δ working capital/total assets		-0.401	-1.595		2.367

a these are referred as "other effects" in the analysis. Theoretical explanations as provided by a number of studies [Stober (1992), Ball (1992)] are offered for these "other effects".

$a_0$  is the constant of the accounting coefficients.

$X_{it}$  is the coefficient of the accounting descriptor;

$R_t$  is this year's stock returns;

$R_{t+1}$  is next year's stock return.

### 1982-1986 PERIOD

To examine whether the accounting descriptors' information concerning the direction and sign of the future earnings changes is impounded in this year's or next year's stock returns, each descriptor is included with the this year's return and next year's return in a univariate regression model.

The majority of the financial statement variable indicate that the accounting descriptors' information concerning the sign and size of future earnings changes is reflected in this year's stock returns, thus supporting the maintained hypothesis of market efficiency, that all information is impounded instantaneously in current stock returns once the financial reports are made publicly available.

A number of the accounting descriptors however, indicate that the information they contain regarding future earnings changes is impounded in next year's stock returns. The three accounting variables are the Δ in debtors, the return on opening equity, and the Δ in working capital/total assets.

The findings also suggest that the information about future earnings sign and size contained by some accounting descriptors is neither reflected in this year's stock returns nor in next year's returns. Perhaps further tests extending to the information reflected in the stock returns two year's ahead might show whether the financial statement information is fully reflected in stock returns. These are referred as "other" cases. The results are shown in table 5.8.

**Table 5.8** *Multivariate Regression Estimation For The Stores Industry Examining Whether The Accounting Descriptors Information About Future Earnings' Sign And Size Changes Is Impounded In This Year's Stock Returns Or In Next Year's Stock Returns Throughout The Period 1982-86.*

<i>Accounting Descriptors</i>	<i>OP</i>	<i>OTHER<sup>a</sup></i>	<i>a<sub>0</sub></i>	<i>X<sub>it</sub></i>	<i>R<sub>t</sub></i>	<i>R<sub>t+1</sub></i>
Δ debtors ratio	*		2.238	-2.214	0.892	
Δ debtors ratio			1.206	-0.953		2.377
Δ inventory/turnover		+	2.149	2.208	0.593	
Δ inventory/turnover			0.895	2.464		2.757
%Δ dividend per share		+	1.600	-6.055	2.261	
%Δ dividend per share			0.941	-0.572		2.315
return on opening equity	*		1.841	1.960	0.746	
return on opening equity			0.839	1.596		2.427
%Δreturn on opening equity		+	3.209	2.048	1.295	
%Δreturn opening equity			2.207	3.292		2.610
Δ working capital/total assets	*		1.954	-2.361	0.296	
Δ working capital/total assets			0.951	-1.090		1.990
Δ uses		+	1.880	1.762	1.090	
Δ uses			0.820	2.221		1.828

<sup>a</sup> these are referred as "other effects" in the analysis. Theoretical explanations as provided by a number of studies [Stober (1992), Ball (1992)] are offered for these "other effects".

$a_0$  is the constant of the accounting coefficients;

$X_{it}$  is the coefficient of the accounting descriptor;

$R_t$  is this year's stock returns;

$R_{t+1}$  is next year's stock returns;

### 1983-1987 PERIOD

To examine whether the accounting descriptors' information concerning the direction and sign of the future earnings changes is impounded in this year's or next year's stock returns, each descriptor is included with the this year's return and next year's return in a univariate regression model.

The majority of the financial statement variable indicate that the accounting descriptors' information concerning the sign and size of future earnings changes is reflected in this year's stock returns, thus supporting the maintained hypothesis of market efficiency, that all information is impounded instantaneously in current stock returns once the financial reports are made publicly available.

The findings also suggest that the information about future earnings sign and size contained by some accounting descriptors is neither reflected in this year's stock returns nor in next year's returns. Perhaps further tests extending to the information reflected in the stock returns two year's ahead might show whether the financial

statement information is fully reflected in stock returns. These are referred as "other" cases. The results are shown in tables 5.9.

**Table 5.9** *Multivariate Regression Estimation For The Stores Industry Examining Whether The Accounting Descriptors Information About Future Earnings' Sign And Size Changes Is Impounded In This Year's Stock Returns Or In Next Years' Stock Returns Throughout The Period 1983-87.*

<i>Accounting Descriptors</i>	<i>OP</i>	<i>OTHER<sup>a</sup></i>	<i>a<sub>0</sub></i>	<i>X<sub>it</sub></i>	<i>R<sub>t</sub></i>	<i>R<sub>t+1</sub></i>
$\Delta$ inventory/turnover		+	1.082	2.248	2.388	
$\Delta$ inventory/turnover			0.990	2.392		2.556
% $\Delta$ dividend per share		+	0.605	-7.512	4.119	
% $\Delta$ dividend per share			0.774	-0.569		2.919
$\Delta$ return on opening equity		+	2.336	3.262	2.020	
$\Delta$ return on opening equity			3.004	2.969		2.166
% $\Delta$ return on opening equity		+	2.220	2.619	1.840	
% $\Delta$ return opening equity			2.688	3.229		2.253
$\Delta$ return on total assets		+	2.336	3.262	2.020	
$\Delta$ return on total assets			3.004	2.969		2.166
% $\Delta$ return on closing equity		+	3.995	-2.678	0.783	
% $\Delta$ return on closing equity			4.631	-2.446		0.470
$\Delta$ operating profit/sales		+	5.080	-1.512	0.822	
$\Delta$ operating profit/sales			4.248	-3.053		0.604

a these are referred as "other effects" in the analysis. Theoretical explanations as provided by a number of studies [Stober (1992), Ball (1992)] are offered for these "other effects".  $a_0$  is the constant of the accounting coefficients;  $X_{it}$  is the coefficient of the accounting descriptor;  $R_t$  is this year's stock returns;  $R_{t+1}$  is next year's stock returns.

### 1984-1988 PERIOD

To examine whether the accounting descriptors' information concerning the direction and sign of the future earnings changes is impounded in this year's or next year's stock returns, each descriptor is included with the this year's return and next year's return in a univariate regression model.

The majority of the financial statement variable indicate that the accounting descriptors' information concerning the sign and size of future earnings changes is reflected in this year's stock returns, thus supporting the maintained hypothesis of market efficiency, that all information is impounded in current stock returns once the financial reports are made publicly available.

The findings also suggest that the information about future earnings sign and size contained by some accounting descriptors is neither reflected in this year's stock returns nor in next year's returns. Perhaps further tests extending to the information reflected in the stock returns two year's ahead might show whether the financial

statement information is fully reflected in stock returns. These are referred as "other" cases. The results are shown in Table 5.10

**Table 5.10: Multivariate Regression Estimation For The Stores Industry Examining Whether The Accounting Descriptors Information About Future Earnings' Sign And Size Changes Is Impounded In This Year's Stock Returns Or In Next Year's Stock Returns Throughout The Period 1984-88.**

<i>Accounting Descriptors</i>	<i>OP</i>	<i>OTHER<sup>a</sup></i>	<i>a<sub>0</sub></i>	<i>X<sub>it</sub></i>	<i>R<sub>t</sub></i>	<i>R<sub>t+1</sub></i>
Δ current ratio		+	-0.359	2.181	2.760	
Δ current ratio			1.831	0.063		1.813
Δ inventory/turnover		+	-0.306	5.686	2.639	
Δ inventory/turnover			1.719	2.689		1.914
return on opening equity		+	-0.617	2.023	2.697	
return on opening equity			1.505	1.908		1.335
return on total assets		+	0.733	-2.290	2.607	
return on total assets			2.005	-1.927		0.921
Δreturn on total assets		+	1.681	-2.332	1.954	
Δreturn on total assets			3.425	-1.755		-0.777
%Δ return on closing equity		+	-0.717	3.498	2.633	
%Δ return on closing equity			1.399	2.686		1.216
%Δ operating profit/sales		+	0.735	-2.486	1.963	
%Δ operating profit/sales			3.677	-2.039		-0.081

<sup>a</sup> these are referred as "other effects" in the analysis. They are reported and theoretical explanations as provided by a number of studies [Stober (1992), Ball (1992)] are offered for these "other effects".

$a_0$  is the constant of the accounting coefficients;  $X_{it}$  is the coefficient of the accounting descriptor;  $R_t$  is this year's stock returns;  $R_{t+1}$  is next year's stock returns;

## CHEMICAL INDUSTRY

### 1980-1988 Period

To examine whether the accounting descriptors' information concerning the direction and sign of the future earnings changes is impounded in this year's or next year's stock returns, each descriptor is included with the this year's return and next year's return in a univariate regression model.

The appendix to this chapter, table A3 presents the coefficient estimates for all 83 accounting descriptors for the period 1980-88, along with a t-statistic (and p-value) relevant for the EMH  $H_0$  that the coefficient is zero and for the OP hypothesis  $H_1$  that the coefficient is not zero at 10% significance level.

The majority of the financial statement variable indicate that the accounting descriptors' information concerning the sign and size of future earnings changes is

reflected in this year's stock returns, thus supporting the maintained hypothesis of market efficiency, that all information is impounded instantaneously in current stock returns once the financial reports are made publicly available.

None of the findings support the OP hypothesis; that is, that the accounting descriptors' information concerning the sign and size of future earnings changes is reflected in next year's stock returns.

The evidence also reveals that the information about future earnings sign and size contained by some accounting descriptors is neither reflected in this year's stock returns nor in next year's returns. Perhaps further tests extending to the information reflected in the stock returns two year's ahead might show whether the financial statement information is fully reflected in stock returns. The accounting variables exhibiting information beyond one year ahead, are the quick assets ratio,  $\Delta$  depreciaton/fixed assets,  $\% \Delta$  capital expenditure/total assets and  $\% \Delta$  net profit margin. These are referred as "other" effects.

### **1980-1984 PERIOD**

The majority of the financial statement variable indicate that the accounting descriptors' information concerning the sign and size of future earnings changes is reflected in this year's stock returns, thus supporting the maintained hypothesis of market efficiency, that all information is impounded instantaneously in current stock returns once the financial reports are made publicly available.

None of the findings support the OP hypothesis; that is, that the accounting descriptors' information concerning the sign and size of future earnings changes is reflected in next year's stock returns.

The evidence also reveals that the information about future earnings sign and size contained by some accounting descriptors is neither reflected in this year's stock returns nor in next year's returns. Perhaps further tests extending to the information reflected in the stock returns two year's ahead might show whether the financial statement information is fully reflected in stock returns.

The results are shown in table 5.11.

**Table 5.11** *Multivariate Regression Estimation For The Chemical Industry Together Examining Whether The Accounting Descriptors Information About Future Earnings\* Sign And Size Changes Is Impounded In This Year's Stock Returns Or In Next Year's Stock Returns Throughout The Period 1980-84.*

<i>Accounting Descriptors</i>	<i>OP</i>	<i>OTHER<sup>a</sup></i>	<i>a<sub>0</sub></i>	<i>X<sub>it</sub></i>	<i>R<sub>t</sub></i>	<i>R<sub>t+1</sub></i>
Δ current ratio		+	0.015	2.639	1.020	
Δ current ratio			0.040	2.556		1.683
%Δ current ratio		+	0.074	3.155	0.969	
%Δ current ratio			0.067	2.968		1.678
quick asset ratio		+	1.994	-2.019	1.256	
quick asset ratio			1.686	-1.736		1.609
debtors ratio		+	-2.365	2.088	1.260	
debtors ratio			-2.444	2.066		1.844
Δ depreciation/fixed assets		+	0.197	2.118	1.081	
Δ depreciation/fixed assets			0.146	0.287		1.125
%Δ return on opening equity		+	-0.252	-3.568	1.558	
%Δ return on opening equity			-0.124	-1.072		1.215
%Δ capital expenditure/total assets		+	-0.237	-3.924	1.006	
%Δ capital expenditure/total assets			-0.192	-1.014		0.683
%Δ capital expenditure		+	-0.223	-3.374	0.980	
%Δ capital expenditure			-0.173	-3.611		1.372
Δ equity/fixed assets		+	-0.044	-3.204	1.158	
Δ equity/fixed assets			-0.179	-3.163		2.091
%Δ equity/fixed assets		+	0.038	-2.059	1.184	
%Δ equity/fixed assets			-0.059	-2.064		1.943
%Δ return on closing equity		+	-0.229	-3.535	1.546	
%Δ return on closing equity			-0.129	-2.872		2.146
Δ working capital		+	0.076	3.761	0.844	
Δ working capital			0.021	4.050		1.589
%Δ working capital		+	-0.034	3.237	0.767	
%Δ working capital			-0.113	3.350		1.440
%Δ net profit margin		+	-0.261	-4.314	1.543	
%Δ net profit margin			-0.186	-1.101		1.257

<sup>a</sup> these are referred as "other effects" in the analysis. Theoretical explanations as provided by a number of studies [Stober (1992), Ball (1992)] are offered for these "other effects".

$a_0$  is the constant of the accounting coefficients;

$X_{it}$  is the coefficient of the accounting descriptor;

$R_t$  is this year's stock returns;  $R_{t+1}$  is next year's stock returns;

***1981-1985 Period***

To examine whether the accounting descriptors' information concerning the direction and sign of the future earnings changes is impounded in this year's or next year's stock returns, each descriptor is included with the this year's return and next year's return in a univariate regression model.

The majority of the financial statement variable indicate that the accounting descriptors' information concerning the sign and size of future earnings changes is reflected in this year's stock returns, thus supporting the maintained hypothesis of market efficiency, that all information is impounded instantaneously in current stock returns once the financial reports are made publicly available.

The findings also suggest that the information about future earnings sign and size contained by some accounting descriptors is neither reflected in this year's stock returns nor in next year's returns. Perhaps further tests extending to the information reflected in the stock returns two year's ahead might show whether the financial statement information is fully reflected in stock returns. These are referred as "other" cases. The results are shown in table 5.12.



**Table 5.12** *Multivariate Regression Estimation For The Chemical Industry Examining Whether The Accounting Descriptors Information About Future Earnings' Sign And Size Changes Is Impounded In This Year's Stock Returns Or In Next Year's Stock Returns Throughout The Period 1981-85.*

<i>Accounting Descriptors</i>	<i>OP</i>	<i>OTHER<sup>a</sup></i>	<i>a<sub>0</sub></i>	<i>X<sub>it</sub></i>	<i>R<sub>t</sub></i>	<i>R<sub>t+1</sub></i>
$\Delta$ current ratio		+	0.372	2.208	1.038	
$\Delta$ current ratio			0.599	2.027		2.125
% $\Delta$ current ratio		+	0.396	3.696	0.632	
% $\Delta$ current ratio			0.407	3.392		2.029
quick asset ratio		+	2.270	-2.372	1.119	
quick asset ratio			0.941	-0.884		1.178
% $\Delta$ debt/equity		+	0.619	-1.968	1.057	
% $\Delta$ debt/equity			0.696	-1.105		1.098
% $\Delta$ equity/fixed assets		+	0.323	-3.717	1.075	
% $\Delta$ equity/fixed assets			0.385	-0.761		1.267
% $\Delta$ return on closing equity		+	-0.115	-4.262	1.464	
% $\Delta$ return on closing equity			0.027	-1.253		1.435
% $\Delta$ net profit margin		+	-0.154	-4.052	1.428	
% $\Delta$ net profit margin			-0.056	-1.148		1.448
$\Delta$ sales/working capital		+	0.327	1.988	0.923	
$\Delta$ sales/working capital			0.330	0.885		1.310
% $\Delta$ sales/working capital		+	0.282	-6.742	1.085	
% $\Delta$ sales/working capital			0.376	-0.546		1.237
$\Delta$ working capital		+	0.228	2.121	0.955	
$\Delta$ working capital			0.311	1.926		1.076
% $\Delta$ working capital		+	0.157	4.200	0.501	
% $\Delta$ working capital			0.032	4.247		1.893

a these are referred as "other effects" in the analysis. Theoretical explanations as provided by a number of studies [Stober (1992), Ball (1992)] are offered for these "other effects".

$a_0$  is the constant of the accounting coefficients;

$X_{it}$  is the coefficient of the accounting descriptor;

$R_t$  is this year's returns;

$R_{t+1}$  is next year's returns.

### 1982-1986 Period

To examine whether the accounting descriptors' information concerning the direction and sign of the future earnings changes is impounded in this year's or next year's stock returns, each descriptor is included with the this year's return and next year's return in a univariate regression model.

The majority of the financial statement variable indicate that the accounting descriptors' information concerning the sign and size of future earnings changes is reflected in this year's stock returns, thus supporting the maintained hypothesis of market efficiency, that all information is impounded instantaneously in current stock

returns once the financial reports are made publicly available.

The findings also suggest that the information about future earnings sign and size contained by some accounting descriptors is neither reflected in this year's stock returns nor in next year's returns. Perhaps further tests extending to the information reflected in the stock returns two year's ahead might show whether the financial statement information is fully reflected in stock returns. These are referred as "other" cases. The results are shown in table 5.13.

**Table 5.13 Multivariate Regression Estimation For The Chemical Industry Examining Whether The Accounting Descriptors' Information About Future Earnings Changes Is Impounded In This Year's Stock Returns Or In Next Year's Stock Returns Throughout The Period 1982-86.**

<i>Accounting Descriptors</i>	<i>OP</i>	<i>OTHER<sup>a</sup></i>	<i>ao</i>	<i>Xit</i>	<i>Rt</i>	<i>Rt+1</i>
$\Delta$ current ratio		+	4.383	2.290	1.000	
$\Delta$ current ratio			4.043	2.096		1.474
% $\Delta$ current ratio		+	4.420	5.004	0.297	
% $\Delta$ current ratio			4.061	5.685		1.260
quick asset ratio		+	3.481	-2.648	1.095	
quick asset ratio			2.525	-1.910		1.300
% $\Delta$ quick asset ratio		+	4.298	-3.622	1.252	
% $\Delta$ quick asset ratio			3.857	-3.257		1.967
$\Delta$ inventory/total assets		+	3.951	-2.091	0.730	
$\Delta$ inventory/total assets			3.793	-1.950		1.258
% $\Delta$ inventory/total assets		+	4.246	-2.478	1.004	
% $\Delta$ inventory/total assets			3.964	-2.386		1.659
return on opening equity		+	3.828	-2.178	0.872	
return on opening equity			3.637	-2.401		2.470
% $\Delta$ return on opening equity		+	4.201	-5.938	1.701	
% $\Delta$ return on opening equity			4.125	-6.952		2.489
% $\Delta$ capital expenditure/total assets		+	5.516	-3.466	0.354	
% $\Delta$ capital expenditure/total assets			4.338	-3.554		1.495
% $\Delta$ capital expenditure		+	5.476	-3.526	-0.111	
% $\Delta$ capital expenditure			4.046	-3.574		1.582
$\Delta$ equity/fixed assets		+	4.203	-2.128	0.964	
$\Delta$ equity/fixed assets			3.880	-2.010		1.969
% $\Delta$ equity/fixed assets		+	4.389	-4.319	0.992	
% $\Delta$ equity/fixed assets			3.613	-2.008		1.702
$\Delta$ times interest earned	*		4.029	2.411	1.346	
$\Delta$ times interest earned			2.769	0.837		2.109
% $\Delta$ times interest earned	*		4.029	2.408	1.346	
% $\Delta$ times interest earned			2.769	0.836		2.109
$\Delta$ sales/total assets		+	4.209	-2.372	0.700	
$\Delta$ sales/total assets			3.884	-2.427		1.749
% $\Delta$ sales/total assets		+	4.411	-3.175	0.978	
% $\Delta$ sales/total assets			3.998	-3.011		1.764
% $\Delta$ return on total assets		+	4.321	-2.618	1.721	
% $\Delta$ return on total assets			4.167	-1.936		2.142
return on closing equity		+	3.876	-2.179	0.893	
return on closing equity			3.633	-2.390		2.443
% $\Delta$ return on closing equity		+	4.288	-5.942	1.680	
% $\Delta$ return on closing equity			4.097	-6.962		2.481
% $\Delta$ net profit margin		+	4.262	-7.791	1.565	
% $\Delta$ net profit margin			3.736	-5.575		2.535

$\Delta$ sales/working capital	+	4.857	1.750	0.478	
$\Delta$ sales/working capital		3.266	2.048		1.951
$\Delta$ sales/total assets	+	4.209	-2.372	0.700	
$\Delta$ sales/total assets		3.884	-2.427		1.749
% $\Delta$ sales/total assets	+	4.411	-3.175	0.978	
% $\Delta$ sales/total assets		3.998	-3.011		1.764

a these are referred as "other effects" in the analysis. Theoretical explanations as provided by a number of studies [Stober (1992), Ball (1992)] are offered for these "other effects".

$a_0$  is the constant of the accounting coefficients;

$X_{it}$  is the coefficient of the accounting descriptor;

$R_t$  is this year's stock returns;

$R_{t+1}$  is next year's stock returns.

### 1983-1987 Period

To examine whether the accounting descriptors' information concerning the direction and sign of the future earnings changes is impounded in this year's or next year's stock returns, each descriptor is included with the this year's return and next year's return in a univariate regression model.

The majority of the financial statement variable indicate that the accounting descriptors' information concerning the sign and size of future earnings changes is reflected in this year's stock returns, thus supporting the maintained hypothesis of market efficiency, that all information is impounded instantaneously in current stock returns once the financial reports are made publicly available.

The findings also suggest that the information about future earnings sign and size contained by some accounting descriptors is neither reflected in this year's stock returns nor in next year's returns. Perhaps further tests extending to the information reflected in the stock returns two year's ahead might show whether the financial statement information is fully reflected in stock returns. These are referred as "other effects". The results are shown in table 5.14.

**Table 5.14** *Multivariate Regression Estimation For The Chemical Industry Examining Whether The Accounting Descriptors Information About Future Earnings' Sign And Size Changes Is Impounded In This Year's Stock Returns Or In Next Year's Stock Returns Throughout The Period 1983-87.*

Accounting Descriptors	OP	OTHER <sup>a</sup>	a <sub>0</sub>	X <sub>it</sub>	R <sub>t</sub>	R <sub>t+1</sub>
Δ current ratio		+	4.383	2.290	1.000	
Δ current ratio			4.043	2.096		1.474
%Δ current ratio		+	5.866	6.272	-0.399	
%Δ current ratio			4.085	6.308		2.081
Δ inventory/total assets		+	4.789	-2.405	-0.004	
Δ inventory/total assets			4.192	-2.201		1.569
%Δ inventory/total assets		+	5.265	-2.463	0.512	
%Δ inventory/total assets			4.702	-2.377		2.074
return on opening equity		+	4.896	-2.533	0.738	
return on opening equity			4.285	-2.902		2.741
Δ return on opening equity		+	5.976	-1.990	1.285	
Δ return on opening equity			4.627	-1.959		2.731
%Δ return on opening equity		+	6.360	-2.066	1.358	
%Δ return on opening equity			4.617	-1.826		2.592
%Δ capital expenditure		+	5.771	-2.468	0.100	
%Δ capital expenditure			4.350	-2.138		2.120
debt/equity		+	5.939	-3.574	0.619	
debt/equity			4.153	-1.745		1.934
%Δ debt/equity		+	5.355	-2.776	0.669	
%Δ debt/equity			4.972	-2.819		2.008
%Δ equity/fixed assets		+	5.207	-4.623	0.574	
%Δ equity/fixed assets			3.967	-1.908		1.902
times interest earned	*		5.292	3.434	0.334	
times interest earned			3.543	0.807		2.098
Δ times interest earned		+	6.019	3.017	1.054	
Δ times interest earned			4.048	3.282		2.550
%Δ times interest earned		+	6.019	3.015	1.054	
%Δ times interest earned			4.048	3.279		2.550
Δ sales/total assets		+	5.354	-2.557	0.218	
Δ sales/total assets			4.493	-2.559		2.242
%Δ sales/total assets		+	5.337	-3.283	0.531	
%Δ sales/total assets			4.733	-3.186		2.186
return on closing equity		+	4.896	-2.533	0.733	
return on closing equity			4.285	-2.902		2.741
Δ return on closing equity		+	5.965	-1.983	1.255	
Δ return on closing equity			4.611	-1.959		2.724
%Δ return on closing equity		+	6.348	-2.071	1.337	
%Δ return on closing equity			4.606	-1.842		2.584
%Δ operating profit /sales	*		6.436	2.262	1.006	
%Δ operating profit/sales			4.566	1.058		2.551
%Δ sales/working capital		+	5.144	-8.580	0.418	
%Δ sales/working capital			3.750	-1.835		2.039
%Δ total assets		+	4.717	7.600	-1.069	
%Δ total assets			2.923	7.337		1.566
Δ working capital		+	5.143	2.281	-0.136	
Δ working capital			4.178	2.250		2.304
%Δ uses		+	6.475	2.381	1.015	
%Δ uses			4.466	3.210		2.624

a these are referred as "other effects" in the analysis. Theoretical explanations as provided by a number of studies [Stober (1992), Ball (1992)] are offered for these "other effects". a<sub>0</sub> is the constant of the accounting coefficients; X<sub>it</sub> is the coefficient of the accounting descriptor; R<sub>t</sub> is this year's stock returns; R<sub>t+1</sub> is next year's stock returns.

***1984-1988 Period***

To examine whether the accounting descriptors' information concerning the direction and sign of the future earnings changes is impounded in this year's or next year's stock returns, each descriptor is included with the this year's return and next year's return in a univariate regression model.

The majority of the financial statement variables indicate that the accounting descriptors' information concerning the sign and size of future earnings changes is reflected in this year's stock returns, thus supporting the maintained hypothesis of market efficiency, that all information is impounded in current stock returns once the financial reports are made publicly available.

The findings also suggest that the information about future earnings sign and size contained by some accounting descriptors is neither reflected in this year's stock returns nor in next year's returns. Perhaps further tests extending to the information reflected in the stock returns two year's ahead might show whether the financial statement information is fully reflected in stock returns. These are referred as "other" cases. The results are shown in table 5.15.

**Table 5.15** *Multivariate Regression Estimation For The Chemical Industry Examining Whether The Accounting Descriptors Information About Future Earnings Changes Is Impounded In This Year's Stock Returns Or In Next Year's Stock Returns Throughout The Period 1984-88.*

<i>Accounting Descriptors</i>	<i>OP</i>	<i>OTHER<sup>a</sup></i>	<i>a<sub>0</sub></i>	<i>X<sub>it</sub></i>	<i>R<sub>t</sub></i>	<i>R<sub>t+1</sub></i>
$\Delta$ current ratio		+	4.228	1.512	0.517	
$\Delta$ current ratio			4.650	2.563		3.528
% $\Delta$ debtors ratio		+	5.544	1.836	-0.175	
% $\Delta$ debtors ratio			3.681	1.957		4.593
% $\Delta$ inventory/total assets		+	4.195	-1.454	0.424	
% $\Delta$ inventory/total assets			4.795	-2.268		3.440
return on opening equity		+	4.081	-2.376	1.082	
return on opening equity			3.745	-2.459		3.768
debt/equity		+	5.176	-3.703	1.027	
debt/equity			4.744	-3.215		3.724
$\Delta$ sales/total assets		+	5.119	-1.932	0.542	
$\Delta$ sales/total assets			4.654	-2.038		3.849
% $\Delta$ sales/total assets		+	5.114	-3.260	0.900	
% $\Delta$ sales/total assets			4.712	-3.043		3.639
return on closing equity		+	4.081	-2.376	1.082	
return on closing equity			3.745	-2.459		3.768
% $\Delta$ sales/working capital		+	4.140	-1.758	0.398	
% $\Delta$ sales/working capital			4.621	-11.418		3.535
% $\Delta$ total assets		+	4.668	2.162	0.004	
% $\Delta$ total assets			3.514	2.067		3.725
% $\Delta$ net profit margin		+	2.398	3.092	-0.691	
% $\Delta$ net profit margin			0.629	3.126		3.593

a these are referred as "other effects" in the analysis. Theoretical explanations as provided by a number of studies [Stober (1992), Ball (1992)] are offered for these "other effects".

$a_0$  is the constant of the accounting coefficients;

$X_{it}$  is the coefficient of the accounting descriptor;

$R_t$  is this year's stock returns;

$R_{t+1}$  is next year's stock returns.

## 5.7 CONCLUDING REMARKS

This chapter investigates whether the financial statements numbers' information concerning the direction and size of earnings changes is impounded in the current year's stock return or in the following year's stock return. It provides empirical evidence of a relationship between the financial statements incremental information and stock returns.

### *Stores and Chemical Industries together*

The findings suggest that, in most cases, the financial statement numbers's information concerning the sign and size of future earnings changes is impounded in current stock returns throughout the periods 1980-84, 1981-85, 1982-86, 1983-87, 1984-88 and 1980-88. Thus the maintained hypothesis of market efficiency is supported by the findings.

However, there is a number of accounting descriptors indicating that the financial statement numbers' information is impounded in the following year's stock return, thus supporting the Ou and Penman hypothesis of a lagged impounding phenomenon. Throughout the period 1980-84, three accounting descriptors exhibit lagged impounding phenomenon. These variables are the %  $\Delta$  debtors ratio, the %  $\Delta$  sales and the %  $\Delta$  return on opening equity. Throughout the period 1981-85, only one descriptor exhibits lagged impounding characteristics. This variable is the %  $\Delta$  uses variable. Throughout the period 1982-86, two descriptors exhibit lagged impounding characteristics: the two descriptors are the %  $\Delta$  return on opening equity and the return on total assets..

Last, the findings also suggest that some accounting descriptors' information about future earnings changes is neither impounded in current stock return nor in the following year's return. These are referred as "other effects" in the analysis carried out. Theoretical explanations as offered by a number of studies, for example Stober (1992), are offered. However, no empirical tests have been carried to test these "other

effects".

### ***Stores Industry***

The findings suggest that, in most cases, financial statement numbers' information concerning the sign and size of future earnings changes is impounded in current stock returns throughout the periods 1980-84, 1981-85, 1982-86, 1983-87, 1984-88 and 1980-88. Thus the findings support the maintained hypothesis of market efficiency.

However, there is a number of accounting descriptors indicating that the financial statement numbers' information is impounded in the following year's stock return, thus supporting the Ou and Penman hypothesis. Throughout the period 1980-84, the accounting descriptors exhibiting this lagged impounding phenomenon are the %  $\Delta$  sales, the depreciation/fixed assets, the  $\Delta$  depreciation/fixed assets, the %  $\Delta$  sales/total assets, the  $\Delta$  sales/cash and the %  $\Delta$  sales/inventory variables. Throughout the period 1981-85, the sales/total assets and the  $\Delta$  working capital/total assets variables exhibit lagged impounding characteristic while throughout the period 1982-86, the  $\Delta$  debtors ratio, the return on opening equity and the  $\Delta$  working capital/total assets variables indicate that the information about future earnings changes is impounded in the following year's stock returns.

The findings also suggest that some accounting descriptors' information about future earnings changes is neither impounded in current stock returns nor in the following year's returns. These are referred as "other effects".

### ***Chemical Industry***

The findings suggest that, in most cases, financial statement numbers' information concerning the sign and size of future earnings changes is impounded in current stock returns throughout the periods 1980-84, 1981-85, 1982-86, 1983-87, 1984-88 and 1980-88. The findings support the maintained hypothesis of market efficiency.

However, there is a number of accounting descriptors indicating that the



financial statement numbers' information is impounded in the following year's stock returns, thus supporting the Ou and Penman hypothesis. Throughout the period 1982-86, the accounting descriptors exhibiting this lagged impounding phenomenon are the  $\Delta$  times interest earned and the %  $\Delta$  times interest earned. Throughout the period 1983-87, the times interest earned and the % operating profit/sales variables exhibit lagged impounding characteristic.

The findings also suggest that some accounting descriptors' information about future earnings changes is neither impounded in current stock returns nor in the following year's returns. These are referred as "other effects".

### ***Concluding Remarks***

The findings suggest that the information concerning future earnings changes contained by the financial statement numbers is impounded in the current stock return, in the majority of cases. There is, though, a number of accounting descriptors whose information concerning future earnings changes is impounded in the following year's stock return and not in the current. These findings support the OP hypothesis that there is indeed a lagged impounding phenomenon. However, there is a number of accounting descriptors whose information is neither reflected in the current year's stock return nor in the following year's stock return. These cases are labelled in the tables as "other effects". These "other effects" are not tested empirically in this thesis. Only theoretical explanations as offered by a number of studies, for example, Stober (1992) and Ball (1992), have been provided in this chapter. The rationale being that the main objective of the analysis is to establish whether there is a lagged impounding phenomenon; that is, a time lag of one year, in the market, before all accounting information is impounded in current prices.

## **CHAPTER SIX**

**Is The Lagged Impounding Phenomenon Of Financial Statement Numbers Information About Future Earnings Changes Valid For Both The Positive and Negative Values Of The Earnings Changes? Evidence For The U.K.**

## 6.1 INTRODUCTION

Evidence in chapter 5 suggests that the information concerning the direction and size of future earnings changes contained by some accounting descriptors, is indeed impounded in next year's stock returns.

The purpose of this chapter is to examine whether this lagged impounding phenomenon of financial statement report numbers is valid for only particular parts of the earnings changes. Specifically, an investigation is carried out to examine whether the lagged impounding phenomenon is valid for both negative and positive values of the  $\% \Delta$  operating profit variable changes. This chapter provides empirical evidence of a valuation link between financial statement numbers' information and stock returns.

## 6.2 HYPOTHESES DEVELOPMENT

The lagged impounding of the market to negative news has been found in the activities of financial analysts. McNichols (1988) finds that security return prediction errors are less positively skewed in earnings announcement periods than in nonannouncement periods. She suggests that this might be due to that bad news is reflected less rapidly in prices because managers tend to disclose bad news earnings less rapidly than good news.

In recent capital market research, analysts forecasts tend to be optimistic on average, that is, they appear to overestimate future earnings, and stock prices *underreact* to earnings announcements and the subsequent completion of the reaction appears in the form of a "post-earnings announcement drift" in stock prices.

Freeman and Tse (1989) and Bernard and Thomas[BT] (1990) present evidence that the market underestimates the implications of previous period earnings for future earnings. Transaction costs have been ruled out as a possible explanation for the "drift" in BT (1989,1990) and Ball (1992) but Bushan (1994) argues that transactions

costs in conjunction with differing abilities among investors to process information, can result in post-announcement drift.

Lys and Sohn argue that analysts' forecasts are based on information partly independent across analysts and partly independent of corporate disclosures. Both Abarbanell (1991) and Klein (1990) confirm the Lys and Sohn results. Moreover, the "herding" behaviour explained by Trueman (1994) that analysts have rather share mistakes with other analysts rather than borne mistakes on their own, might offer a second explanation for the drift.

In research which investigates the potential links between analysts forecasting behaviour and post-earnings announcement drifts, Mendenhall (1991), Abarbanell and Bernard (1991) and Ali, Klein and Rosenfeld (1992) find that analysts underestimate the persistence of past earnings forecasts errors in forecasting future earnings, that is, analysts do not utilize time-series information about earnings correctly when setting their forecasts. On the other hand, DeBondt and Thaler (1987, 1990) characterise their evidence as consistent with *overreaction* to earnings and suggest that corrections of such overreactions may explain the long-term reversals of extreme prior stock price changes documented by DeBondt and Thaler (1985) and Chopra, Lakonishok and Ritter (1992).

Repeated attempts to explain post-earnings announcement drift as the product of research design flaws including a failure to fully control for risk, have failed to resolve the anomaly.

Bernard and Thomas (1989, 1990) investigate the hypothesis that stock prices partially reflect a naive earnings expectation: that future earnings will be equal to earnings for the comparable quarter for the prior year. It is well known that forecast errors on such a naive model [*Fried and Givoly (1982)*] are correlated through time. In contrast, in a market that fully impounds all prior earnings information, forecast errors should not be autocorrelated. Mendenhall (1991) finds evidence of positive serial correlation in Value Line earnings forecasts errors as well as a positive relation between forecast revisions and returns around the subsequent earnings announcements. He interprets his results as indicating analysts underreaction to earnings information

in forming their forecasts. Abarbanell and Bernard (1991) using Value Line earnings forecasts (where relatively precise dating is possible) find that forecast extremes are eliminated after the first quarter. In addition, the most optimistic earnings forecasts (biggest overestimates) are associated with firms with weak earnings performance the previous year. He concludes that analysts appear to underreact to past earnings signals. Ali, Klein and Rosenfeld (1992) find a significant positive serial correlation in eight-month and one-month forecast errors, result consistent with the hypothesis that analysts on average underestimate the permanence of the last year's forecast error when setting forecasts. Further, they find an overprediction bias for both forecast horizons. The over prediction bias is most pronounced for firms previously having reported negative annual earnings. Also, the positive serial correlation in the prediction errors is greatest form firms with previous period earnings predominantly permanent.

DeBondt and Thaler (1985, 1987) show that mean reversion in stock prices is evidence of *overreaction*. DeBondt and Thaler (1985) show that stocks that were extreme "losers" over an initial three-to five year period earned excess returns over the subsequent three to five years. In the 1987 paper, it was shown that these excess returns cannot easily be attributed to changes in risk, tax or the small firm effects. Rather these excess returns to losers might be explained by biased expectations of the future: earnings for losing firms had fallen precipitously during the formation period but then rebounded strongly over the next few years i.e the market participants may overreact to current earnings not recognising that extreme annual earnings changes tend to be partially reversed in the future. Ball and Kothari (1989) suggest that when one controls for nonstationary betas the market-adjusted returns can be explained as risk premia. However, Chopra, Lakonishok and Ritter (1992) argue that Ball and Kothari[1989] rely on the Sharpe-Lintner CAPM and the influence of the beta adjustment might be overstated while if used the market price of risks the DeBondt and Thaler portfolios generate abnormal returns of approximately 5% per year even after controlling for nonstationary betas and the size effect. DeBondt and Thaler (1990) report evidence suggesting that analysts's earnings forecasts tracked by Institutional Brokers Estimate System (IBES) are indeed "consistent with generalized

overreaction". Specifically, they show that earnings changes forecasted by analysts are significantly more extreme than actual realizations and conclude that the forecasts are "simply too extreme to be considered rational". Klein (1990) motivated by the cognitive bias theory put forward by DeBondt and Thaler (1987, 1990), tests whether analysts systematically underpredict earnings following large share price declines and overpredict earnings after large price increases, and finds no evidence that they do. The evidence instead supports nonsymmetric forecasting behaviour: forecasts after price declines are optimistic i.e forecasts exceeding the actual earnings, and forecasts after price increases are neither optimistic nor pessimistic i.e there is no particular bias in the forecast errors. Results more consistent with the underreaction not the overreaction that DeBondt and Thaler find.

The literature on both underreaction and overreaction indicates that the anomalous stock price behaviour around earnings announcements may be due to a failure by market participants to appreciate what current earnings imply about future earnings.

### 6.3 EXPERIMENTAL DESIGN

The data sample used for the tests carried out in this chapter, for the Stores industry, are sub-divided into three sub-periods<sup>1</sup>: 1980-84, 1981-85, 1982-86, and for Chemical industry, into two sub-periods<sup>2</sup>: 1982-86, 1983-87.

To examine whether the lagged impounding phenomenon documented for some financial statement numbers is only valid for negative and/or positive values of the  $\% \Delta$  operating profit, the analysis is carried out in three stages: in the first stage, each accounting descriptor is included as the sole explanatory variable in a univariate regression analysis; in the second stage, each accounting descriptor is included with this year's stock returns in a multivariate regression analysis; in the third stage, each

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<sup>1</sup> These sub-periods for the stores industry have been chosen based on the evidence presented in chapter 5.

<sup>2</sup> These sub-periods for chemical industry have been chosen based on the evidence presented in chapter 5.

accounting descriptor is included with next year's stock returns in a multivariate regression.

The dependent variable is defined as the  $\% \Delta \text{ Operating profit} = \text{OP}_t - \text{OP}_{t-1} / \text{OP}_{t-1}$ , and is specified in two ways: first, it takes only the negative values and is regressed on the relevant accounting variable, this year's stock returns and then next year's stock returns;

second, it takes only the positive values and is regressed on the relevant accounting descriptor, this year's stock returns and then next year's stock returns.

The analysis is carried out for stores and chemical industries separately.

The rationale is that analysts might follow one particular industry more than another; for example, the stores industry might be followed by more analysts than the chemical industry.

The following three equations are estimated for the purpose of this analysis:

$$\% \Delta \text{ operating profit}_{it+1} = a_0 + a_1 X_{it} + u_{it} \quad [6.1]$$

where  $x_{it}$  is the accounting descriptor and  $e_{it}$  is the error term. The EMH accepts that  $a_1=0$ ; that is, accounting descriptors do not contain information about future earnings sign and size changes. The OP hypothesis accepts that  $a_1 \neq 0$ . This hypothesis supports that accounting descriptors contain information about future earnings changes.

$$\% \Delta \text{ operating profit}_{it+1} = a_3 + a_4 X_{it} + a_5 R_t + e_{it} \quad [6.2]$$

where  $x_{it}$  is the accounting descriptor and  $R_t$  is this year's stock returns.

The EMH accepts that  $a_4 \neq 0$  while  $a_5=0$ . The null hypothesis suggests that the accounting descriptors' information about future earnings changes is reflected in current stock returns. The OP hypothesis supports that the accounting information concerning the sign and size of future earnings changes is not impounded in this year's stock returns.

$$\% \Delta \text{operatingprofit}_{it+1} = a_6 + a_7 X_{it} + a_8 R_{t+1} + u_{it} \quad [6.3]$$

where  $R_{t+1}$  is next year's stock returns. The EMH accepts that  $a_7=0$  while  $a_8=0$ . The null hypothesis accepts that the accounting descriptors' information about future earnings changes is reflected in next year's stock returns. The OP hypothesis also accepts that accounting descriptors' information is impounded in next year's stock returns.

However, the  $R_t$  and  $R_{t+1}$  in equations 6.2 and 6.3 respectively, might be merely reflecting underlying technical relationships that these returns are capturing. In other words, the current returns and next year returns might be reflecting changes in, for example, decrease/increase in production costs, and not explicitly the information contained by financial statement variables.

## 6.4 EMPIRICAL RESULTS

### *Stores Industry*

#### *1980-1984 Period*

I examine whether the accounting descriptors exhibit information about future earnings' sign and size changes and whether this ability of the accounting descriptors is only valid for the negative and/or particular values of the  $\% \Delta$  operating profit. The findings suggest that during the period 1980-84, the  $\% \Delta$  sales, the  $\Delta$  depreciation/fixed assets, the  $\% \Delta$  sales/total assets, the  $\Delta$  sales/cash, the  $\% \Delta$  sales./inventory, the  $\Delta$  working capital/total assets and the  $\% \Delta$  working capital/total assets variables, all exhibit information about future earnings changes valid for the negative and/or positive values of the earnings changes. The results are shown in table 6.1.



**Table 6.1: Multivariate Regression Analysis Examining Whether The Accounting Descriptor's Ability To Contain Information About Future Earnings Changes Is Valid Only For The Positive And/Or Negative Values Of The %  $\Delta$ Operating profit During The Period 1980-1984.**

Accounting variables	% $\Delta$ Operating profit < 0 <sup>b</sup>			% $\Delta$ Operating profit > 0 <sup>c</sup>		
	coefficient	t-statistic	probability	coefficient	t-statistic	probability
<b>Panel A</b>						
constant	-1.0143	-4.399*	0.00000	0.55181	6.2260*	0.00000
$\Delta\%$ sales	2.13140	1.9740*	0.04800	-4.0930	-0.092	0.92700
constant	-1.0185	-4.413*	0.00000	0.59200	5.7260*	0.00000
$\Delta\%$ sales	2.12020	1.9600*	0.05000	-0.1931	-0.215	0.82900
$R_t$	0.40217	0.9900	0.32200	-0.2199	-1.182	0.23700
constant	-1.0254	-4.364*	0.00000	0.43800	5.5000*	0.00000
$\Delta\%$ sales	2.05090	1.7190*	0.08600	0.18350	0.2050	0.83700
$R_{t+1}$	1.18460	1.8370*	0.06600	0.30356	1.4550	0.14600
<b>Panel B</b>						
constant	-0.8080	-4.0760*	0.00000	0.55203	4.9270*	0.00000
depreciation/fixed assets	-0.2355	-0.3620	0.71900	-0.2150	-0.0210	0.98352
constant	-0.8089	-4.5250*	0.00000	0.58964	5.0270*	0.00000
depreciation/fixed assets	-0.2750	-1.4300	0.15266	0.32460	0.0310	0.97524
$R_t$	0.41447	1.01800	0.30877	-0.2208	-1.184	0.23630
constant	-0.8583	-4.4430*	0.00000	0.44553	4.1720*	0.00000
depreciation/fixed assets	0.18640	0.10600	0.91543	-0.1005	-0.094	0.92500
$R_{t+1}$	1.20540	1.77500*	0.07596	0.30373	1.4620	0.14379
<b>Panel C</b>						
constant	-0.8120	-5.0100*	0.00000	0.88200	6.1070*	0.00000
$\Delta$ depreciation/fixed assets	-12.235	-1.3280	0.18400	0.22400	-1.251	0.21400
constant	-0.8193	-4.8880*	0.00000	0.57593	5.5440*	0.00000
$\Delta$ depreciation/fixed assets	-10.345	-1.3800	0.16753	-0.2599	-6.315*	0.00000
$R_t$	-0.2208	-1.1840	0.23630	-0.1939	-1.041	0.29784
constant	-0.8351	-5.0790*	0.00000	0.42509	5.5140*	0.00000
$\Delta$ depreciation/fixed assets	-9.0626	-1.2190	0.22200	-0.2913	-10.50*	0.00000
$R_{t+1}$	10.8840	1.89000*	1.89000	0.30882	1.4780	0.13943
<b>Panel D</b>						
constant	-0.8352	-4.523*	0.00000	0.54784	6.1960*	0.00000
$\Delta\%$ sales/total assets	-0.9985	-0.079	0.93700	0.14300	0.2270	0.82000
constant	-0.8559	-4.232*	0.00000	0.58900	5.7160*	0.00000
$\Delta\%$ sales/total assets	0.43900	0.3020	0.76200	0.17900	1.1890	0.23500
$R_t$	0.45200	0.9310	0.35200	-0.2230	-1.201	0.23000
constant	-0.8920	-4.351*	0.00000	0.43300	5.4850*	0.00000
$\Delta\%$ sales/total assets	1.17320	0.8030	0.42200	0.22000	1.6630*	0.09600
$R_{t+1}$	1.40450	1.8210*	0.06858	0.30691	1.4680	1.14209
<b>Panel E</b>						
constant	-0.88232	-4.587*	0.00000	0.53233	5.7270*	0.00000
$\Delta$ sales/cash	0.137200	0.2870	0.77561	0.21422	-0.487	0.62790
constant	-0.88926	-4.621*	0.00000	0.56927	5.1530*	0.00000
$\Delta$ sales/cash	0.135000	0.8780	0.87800	0.37975	-0.197	0.35800
$R_t$	0.416730	1.0310	0.30241	-0.1842	-0.953	0.34000

constant	-0.92070	-4.728*	0.00000	0.39270	4.7680*	0.00000
$\Delta$ sales/cash	0.332200	1.7590*	0.07862	-0.3084	-1.349	0.17700
$R_{t+1}$	1.325600	1.8970*	0.05789	0.35444	1.5850	0.11286
<b>Panel F</b>						
constant	-0.85672	-4.77*	0.00000	0.52174	5.840*	0.00000
$\Delta$ working capital/total assets	0.127610	1.8290*	0.06700	0.10381	1.3470	0.18151
constant	-0.86112	-4.770*	0.00000	0.55871	5.3700*	0.00000
$\Delta$ working capital/total assets	0.122800	1.7190*	0.08560	0.95600	2.3960*	0.01657
$R_t$	0.402560	0.9960	0.31913	-0.1858	-0.984	0.32533
constant	-0.88972	-4.891*	-4.8910	0.40307	5.3260*	0.00000
$\Delta$ working capital/total assets	0.221000	3.6280*	3.62800	0.00118	2.9840*	0.00284
$R_{t+1}$	1.278600	1.9040*	1.90400	0.31635	1.4900	0.13625
<b>Panel H</b>						
constant	-0.79612	-4.249*	0.00000	0.57663	5.8390*	0.00000
$\% \Delta$ working capital/total assets	0.000016	3.3380*	0.00000	-0.0000	-1.153	0.25253
constant	-0.79622	-4.297*	0.00000	0.60958	5.2500*	0.00000
$\Delta$ working capital/total assets	0.000014	3.1010*	0.00100	-0.0000	-2.909*	0.00363
$R_t$	0.414320	0.9980	0.31800	-0.1833	-0.857	0.39160
constant	-0.82560	-4.187*	0.00000	0.38924	3.3140*	0.00009
$\Delta$ working capital/total assets	0.000012	2.7520*	0.00005	-0.0000	-2.550*	0.01078
$R_{t+1}$	1.035000	1.4090	0.15892	0.61560	1.2220	0.22157

a The dependent variable is the  $\% \Delta$  in operating profit.

b The dependent variable takes negative values.

c The dependent variable takes positive values.

\* The p-values of these t-statistic values are all significant at the 0.10 level.

### $\% \Delta$ operating profit has a negative distribution

#### $\% \Delta$ sales

The  $\% \Delta$  in sales contains information about future earnings' sign and size changes. This informational characteristic is only valid for the negative distribution of the  $\% \Delta$  in operating profit descriptor. This information the  $\% \Delta$  in sales contains about future earnings changes is not reflected in the current stock returns, but part of this information is reflected in next year's stock returns.

The  $\% \Delta$  sales descriptor exhibits a negative relationship with the  $\% \Delta$  operating profit variable. However, the  $\% \Delta$  sales variable does not account for the cost of the goods sold and it might refer to firms financing their working capital requirements through debt. This conclusion is further supported by the negative relationship, the  $\Delta$

working capital/total assets and the  $\% \Delta$  working capital/total assets variables exhibit with the  $\% \Delta$  in operating profit. Moreover, the constant of the coefficient is statistically significant, indicating that economic circumstances in this period are more important than the information about future earnings changes contained in the financial statements.

#### $\Delta$ working capital/total assets and $\% \Delta$ working capital/total assets

The  $\Delta$  working capital and the  $\% \Delta$  working capital descriptors contain information about future earnings' sign and size changes. This informational characteristic the  $\Delta$  and the  $\% \Delta$  working capital/total assets variables exhibit is only valid for the negative distribution of the  $\% \Delta$  operating profit variable. However, this information about future earnings changes is not reflected in current stock returns, but only part of this information is reflected in next year's stock returns. This result might be further supported by Stober (1992) who finds that the "Pr" measure of OP is just a proxy for expected returns.

The  $\Delta$  and the  $\% \Delta$  working capital/total assets variables exhibit a negative relationship with the  $\% \Delta$  operating profit variable. This might indicate that companies have large volume of stocks and debtors. This will result in over-investing in working capital and so tying up more funds in the business than it needs to. This might also suggest poor management of debtors (credit).

#### $\Delta$ sales/cash

The  $\Delta$  sales/cash descriptor exhibits information about future earnings' sign and size changes. The informational characteristic this accounting descriptor exhibits is only valid for the negative values the  $\% \Delta$  operating profit variable. Moreover, the  $\Delta$  sales/cash exhibits information about future earnings changes only when regressed with next year's stock returns. No reasonable explanation can be provided.

**% $\Delta$ operating profit has a positive distribution** **$\Delta$  depreciation/fixed assets**

The  $\Delta$  depreciation/fixed assets variable does not have any information about the future earnings changes in the univariate regression, but when, regressed with this year's stock returns and next year's returns, is having information about the future earnings changes. However, this information is neither reflected in the current stock returns nor in next year's stock returns. I am unable to provide any reasonable explanation for this result.

**% $\Delta$  sales/inventory**

The % $\Delta$  sales/inventory variable contains information about future earnings changes and this information is reflected in this year's stock returns. However, a further test shows that the % $\Delta$  sales/inventory variable still contains information which is not reflected in next year's stock returns. Again, I am unable to provide any reasonable explanation for this result.

 **$\Delta$  working capital/total assets, % $\Delta$  working capital/total assets**

The  $\Delta$  working capital/total assets and the % $\Delta$  working capital/total assets variables do not have any information about the future earnings changes in the univariate regression, but when, regressed with this year's stock returns and next year's stock returns are having information about the future earnings changes. This information is neither reflected in this year's stock returns nor in next year's stock returns. I am unable to provide any reasonable explanation for this result.

**1981-1985 Period**

I examine whether the accounting descriptors exhibit information about future earnings' sign and size changes and whether this ability of the accounting descriptors is only valid for the negative and/or particular values of the  $\% \Delta$  operating profit. The findings suggest that during the period 1981-85, the  $\Delta$  working capital/total assets variable exhibits information about future earnings' sign and size changes. The results are shown in 6.2.

**Table 6.2 Multivariate Regression Analysis Examining Whether The Accounting Descriptor's Ability To Contain Information About Future Earnings' Sign And Size Changes Is Valid Only For The Negative And/Or Positive Values Of The  $\% \Delta$  Operating Profit During The Period 1981-1985.**

Accounting variables	$\% \Delta$ operating profit $< 0^b$			$\% \Delta$ operating profit $> 0^c$		
	Coefficient	t-statistic	probability	Coefficient	t-statistic	probability
<b>Panel A</b>						
constant	-0.96788	-2.401*	0.02213	0.53743	6.8250*	0.00000
sales/total assets	-0.07931	-0.087	0.93142	0.00854	1.1660	0.24624
constant	-1.1126	-2.876*	0.00403	0.58539	5.6610*	0.00000
sales/total assets	-0.0018	-0.029	0.97704	0.00777	1.5610	0.11856
$R_t$	0.46401	1.5380	0.12398	-0.1755	-1.026	0.30489
constant	-1.0006	-2.881*	0.00396	0.46713	6.9370*	0.00000
sales/total assets	0.02214	0.4480	0.06544	0.00827	1.4290	0.15310
$R_{t+1}$	1.42580	1.1810	0.23757	0.16427	1.5680	0.11696
<b>Panel B</b>						
constant	-1.0161	-2.6720*	0.01225	0.55447	6.6510*	0.00000
$\Delta$ working capital/total assets	-2.0540	-0.4310	0.66973	-0.5082	-1.027	0.30720
constant	-1.1571	-2.6070*	0.00912	0.59643	5.6210*	0.00000
$\Delta$ working capital/total assets	-2.4647	-0.8120	0.41667	0.52310	-1.969*	0.04896
$R_t$	0.48456	1.51800	0.12901	-0.1698	-0.872	0.38033
constant	-0.9918	-2.7760*	0.00550	0.46899	5.4820*	0.00000
$\Delta$ working capital/total assets	-1.0411	-0.3890	0.69693	-0.4384	-1.712*	0.08686
$R_{t+1}$	1.31720	0.99600	0.31909	0.25486	0.8350	0.40395

a The dependent variable is the  $\% \Delta$  in operating profit accounting variable.

b The operating profit variable takes only positive values.

c The operating profit variable takes only negative values.

\* The p-values of these t-statistic values are all significant at the 0.10 level

**% $\Delta$ operating profit has a positive distribution** **$\Delta$ working capital/total assets**

The % $\Delta$  working capital/total assets variable does not have any information about the future earnings changes in the univariate regression, but when, regressed with this year's stock returns and next year's stock returns is having information about the future earnings changes. This information is neither reflected in this year's stock returns nor in next year's stock returns. I am unable to provide any reasonable explanation for this result.

**1982-1986 Period**

I examine whether the accounting descriptors exhibit information about future earnings' sign and size changes and whether this ability of the accounting descriptors is only valid for the negative and/or particular values of the % $\Delta$  operating profit. The findings suggest that during the period 1982-86, the  $\Delta$  working capital/total assets variable exhibits information about future earnings' sign and size changes. The results are shown in table 6.3.

**Table 6.3 Multivariate Regression Analysis Examining Whether The Accounting Descriptor's Ability To Contain Information About Future Earnings' Sign And Size Changes Is Valid Only For The Negative And/Or Positive Values Of The %  $\Delta$ Operating Profit During The Period 1982-1986.**

<i>Accounting variables</i>	<i>%<math>\Delta</math>operating profit &lt; 0<sup>b</sup></i>			<i>%<math>\Delta</math>operating profit &gt; 0<sup>c</sup></i>		
	<i>Coefficient</i>	<i>t-statistic</i>	<i>probability</i>	<i>Coefficient</i>	<i>t-statistic</i>	<i>probability</i>
<b>Panel A</b>						
constant	-0.97777	-2.871*	0.03304	0.52654	5.8387*	0.00000
debtors ratio	0.05623	-0.089	0.85442	0.00954	1.0780	0.54124
constant	-1.1006	-2.066*	0.01452	0.68529	4.7890*	0.00000
debtors ratio	-0.0017	-0.036	0.94111	0.002458	1.5440	0.15556
$R_t$	0.45551	1.6980	0.13338	-0.1766	-1.257	0.87419
constant	-1.0526	-2.654*	0.00378	0.47773	5.8620*	0.00000
debtors ratio	0.01314	0.1450	0.07844	0.01254	1.6540	0.17810
$R_{t+1}$	1.35460	1.2874	0.27897	0.15555	1.5785	0.12316
<b>Panel B</b>						
constant	-1.1111	-2.1245*	0.00225	0.45247	5.4510*	0.00000
$\Delta$ working capital/total assets	-2.4578	-0.5879	0.67773	-0.3654	-1.045	0.24720

constant	-1.1678	-2.4512*	0.00745	0.45623	4.4561*	0.00000
$\Delta$ working capital/total assets	-1.4787	-0.6120	0.74227	0.41320	-1.745*	0.03546
$R_t$	0.38746	1.45120	0.13411	-0.1457	-0.772	0.28743
constant	-0.9888	-2.1452*	0.01452	0.46478	3.4330*	0.00000
$\Delta$ working capital/total assets	-1.0321	-0.2712	0.78993	-0.5362	-1.622*	0.07576
$R_{t+1}$	1.31720	0.99600	0.31909	0.25486	0.8350	0.40395
<b>Panel C</b>						
constant	-0.89745	-2.501*	0.03654	0.46230	5.8360*	0.00000
return on opening equity	-0.08945	-0.074	0.87452	0.00954	1.1840	0.25460
constant	-1.1232	-2.785*	0.00521	0.57463	5.1234*	0.000000
return on opening equity	0.00019	-0.0278	0.98745	0.00888	1.5479	0.12453
$R_t$	0.45212	1.5230	0.14578	-0.1854	-1.023	0.45126
constant	-1.0020	-2.456*	0.000546	0.47890	6.8520*	0.00000
return on opening equity	0.02546	0.4789	0.064120	0.00845	1.4573	0.18652
$R_{t+1}$	1.211720	0.78900	0.45619	0.36486	0.7840	0.32145

a The dependent variable is the  $\% \Delta$  in operating profit accounting variable.

b The operating profit variable takes only positive values.

c The operating profit variable takes only negative values.

\* The p-values of these t-statistic values are all significant at the 0.10 level

### **$\% \Delta$ operating profit has a positive distribution**

#### **$\Delta$ working capital/total assets**

The  $\% \Delta$  working capital/total assets variable does not have any information about the future earnings changes in the univariate regression, but when, regressed with this year's stock returns and next year's stock returns is having information about the future earnings changes. This information is neither reflected in the current year's stock returns nor in the following year's stock returns.

## ***Chemical Industry***

### ***1982-1986 Period***

I examine whether the accounting descriptors exhibit information about future earnings' sign and size changes and whether this ability of the accounting descriptors is only valid for the negative and/or particular values of the  $\% \Delta$  operating profit. The findings suggest that during the period 1982-1986, the  $\Delta$  and  $\% \Delta$  times interest

earned variables exhibit information concerning the sign and size of future earnings' changes. This information is not impounded in this year's stock returns. The results are shown in table 6.4.

**Table 6.4: Multivariate Regression Analysis Examining Whether The Accounting Descriptor's Ability To Contain Information About Future Earnings Changes Is Valid Only For A Particular Distribution Of The Accounting Descriptors For The Period 1982-1986.**

Accounting variables	%Δoperating profit<0 <sup>b</sup>			%Δoperating profit>0 <sup>c</sup>		
	Coefficient	t-statistic	probability	Coefficient	t-statistic	probability
<b>Panel A</b>						
constant	-0.23021	-3.500*	0.00322	0.31385	7.6210*	0.00000
Δtimes interest earned	0.001032	0.1400	0.89057	0.04582	0.5460	0.58656
constant	-0.28694	-3.200*	0.00138	0.24807	7.7170*	0.00000
Δtimes interest earned	-0.00050	-0.171	0.86391	0.00000	3.9060*	0.00000
Δ%p <sub>t</sub>	0.181820	1.3420	0.17956	0.29068	1.6840*	0.09218
constant	-0.23524	-3.101*	0.00782	0.27538	5.9030*	0.00000
Δtimes interest earned	0.000670	0.0420	0.96726	0.00000	2.0930*	0.03632
Δ%p <sub>t+1</sub>	0.034575	1.1500	0.88305	0.11350	0.8900	0.37348
<b>Panel B</b>						
constant	-0.23181	-3.3710*	0.00420	0.31385	7.6210*	0.00000
Δ%times interest earned	0.001900	0.02300	0.98216	0.00000	0.5460	0.58665
constant	-0.27630	-3.120*	0.00124	0.25999	4.5666*	0.00000
%Δtimes interest earned	-0.00043	-0.165	0.79000	0.00000	1.8960*	0.03420
%Δpt	0.029545	1.2860	0.16500	0.14000	0.7800	0.54020
constant	-0.28262	-3.0820*	0.00206	0.24807	7.7170*	0.00000
Δ%times interest earned	-0.02508	-0.3060	0.75957	0.00001	3.9070*	0.00009
Δ%p <sub>t-1</sub>	0.190440	1.57400	0.11558	0.29068	1.6840	0.09222

a The dependent variable is the %Δ in operating profit.

b The operating profit variable takes only negative values.

c The operating profit variable takes only positive values.

\* The p-values of these t-statistic values are all significant at the 0.10 level.

## %Δ operating profit has a positive distribution

### Δ times interest earned and % Δ times interest earned

The Δ and % Δ times interest earned variables does not exhibit information about future earnings' sign and size change in the univariate regression, but when regressed with this year's stock returns and next year's stock returns, these variables exhibit information about future earnings changes. This information however is neither



reflected in this year's stock returns nor in next year's returns. I am unable to provide any reasonable explanation for this result. The results are shown in table 6.3.

### 1983-1987 Period

I examine whether the accounting descriptors exhibit information about future earnings' sign and size changes and whether this ability of the accounting descriptors is only valid for the negative and/or particular values of the  $\% \Delta$  operating profit. The findings suggest that during the period 1983-1987, the  $\Delta$  times interest earned variables exhibits information concerning the sign and size of future earnings' changes. This information is not impounded in this year's stock returns. The results are shown in table 6.5.

**Table 6.5: Multivariate Regression Analysis Examining Whether The Accounting Descriptor's Ability To Contain Information About Future Earnings' Sign and Size Changes Is Valid Only For The Positive And/Or Negative Values Of The  $\% \Delta$  Operating Profit During The Period 1983-1987.**

Accounting variables	$\% \Delta$ operating profit $< 0^b$			$\% \Delta$ operating profit $> 0^c$		
	Coefficient	t-statistic	probability	Coefficient	t-statistic	probability
<b>Panel A</b>						
constant	-0.21577	-2.360*	0.03459	0.34771	8.5900*	0.00000
times interest earned	0.000238	0.0170	0.98671	0.00000	0.6160	0.53971
constant	-0.22333	-1.973*	0.07199	0.30496	6.2740*	0.00000
times interest earned	0.000318	0.0220	0.98300	0.00000	5.2640*	0.00000
$R_t$	0.015817	0.1230	0.90399	0.14814	1.0180	0.30876
constant	-0.21522	-2.256*	0.04356	0.29896	6.6390*	0.00000
times interest earned	0.000306	-0.019	0.98529	0.0000	3.6320*	0.00028
$R_{t+1}$	0.012776	0.0760	0.94046	0.11587	1.4400	0.14980
<b>Panel B</b>						
constant	-0.25406	-4.112*	0.00106	0.32216	9.1130*	0.00000
$\% \Delta$ operating profit/sales	0.362910	1.3680	0.19292	0.00593	0.3410	0.73410
constant	-0.24412	-3.126*	0.00803	0.25472	9.2100*	0.00000
$\Delta \% \Delta$ operating profit/sales	0.373810	1.3390	0.20349	0.00441	1.0860	0.27728
$R_t$	-0.02633	-0.222	0.82754	0.22638	1.7980*	0.07220
constant	-0.26665	-3.964*	0.00270	0.27019	8.6920*	0.00000
$\Delta \% \Delta$ operating profit/sales	0.388880	1.3760	0.19209	0.00506	0.6700	0.50285
$R_{t+1}$	0.052856	0.3720	0.71580	0.61580	1.6880*	0.09134

a The dependent variable is the  $\% \Delta$  operating profit variable.

b The operating profit takes only negative values.

c The operating profit takes only positive values.

\* The p-values of these t-statistic values are all significant at the 0.10 level.

### % $\Delta$ operating profit has a positive distribution

#### $\Delta$ times interest earned

The  $\Delta$  times interest earned descriptor does not exhibit information about future earnings changes in the univariate regression, but when, regressed with this, it exhibits information about the future earnings changes. However, this information is neither reflected in this year's stock returns nor in next year's stock returns. I am unable to provide any reasonable explanation for this result.

## 6.5 CONCLUDING REMARKS

This chapter examines whether the lagged impounding phenomenon of financial statement report numbers is valid for both negative and positive values of the %  $\Delta$  operating profit variable changes. It provides empirical evidence of a valuation relationship between financial statement numbers' information and stock returns for the stores and chemical industries.

### ***Stores Industry***

During the period 1980-84, the findings suggest that the %  $\Delta$  sales, the  $\Delta$  working capital/total assets and the %  $\Delta$  working capital/total assets variables exhibit information concerning the direction and size of future earnings changes. The information exhibited by these variables is valid only for the *negative values* of the %  $\Delta$  operating profit variable changes.

Moreover, the constant of the accounting coefficient is statistically significant, indicating that economic circumstances during this period are more important than the information about future earnings changes contained in the financial statements report numbers.

During the 1980-84 period, the findings also reveal a lagged impounding phenomenon [as reported by Ou and Penman (1989a)] valid only for the *positive values* of the  $\% \Delta$  operating profit variable. The accounting variable exhibiting this lagged impounding phenomenon is the  $\% \Delta$  sales/inventory variable. During the same period 1980-84, another three accounting variables, the  $\Delta$  depreciation/fixed assets, the  $\Delta$  working capital/total assets and the  $\% \Delta$  working capital/total assets, exhibit information concerning future earnings changes. These accounting descriptors' ability to exhibit information is only valid for the positive values of the earnings changes. However, they exhibit this informational characteristic only when they are regressed with the current year's stock returns and the following year's stock returns in a multivariate regression model. No theoretical explanation can be offered for the predictive ability of these accounting descriptors.

During the period 1981-85, the  $\Delta$  working capital/total assets variable exhibits information concerning future earnings' sign and size changes. This accounting descriptor's ability to describe future earnings changes is only valid for the positive values of the  $\% \Delta$  operating profit variable. But what is more amazing, it is that this accounting descriptor predicts future earnings changes only when regressed with this year's and next year's stock returns in a multivariate regression model. Again, no theoretical explanation can be offered for the predictive ability of this accounting descriptor.

### ***Chemical Industry***

During the period 1982-86, the times interest earned and the  $\Delta$  times interest earned exhibit information concerning future earnings' sign and size changes. This accounting descriptor's ability to describe future earnings changes is only valid for the positive values of the  $\% \Delta$  operating profit variable. But what is more amazing, it is that these accounting descriptors predict future earnings changes only when regressed with this year's and next year's stock returns in a multivariate regression model.

Moreover, the constant of the accounting coefficient is statistically significant, indicating that economic circumstances during this period are more important than the information about future earnings changes contained in the financial statements report numbers.

During the period 1983-87, the times interest earned and the  $\% \Delta$  operating profit/sales exhibit information concerning future earnings' sign and size changes. These accounting descriptor's ability to describe future earnings changes is only valid for the positive values of the  $\% \Delta$  operating profit variable. However, these accounting descriptors predict future earnings changes only when regressed with this year's and next year's stock returns in a multivariate regression model.

### ***Concluding Remarks***

The findings suggest that for the stores industry, during the period 1980-84, only in the case of the  $\% \Delta$  sales variable, there exists clear evidence that the ability of the  $\% \Delta$  sales variable to predict future earnings' sign and size changes is valid only for the negative values of the  $\% \Delta$  operating profit variable. Also, the findings reveal that the  $\% \Delta$  sales/inventory variable exhibits a lagged impounding phenomenon as reported by Ou and Penman (1989a). This lagged impounding phenomenon is valid only for the positive values of the  $\% \Delta$  operating profit variable.

The rest of the evidence presented for the stores industry during the periods 1980-84, 1981-85 and 1982-86 is spurious. The accounting descriptors exhibit information concerning the sign and size of earnings changes only when regressed with the current year's stock return and the following year's stock return.

For the chemical industry, the findings present spurious evidence as well. The accounting descriptors exhibit information concerning the sign and size of earnings changes only when regressed with the current year's stock return and the following year's stock return.

Possible explanations for the results might lie in the activities of analysts. For example, analysts engaged in forecasting might be subjected to psychological forces

*[Kahneman and Tversky (1975)]*, or to the "herding" behaviour *[Truemann (1994)]* or to other personal incentives, like for example, analysts release forecasts similar to those previously announced by other analysts, even when this is not justified by their information.

A second explanation of why the information is not reflected in this year's stock returns might be the transaction costs (Bushan 1994). Transactions costs are also inversely related to firm size.

## **CHAPTER SEVEN**

**Is The Lagged Impounding Phenomenon Of Financial  
Statement Numbers Information About Future Earnings  
Changes Driven By Large Or Small Companies? Evidence for  
the U.K.**

## 7.1 INTRODUCTION AND HYPOTHESES DEVELOPMENT

Annual financial statements report numbers' information about the direction and size of future earnings changes is impounded in next year's stock returns. The purpose of this chapter is to examine whether the lagged impounding phenomenon is attributed to the way the market process information. Specifically, an investigation is carried out to examine whether the information about future earnings changes is reflected quicker in the current share prices for large companies and later for small companies.

The "firm size effect" is one area where a growing stream of evidence has arisen to suggest an apparent inefficiency. Greig (1992) argues that Ou and Penman's measure "works" in the sense of predicting future returns because it is a proxy for *expected returns* associated with differences in relative size and not because it captures abnormal returns associated with stock price deviations from fundamental values".

In a well publicized study, Bantz (1981) finds that the stocks of small NYSE firms earned higher risk-adjusted returns than the stocks of large NYSE firms. Bantz finds a negative association between average returns to stocks and the market value of the stocks after controlling for risk.

This empirical finding prompted a number of researchers, amongst those, Reinganum (1981) to see whether there is any interrelationship between the "size effect" and other empirical anomalies apparent in stock return data. Reinganum (1981) using a sample of both NYSE and Amex firms, finds abnormally large risk-adjusted returns for small firms. Specifically, Reinganum concludes: "after controlling returns for any P/E effect, a strong firm size effect still emerged. But after controlling returns for any market value effect, a separate P/E effect was not found". Reinganum's conclusion is that the "size effect" subsumes Basu (1977) evidence that stocks with high earnings/price (E/P) ratios have higher average risk-adjusted returns than low E/P stocks. However, both Bantz (1981) and Reinganum (1981) attributed the results to a misspecification of the CAPM rather than inefficiency, unwilling to reject the idea that the market could have inefficiencies of this type.

The papers by Bantz (1981) and Reinganum (1981) have drawn a lot of

attention and a number of papers have analyzed the statistical tests used in these two papers. According to Schwert (1983) papers trying to analyze "size effect" fall into three categories: [1] "papers that look for an explanation of the findings of Bantz (1981a) and Reinganum (1981) in measurement of statistical testing errors; [2] papers that provide more detailed characterization of the "size effect"; and [3] papers that propose an economic explanation of the evidence."

In the first group of "size effect" as a statistical artifact, Roll (1981) argues that the stocks of small firms are traded less frequently than those of large firms, thus estimates of systematic risk from daily stock returns will be biased downward. However "both Roll and Reinganum (1982) conclude that the bias in risk estimates due to non-synchronous trading cannot explain the magnitude of the risk-adjusted returns found by Reinganum (1981a).

Christie and Hertzl (1981) argue that the "size effect" could be due to non-stationarity in the risk measures. The risk of the stock of a levered firm increases as the stock value decreases. Assuming risk is constant over time, the risk of levered stocks whose value has fallen, is understated; hence, average risk-adjusted returns for stocks with low current value should be positive because risk is underestimated. However, Christie and Hertzl (1981) even adjusting for this bias in risk estimates still find that "size effect" exists.

In 1983, Basu re-examines Reinganum's (1981a) results using both different sample period and different way for forming portfolios of stocks on both size and earnings/price ratios. Basu (1983) results contradict Reinganum's (1981a) conclusion that the "size effect" subsumes the E/P effect. He argues that there is indeed some interaction between size and E/P ratios: the magnitude of risk-adjusted returns is largest for small firms with high E/P ratios.

Roll (1982) and Blume and Stambaugh (1983) find that the magnitude of the "size effect" is sensitive to the technique used to calculate average risk-adjusted returns and thus question the empirical importance of the "size effect".

In the second group, having observed that small firms have higher returns than large firms and that returns in January are higher than in any other month of the year,



Keim (1983) examining all NYSE-listed and AMEX-listed stocks over the 17-year period of 1963 to 1979 and forming ten portfolios based on size with portfolio 1 containing the smallest 10% of the firms, portfolio number 2 containing the next smallest 10% and so on, finds that the January effect has been due primarily to the behaviour of small firms and the size effect has been concentrated mainly in the month of January. Further examination of this interrelationship between the size effect and the January effect has shown that it is concentrated in the first five trading days in January.

Brown, Kleidon and Marsh (1983) examine the behaviour of "size effect" over time. They find that the risk-adjusted average returns to portfolios ranked on size are linearly related to the size variable but the magnitude and sign of the relation is not constant throughout the sample period 1967-79: a negative excess return between 1969-73 for small stocks and a positive excess return for the period 1974-79.

Attempts to explain this interrelationship between the "January effect" and the "size effect" appearing to have some merit have to do with "tax selling" [*Roll(1977), Reinganum(1983), Lakonishok and Smidt(1986)*].

Keim and Stambaugh (1984) extend the previously mentioned studies of the day-of-the-week effect back to 1928 and negative Monday returns were documented over the 55-year period. Using all NYSE-listed and AMEX-listed stocks for the 1963-79 period and forming ten size-based portfolios, Monday returns were observed for all sizes of portfolios. However, there was no systematic relationship between portfolio size and the size of the Monday return.

A second explanation is that small stocks may be relatively riskier in January, thus they should have a relatively higher average return in January. Two studies lending support to this argument are Rogalski and Tinic(1986) and Arbel(1985).

Other papers have examined the magnitude of transaction costs for stocks of firms in different size categories [*Stoll and Whaley(1983) and Schultz(1983)*]. Stoll and Whaley(1983) examining monthly returns of NYSE-listed stocks from 1960 to 1979 for ten portfolios ranked on market value of the stocks, find that small stocks tend to have lower prices and higher bid-ask spreads, so transaction costs are relatively

high for these stocks. They estimate risk-adjusted returns to the small firm portfolio net of transaction costs and find that a round-trip transaction every three months is sufficient to eliminate the "size effect". However, Schultz (1983) examining daily returns to NYSE-listed and AMEX-listed stocks from 1963 to 1979 finds similar results to those of Stoll and Whaley (1983). However, he also estimates average transaction costs for each month and finds no evidence of seasonality that could explain the "January size effect" found by Keim (1983). Schultz conclusion is that transaction costs cannot explain the high average returns to small firms' stocks.

## 7.2 EXPERIMENTAL DESIGN

The information accounting descriptors contain about future earnings changes, is impounded in next year's stock returns.

In order to test whether the lagged impounding phenomenon as documented in chapter 5 is indeed due to large or small companies, two issues are tested.

- ◆ Is the financial statement information concerning the direction and size changes of future earnings is impounded in next year's stock returns for small companies.
- ◆ Is the financial statement information concerning the direction and size changes of future earnings is impounded in next year's stock returns for large companies.

$$\% \Delta \text{Operating profit} = a_0 + a_1 x_i + a_2 R_t + a_3 D + e_{it} \quad [7.1]$$

where  $x_i$  represents the accounting descriptor,  $R_t$  represents this year's stock returns and  $D$  the dummy variable.

The sales variable, in log form, is used as a proxy for size. The dummy variable is specified, using the MEAN of the log of sales variable, in two ways:

- A.
  - if observations are greater than the MEAN, then the dummy variable takes the value of 0, and this signifies large companies.

- if observations are smaller than the MEAN, then the dummy variable takes the value of this year's returns.
- B.
- if observations are greater than the MEAN, then the dummy variable takes the value of 0, and this signifies large companies.
  - if observations are smaller than the MEAN, then the dummy variable takes the value of next year's returns.

The Efficient Market Hypothesis accepts that  $a_2$  is statistically significant from zero while  $a_1=a_3=0$ . The OP hypothesis, if it is driven by small firms, accepts  $a_2$  is statistically significant from zero while  $a_3=-a_2$ .

$$\% \Delta \text{Operating profit} = a_4 + a_5 x_i + a_6 R_{t+1} + a_7 D + e_{it} \quad [7.2]$$

where  $x_i$  represents the accounting descriptor,  $R_{t+1}$  represents next year's stock returns and  $D$  the dummy variable. The EMH accepts that  $a_6=a_7=0$  while the OP hypothesis, if it is driven by small firms, supports that for small companies  $a_6=0$  and  $a_7 \neq 0$  [statistically significant from zero].

## 7.3 EMPIRICAL RESULTS

### *Stores Industry*

#### *1980-1984 Period*

To examine whether the lagged impounding phenomenon is valid for small or large companies or for both small and large companies, a multivariate regression model is run. During the period 1980-84, the findings suggest that the lagged impounding phenomenon is valid for LARGE companies. The results are shown in table 7.1.

**Table 7.1: Multivariate Regression Analysis For The Stores Industry For The Period 1980-84 Testing For The Effect Of Large and Small Companies On The Information Impounded In This Year's And Next Year's Stock Returns.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
<b>Panel A</b>				
% $\Delta$ sales	0.18113E-01	0.9442E-02	1.918*	0.05508
$R_t$	0.71937	0.4996	1.440	0.14987
dmy	-0.60183	0.4934	-1.220	0.22253
% $\Delta$ sales	0.39733E-01	0.6177E-01	0.643	0.52113
$R_{t+1}$	0.90571	0.1996	4.538*	0.00001
dmy	-0.53716E-01	0.2863	-0.188	0.85144
<b>Panel B</b>				
$\Delta$ depreciation/fixed assets	-0.48889	0.3286	-1.488	0.13913
$\Delta R_t$	0.75805	0.3578	2.119*	0.03589
dmy	-0.63496	0.4576	-1.387	0.16754
$\Delta$ depreciation/fixed assets	-0.43370	0.3110	-1.395	0.16538
$R_{t+1}$	0.89743	0.1991	4.507*	0.00001
dmy	-0.49443E-01	0.2857	-0.173	0.86285
<b>Panel C</b>				
$\Delta$ sales/total assets	0.42133E-01	0.2083E-01	2.023*	0.04308
$\Delta R_t$	0.71399	0.4995	1.429	0.15287
dmy	-0.59359	0.4933	-1.203	0.22889
$\Delta$ sales/total assets	0.73837E-01	0.8764E-01	0.843	0.40095
$R_{t+1}$	0.90764	0.1994	4.552*	0.00001
dmy	-0.49065E-01	0.2861	-0.172	0.86407
<b>Panel D</b>				
$\Delta$ sales/cash	-0.60507E-05	0.3521E-05	-1.719*	0.08568
$R_t$	0.74702	0.4997	1.495	0.13496
dmy	-0.59378	0.4925	-1.206	0.22800
$\Delta$ sales/cash	-0.71161E-05	0.6011E-05	-1.184	0.23865
$R_{t+1}$	0.95116	0.2040	4.662*	0.00001
dmy	-0.32013E-01	0.2925	-0.109	0.91301
<b>Panel E</b>				
$\Delta$ working capital/total assets	-0.92307	0.4472	-2.064*	0.03900
$R_t$	0.76876	0.5892	1.305	0.19200
dmy	-0.60297	0.5741	-1.050	0.29358
$\Delta$ working capital/total assets	-0.65783	0.6945	-0.947	0.34537
$R_{t+1}$	1.3318	0.2893	4.603*	0.00001
dmy	-0.38414E-01	0.2945	-0.130	0.89644

\* The t-statistic values are statistically significant at the 0.10 level.

The findings suggest that the accounting descriptors' information about the direction and size changes of future earnings is impounded in this year's stock returns for small companies while the information of large companies is impounded in next year's stock returns.

Specifically, the %  $\Delta$  sales, the depreciation/fixed assets, the %  $\Delta$  sales/total assets, the  $\Delta$  sales/cash, the  $\Delta$  working capital/total assets and the %  $\Delta$  sales/total assets variables indicate that for small companies accounting information is impounded

in this year's stock returns.

### 1981-1985 Period

To examine whether the lagged impounding phenomenon, during the sub-period 1981-85, is valid for small or large companies or for both small and large companies, a multivariate regression model is run. During this period, the findings suggest that the lagged impounding phenomenon is mostly valid for large companies. The results are shown in table 7.2.

**Table 7.2: Multivariate Regression Analysis For The Stores Industry Examining The Effect Of Large And Small Companies On The Information Impounded In This Year's Or Next Year's Stock Returns During Period 1981-85.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
<b>Panel A</b>				
sales/total assets	0.11536E-01	0.7433E-02	1.552	0.12065
$R_t$	0.14377	0.2019	0.712	0.47636
dmy	0.58223	0.2170	2.683*	0.00730
sales/total assets	0.11536E-01	0.7433E-02	1.552	0.12065
$R_{t+1}$	0.58223	0.2170	2.683*	0.00730
dmy	0.14377	0.2019	0.712	0.47636
<b>Panel B</b>				
$\Delta$ working capital/total assets	-0.48453	0.3052	-1.588	0.11240
$R_t$	0.14840	0.2065	0.719	0.47226
dmy	0.95789	0.3971	2.412*	0.01586
$\Delta$ working capital/total assets	-0.48283	0.3026	-1.595	0.11062
$R_{t+1}$	0.97081	0.4101	2.367*	0.01791
dmy				

\* The t-statistic values are statistically significant at the 0.10 level.

For large companies the information about future earnings changes, contained by the accounting descriptors, is impounded in next year's stock returns. Especially the information contained by the sales/total assets and the  $\Delta$  working capital/total assets variables is impounded in next year's stock returns.

### 1982-1986 Period

To examine whether the lagged impounding phenomenon is valid for small or large

companies or for both small and large companies, a multivariate regression model is run. During the period 1982-86, the findings suggest that the lagged impounding phenomenon is valid for large companies. The results are shown in table 7.3.

**Table 7.3: Multivariate Regression Analysis For The Stores Industry Examining The Effect Of Large And Small Companies On The Information Impounded In This Year's Or Next Year's Stock Returns During The Period 1982-86.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob[ t &gt;=x]</i>
<b>Panel A</b>				
$\Delta$ debtors ratio	0.11406E-05	0.4137E-05	0.276	0.78318
$R_t$	0.11607	0.1409	0.824	0.41151
dmy	0.25889	0.1190	2.176*	0.03123
$\Delta$ debtors ratio	0.11104E-05	0.1913E-05	0.580	0.56169
$R_{t+1}$	0.27627	0.1012	2.730*	0.00634
dmy	0.21935E-03	0.1370	0.002	0.99872
<b>Panel B</b>				
Return on opening equity	0.49969E-02	0.2964E-02	1.686*	0.09415
$R_t$	0.11115	0.1408	0.790	0.43118
dmy	0.25269	0.1191	2.121*	0.03572
return on opening equity	0.47162E-02	0.2585E-02	1.825*	0.06804
$R_{t+1}$	0.25780	0.1026	2.513*	0.01197
dmy	0.11603E-01	0.1359	0.085	0.93197
<b>Panel C</b>				
$\Delta$ working capital/total assets	-0.74250	0.6393	-1.161	0.24770
$R_t$	0.64863E-01	0.1691	0.383	0.70202
dmy	0.25190	0.1373	1.834*	0.06903
$\Delta$ working capital/total assets	-0.69677	0.2820	-2.471*	0.01347
$R_{t+1}$	0.24560	0.1675	1.466	0.14261
dmy	0.22580E-01	0.1838	0.123	0.90224

\* The t-statistic values are statistically significant at the 0.10 level.

The  $\Delta$  in debtors ratio, the return on opening equity and the  $\Delta$  in working capital/total assets variables, all indicate that for large companies, the information about future earnings changes is reflected in next year's stock returns.

## CHEMICAL INDUSTRY

### 1982-1986 Period

To examine whether the lagged impounding phenomenon is valid for small or large companies or for both small and large companies, a multivariate regression model is run, for the chemical industry during the period 1982-86. The findings suggest that the lagged impounding phenomenon is valid for large companies. The results are shown in table 7.4.

**Table 7.4 Multivariate Regression Analysis For The Chemical Industry Examining The Effect Of Large And Small Companies On The Information Impounded In This Year's Or Next Year's Stock Returns During The Period 1982-86.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob t &gt;=x</i>
<b>Panel A</b>				
$\Delta$ times interest earned	0.27906E-05	0.2230E-05	1.252	0.21072
$R_t$	0.16775	0.2408	0.697	0.48606
dmy	0.10894	0.2665	0.409	0.68269
$\Delta$ times interest earned	0.73788E-05	0.9624E-05	0.767	0.44529
$R_{t+1}$	0.23034	0.1106	2.082*	0.04021
dmy	0.23757	0.1507	1.577	0.11848
<b>Panel B</b>				
% $\Delta$ times interest earned	0.52426E-05	0.4202E-05	1.247	0.21222
$R_t$	0.16774	0.2408	0.697	0.48608
dmy	0.10894	0.2665	0.409	0.68270
% $\Delta$ times interest earned	0.13895E-04	0.1813E-04	0.766	0.44555
$R_{t+1}$	0.23035	0.1106	2.082*	0.04021
dmy	0.23755	0.1507	1.576	0.11851

\* The t-statistic are statistically significant at the 0.10 level.

The  $\Delta$  interest earned variable and the %  $\Delta$  interest earned variable suggest that the information of financial statement report numbers' information for large firms is impounded in next year's stock returns.

### 1983-1987 Period

To examine whether the lagged impounding phenomenon is valid for small or large companies and for both small and large companies, a multivariate regression model

is run for the period 1983-87. The findings suggest that the lagged impounding phenomenon is valid for large companies. The results are shown in table 7.5.

**Table 7.5: Multivariate Regression Analysis For The Chemical Industry Examining The Effect Of Large And Small Companies On The Information Impounded In This Year's Or In Next Year's Stock Returns During The Period 1983-87.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob t &gt;=x</i>
<b>Panel A</b>				
%Δoperating profit/sales	0.10169E-01	0.6066E-02	1.677*	0.09364
R <sub>t</sub>	0.12167	0.1706	0.713	0.47571
dmy	-0.17473E-01	0.1865	-0.094	0.92536
%Δoperating profit/sales	0.98145E-02	0.1919E-01	0.511	0.61022
R <sub>t+1</sub>	0.19135	0.8029E-01	2.383*	0.01907
dmy	0.22217E-01	0.1231	0.180	0.85713

\* The t-statistic values are statistically significant at the 0.10 level.

The % Δ operating profit variable reveals that during the period 1983-87, the financial statement report numbers' information concerning the direction and sign of future earnings changes for large companies is impounded in next year's stock returns.



## 7.4 CONCLUDING REMARKS

This chapter investigates whether the lagged impounding phenomenon is valid for all classes of companies. Specifically, an investigation is carried out whether the lagged impounding phenomenon is valid only for large or small companies.

### *Stores Industry*

The findings suggest that the annual financial statements report numbers' information concerning the direction and size changes of future earnings changes, for large firms, is impounded in next year's stock returns while the information of the annual financial statements report numbers of small firms, is impounded in this year's stock returns. My findings are in accordance with Greig (1992)<sup>1</sup>.

A possible explanation of why large companies' information concerning future earnings sign and size changes is impounded in next year's stock returns might be that it takes a longer time for analysts and investors to analyse the implications of current earnings for future earnings. The rationale might be that large companies financial statements are quite complex while the financial statement of small companies are simpler and easier to be interpreted.

During the period 1980-84, the accounting descriptors whose information about future earnings changes are reflected in next year's stock returns are the following:

- ◆ %  $\Delta$  sales;
- ◆  $\Delta$  depreciation/fixed assets;
- ◆  $\Delta$  sales/total assets;
- ◆  $\Delta$  sales/cash;
- ◆  $\Delta$  working capital/total assets;

It is worth noticing that the above accounting descriptors capture similar operating

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<sup>1</sup> Greig (1992) argues that accounting ratios are likely to vary systematically both across firms and across time for reasons other than their association with future accounting earning changes. The accounting ratios of small firms are systematically different from those of large firms, giving rise to the possibility that the Pr measure reported by OP to also vary systematically as a function of firm size.

characteristics. For example, the sales appear in more than one descriptor.

During the period 1981-85, the accounting descriptors whose information about future earnings changes is reflected in next year's stock returns are the following:

- ◆ sales/total assets;
- ◆  $\Delta$  working capital/total assets;

During the period 1982-86, the accounting descriptors whose information is reflected in next year's stock returns are the following:

- ◆  $\Delta$  debtors ratio;
- ◆ return on opening equity;
- ◆  $\Delta$  working capital/total assets;

The  $\Delta$  working capital/total assets variable exhibits information concerning the direction and size of future earnings throughout the periods 1980-84, 1981-85 and 1982-86. However, the estimates within each estimation period are not from independent observations.

## ***Chemical Industry***

The findings for chemical industry suggest that the annual financial statements report numbers' information concerning the direction and size changes of future earnings changes, for large firms, is impounded in next year's stock returns while the information of the annual financial statements report numbers' information, for small firms, is impounded in this year's stock returns. The findings are, once more, in accordance with Greig's (1992) argument that accounting ratios of small firms are systematically different from those of large firms.

During the period 1982-86, three accounting descriptors' information about future earnings changes is reflected in next year's stock returns. These accounting descriptors are the following:

- ◆ the  $\Delta$  times interest earned; and
- ◆ the %  $\Delta$  times interest earned.

During the period 1983-87, the only accounting variable exhibiting lagged impounding

phenomenon is

◆ the %  $\Delta$  operating profit/sales variable.

A possible explanation of why large companies' information concerning future earnings sign and size changes is impounded in next year's stock returns might be that it takes a longer time for analysts and investors to analyse the implications of current earnings for future earnings. The rationale might be that large companies financial statements are quite complex while the financial statement of small companies are simpler and easier to be interpreted.

## **CHAPTER EIGHT**

### **Conclusions and Future Research**

## 8.1 INTRODUCTION

The thesis provides empirical evidence on the predictive ability and information content of UK financial statement report numbers. Specifically, it is examined whether the Ou and Penman (1989a) finding for the US that financial statement numbers convey information about the sign of the one year ahead earnings change, and that this is not reflected in current stock returns. The OP give little or no explanation for their findings: there is no economic rationale given to explain why some financial statement number predict earnings changes. Indeed, OP purposely avoid such a discussion since they wish to replicate the position of a naive investor.

However, the main focus of this thesis is whether the lagged impounding results of OP transfer to UK, and if so, whether they are driven by cross sectional differences; whether they are driven by companies' size and last, whether they are driven by the negative and/or positive values of earnings changes.

Two different industry groupings, stores and chemicals, both separately and combined are investigated. In the first stage, the ability of 83 accounting descriptors to predict earnings one year ahead, over the periods 1980-1988, 1980-1984, 1981-1985, 1982-1986, 1983-1987 and 1984-1988. Although, the results are mixed, they seem to give support to Greig's position, that differences between industries are associated with predictive ability.

In the second stage, it is examined whether the information contained in accounting descriptors about future earnings is impounded in contemporaneous returns. The results suggest that lagged impounding is far more frequent when the industries are aggregated, than when examined separately. Moreover, the results suggest that the impounding process tends to be focussed within individual industry sectors.

In the third stage, it is examined whether the predictive information of financial statement numbers for future earnings changes is only valid for the negative and/or positive distribution of the earnings changes. The evidence is however, mixed.

In the last stage, it is examined whether the lagged impounding phenomenon of the financial statements report numbers' predictive information for future earnings changes is confined to large or small companies. The evidence suggests that the

lagged impounding phenomenon is confined to large companies.

The section 8.2 reports the main findings of each chapter. Section 8.3 explores discusses explanations offered by other research papers about the relationship between financial statement ratios and future earnings changes; section 8.4 explains the policy implications of the thesis findings and section 8.5 suggests future research direction.

## 8.2 CONCLUSIONS

**Chapter one** reviews the different swings in mood in capital markets research beginning with the Ball and Brown (1968) and ending with Ou and Penman (1989). In late 1960's and early 1970's, the belief that the market is efficient is very strong and we experience a number of event studies investigating what information accounting pertains. However, by the mid 1980's, academics realise how little we know about market efficiency and the appearance of market anomalies - E/P ratio, size effect, the crash of 1987, volatility -and perhaps the most challenging evidence against efficiency, *the underutilisation of financial statements*, shake the faith in market efficiency. The question becomes then, whether the market is efficient or not. But, entering the late 1980's and early 1990's, the question posed is no longer whether the market is efficient, but how the market processes information (i.e impounding of information in current prices or not impounding). A turn to the traditional issues is witnessed, with emphasis on the relation between earnings and prices and the information content of earnings and non-earnings data.

It is high time, the question was addressed of how financial statement numbers can be used in investment worth. An understanding of how one can use the financial statement information in assessing how much a firm is worth would clearly be an important contribution. The Ou and Penman (1989) controversy represents an understanding of valuation. This would have been true even without the result on the ability to predict future stock returns. Although crude, it focus our thinking of how accounting information can be used by investors.

**Chapter two** explores the background to the research and defines the accounting

descriptors used in the empirical tests. It draws attention on the problems faced when dealing with ratio analysis as well as on future replications, of using the same accounting descriptors of this thesis. A different definition of one accounting descriptor used, might alter the empirical results.

**Chapter three** takes an earnings change prediction approach to investigate whether U.K stores and chemical industries annual financial statement numbers contain information concerning the direction and size of one-year ahead earnings changes. It provides empirical evidence for a predictive information link between these financial statement numbers and future earnings changes.

***In Stores Industry***, the findings (via logit) suggest that some financial accounting variables exhibit information concerning the direction of next year's earnings changes. However, the ability of some of these accounting variables to describe future earnings changes disappears once outliers [*these may be extraordinary items*] are deleted from the sample.

The accounting descriptors which are robust to all the logit tests carried out [*with and without outliers*] are the following:

- ◆ the %  $\Delta$  current ratio;
- ◆ the inventory;
- ◆ the times interest earned; and
- ◆ the return on total assets.

The findings (via regression) suggest that the accounting descriptors can predict the size of the %  $\Delta$  operating profit as well as the sign. However, different accounting variables from the ones reported in the logit models are found to capture information concerning the size and sign of the %  $\Delta$  operating profit one-year ahead.

It is noteworthy that the accounting variable

- ◆  $\Delta$  inventory/turnover,

found to exhibit information about future earnings changes sign and size, is also reported by OP (1989a) as one of six descriptors to describe the sign of the future earnings changes for the periods 1965-72 and 1973-77.

***In Chemical Industry***, the findings (via logit) suggest that some financial accounting variables exhibit information concerning the direction of next year's

earnings change. However, the ability of some of these accounting variables to describe future earnings changes disappears once outliers [*these may be extraordinary items*] are deleted from the sample.

The accounting variables which are robust to all the logit tests carried out [*with and without outliers*] and predict next year's earnings changes are the following:

- ◆ the sales/total assets;
- ◆ the %  $\Delta$  total assets;
- ◆ the debtors ratio; and
- ◆ the sales/total assets.

The findings (via regression) suggest that the accounting descriptors can predict the size of the %  $\Delta$  operating profit as well as the sign. The two accounting variables which exhibit information about the size and sign of the %  $\Delta$  operating profit one-year ahead are the following:

- ◆ the sales/total assets; and
- ◆ the %  $\Delta$  total assets.

Ohlson (1991) recommends the aggregated total assets as the accounting descriptor which can shed light on the valuation concept<sup>1</sup>.

***In Stores and Chemical Industries Together***, the findings (via logit) suggest that, when industries are aggregated, some financial accounting variables exhibit information concerning the direction of next year's earnings change. However, the ability of all these accounting variables to describe future earnings changes one-year ahead disappears once outliers [*these may be extraordinary items*] are deleted from the sample.

The findings (via regression) suggest that the accounting descriptors can predict the size of the %  $\Delta$  operating profit as well as the sign. The accounting variables which exhibit information about the size and sign of the %  $\Delta$  operating profit one-year ahead are the following:

- ◆ the  $\Delta$  inventory/total assets;
- ◆ the %  $\Delta$  sales;

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<sup>1</sup> The predictive information link between financial statement numbers and stock returns.



- ◆ the  $\Delta$  depreciation/fixed assets;
- ◆ the return on opening equity;
- ◆ the %  $\Delta$  return on opening equity;
- ◆ the times interest earned and
- ◆ the return on closing equity.

None of the above accounting descriptors are reported to capture information about the sign and size of the future earnings when the stores and chemical industries are examined separately. No accounting descriptor appears to contain information about future earnings changes under the two univariate logit models [*first model with outliers and second model without outliers*]. Moreover none of the accounting descriptor is the same as the ones presented by OP [*Ou and Penman (1989), p. 307*].

**Overall the findings** suggest that the power of the tests to predict the sign (via logit) and size (via regression) when the industries are aggregated is poor. Only in the case of the times interest earned variable, evidence suggests that this accounting descriptor predicts the sign (via logit) of future earnings changes for the stores industry and when the stores and chemical industries are aggregated, the same descriptor is found to predict the size (via regression) of future earnings changes. However, overall the evidence suggests that when industries are tested separately, the findings reveal that different accounting descriptors describe future earnings sign and size changes in different industries. This is in accordance to Greig (1992) argument that "the summary measure "Pr" of the OP analysis is a function of accounting ratios. Ratios vary systematically across firms as a function of future earnings changes and also vary systematically cross-sectionally as a function of risk, size and determinants of expected returns [*Greig (1992), p. 415*]. In other words, economic factors cause the link between financial statement numbers and future earnings changes.

But the question asked now is whether the overall results are a consequence of a systematic relationship between these industry accounting descriptors and future earnings changes and whether expert analysts and investors can detect this relationship. The answer might lie on whether these accounting descriptors capture the "temporary" or " permanent" changes in current earnings. The permanent component will persist over time while the transitory will be only time-specific.

Thus the consistency of the accounting descriptors' coefficient signs and size across time and across industry is tested in chapter 4.

**Chapter four** takes an earnings change prediction approach to investigate the incremental information content of financial statement report numbers over current earnings, over shorter periods than in the previous chapter. I examine the periods 1980-84, 1981-85, 1982-86, 1983-87 and 1984-88. It provides empirical evidence for an unsystematic relationship between these financial statement report numbers and future earnings changes over the periods examined.

***In Stores Industry***, the findings (via logit) suggest that a firm's financial statement report numbers predict the direction of one-year ahead earnings changes over the periods 1980-84, 1981-85, 1982-86, 1983-87, 1984-88 and 1980-88. The accounting descriptors which predict future earnings changes over all the periods examined are

- ◆ the %  $\Delta$  current ratio and
- ◆ the times interest earned variable.

However, the predictive information link between these two financial descriptors and future earnings changes disappears when the outliers are deleted from the sample.

The findings (via regression) suggest that a firm's financial statement report numbers predict the size as well as the sign of the %  $\Delta$  operating profit variable. However, this predictive ability of the accounting descriptors is not systematic. It is time-specific.

***In Chemical Industry***, the findings (via logit) suggest that a firm's financial statement report numbers predict the direction of one-year ahead earnings changes over the periods 1980-84, 1981-85, 1982-86, 1983-87, 1984-88 and 1980-88. The accounting descriptors which predict future earnings changes over all the periods examined are

- ◆ the debtors ratio;
- ◆ the return on opening equity and
- ◆ the return on total assets.

However, the predictive information link between these two financial descriptors and future earnings changes disappears when the outliers are deleted from the sample.

The findings (via regression) suggest that a firm's financial statement report

numbers predict the size as well as the sign of the %  $\Delta$  operating profit variable. However, this predictive ability of the accounting descriptors is not systematic. It is time-specific.

***In Stores and Chemical Industries Together***, the findings (via logit) suggest that a firm's financial statement report numbers do not predict the direction of one-year ahead earnings changes over the periods 1980-84, 1981-85, 1982-86, 1983-87, 1984-88 and 1980-88.

The findings (via regression) suggest that a firm's financial statement report numbers predict the size as well as the sign of the %  $\Delta$  operating profit variable. However, this predictive ability of the accounting descriptors is not systematic. It is time-specific.

***Overall the findings*** (via logit) suggest that a firm's financial statement report numbers predict the direction of one-year ahead earnings changes over the periods 1980-84, 1981-85, 1982-86, 1983-87, 1984-88 and 1980-88. However, there is not a time-consistent relationship between the financial statement report numbers and future earnings changes. The predictive ability of the financial statement report numbers regarding future earnings changes is time-specific. The findings are in accordance with Woodmore (1991)<sup>2</sup> and Holthausen and Larcker (1992)<sup>3</sup>.

The accounting descriptors, under the LOGIT methodology, are found to predict the sign of the %  $\Delta$  operating profit more systematically than under the REGRESSION methodology. In addition, under the regression analysis, the accounting descriptors do not seem so systematic in predicting the size of the %  $\Delta$  operating profit.

The accounting variables exhibiting incremental information content over current earnings in stores industry differ from those exhibiting incremental information content over current earnings in chemical industry. The findings suggest that the difference in the accounting ratios reflects an industry differential. Also, the findings

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<sup>2</sup> Woodmore (1991) study is based on data from the Australian Graduate School of Management's Centre For Research in Finance database for the period 1972-1985. He could not develop a stable model either to predict abnormal returns directly as in Holthausen and Larcker (1992) or indirectly as in OP (1989a). He suggested that the OP results are time-specific.

<sup>3</sup> Holthausen and Larcker (1992) attempted to predict abnormal returns directly but found that the OP "Pr" measure did not work in the 1973-83 period.

suggest poor power of the tests when the stores and chemical industries are aggregated. Ou and Penman (1989, p. 299) state that "if a general model is not a good representation for all firms ( to the extent to which different characteristics generate future earnings in different firms in different ways ), we again introduce a conservative bias to the tests". This conservative bias is also emphasized in their conclusion (pp. 327-328) that "one suspects that industry-specific or firm-specific models would produce improvements".

Overall the findings are in accordance with Greig (1992) who argues that the economic factors are the cause of the information link between the financial statement numbers and future earnings changes.

**Chapter five** examines whether the financial statement numbers' information, concerning the direction and size changes of future earnings, is impounded in the current year's stock return or in the following year's stock return. Specifically an investigation is carried out to examine whether the U.K stock market exhibits lagged impounding characteristics, similar to the ones reported for the U.S.A market by Ou and Penman (1989a).

The findings suggest that the information concerning future earnings changes contained by the financial statement numbers, is impounded in the current year's stock return, in the majority of cases. Thus the maintained hypothesis of market efficiency is supported by the majority of the findings.

However, there is a number of accounting descriptors, whose information concerning future earnings changes, is impounded in the following year's stock return and not in the current. These findings support the OP hypothesis that there is indeed a lagged impounding phenomenon in the market. This lagged impounding phenomenon is not consistent over all the periods examined.

The findings also reveal that there is a number of accounting descriptors whose information is neither reflected in the current year's stock return nor in the following year's stock return. These cases are referred to as "other effects". These "other effects" are not tested empirically in this thesis. Only theoretical explanations as offered by a number of studies [*Stober (1992) and Ball (1992)*], have been provided. The rationale being that the main objective of the analysis carried out in this chapter, is to establish

whether there is a lagged impounding phenomenon; that is, a time lag of one year, in the market, before all accounting information is impounded in current prices.

**Chapter six** examines whether the lagged impounding phenomenon of financial statement report numbers is valid for both negative and positive values of the  $\% \Delta$  operating profit variable changes. It provides empirical evidence of a valuation link between financial statement numbers' information and stock returns for the stores and chemical industries.

The findings suggest that for the stores industry, during the period 1980-84, only in the case of the  $\% \Delta$  sales variable, there exists clear evidence that the ability of the  $\% \Delta$  sales variable to predict future earnings' sign and size changes is valid only for the negative values of the  $\% \Delta$  operating profit variable. Also, the findings reveal that the  $\% \Delta$  sales/inventory variable exhibits a lagged impounding phenomenon as reported by Ou and Penman (1989a). This lagged impounding phenomenon is valid only for the positive values of the  $\% \Delta$  operating profit variable.

The rest of the evidence presented for the stores industry during the periods 1980-84, 1981-85 and 1982-86 is spurious. The reason for this is that the accounting descriptors exhibit information concerning the sign and size of earnings changes only when regressed with the current year's stock return and the following year's stock return.

For the chemical industry, the findings present spurious evidence as well. The accounting descriptors exhibit information concerning the sign and size of earnings changes only when regressed with the current year's stock returns and the following year's stock returns.

Possible explanations for the results might lie in the activities of analysts. For example, analysts engaged in forecasting might be subjected to psychological forces [*Kahneman and Tversky (1975)*], or to the "herding" behaviour [*Truemann (1994)*] or to other personal incentives, like for example, analysts release forecasts similar to those previously announced by other analysts, even when this is not justified by their information. A second explanation of why the information is not reflected in the current stock returns might be the transaction costs (Bushan 1994). The transaction costs are inversely related to firm size.

**Chapter seven** investigates whether the lagged impounding phenomenon is valid for all classes of companies. Specifically, an investigation is carried out whether the lagged impounding phenomenon is valid only for large or small companies.

***In Stores Industry***, the findings suggest that the annual financial statements report numbers' information concerning the direction and size changes of future earnings changes, for large firms, is impounded in next year's stock returns while the information of the annual financial statements report numbers' information, for small firms, is impounded in this year's stock returns. My findings are somewhat in accordance with Greig (1992)<sup>4</sup>.

A possible explanation of why large companies' information concerning future earnings sign and size changes is impounded in next year's stock returns might be that it takes a longer time for analysts and investors to analyse the implications of current earnings for future earnings. The rationale might be that large companies financial statements are quite complex while the financial statement of small companies are simpler and easier to be interpreted.

During the period 1980-84, the accounting descriptors whose information about future earnings changes are reflected in next year's stock returns are the following:

- ◆ the %  $\Delta$  sales;
- ◆ the  $\Delta$  depreciation/fixed assets;
- ◆ the  $\Delta$  sales/total assets;
- ◆ the  $\Delta$  sales/cash;
- ◆ the  $\Delta$  working capital/total assets;

It is worth noticing that the above accounting descriptors capture similar operating characteristics. For example, the sales appear in more than one descriptor.

During the period 1981-85, the following accounting descriptors' information about future earnings changes is reflected in next year's stock returns:

- ◆ the sales/total assets;
- ◆ the  $\Delta$  working capital/total assets;

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<sup>4</sup> Greig (1992) argues that accounting ratios are likely to vary systematically both across firms and across time for reasons other than their association with future accounting earning changes. The accounting ratios of small firms are systematically different from those of large firms, giving rise to the possibility that the Pr measure reported by OP to also vary systematically as a function of firm size.

During the period 1982-86, the following accounting descriptors' information about future earnings changes is reflected in next year's stock returns:

- ◆ the  $\Delta$  debtors ratio;
- ◆ the return on opening equity;
- ◆ the  $\Delta$  working capital/total assets;

The accounting variable  $\Delta$  working capital/total assets exhibits information concerning the direction and size of future earnings throughout the periods 1980-84, 1981-85 and 1982-86. This information is impounded in next year's stock returns. However, this lagged impounding phenomenon exhibited by the  $\Delta$  working capital/total assets. However, the estimates within each estimation period are not from independent observations however.

***In Chemical Industry***, the findings suggest that the annual financial statements report numbers' information concerning the direction and size changes of future earnings changes, for large firms, is impounded in next year's stock returns while the information of the annual financial statements report numbers' information, for small firms, is impounded in this year's stock returns. My findings are somewhat in accordance with Greig's (1992) argument that accounting ratios of small firms are systematically different from those of large firms.

During the period 1982-86, the accounting descriptors whose information about future earnings changes are reflected in next year's stock returns are the following:

- ◆ the  $\Delta$  times interest earned; and
- ◆ the %  $\Delta$  times interest earned.

During the period 1983-87, the only accounting variable exhibiting lagged impounding phenomenon is the %  $\Delta$  operating profit/sales.

***Overall the findings*** suggest that there is a large size effect. A possible explanation of why large companies' information concerning future earnings sign and size changes is not impounded in the current year's stock returns, but is impounded in the following period, might be that it takes a longer time for analysts and investors to analyse the implications of current earnings for future earnings. The rationale might be that large companies financial statements are quite complex while the financial statement of small companies are simpler and easier to be interpreted.

### 8.3 POLICY IMPLICATIONS

The findings in chapters 3, 4 and 5 are interpreted as evidence that even when signals about future earnings are imbedded in the balance sheet, footnotes and elsewhere, the market fails to impound it completely until those signals translate into an impact on current earnings. This shows that financial statement analysis works and that there is some point to fundamental analysis even when it is based solely on readily available accounting disclosures. The FRS3 "Reporting Financial Performance" may be interpreted as a response to the findings. The new Statement of Total Recognised Gains and Losses makes the cost of reading and understanding the position of the company much lower.

The findings in chapter 7 are interpreted as evidence that accounting ratios of small firms are systematically different from those of large firms. Financial statement numbers' information concerning the sign and size of future earnings changes is impounded with one year' lag in stock returns, for large companies. This shows that large companies' annual report accounts are more complex than the accounts of small firms and the market needs more time to investigate the implications of current earnings for future earnings.

Some groundwork on the time-series and cross-sectional relations among accounting numbers has been carried out. Two industries, the stores and chemicals are first tested separately and then together. The findings suggest that the power of the tests when the two industries are aggregated, is poor. The rationale is that accounting ratios vary systematically both across firms and across time for reasons other than their association with future accounting earnings changes.



## 8.4 LIMITATIONS OF THE THESIS AND FUTURE RESEARCH

- ◆ The research covered by the thesis should be further extended by examining whether the financial statements' predictive ability can be justified by economic rationale. During the period examined, 1980-88, the U.K. market experienced considerable swings in trends. For example, the change in monetary policy with the newly Thatcher elected government, the house boom in 1983, the high interest rates [*as high as 15 per cent*] in 1986, the stock market crash in 1987.
- ◆ The thesis' results might be sensitive to the definitions of the accounting descriptors employed. Greig (1992), despite using the same definitions of the accounting descriptors adopted by Ou and Penman (1989a), finds different results from those documented by Ou and Penman. He attributes the difference in the results to a slight different definition of an accounting descriptor. Future research might therefore examine the sensitivity of the results to different definition of accounting descriptors.
- ◆ Moreover, the predictive information link between financial statement numbers might be a statistical flaw. Unfortunately, there is no one test that is accepted as the standard test for heteroscedasticity. The logit and regression models employed in this thesis are corrected for heteroscedasticity using the White-adjustment. No effort was made to find alternative GLS specifications of the model and therefore, the use of a different test might result in different empirical evidence.
- ◆ Variations in one year ahead changes in earnings are explained by (i) variations in a descriptor and (ii) variations in contemporaneous returns. This approach is intended to capture the information contained in a descriptor which is not already reflected in returns. However, this partitioning takes place within the OLS procedures and may not fully reflect the preferences of investors; for example, the mapping between industry characteristics and expected returns may not be linear.
- ◆ The thesis can be further extended by focusing on what financial analysts actually do and why they do not trace the lagged impounding phenomenon even when it is time-specific. The general analysts decision context can be first investigated and second the incentives faced by analysts. Questionnaires might be sent to financial analysts to examine how they actually make their forecasts; how they analyse large

firms. The findings can be analyzed using the informational efficiency framework [Grossman and Stiglitz (1976, 1980)]. Under this perspective, trading and investment by professionals help bring prices in line with fundamentals and a firm can be mispriced because *transaction costs and processing costs analysis* can prevent professionals from trading in its shares. Thus, the combination of investor heterogeneity (in terms of costs faced by analysing information) and transaction costs can result in lagged impounding existing up to the magnitude of transaction costs. Firms with high transaction costs can display significant mispricing or lagged impounding while those with low transactions costs are unlikely to be mispriced. Firms with low transaction costs are unlikely to display lagged impounding even when analysts following these firms may not fully appreciate the time-series properties of earnings and issue inefficient forecasts [ Bhushan (1994)].

## **APPENDIX A**

## Binary Specification is formed based on the mean of the % $\Delta$ operating profit

### Stores Industry

**Table A1: Univariate Logit Estimation For The Stores Industry For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1980-1988.**

<i>Accounting Descriptors</i>	<i>Accounting Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
Current ratio	-0.29045	0.1328	-2.187	0.02872
$\Delta$ Current ratio	-0.26390	0.1135	-2.006	0.03526
% $\Delta$ Current ratio	-0.30722	0.1468	-2.093	0.03638
Quick Asset ratio	-0.1526	0.3512	-0.205	0.72637
$\Delta$ Quick Asset ratio	-0.19548	0.4801	-0.407	0.68392
% $\Delta$ Quick Asset ratio	0.37090	0.6054	0.613	0.54007
Debtors ratio	-0.12277E-01	0.8067E-02	-1.522	0.12806
$\Delta$ Debtors ratio	-0.12937E-02	0.8243E-02	-0.157	0.87529
% $\Delta$ Debtors ratio	0.25706	0.3738	0.688	0.49161
Inventory Turnover	-0.15321	0.9724E-01	-1.576	0.11512
$\Delta$ Inventory Turnover	-0.11289	0.6321E-01	-1.786	0.07412
% $\Delta$ Inventory Turnover	-0.24950	1.303	-0.191	0.84816
Inventory/Total Assets	1.1803	0.8933	1.321	0.18640
$\Delta$ Inventory /Total Assets	-2.6363	3.761	-0.701	0.48338
% $\Delta$ Inventory/Total Assets	-2.8979	2.784	-0.842	0.45633
Inventory	-0.11002E-03	0.5036E-04	-2.184	0.02893
$\Delta$ Inventory	-0.79161E-04	0.4722E-04	-1.676	0.09366
% $\Delta$ Inventory	-0.66182	0.9984	-0.663	0.50741
Sales	-0.92545E-05	0.7079E-05	-1.307	0.19113
$\Delta$ Sales	-0.32016E-05	0.2306E-05	-1.388	0.16507
% $\Delta$ Sales	-1.9799	1.066	-1.858	0.06322
$\Delta$ Depreciation	-0.69550E-04	0.7235E-04	-0.961	0.33643
Depreciation	-0.16599E-03	0.1349E-03	-1.231	0.21840
% $\Delta$ Depreciation	-0.94559	0.9147	-1.034	0.30122
$\Delta$ Dividend Per Share	-0.82224E-01	0.1423	-0.578	0.56351
% $\Delta$ Dividend Per Share	-0.92235	0.8313	-1.110	0.26721
Depreciation/Fixed Assets	1.5130	0.6640	2.279	0.02268
$\Delta$ Depreciation/Fixed Assets	6.3982	5.422	1.180	0.23802
% $\Delta$ Depreciation/Fixed Assets	5.6323	5.362	1.276	0.26540
Return On Opening Equity	0.22121E-02	0.4888E-02	0.453	0.65088
$\Delta$ Return On Opening Equity	-0.12213E-01	0.5574E-02	-2.191	0.02844
% $\Delta$ Return On Opening Equity	-0.28221	0.1035	-2.726	0.00641
Capital Expenditure/Total Assets	-14.721	10.64	-1.383	0.16667
$\Delta$ Capital Expenditure/Total Assets	-12.846	12.30	-1.044	0.29627
% $\Delta$ Capital Expenditure/Total Assets	-11.366	16.32	-1.096	0.45600
Capital Expenditure	-0.30407E-02	0.1855E-02	-1.639	0.10115
$\Delta$ Capital Expenditure	-0.25923E-04	0.8807E-04	-0.294	0.76849
% $\Delta$ Capital Expenditure	-0.79899E-02	0.3896E-01	-0.205	0.83751
Debt/Equity	-0.31522	0.1651	-1.909	0.05627
$\Delta$ Debt/Equity	0.11434E-02	0.1405	0.008	0.99351
% $\Delta$ Debt/Equity	0.36158E-01	0.2862	0.126	0.89945
Times Interest Earned	-0.25205	0.8531E-01	-2.954	0.00313
$\Delta$ Times Interest Earned	-0.56045E-03	0.6719E-02	-0.083	0.93352
% $\Delta$ Times Interest Earned	-0.38449	0.2917	-1.318	0.18754
Sales/Total Assets	0.14560	0.2230	1.456	0.47562
$\Delta$ Sales/Total Assets	0.12827	0.1039	1.234	0.21713
% $\Delta$ Sales/Total Assets	-0.41925	0.9428	-0.445	0.65654
Return On Total Assets	-6.5292	2.091	-3.122	0.00179
$\Delta$ Return On Total Assets	-8.0339	6.762	-1.188	0.23481
% $\Delta$ Return On Total Assets	-0.10717	0.1566	-0.684	0.49376

Return On Closing Equity	0.37517E-02	0.2969E-02	1.264	0.20638
$\Delta$ Return On Closing Equity	0.14969E-01	0.7556E-02	1.981	0.04759
% $\Delta$ Return On Closing Equity	-0.19761	0.1585	-1.246	0.21258
Operating Profit/Sales	-16.536	4.068	-4.065	0.00005
$\Delta$ Operating Profit/Sales	-3.1747	5.816	-0.546	0.58516
% $\Delta$ Operating Profit/Sales	0.20159	1.007	0.200	0.84139
Net Profit Margin	-0.84448E-01	0.3714E-01	-2.274	0.02297
$\Delta$ Net Profit Margin	-0.11281	0.1451	-0.777	0.43704
% $\Delta$ Net Profit Margin	-0.10879	0.1523	-0.714	0.47502
Sales/Cash	-0.24105E-04	0.7907E-04	-0.305	0.76047
$\Delta$ Sales/Cash	0.12100E-05	0.2368E-04	0.051	0.95926
% $\Delta$ Sales/Cash	-0.10216E-02	0.5656E-02	-0.181	0.85666
Sales/Inventory	0.46509E-02	0.6005E-02	0.775	0.43862
$\Delta$ Sales/Inventory	0.30042E-01	0.2506E-01	1.199	0.23051
% $\Delta$ Sales/Inventory	0.17431E-01	0.1360	0.128	0.89800
Sales/Working Capital	0.18736E-02	0.1954E-02	0.959	0.33764
$\Delta$ Sales/Working Capital	0.66043E-02	0.3484E-02	1.895	0.05804
% $\Delta$ Sales/Working Capital	0.17118	0.7486E-01	2.287	0.02222
Sales/Fixed Assets	0.12501E-01	0.1917E-01	0.864	0.35613
$\Delta$ Sales/Fixed Assets	0.14567	0.1039	1.344	0.31713
% $\Delta$ Sales/Fixed Assets	-0.31925	0.9428	-0.455	0.45654
$\Delta$ Total Assets	-0.26038E-04	0.1443E-04	-1.804	0.07124
% $\Delta$ Total Assets	-0.55308	0.8952	-0.618	0.53668
Cash Flow/Total Debt	-0.42991E-05	0.2241E-05	-1.919	0.05504
Working Capital/Total Assets	-0.28673	0.7123	-0.403	0.68729
$\Delta$ Working Capital/Total Assets	-1.9771	1.589	-1.244	0.21335
% $\Delta$ Working Capital/Total Assets	-0.32897	0.3164	-1.040	0.29848
$\Delta$ Funds	-0.92819E-04	0.7351E-04	-1.263	0.20668
$\Delta$ Tuses	-0.18845E-04	0.1706E-04	-1.105	0.26930
Working Capital	-0.13577E-05	0.1833E-05	-0.741	0.45888
$\Delta$ Working Capital	-0.12667E-04	0.1535E-04	-0.825	0.40915
% $\Delta$ Working Capital	-0.20862	0.2846	-0.733	0.46347
Total income/Cash Flow	-0.46940	0.2735	-1.716	0.08610

**Binary Specification is formed based on the mean of the % $\Delta$  operating profit with outliers being deleted**

***Table A1a: Univariate Logit Estimation For The Stores Industry For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1980-1988.***

<i>Accounting Descriptors</i>	<i>Accounting Coefficient</i>	<i>Standard Error</i>	<i>t-ratio</i>	<i>prob<math> t  \geq x</math></i>
current ratio				
$\Delta$ current ratio	-0.13521E-01	0.5280E-01	-0.256	0.79789
% $\Delta$ current ratio	-0.88210	0.4925	-1.791	0.07331
quick asset ratio	0.80504E-03	0.1671	0.005	0.99616
$\Delta$ quick asset ratio	0.38451	0.3525	1.091	0.27537
% $\Delta$ quick asset ratio	0.14907	0.3309	0.450	0.65239
debtors ratio	0.14561E-02	0.2221E-02	0.656	0.51210
$\Delta$ debtors ratio	0.19344E-02	0.5041E-02	0.384	0.70120
% $\Delta$ debtors ratio	-0.18713	0.3142	-0.596	0.55148
inventory/turnover	-0.39782E-01	0.2829E-01	-1.406	0.15964
$\Delta$ inventory/turnover	0.10416	0.7314E-01	1.424	0.15440
% $\Delta$ inventory/turnover	0.74618	0.6534	1.142	0.25347
inventory/total assets	0.62301E-01	0.5501	0.113	0.90983
$\Delta$ inventory/total assets	0.54072	1.535	0.352	0.72457
inventory	-0.28835E-05	0.1479E-05	-1.949	0.05129
$\Delta$ inventory	-0.50549E-05	0.8495E-05	-0.595	0.55184
% $\Delta$ inventory	0.11554E-01	0.2771	0.042	0.96674
sales	-0.32458E-06	0.1846E-06	-1.758	0.07875
$\Delta$ sales	-0.39462E-06	0.1062E-05	-0.372	0.71011
% $\Delta$ sales	0.21510	0.2322	0.926	0.35425
$\Delta$ depreciation	-0.21114E-04	0.3633E-04	-0.581	0.56115
depreciation	-0.18144E-04	0.1215E-04	-1.493	0.13534
% $\Delta$ depreciation	-0.84563E-01	0.1184	-0.714	0.47520
$\Delta$ dividend per share	-0.14550	0.9157E-01	-1.589	0.11210
% $\Delta$ dividend per share	-0.37372	0.2911	-1.284	0.19919
depreciation/fixed assets	-0.76103	0.7721	-0.986	0.32432
$\Delta$ depreciation/fixed assets	-1.7621	2.985	-0.590	0.55497
return on opening equity	0.38120E-02	0.4734E-02	0.805	0.42068
$\Delta$ return on opening equity	0.10344E-02	0.5107E-02	0.203	0.83950
% $\Delta$ return on openign equity	0.10696	0.8324E-01	1.285	0.19878
capital expenditure/total assets	-2.5672	5.299	-0.484	0.62807
$\Delta$ capital expenditure/total assets	1.9352	5.513	0.351	0.72557
% $\Delta$ capital expenditure/total assets	0.39032E-01	0.3131E-01	1.247	0.21249
capital expenditure	-0.53807E-05	0.8550E-05	-0.629	0.52913
$\Delta$ capital expenditure	0.12055E-04	0.2168E-04	0.556	0.57819
% $\Delta$ capital expenditure	-0.42056E-02	0.5830E-02	-0.721	0.47069
debt/equity	0.66413E-01	0.3881E-01	1.711	0.08702
$\Delta$ debt/equity	0.83887E-01	0.7310E-01	1.148	0.25113
% $\Delta$ debt/equity	0.56712	0.2841	1.996	0.04588
times interest earned	-0.91934E-02	0.4940E-02	-1.861	0.06276
$\Delta$ times interest earned	-0.47321E-02	0.5884E-02	-0.804	0.42126
% $\Delta$ times interest earned	0.77131E-02	0.3184E-01	0.242	0.80859
sales/total assets	0.30566E-01	0.1679E-01	1.820	0.06875
$\Delta$ sales/total assets	0.50650E-01	0.5660E-01	0.895	0.37087
% $\Delta$ sales/total assets	0.52288	0.4286	1.220	0.22243
return on total assets	-3.6024	1.929	-1.868	0.06177
$\Delta$ return on total assets	1.0146	3.861	0.263	0.79272
% $\Delta$ return on total assets	-0.58225E-02	0.7168E-01	-0.081	0.93526
return on closing equity	0.24812E-02	0.3881E-02	0.639	0.52260
$\Delta$ return on closing equity	0.77406E-02	0.7433E-02	1.041	0.29770
% $\Delta$ return on closing equity	-0.99215E-01	0.7547E-01	-1.315	0.18865
operating profit/sales	-0.75255	0.7057	-1.066	0.28623

$\Delta$ operating profit/sales	-4.5657	3.197	-1.428	0.15322
% $\Delta$ operating profit/sales	0.18065	0.5303	0.341	0.73338
net profit margin	-0.22509E-01	0.2796E-01	-0.805	0.42080
$\Delta$ net profit margin	0.31441E-01	0.7276E-01	0.432	0.66566
% $\Delta$ net profit margin	-0.45150E-01	0.7299E-01	-0.619	0.53618
sales/cash	-0.95234E-05	0.1160E-04	-0.821	0.41177
$\Delta$ sales/cash	-0.45005E-05	0.1030E-04	-0.437	0.66201
% $\Delta$ sales/cash	0.34415E-01	0.2376E-01	1.449	0.14747
sales/inventory	0.56270E-02	0.4289E-02	1.312	0.18950
$\Delta$ sales/inventory	-0.40412E-02	0.9042E-02	-0.447	0.65491
% $\Delta$ sales/inventory	-0.24580E-01	0.5343E-01	-0.460	0.64546
sales/working capital	0.28480E-02	0.1696E-02	1.679	0.09313
$\Delta$ sales/working capital	0.26879E-02	0.2209E-02	1.217	0.22369
% $\Delta$ sales/working capital	0.10380	0.7332E-01	1.416	0.15689
sales/fixed assets	0.305666-01	0.1679E-01	1.230	0.16875
$\Delta$ sales/fixed assets	0.52220E-01	0.5660E-01	0.885	0.34687
% $\Delta$ sales/fixed assets	0.47888	0.4286	1.235	0.78443
$\Delta$ total assets	-0.10132E-05	0.1966E-05	-0.515	0.60620
% $\Delta$ total assets	-0.80130E-01	0.2501	-0.320	0.74864
cash flow/total debt	-0.77299E-04	0.2002E-03	-0.386	0.69935
working capital/total assets	-0.30718	0.3731	-0.823	0.41028
$\Delta$ working capital/total assets	-1.9125	1.226	-1.560	0.11867
% $\Delta$ working capital/total assets	-0.80019E-01	0.1716	-0.466	0.64099
$\Delta$ funds	-0.16549E-04	0.1117E-04	-1.482	0.13835
$\Delta$ uses	-0.10570E-05	0.4394E-05	-0.241	0.80991
working capital	-0.10463E-05	0.7391E-06	-1.416	0.15687
$\Delta$ working capital	-0.17745E-05	0.4546E-05	-0.390	0.69630
% $\Delta$ working capital	-0.54578E-01	0.7912E-01	-0.690	0.49033
Total income/cash flow	-0.23927E-01	0.5342E-01	-0.448	0.65422

## Regression Estimation

**Table A1b: Univariate Regression Estimation For The Stores Industry For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1980-1988**

<i>Accounting Descriptors</i>	<i>Accounting Coefficient</i>	<i>Standard Error</i>	<i>t-ratio</i>	<i>prob t &gt;=x</i>
Current ratio	0.26656E-02	0.1467E-01	0.182	0.85597
Δcurrent ratio	-0.34160E-02	0.3216E-01	-0.106	0.91550
%Δcurrent ratio	-0.11751	0.1111	-1.058	0.29105
quick asset ratio	0.15545E-01	0.1035	0.150	0.88071
Δquick asset ratio	-0.15990	0.1755	-0.911	0.36313
%Δquick asset ratio	-0.30917	0.2807	-1.101	0.27069
debtors ratio	0.62248E-03	0.8862E-03	0.702	0.48242
Δdebtors ratio	0.63888E-03	0.3016E-02	0.212	0.83240
%Δdebtors ratio	-0.11661	0.2312	-0.504	0.61399
inventory turnover	0.88711E-02	0.1656E-01	0.536	0.59264
Δinventory turnover	0.74206E-01	0.3423E-01	2.168	0.03099
%Δinventory turnover	0.45069	0.3976	1.133	0.25801
inventory/total assets	-0.28517	0.2309	-1.235	0.21681
Δinventory/total assets	-0.36814E-01	0.8314	-0.044	0.96468
%Δinventory/total assets	0.17849E-02	0.3286	0.005	0.99567
inventory	-0.13327E-06	0.4141E-06	-0.322	0.74759
Δinventory	0.26188E-05	0.2510E-05	1.043	0.29682
%Δinventory	0.77391E-01	0.1720	0.450	0.65310
sales	-0.18490E-07	0.4639E-07	-0.399	0.69020
Δsales	0.21462E-06	0.2590E-06	0.829	0.40726
%Δsales	0.33378E-01	0.6177E-01	0.540	0.58940
Δdepreciation	0.16664E-05	0.5625E-05	0.296	0.76703
%Δdepreciation	0.66570E-02	0.5015E-01	0.133	0.89450
Δdividend per share	0.60531E-01	0.1135	0.533	0.59392
depreciation/fixed assets	-0.21090	0.3416	-0.617	0.53748
Δdepreciation/fixed assets	-0.22414	0.2614	-0.857	0.39200
return on opening equity	0.57461E-02	0.2648E-02	2.170	0.03090
Δreturn on opening equity	0.72895E-04	0.5645E-02	0.013	0.98970
%Δreturn on opening equity	0.46342E-01	0.3541E-01	1.309	0.19186
Δcapital expenditure/total assets	-0.23602	2.909	-0.081	0.93533
%Δcapital expenditure/total assets	0.12352E-01	0.1015E-01	1.217	0.22522
capital expenditure	0.21674E-06	0.1594E-05	0.136	0.89187
Δcapital expenditure	0.70758E-06	0.1097E-04	0.065	0.94862
%Δcapital expenditure	0.23044E-03	0.2133E-02	0.108	0.91411
debt/equity	0.17798E-01	0.1300E-01	1.369	0.17089
Δdebt/equity	0.48293E-01	0.4023E-01	1.200	0.23098
%Δdebt/equity	0.14914	0.1034	1.442	0.15042
equity/fixed assets	0.67242E-01	0.1041	0.646	0.51823
Δequity/fixed assets	-0.66892E-02	0.1295	-0.052	0.95879
%Δequity/fixed assets	-0.55473E-01	0.7769E-01	-0.714	0.47583
times interest earned	-0.25630E-01	0.5642E-01	-0.456	0.54622
Δtimes interest earned	-0.99060E-03	0.2927E-02	-0.338	0.73537
%Δtimes interest earned	0.97890E-02	0.1083E-01	0.904	0.36611
sales/total assets	0.39316E-02	0.7701E-02	0.511	0.61007
Δsales/total assets	0.23754E-01	0.3107E-01	0.765	0.44513
%Δsales/total assets	0.38068E-01	0.9031E-01	0.422	0.67368
Return on total assets	-1.6396	1.337	-1.226	0.22019
Δreturn on total assets	-0.13839	2.935	-0.047	0.96239
%Δreturn on total assets	0.69491E-02	0.3925E-01	0.177	0.85946
return on closing equity	0.45368E-02	0.1546E-02	2.935	0.00333
Δreturn on closing equity	0.72968E-02	0.4380E-02	1.666	0.09570
%Δreturn on closing equity	-0.84244E-02	0.2313E-01	-0.364	0.71568
operating profit/sales	-0.27262	0.2521	-1.081	0.27953



$\Delta$ operating profit/sales	-0.44286	0.8298	-0.534	0.59357
% $\Delta$ operating profit/sales	-0.87904E-02	0.1569E-01	-0.560	0.57569
net profit margin	-0.10238E-01	0.1305E-01	-0.784	0.43290
$\Delta$ net profit margin	0.16504E-01	0.3939E-01	0.419	0.67524
% $\Delta$ net profit margin	0.44740E-02	0.3509E-01	0.128	0.89853
sales/cash	-0.63017E-06	0.5404E-05	-0.117	0.90726
$\Delta$ sales/cash	-0.37528E-05	0.6092E-05	-0.616	0.53841
% $\Delta$ sales/cash	0.11500E-01	0.1267E-01	0.908	0.36392
sales/inventory	0.16068E-02	0.2407E-02	0.668	0.50490
$\Delta$ sales/inventory	0.16614E-02	0.5485E-02	0.303	0.76220
% $\Delta$ sales/inventory	0.51515E-02	0.3089E-01	0.167	0.86768
sales/working capital	0.12769E-02	0.8178E-03	1.561	0.11957
$\Delta$ sales/working capital	0.14703E-02	0.1054E-02	1.395	0.16436
% $\Delta$ sales/working capital	0.37570E-01	0.2401E-01	1.565	0.11889
sales/fixed assets	0.34446E-02	0.7701E-02	0.611	0.80007
$\Delta$ sales/fixed assets	0.23555E-01	0.3107E-01	0.745	0.48883
% $\Delta$ sales/fixed assets	0.38898E-01	0.9031E-01	0.322	0.65558
$\Delta$ total assets	0.50954E-06	0.5564E-06	0.916	0.35978
% $\Delta$ total assets	0.81584E-01	0.1046	0.780	0.43556
cash flow/total debt	-0.20270E-05	0.1955E-05	-1.037	0.30090
working capital/total assets	-0.29364	0.1757	-1.672	0.09462
$\Delta$ working capital/total assets	-1.2115	0.6614	-1.832	0.06823
% $\Delta$ working capital/total assets	-0.12439	0.1080	-1.151	0.25068
$\Delta$ funds	0.24344E-05	0.2746E-05	0.887	0.37532
% $\Delta$ funds	0.10765E-01	0.4076E-01	0.264	0.79172
$\Delta$ uses	0.19147E-05	0.1176E-05	1.628	0.10352
% $\Delta$ uses	-0.15503E-05	0.5055E-02	0.000	0.99976
working capital	-0.10731E-06	0.1091E-06	-0.984	0.32527
$\Delta$ working capital	0.83855E-06	0.1299E-05	0.646	0.51842
% $\Delta$ working capital	-0.81646E-02	0.1042E-01	-0.784	0.43317
total income/cash flow	-0.12455	0.9812E-01	-1.269	0.20431

**Binary Specification is formed based on the mean of the % $\Delta$  operating profit**

***Chemical Industry***

***Table A2: Univariate Logit Estimation For The Chemical Industry For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1980-1988***

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob<math> t  \geq x</math></i>
Current ratio	0.13586E-01	0.6415E-01	0.212	0.83228
$\Delta$ current ratio	0.60261E-01	0.8316E-01	0.725	0.46868
% $\Delta$ Current ratio	0.28229E-03	0.1671E-01	0.017	0.98652
Quick Asset ratio	-0.87375	0.5745	-1.521	0.12830
$\Delta$ quick Asset ratio	-0.16359	0.5004	-0.327	0.74370
% $\Delta$ Quick Asset ratio	-0.45582	0.5832	-0.782	0.43447
Debtors ratio	0.27391E-01	0.7491E-02	3.657	0.00026
$\Delta$ debtors ratio	0.19791E-01	0.8053E-02	2.457	0.01399
% $\Delta$ Debtors ratio	1.5020	0.6210	2.419	0.01558
Inventory Turnover	-0.31162E-01	0.3620E-01	-0.861	0.38936
$\Delta$ inventory Turnover	0.30924E-02	0.3987E-01	0.078	0.93818
% $\Delta$ Inventory Turnover	0.17081E-02	0.4623	0.004	0.99705
Inventory Turnover	0.55253E-01	1.175	0.047	0.96248
$\Delta$ inventory Turnover	0.34782	1.552	0.224	0.82265
Inventory	-0.24403E-06	0.5746E-06	-0.425	0.67105
$\Delta$ inventory	0.20383E-05	0.5430E-05	0.375	0.70739
% $\Delta$ Inventory	0.50093	0.3472	1.443	0.14911
Sales	-0.72241E-07	0.1086E-06	-0.665	0.50585
$\Delta$ sales	-0.32989E-07	0.7736E-06	-0.043	0.96598
% $\Delta$ Sales	0.10400	0.6156	0.169	0.86585
$\Delta$ depreciation	-0.13912E-04	0.3316E-04	-0.420	0.67480
Depreciation	-0.10803E-04	0.8833E-05	-1.223	0.22130
% $\Delta$ Depreciation	0.45059E-01	0.4870	0.093	0.92628
$\Delta$ dividend Per Share	-0.19108	0.1230	-1.554	0.12023
% $\Delta$ Dividend Per Share	-0.33249	0.4188	-0.794	0.42721
Depreciation/Fixed Assets	0.29254	0.2342	1.249	0.21166
$\Delta$ Depreciation/Fixed Assets	0.54049	0.6086	0.888	0.37449
% $\Delta$ depreciation/Fixed Assets	0.52363	0.5623	0.895	0.38790
Return On Opening Equity	-0.87730	0.2563	-3.423	0.00062
$\Delta$ εβτορσΡαπιοοοε	-0.48296	0.2592	-1.863	0.06241
% $\Delta$ Return On Opening Equity	-0.43477	0.2390	-1.819	0.06890
Capital Expenditure/Total Assets	-10.217	10.11	-1.011	0.31206
$\Delta$ capital Expenditure/Total Assets	-2.0655	8.643	-0.239	0.811120
% $\Delta$ Capital Expenditure/Total Assets	-2.3612	9.546	-0.352	0.97820
Capital Expenditure	-0.62640E-05	0.6777E-05	-0.924	0.35534
$\Delta$ capital Expenditure	-0.44623E-06	0.1052E-04	-0.042	0.96616
% $\Delta$ Capital Expenditure	-0.10819	0.9448E-01	-1.145	0.25217
Debt/Equity	-0.64495E-01	0.4784E-01	-1.348	0.17762
$\Delta$ debt/Equity	0.89641E-03	0.2017E-01	0.044	0.96454
% $\Delta$ Debt/Equity	-0.63155E-01	0.2543	-0.248	0.80386
Times Interest Earned	0.12842E-03	0.6238E-03	0.206	0.83689
$\Delta$ times Interest Earned	0.14540E-03	0.9508E-03	0.153	0.87846
% $\Delta$ Times Interest Earned	0.17294E-03	0.5644E-03	0.306	0.75930
Sales/Total Assets	-0.80603	0.3128	-2.577	0.00997
$\Delta$ sales/Total Assets	-0.52761	0.3950	-1.336	0.18169
% $\Delta$ Sales/Total Assets	-0.71726	0.5529	-1.297	0.19452
Return on Total Assets	-0.54876E-01	0.2066E-01	-2.656	0.00792
$\Delta$ Return on Total Assets	-0.59211E-02	0.2077E-01	-0.285	0.77556
% $\Delta$ Return on Total Assets	-0.42390	0.2379	-1.782	0.07479

Return on closing equity	-0.87090	0.2558	-3.404	0.00066
$\Delta$ Return on closing equity	-0.48666	0.2598	-1.873	0.06102
% $\Delta$ Return on closing equity	-0.44203	0.2406	-1.837	0.06620
Operating profit/sales	-7.5399	3.321	-2.271	0.02318
$\Delta$ Operating profit/sales	-0.64460	1.680	-0.384	0.70122
% $\Delta$ Operating profit/sales	-0.12860	0.2955	-0.435	0.66340
Net Profit Margin	-0.39607E-01	0.3227E-01	-1.227	0.21973
$\Delta$ net Profit Margin	-0.14260	0.8262E-01	-1.726	0.08435
% $\Delta$ Net Profit Margin	-0.19849	0.1521	-1.305	0.19182
Sales/cash	0.15004E-03	0.1726E-03	0.869	0.38458
$\Delta$ sales/cash	0.18388E-03	0.3259E-03	0.564	0.57262
% $\Delta$ Sales/cash	0.51978E-02	0.1327E-01	0.392	0.69538
Sales/Inventory	-0.26445E-01	0.3762E-01	-0.703	0.48205
$\Delta$ sales/inventory	-0.83744E-03	0.4145E-01	-0.020	0.98388
% $\Delta$ Sales/inventory	-0.48345	0.5317	-0.909	0.36320
Sale/working capital	0.28606E-02	0.1542E-01	0.186	0.85278
$\Delta$ sales/working capital	0.23335E-01	0.2398E-01	0.973	0.33039
% $\Delta$ Sales/working capital	-0.55978E-01	0.1987	-0.282	0.77817
Sales/Total Assets	-0.80603	0.3128	-2.577	0.00997
$\Delta$ sales/Total Assets	-0.52761	0.3950	-1.336	0.18169
% $\Delta$ Sales/Total Assets	-0.71726	0.5529	-1.297	0.19452
$\Delta$ Total Assets	0.33257E-06	0.8363E-06	0.398	0.69088
% $\Delta$ Total Assets	1.0217	0.4584	2.229	0.02581
Cash Flow/Total Debt	0.36395E-03	0.9308E-03	0.391	0.69579
Working Capital/Total Assets	-0.67537	0.8828	-0.765	0.44427
$\Delta$ Working Capital/Total Assets	-0.33884	1.324	-0.256	0.79797
% $\Delta$ Working Capital/Total Assets	-0.12440	0.2289	-0.543	0.58683
$\Delta$ funds	0.15472E-05	0.3119E-05	0.496	0.61990
$\Delta$ tuses	-0.11157E-06	0.2582E-05	-0.043	0.96554
Working Capital	-0.27375E-07	0.5057E-06	-0.054	0.95683
$\Delta$ Working Capital	0.26284E-05	0.1881E-05	1.397	0.16235
% $\Delta$ Working Capital	0.17459	0.1756	0.994	0.32010
Total Income/Cash Flow	0.15623	0.15469	0.895	0.33620

**Binary Specification is formed based on the mean of the % $\Delta$  operating profit with outliers being deleted**

**Table A2a: Univariate Logit Estimation For The Chemical Industry For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1980-1988**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob t <math>\geq</math>x</i>
current ratio	-0.23126E-01	0.5918E-01	-0.391	0.69596
$\Delta$ current ratio	0.62007E-01	0.7663E-01	0.809	0.41839
% $\Delta$ current ratio	-0.30975E-02	0.3575	-0.009	0.99309
Quick asset ratio	-0.37399	0.4349	-0.860	0.38986
$\Delta$ Quick asset ratio	-0.57133	0.4629	-1.234	0.21714
% $\Delta$ Quick asset ratio	-0.54776	0.4906	-1.117	0.26419
Debtors ratio	0.29803E-01	0.7780E-02	3.831	0.00013
$\Delta$ Debtors ratio	0.12296E-01	0.6893E-02	1.784	0.07444
% $\Delta$ Debtors ratio	0.88005	0.5747	1.531	0.12568
Inventory turnover	-0.39192E-02	0.2566E-01	-0.153	0.87859
$\Delta$ Inventory turnover	0.45128E-01	0.4218E-01	1.070	0.28463
% $\Delta$ Inventory turnover	0.14053E-01	0.4086	0.034	0.97256
Inventory/total assets	-2.4357	1.558	-1.563	0.11802
$\Delta$ Inventory/total assets	-3.4732	3.316	-1.047	0.29495
Inventory	-0.62781E-06	0.5310E-06	-1.182	0.23707
$\Delta$ Inventory	-0.67359E-05	0.5712E-05	-1.179	0.23826
% $\Delta$ Inventory	0.38089	0.3616	1.053	0.29218
Sales	-0.12517E-06	0.9540E-07	-1.312	0.18948
$\Delta$ Sales	-0.20124E-05	0.1070E-05	-1.880	0.06010
% $\Delta$ Sales	-0.22876	0.5618	-0.407	0.68384
Depreciation	-0.69323E-06	0.1222E-05	-0.567	0.57067
% $\Delta$ Depreciation	-0.41378E-02	0.1094	-0.038	0.96983
$\Delta$ Dividend per share	-0.21022E-01	0.1531E-01	-1.373	0.16968
% $\Delta$ Dividend per share	-0.34407E-01	0.6319E-01	-0.545	0.58608
Depreciation/fixed assets	0.45458E-01	0.4125E-01	1.102	0.27049
$\Delta$ Depreciation/fixed assets	0.62601E-01	0.3322E-01	1.885	0.05948
$\Delta$ Depreciation/fixed assets	1.6813	1.254	1.340	0.18015
Return on opening equity	-0.17328	0.1298	-1.335	0.18199
$\Delta$ Return on opening equity	0.95785E-01	0.2192	0.437	0.66220
% $\Delta$ Return on opening equity	-0.12474	0.1323	-0.943	0.34565
Capital expenditure/total assets	-0.59611	7.484	-0.080	0.93651
$\Delta$ Capital expenditure/total assets	-4.3150	7.488	-0.576	0.56443
% $\Delta$ Capital expenditure/total assets	-0.11144	0.7262E-01	-1.535	0.12490
Capital Expenditure	-0.66375E-05	0.5262E-05	-1.261	0.20716
$\Delta$ Capital Expenditure	0.70842E-06	0.9101E-05	0.078	0.93795
% $\Delta$ Capital Expenditure	-0.68559E-01	0.5130E-01	-1.337	0.18138
Debt/equity	-0.77329E-01	0.4026E-01	-1.921	0.05476
$\Delta$ Debt/equity	0.29920E-02	0.1786E-01	0.168	0.86694
% $\Delta$ Debt/equity	-0.13764	0.2484	-0.554	0.57955
Equity/fixed assets	0.21065E-01	0.1079	0.195	0.84526
$\Delta$ Equity/fixed assets	0.36727	0.3171	1.158	0.24681
% $\Delta$ Equity/fixed assets	-0.11016	0.1234	-0.893	0.37202
Times interest earned	0.17980E-03	0.1075E-02	0.167	0.86715
$\Delta$ Times interest earned	0.32261E-02	0.1188E-01	0.271	0.78605
% $\Delta$ Times interest earned	0.24638E-03	0.7339E-03	0.336	0.73709
Sales/total assets	-1.0410	0.3043	-3.421	0.00062
$\Delta$ Sales/total assets	-0.95051	0.4304	-2.208	0.02722
% $\Delta$ Sales/total assets	-1.4698	0.6369	-2.308	0.02101
Return on total assets	0.16594E-01	0.1719E-01	0.966	0.33424
$\Delta$ Return on total assets	0.26770E-01	0.2512E-01	1.066	0.28650
% $\Delta$ Return on total assets	-0.63267E-01	0.9067E-01	-0.698	0.48533
Return on closing equity	-0.17802	0.1300	-1.369	0.17103

ΔReturn on closing equity	0.93069E-01	0.2190	0.425	0.67086
%ΔReturn on closing equity	-0.12736	0.1335	-0.954	0.34010
Operating profit/sales	2.5138	2.508	1.002	0.31616
ΔOperating profit/sales	-0.81949	2.136	-0.384	0.70122
%ΔOperating profit/sales	-1.0534	0.6552	-1.608	0.10792
Net profit margin	0.41671E-01	0.3460E-01	1.204	0.22842
ΔNet profit margin	0.86058E-01	0.8080E-01	1.065	0.28682
%ΔNet profit margin	-0.50676E-01	0.8586E-01	-0.590	0.55505
Sales/cash	0.49748E-04	0.7320E-04	0.680	0.49673
ΔSales/cash	0.88505E-04	0.1018E-03	0.869	0.38474
%ΔSales/cash	0.33529E-02	0.7019E-02	0.478	0.63288
Sales/inventory	0.12080E-01	0.2767E-01	0.437	0.66247
ΔSales/inventory	0.44252E-01	0.4336E-01	1.020	0.30750
%ΔSales/inventory	-0.31595	0.4178	-0.756	0.44954
Sales/working capital	-0.62744E-02	0.1438E-01	-0.436	0.66271
ΔSales/working capital	0.24904E-01	0.2055E-01	1.212	0.22551
%ΔSales/working capital	-0.45607E-01	0.9222E-01	-0.495	0.62093
Sales/fixed assets	-1.2415	0.3453	-1.421	0.14562
ΔSales/fixed assets	-0.96651	0.4894	-1.207	0.22722
%ΔSales/fixed assets	-1.0008	0.6569	-1.258	0.22691
ΔTotal assets	0.23529E-06	0.7725E-06	0.305	0.76068
%ΔTotal assets	1.7093	0.6014	2.842	0.00448
Cash flow/total debt	-0.11886E-03	0.1319E-03	-0.901	0.36758
Working capital/total assets	-0.64374	0.7853	-0.820	0.41236
%ΔWorking capital/total assets	-0.17656E-01	0.5345E-01	-0.330	0.74114
ΔFunds	0.12128E-07	0.7324E-06	0.017	0.98679
ΔTuses	0.34868E-06	0.5891E-06	0.592	0.55390
Working capital	-0.94176E-07	0.1149E-06	-0.820	0.41250
ΔWorking capital	0.51466E-06	0.3096E-06	1.662	0.09646
%ΔWorking capital	0.51806E-01	0.3497E-01	1.482	0.13844
Total income/cash flow	0.12048E-05	0.2701E-05	0.446	0.65556

## Regression Estimation

**Table A2b: Univariate Regression Estimation For The Chemical Industry For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1980-1988**

<i>Accounting Descriptors</i>	<i>Accounting Coefficient</i>	<i>Standard Error</i>	<i>t-ratio</i>	<i>Prob( t &gt;=x)</i>
current ratio	0.32671E-01	0.3467E-01	0.942	0.34601
Δcurrent ratio	0.80091E-01	0.4018E-01	1.993	0.04624
%Δcurrent ratio	0.49136	0.1670	2.942	0.00326
quick asset ratio	0.33387E-01	0.2371	0.141	0.88800
Δquick asset ratio	0.32734	0.4641	0.705	0.48061
%Δquick asset ratio	0.94021E-01	0.3095	0.304	0.76128
debtors ratio	0.67830E-02	0.3227E-02	2.102	0.03555
Δdebtors ratio	0.38249E-02	0.4289E-02	0.892	0.37246
%Δdebtors ratio	0.46024	0.4634	0.993	0.32066
inventory turnover	0.53822E-02	0.9405E-02	0.572	0.56716
Δinventory turnover	0.49122E-02	0.1013E-01	0.485	0.62776
%Δinventory turnover	0.19282	0.2746	0.702	0.48260
inventory/total assets	-0.62964	0.6161	-1.022	0.30805
Δinventory/total assets	0.47180E-01	2.530	0.019	0.98512
%Δinventory/total assets	-0.10553	0.9389E-01	-1.124	0.26105
inventory	-0.77082E-07	0.1022E-06	-0.754	0.45090
Δinventory	-0.12961E-05	0.2063E-05	-0.628	0.53049
%Δinventory	0.14459	0.1196	1.209	0.22827
sales	-0.13656E-07	0.1671E-07	-0.817	0.41371
Δsales	-0.17915E-06	0.2766E-06	-0.648	0.51787
%Δsales	-0.50044E-01	0.2568	-0.195	0.84551
Δdepreciation	0.25808E-05	0.1123E-04	0.230	0.81854
%Δdepreciation	0.34440	0.2323	1.483	0.13819
Δdividend per share	0.49054E-02	0.2395E-01	0.205	0.83794
%Δdividend per share	0.89649E-01	0.1078	0.831	0.40679
depreciation/fixed assets	0.50584E-02	0.7487E-01	0.068	0.94620
Δdepreciation/fixed assets	0.23829E-01	0.5826E-01	0.409	0.68300
return on opening equity	-0.38148E-01	0.4351E-01	-0.877	0.38061
Δreturn on opening equity	-0.21111E-02	0.4331E-01	-0.049	0.96112
%Δreturn on opening equity	-0.47326E-01	0.3045E-01	-1.554	0.12014
capital expenditure/total assets	-0.49663	1.764	-0.281	0.77836
Δcapital expenditure/total assets	-0.63312E-01	3.895	-0.016	0.98705
%Δcapital expenditure/total assets	-0.33284E-01	0.2181E-01	-1.526	0.12900
capital expenditure	-0.59328E-06	0.8038E-06	-0.738	0.46047
Δcapital expenditure	0.11591E-05	0.3807E-05	0.304	0.76117
%Δcapital expenditure	-0.21250E-01	0.1252E-01	-1.697	0.09158
debt/equity	-0.78702E-02	0.8150E-02	-0.966	0.33537
Δdebt/equity	-0.31602E-03	0.6987E-02	-0.045	0.96397
%Δdebt/equity	-0.91422E-01	0.9068E-01	-1.008	0.31461
times interest earned	0.15743E-05	0.1836E-04	0.086	0.93174
Δtimes interest earned	0.13221E-05	0.1841E-04	0.072	0.94283
%Δtimes interest earned	0.24466E-05	0.3469E-04	0.071	0.94384
sales/total assets	-0.20245	0.1196	-1.692	0.09056
Δsales/total assets	-0.44316E-01	0.3595	-0.123	0.90190
%Δsales/total assets	-0.89316E-01	0.5183E-01	-1.723	0.08487
return on total assets	0.10811E-02	0.1045E-01	0.103	0.91760
Δreturn on total assets	0.22091E-02	0.3935E-02	0.561	0.57451
%Δreturn on total assets	-0.18526E-01	0.7215E-01	-0.257	0.79736
return on closing equity	-0.38092E-01	0.4963E-01	-0.768	0.44363
Δreturn on closing equity	-0.22996E-02	0.4335E-01	-0.053	0.95770
%Δreturn on closing equity	-0.47478E-01	0.3040E-01	-1.562	0.11833
operating profit/sales	0.77345	1.338	0.578	0.56329
Δoperating profit/sales	0.27338	0.7792	0.351	0.72606
%Δoperating profit/sales	0.16724E-01	0.3481E-01	0.481	0.63086

net profit margin	0.73404E-02	0.1503E-01	0.488	0.62521
$\Delta$ net profit margin	0.19902E-01	0.4502E-01	0.442	0.65846
% $\Delta$ net profit margin	-0.30227E-02	0.3910E-01	-0.077	0.93846
sales/cash	-0.15414E-03	0.2244E-03	-0.687	0.49212
$\Delta$ sales/cash	0.48801E-04	0.9438E-04	0.517	0.60572
% $\Delta$ sales/cash	-0.72589E-02	0.7043E-02	-1.031	0.30273
sales/inventory	0.96357E-03	0.7599E-02	0.127	0.89910
$\Delta$ sales/inventory	0.34908E-03	0.9212E-02	0.038	0.96977
% $\Delta$ sales/inventory	-0.36080E-01	0.1892	-0.191	0.84874
sales/working capital	0.95890E-03	0.4352E-02	0.220	0.82559
$\Delta$ sales/working capital	0.71821E-02	0.8461E-02	0.849	0.39700
% $\Delta$ sales/working capital	-0.64869E-02	0.7773E-02	-0.835	0.40499
sales/fixed assets	-0.25545	0.1286	-1.425	0.19056
$\Delta$ sales/fixed assets	-0.45516E-01	0.3689	-0.198	0.90190
% $\Delta$ sales/fixed assets	-0.81256E-01	0.5187E-01	-1.123	0.88487
$\Delta$ total assets	0.32340E-06	0.3016E-06	1.072	0.28493
% $\Delta$ total assets	0.36803	0.1522	2.419	0.01558
cash flow/total debt	-0.34005E-04	0.2155E-03	-0.158	0.87479
Working capital/total assets	-0.23087E-01	0.4711	-0.049	0.96092
$\Delta$ Working capital/total assets	1.0754	0.8855	1.214	0.22459
% $\Delta$ Working capital/total assets	0.39485E-01	0.6122E-01	0.645	0.51896
$\Delta$ funds	0.13496E-06	0.1136E-05	0.119	0.90553
% $\Delta$ funds	-0.19138E-01	0.7133E-01	-0.268	0.78846
$\Delta$ uses	0.36465E-06	0.9228E-06	0.395	0.69317
% $\Delta$ uses	0.17328E-01	0.1414E-01	1.225	0.22197
working capital	0.77663E-07	0.1806E-06	0.430	0.66767
$\Delta$ working capital	0.11709E-05	0.4827E-06	2.426	0.01618
% $\Delta$ working capital	0.10280	0.5681E-01	1.810	0.07186
total income/cash flow	-0.27365	0.6904	-0.396	0.69182

**Binary Specification is formed based on the mean of the % $\Delta$  operating profit**

**Stores and Chemical Industries Together**

**Table A3: Univariate Logit Estimation For The Chemical and Stores Industries For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1980-88**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob[<math>\lambda \geq x</math>]</i>
Current ratio	0.72888E-06	0.1201E-05	0.607	0.54187
$\Delta$ Current ratio	-17.952	9.171	-1.957	0.05029
Quick Asset ratio	-0.63376E-01	0.3239	-0.196	0.84485
% $\Delta$ Quick Asset ratio	-2.1277	2.269	-0.938	0.34834
Debtors ratio	-0.42899E-02	0.4518E-02	-0.950	0.34234
$\Delta$ Debtors ratio	0.12833E-02	0.7938E-02	0.162	0.87157
% $\Delta$ Debtors ratio	0.27926E-04	0.4171E-04	0.670	0.50314
Inventory Turnover	0.22313E-02	0.3723E-01	0.060	0.95221
$\Delta$ Inventory Turnover	-1.2477	0.5749	-2.170	0.02998
% $\Delta$ Inventory Turnover	0.64566E-02	0.3374E-02	1.913	0.05569
Inventory/total Assets	0.64749	0.8542	0.758	0.44847
$\Delta$ Inventory/total Assets	-0.17012	0.6350	-0.268	0.78879
% $\Delta$ Inventory/total Assets	0.30191	0.2589	1.166	0.24357
Inventory	-0.66527E-06	0.1321E-05	-0.504	0.61453
$\Delta$ Inventory	-0.62649E-02	0.3448E-01	-0.182	0.85583
% $\Delta$ Inventory	0.41770E-01	0.2601E-01	1.606	0.10833
Sales	-0.17590E-06	0.2533E-06	-0.694	0.48739
$\Delta$ Sales	-0.11636	0.2238	-0.520	0.60305
% $\Delta$ Sales	-0.22806E-04	0.2635E-03	-0.087	0.93104
$\Delta$ Depreciation	-0.60970	0.6835	-0.892	0.37239
Depreciation	-0.14073E-03	0.7288E-04	-1.931	0.05349
% $\Delta$ Depreciation	0.38498	0.1646	2.339	0.01933
$\Delta$ Dividend Per Share	0.19114	0.5048	0.379	0.70494
% $\Delta$ Dividend Per Share	0.54086E-01	0.2048E-01	2.641	0.00827
Depreciation/Fixed Assets	0.18470	0.2143	0.862	0.38880
$\Delta$ Depreciation/Fixed Assets	0.23329	0.2358	0.989	0.32250
% $\Delta$ Depreciation/Fixed Assets	0.33666	0.3689	0.891	0.45620
Return On Opening Equity	0.11995E-02	0.5216E-02	0.230	0.818110
$\Delta$ Return On Opening Equity	0.30275	0.3208	0.944	0.34535
% $\Delta$ Return On Opening Equity	0.46836E-05	0.2188E-05	2.141	0.03229
Capital Expenditure/Total Assets	-0.12921E-04	0.5784E-05	-2.234	0.02550
$\Delta$ Capital Expenditure/Total Assets	-0.17718E-05	0.1961E-04	-0.090	0.92802
% $\Delta$ Capital Expenditure/Total Assets	-0.16585E-05	0.1862E-04	-0.089	0.912300
Capital Expenditure	-0.11349E-04	0.1468E-04	-0.773	0.43958
$\Delta$ Capital Expenditure	-0.10372	0.2797	-0.371	0.71076
% $\Delta$ Capital Expenditure	0.67047E-01	0.4520E-01	1.483	0.13799
Debt/Equity	-0.19262	0.8742E-01	-2.203	0.02758
$\Delta$ Debt/Equity	-0.21563	0.4386	-0.492	0.62299
% $\Delta$ Debt/Equity	0.11877	0.5513E-01	2.154	0.03121
Times Interest Earned	0.11500E-01	0.7239E-02	1.589	0.11214
$\Delta$ Times Interest Earned	0.14743E-01	0.5213E-02	2.828	0.00468
% $\Delta$ Times Interest Earned	-0.78889E-01	0.5612E-01	-1.406	0.15979
Sales/Total Assets	-0.66749E-05	0.1120E-04	-0.596	0.55103
$\Delta$ Sales/Total Assets	-0.16994	0.3193	-0.532	0.59452
% $\Delta$ Sales/Total Assets	0.15443E-03	0.3259E-02	0.047	0.96221
Return On Total Assets	-0.13077	0.8989E-01	-1.455	0.14574
$\Delta$ Return On Total Assets	0.24293	0.6928	0.351	0.72586
% $\Delta$ Return On Total Assets	0.17799E-03	0.1703E-02	0.104	0.91677
Return On Closing Equity	0.30240E-02	0.3057E-02	0.989	0.32250
$\Delta$ Return On Closing Equity	-0.14194E-01	0.1689E-01	-0.841	0.40060
% $\Delta$ Return On Closing Equity	0.69715E-01	0.2678E-01	2.603	0.00923



Operating Profit/Sales	-0.25295E-05	0.5107E-05	-0.495	0.62042
ΔOperating Profit/Sales	-0.44126E-01	0.1071	-0.412	0.68020
%ΔOperating Profit/Sales	-0.52648	0.6569	-0.801	0.42286
Net Profit Margin	-0.10665	0.2884E-01	-3.698	0.00022
ΔNet Profit Margin	0.40068	0.5990	0.669	0.50354
%ΔNet Profit Margin	0.23829	1.685	0.141	0.88754
Sales/Cash	-0.51720E-04	0.4626E-04	-1.118	0.26351
ΔSales/Cash	0.28540	0.1014	2.814	0.00490
%ΔSales/Cash	-0.16989	0.1023	-1.660	0.09691
Sales/Inventory	0.36471E-05	0.2293E-04	0.159	0.87361
ΔSales/Inventory	0.25562E-01	0.1349E-01	1.895	0.05814
%ΔSales/Inventory	-0.68544E-03	0.3151E-02	-0.218	0.82782
Sales/Working Capital	0.21542E-02	0.6904E-02	0.312	0.75502
ΔSales/Working Capital	0.85118E-06	0.1776E-04	0.048	0.96178
%ΔSales/Working Capital	0.27873E-01	0.7138E-01	0.391	0.69617
Sales/Fixed Assets	-0.65459E-05	0.2020E-04	-0.666	0.57483
ΔSales/Fixed Assets	-0.16123	0.3223	-0.587	0.55552
%ΔSales/Fixed Assets	0.16443E-03	0.3569E-02	0.147	0.98841
ΔTotal Assets	-0.47036	0.2553	-1.843	0.06538
%ΔTotal Assets	6.4548	10.09	0.639	0.52251
Cash Flow/Total Debt	0.29132E-01	0.4510E-01	0.646	0.51833
Working Capital/Total Assets	-0.14556E-01	0.6111E-02	-2.382	0.01722
ΔWorking Capital/Total Assets	0.38409E-06	0.6372E-06	0.603	0.54666
%ΔWorking Capital/Total Assets	-0.50821E-01	0.1485	-0.342	0.73210
ΔFunds	-0.73369E-02	0.2990E-01	-0.245	0.80618
ΔTuses	-0.10068E-01	0.2138E-01	-0.471	0.63779
Working Capital	-0.10837	0.4470	-0.242	0.80842
ΔWorking Capital	-21.049	3.766	-5.588	0.00000
%ΔWorking Capital	0.12478E-01	0.1202	0.104	0.91732
Total Income/Cash Flow	0.12362E-01	0.1205	0.145	0.98562

## Binary Specification is formed based on the mean of the % $\Delta$ operating profit with outliers being deleted

**Table A3a: Univariate Logit Estimation For The Stores and Chemical Industries For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1980-88.**

<i>Accounting Descriptors</i>	<i>Accounting Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob(&gt;x)</i>
current ratio	0.17184E-06	0.7112E-06	0.242	0.80908
$\Delta$ current ratio	-1.0909	4.284	-0.255	0.79899
% $\Delta$ current ratio	-0.51912E-01	0.4247E-01	-1.222	0.22156
Quick asset ratio	-0.33298E-01	0.1503	-0.222	0.82461
$\Delta$ Quick asset ratio	-0.60171E-01	0.9445E-01	-0.637	0.52407
Debtors ratio	0.45240E-02	0.2044E-02	2.213	0.02686
$\Delta$ Debtors ratio	-0.70866E-02	0.7812E-02	-0.907	0.36435
% $\Delta$ Debtors ratio	0.22549E-06	0.9512E-05	0.024	0.98109
Inventory turnover	-0.11341E-01	0.1844E-01	-0.615	0.53851
$\Delta$ Inventory turnover	-0.21302	0.1698	-1.255	0.20960
% $\Delta$ Inventory turnover	0.28105E-02	0.2173E-02	1.294	0.19580
Inventory/total assets	-0.37109	0.4934	-0.752	0.45201
$\Delta$ Inventory/total assets	0.22367	0.2854	0.784	0.43328
% $\Delta$ Inventory/total assets	0.10628	0.1404	0.757	0.44913
Inventory	-0.82646E-06	0.5274E-06	-1.567	0.11708
$\Delta$ Inventory	0.81901E-02	0.1786E-01	0.459	0.64658
% $\Delta$ Inventory	0.14016E-01	0.2274E-01	0.616	0.53761
Sales	-0.14863E-06	0.8728E-07	-1.703	0.08857
$\Delta$ Sales	0.19291	0.1706	1.131	0.25824
% $\Delta$ Sales	-0.13754E-03	0.2105E-03	-0.653	0.51353
$\Delta$ Depreciation	0.33799	0.2302	1.468	0.14203
Depreciation	-0.33016E-05	0.4528E-05	-0.729	0.46588
% $\Delta$ Depreciation	0.69379E-01	0.1214	0.571	0.56779
$\Delta$ Dividend per share	-0.13251	0.2601	-0.510	0.61040
% $\Delta$ Dividend per share	-0.22481E-02	0.8678E-02	-0.259	0.79560
Depreciation/fixed assets	0.16915	0.1892	0.894	0.37121
$\Delta$ Depreciation/fixed assets	0.32205	0.2037	1.581	0.11390
Return on opening equity	-0.12569E-02	0.2968E-02	-0.424	0.67192
$\Delta$ Return on opening equity	-0.56970E-01	0.2456	-2.32	0.81655
% $\Delta$ Return on opening equity	0.23116E-05	0.1725E-05	1.340	0.18017
Capital expenditure/total assets	0.11084E-05	0.2063E-05	0.537	0.59104
$\Delta$ Capital expenditure/total assets	0.53865E-05	0.1092E-04	0.493	0.62182
Capital Expenditure	-0.49845E-05	0.4340E-05	-1.148	0.25079
$\Delta$ Capital Expenditure	0.13692	0.1211	1.130	0.25827
% $\Delta$ Capital Expenditure	0.53287E-01	0.3266E-01	1.632	0.10277
Debt/equity	-0.79391E-02	0.1807E-01	-0.439	0.66037
$\Delta$ Debt/equity	-0.29918	0.3162	-0.946	0.34406
% $\Delta$ Debt/equity	0.10862E-01	0.4111E-01	0.264	0.79163
Times interest earned	0.11927E-01	0.8101E-02	1.472	0.14093
$\Delta$ Times interest earned	0.57881E-02	0.4892E-02	1.183	0.23675
% $\Delta$ Times interest earned	-0.29332E-01	0.2591E-01	-1.132	0.25760
Sales/total assets	-0.49959E-05	0.4551E-05	-1.098	0.27231
$\Delta$ Sales/total assets	0.13872	0.1316	1.054	0.29181
% $\Delta$ Sales/total assets	-0.13493	0.9851E-01	-1.370	0.17078
Return on total assets	0.60644E-01	0.5213E-01	1.163	0.24467
$\Delta$ Return on total assets	-0.40582	0.3329	-1.219	0.22277
% $\Delta$ Return on total assets	0.24493E-03	0.7351E-03	0.333	0.73899
Return on closing equity	0.16637E-02	0.2614E-02	0.636	0.52454
$\Delta$ Return on closing equity	-0.13954E-01	0.2019E-01	-0.691	0.48944
% $\Delta$ Return on closing equity	0.13189E-02	0.9748E-02	0.135	0.89238
Operating profit/sales	-0.24385E-05	0.2466E-05	-0.989	0.32277

ΔOperating profit/sales	-0.16105E-01	0.2911E-01	-0.553	0.58011
%ΔOperating profit/sales	-0.25354E-01	0.3975E-01	-0.638	0.52359
Net profit margin	0.10853E-01	0.2029E-01	0.535	0.59268
ΔNet profit margin	0.28051	0.3465	0.809	0.41823
%ΔNet profit margin	-1.5192	0.8714	-1.743	0.08128
Sales/cash	0.33441E-05	0.2177E-04	0.154	0.87789
ΔSales/cash	0.17847E-01	0.8439E-01	0.211	0.83252
%ΔSales/cash	-0.28216E-01	0.3109E-01	-0.908	0.36412
Sales/inventory	0.25293E-05	0.8434E-05	0.300	0.76425
ΔSales/inventory	0.11971E-01	0.1108E-01	1.081	0.27980
%ΔSales/inventory	0.22434E-02	0.2638E-02	0.850	0.39518
Sales/working capital	0.54934E-02	0.4250E-02	1.293	0.19616
ΔSales/working capital	-0.92141E-05	0.1067E-04	-0.863	0.38797
%ΔSales/working capital	-0.36450E-01	0.5537E-01	-0.658	0.51036
Sales/fixed assets	-0.47459E-05	0.4633E-05	-1.198	0.28881
ΔSales/fixed assets	0.15552	0.1366	1.253	0.21481
%ΔSales/fixed assets	-0.12293	0.8771E-01	-1.345	0.45678
ΔTotal assets	-0.27523E-01	0.7494E-01	-0.367	0.71344
%ΔTotal assets	0.74503	4.356	0.171	0.86419
Cash flow/total debt	0.78222E-01	0.3805E-01	2.056	0.03982
Working capital/total assets	0.18391E-02	0.5135E-02	0.358	0.72022
ΔWorking capital/total assets	-0.65607E-06	0.4078E-06	-1.609	0.10764
%ΔWorking capital/total assets	-0.40026E-01	0.5148E-01	-0.778	0.43686
ΔFunds	-0.43491E-01	0.5138E-01	-0.847	0.39726
ΔTuses	-0.91275E-01	0.6145E-01	-1.485	0.13746
Working capital	0.37079E-01	0.2379	0.156	0.87615
ΔWorking capital	-0.75923E-01	0.6281	-0.121	0.90379
%ΔWorking capital	-0.26361E-01	0.5458E-01	-0.483	0.62912
Total income/cash flow	0.44195E-01	0.3413E-01	1.295	0.19530

## Regression Estimation

**Table A3b: Univariate Regression Analysis For The Stores and Chemical Industries Together For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1980-88.**

<i>Accounting Descriptors</i>	<i>Accounting Coefficient</i>	<i>Standard Error</i>	<i>t-ratio</i>	<i>prob( t &gt;=x)</i>
current ratio	0.34812E-06	0.3824E-06	0.910	0.36308
Δcurrent ratio	1.4046	1.962	0.716	0.47411
%Δcurrent ratio	-0.48360E-02	0.5920E-02	-0.817	0.41396
quick asset ratio	0.17703E-01	0.8165E-01	0.217	0.82836
Δquick asset ratio	0.15825E-01	0.4269E-01	0.371	0.71101
%Δquick asset ratio	0.27873E-01	0.3629	0.077	0.93878
debtors ratio	0.12659E-02	0.9941E-03	1.273	0.20288
Δdebtors ratio	-0.57816E-04	0.1913E-02	-0.030	0.97590
%Δdebtors ratio	-0.35325E-05	0.4864E-05	-0.726	0.46807
inventory/turnover	0.71131E-02	0.9112E-02	0.781	0.43503
Δinventory/turnover	-0.35488E-02	0.1498E-01	-0.237	0.81280
%Δinventory/turnover	0.15055E-02	0.1001E-02	1.504	0.13266
inventory/total assets	-0.31232	0.2290	-1.364	0.17267
Δinventory/total assets	-0.16798E-01	0.1620	-0.104	0.91744
%Δinventory/total assets	0.16506	0.7477E-01	2.208	0.02728
inventory	-0.81022E-07	0.1067E-06	-0.760	0.44746
Δinventory	0.30590E-02	0.9195E-02	0.333	0.73953
%Δinventory	0.67905E-02	0.9861E-02	0.689	0.49105
sales	-0.14349E-07	0.1698E-07	-0.845	0.39814
Δsales	-0.26818E-02	0.7464E-01	-0.036	0.97135
%Δsales	-0.20655E-05	0.8130E-07	-25.408	0.00000
Δdepreciation	0.10766	0.1100	0.979	0.32812
%Δdepreciation	-0.45684E-01	0.1226	-0.373	0.70944
Δdividend per share	-0.18043	0.1459	-1.237	0.21674
%Δdividend per share	0.16012E-02	0.4626E-02	0.346	0.72940
depreciation/fixed assets	-0.17310E-01	0.9567E-01	-0.181	0.85649
Δdepreciation/fixed assets	0.17698	0.1065	1.662	0.09725
return on opening equity	0.55006E-02	0.2246E-02	2.449	0.01467
Δreturn on opening equity	0.98300E-02	0.2156	0.046	0.96364
%Δreturn on opening equity	0.11475E-05	0.6471E-06	1.773	0.07686
capital expenditure/total assets	0.72823E-06	0.4907E-06	1.484	0.13782
Δcapital expenditure/total assets	-0.12122	0.9709E-01	-1.249	0.21181
%Δcapital expenditure/total assets	0.24528E-02	0.3455E-01	0.071	0.94340
capital expenditure	-0.34866E-06	0.7733E-06	-0.451	0.65209
Δcapital expenditure	0.64213E-01	0.7041E-01	0.912	0.36221
%Δcapital expenditure	-0.77411E-02	0.2251E-01	-0.344	0.73112
debt/equity	-0.15859E-02	0.5276E-02	-0.301	0.76371
Δdebt/equity	-0.73213E-01	0.1043	-0.702	0.48281
%Δdebt/equity	0.27706E-01	0.2195E-01	1.262	0.20740
times interest earned	0.72744E-02	0.4419E-02	1.646	0.09977
Δtimes interest earned	0.51745E-03	0.2154E-02	0.240	0.81019
%Δtimes interest earned	-0.49025E-01	0.3446E-01	-1.422	0.15489
sales/total assets	-0.16342E-06	0.1354E-05	-0.121	0.90393
Δsales/total assets	0.66414E-01	0.7267E-01	0.914	0.36122
%Δsales/total assets	-0.43658E-01	0.3981E-01	-1.097	0.27330
return on total assets	0.17265E-01	0.2991E-01	0.577	0.56375
Δreturn on total assets	-0.24170	0.1626	-1.486	0.13721
%Δreturn on total assets	0.26460E-05	0.4142E-04	0.064	0.94909
return on closing equity	0.43582E-02	0.1519E-02	2.870	0.00411
Δreturn on closing equity	0.25156E-01	0.2485E-01	1.012	0.31130
%Δreturn on closing equity	0.18782E-02	0.5477E-02	0.343	0.73179
operating profit/sales	-0.25566E-06	0.6236E-06	-0.410	0.68181
Δoperating profit/sales	-0.46980E-02	0.1150E-01	-0.409	0.68284

%Δoperating profit/sales	-0.98393E-02	0.1612E-01	-0.610	0.54185
net profit margin	-0.31358E-02	0.9841E-02	-0.319	0.74999
Δnet profit margin	0.27742	0.2345	1.183	0.23670
%Δnet profit margin	-0.37724	0.4644	-0.812	0.41663
sales/cash	0.22379E-05	0.2902E-05	0.771	0.44062
Δsales/cash	0.61305E-01	0.9881E-01	0.620	0.53499
%Δsales/cash	-0.62827E-02	0.1177E-01	-0.534	0.59356
sales/inventory	0.11488E-05	0.3972E-05	0.289	0.77261
Δsales/inventory	0.52187E-03	0.6252E-02	0.083	0.93351
%Δsales/inventory	0.83684E-02	0.1129E-01	0.741	0.45870
sales/working capital	0.18057E-02	0.1876E-02	0.963	0.33575
Δsales/working capital	-0.97220E-06	0.4652E-05	-0.209	0.83457
%Δsales/working capital	0.17143E-02	0.2630E-01	0.065	0.94805
sales/fixed assets	-0.17892E-06	0.1344E-05	-1.185	0.98888
Δsales/fixed assets	0.67774E-01	0.7337E-01	0.514	0.31154
%Δsales/fixed assets	-0.45558E-01	0.3456E-01	-1.027	0.29988
Δtotal assets	0.60717E-02	0.3604E-01	0.168	0.86621
%Δtotal assets	-0.23053	2.227	-0.104	0.91755
cash flow/total debt	0.20182E-01	0.2700E-01	0.748	0.45475
working capital/total assets	0.37401E-04	0.5668E-02	0.007	0.99473
Δworking capital/total assets	0.19938E-07	0.1216E-06	0.164	0.86978
%Δworking capital/total assets	-0.97100E-02	0.1573E-01	-0.617	0.53740
Δfunds	0.19687E-02	0.3239E-01	0.061	0.95154
%Δfunds	0.13193E-05	0.2198E-04	0.060	0.95217
Δuses	-0.16557E-01	0.2078E-01	-0.797	0.42555
%Δuses	-0.21315	0.1592	-1.339	0.18060
working capital	-0.19547E-01	0.1717	-0.114	0.90934
Δworking capital	-0.20939	0.2466	-0.849	0.39582
%Δworking capital	0.46649E-02	0.2655E-01	0.176	0.86059
total income/cash flow	0.27248E-01	0.1933E-01	1.410	0.15865

## **APPENDIX B**

**Binary Specification is formed based on the mean of the % $\Delta$  operating profit**

**Stores Industry**

**Table A1: Univariate Logit Estimation For The Stores Industry For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1980-84.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob  <math>\geq</math> x</i>
Current ratio	-0.30833	0.1441	-2.140	0.03233
$\Delta$ Current ratio	-0.24500	0.1541	-2.175	0.01024
% $\Delta$ Current ratio	-0.27368	0.1334	-2.051	0.04026
Quick Asset ratio	-0.32100	0.1452	-1.023	0.57888
$\Delta$ Quick Asset ratio	-0.59369	1.3980	-0.425	0.67101
% $\Delta$ Quick Asset Ratio	0.755850	0.7089	1.066	0.28635
Debtors Ratio	-0.81337E-02	0.9154E-02	-0.889	0.37424
$\Delta$ Debtors Ratio	0.77055E-03	0.1750E-01	0.044	0.96489
$\Delta$ %Debtors Ratio	0.99113	0.7147	1.387	0.16549
Inventory Turnover	-0.17500	0.1441	-1.214	0.22463
$\Delta$ inventory Turnover	0.17886E-01	0.2909	0.061	0.95098
% $\Delta$ Inventory Turnover	1.4746	1.978	0.745	0.45606
Inventory/Total Assets	2.0203	1.465	1.379	0.16780
$\Delta$ inventory /Total Assets	-4.5463	6.832	-0.665	0.50577
% $\Delta$ Inventory/Total Assets	-3.3330	5.456	-0.456	0.45612
Inventory	-0.68522E-04	0.5597E-04	-1.224	0.22087
$\Delta$ Inventory	-0.97982E-04	0.7719E-04	-1.269	0.20434
% $\Delta$ Inventory	-3.3802	1.865	-1.813	0.06990
Sales	-0.22750E-05	0.2799E-05	-0.813	0.41639
$\Delta$ Sales	-0.17437E-05	0.3027E-05	-0.576	0.56463
% $\Delta$ Sales	-2.5248	1.663	-1.518	0.12898
Depreciation	-0.15503E-03	0.1970E-03	-0.787	0.43119
$\Delta$ Depreciation	-0.68558E-04	0.9036E-04	-0.759	0.44803
% $\Delta$ Depreciation	-2.3290	1.503	-1.549	0.12127
$\Delta$ Dividend Per Share	-0.25147E-01	0.2016	-0.125	0.90073
% $\Delta$ Dividend Per Share	-0.61252	1.089	-0.562	0.57396
Depreciation/Fixed Assets	1.4642	0.6576	2.227	0.02597
$\Delta$ Depreciation/Fixed Assets	5.2969	3.691	1.435	0.15129
% $\Delta$ Depreciation/Fixed Assets	6.1230	4.899	1.254	0.12340
Return On Opening Equity	-0.22527E-01	0.1231E-01	-1.830	0.06732
$\Delta$ Return On Opening Equity	-0.52599E-01	0.2301E-01	-2.286	0.02226
% $\Delta$ Return On Opening Equity	-0.38494	0.1526	-2.522	0.01167
Capital Expenditure/Total Assets	-57.843	57.20	-1.011	0.31186
$\Delta$ Capital Expenditure/Total Assets	-15.106	16.26	-0.929	0.35294
% $\Delta$ Capital Expenditure/Total Assets	-16.012	17.23	-0.875	0.45100
Capital Expenditure	-0.23848E-02	0.2340E-02	-1.019	0.30817
$\Delta$ Capital Expenditure	-0.16943E-04	0.1064E-03	-0.159	0.87345
% $\Delta$ Capital Expenditure	-3.0454	2.530	-1.204	0.22875
Debt/Equity	-0.18093	0.1892	-0.956	0.33904
$\Delta$ Debt/Equity	0.21692	0.4115	0.527	0.59806
% $\Delta$ Debt/Equity	0.35733	0.3165	1.129	0.25890
Times Interest Earned	-0.40924	0.1785	-2.292	0.02189
$\Delta$ Times Interest Earned	-0.12622E-02	0.1873E-01	-0.067	0.94628
5 $\Delta$ Times Interest Earned	-0.35580	0.3837	-0.927	0.35378
Sales/Total Assets	0.31132E-01	0.2093E-01	1.487	0.13688
$\Delta$ Sales/Total Assets	0.21279	0.1127	1.888	0.05908
% $\Delta$ Sales/Total Assets	-0.91031E-01	0.5338	-0.171	0.86458
Return On Total Assets	-11.808	4.698	-2.513	0.01196
$\Delta$ Return On Total Assets	-7.5167	8.353	-0.900	0.36819
% $\Delta$ Return On Total Assets	-0.12903	0.1675	-0.770	0.44106

Return On Closing Equity	-0.33437E-01	0.1388E-01	-2.409	0.01598
ΔReturn On Closing Equity	-0.24993E-01	0.1798E-01	-1.390	0.16452
%ΔReturn On Closing Equity	-0.26491	0.1677	-1.579	0.11423
Operating Profit/Sales	-34.488	10.29	-3.351	0.00081
ΔOperating Profit/Sales	-2.5533	6.770	-0.377	0.70608
%ΔOperating Profit/Sales	-0.33892	1.607	-0.211	0.83295
Net Profit Margin	-0.26227	0.9003E-01	-2.913	0.00358
ΔNet Profit Margin	-0.13367	0.1747	-0.765	0.44422
%ΔNet Profit Margin	-0.12234	0.1680	-0.728	0.46652
Sales/Cash	-0.12598E-04	0.4724E-04	-0.267	0.78972
ΔSales/Cash	0.35508E-05	0.2710E-04	0.131	0.89575
%ΔSales/Cash	0.26796E-02	0.1433E-01	0.187	0.85166
Sales/Inventory	0.85243E-02	0.6426E-02	1.327	0.18465
ΔSales/Inventory	0.45225E-01	0.2410E-01	1.877	0.06055
%ΔSales/Inventory	-0.40431E-01	0.3690	-0.110	0.91275
Sales/Working Capital	0.17008E-02	0.2289E-02	0.743	0.45739
ΔSales/Working Capital	0.37894E-02	0.4343E-02	0.873	0.38288
%ΔSales/Working Capital	0.12753	0.1118	1.140	0.25415
Sales/Fixed Assets	0.22222E-01	0.5233E-01	1.387	0.13688
ΔSales/Fixed Assets	0.24579	0.1224	1.288	0.05908
%ΔSales/Fixed Assets	-0.74031E-01	0.5338	-0.151	0.86458
ΔTotal Assets	-0.26373E-04	0.2559E-04	-1.281	0.20026
%ΔTotal Assets	-3.3632	1.871	-1.797	0.07230
Cash Flow/Total Debt	-0.40532E-05	0.2277E-05	-1.780	0.07505
Working Capital/Total Assets	0.18302	1.503	0.122	0.90306
ΔWorking Capital/Total Assets	-0.78137	2.210	-0.354	0.72363
%ΔWorking Capital/Total Assets	-0.39025	0.5175	-0.754	0.45080
ΔFunds	-0.14164E-03	0.2047E-03	-0.692	0.48902
ΔTuses	-0.41006E-04	0.4923E-04	-0.833	0.40488
Working Capital	-0.25679E-05	0.3828E-05	-0.671	0.50236
ΔWorking Capital	-0.12437E-04	0.2264E-04	-0.549	0.58283
%ΔWorking Capital	-0.30234	0.3466	-0.872	0.38302
Total Income/Cash Flow	-1.5132	0.6127	-2.470	0.01352



**Table A1a: Univariate Logit Estimation For The Stores Industry For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1981-85.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
Current ratio	-0.29595	0.1418	-2.088	0.03682
Δ Current ratio	-0.28792	0.1235	-2.077	0.02580
%ΔCurrent ratio	-0.27300	0.1334	-2.046	0.04072
Quick Asset ratio	-0.25293	0.5852	-0.432	0.66561
ΔQuick Asset ratio	-0.61133	1.264	-0.483	0.62876
%ΔQuick Asset ratio	0.57314	0.6931	0.827	0.40831
Debtors ratio	-0.73560E-02	0.8876E-02	-0.829	0.40725
ΔDebtors ratio	-0.18604E-02	0.1551E-01	-0.120	0.90452
%ΔDebtors ratio	0.49107	0.5567	0.882	0.37774
Inventory Turnover	-0.20473	0.1483	-1.381	0.16740
ΔInventory Turnover	-0.54289E-01	0.2485	-0.218	0.82706
%Δinventory Turnover	0.84175	1.861	0.452	0.65097
Inventory/Total Assets	1.5696	1.261	1.244	0.21337
ΔInventory/Total Assets	-4.6731	6.713	-0.696	0.48634
%Δ Inventory/Total Assets	-4.3401	5.413	-0.896	0.78634
Inventory	-0.68455E-04	0.5517E-04	-1.241	0.21468
ΔInventory	-0.95528E-04	0.7375E-04	-1.295	0.19524
%ΔInventory	-2.4453	1.535	-1.593	0.11112
Sales	-0.24140E-05	0.3006E-05	-0.803	0.42199
ΔSales	-0.19180E-05	0.2857E-05	-0.671	0.50195
%ΔSales	-1.8168	1.424	-1.276	0.20201
ΔDepreciation	-0.24100E-04	0.1107E-03	-0.218	0.82773
Depreciation	-0.70212E-04	0.8988E-04	-0.781	0.43472
%ΔDepreciation	-1.2032	1.176	-1.023	0.30627
ΔDividend Per Share	-0.37665E-01	0.1808	-0.208	0.83502
%ΔDividend Per Share	-0.70850	1.062	-0.667	0.50454
Depreciation/Fixed Assets	12.163	4.768	2.551	0.01074
ΔDepreciation/Fixed Assets	5.2948	3.692	1.434	0.15153
%Δ Depreciation/Fixed Assets	5.267948	2.782	1.513	0.16783
Return On Opening Equity	-0.61636E-02	0.7140E-02	-0.863	0.38798
ΔReturn On Opening Equity	-0.47828E-02	0.7922E-02	-0.604	0.54600
%ΔReturn On Opening Equity	-0.22115	0.1087	-2.034	0.04190
Capital Expenditure/Total Assets	-9.8839	12.52	-0.789	0.42985
ΔCapital Expenditure/Total Assets	-17.677	15.62	-1.132	0.25774
%Δ Capital Expenditure/Total Assets	-16.787	13.62	-1.543	0.34574
Capital Expenditure	-0.31676E-02	0.2720E-02	-1.165	0.24420
ΔCapital Expenditure	-0.27718E-04	0.1165E-03	-0.238	0.81195
%ΔCapital Expenditure	-2.9226	2.249	-1.299	0.19380
Debt/Equity	-0.18283	0.1873	-0.976	0.32898
ΔDebt/Equity	0.10544	0.3196	0.330	0.74144
%ΔDebt/Equity	0.34031	0.3182	1.070	0.28481
Times Interest Earned	-0.35766	0.1602	-2.233	0.02555
ΔTimes Interest Earned	-0.28460E-01	0.3841E-01	-0.741	0.45871
%ΔTimes Interest Earned	-0.43966	0.3312	-1.327	0.18434
Sales/Total Assets	0.28770E-01	0.2032E-01	1.416	0.15674
ΔSales/Total Assets	0.17383	0.1031	1.686	0.09185
%ΔSales/Total Assets	-0.10213	0.5579	-0.183	0.85474
Return On Total Assets	-12.376	4.768	-2.596	0.00944
ΔReturn On Total Assets	-8.5516	7.426	-1.152	0.24950
%ΔReturn On Total Assets	-0.13854	0.1538	-0.901	0.36766
Return On Closing Equity	-0.33071E-01	0.1383E-01	-2.392	0.01676
ΔReturn On Closing Equity	-0.28110E-01	0.1719E-01	-1.635	0.10201
%ΔReturn On Closing Equity	-0.26778	0.1610	-1.663	0.09635
Operating Profit/Sales	-32.240	9.729	-3.314	0.00092
ΔOperating Profit/Sales	-3.3662	5.967	-0.564	0.57265
%ΔOperating Profit/Sales	-0.26346	1.609	-0.164	0.86996
Net Profit Margin	-0.15176	0.6721E-01	-2.258	0.02395
ΔNet Profit Margin	-0.17482	0.1496	-1.169	0.24253

%ΔNet Profit Margin	-0.13504	0.1530	-0.882	0.37756
Sales/Cash	-0.62982E-05	0.4022E-04	-0.157	0.87555
ΔSales/Cash	0.60395E-06	0.2562E-04	0.024	0.98120
%ΔSales/Cash	0.69032E-01	0.3970E-01	1.739	0.08207
Sales/Inventory	0.81909E-02	0.6333E-02	1.293	0.19590
ΔSales/Inventory	0.43952E-01	0.2383E-01	1.845	0.06508
%ΔSales/Inventory	-0.49279E-01	0.3897	-0.126	0.89937
Sales/Working Capital	0.15712E-02	0.2294E-02	0.685	0.49338
ΔSales/Working Capital	0.39604E-02	0.4165E-02	0.951	0.34167
%ΔSales/Working Capital	0.12717	0.1110	1.146	0.25196
Sales/Fixed Assets	0.27770E-01	0.6032E-01	1.316	0.15674
ΔSales/Fixed Assets	0.16283	0.1521	1.456	0.19185
%ΔSales/Fixed Assets	-0.62113	0.6279	-0.173	0.95474
ΔTotal Assets	-0.24990E-04	0.1936E-04	-1.291	0.24675
%ΔTotal Assets	-2.3774	1.531	-1.553	0.12038
Cash Flow/Total debt	-0.44989E-05	0.2276E-05	-1.977	0.04806
Working Capital/Total Assets	0.40829	1.336	0.306	0.75989
ΔWorking Capital/Total Assets	-0.78610	2.172	-0.362	0.71743
%ΔWorking Capital/Total Assets	-0.22459	0.3697	-0.607	0.54358
ΔFunds	-0.29769E-03	0.3194E-03	-0.932	0.35126
ΔTuses	-0.10102E-03	0.9219E-04	-1.096	0.27314
Working Capital	-0.21334E-05	0.3343E-05	-0.638	0.52339
ΔWorking Capital	-0.13631E-04	0.2019E-04	-0.675	0.49961
%ΔWorking Capital	-0.25637	0.3209	-0.799	0.42435
Total Income/Cash Flow	-0.53032	0.3370	-1.574	0.11555

**Table A1b: Univariate Logit Estimation For The Stores Industry For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1982-86.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
Current ratio	-0.32479	0.1487	-2.185	0.02891
ΔCurrent ratio	-0.30088	0.1338	-2.249	0.02454
%ΔCurrent ratio	-0.30470	0.1375	-2.216	0.02669
ΔQuick Asset ratio	-1.0498	1.483	-0.708	0.47893
Debtors ratio	-0.11147E-01	0.1283E-01	-0.869	0.38489
ΔDebtors ratio	-0.15742E-02	0.1855E-01	-0.085	0.93237
%ΔDebtors ratio	0.45561	0.5911	0.771	0.44086
Inventory Turnover	-0.24184	0.1898	-1.274	0.20259
ΔInventory Turnover	0.34971E-01	0.1706	0.205	0.83759
%ΔInventory Turnover	2.0152	1.975	1.020	0.30751
Inventory/Total Assets	1.5510	1.364	1.137	0.25538
ΔInventory/Total Assets	-4.1787	5.848	-0.715	0.47487
%Δ Inventory/Total Assets	-3.1787	5.568	-0.614	0.54687
Inventory	-0.46024E-04	0.5338E-04	-0.862	0.38861
ΔInventory	-0.41430E-03	0.1981E-03	-2.091	0.03652
%ΔInventory	-3.7282	1.669	-2.234	0.02550
Sales	-0.17923E-04	0.1691E-04	-1.060	0.28907
ΔSales	-0.23256E-05	0.3054E-05	-0.762	0.44635
%ΔSales	-2.5477	1.413	-1.803	0.07137
ΔDepreciation	-0.57735E-04	0.9690E-04	-0.596	0.55128
Depreciation	-0.93323E-04	0.1313E-03	-0.711	0.47713
%ΔDepreciation	-1.7629	1.371	-1.286	0.19857
ΔDividend Per Share	-0.17498	0.3933	-0.445	0.65639
%ΔDividend Per Share	-0.94705	1.532	-0.618	0.53635
Depreciation/Fixed Assets	11.541	4.815	2.397	0.01654
ΔDepreciation/Fixed Assets	0.46583	3.165	0.147	0.88300
%Δ Depreciation/Fixed Assets	0.34583	4.565	0.777	0.97600
Return On Opening Equity	-0.69766E-02	0.7628E-02	-0.915	0.36039
ΔReturn On Opening Equity	-0.55101E-02	0.8559E-02	-0.644	0.51972
%ΔReturn On Opening Equity	-0.26588	0.1133	-2.346	0.01899
Capital Expenditure/Tototal Assets	-9.1570	14.88	-0.615	0.53839
ΔCapital Expenditure/Total Assets	-19.637	16.96	-1.158	0.24696
%Δ Capital Expenditure/Total Assets	-20.637	17.86	-1.238	0.45696
Capital Expenditure	-0.21033E-02	0.2428E-02	-0.866	0.38636
ΔCapital Expenditure	-0.27421E-04	0.1649E-03	-0.166	0.86790
%ΔCapital Expenditure	-4.1462	3.696	-1.122	0.26198
Debt/Equity	-0.16492	0.2128	-0.775	0.43830
ΔDebt/Equity	-0.13753E-01	0.2788	-0.049	0.96066
%ΔDebt/Equity	0.98953E-01	0.5513	0.179	0.85756
Times Interest Earned	-0.36101	0.1614	-2.237	0.02526
ΔTimes Interest Earned	-0.64411E-02	0.3154E-01	-0.204	0.83819
%ΔTimes Interest Earned	-0.49538	0.5764	-0.859	0.39013
Sales/Total Assets	-0.34607E-01	0.1063	-0.326	0.74480
ΔSales/Total Assets	0.21448E-01	0.1497	0.143	0.88604
%ΔSales/Total Assets	-0.41580E-01	0.4922	-0.084	0.93267
Return On Total Assets	-5.9662	3.356	-1.778	0.07547
ΔReturn On Total Assets	-7.8359	11.82	-0.663	0.50729
%ΔReturn On Total Assets	-0.14405	0.2384	-0.604	0.54573
Return On Closing Equity	-0.34784E-01	0.1515E-01	-2.296	0.02170
ΔReturn On Closing Equity	-0.14436E-01	0.3136E-01	-0.460	0.64530
%ΔReturn On Closing Equity	-0.21169	0.2289	-0.925	0.35502
Operating Profit/Saless	-14.352	6.061	-2.368	0.01788
ΔOperating Profit/Sales	-4.8633	7.155	-0.680	0.49671
%ΔOperating Profit/Sales	-0.11022	1.822	-0.060	0.95177
Net Profit Margin	-0.10633	0.5854E-01	-1.816	0.06933
ΔNet Profit Margin	-0.17402	0.1902	-0.915	0.36035
%ΔNet Profit Margin	-0.12588	0.2091	-0.602	0.54710
Sales/Cash	-0.51672E-04	0.2146E-03	-0.241	0.80973

$\Delta$ Sales/Cash	-0.91327E-06	0.2750E-04	-0.033	0.97351
% $\Delta$ Sales/Cash	-0.55107	0.6992	-0.788	0.43064
Sales/Inventory	-0.80820E-01	0.1271	-0.636	0.52474
$\Delta$ Sales/Inventory	0.47723E-02	0.3765E-01	0.127	0.89914
% $\Delta$ Sales/Inventory	-0.20081E-01	0.3878	-0.052	0.95870
Sales/Working Capital	0.72929E-03	0.3534E-02	0.206	0.83651
$\Delta$ Sales/Working Capital	0.46485E-02	0.4946E-02	0.940	0.34731
% $\Delta$ Sales/Working Capital	0.13981	0.1226	1.140	0.25429
Sales/Fixed Assets	-0.34607E-01	0.1063	-0.326	0.74480
$\Delta$ Sales/Fixed Assets	0.21448E-01	0.1497	0.143	0.88604
% $\Delta$ Sales/Fixed Assets	-0.41580E-01	0.4922	-0.084	0.93267
$\Delta$ Total Assets	-0.31936E-04	0.2302E-04	-1.387	0.16532
% $\Delta$ Total Assets	-3.7994	1.669	-2.277	0.02281
Cash Flow/Total Debt	0.61779E-05	0.5797E-04	0.107	0.91513
Working Capital/Total Assets	1.0136	1.510	0.671	0.50206
$\Delta$ Working Capital/Total Assets	-0.42864	2.868	-0.149	0.88118
% $\Delta$ Working Capital/Total Assets	-0.22079	0.4496	-0.491	0.62336
$\Delta$ Funds	-0.26127E-03	0.3653E-03	-0.715	0.47450
$\Delta$ Tuses	-0.12528E-03	0.1078E-03	-1.162	0.24522
Working Capital	-0.13118E-05	0.3151E-05	-0.416	0.67723
$\Delta$ Working Capital	-0.15050E-04	0.2400E-04	-0.627	0.53057
% $\Delta$ Working Capital	-0.49325	0.4776	-1.033	0.30171
Total Income/Cash Flow	-0.34555	0.4567	-1.042	0.45621

**Table A1c: Univariate Logit Estimation For The Stores Industry For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1983-87.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
Current ratio	-0.25398	0.1443	-1.760	0.07835
ΔCurrent ratio	-0.27433	0.1232	-2.227	0.02594
%ΔCurrent ratio	-0.29100	0.1354	-2.149	0.03162
Quick Asset ratio	-0.42445	0.7151	-0.594	0.55820
ΔQuick Asset ratio	0.55955E-01	0.7677	0.073	0.94190
%Δ Quick Asset ratio	0.45695E-01	0.8977	0.0745	1.95670
Debtors ratio	-0.16173E-01	0.1490E-01	-1.086	0.27768
Δ Debtors ratio	-0.12453E-01	0.1560E-01	-1.034	0.37688
%ΔDebtors Ratio	0.19981	0.4881	0.409	0.68226
Inventory turnover	-0.45734	0.2222	-2.058	0.03958
ΔInventory Turnover	-0.64454E-03	0.1408	-0.005	0.99635
%ΔInventory Turnover	0.72400	1.635	0.443	0.65786
Inventory/total assets	1.1016	1.269	0.868	0.38547
ΔInventory/total assets	-8.6418	4.438	-1.447	0.15151
%Δ Inventory/total assets	-7.6488	5.438	-1.570	0.17851
Inventory	-0.65394E-04	0.5858E-04	-1.116	0.26429
ΔInventory	-0.16227E-03	0.1604E-03	-1.011	0.31181
%ΔInventory	-1.1746	1.619	-0.725	0.46826
Sales	-0.38180E-04	0.2049E-04	-1.864	0.06235
ΔSales	-0.22914E-05	0.2754E-05	-0.832	0.40534
%ΔSales	-0.69761	1.587	-0.439	0.66032
ΔDepreciation	-0.58611E-04	0.8700E-04	-0.674	0.50051
Depreciation	-0.12389E-03	0.1595E-03	-0.777	0.43729
%ΔDepreciation	-1.0047	1.247	-0.806	0.42053
ΔDividend Per Share	-0.24713	0.3413	-0.724	0.46898
%ΔDividend Per Share	-1.4439	1.459	-0.989	0.32252
Depreciation/Fixed Assets	8.3557	4.620	1.809	0.07050
ΔDepreciation/Fixed Assets	-1.0766	13.06	-0.082	0.93430
%ΔDepreciation/Fixed Assets	-1.2346	14.66	-0.056	0.87430
Return On Opening Equity	-0.58279E-02	0.7974E-02	-0.731	0.46487
ΔReturn On Opening Equity	-0.37110E-02	0.9501E-02	-0.391	0.69609
%ΔReturn On Opening Equity	-0.19191	0.1132	-1.695	0.09007
Capital Expenditure/Total Assets	-9.9443	13.49	-0.737	0.46114
ΔCapital Expenditure/Total Assets	-11.118	21.79	-0.510	0.60989
%Δ Capital Expenditure/Total Assets	-10.118	23.59	-0.640	0.76889
Capital Expenditure	-0.22450E-02	0.2206E-02	-1.018	0.30881
ΔCapital Expenditure	-0.23956E-04	0.1957E-03	-0.122	0.90257
%ΔCapital Expenditure	0.12643	0.7831E-01	1.615	0.10642
Debt/Equity	-0.31148	0.2547	-1.223	0.22130
ΔDebt/Equity	0.15907E-01	0.2210	0.072	0.94261
%ΔDebt/Equity	0.16417	0.4377	0.375	0.70761
Times Interest Earned	-0.19962	0.1219	-1.638	0.10145
ΔTimes Interest Earned	-0.41357E-03	0.7575E-02	-0.055	0.95646
%ΔTimes Interest Earned	-2.0284	0.9998	-2.029	0.04247
Sales/Total Assets	-0.20265	0.3896	-0.520	0.60294
ΔSales/Total Assets	0.18001E-01	0.1473	0.122	0.90271
%ΔSales/Total Assets	-0.83326	1.375	-0.606	0.54448
Return On Total Assets	-4.7104	2.997	-1.572	0.11598
ΔReturn On Total Assets	-7.2886	26.00	-0.280	0.77921
%ΔReturn On Total Assets	-0.60808	0.6076	-1.001	0.31693
Return On Closing Equity	-0.30527E-01	0.1581E-01	-1.931	0.05351
ΔReturn On Closing Equity	0.21289E-03	0.2366E-01	0.009	0.99282
%ΔReturn On Closing Equity	-0.40745	0.3434	-1.187	0.23539
Operating Profit/Sales	-11.926	5.014	-2.379	0.01738
ΔOperating Profit/Sales	-2.5878	8.526	-0.304	0.76151
%ΔOperating Profit/Sales	-2.1283	1.764	-1.206	0.22764
Net Profit Margin	-0.74037E-01	0.4412E-01	-1.678	0.09333
ΔNet Profit Margin	-0.27051	0.3250	-0.832	0.40525

%ΔNet Profit Margin	-0.53105	0.4895	-1.085	0.27799
Sales/Cash	-0.60881E-04	0.1912E-03	-0.318	0.75014
ΔSales/Cash	-0.62899E-04	0.7258E-04	-0.867	0.38617
%ΔSales/Cash	-1.8030	0.9645	-1.869	0.06156
Sales/Inventory	-0.20892	0.1562	-1.338	0.18095
ΔSales/Inventory	0.73163E-02	0.4356E-01	0.168	0.86662
%ΔSales/Inventory	-0.61948E-01	0.4753	-0.130	0.89630
Sales/Working Capital	0.14491E-02	0.4594E-02	0.315	0.75241
ΔSales/Working Capital	0.11355E-01	0.7907E-02	1.436	0.15094
%ΔSales/Working Capital	0.89778E-01	0.1145	0.784	0.43305
Sales/Fixed Assets	-0.10265	0.4896	-0.620	0.60294
ΔSales/Fixed Assets	0.13401E-01	0.1563	0.145	0.88271
5ΔSales/Fixed Assets	-0.92226	1.765	-0.706	0.34548
ΔTotal Assets	-0.19585E-04	0.1712E-04	-1.144	0.56894
%ΔTotal Assets	0.14658	0.5406	0.271	0.78627
Cash Flow/Total Debt	-0.37662E-02	0.3620E-02	-1.040	0.29812
Working Capital/Total Assets	1.6997	1.349	1.260	0.20760
ΔWorking Capital/Total Assets	-0.61077	2.362	-0.259	0.79597
%ΔWorking Capital/Total Assets	-0.13605	0.3998	-0.340	0.73361
ΔFunds	-0.76727E-04	0.8420E-04	-0.911	0.36218
ΔTuses	-0.17830E-04	0.2189E-04	-0.814	0.41541
Working Capital	-0.10727E-05	0.2531E-05	-0.424	0.67167
ΔWorking Capital	-0.12752E-04	0.1957E-04	-0.652	0.51463
%ΔWorking Capital	-0.37910E-01	0.2068	-0.183	0.85456
Total Income/Cash Flow	-0.27741	0.4032	-0.688	0.49143

**Table A1d: Univariate Logit Estimation For The Stores Industry For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1984-88.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob t &gt;=x</i>
Current Ratio	-0.16307	0.3391	-0.481	0.63055
Δ Current Ratio	-0.32053	0.2264	-1.416	0.15678
%Δ Current Ratio	-3.4642	1.291	-2.684	0.00727
Quick Asset Ratio	-0.45718	0.7003	-0.653	0.51384
Δ Quick Asset Ratio	-0.14500	0.5666	-0.256	0.79802
%Δ Quick Asset Ratio	-0.28208	1.048	-0.269	0.78779
Debtors Ratio	-0.21257E-01	0.1657E-01	-1.283	0.19942
Δ Debtors Ratio	-0.18839E-02	0.9333E-02	-0.202	0.84003
%Δ Debtors Ratio	0.11287E-01	0.5678	0.020	0.98414
Inventory Turnover	-0.13210	0.1316	-1.004	0.31539
Δ inventory Turnover	-0.12417	0.6546E-01	-1.897	0.05784
%Δ inventory Turnover	-1.4241	1.678	-0.849	0.39595
Inventory/Total Assets	0.73443	1.219	0.602	0.54694
Δ inventory/Total Assets	-1.6039	4.912	-0.327	0.74403
%Δ inventory/Total Assets	-1.4569	7.812	-0.456	0.89703
Inventory	-0.17921E-03	0.9664E-04	-1.854	0.06367
Δ Inventory	-0.67903E-04	0.5799E-04	-1.171	0.24165
%Δ Inventory	-0.21101E-01	0.6031	-0.035	0.97209
Sales	-0.73597E-04	0.2989E-04	-2.463	0.01380
Δ Sales	-0.99977E-05	0.6920E-05	-1.445	0.14855
%Δ Sales	-1.6188	1.419	-1.141	0.25394
Δ Depreciation	-0.58253E-04	0.8087E-04	-0.720	0.47132
Depreciation	-0.22539E-02	0.1124E-02	-2.006	0.04488
%Δ Depreciation	-0.20012	0.7798	-0.257	0.79746
Δ Dividend Per Share	-0.44044	0.4216	-1.045	0.29614
%Δ Dividend Per Share	-1.7404	1.553	-1.120	0.26256
Depreciation/Fixed Assets	4.4494	4.653	0.956	0.33895
Δ Depreciation/Fixed Assets	15.518	12.65	1.227	0.22001
%Δ Depreciation/FixeΔ Assets	14.558	13.66	15677	0.87601
Return On Opening Equity	0.47090E-02	0.3979E-02	1.184	0.23660
Δ Return On Opening Equity	0.34500E-02	0.4569E-02	1.345	0.12335
%Δ Return On Opening Equity	-0.18310	0.1420	-1.289	0.19732
Capital Expenditure/Total Assets	-0.20310	0.4560	-1.239	0.23452
Δ Capital Expenditure/Total Assets	-9.8739	19.10	-0.517	0.60526
%Δ Capital Expenditure/Total Assets	-7.8678	20.10	-1.345	0.76526
Capital Expenditure	-0.39808E-02	0.3006E-02	-1.324	0.18536
Δ Capital Expenditure	-0.34728E-04	0.1377E-03	-0.252	0.80085
%Δ Capital Expenditure	0.94026E-01	0.7639E-01	1.231	0.21838
Debt/Equity	-0.55093	0.3270	-1.685	0.09201
Δ Debt/Equity	-0.32624E-01	0.1593	-0.205	0.83773
%Δ Debt/Equity	-0.65248	0.8638	-0.755	0.45002
Times Interest Earned	-0.19180	0.9576E-01	-2.003	0.04518
Δ Times Interest Earned	-0.46972E-03	0.6930E-02	-0.068	0.94596
%Δ Times Interest Earned	-0.76230	0.7104	-1.073	0.28325
Sales/Total Assets	-0.29719E-01	0.8369E-01	-0.355	0.72252
Δ Sales/Total Assets	-0.19107	0.2319	-0.824	0.40994
%Δ Sales/Total Assets	-1.3211	1.557	-0.848	0.39630
Return On Total Assets	-5.4656	2.165	-2.525	0.01158
Δ Return On Total Assets	-24.007	20.09	-1.195	0.23206
%Δ Return On Total Assets	-0.11791	0.5022	-0.235	0.81436
Return On Closing Equity	0.51927E-02	0.2826E-02	1.838	0.06609
Δ Return On Closing Equity	0.18839E-01	0.9442E-02	1.995	0.04601
%Δ Return On Closing Equity	0.85363E-02	0.4056	0.021	0.98321
Operating Profit/Saless	-12.716	4.115	-3.091	0.00200
Δ Operating Profit/Sales	-5.5045	15.57	-0.353	0.72372
%Δ Operating Profit/Sales	0.61904	1.228	0.504	0.61427
Net Profit Margin	-0.46792E-01	0.4722E-01	-0.991	0.32174

Δ Net Profit Margin	-0.28110	0.3828	-0.734	0.46274
%Δ Net Profit Margin	-0.22079	0.6132	-0.360	0.71878
Sales/Cash	-0.10308E-03	0.2663E-03	-0.387	0.69867
Δ Sales/Cash	-0.17005E-04	0.8985E-04	-0.189	0.84989
%Δ Sales/Cash	-0.24127E-02	0.2170E-01	-0.111	0.91147
Sales/Inventory	-0.64272E-02	0.1411E-01	-0.456	0.64865
Δ Sales/Inventory	-0.64822E-02	0.1896E-01	-0.342	0.73238
%Δ Sales/Inventory	0.37447E-01	0.2335	0.160	0.87258
Sales/Working Capital	0.23172E-02	0.3970E-02	0.584	0.55941
Δ Sales/Working Capital	0.21922E-01	0.1053E-01	2.081	0.03742
%Δ Sales/Working Capital	0.21386	0.1041	2.055	0.03991
Sales/Fixed Assets	-0.34559E-01	0.7869E-01	-0.655	0.72252
Δ Sales/Fixed Assets	-0.23407	0.3459	-0.924	0.56994
%Δ Sales/Fixed Assets	-1.3411	1.345	-0.848	0.23630
Δ Total Assets	-0.25806E-04	0.2025E-04	-1.234	0.26785
%Δ Total Assets	0.14210E-01	0.5300	0.027	0.97861
Cash Flow/Total Debt	0.12786E-04	0.4578E-03	0.028	0.97772
Working Capital/Total Assets	-0.45929	0.7855	-0.585	0.55875
Δ Working Capital/Total Assets	-5.4412	3.154	-1.725	0.08450
%Δ Working Capital/Total Assets	-0.28594	0.4119	-0.694	0.48757
Δ Funds	-0.85820E-04	0.7706E-04	-1.114	0.26541
Δ Tuses	-0.15615E-04	0.1684E-04	-0.927	0.35386
Working Capital	-0.10028E-05	0.2107E-05	-0.476	0.63406
Δ Working Capital	-0.12595E-04	0.2124E-04	-0.593	0.55311
%Δ Working Capital	-0.68201E-01	0.3697	-0.184	0.85365
Total Income/Cash Flow	-0.34030	0.1841	-1.848	0.06458



**Table A1e: Univariate Logit Estimation For The Stores Industry For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1980-88.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob&gt; t =x</i>
Current ratio	-0.29045	0.1328	-2.187	0.02872
Δ Current ratio	-0.30092	0.1520	-2.132	0.02450
%ΔCurrent ratio	-0.30722	0.1468	-1.093	0.13638
Quick Asset ratio	-0.34530	0.4568	-0.789	0.21458
ΔQuick Asset ratio	-0.19548	0.4801	-0.407	0.68392
%ΔQuick Asset ratio	0.37090	0.6054	0.613	0.54007
Debtors ratio	-0.12277E-01	0.8067E-02	-1.522	0.12806
ΔDebtors ratio	-0.12937E-02	0.8243E-02	-0.157	0.87529
%ΔDebtors ratio	0.25706	0.3738	0.688	0.49161
Inventory Turnover	-0.15321	0.9724E-01	-1.576	0.11512
Δ Inventory Turnover	-0.11289	0.6321E-01	-1.786	0.07412
%ΔInventory Turnover	-0.24950	1.303	-0.191	0.84816
Inventory/Total Assets	1.1803	0.8933	1.321	0.18640
ΔInventory /Total Assets	-2.6363	3.761	-0.701	0.48338
%Δ Inventory/Total Assets	-1.6222	4.755	-1.701	0.68938
Inventory	-0.11002E-03	0.5036E-04	-2.184	0.02893
ΔInventory	-0.79161E-04	0.4722E-04	-1.676	0.09366
%ΔInventory	-0.66182	0.9984	-0.663	0.50741
Sales	-0.92545E-05	0.7079E-05	-1.307	0.19113
ΔSales	-0.32016E-05	0.2306E-05	-1.388	0.16507
%ΔSales	-1.9799	1.066	-1.858	0.06322
ΔDepreciation	-0.69550E-04	0.7235E-04	-0.961	0.33643
Depreciation	-0.16599E-03	0.1349E-03	-1.231	0.21840
%ΔDepreciation	-0.94559	0.9147	-1.034	0.30122
ΔDividend Per Share	-0.82224E-01	0.1423	-0.578	0.56351
%ΔDividend Per Share	-0.92235	0.8313	-1.110	0.26721
Depreciation/Fixed Assets	1.5130	0.6640	2.279	0.02268
ΔDepreciation/Fixed Assets	6.3982	5.422	1.180	0.23802
%Δ Depreciation/Fixed Assets	5.5582	3.546	1.236	1.23567
Return On Opening Equity	0.22121E-02	0.4888E-02	0.453	0.65088
ΔReturn On Opening Equity	-0.12213E-01	0.5574E-02	-2.191	0.02844
%ΔReturn On Opening Equity	-0.28221	0.1035	-2.726	0.00641
Capital Expenditure/Total Assets	-14.721	10.64	-1.383	0.16667
ΔCapital Expenditure/Total Assets	-12.846	12.30	-1.044	0.29627
%Δ Capital Expenditure/Total Assets	-10.756	10.45	-1.524	1.34527
Capital Expenditure	-0.30407E-02	0.1855E-02	-1.639	0.10115
ΔCapital Expenditure	-0.25923E-04	0.8807E-04	-0.294	0.76849
%ΔCapital Expenditure	-0.79899E-02	0.3896E-01	-0.205	0.83751
Debt/Equity	-0.31522	0.1651	-1.909	0.05627
ΔDebt/Equity	0.11434E-02	0.1405	0.008	0.99351
%ΔDebt/Equity	0.36158E-01	0.2862	0.126	0.89945
Times Interest Earned	-0.25205	0.8531E-01	-2.954	0.00313
ΔTimes Interest Earned	-0.56045E-03	0.6719E-02	-0.083	0.93352
%ΔTimes Interest Earned	-0.38449	0.2917	-1.318	0.18754
Sales/Total Assets	0.12900	0.2349	1.244	0.19803
ΔSales/Total Assets	0.12827	0.1039	1.234	0.21713
%ΔSales/Total Assets	-0.41925	0.9428	-0.445	0.65654
Return On Total Assets	-6.5292	2.091	-3.122	0.00179
ΔReturn On Total Assets	-8.0339	6.762	-1.188	0.23481
%ΔReturn On Total Assets	-0.10717	0.1566	-0.684	0.49376
Return On Closing Equity	0.37517E-02	0.2969E-02	1.264	0.20638
ΔReturn On Closing Equity	0.14969E-01	0.7556E-02	1.981	0.04759
%ΔReturn On Closing Equity	-0.19761	0.1585	-1.246	0.21258
Operating Profit/Sales	-16.536	4.068	-4.065	0.00005
ΔOperating Profit/Sales	-3.1747	5.816	-0.546	0.58516
%ΔOperating Profit/Sales	0.20159	1.007	0.200	0.84139
Net Profit Margin	-0.84448E-01	0.3714E-01	-2.274	0.02297
ΔNet Profit Margin	-0.11281	0.1451	-0.777	0.43704

%ΔNet Profit Margin	-0.10879	0.1523	-0.714	0.47502
Sales/Cash	-0.24105E-04	0.7907E-04	-0.305	0.76047
ΔSales/Cash	0.12100E-05	0.2368E-04	0.051	0.95926
%ΔSales/Cash	-0.10216E-02	0.5656E-02	-0.181	0.85666
Sales/Inventory	0.46509E-02	0.6005E-02	0.775	0.43862
ΔSales/Inventory	0.30042E-01	0.2506E-01	1.199	0.23051
%ΔSales/Inventory	0.17431E-01	0.1360	0.128	0.89800
Sales/Working Capital	0.18736E-02	0.1954E-02	0.959	0.33764
ΔSales/Working Capital	0.66043E-02	0.3484E-02	1.895	0.05804
%ΔSales/Working Capital	0.17118	0.7486E-01	2.287	0.02222
Sales/Fixed Assets	0.15701E-01	0.1817E-01	0.864	0.38753
ΔSales/Fixed Assets	0.12827	0.1039	1.234	0.21713
%ΔSales/Fixed Assets	-0.41925	0.9428	-0.445	0.65654
ΔTotal Assets	-0.26038E-04	0.1443E-04	-1.804	0.07124
%ΔTotal Assets	-0.55308	0.8952	-0.618	0.53668
Cash Flow/Total Debt	-0.42991E-05	0.2241E-05	-1.919	0.05504
Working Capital/Total Assets	-0.28673	0.7123	-0.403	0.68729
ΔWorking Capital/Total Assets	-1.9771	1.589	-1.244	0.21335
%ΔWorking Capital/Total Assets	-0.32897	0.3164	-1.040	0.29848
ΔFunds	-0.92819E-04	0.7351E-04	-1.263	0.20668
ΔTuses	-0.18845E-04	0.1706E-04	-1.105	0.26930
Working Capital	-0.13577E-05	0.1833E-05	-0.741	0.45888
ΔWorking Capital	-0.12667E-04	0.1535E-04	-0.825	0.40915
%ΔWorking Capital	-0.20862	0.2846	-0.733	0.46347
Total Income/Cash Flow	-0.46940	0.2735	-1.716	0.08610

## Chemical Industry

**Table A2: Univariate Logit Estimation For The Chemical Industry For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1980-84.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>probt   &gt;=x</i>
Current ratio	0.11436E-03	0.2505E-02	0.046	0.96359
Δ Current ratio	0.25636E-03	0.5890E-02	0.156	1.54259
%ΔCurrent ratio	0.27970	0.4128	0.678	0.49800
Quick Asset ratio	-1.4564	0.457	-1.567	0.34567
ΔQuick Asset Ratio	-1.2214	1.047	-1.167	0.24337
%ΔQuick Asset Ratio	-2.0767	1.331	-1.561	0.11859
Debtors Ratio	0.44723E-01	0.1373E-01	3.257	0.00113
ΔDebtors Ratio	0.22919E-01	0.1462E-01	1.567	0.11702
%ΔDebtors Ratio	1.7481	1.199	1.458	0.14492
Inventory Turnover	-0.79532E-01	0.7315E-01	-1.087	0.27695
Δ Inventory Turnover	0.68955E-01	0.1071	0.644	0.51957
%ΔInventory Turnover	0.15967	0.6981	0.229	0.81909
Inventory/Total Assets	0.46454	1.605	0.289	0.77227
ΔInventory/Total Assets	0.73313	2.021	0.363	0.71674
%Δ Inventory/Total Assets	1.03313	1.231	0.456	0.87574
Inventory	0.10933E-05	0.7787E-06	1.404	0.16027
ΔInventory	0.80691E-05	0.8142E-05	0.991	0.32168
%ΔInventory	0.45792	0.4268	1.073	0.28331
Sales	0.19922E-06	0.1471E-06	1.355	0.17557
ΔSales	0.16191E-05	0.1327E-05	1.220	0.22228
%ΔSales	-0.62684	1.109	-0.565	0.57206
ΔDepreciation	-0.32382E-04	0.6856E-04	-0.472	0.63672
Depreciation	-0.12786E-05	0.1055E-04	-0.121	0.90350
%ΔDepreciation	-0.70187E-01	0.6350	-0.111	0.91198
ΔDividend Per Share	-0.20095	0.1429	-1.406	0.15968
%ΔDividend Per Share	-1.0756	0.7002	-1.536	0.12448
Depreciation/Fixed Assets	0.34865	0.2849	1.224	0.22111
ΔDepreciation/Fixed Assets	4.4296	3.367	1.315	0.18837
%Δ Depreciation/Fixed Assets	3.4456	2.347	0.245	1.13457
Return On Opening Equity	-1.1638	0.4466	-2.606	0.00917
ΔReturn On Opening Equity	-0.32449	0.2875	-1.129	0.25904
%ΔReturn On Opening Equity	-0.67111	0.3470	-1.934	0.05308
Capital Expenditure/Total Assets	-10.283	16.53	-0.622	0.53384
ΔCapital Expenditure/Total Assets	-8.0690	11.87	-0.680	0.49675
%Δ Capital Expenditure/Total Assets	-4.6690	21.87	-1.560	1.36775
Capital Expenditure	0.74297E-05	0.9408E-05	0.790	0.42970
ΔCapital Expenditure	0.49854E-05	0.1580E-04	0.315	0.75241
%ΔCapital Expenditure	-0.38360	0.2639	-1.454	0.14599
Debt/Equity	-0.16676E-01	0.6024E-01	-0.277	0.78192
ΔDebt/Equity	0.12427E-01	0.1012	0.123	0.90230
%ΔDebt/Equity	0.45217	0.6870	0.658	0.51042
Times Interest Earned	0.12624E-03	0.6666E-03	0.189	0.84980
ΔTimes Interest Earned	0.16330E-03	0.1549E-02	0.105	0.91604
%ΔTimes Interest Earned	0.16251E-03	0.5535E-03	0.294	0.76905
Sales/Total Assets	-0.82463	0.4159	-1.983	0.04740
ΔSales/Total Assets	-0.13116	0.6208	-0.211	0.83266
%ΔSales/Total Assets	-0.50737	0.7268	-0.698	0.48514
Return On Total Assets	-0.65857E-01	0.3148E-01	-2.092	0.03646
ΔReturn On Total Assets	-0.10166E-01	0.2296E-01	-0.443	0.65793
%ΔReturn On Total Assets	-0.83705	0.4228	-1.980	0.04771
Return On Closing Equity	-1.1596	0.4466	-2.596	0.00942
ΔReturn On Closing Equity	-0.33308	0.2888	-1.153	0.24874
%ΔReturn On Closing Equity	-0.68890	0.3507	-1.964	0.04952
Operating Profit/Sales	-6.3432	5.008	-1.267	0.20526
ΔOperating Profit/Sales	-0.53400	1.782	-0.300	0.76437

%ΔOperating Profit/Sales	0.13829	0.4865	0.284	0.77620
Net Profit Margin	-0.31811E-01	0.4436E-01	-0.717	0.47327
ΔNet Profit Margin	-0.22771	0.1170	-1.946	0.05163
%ΔNet Profit Margin	-0.63010	0.3509	-1.796	0.07251
Sales/Cash	0.49413E-03	0.3284E-03	1.505	0.13243
ΔSales/Cash	0.89893E-03	0.6873E-03	1.308	0.19092
%ΔSales/Cash	0.64171E-02	0.2560E-01	0.251	0.80209
Sales/Inventory	-0.91378E-01	0.8810E-01	-1.037	0.29967
ΔSales/Inventory	0.12092E-01	0.1032	0.117	0.90670
%ΔSales/Inventory	-0.72724	0.9813	-0.741	0.45863
Sales/Working Capital	-0.16073E-01	0.2420E-01	-0.664	0.50658
ΔSales/Working Capital	0.59027E-01	0.3936E-01	1.500	0.13372
%ΔSales/Working Capital	0.19202	0.3565	0.539	0.59014
Sales/Fixed Assets	-0.82463	0.4159	-1.983	0.04740
ΔSales/Fixed Assets	-0.13116	0.6208	-0.211	0.83266
%ΔSales/Fixed Assets	-0.50737	0.7268	-0.698	0.48514
ΔTotal Assets	0.13653E-05	0.1223E-05	1.116	0.26446
%ΔTotal Assets	0.64903	0.4459	1.456	0.14552
Cash Flow/Total Debt	-0.89945E-02	0.1017E-01	-0.884	0.37660
Working Capital/Total Assets	-1.4742	1.330	-1.108	0.26786
ΔWorking Capital/Total Assets	-1.7535	2.147	-0.817	0.41412
%ΔWorking Capital/Total Assets	-0.55509	0.4412	-1.258	0.20832
ΔFunds	0.95843E-05	0.7633E-05	1.256	0.20926
ΔTuses	0.14224E-05	0.4554E-05	0.312	0.75475
Working Capital	0.13691E-05	0.7290E-06	1.878	0.06039
ΔWorking Capital	0.67936E-05	0.4963E-05	1.369	0.17106
%ΔWorking Capital	0.14901	0.2662	0.560	0.57567
Total Income/Cash Flow	-0.76221E-05	0.1177E-04	-0.647	0.51742

**Table A2a: Univariate Logit Estimation For The Chemical Industry For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1981-85.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>probt   &gt;=x</i>
Current ratio	0.14291E-03	0.8515E-02	0.017	0.98661
Δ Current ratio	0.23491E-03	0.9515E-02	1.217	1.07861
%ΔCurrent Ratio	0.51649	0.4618	1.118	0.26338
Quick Asset ratio	-0.98998	1.234	-0.987	1.23338
ΔQuick Asset ratio	-0.86998	1.030	-0.844	0.39848
%ΔQuick Asset ratio	-1.8995	1.394	-1.362	0.17315
Debtors ratio	0.19470E-01	0.1081E-01	1.802	0.07157
ΔDebtors ratio	-0.49300E-02	0.1130E-01	-0.436	0.66249
%ΔDebtors ratio	-0.75386	1.233	-0.612	0.54080
Inventory Turnover	-0.12543E-01	0.5826E-01	-0.215	0.82955
Δinventory Turnover	0.15702	0.1060	1.481	0.13855
%ΔInventory Turnover	0.82153	0.6834	1.202	0.22935
Inventory/Total Assets	-0.32845	1.312	-0.250	0.80238
ΔInventory/Total Assets	0.33040	1.751	0.189	0.85033
%Δ Inventory/Total Assets	0.25820	0.879	1.456	0.97633
Inventory	0.81903E-06	0.7018E-06	1.167	0.24320
ΔInventory	0.25963E-05	0.6834E-05	0.380	0.70403
%ΔInventory	-2.6144	1.309	-1.997	0.04586
Sales	0.13331E-06	0.1286E-06	1.037	0.29989
ΔSales	0.58683E-06	0.9645E-06	0.608	0.54291
%ΔSales	-1.1269	1.124	-1.003	0.31594
ΔDepreciation	-0.10102E-03	0.1101E-03	-0.917	0.35890
Depreciation	-0.13790E-04	0.1676E-04	-0.823	0.41062
%ΔDepreciation	-1.3500	1.057	-1.277	0.20166
ΔDividend Per Share	-0.30060	0.2111	-1.424	0.15444
%ΔDividend Per Share	-1.1465	0.6916	-1.658	0.09740
Depreciation/Fixed Assets	0.15929	0.4564	0.349	0.72707
ΔDepreciation/Fixed Assets	1.4073	1.878	0.749	0.45364
%Δ Depreciation/Fixed Assets	0.0073	0.778	0.015	0.54664
Return On Opening Equity	-1.6281	0.5105	-3.189	0.00143
ΔReturn On Opening Equity	-0.39039	0.3009	-1.297	0.19449
%ΔReturn On Opening Equity	-0.72790	0.3541	-2.056	0.03981
Capital Expenditure/Total Assets	-16.674	17.62	-0.946	0.34392
ΔCapital Expenditure/Total Assets	-19.620	15.43	-1.272	0.20339
%Δ Capital Expenditure/Total Assets	-10.620	12.43	-0.356	0.14539
Capital Expenditure	0.79782E-05	0.1037E-04	0.769	0.44176
ΔCapital Expenditure	-0.11168E-04	0.2406E-04	-0.464	0.64249
%ΔCapital Expenditure	-0.64631	0.3521	-1.836	0.06638
Debt/Equity	-0.94462E-01	0.7896E-01	-1.196	0.23156
ΔDebt/Equity	0.56790E-01	0.1371	0.414	0.67863
%ΔDebt/Equity	-0.10973	0.4680	-0.234	0.81462
Times Interest Earned	0.16337E-03	0.1581E-02	0.103	0.91769
ΔTimes Interest Earned	0.18413E-03	0.2805E-02	0.066	0.94767
%ΔTimes Interest Earned	0.14807E-03	0.5407E-03	0.274	0.78419
Sales/Total Assets	-0.43791	0.4112	-1.065	0.28693
ΔSales/Total Assets	0.36346	0.7099	0.512	0.60866
%ΔSales/Total Assets	-0.15446	0.3883	-0.398	0.69081
Return On Total Assets	-0.79384E-01	0.3394E-01	-2.339	0.01935
ΔReturn On Total Assets	-0.72489E-01	0.5516E-01	-1.314	0.18877
%ΔReturn On Total Assets	-0.74483	0.3912	-1.904	0.05693
Return On Closing Equity	-1.6233	0.5104	-3.180	0.00147
ΔReturn On Closing Equity	-0.39670	0.3020	-1.313	0.18902
%ΔReturn On Closing Equity	-0.74094	0.3572	-2.075	0.03803
Operating Profit/Sales	-12.017	5.380	-2.234	0.02551
ΔOperating Profit/Sales	-0.67318	1.848	-0.364	0.71564
%ΔOperating Profit/Sales	-0.14291	0.3315	-0.431	0.66639
Net Profit Margin	-0.51727E-01	0.4423E-01	-1.169	0.24224
ΔNet Profit Margin	-0.21738	0.1230	-1.768	0.07711

%ΔNet Profit Margin	-0.71351	0.3713	-1.922	0.05465
Sales/Cash	0.52930E-03	0.3307E-03	1.601	0.10944
ΔSales/Cash	0.16036E-03	0.2669E-03	0.601	0.54792
%ΔSales/Cash	0.50020E-02	0.1045E-01	0.479	0.63209
Sales/Inventory	0.17706E-02	0.6406E-01	0.028	0.97795
ΔSales/Inventory	0.11098	0.1073	1.034	0.30099
%ΔSales/Inventory	0.30679	0.7672	0.400	0.68923
Sales/Working Capital	0.91258E-02	0.2191E-01	0.416	0.67706
ΔSales/Working Capital	0.50734E-01	0.4138E-01	1.226	0.22013
%ΔSales/Working Capital	-0.26775E-01	0.7473E-01	-0.358	0.72014
Sales/Fixed Assets	-0.23391	0.5462	-1.255	0.14593
ΔSales/Fixed Assets	0.45346	0.7569	0.622	0.12566
%ΔSales/Fixed Assets	-0.15566	0.4563	-0.254	0.78981
ΔTotal Assets	0.77466E-06	0.9489E-06	0.816	0.41428
%ΔTotal Assets	0.36870	0.4187	0.881	0.37859
Cash Flow/Total Debt	-0.12222E-01	0.9728E-02	-1.256	0.20899
Working Capital/Total Assets	-1.8651	1.445	-1.291	0.19685
ΔWorking Capital/Total Assets	0.64710E-01	1.749	0.037	0.97049
%ΔWorking Capital/Total Assets	-0.27668	0.4459	-0.620	0.53496
ΔFunds	0.32602E-05	0.3736E-05	0.873	0.38286
ΔTuses	-0.17618E-05	0.4065E-05	-0.433	0.66471
Working Capital	0.10469E-05	0.6391E-06	1.638	0.10138
ΔWorking Capital	0.53820E-05	0.4018E-05	1.340	0.18039
%ΔWorking Capital	0.19168	0.2689	0.713	0.47594
Total Income/Cash Flow	-0.12898E-04	0.1162E-04	-1.110	0.26698

**Table A2b: Univariate Logit Estimation For The Chemical Industry For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1982-86.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>probitl &gt;=x</i>
Current ratio	0.58785E-01	0.6853E-01	0.858	0.39100
ΔCurrent ratio	0.34585E-01	0.8973E-01	0.456	0.45600
%ΔCurrent ratio	0.44508	0.4378	1.017	0.30928
Quick Asset ratio	-0.23400	0.3456	1267	0.23428
ΔQuick Asset ratio	-0.31960	0.7477	-0.427	0.66905
%ΔQuick Asset ratio	-1.2047	1.177	-1.023	0.30623
Debtors ratio	0.17939E-01	0.1060E-01	1.692	0.09060
ΔDebtors ratio	0.15709E-01	0.1342E-01	1.170	0.24194
%ΔDebtors ratio	2.0060	1.069	1.876	0.06064
Inventory Turnover	0.63494E-01	0.4237E-01	1.499	0.13398
ΔInventory Turnover	0.10888	0.1012	1.076	0.28199
%ΔInventory Turnover	1.4537	0.9914	1.466	0.14257
Inventory/Total Assets	-4.2997	2.579	-1.667	0.09552
ΔInventory /Total Assets	-7.1072	5.038	-1.411	0.15830
%Δ Inventory/Total Assets	-6.1172	4.738	-0.981	0.17830
Inventory	-0.33746E-07	0.1294E-06	-0.261	0.79427
ΔInventory	0.29052E-05	0.7868E-05	0.369	0.71193
%ΔInventory	0.14878E-01	1.078	0.014	0.98899
Sales	-0.72155E-07	0.1650E-06	-0.437	0.66190
ΔSales	-0.46353E-06	0.1239E-05	-0.374	0.70828
%ΔSales	-0.36857	1.086	-0.339	0.73440
ΔDepreciation	-0.46810E-04	0.6148E-04	-0.761	0.44639
Depreciation	-0.16804E-04	0.1892E-04	-0.888	0.37437
%ΔDepreciation	-1.0906	1.196	-0.912	0.36179
ΔDividend Per Share	-0.29722E-01	0.9510E-01	-0.313	0.75462
%ΔDividend Per Share	-0.52985E-01	0.3839	-0.138	0.89022
Depreciation/Fixed Assets	0.91491	0.6395	1.431	0.15253
ΔDepreciation/Fixed Assets	0.90668	1.895	0.479	0.63228
%Δ Depreiciation/Fixed Assets	0.80668	17695	0.567	0.89028
Return On Opening Equity	-1.5574	0.4877	-3.193	0.00141
ΔReturn On Opening Equity	-0.36009	0.3000	-1.200	0.22999
%ΔReturn On Opening Equity	-0.42684	0.3163	-1.350	0.17717
Capital Expenditure/Total Assets	-26.787	21.62	-1.239	0.21537
ΔCapital Expenditure/Total Assets	11.866	15.48	0.766	0.44347
%Δ Capital Expenditure/Total Assets	10.856	14.38	0.666	0.53347
Capital Expenditure	-0.50177E-05	0.1148E-04	-0.437	0.66201
ΔCapital Expenditure	0.60180E-05	0.3066E-04	0.196	0.84441
%ΔCapital Expenditure	-0.50629E-01	0.1007	-0.503	0.61502
Debt/Equity	-0.28106E-03	0.6963E-01	-0.004	0.99678
ΔDebt/Equity	0.23795	0.1742	1.366	0.17192
%ΔDebt/Equity	-0.88305E-01	0.7893	-0.112	0.91092
Times Interest Earned	0.72930E-02	0.2712E-01	0.269	0.78798
ΔTimes Interest Earned	0.31624E-01	0.5724E-01	0.552	0.58065
%ΔTimes Interest Earned	0.15044E-03	0.5554E-03	0.271	0.78649
Sales/Total Assets	-0.80524	0.5161	-1.560	0.11871
ΔSales/Total Assets	-1.9242	0.8988	-2.141	0.03228
%ΔSales/Total Assets	-1.9710	1.279	-1.541	0.12325
Return On Total Assets	-0.13786	0.3952E-01	-3.489	0.00049
ΔReturn On Total Assets	-0.13018	0.6331E-01	-2.056	0.03975
%ΔReturn On Total Assets	-0.61503	0.3888	-1.582	0.11372
Return On Closing Equity	-1.5484	0.4866	-3.182	0.00146
ΔReturn On Closing Equity	-0.36531	0.3006	-1.215	0.22430
%ΔReturn On Closing Equity	-0.43504	0.3198	-1.360	0.17369
Operating Profit/Sales	-23.536	7.140	-3.296	0.00098
ΔOperating Profit/Sales	-0.60182	2.304	-0.261	0.79396
%ΔOperating Profit/Sales	-2.4724	1.306	-1.893	0.05837
Net Profit Margin	-0.29397	0.9914E-01	-2.965	0.00303
ΔNet Profit Margin	-0.27043	0.1709	-1.582	0.11367

%ΔNet Profit Margin	-0.28785	0.2625	-1.097	0.27285
Sales/Cash	0.47246E-03	0.3034E-03	1.557	0.11940
ΔSales/Cash	0.99534E-04	0.9593E-04	1.038	0.29946
%ΔSales/Cash	0.51036E-02	0.1107E-01	0.461	0.64488
Sales/Inventory	0.69711E-01	0.4542E-01	1.535	0.12483
ΔSales/Inventory	0.13606	0.1103	1.234	0.21719
%ΔSales/Inventory	0.54115	1.162	0.466	0.64153
Sales/Working Capital	0.29802E-01	0.2495E-01	1.194	0.23229
ΔSales/Working Capital	0.33685E-01	0.4079E-01	0.826	0.40886
%ΔSales/Working Capital	-0.34116E-01	0.1087	-0.314	0.75359
Sales/Fixed Assets	-0.56524	0.4152	-1.450	0.12871
ΔSales/Fixed Assets	-1.8242	0.8888	-1.141	0.17228
%ΔSales/Fixed Assets	-1.9560	1.236	-1.645	0.13255
ΔTotal Assets	0.10038E-05	0.1093E-05	0.918	0.35849
%ΔTotal Assets	0.91054	0.5613	1.622	0.10479
Cash Flow/Total Debt	-0.47912E-01	0.1529E-01	-3.134	0.00172
Working Capital/Total Assets	-0.83279	1.401	-0.594	0.55228
ΔWorking Capital/Total Assets	-0.21651	2.010	-0.108	0.91420
%ΔWorking Capital/Total Assets	-0.53624	0.5205	-1.030	0.30288
ΔFunds	-0.10214E-04	0.1498E-04	-0.682	0.49546
ΔTuses	-0.70252E-05	0.5402E-05	-1.300	0.19344
Working Capital	0.20284E-06	0.6740E-06	0.301	0.76344
ΔWorking Capital	0.35005E-05	0.2652E-05	1.320	0.18678
%ΔWorking Capital	0.30823	0.2736	1.127	0.25992
Total Income/Cash Flow	-0.54201E-04	0.3324E-04	-1.631	0.10299



**Table A2c: Univariate Logit Estimation For The Chemical Industry For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1983-87.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob &gt;=</i>
Current ratio	0.71201E-01	0.7295E-01	0.976	0.32908
ΔCurrent ratio	0.61501E-01	0.7456E-01	0.874	0.45608
%ΔCurrent ratio	0.38931	0.4303	0.905	0.36562
Quick Assets ratio	0.45931	0.5473	0.875	0.45662
ΔQuick Asset ratio	-0.14230	0.5859	-0.243	0.80811
%ΔQuick Asset ratio	-0.37544	0.7015	-0.535	0.59251
Debtors ratio	0.17748E-01	0.9987E-02	1.777	0.07556
ΔDebtors ratio	0.10837E-01	0.1138E-01	0.952	0.34089
%ΔDebtors ratio	1.4430	0.9691	1.489	0.13647
Inventory/Turnover	0.22937E-01	0.4239E-01	0.541	0.58844
ΔInventory Turnover	0.79927E-01	0.7896E-01	1.012	0.31141
%ΔInventory Turnover	1.0448	0.7398	1.412	0.15785
Inventory/Total Assets	-2.5335	2.321	-1.092	0.27495
ΔInventory /Total Assets	-4.9258	4.745	-1.038	0.29927
%Δ Inventory/Total Assets	-3.9258	2.745	-1.245	0.78527
Inventory	-0.47935E-06	0.8156E-06	-0.588	0.55670
ΔInventory	0.22340E-05	0.7255E-05	0.308	0.75813
%ΔInventory	-0.27743	0.6721	-0.413	0.67976
Sales	-0.11474E-06	0.1543E-06	-0.744	0.45705
ΔSales	0.28231E-07	0.8904E-06	0.032	0.97471
%ΔSales	-0.65493E-01	0.8240	-0.079	0.93665
ΔDepreciation	-0.30705E-04	0.4956E-04	-0.620	0.53551
Depreciation	-0.16970E-04	0.1553E-04	-1.093	0.27458
%ΔDepreciation	-0.98140	0.9578	-1.025	0.30553
ΔDividend Per Share	-0.31022	0.2164	-1.433	0.15176
%ΔDividend Per Share	-0.27471	0.4638	-0.592	0.55366
Depreciation/Fixed Assets	0.53340	0.6355	0.839	0.40128
ΔDepreciation/Fixed Assets	-0.38038	1.690	-0.225	0.82190
%Δ Depreciation/Fixed Assets	-0.28128	1.450	-1.325	0.92490
Return On Opening Equity	-0.90643	0.3450	-2.628	0.00860
ΔReturn On Opening Equity	-1.6578	0.8234	-2.013	0.04408
%ΔReturn On Opening Equity	-0.43035	0.3359	-1.281	0.20017
Capital Expenditure/Total Assets	-6.5540	13.27	-0.494	0.62141
ΔCapital Expenditure/Total Assets	-7.2059	17.02	-0.423	0.67197
%Δ Capital Expenditure/Total Assets	-6.5059	16.42	-1.423	0.78197
Capital Expenditure	-0.93904E-05	0.1046E-04	-0.898	0.45611
ΔCapital Expenditure	-0.29102E-04	0.3152E-04	-0.923	0.35592
%ΔCapital Expenditure	-0.60883E-01	0.1086	-0.561	0.57492
Debt/Equity	-0.41059E-01	0.5609E-01	-0.732	0.46417
ΔDebt/Equity	-0.13908E-01	0.3875E-01	-0.359	0.71967
%ΔDebt/Equity	-0.21209	0.4097	-0.518	0.60471
Times Interest Earned	0.17787E-01	0.2205E-01	0.807	0.41995
ΔTimes Interest Earned	0.22165E-01	0.3875E-01	0.572	0.56728
%ΔTimes Interest Earned	0.36449E-03	0.4989E-02	0.073	0.94176
Sales/Total Assets	-1.0009	0.4852	-2.063	0.03912
ΔSales/Total Assets	-0.98195	0.6566	-1.496	0.13476
%ΔSales/Total Assets	-0.84531	0.8852	-0.955	0.33960
Return On Total Assets	-0.70226E-01	0.2975E-01	-2.361	0.01825
ΔReturn On Total Assets	-0.53636E-01	0.5862E-01	-0.915	0.36023
%ΔReturn On Total Assets	-0.48749	0.3966	-1.229	0.21907
Return On Closing Equity	-0.90643	0.3450	-2.628	0.00860
ΔReturn On Closing Equity	-1.6680	0.8267	-2.018	0.04363
%ΔReturn On Closing Equity	-0.43862	0.3391	-1.293	0.19584
Operating Profit/Sales	-9.7277	4.923	-1.976	0.04813
ΔOperating Profit/Sales	-10.680	10.34	-1.033	0.30174
%ΔOperating Profit/Sales	-2.2110	1.217	-1.817	0.06916
Net Profit Margin	-0.12939	0.6852E-01	-1.888	0.05897
ΔNet Profit Margin	-0.22654	0.1949	-1.162	0.24508

%ΔNet Profit Margin	-0.30873	0.3313	-0.932	0.35135
Sales/Cash	0.45285E-03	0.2813E-03	1.610	0.10744
ΔSales/Cash	0.35546E-03	0.4684E-03	0.759	0.44788
%ΔSales/Cash	0.18692	0.1226	1.524	0.12743
Sales/Inventory	0.29399E-01	0.4457E-01	0.660	0.50951
ΔSales/Inventory	0.10335	0.9123E-01	1.133	0.25730
%ΔSales/Inventory	0.42058	0.7757	0.542	0.58767
Sales/Working Capital	0.23901E-01	0.2401E-01	0.995	0.31956
ΔSales/Working Capital	0.33432E-01	0.3586E-01	0.932	0.35114
%ΔSales/Working Capital	-0.54161E-01	0.2164	-0.250	0.80241
Sales/Fixed Assets	-1.0009	0.4852	-2.063	0.03912
ΔSales/Fixed Assets	-0.98195	0.6566	-1.496	0.13476
%ΔSales/Fixed Assets	-0.84531	0.8852	-0.955	0.33960
ΔTotal Assets	0.86378E-06	0.9916E-06	0.871	0.38369
%ΔTotal Assets	0.92177	0.6357	1.450	0.14704
Cash Flow/Total Debt	-0.15588E-01	0.1039E-01	-1.501	0.13347
Working Capital/Total Assets	-0.58427E-01	1.215	-0.048	0.96164
ΔWorking Capital/Total Assets	0.40034	1.882	0.213	0.83154
%ΔWorking Capital/Total Assets	-0.15447	0.2709	-0.570	0.56854
ΔFunds	0.22679E-05	0.3507E-05	0.647	0.51788
ΔTuses	0.75716E-06	0.2782E-05	0.272	0.78549
Working Capital	-0.62362E-07	0.6269E-06	-0.099	0.92076
ΔWorking Capital	0.26791E-05	0.2079E-05	1.289	0.19744
%ΔWorking Capital	0.12138	0.1839	0.660	0.50925
Total Income/Cash Flow	-0.16966E-04	0.2766E-04	-0.613	0.53962

**Table A2d: Univariate Logit Estimation For The Chemical Industry For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1984-88.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t  &gt;= x)</i>
Current ratio	-0.20476	0.9596	-1.350	0.89600
Δ Current ratio	-0.24780	0.89700	-1.560	0.90870
%ΔCurrent ratio	-0.30476	0.8696	-0.350	0.72600
Quick Asset ratio	0.24566E-01	0.4560	0.075	0.85621
ΔQuick Asset ratio	0.26877E-01	0.5462	0.049	0.96075
%ΔQuick Asset ratio	-0.21207	0.6094	-0.348	0.72784
Debtors ratio	0.24607E-01	0.9561E-02	2.574	0.01006
ΔDebtors ratio	0.22677E-01	0.1025E-01	2.212	0.02697
%ΔDebtors ratio	1.6198	0.7558	2.143	0.03209
Inventory Turnover	0.59892E-02	0.3074E-01	0.195	0.84553
ΔInventory Turnover	-0.15040E-02	0.4274E-01	-0.035	0.97193
%ΔInventory Turnover	-0.18193	0.6162	-0.295	0.76782
Inventory /Total Assets	-3.0359	2.386	-1.272	0.20327
ΔInventory /Total Assets	-5.6848	6.076	-0.936	0.34950
%Δ Inventory /Total Assets	-4.6788	5.176	-0.754	0.46350
Inventory	-0.52682E-05	0.3388E-05	-1.555	0.12000
ΔInventory	-0.18316E-05	0.7293E-05	-0.251	0.80171
%ΔInventory	0.63931	0.5200	1.229	0.21894
Sales	-0.13155E-05	0.6695E-06	-1.965	0.04941
ΔSales	-0.86932E-06	0.1041E-05	-0.835	0.40361
%ΔSales	0.24294	0.7788	0.312	0.75510
ΔDepreciation	0.64086E-05	0.3737E-04	0.171	0.86384
Depreciation	-0.17871E-04	0.1467E-04	-1.218	0.22327
%ΔDepreciation	0.34480	0.8411	0.410	0.68184
ΔDividend Per Share	-0.26951	0.2886	-0.934	0.35035
%ΔDividend Per Share	0.13167E-01	0.3095	0.043	0.96607
Depreciation/Fixed Assets	0.69990	0.6177	1.133	0.25715
ΔDepreciation/Fixed Assets	0.68776E-01	1.459	0.047	0.96239
%Δ Depreciation/Fixed Assets	0.54776E-01	1.569	1.457	0.78139
Return On Opening Equity	-0.60937	0.2781	-2.191	0.02846
ΔReturn On Opening Equity	-0.59285	0.4278	-1.386	0.16585
%ΔReturn On Opening Equity	-0.29035	0.3667	-0.792	0.42851
Capital Expenditure/Total Assets	-12.836	12.97	-0.989	0.32249
ΔCapital Expenditure/Total Assets	5.3184	12.33	0.431	0.66621
%Δ Capital Expenditure/Total Assets	4.3564	13.53	1.467	0.54621
Capital Expenditure	-0.21295E-04	0.1449E-04	-1.470	0.14168
ΔCapital Expenditure	-0.22585E-04	0.2742E-04	-0.824	0.41015
%ΔCapital Expenditure	-0.32442E-01	0.6986E-01	-0.464	0.64238
Debt/Equity	-0.54187E-01	0.6248E-01	-0.867	0.38583
ΔDebt/Equity	0.24406E-02	0.1967E-01	0.124	0.90127
%ΔDebt/Equity	-0.17812	0.3566	-0.499	0.61743
Times Interest Earned	-0.10358E-02	0.1350E-01	-0.077	0.93882
ΔTimes Interest Earned	-0.56230E-02	0.1784E-01	-0.315	0.75263
%ΔTimes Interest Earned	-0.45463E-01	0.2150	-0.211	0.83255
Sales/Total Assets	-1.0894	0.4983	-2.186	0.02880
ΔSales/Total Assets	-1.2308	0.6029	-2.041	0.04121
%ΔSales/Total Assets	-1.8434	0.9748	-1.891	0.05861
Return On Total Assets	-0.57060E-01	0.2862E-01	-1.994	0.04618
ΔReturn On Total Assets	-0.30383E-01	0.4916E-01	-0.618	0.53655
%ΔReturn On Total Assets	-0.29091	0.3762	-0.773	0.43935
Return On Closing Equity	-0.60937	0.2781	-2.191	0.02846
ΔReturn On Closing Equity	-0.59285	0.4278	-1.386	0.16585
%ΔReturn On Closing Equity	-0.29035	0.3667	-0.792	0.42851
Operating Profit/Sales	-7.9215	4.433	-1.787	0.07398
ΔOperating Profit/Sales	-4.4106	9.581	-0.460	0.64526
%ΔOperating Profit/Sales	-1.7562	1.177	-1.492	0.13582
Net Profit Margin	-0.62627E-01	0.5300E-01	-1.182	0.23733
ΔNet Profit Margin	-0.12997E-01	0.1607	-0.081	0.93553

%ΔNet Profit Margin	0.89336E-01	0.2237	0.399	0.68960
Sales/Cashh	-0.13169E-03	0.3227E-03	-0.408	0.68322
ΔSales/Cash	-0.28045E-03	0.4534E-03	-0.619	0.53623
%ΔSales/Cash	-0.78017E-01	0.1399	-0.558	0.57716
Sales/Inventory	0.94497E-02	0.3097E-01	0.305	0.76026
ΔSales/Inventory	0.95008E-03	0.4333E-01	0.022	0.98251
%ΔSales/Inventory	-0.51353	0.6309	-0.814	0.41565
Sales/Working Capital	-0.11124E-01	0.1949E-01	-0.571	0.56812
ΔSales/Working Capital	-0.68464E-02	0.3224E-01	-0.212	0.83185
%ΔSales/Working Capital	-0.34062	0.4284	-0.795	0.42658
Sales/Fixed Assets	-1.1894	0.6954	-1.186	0.12880
ΔSales/Fixed Assets	-1.2488	0.6119	-1.456	0.14121
%ΔSales/Fixed Assets	-1.4624	0.7851	-1.621	0.15861
ΔTotal Assets	-0.28866E-06	0.1108E-05	-0.261	0.79447
%ΔTotal Assets	2.3582	0.8028	2.937	0.00331
Cash Flow/Total Debt	-0.22233E-01	0.1052E-01	-2.114	0.03451
Working Capital/Total Assets	-0.72311	1.295	-0.559	0.57650
ΔWorking Capital/Total Assets	0.20851	1.820	0.115	0.90880
%ΔWorking Capital/Total Assets	-0.43320E-01	0.2789	-0.155	0.87655
ΔFunds	-0.50240E-05	0.6145E-05	-0.818	0.41357
ΔTuses	-0.49474E-06	0.3053E-05	-0.162	0.87129
Working Capital	-0.49379E-05	0.3271E-05	-1.509	0.13120
ΔWorking Capital	0.63096E-06	0.1992E-05	0.317	0.75147
%ΔWorking Capital	0.16330	0.2241	0.729	0.46619
Total Income/Cash Flow	-0.19403E-04	0.2985E-04	-0.650	0.51566

**Table A2e: Univariate Logit Estimation For The Chemical Industry For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1980-88.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
Current ratio	0.13586E-01	0.6415E-01	0.212	0.83228
Δcurrent ratio	0.60261E-01	0.8316E-01	0.725	0.46868
%ΔCurrent ratio	0.28229E-03	0.1671E-01	0.017	0.98652
Quick Asset ratio	-0.87375	0.5745	-1.521	0.12830
ΔQuick Asset ratio	-0.16359	0.5004	-0.327	0.74370
%ΔQuick Asset ratio	-0.45582	0.5832	-0.782	0.43447
Debtors ratio	0.27391E-01	0.7491E-02	3.657	0.00026
Δdebtors ratio	0.19791E-01	0.8053E-02	2.457	0.01399
%ΔDebtors ratio	1.5020	0.6210	2.419	0.01558
Inventory Turnover	-0.31162E-01	0.3620E-01	-0.861	0.38936
Δinventory Turnover	0.30924E-02	0.3987E-01	0.078	0.93818
%ΔInventory Turnover	0.17081E-02	0.4623	0.004	0.99705
Inventory Turnover	0.55253E-01	1.175	0.047	0.96248
Δinventory Turnover	0.34782	1.552	0.224	0.82265
Inventory	-0.24403E-06	0.5746E-06	-0.425	0.67105
Δinventory	0.20383E-05	0.5430E-05	0.375	0.70739
%ΔInventory	0.50093	0.3472	1.443	0.14911
Sales	-0.72241E-07	0.1086E-06	-0.665	0.50585
Δsales	-0.32989E-07	0.7736E-06	-0.043	0.96598
%ΔSales	0.10400	0.6156	0.169	0.86585
Δdepreciation	-0.13912E-04	0.3316E-04	-0.420	0.67480
Depreciation	-0.10803E-04	0.8833E-05	-1.223	0.22130
%ΔDepreciation	0.45059E-01	0.4870	0.093	0.92628
Δdividend Per Share	-0.19108	0.1230	-1.554	0.12023
%ΔDividend Per Share	-0.33249	0.4188	-0.794	0.42721
Depreciation/Fixed Assets	0.29254	0.2342	1.249	0.21166
ΔDepreciation/Fixed Assets	0.54049	0.6086	0.888	0.37449
%Δ depreciation/Fixed Assets	0.45649	0.7886	0.998	0.24579
Return On Opening Equity	-0.87730	0.2563	-3.423	0.00062
DebtorsRatio	-0.48296	0.2592	-1.863	0.06241
%ΔReturn On Opening Equity	-0.43477	0.2390	-1.819	0.06890
Capital Expenditure/Total Assets	-10.217	10.11	-1.011	0.31206
Δcapital Expenditure/Total Assets	-2.0655	8.643	-0.239	0.81112
%Δ Capital Expenditure/Total Assets	-3.5455	9.456	-1.452	0.78412
Capital Expenditure	-0.62640E-05	0.6777E-05	-0.924	0.35534
Δcapital Expenditure	-0.44623E-06	0.1052E-04	-0.042	0.96616
%ΔCapital Expenditure	-0.10819	0.9448E-01	-1.145	0.25217
Debt/Equity	-0.64495E-01	0.4784E-01	-1.348	0.17762
Δdebt/Equity	0.89641E-03	0.2017E-01	0.044	0.96454
%ΔDebt/Equity	-0.63155E-01	0.2543	-0.248	0.80386
Times Interest Earned	0.12842E-03	0.6238E-03	0.206	0.83689
Δtimes Interest Earned	0.14540E-03	0.9508E-03	0.153	0.87846
%ΔTimes Interest Earned	0.17294E-03	0.5644E-03	0.306	0.75930
Sales/Total Assets	-0.80603	0.3128	-2.577	0.00997
Δsales/Total Assets	-0.52761	0.3950	-1.336	0.18169
%ΔSales/Total Assets	-0.71726	0.5529	-1.297	0.19452
Return on Total Assets	-0.54876E-01	0.2066E-01	-2.656	0.00792
ΔReturn on Total Assets	-0.59211E-02	0.2077E-01	-0.285	0.77556
%ΔReturn on Total Assets	-0.42390	0.2379	-1.782	0.07479
Return on closing equity	-0.87090	0.2558	-3.404	0.00066
ΔReturn on closing equity	-0.48666	0.2598	-1.873	0.06102
%ΔReturn on closing equity	-0.44203	0.2406	-1.837	0.06620
Operating profit/sales	-7.5399	3.321	-2.271	0.02318
Δoperating profit/sales	-0.64460	1.680	-0.384	0.70122
%ΔOperating profit/sales	-0.12860	0.2955	-0.435	0.66340

Net Profit Margin	-0.39607E-01	0.3227E-01	-1.227	0.21973
Δnet Profit Margin	-0.14260	0.8262E-01	-1.726	0.08435
%ΔNet Profit Margin	-0.19849	0.1521	-1.305	0.19182
Sales/cash	0.15004E-03	0.1726E-03	0.869	0.38458
Δsales/cash	0.18388E-03	0.3259E-03	0.564	0.57262
%ΔSales/cash	0.51978E-02	0.1327E-01	0.392	0.69538
Sales/Inventory	-0.26445E-01	0.3762E-01	-0.703	0.48205
Δsales/inventory	-0.83744E-03	0.4145E-01	-0.020	0.98388
%ΔSales/inventory	-0.48345	0.5317	-0.909	0.36320
Sale/working capital	0.28606E-02	0.1542E-01	0.186	0.85278
Δsales/working capital	0.23335E-01	0.2398E-01	0.973	0.33039
%ΔSales/working capital	-0.55978E-01	0.1987	-0.282	0.77817
Sales/Fixed Assets	-0.80603	0.3128	-2.577	0.00997
Δsales/Fixed Assets	-0.52761	0.3950	-1.336	0.18169
%ΔSales/Fixed Assets	-0.71726	0.5529	-1.297	0.19452
ΔTotal Assets	0.33257E-06	0.8363E-06	0.398	0.69088
%ΔTotal Assets	1.0217	0.4584	2.229	0.02581
Cash Flow/Total Debt	0.36395E-03	0.9308E-03	0.391	0.69579
Working Capital/Total Assets	-0.67537	0.8828	-0.765	0.44427
ΔWorking Capital/Total Assets	-0.33884	1.324	-0.256	0.79797
%ΔWorking Capital/Total Assets	-0.12440	0.2289	-0.543	0.58683
Δfunds	0.15472E-05	0.3119E-05	0.496	0.61990
Δtuses	-0.11157E-06	0.2582E-05	-0.043	0.96554
Working Capital	-0.27375E-07	0.5057E-06	-0.054	0.95683
ΔWorking Capital	0.26284E-05	0.1881E-05	1.397	0.16235
%ΔWorking Capital	0.17459	0.1756	0.994	0.32010
Total Income/Cash Flow	0.78959	0.7985	1.004	0.62110

## Stores And Chemical Industries Together

**Table A3: Univariate Logit Estimation For The Stores and Chemical Industries For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1980-84.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob(t) ≥ x</i>
Current ratio	0.12242E-05	0.1153E-05	1.456	0.20465
ΔCurrent ratio	4.5618	10.50	0.616	0.84515
%ΔCurrent ratio	-0.23118E-01	0.1968	-1.146	0.86991
Quick Asset ratio	-0.56270	0.5853	-0.899	0.25424
Δ Quick Asset ratio	-1.6456	0.9782	-1.515	0.10635
%ΔQuick Asset ratio	-1.4561	2.573	-0.690	0.49667
Debtors ratio	-0.12604E-02	0.6328E-02	-0.417	0.72094
Δ Debtors ratio	0.32450E-01	0.2118E-01	1.496	0.11053
%ΔDebtor s ratio	0.65568E-06	0.2466E-04	0.125	0.99984
Inventory Turnover	-0.87597E-01	0.8977E-01	-1.229	0.30337
ΔInventory Turnover	-0.54907	0.7805	-0.645	0.54474
%Δ Inventory Turnover	0.42361E-02	0.4130E-02	1.019	0.30838
Inventory/Total Assets	1.2789	1.219	0.975	0.32969
ΔInventory /Total Assets	-0.12254E-02	1.046	-0.101	0.74803
%ΔInventory /Total Assets	-0.15646E-01	0.4985	-0.133	0.97271
Inventory	0.81236E-06	0.9423E-06	0.953	0.39233
ΔInventory	-0.54708E-01	0.1463	-0.456	0.63333
%ΔInventory	0.93456E-04	0.2402E-02	1.139	0.96745
Sales	0.14561E-06	0.1804E-06	0.459	0.44579
ΔSales	3.5469	1.566	2.178	0.00961
%ΔSales	-0.44565E-05	0.2246E-05	-1.784	0.06383
Depreciation	-2.6789	1.261	-2.329	0.09637
ΔDepreciation	-0.361452E-04	0.4863E-04	-0.752	0.45191
%ΔDepreciation	0.24067E-03	0.4658E-02	1.112	0.78419
ΔDividend Per Share	0.34521	0.6597	0.647	0.54782
%ΔDividend Per Share	0.44451E-01	0.2319E-01	1.007	0.15651
Depreciation/Fixed Assets	1.44236	0.5588	1.578	0.14593
ΔDepreciation/Fixed Assets	0.29127	0.3356	0.852	0.38560
%Δ Depreciation/Fixed Assets	0.45627	0.3356	0.741	0.45630
Return on opening equity	-0.63452E-02	0.7126E-02	-0.890	0.37364
Δreturn on opening equity	0.37897	0.6019	0.501	0.61662
%ΔReturn on opening equity	0.51459E-05	0.3083E-05	1.078	0.17540
Capital Expenditure/Total Assets	-0.54481E-04	0.4408E-04	-1.236	0.21649
Δcapital Expenditure/Total Assets	0.18743E-03	0.2131E-02	0.089	0.92909
%Δ Capital Expenditure/Total Assets	0.22243E-03	0.2131E-02	0.089	0.92909
Capital Expenditure	0.53453E-05	0.1422E-04	0.254	0.65330
Δcapital Expenditure	0.12459	0.3886	0.364	0.54784
%ΔCapital Expenditure	0.40840E-01	0.5528E-01	0.639	0.46003
Debt/Equity	-0.96711E-01	0.1070	-0.822	0.24518
ΔDebt/Equity	-0.23493	0.4859	-0.553	0.79875
%ΔDebt/Equity	0.85156E-01	0.1018	0.886	0.87114
Times Interest Earned	-0.20013E-01	0.1593E-01	-1.454	0.18988
Δtimes Interest Earned	0.998562E-02	0.7984E-02	1.351	0.11210
%ΔTimes Interest Earned	0.94694E-01	0.1475	0.662	0.66664
Sales/Total Assets	0.24705E-05	0.1091E-04	0.226	0.56232
ΔSales /Total Assets	0.18885	0.3607	0.637	0.55557
%ΔSales/Total Assets	0.14301E-03	0.2608E-02	0.155	0.88899
Return on total assets	-0.19784	0.9095E-01	-1.885	0.00061
ΔReturn on total assets	0.74567	1.119	0.5989	0.23131
%ΔReturn on total assets	0.19773E-03	0.2213E-02	0.236	0.99990
Return on closing equity	-0.34432E-01	0.1365E-01	-1.745	0.41265
Δreturn on closing equity	-0.97845E-02	0.1940E-01	-0.514	0.56725
%ΔReturn on closing equity	0.40459E-01	0.3411E-01	0.186	0.42358

Operating profit/Sales	-0.12908E-05	0.8464E-05	-0.155	0.54440
ΔOperating profit/Sales	-0.18585	0.1139	-1.611	0.00475
%ΔOperating profit/ Sales	-0.36957	0.8836	-0.798	0.77777
Net Profit Margin	-0.10516	0.4217E-01	-2.314	0.04563
Δ Net Profit Margin	1.0771	0.7570	1.616	0.14117
%ΔNet Profit Margin	0.70964	2.145	0.231	0.89572
Sales/Cash	-0.50053E-04	0.7546E-04	-0.673	0.60713
ΔSales/Cash	0.24580E-03	0.4618E-02	0.552	0.92222
%ΔSales/Cash	-0.15638	0.1114	-1.512	0.18721
Sales/Inventory	0.16651E-04	0.3615E-04	0.354	0.78407
ΔSales/Inventory	0.15961E-01	0.2240E-01	0.654	0.69459
%ΔSales/Inventory	-0.95630E-03	0.5403E-02	-0.144	0.41227
Sales/Working Capital	-0.78412E-02	0.1099E-01	-0.621	0.66622
ΔSales/Working Capital	-0.67703E-05	0.4032E-04	-0.245	0.06665
%ΔSales/Working Capital	0.14626E-01	0.9443E-01	0.7845	0.63145
Sales/Fixed Assets	0.00005E-05	0.2451E-04	0.226	0.92092
ΔSales/Fixed Assets	0.10005	0.1444	0.437	0.51117
%ΔSales/Fixed Assets	0.14301E-03	0.2677	0.098	0.87416
Δ Total Assets	-0.44568	0.3059	-1.786	0.11728
%ΔTotal Assets	14.256	12.04	1.293	0.19595
Cash Flow/Total Assets	-0.12265E-01	0.5975E-01	-1.458	0.93735
Working Capital /Total Assets	-0.58795E-02	0.7282E-02	-0.821	0.41152
Δ Working Capital / Total Assets	0.12379E-05	0.6986E-06	1.662	0.07641
%ΔWorking Capital/ Total Assets	-0.75099	0.9780	-0.768	0.57454
ΔFunds	-0.10452E-01	0.2622E-01	-0.305	0.79618
Δ Uses	-0.00052E-01	0.0078E-01	-0.698	0.87418
Working Capital	-0.57569	1.030	-0.587	0.57000
Δworking Capital	-26.597	6.463	-5.412	0.00001
%ΔWorking Capital	-0.12457E-01	0.3476	-0.1087	0.87921
Total Income/Cash Flow	0.85628E-01	0.1085	0.456	0.74518



**Table A3a: Univariate Logit Estimation For The Stores and Chemical Industries For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1981-85.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
Current ratio	0.13642E-05	0.1153E-05	1.183	0.23665
ΔCurrent ratio	5.8118	11.50	0.506	0.61315
%ΔCurrent ratio	-0.30918E-01	0.1888	-0.164	0.86991
Quick Asset ratio	-0.46770	0.5853	-0.799	0.42424
Δ Quick Asset ratio	-1.5796	0.9782	-1.615	0.10635
%ΔQuick Asset ratio	-1.7491	2.573	-0.680	0.49667
Debtors ratio	-0.22604E-02	0.6328E-02	-0.357	0.72094
Δ Debtors ratio	0.33800E-01	0.2118E-01	1.596	0.11053
%ΔDebtor s ratio	0.62008E-06	0.2466E-04	0.025	0.97994
Inventory Turnover	-0.92397E-01	0.8977E-01	-1.029	0.30337
ΔInventory Turnover	-0.54907	0.7805	-0.704	0.48174
%Δ Inventory Turnover	0.42066E-02	0.4130E-02	1.019	0.30838
Inventory/Total Assets	1.1879	1.219	0.975	0.32969
ΔInventory /Total Assets	-0.12679E-02	1.046	-0.001	0.99903
%ΔInventory /Total Assets	-0.16426E-01	0.4985	-0.033	0.97371
Inventory	0.80336E-06	0.9423E-06	0.853	0.39393
ΔInventory	-0.69608E-01	0.1463	-0.476	0.63426
%ΔInventory	0.93710E-04	0.2402E-02	0.039	0.96888
Sales	0.11531E-06	0.1804E-06	0.639	0.52279
ΔSales	3.4059	1.566	2.175	0.02961
%ΔSales	-0.44845E-05	0.2246E-05	-1.997	0.04583
Depreciation	-2.6852	1.261	-2.129	0.03327
ΔDepreciation	-0.36582E-04	0.4863E-04	-0.752	0.45191
%ΔDepreciation	0.24067E-03	0.4658E-02	0.052	0.95879
ΔDividend Per Share	0.33479	0.6597	0.507	0.61182
%ΔDividend Per Share	0.44223E-01	0.2319E-01	1.907	0.05651
Depreciation/Fixed Assets	1.4408	0.5588	2.578	0.00993
ΔDepreciation/Fixed Assets	0.29254	0.3356	0.872	0.38330
%Δ Depreciation/Fixed Assets	0.15642	0.12356	0.948	0.28790
Return on opening equity	-0.63396E-02	0.7126E-02	-0.890	0.37364
Δreturn on opening equity	0.30137	0.6019	0.501	0.61662
%ΔReturn on opening equity	0.54819E-05	0.3083E-05	1.778	0.07540
Capital Expenditure/Total Assets	-0.54481E-04	0.4408E-04	-1.236	0.21649
Δcapital Expenditure/Total Assets	0.18963E-03	0.2131E-02	0.089	0.92909
%Δ Capital Expenditure/Total Assets	0.00954E-03	0.1111E-02	1.089	0.87909
Capital Expenditure	0.52263E-05	0.1422E-04	0.367	0.71330
Δcapital Expenditure	0.18129	0.3886	0.467	0.64084
%ΔCapital Expenditure	0.40840E-01	0.5528E-01	0.739	0.46002
Debt/Equity	-0.96711E-01	0.1070	-0.904	0.36618
ΔDebt/Equity	-0.23493	0.4859	-0.483	0.62875
%ΔDebt/Equity	0.85156E-01	0.1018	0.836	0.40294
Times Interest Earned	-0.25393E-01	0.1593E-01	-1.594	0.11088
Δtimes Interest Earned	0.99848E-02	0.7984E-02	1.251	0.21110
%ΔTimes Interest Earned	0.94694E-01	0.1475	0.642	0.52085
Sales/Total Assets	0.24705E-05	0.1091E-04	0.226	0.82092
ΔSales /Total Assets	0.19365	0.3607	0.537	0.59137
%ΔSales/Total Assets	0.14301E-03	0.2608E-02	0.055	0.95626
Return on total assets	-0.19784	0.9095E-01	-2.175	0.02961
ΔReturn on total assets	0.65817	1.119	0.588	0.55631
%ΔReturn on total assets	0.19773E-03	0.2213E-02	0.089	0.92880
Return on closing equity	-0.34432E-01	0.1365E-01	-2.523	0.01165
Δreturn on closing equity	-0.99715E-02	0.1940E-01	-0.514	0.60725
%ΔReturn on closing equity	0.40459E-01	0.3411E-01	1.186	0.23558
Operating profit/Sales	-0.12908E-05	0.8464E-05	-0.152	0.87880
ΔOperating profit/Sales	-0.18585	0.1139	-1.632	0.10275
%ΔOperating profit/ Sales	-0.36957	0.8836	-0.418	0.67577
Net Profit Margin	-0.10516	0.4217E-01	-2.494	0.01263
Δ Net Profit Margin	1.0871	0.7570	1.436	0.15097

%ΔNet Profit Margin	0.70964	2.145	0.331	0.74072
Sales/Cash	-0.50053E-04	0.7546E-04	-0.663	0.50713
ΔSales/Cash	0.23980E-03	0.4618E-02	0.052	0.95858
%ΔSales/Cash	-0.15638	0.1114	-1.404	0.16021
Sales/Inventory	0.16651E-04	0.3615E-04	0.461	0.64507
ΔSales/Inventory	0.15961E-01	0.2240E-01	0.712	0.47619
%ΔSales/Inventory	-0.83430E-03	0.5403E-02	-0.154	0.87727
Sales/Working Capital	-0.68312E-02	0.1099E-01	-0.622	0.53422
ΔSales/Working Capital	-0.67703E-05	0.4032E-04	-0.168	0.86665
%ΔSales/Working Capital	0.12526E-01	0.9443E-01	0.133	0.89448
Sales/Fixed Assets	0.35545E-05	0.2091E-04	0.254	0.98892
ΔSales/Fixed Assets	0.20165	0.4567	0.637	0.56667
%ΔSales/Fixed Assets	0.14301E-03	0.6358E-02	0.655	0.87541
Δ Total Assets	-0.47908	0.3059	-1.566	0.11728
%ΔTotal Assets	15.566	12.04	1.293	0.19595
Cash Flow/Total Assets	-0.12265E-01	0.5975E-01	-0.205	0.83735
Working Capital /Total Assets	-0.59805E-02	0.7282E-02	-0.821	0.41152
Δ Working Capital / Total Assets	0.12379E-05	0.6986E-06	1.772	0.07641
%ΔWorking Capital/ Total Assets	-0.75099	0.9780	-0.768	0.44254
ΔFunds	-0.10629E-01	0.2622E-01	-0.405	0.68518
Δ Uses	-0.11229E-01	0.6892E-01	-1.079	0.89718
Working Capital	-0.57569	1.030	-0.559	0.57634
Δworking Capital	-26.597	6.463	-4.115	0.00004
%ΔWorking Capital	-0.34817E-01	0.3476	-0.100	0.92021
Total Income/Cash Flow	0.88958E-01	0.1085	0.820	0.41218

**Table A3b: Univariate Logit Estimation For The Stores And Chemical Industries For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1982-86.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob t &gt;=x</i>
Current ratio	0.21666E-05	0.1249E-05	1.735	0.08281
ΔCurrent ratio	-11.555	12.79	-0.903	0.36644
%Current ratio	-0.36691E-01	0.2150	-0.171	0.86447
Quick Asset ratio	-0.82334	0.7510	-1.096	0.27293
ΔQuick Asset ratio	-2.0467	1.110	-1.845	0.06509
%ΔQuick Asset ratio	-2.1614	3.025	-0.714	0.47494
Debtors ratio	-0.33113E-02	0.7311E-02	-0.453	0.65062
ΔDebtors ratio	-0.50654	0.5977	-0.847	0.39675
%ΔDebtors ratio	-0.31263E-06	0.2664E-04	-0.012	0.99064
Inventory turnover	-0.51469E-01	0.8728E-01	-0.590	0.55538
Δ Inventory turnover	-0.81118E-01	0.5287	-0.153	0.87807
%ΔInventory turnover	0.44900E-02	0.4931E-02	0.911	0.36250
Inventory/total assets	0.64371	1.468	0.438	0.66107
ΔInventory/total assets	0.60210	1.164	0.517	0.60511
%ΔInventory/total assets	0.60469E-01	0.4220	0.143	0.88607
Inventory	0.96611E-06	0.8789E-06	1.099	0.27168
ΔInventory	-0.11795	0.1460	-0.808	0.41926
%ΔInventory	0.10446E-01	0.6665E-01	0.157	0.87546
Sales	0.13256E-06	0.1649E-06	0.804	0.42151
ΔSales	0.57072	2.435	0.234	0.81470
%Δsales	0.58569E-05	0.5063E-04	0.116	0.90791
Depreciation	-0.31957E-04	0.4969E-04	-0.643	0.52013
ΔDepreciation	-1.5304	1.428	-1.072	0.28393
%ΔDepreciation	0.38047	0.1697	2.242	0.02498
ΔDividend Per Share	0.46549	0.6964	0.668	0.50388
%ΔDividend Per Share	0.36873E-02	0.3493E-01	0.106	0.91594
Depreciation/fixed assets	1.1123	0.7812	1.424	0.15447
Δ Depreciation/fixed assets	0.0023	0.0012	0.454	0.45247
%ΔDepreciation/fixed assets	0.41624	0.3202	1.300	0.19360
Return on opening equity	-0.71183E-02	0.7388E-02	-0.964	0.33527
Δ Return on opening equity	0.38872	0.5749	0.676	0.49893
%ΔReturn on opening equity	0.67016E-05	0.3945E-05	1.699	0.08935
Capital expenditure/total assets	-0.20830E-04	0.8286E-05	-2.514	0.01194
Δcapital expenditure/total assets	-0.15866E-04	0.1963E-04	-0.808	0.41894
%Δ capital expenditure/total assets	-0.12586E-04	0.0257E-04	-1.056	0.54794
Capital expenditure	0.72802E-05	0.1279E-04	0.569	0.56935
Δcapital expenditure	0.61987E-01	0.6942	0.089	0.92885
%Δcapital expenditure	0.20575E-01	0.7038E-01	0.292	0.77002
Debt/equity	-0.89330E-01	0.1207	-0.740	0.45940
Δdebt/equity	-1.1533	1.481	-0.779	0.43603
%ΔDebt/Equity	0.47656E-01	0.7457E-01	0.639	0.52279
Times interest earned	-0.12525E-01	0.2835E-01	-0.442	0.65864
ΔTimes interest earned	-0.39009E-02	0.1961E-01	-0.199	0.84230
%ΔTimes interest earned	0.11751	0.1485	0.792	0.42864
Sales/total assets	0.58361E-05	0.1128E-04	0.517	0.60493
Δsales/total assets	-0.74758	0.9198	-0.813	0.41635
%Δsales/total assets	0.39891E-01	0.1743	0.229	0.81902
ΔReturn on total assets	-0.16031	0.1185	-1.352	0.17629
%ΔReturn on total assets	0.17436E-03	0.2782E-02	0.063	0.95003
Return on closing equity	-0.35184E-01	0.1461E-01	-2.408	0.01604
ΔReturn on closing equity	-0.12044E-01	0.2090E-01	-0.576	0.56442
%ΔReturn on closing equity	0.16354E-02	0.4260E-01	0.038	0.96938
Operating profit/sales	0.17360E-05	0.7382E-05	0.235	0.81408
ΔOperating profit/sales	-0.16372	0.1496	-1.094	0.27394
%ΔOperating profit/sales	-0.21479	0.8683	-0.247	0.80463
Net profit margin	-0.11441	0.4782E-01	-2.393	0.01673
Δnet profit margin	2.1637	1.101	1.964	0.04947
%Δnet profit margin	2.8261	2.590	1.091	0.27524

Sales/ Cash	-0.45502E-04	0.7771E-04	-0.586	0.55820
Δsales/Cash	0.29725	0.1389	2.139	0.03241
%Δsales/Cash	-0.13522	0.1533	-0.882	0.37781
Sales/inventory	0.34585E-04	0.5063E-04	0.683	0.49454
Δsales/inventory	0.47596E-02	0.3112E-01	0.153	0.87842
%Δsales/inventory	-0.48195	0.4961	-0.971	0.33131
Sales/working capital	-0.61623E-02	0.1363E-01	-0.452	0.65108
Δsales/working capital	-0.28154E-04	0.1289E-03	-0.218	0.82716
%Δsales/working capital	0.37756E-01	0.7818E-01	0.483	0.62915
Sales/fixed assets	0.44461E-05	0.5478E-04	0.617	0.85293
Δsales/fixed assets	-0.65458	0.8998	-0.913	0.54735
%Δsales/fixed assets	0.47891E-01	0.1883	0.2289	0.98702
Δtotal assets	-0.38442	0.4681	-0.821	0.41155
%Δtotal assets	-15.011	15.18	-0.989	0.32265
Cash flow/total debt	0.18956E-01	0.6478E-01	0.293	0.76979
Working capital/total assets	-0.60480E-02	0.8335E-02	-0.726	0.46808
Δworking capital/total assets	0.13995E-05	0.6766E-06	2.069	0.03858
%Δworking capital/total assets	-0.86818	1.158	-0.750	0.45323
Δfunds	-0.82175E-02	0.3767E-01	-0.218	0.82731
Δtuses	-0.85851E-02	0.3042E-01	-0.282	0.77776
Working capital	-0.53932	1.011	-0.533	0.59384
Δworking capital	-15.265	4.850	-3.148	0.00165
%Δworking capital	-0.55120E-01	0.4687	-0.118	0.90638
Total Income/Cash Flow	0.254110	1.2354	-1.245	0.00145

**Table A3c: Univariate Logit Estimation For The Stores And Chemical Industries For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1983-87.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
Current ratio	0.17831E-05	0.1213E-05	1.470	0.14159
ΔCurrent ratio	-26.216	10.77	-2.435	0.01490
%ΔCurrent ratio	-0.11117	0.3218	-0.345	0.72978
Quick Asset ratio	-0.33307	0.5416	-0.615	0.53860
ΔQuick Asset ratio	-1.9094	0.9415	-2.028	0.04256
%ΔQuick Asset ratio	-4.6765	5.247	-0.891	0.37278
Debtors ratio	-0.45027E-02	0.6740E-02	-0.668	0.50408
ΔDebtors ratio	0.50618E-01	0.5993E-01	0.845	0.39832
%ΔDebtors ratio	0.72741E-04	0.5635E-04	1.291	0.19677
Inventory Turnover	0.45086E-01	0.4321E-01	1.043	0.29679
ΔInventory Turnover	-0.48364	1.073	-0.451	0.65232
%ΔInventory Turnover	0.10315E-01	0.7708E-02	1.338	0.18081
Inventory/Totals Assets	-0.38867E-01	1.435	-0.027	0.97839
ΔInventory/Totals Assets	0.90719	1.052	0.862	0.38863
%ΔInventory/Totals Assets	0.53499	0.2777	1.927	0.05403
Inventory	-0.60088E-04	0.3500E-04	-1.717	0.08599
ΔInventory	-0.93586E-01	0.1351	-0.693	0.48839
%ΔInventory	0.69577E-01	0.3041E-01	2.288	0.02213
Sales	-0.11113E-04	0.6935E-05	-1.602	0.10907
ΔSales	0.16706	3.366	0.050	0.96042
%ΔSales	-0.17437E-02	0.2714E-02	-0.642	0.52062
ΔDepreciation	-0.32998	0.9960	-0.331	0.74041
Depreciation	-0.60889E-04	0.5650E-04	-1.078	0.28120
%ΔDepreciation	0.33979	0.1640	2.071	0.03831
ΔDividend Per Share	0.37293	0.6191	0.602	0.54692
%ΔDividend Per Share	0.58833E-01	0.6234E-01	0.944	0.34533
Depreciation/Fixed Assets	0.93953	0.7856	1.196	0.23174
ΔDepreciation/Fixed Assets	0.68763	0.2909	2.364	0.01807
%ΔDepreciation/Fixed Assets	0.45263	0.0009	1.364	0.14507
Return On Opening Equity	-0.52875E-02	0.7880E-02	-0.671	0.50220
ΔReturn On Opening Equity	0.54181E-01	0.5264	0.103	0.91801
%ΔReturn On Opening Equity	0.52197E-05	0.2485E-05	2.100	0.03570
Capital Expenditure/Totals Assets	-0.67993E-05	0.9079E-05	-0.749	0.45389
ΔCapital Expenditure/Totals Assets	-0.45064E-04	0.3290E-04	-1.370	0.17080
%ΔCapital Expenditure/Totals Assets	-0.32114E-03	0.4578E-03	-0.245	0.04587
Capital Expenditure	-0.23947E-02	0.1478E-02	-1.620	0.10516
ΔCapital Expenditure	-0.34816E-01	0.4055	-0.086	0.93158
%ΔCapital Expenditure	0.11370	0.9899E-01	1.149	0.25073
Debt/Equity	-0.14082	0.1173	-1.201	0.22987
ΔDebt/Equity	-2.9956	1.270	-2.359	0.01833
%ΔDebt/Equity	0.14761	0.6312E-01	2.339	0.01936
Times Interest Earned	-0.73467E-02	0.1211E-01	-0.607	0.54410
ΔTimes Interest Earned	0.66319E-02	0.1074E-01	0.617	0.53694
%ΔTimes Interest Earned	0.11673E-01	0.8651E-01	0.135	0.89267
Sales/Totals Assets	-0.17358E-04	0.1682E-04	-1.032	0.30204
ΔSales/Totals Assets	-0.31385	0.6293	-0.499	0.61796
%ΔSales/Totals Assets	-0.32322E-01	0.2448	-0.132	0.89494
Return On Total Assets	-0.55381	0.2222	-2.493	0.01267
ΔReturn On Total Assets	2.3704	1.070	2.216	0.02671
%ΔReturn On Total Assets	0.17985E-03	0.1834E-02	0.098	0.92189
Return On Closing Equity	-0.32712E-01	0.1536E-01	-2.130	0.03314
ΔReturn On Closing Equity	-0.27938	0.1061	-2.634	0.00843
%ΔReturn On Closing Equity	0.95628E-01	0.4844E-01	1.974	0.04835
Operating Profit/Sales	-0.13470E-04	0.1519E-04	-0.887	0.37517
ΔOperating Profit/Sales	-0.32713	0.2252	-1.453	0.14632
%ΔOperating Profit/Sales	-0.59290	1.006	-0.589	0.55564
Net Profit Margin	-0.95294E-01	0.3714E-01	-2.566	0.01029

ΔNet Profit Margin	1.5495	0.8305	1.866	0.06207
%ΔNet Profit Margin	2.5190	2.294	1.098	0.27214
Sales/Cash	-0.51800E-04	0.6751E-04	-0.767	0.44290
ΔSales/Cash	0.23001	0.1115	2.063	0.03907
%ΔSales/Cash	-0.21858	0.1858	-1.176	0.23955
Sales/Inventory	-0.22062E-04	0.7559E-04	-0.292	0.77038
ΔSales/Inventory	0.65978E-02	0.2958E-01	0.223	0.82348
%ΔSales/Inventory	-0.47615E-03	0.3584E-02	-0.133	0.89430
Sales/Working Capital	-0.25299E-02	0.7682E-02	-0.329	0.74190
ΔSales/Working Capital	0.77821E-04	0.4576E-04	1.701	0.08901
%ΔSales/Working Capital	0.47859E-01	0.6221E-01	0.769	0.44174
Sales/Fixed Assets	-0.14568E-04	0.1654E-04	-1332	0.45124
ΔSales/Fixed Assets	-0.45185	0.6893	-0.589	0.51796
%ΔSales/Fixed Assets	-0.32222E-01	0.2555	-0.145	0.99994
ΔTotal Assets	-0.83278	0.4123	-2.020	0.04342
%ΔTotal Assets	-11.768	17.07	-0.689	0.49066
Cash Flow/Total Debt	0.14956	0.6580E-01	2.273	0.02304
Working Capital	-0.54371E-02	0.8507E-02	-0.639	0.52272
ΔWorking Capital	0.38806E-06	0.8599E-06	0.451	0.65178
%ΔWorking Capital	-0.38691	1.028	-0.376	0.70667
ΔFunds	-1.0342	0.3150	-3.283	0.00103
ΔTuses	-0.82750	0.2430	-3.405	0.00066
Working Capital	-0.18415E-01	0.5713	-0.032	0.97429
ΔWorking Capital	-14.614	4.192	-3.486	0.00049
%ΔWorking Capital	-0.18670E-01	0.3239	-0.058	0.95403
Total Income/Cash Flow				

**Table A3d: Univariate Logit Estimation For The Stores And Chemical Industries For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1984-88.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
Current ratio	-0.70873E-06	0.2009E-05	-0.353	0.72431
ΔCurrent ratio	-21.336	9.957	-2.143	0.03212
%ΔCurrent ratio	-0.11371E-02	0.6087E-01	-0.019	0.98509
Quick Asset ratio	0.23284	0.3080	0.756	0.44963
ΔQuick Asset ratio	-0.45364	0.8711	-0.521	0.60252
%ΔQuick Asset ratio	-11.445	9.494	-1.205	0.22803
Debtors ratio	-0.92027E-02	0.7069E-02	-1.302	0.19298
ΔDebtors ratio	0.28345E-01	0.6650E-01	0.426	0.66991
%ΔDebtors ratio	0.85831E-04	0.5315E-04	1.615	0.10632
Inventory Turnover	0.36812E-01	0.3179E-01	1.158	0.24685
ΔInventory Turnover	-0.84855	1.312	-0.647	0.51767
%ΔInventory Turnover	0.18411E-01	0.9301E-02	1.979	0.04776
Inventory/Total Assets	0.85310	0.9956	0.857	0.39153
ΔInventory/Total Assets	-0.21066	0.7866	-0.268	0.78885
%ΔInventory/Total Assets	0.84648E-01	0.3086	0.274	0.78385
Inventory	-0.16701E-04	0.1194E-04	-1.398	0.16199
ΔInventory	0.31243E-02	0.3609E-01	0.087	0.93101
%ΔInventory	0.43921E-01	0.2685E-01	1.636	0.10193
Sales	-0.45827E-05	0.3160E-05	-1.450	0.14704
ΔSales	0.13692	1.417	0.097	0.92304
%ΔSales	0.13132E-03	0.5446E-03	0.241	0.80947
ΔDepreciation	0.11055	0.4035	0.274	0.78410
Depreciation	-0.39183E-03	0.2083E-03	-1.881	0.06002
%ΔDepreciation	0.51967	0.2074	2.506	0.01221
ΔDividend Per Share	-0.22561E-01	0.7080	-0.032	0.97458
%ΔDividend Per Share	-0.17115E-03	0.2394E-01	-0.007	0.99429
Depreciation/Fixed Assets	-0.10439	0.9020	-0.116	0.90786
ΔDepreciation/Fixed Assets	0.37602	0.2751	1.367	0.17173
%ΔDepreciatopm/Fixed Assets	0.25472	0.0001	0.321	0.24773
Return On Opening Equity	0.43151E-02	0.3821E-02	1.129	0.25878
ΔReturn On Opening Equity	0.25751	0.3665	0.703	0.48226
%ΔReturn On Opening Equity	0.22811E-05	0.4532E-05	0.503	0.61475
Capital Expenditure/Total Assets	-0.85676E-06	0.4968E-05	-0.172	0.86308
ΔCapital Expenditure/Total Assets	-0.76609E-04	0.3101E-04	-2.470	0.01351
%Δcapital expenditure/total assets	-0.18790E-04	0.2450E-04	-1.000	0.45351
Capital Expenditure	-0.15353E-03	0.1404E-03	-1.094	0.27417
ΔCapital Expenditure	-0.11334	0.3230	-0.351	0.72566
%ΔCapital Expenditure	0.13568	0.8497E-01	1.597	0.11032
Debt/Equity	-0.25813	0.1306	-1.976	0.04813
ΔDebt/Equity	-0.93146	1.326	-0.703	0.48231
%ΔDebt/Equity	0.14815	0.8799E-01	1.684	0.09224
Times Interest Earned	0.14416E-01	0.7774E-02	1.854	0.06370
ΔTimes Interest Earned	0.10885E-01	0.8164E-02	1.333	0.18243
%ΔTimes Interest Earned	-0.89436E-01	0.8426E-01	-1.061	0.28848
Sales/Total Assets	-0.30951E-05	0.1179E-04	-0.262	0.79295
ΔSales/Total Assets	-0.82237	0.6929	-1.187	0.23529
%ΔSales/Total Assets	0.42398E-01	0.1304	0.325	0.74507
Return On Total Assets	-0.23800	0.2627	-0.906	0.36490
ΔReturn On Total Assets	-0.30233	0.7122	-0.424	0.67120
%ΔReturn On Total Assets	-0.96824	0.5670	-1.708	0.08773
Return On Closing Equity	0.43567E-02	0.2753E-02	1.583	0.11351
ΔReturn On Closing Equity	-0.21415	0.1353	-1.583	0.11347
%ΔReturn On Closing Equity	0.48234E-01	0.5197E-01	0.928	0.35333
Operating Profit/Sales	-0.16375E-05	0.5522E-05	-0.297	0.76682
ΔOperating Profit/Sales	-1.5300	0.5613	-2.726	0.00642
%ΔOperating Profit/Sales	-0.60350	0.9330	-0.647	0.51774

Net Profit Margin	-0.82957E-01	0.3490E-01	-2.377	0.01745
ΔNet Profit Margin	-0.57032	1.037	-0.550	0.58247
%ΔNet Profit Margin	0.22983	2.755	0.083	0.93351
Sales/Cash	-0.25996E-04	0.5333E-04	-0.487	0.62596
ΔSales/Cash	0.38178	0.1182	3.229	0.00124
%ΔSales/Cash	-1.5855	0.6265	-2.531	0.01138
Sales/Inventory	-0.42356E-04	0.7800E-04	-0.543	0.58711
ΔSales/Inventory	0.20162E-01	0.2016E-01	1.000	0.31726
%ΔSales/Inventory	-0.42118E-03	0.3211E-02	-0.131	0.89563
Sales/Working Capital	0.63169E-02	0.6881E-02	0.918	0.35859
ΔSales/Working Capital	0.60939E-04	0.4701E-04	1.296	0.19490
%ΔSales/Working Capital	0.12361	0.1986	0.623	0.53359
Sales/Fixed Assets	-0.21451E-05	0.11879E-04	-0.362	0.69295
ΔSales/Fixed Assets	-0.72237	0.6929	-1.129	0.24449
%ΔSales/Fixed Assets	0.42398E-01	0.1304	0.625	0.87407
ΔTotal Assets	-0.50689	0.4122	-1.230	0.21875
%ΔTotal Assets	-8.8464	15.10	-0.586	0.55798
Cash Flow/Total Debt	0.80909E-01	0.5490E-01	1.474	0.14057
Working Capital/Total Assets	-0.11430E-01	0.5531E-02	-2.067	0.03876
ΔWorking Capital/Total Assets	-0.20517E-05	0.1749E-05	-1.173	0.24072
%ΔWorking Capital/Total Assets	-0.29890E-01	0.1250	-0.239	0.81109
ΔFunds	-0.88017E-01	0.3650	-0.241	0.80945
ΔTuses	-0.93469	0.4121	-2.268	0.02333
Working Capital	0.18852	0.6368	0.296	0.76718
ΔWorking Capital	-16.106	3.996	-4.030	0.00006
%ΔWorking Capital	0.16901E-01	0.1462	0.116	0.90800
Total Income/Cash Flow	-0.86829E-02	0.6595E-01	-0.132	0.89525



**Table A3d: Univariate Logit Estimation For The Stores And Chemical Industries For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1984-88.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
Current ratio	-0.70873E-06	0.2009E-05	-0.353	0.72431
ΔCurrent ratio	-21.336	9.957	-2.143	0.03212
%ΔCurrent ratio	-0.11371E-02	0.6087E-01	-0.019	0.98509
Quick Asset ratio	0.23284	0.3080	0.756	0.44963
ΔQuick Asset ratio	-0.45364	0.8711	-0.521	0.60252
%ΔQuick Asset ratio	-11.445	9.494	-1.205	0.22803
Debtors ratio	-0.92027E-02	0.7069E-02	-1.302	0.19298
ΔDebtors ratio	0.28345E-01	0.6650E-01	0.426	0.66991
%ΔDebtors ratio	0.85831E-04	0.5315E-04	1.615	0.10632
Inventory Turnover	0.36812E-01	0.3179E-01	1.158	0.24685
ΔInventory Turnover	-0.84855	1.312	-0.647	0.51767
%ΔInventory Turnover	0.18411E-01	0.9301E-02	1.979	0.04776
Inventory/Total Assets	0.85310	0.9956	0.857	0.39153
ΔInventory/Total Assets	-0.21066	0.7866	-0.268	0.78885
%ΔInventory/Total Assets	0.84648E-01	0.3086	0.274	0.78385
Inventory	-0.16701E-04	0.1194E-04	-1.398	0.16199
ΔInventory	0.31243E-02	0.3609E-01	0.087	0.93101
%ΔInventory	0.43921E-01	0.2685E-01	1.636	0.10193
Sales	-0.45827E-05	0.3160E-05	-1.450	0.14704
ΔSales	0.13692	1.417	0.097	0.92304
%ΔSales	0.13132E-03	0.5446E-03	0.241	0.80947
ΔDepreciation	0.11055	0.4035	0.274	0.78410
Depreciation	-0.39183E-03	0.2083E-03	-1.881	0.06002
%ΔDepreciation	0.51967	0.2074	2.506	0.01221
ΔDividend Per Share	-0.22561E-01	0.7080	-0.032	0.97458
%ΔDividend Per Share	-0.17115E-03	0.2394E-01	-0.007	0.99429
Depreciation/Fixed Assets	-0.10439	0.9020	-0.116	0.90786
ΔDepreciation/Fixed Assets	0.37602	0.2751	1.367	0.17173
%Δdepreciation/fixed assets	0.25402	0.1751	1.267	0.27173
Return On Opening Equity	0.43151E-02	0.3821E-02	1.129	0.25878
ΔReturn On Opening Equity	0.25751	0.3665	0.703	0.48226
%ΔReturn On Opening Equity	0.22811E-05	0.4532E-05	0.503	0.61475
Capital Expenditure/Total Assets	-0.85676E-06	0.4968E-05	-0.172	0.86308
ΔCapital Expenditure/Total Assets	-0.76609E-04	0.3101E-04	-2.470	0.01351
%Δcapital expenditure/total assets	-0.86909E-04	0.9521E-04	-1.350	0.11351
Capital Expenditure	-0.15353E-03	0.1404E-03	-1.094	0.27417
ΔCapital Expenditure	-0.11334	0.3230	-0.351	0.72566
%ΔCapital Expenditure	0.13568	0.8497E-01	1.597	0.11032
Debt/Equity	-0.25813	0.1306	-1.976	0.04813
ΔDebt/Equity	-0.93146	1.326	-0.703	0.48231
%ΔDebt/Equity	0.14815	0.8799E-01	1.684	0.09224
Times Interest Earned	0.14416E-01	0.7774E-02	1.854	0.06370
ΔTimes Interest Earned	0.10885E-01	0.8164E-02	1.333	0.18243
%ΔTimes Interest Earned	-0.89436E-01	0.8426E-01	-1.061	0.28848
Sales/Total Assets	-0.30951E-05	0.1179E-04	-0.262	0.79295
ΔSales/Total Assets	-0.82237	0.6929	-1.187	0.23529
%ΔSales/Total Assets	0.42398E-01	0.1304	0.325	0.74507
Return On Total Assets	-0.23800	0.2627	-0.906	0.36490
ΔReturn On Total Assets	-0.30233	0.7122	-0.424	0.67120
%ΔReturn On Total Assets	-0.96824	0.5670	-1.708	0.08773
Return On Closing Equity	0.43567E-02	0.2753E-02	1.583	0.11351
ΔReturn On Closing Equity	-0.21415	0.1353	-1.583	0.11347
%ΔReturn On Closing Equity	0.48234E-01	0.5197E-01	0.928	0.35333
Operating Profit/Sales	-0.16375E-05	0.5522E-05	-0.297	0.76682
ΔOperating Profit/Sales	-1.5300	0.5613	-2.726	0.00642
%ΔOperating Profit/Sales	-0.60350	0.9330	-0.647	0.51774
Net Profit Margin	-0.82957E-01	0.3490E-01	-2.377	0.01745
ΔNet Profit Margin	-0.57032	1.037	-0.550	0.58247

%ΔNet Profit Margin	0.22983	2.755	0.083	0.93351
Sales/Cash	-0.25996E-04	0.5333E-04	-0.487	0.62596
ΔSales/Cash	0.38178	0.1182	3.229	0.00124
%ΔSales/Cash	-1.5855	0.6265	-2.531	0.01138
Sales/Inventory	-0.42356E-04	0.7800E-04	-0.543	0.58711
ΔSales/Inventory	0.20162E-01	0.2016E-01	1.000	0.31726
%ΔSales/Inventory	-0.42118E-03	0.3211E-02	-0.131	0.89563
Sales/Working Capital	0.63169E-02	0.6881E-02	0.918	0.35859
ΔSales/Working Capital	0.60939E-04	0.4701E-04	1.296	0.19490
%ΔSales/Working Capital	0.12361	0.1986	0.623	0.53359
Sales/Fixed Assets	-0.30951E-05	0.1179E-04	-0.262	0.79295
ΔSales/Fixed Assets	-0.82237	0.6929	-1.187	0.23529
%ΔSales/Fixed Assets	0.42398E-01	0.1304	0.325	0.74507
ΔTotal Assets	-0.50689	0.4122	-1.230	0.21875
%ΔTotal Assets	-8.8464	15.10	-0.586	0.55798
Cash Flow/Total Debt	0.80909E-01	0.5490E-01	1.474	0.14057
Working Capital/Total Assets	-0.11430E-01	0.5531E-02	-2.067	0.03876
ΔWorking Capital/Total Assets	-0.20517E-05	0.1749E-05	-1.173	0.24072
%ΔWorking Capital/Total Assets	-0.29890E-01	0.1250	-0.239	0.81109
ΔFunds	-0.88017E-01	0.3650	-0.241	0.80945
ΔTuses	-0.93469	0.4121	-2.268	0.02333
Working Capital	0.18852	0.6368	0.296	0.76718
ΔWorking Capital	-16.106	3.996	-4.030	0.00006
%ΔWorking Capital	0.16901E-01	0.1462	0.116	0.90800
Total Income/Cash Flow	-0.86829E-02	0.6595E-01	-0.132	0.89525

**Table A3e: Univariate Logit Estimation For The Stores And Chemical Industries For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1980-88.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
Current ratio	0.72888E-06	0.1201E-05	0.607	0.54687
ΔCurrent ratio	-17.952	9.171	-1.957	0.05029
Quick Asset ratio	-0.63376E-01	0.3239	-0.196	0.84485
%ΔQuick Asset ratio	-2.1277	2.269	-0.938	0.34834
Debtors ratio	-0.42899E-02	0.4518E-02	-0.950	0.34234
ΔDebtors ratio	0.12833E-02	0.7938E-02	0.162	0.87157
%ΔDebtors ratio	0.27926E-04	0.4171E-04	0.670	0.50314
Inventory Turnover	0.22313E-02	0.3723E-01	0.060	0.95221
ΔInventory Turnover	-1.2477	0.5749	-2.170	0.02998
%ΔInventory Turnover	0.64566E-02	0.3374E-02	1.913	0.05569
Inventory/total Assets	0.64749	0.8542	0.758	0.44847
ΔInventory/total Assets	-0.17012	0.6350	-0.268	0.78879
%ΔInventory/total Assets	0.30191	0.2589	1.166	0.24357
Inventory	-0.66527E-06	0.1321E-05	-0.504	0.61453
ΔInventory	-0.62649E-02	0.3448E-01	-0.182	0.85583
%ΔInventory	0.41770E-01	0.2601E-01	1.606	0.10833
Sales	-0.17590E-06	0.2533E-06	-0.694	0.48739
ΔSales	-0.11636	0.2238	-0.520	0.60305
%ΔSales	-0.22806E-04	0.2635E-03	-0.087	0.93104
ΔDepreciation	-0.60970	0.6835	-0.892	0.37239
Depreciation	-0.14073E-03	0.7288E-04	-1.931	0.05349
%ΔDepreciation	0.38498	0.1646	2.339	0.01933
ΔDividend Per Share	0.19114	0.5048	0.379	0.70494
%ΔDividend Per Share	0.54086E-01	0.2048E-01	2.641	0.00827
Depreciation/Fixed Assets	0.18470	0.2143	0.862	0.38880
ΔDepreciation/Fixed Assets	0.23329	0.2358	0.989	0.32250
%Δ Depreciation/Fixed Assets	0.12329	0.1245	0.075	0.45650
Return On Opening Equity	0.11995E-02	0.5216E-02	0.230	0.81811
ΔReturn On Opening Equity	0.30275	0.3208	0.944	0.34535
%ΔReturn On Opening Equity	0.46836E-05	0.2188E-05	2.141	0.03229
Capital Expenditure/Total Assets	-0.12921E-04	0.5784E-05	-2.234	0.02550
ΔCapital Expenditure/Total Assets	-0.17718E-05	0.1961E-04	-0.090	0.92802
%Δ Capital Expenditure/Total Assets	-0.16668E-05	0.1856E-04	-0.198	0.89512
Capital Expenditure	-0.11349E-04	0.1468E-04	-0.773	0.43958
ΔCapital Expenditure	-0.10372	0.2797	-0.371	0.71076
%ΔCapital Expenditure	0.67047E-01	0.4520E-01	1.483	0.13799
Debt/Equity	-0.19262	0.8742E-01	-2.203	0.02758
ΔDebt/Equity	-0.21563	0.4386	-0.492	0.62299
%ΔDebt/Equity	0.11877	0.5513E-01	2.154	0.03121
Times Interest Earned	0.11500E-01	0.7239E-02	1.589	0.11214
ΔTimes Interest Earned	0.14743E-01	0.5213E-02	2.828	0.00468
%ΔTimes Interest Earned	-0.78889E-01	0.5612E-01	-1.406	0.15979
Sales/Total Assets	-0.66749E-05	0.1120E-04	-0.596	0.55103
ΔSales/Total Assets	-0.16994	0.3193	-0.532	0.59452
%ΔSales/Total Assets	0.15443E-03	0.3259E-02	0.047	0.96221
Return On Total Assets	-0.13077	0.8989E-01	-1.455	0.14574
ΔReturn On Total Assets	0.24293	0.6928	0.351	0.72586
%ΔReturn On Total Assets	0.17799E-03	0.1703E-02	0.104	0.91677
Return On Closing Equity	0.30240E-02	0.3057E-02	0.989	0.32250
ΔReturn On Closing Equity	-0.14194E-01	0.1689E-01	-0.841	0.40060
%ΔReturn On Closing Equity	0.69715E-01	0.2678E-01	2.603	0.00923
Operating Profit/Sales	-0.25295E-05	0.5107E-05	-0.495	0.62042
ΔOperating Profit/Sales	-0.44126E-01	0.1071	-0.412	0.68020
%ΔOperating Profit/Sales	-0.52648	0.6569	-0.801	0.42286
Net Profit Margin	-0.10665	0.2884E-01	-3.698	0.00022
ΔNet Profit Margin	0.40068	0.5990	0.669	0.50354
%ΔNet Profit Margin	0.23829	1.685	0.141	0.88754

Sales/Cash	-0.51720E-04	0.4626E-04	-1.118	0.26351
ΔSales/Cash	0.28540	0.1014	2.814	0.00490
%ΔSales/Cash	-0.16989	0.1023	-1.660	0.09691
Sales/Inventory	0.36471E-05	0.2293E-04	0.159	0.87361
ΔSales/Inventory	0.25562E-01	0.1349E-01	1.895	0.05814
%ΔSales/Inventory	-0.68544E-03	0.3151E-02	-0.218	0.82782
Sales/Working Capital	0.21542E-02	0.6904E-02	0.312	0.75502
ΔSales/Working Capital	0.85118E-06	0.1776E-04	0.048	0.96178
%ΔSales/Working Capital	0.27873E-01	0.7138E-01	0.391	0.69617
Sales/Fixed Assets	-0.56419E-05	0.1156E-04	-0.496	0.67803
ΔSales/Fixed Assets	-0.17894	0.4153	-0.645	0.78552
%ΔSales/Fixed Assets	0.14443E-03	0.2459E-02	0.147	0.98871
ΔTotal Assets	-0.47036	0.2553	-1.843	0.06538
%ΔTotal Assets	6.4548	10.09	0.639	0.52251
Cash Flow/Total Debt	0.29132E-01	0.4510E-01	0.646	0.51833
Working Capital/Total Assets	-0.14556E-01	0.6111E-02	-2.382	0.01722
ΔWorking Capital/Total Assets	0.38409E-06	0.6372E-06	0.603	0.54666
%ΔWorking Capital/Total Assets	-0.50821E-01	0.1485	-0.342	0.73210
ΔFunds	-0.73369E-02	0.2990E-01	-0.245	0.80618
ΔTuses	-0.10068E-01	0.2138E-01	-0.471	0.63779
Working Capital	-0.10837	0.4470	-0.242	0.80842
ΔWorking Capital	-21.049	3.766	-5.588	0.00000
%ΔWorking Capital	0.12478E-01	0.1202	0.104	0.91732
Total Income/Cash Flow	0.12547	0.1452	0.154	0.87666

## Multinomial Logit Estimations

**Binary Specification is formed based on the standardised mean of the  
%Δ operating profit**

### Stores Industry

**Table A1i: Multinomial Logit Estimation For The Stores Industry For The Identification Of The Accounting Descriptors Which Jointly Describe Future Earnings Changes For The Period 1980-84.**

<i>Accounting Descriptors</i>	<i>Accounting Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
Current ratio	-3.1802	1.832	-1.736	0.08262
Δcurrent ratio	5.1901	4.037	1.286	0.19856
Δ%current ratio	-1.3767	2.141	-0.643	0.52030
Δ%inventory	0.65458	5.457	0.120	0.90451
depreciation/fixed assets	26.538	21.87	1.213	0.22496
Return on opening equity	0.66324E-01	0.9953E-01	0.666	0.50519
Δreturn on opening equity	-0.88740E-01	0.1077	-0.824	0.40980
Δ%return on opening equity	-0.29335	0.5451	-0.538	0.59043
Times Interest Earned	0.80897E-02	0.6742E-01	0.120	0.90448
Δsales/total assets	-3.2014	2.305	-1.389	0.16477
Return on total assets	-48.839	45.11	-1.083	0.27901
Return on closing equity	0.31295E-01	0.5130E-01	0.610	0.54185
Operating profit/sales	-123.96	64.25	-1.929	0.05371
Net Profit Margin	1.7783	1.098	1.619	0.10545
ΔSales/Inventory	0.90730	0.6299	1.440	0.14979
Δsales/fixed assets	-0.39181	0.4805	-0.815	0.41483
Δtotal assets	-0.23062	4.522	-0.051	0.95932
Cash flow/total debt	-0.18380E-04	0.8507E-04	-0.216	0.82894
Total Income/Cash Flow	-0.82197	0.9695	-0.848	0.39653

**Table A1ai: Multinomial Logit Estimation For The Stores Industry For The Identification Of The Accounting Descriptors Which Jointly Describe Future Earnings Changes For The Period 1981-85.**

<i>Accounting Descriptors</i>	<i>Accounting Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
Current ratio	0.35070E-02	0.5614E-02	0.625	0.53218
ΔCurrent ratio	-0.79381E-02	0.1293E-01	-0.614	0.53940
Δ%Current ratio	0.34927E-01	0.6481E-01	0.539	0.58997
Depreciation/fixed assets	0.28282	0.4328E-01	6.534	0.00000
Δ%Return on opening equity	-0.12005E-02	0.4808E-02	-0.250	0.80284
Times interest earned	-0.18391E-03	0.4520E-03	-0.407	0.68408
ΔSales/total assets	-0.29497E-02	0.1756E-01	-0.168	0.86663
Return on total assets	0.92839	0.6187	1.501	0.13347
Return on closing equity	-0.60494E-02	0.2634E-02	-2.297	0.02162
Δreturn on closing equity	-0.52303E-02	0.2412E-02	-1.230	0.02356
Δ%Return on closing equity	0.32599E-02	0.8346E-02	0.391	0.69611
Operating profit/sales	0.59188E-01	0.7118E-01	0.832	0.40566
Net profit margin	-0.41298E-02	0.8957E-02	-0.461	0.64474
ΔSales/inventory	0.65279E-03	0.4132E-02	0.158	0.87447
Δ%Sales/cash	0.10502E-01	0.2819E-02	3.725	0.00020
Cash flow/total debt	-0.23020E-06	0.1750E-06	-1.315	0.18843

**Table A1bi: Multinomial Logit Estimation For The Stores Industry For The Identification Of The Accounting Descriptors Which Jointly Describe Future Earnings Changes For The Period 1982-86.**

<i>Accounting Descriptors</i>	<i>Accounting Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob t &gt;=x</i>
Current ratio	0.45623E-02	0.6285E-02	0.726	0.46788
Δcurrent ratio	-0.56118E-02	0.1156E-01	-0.486	0.62726
Δ%current ratio	-0.49997E-01	0.1178E-01	-4.244	0.00002
Δinventory	0.15382E-05	0.1259E-05	1.221	0.22192
Δ%inventory	-0.14776	0.8828E-01	-1.674	0.09420
Δdepreciation/fixeΔ assets	0.38210	0.1607	2.377	0.01743
%Δ sales	0.26333	0.1253-01	1.456	0.89000
Δ%return on opening equity	-0.14562E-02	0.5210E-02	-0.279	0.77987
Times interest earned	0.34025E-04	0.1479E-03	0.230	0.81803
Return on total assets	-0.33743	0.5344	-0.631	0.52779
Return on closing equity	-0.12490E-02	0.2218E-02	-0.563	0.57337
Operating profit/sales	-0.22131E-01	0.8741E-01	-0.253	0.80012
Net profit margin	0.10186E-02	0.3982E-02	0.256	0.79808
Δ%total assets	0.18102E-01	0.7127E-01	0.254	0.79950

**Table A1ci: Multinomial Logit Estimation For The Stores Industry For The Identification Of The Accounting Descriptors Which Jointly Describe Future Earnings Changes For The Period 1983-87.**

<i>Accounting Descriptors</i>	<i>Accounting Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob t &gt;=x</i>
Current ratio	3.0639	135.3	0.023	0.98193
Δcurrent ratio	4.9470	322.2	0.015	0.98775
Δ%current ratio	45.198	2726.	0.017	0.98677
Δinventory turnover	-6.3481	1032.	-0.006	0.99509
inventory turnover	-9.9318	432.1	-0.023	0.98166
Sales	0.67308E-05	0.1379E-02	0.005	0.99610
Depreciation/fixed assets	220.56	8624.	0.026	0.97960
%Δreturn on opening equity	-1.7615	392.5	-0.004	0.99642
Times interest earned	0.16599	17.30	0.010	0.99234
%Δtimes interest earned	-29.945	690.9	-0.043	0.96543
Return on closing equity	1.9431	99.81	0.019	0.98447
Operating profit/sales	-376.71	0.2368E+05	-0.016	0.98731
Net profit margin	-1.4932	105.2	-0.014	0.98867
%Δsales/cash	-9.8591	395.3	-0.025	0.98010

**Table A1di: Multinomial Logit Estimation For The Stores Indusry For The Identification Of The Accounting Descriptors Which Jointly Describe Future Earnings Changes For The Period 1984-88.**

<i>Accounting Descriptors</i>	<i>Accounting Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob t &gt;=x</i>
$\Delta\%$ current ratio	65.239	5149.	0.013	0.98989
$\Delta$ inventory turnover	0.30763E-01	205.2	0.000	0.99988
Inventory	0.20262E-02	0.1063	0.019	0.98479
Sales	-0.29423E-03	0.1505E-01	-0.020	0.98440
Depreciation	-0.41170E-02	0.2568	-0.016	0.98721
Debt/equity	-23.224	886.3	-0.026	0.97910
Times interest earned	-1.0584	62.87	-0.017	0.98657
Return on total assets	265.87	2555.	0.011	0.99112
Return on closing equity	-1.0024	107.4	-0.009	0.99256
$\Delta$ Return on closing equity	1.9278	81.37	0.024	0.98110
Operating profit/sales	75.691	145.	0.004	0.99682
$\Delta$ sales/working capital	-0.16686	18.63	-0.009	0.99285
$\Delta\%$ sales/working capital	8.5297	243.4	0.035	0.97204
$\Delta$ working capital/total assets	147.23	8657.	0.017	0.98643
Total income/cash flow	-32.680	0.0025	-0.003	0.99749

**Table A1ei: Multinomial Logit Estimation For The Stores Indusry For The Identification Of The Accounting Descriptors Which Jointly Describe Future Earnings Changes For The Period 1980-88.**

<i>Accounting Descriptors</i>	<i>Accounting Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob t &gt;=x</i>
current ratio	45.560	4561.	0.012	0.98999
$\Delta$ current ratio	52.630	5426.	0.014	0.99415
$\Delta\%$ current ratio	65.239	5149.	0.013	0.98989
$\Delta$ inventory turnover	0.40276E-01	115.2	0.000	0.98888
Inventory	0.33262E-02	0.1163	0.020	0.94755
$\%\Delta$ Sales	-0.211134E-03	0.1605E-01	-0.019	0.98990
Depreciation/fixed assets	-0.51170E-02	0.3568	-0.126	0.78921
$\Delta$ return on opening equity	-13.224	566.3	-0.023	0.96660
$\%\Delta$ return on opening equity	-12.561	423.2	-0.021	0.98523
capital expenditure	-0.101253E-01	0.1245	0.0013	0.98562
Times interest earned	-1.0584	62.87	-0.017	0.98657
Return on total assets	235.56	0.4569E+05	0.123	0.99145
net profit margin	-1.0400	112.4	-0.009	0.97896
$\Delta$ Return on closing equity	1.9325	91.37	0.026	0.94560
Operating profit/sales	7.2691	10.897	0.145	0.99546
$\%\Delta$ sales/working capital	-0.17778	17.53	-0.109	0.98885
cash flow/total debt	8.5567	254.4	0.035	0.97204
Total income/cash flow	-33.656	100.236	-0.223	0.56989

### Chemical Industry

**Table A2i: Multinomial Logit Estimation For The Chemical Industry For The Identification Of The Accounting Descriptors Which Jointly Describe Future Earnings Changes For The Period 1980-84.**

<i>Accounting Descriptors</i>	<i>Accounting Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t  ≥ x)</i>
debtors ratio	0.00337	0.01363	2.010	0.00112
return on opening equity	-1.1418	0.42660	1.606	0.11517
%Δ return on opening equity	-0.5711	0.34700	1.740	0.06308
return on total assets	-0.0658	0.03148	-1.590	0.13646
%Δ return on total assets	-0.7370	0.43280	-1.432	0.14721
return on closing equity	-1.1590	0.34660	-2.610	0.03920
%Δ return on closing equity	-0.5789	0.33080	-1.513	0.16874
Δ net profit margin	-0.1277	0.12700	-1.417	0.15660
%Δ net profit margin	-0.5301	0.25090	-1.695	0.06251
working capital	0.00000	0.00000	1.6780	0.05029

**Table A2ai: Multinomial Logit Estimation For The Chemical Industry For The Identification Of The Accounting Descriptors Which Jointly Describe Future Earnings Changes For The Period 1981-85.**

<i>Accounting Descriptors</i>	<i>Accounting Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t  ≥ x)</i>
debtors ratio	0.01847	0.01181	1.732	0.06153
%Δ inventory	-2.5114	1.20900	-1.797	0.07860
return on opening equity	-1.5371	0.31050	-1.153	0.19035
%Δ return on opening equity	-0.6279	0.25410	-2.166	0.02971
%Δ capital expenditure	-0.6563	0.36270	-1.736	0.06628
return on total assets	-0.0693	0.03248	-1.590	0.13646
%Δ return on total assets	-0.6447	0.59120	-1.902	0.05692
return on closing equity	-1.6232	0.61030	-2.190	0.05692
%Δ return on closing equity	-0.7409	0.37720	-2.095	0.02703
Δ net profit margin	-0.3173	0.13400	-1.758	0.08711
%Δ net profit margin	-0.6135	0.47230	-1.822	0.06421
working capital	0.7062E-05	0.1177E-04	1.6480	0.03049

**Table A2bi: Multinomial Logit Estimation For The Chemical Industry For The Identification Of The Accounting Descriptors Which Jointly Describe Future Earnings Changes For The Period 1982-86.**

<i>Accounting Descriptors</i>	<i>Accounting Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t  ≥ x)</i>
Debtors ratio	0.17061E-01	0.1276E-01	1.338	0.18105
Δ%Debtors ratio	1.7795	2.332	0.763	0.44548
Inventory/total assets	-4.6346	3.404	-1.362	0.17329
Return on opening equity	-0.88779	0.6304	-1.408	0.15902
Δsales/total assets	-1.3445	2.003	-0.671	0.50205
Return on total assets	0.73548E-01	0.8874E-01	0.829	0.40722
Δreturn on total assets	0.16130	0.1156	1.395	0.16288
Operating profit/sales	-28.339	19.35	-1.464	0.14315
Δ%operating profit/sales	-2.2620	2.486	-0.910	0.36284
Δsales/total assets	0.21496	0.2643	0.813	0.41604
Cash flow/total debt	-0.82969E-02	0.3093E-01	-0.268	0.78850



**Table A2ci: Multinomial Logit Estimation For The Chemical Industry For The Identification Of The Accounting Descriptors Which Jointly Describe Future Earnings Changes For The Period 1983-87.**

<i>Accounting Descriptors</i>	<i>Accounting Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
Debtors ratio	0.17244E-01	0.1052E-01	1.639	0.10130
Return on opening equity	-0.50502	0.4236	-1.192	0.23322
$\Delta$ return on opening equity	-0.82675	0.9654	-0.856	0.39180
Sales/total assets	-0.79872	0.8239	-0.969	0.33230
Return on total assets	0.79702E-01	0.9685E-01	0.823	0.41053
Operating profit/sales	-13.703	13.72	-0.999	0.31803
% $\Delta$ operating profit/sales	-4.6158	2.170	-2.127	0.03340
Net profit margin	-0.30210E-01	0.2292	-0.132	0.89515
Sales/fixed assets	-0.13745	0.1050	-1.309	0.19057

**Table A2di: Multinomial Logit Estimation For The Chemical Industry For The Identification Of The Accounting Descriptors Which Jointly Describe Future Earnings Changes For The Period 1984-88.**

<i>Accounting Descriptors</i>	<i>Accounting Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
Debtors ratio	-0.22022E-07	0.6225E-06	-0.035	0.97178
$\Delta$ debtors ratio	0.42697E-02	0.1973E-02	2.164	0.03044
$\Delta$ %debtors ratio	-0.10887E-03	0.6110E-03	-0.178	0.85858
Sales	0.13094E-07	0.2236E-07	0.586	0.55814
Return on opening equity	-0.44461E-04	0.1766E-03	-0.252	0.80121
Sales/total assets	0.11369E-02	0.2078E-02	0.547	0.58433
$\Delta$ sales/total assets	-0.74265E-01	0.7705E-01	-0.964	0.33512

**Table A2ei: Multinomial Logit Estimation For The Chemical Industry For The Identification Of The Accounting Descriptors Which Jointly Describe Future Earnings Changes For The Period 1980-88.**

<i>Accounting Descriptors</i>	<i>Accounting Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
Debtors ratio	0.17409E-01	0.6744E-02	2.581	0.00984
$\Delta$ debtors ratio	0.34805E-01	0.2950E-01	1.180	0.23805
% $\Delta$ debtors ratio	-2.9098	2.518	-1.156	0.24781
Return on opening equity	-0.67929	0.2923	-2.324	0.02013
$\Delta$ return on opening equity	-0.19206	0.3588	-0.535	0.59247
$\Delta$ %return on opening equity	-0.47410	0.4243	-1.117	0.26386
Sales/total assets	-1.3123	0.3570	-3.676	0.00024
Return on total assets	0.80416E-01	0.5349E-01	1.503	0.13275
$\Delta$ %return on total assets	0.35809E-01	0.3121	0.250	0.00230

### Stores and Chemical Industries Together

**Table A3i: Multinomial Logit Estimation For The Stores and Chemical Industry For The Identification Of The Accounting Descriptors Which Jointly Describe Future Earnings Changes For The Period 1980-84.**

<i>Accounting Descriptors</i>	<i>Accounting Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
Δsales	0.16009E-01	0.5714E-02	1.681	0.00984
%Δ sales	0.35205E-01	0.2790E-01	1.240	0.23785
Δ_depreciation	-2.9799	1.518	-1.426	0.12321
%Δ dividend per share	-0.66629	0.3023	-2.521	0.01013
depreciation/fixed assets	-0.20206	0.3578	-0.335	0.89247
return on total assets	-0.12410	0.5443	-1.247	0.69186
return on closing equity	-1.4523	0.3890	-2.456	0.00074
net profit margin	0.70426E-01	0.6129E-01	1.463	0.14575
Δ working capital/total assets	0.78809E-01	0.3134E-01	0.123	0.70450
Δ working capital	0.69701E-01	0.2463E-01	0.128	0.56001

**Table A3ai: Multinomial Logit Estimation For The Stores and Chemical Industry For The Identification Of The Accounting Descriptors Which Jointly Describe Future Earnings Changes For The Period 1981-85.**

<i>Accounting Descriptors</i>	<i>Accounting Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
current ratio	0.12309E-01	0.5789E-02	1.671	0.00884
%Δdepreciation	-2.7899	1.618	-1.326	0.12451
return on opening equity	-0.66629	0.4123	-1.302	0.11113
%Δreturn on opening equity	-0.10406	0.3228	-0.655	0.99247
capital expenditure/total assets	-0.14510	0.6443	-1.123	0.45686
return on closing equity	-1.47410	0.8910	-3.356	0.00044
net profit margin	0.45126E-01	0.7899E-01	1.425	0.18575
Δnet profit margin	0.052304	0.4526E-01	1.632	0.45600
Δsales/cash	0.456210	0.45879	1.230	0.63100
Δ working capital/total assets	0.45609E-01	0.6234E-01	0.633	0.90450
Δ working capital	0.12301E-01	0.2783E-01	0.451	0.57451

**Table A2bi: Multinomial Logit Estimation For The Stores and Chemical Industry For The Identification Of The Accounting Descriptors Which Jointly Describe Future Earnings Changes For The Period 1982-86.**

<i>Accounting Descriptors</i>	<i>Accounting Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
current ratio	0.23119E-01	0.562E-02	1.981	0.00984
%Δdepreciation	-1.97890	1.456	-1.666	0.02321
%Δreturn on opening equity	-0.64560	0.4223	-1.521	0.11013
capital expenditure/total assets	-0.65206	0.4528	-0.478	0.99237
return on closing equity	-0.12780	0.9543	-2.347	0.06186
net profit margin	-1.7893	0.4560	-1.456	0.14074
Δnet profit margin	0.60426E-01	0.5129E-01	1.363	0.17575
Δ sales/cash	0.33210	0.46333	1.465	0.51200
Δ working capital/total assets	0.74509E-01	0.4564E-01	0.363	0.45450
Δ working capital	0.45701E-01	0.3163E-01	1.456	0.66001

**Table A2ci: Multinomial Logit Estimation For The Stores and Chemical Industry For The Identification Of The Accounting Descriptors Which Jointly Describe Future Earnings Changes For The Period 1983-87.**

<i>Accounting Descriptors</i>	<i>Accounting Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
$\Delta$ current ratio	0.25409E-01	0.9114E-02	1.798	0.00084
% $\Delta$ quick assets ratio	0.12505E-01	0.4521E-01	1.250	0.56785
% $\Delta$ inventory/total assets	-3.89791	1.6453	-1.523	0.45121
% $\Delta$ inventory	-0.67459	0.4023	-1.874	0.00013
% $\Delta$ depreciation	0.123690	0.4512	1.0230	0.49978
$\Delta$ depreciation/fixed assets	-0.12036	0.7898	-1.456	0.23947
% $\Delta$ return on opening equity	-0.17890	0.6783	-2.897	0.04586
debt/equity	-1.00890	1.4560	-1.666	0.04421
$\Delta$ debt/equity	-0.67860	0.4113	-1.621	0.11013
return on total assets	-0.55206	0.5228	-0.788	0.87237
$\Delta$ return on total assets	-0.12000	0.9899	-2.347	0.04286
return on closing equity	-1.78930	0.4560	-1.556	0.17874
$\Delta$ return on closing equity	-1.56999	0.4666	-1.785	0.00023
% $\Delta$ return on closing equity	-1.23546	0.0089	-0.987	0.49000
net profit margin	0.63333E-01	0.5419E-01	1.303	0.13215
$\Delta$ net profit margin	-1.97890	1.4560	-1.666	0.02321
$\Delta$ sales/cash	-0.62260	0.5223	-1.331	0.11013
$\Delta$ total assets	-0.65206	0.4788	-0.478	0.87237
cash flow/total debt	-0.12780	0.9543	-2.347	0.06186
$\Delta$ funds	-1.78931	0.4560	-1.456	0.14074
$\Delta$ uses	-0.56230	0.7890	-1.562	0.15200
$\Delta$ working capital	0.99991E-01	0.4573E-01	0.569	0.36651

**Table A2di: Multinomial Logit Estimation For The Stores and Chemical Industry For The Identification Of The Accounting Descriptors Which Jointly Describe Future Earnings Changes For The Period 1984-88.**

<i>Accounting Descriptors</i>	<i>Accounting Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
$\Delta$ current ratio	0.25409E-01	0.9114E-02	1.798	0.00084
% $\Delta$ inventory	-3.89791	1.6453	-1.523	0.45121
depreciation	0.123690	0.4512	1.0230	0.49978
% $\Delta$ depreciation	-0.12036	0.7898	-1.456	0.23947
$\Delta$ capital expenditure/total assets	-0.17890	0.6783	-2.897	0.04586
debt/equity	-1.00890	1.4560	-1.666	0.04421
% $\Delta$ debt/equity	-0.67860	0.4113	-1.621	0.11013
times interest earned	-0.55206	0.5228	-0.788	0.87237
% $\Delta$ return on total assets	-0.12000	0.9899	-2.347	0.04286
operating profit/sales	-0.12356	0.4562	-1.456	0.42360
net profit margin	0.63333E-01	0.5419E-01	1.303	0.13215
$\Delta$ sales/cash	-0.62260	0.5223	-1.331	0.11013
% $\Delta$ sales/cash	-0.65206	0.4788	-0.478	0.87237
working capital/total assets	-0.12780	0.9543	-2.347	0.06186
$\Delta$ uses	-0.56230	0.7890	-1.562	0.15200
$\Delta$ working capital	0.99991E-01	0.4573E-01	0.569	0.36651

**Table A2ei: Multinomial Logit Estimation For The Stores and Chemical Industry For The Identification Of The Accounting Descriptors Which Jointly Describe Future Earnings Changes For The Period 1980-88.**

<i>Accounting Descriptors</i>	<i>Accounting Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
$\Delta$ current ratio	0.00019E-01	0.5615E-02	2.0981	0.00984
$\Delta$ inventory/turnover	-0.64559	0.6213	-1.874	0.00013
% $\Delta$ inventory/turnover	0.122690	0.4512	1.0230	0.49978
depreciation	-0.12336	0.7898	-1.456	0.23947
% $\Delta$ depreciation	-1.97890	1.4560	-1.786	0.02321
% $\Delta$ dividend per share	-0.64560	0.4223	-1.521	0.11013
% $\Delta$ return on opening equity	-0.26360	0.4562	-0.256	0.45890
capital expenditure/total assets	-0.65206	0.4528	-0.478	0.99237
debt/equity	-0.67259	0.8563	-1.674	0.00013
% $\Delta$ debt/equity	0.122245	0.4522	1.0870	0.56978
$\Delta$ times interest earned	-0.16536	0.6898	-1.656	0.04547
% $\Delta$ return on closing equity	-0.12780	0.9543	-2.347	0.06186
net profit margin	-1.7893	0.4560	-1.456	0.14074
$\Delta$ sales/cash	0.33210	0.46333	1.465	0.51200
% $\Delta$ sales/cash	-0.62260	0.5223	-1.331	0.11013
$\Delta$ sales/inventory	-0.65206	0.4788	-0.478	0.87237
$\Delta$ total assets	-0.12780	0.9543	-2.347	0.06186
working capital/total assets	-1.78931	0.4560	-1.456	0.14074
$\Delta$ working capital	0.45701E-01	0.3163E-01	1.456	0.66001

**Binary Specification is formed based on the mean of the %Δ in  
operating profit with outliers being deleted**

**Stores Industry**

**Table A4: Univariate Logit Estimation For The Stores industry For The Identificaiton Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1980-84.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
Current ratio	-0.28006E-01	0.9403E-01	-0.298	0.76582
ΔCurrent ratio	-0.21466	0.1691	-1.269	0.20436
%ΔCurrent ratio	-1.0096	0.7357	-1.372	0.16997
Quick asset ratio	0.27889	0.2890	0.965	0.33450
ΔQuick asset ratio	0.39890	0.6521	0.612	0.54070
%ΔQuick asset ratio	0.41543	0.4928	0.843	0.39922
Debtors ratio	0.11640E-03	0.3259E-02	0.036	0.97151
ΔDebtors ratio	0.14841E-02	0.9619E-02	0.154	0.87738
%ΔDebtors ratio	0.52819	0.6582	0.802	0.42228
Inventory turnover	0.49236E-01	0.4459E-01	1.104	0.26953
ΔInventory turnover	-0.84945E-01	0.1426	-0.596	0.55129
%ΔInventory turnover	-0.18475	1.071	-0.172	0.86306
Inventory/total assets	-1.0039	0.9629	-1.043	0.29714
ΔInventory/total assets	4.0659	3.193	1.274	0.20284
Inventory	0.25070E-05	0.2649E-05	0.946	0.34398
ΔInventory	-0.14765E-05	0.2252E-04	-0.066	0.94774
%ΔInventory	0.54751	0.8409	0.651	0.51497
Sales	0.49597E-06	0.3577E-06	1.386	0.16562
ΔSales	0.35198E-05	0.2407E-05	1.462	0.14372
%ΔSales	1.1711	1.122	1.044	0.29666
ΔDepreciation	0.44129E-05	0.1141E-03	0.039	0.96916
Depreciation	0.44962E-04	0.2822E-04	1.593	0.11115
%ΔDepreciation	0.13888	0.5186	0.268	0.78885
ΔDividend per share	-0.63384E-01	0.9451E-01	-0.671	0.50241
%ΔDividend per share	-0.22339	0.2627	-0.850	0.39512
Depreciation/fixed assets	-3.2890	2.814	-1.169	0.24254
ΔDepreciation/fixed assets	-1.3300	3.233	-0.411	0.68075
Return on opening equity	0.34703E-02	0.9563E-02	0.363	0.71668
ΔReturn on opening equity	-0.32584E-02	0.1786E-01	-0.182	0.85523
%ΔReturn on opening equity	-0.98676E-01	0.1569	-0.629	0.52932
Capital expenditure/total assets	28.817	15.28	1.885	0.05938
ΔCapital expenditure/total assets	4.7825	8.715	0.549	0.58315
%ΔCapital expenditure/total assets	0.19921	0.1722	1.157	0.24723
Capital Expenditure	0.71885E-04	0.4881E-04	1.473	0.14081
ΔCapital Expenditure	0.20691E-03	0.1519E-03	1.362	0.17318
%ΔCapital Expenditure	0.35614E-02	0.6166E-02	0.578	0.56355
Debt/equity	0.37023E-01	0.6483E-01	0.571	0.56793
ΔDebt/equity	0.25949	0.1907	1.360	0.17369
%ΔDebt/equity	0.75838	0.5586	1.358	0.17456
Equity/fixed assets	0.19815	0.3759	0.527	0.59805
ΔEquity/fixed assets	0.85613E-01	0.9837	0.087	0.93065
%ΔEquity/fixed assets	0.16370	0.2613	0.626	0.53104
Times interest earned	0.10961E-02	0.8325E-02	0.132	0.89525
ΔTimes interest earned	0.84501E-02	0.1265E-01	0.668	0.50431
%ΔTimes interest earned	-0.15684E-01	0.5708E-01	-0.275	0.78348
Sales/total assets	0.25597E-02	0.1996E-01	0.128	0.89796
ΔSales/total assets	0.16139E-01	0.5685E-01	0.284	0.77649
%ΔSales/total assets	1.1720	0.7653	1.532	0.12564
Return on total assets	-0.59445	3.084	-0.193	0.84715
ΔReturn on total assets	5.8778	5.510	1.067	0.28609
%ΔReturn on total assets	0.31368E-01	0.8953E-01	0.350	0.72607

Return on closing equity	0.60360E-02	0.1137E-01	0.531	0.59559
ΔReturn on closing equity	0.24707E-01	0.1526E-01	1.619	0.10535
%ΔReturn on closing equity	-0.65908E-01	0.7074E-01	-0.932	0.35152
Operating profit/sales	1.5756	1.196	1.318	0.18759
ΔOperating profit/sales	-1.0093	3.185	-0.317	0.75135
%ΔOperating profit/sales	1.3212	0.8816	1.499	0.13397
Net profit margin	-0.18033E-01	0.5904E-01	-0.305	0.76002
ΔNet profit margin	0.71871E-01	0.8894E-01	0.808	0.41905
%ΔNet profit margin	-0.48428E-01	0.8488E-01	-0.571	0.56829
Sales/cash	-0.31026E-03	0.1314E-03	-2.361	0.01824
ΔSales/cash	-0.42915E-05	0.1135E-04	-0.378	0.70525
%ΔSales/cash	0.26219E-02	0.3187E-01	0.082	0.93444
Sales/inventory	0.14596E-02	0.6037E-02	0.242	0.80895
ΔSales/inventory	-0.83972E-03	0.1288E-01	-0.065	0.94802
%ΔSales/inventory	0.27280	0.4997	0.546	0.58509
Sales/working capital	0.95710E-03	0.1875E-02	0.510	0.60976
ΔSales/working capital	0.50308E-02	0.4314E-02	1.166	0.24355
%ΔSales/working capital	0.41548	0.2345	1.772	0.07648
Sales/fixed assets	0.22227E-02	0.1996E-01	0.428	0.89796
ΔSales/fixed assets	0.22459E-01	0.2145E-01	0.244	0.67649
%ΔSales/fixed assets	1.2220	0.4563	1.432	0.16564
ΔTotal assets	0.50873E-05	0.4689E-05	1.085	0.67791
%ΔTotal assets	-0.34050	0.4103	-0.830	0.40656
Cash flow/total debt	-0.73762E-04	0.8729E-03	-0.085	0.93266
Working capital/total assets	-0.72372	0.7425	-0.975	0.32969
ΔWorking capital/total assets	-3.5235	2.052	-1.717	0.08603
%ΔWorking capital/total assets	-0.22568	0.2795	-0.807	0.41942
ΔFunds	0.79982E-04	0.4324E-04	1.850	0.06438
ΔTuses	0.48325E-04	0.2284E-04	2.116	0.03439
Working capital	-0.35221E-06	0.1455E-05	-0.242	0.80870
ΔWorking capital	0.61939E-06	0.9993E-05	0.062	0.95058
%ΔWorking capital	-0.75166E-01	0.1014	-0.742	0.45837
Total income/cash flow	0.34651E-01	0.8815E-01	0.393	0.69426

**Table A4a: Univariate Logit Estimation For The Stores industry For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1981-85.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
Current ratio	-0.15932	0.9940E-01	-1.603	0.10898
Δcurrent ratio	-1.0157	0.4364	-2.328	0.01993
%Δcurrent ratio	-2.5171	0.8998	-2.797	0.00515
Quick asset ratio	-0.18730	0.2386	-0.785	0.43252
ΔQuick asset ratio	-0.28030	0.5427	-0.516	0.60552
%ΔQuick asset ratio	-0.15635	0.4166	-0.375	0.70741
Debtors ratio	-0.27224E-02	0.3082E-02	-0.883	0.37701
ΔDebtors ratio	-0.77285E-02	0.9221E-02	-0.838	0.40196
%ΔDebtors ratio	-0.55342	0.4674	-1.184	0.23639
Inventory turnover	-0.54259E-01	0.3894E-01	-1.394	0.16346
ΔInventory turnover	0.11082	0.1141	0.971	0.33142
%ΔInventory turnover	0.86701	0.9911	0.875	0.38166
Inventory/total assets	1.3991	0.9193	1.522	0.12802
ΔInventory/total assets	5.4854	3.581	1.532	0.12554
Inventory	-0.82246E-05	0.3138E-05	-2.621	0.00876
ΔInventory	-0.23982E-04	0.2212E-04	-1.084	0.27826
%ΔInventory	0.73495	0.7901	0.930	0.35227
Sales	-0.10065E-05	0.3760E-06	-2.677	0.00744
ΔSales	-0.63109E-06	0.1454E-05	-0.434	0.66437
%ΔSales	2.0979	1.027	2.042	0.04115
ΔDepreciation	0.28794E-04	0.6594E-04	0.437	0.66235
Depreciation	-0.55390E-04	0.2648E-04	-2.091	0.03649
%ΔDepreciation	0.97140	0.5947	1.633	0.10238
ΔDividend per share	-0.91682E-01	0.9416E-01	-0.974	0.33021
%ΔDividend per share	-0.30274	0.3670	-0.825	0.40945
Depreciation/fixed assets	1.2519	2.283	0.548	0.58344
ΔDepreciation/fixed assets	-1.0368	1.833	-0.566	0.57169
Return on opening equity	0.62772E-02	0.7244E-02	0.866	0.38622
ΔReturn on opening equity	0.20161E-01	0.1962E-01	1.028	0.30408
%ΔReturn on opening equity	0.13415	0.1048	1.281	0.20032
Capital expenditure/total assets	-3.5733	6.558	-0.545	0.58584
ΔCapital expenditure/total assets	6.8673	8.119	0.846	0.39766
%ΔCapital expenditure/total assets	0.72981E-01	0.5821E-01	1.254	0.20990
Capital Expenditure	-0.26716E-04	0.1660E-04	-1.610	0.10749
ΔCapital Expenditure	0.70508E-04	0.5969E-04	1.181	0.23747
%ΔCapital Expenditure	0.88110E-01	0.5625E-01	1.566	0.11724
Debt/equity	0.26987E-01	0.6002E-01	0.450	0.65298
ΔDebt/equity	-0.32113E-01	0.1227	-0.262	0.79362
%ΔDebt/equity	0.46507	0.4725	0.984	0.32495
Equity/fixed assets	-0.93659E-01	0.2240	-0.418	0.67584
ΔEquity/fixed assets	-0.36964	0.4946	-0.747	0.45486
%ΔEquity/fixed assets	-0.21084	0.2569	-0.821	0.41180
Times interest earned	-0.99954E-02	0.7907E-02	-1.264	0.20621
ΔTimes interest earned	0.15834E-02	0.1584E-01	0.100	0.92035
%ΔTimes interest earned	-0.44336E-01	0.6514E-01	-0.681	0.49611
Sales/total assets	0.47203E-01	0.3546E-01	1.331	0.18315
ΔSales/total assets	0.61131E-01	0.6361E-01	0.961	0.33651
%ΔSales/total assets	2.1957	0.8402	2.613	0.00897
Return on total assets	-4.8571	3.154	-1.540	0.12357
ΔReturn on total assets	-0.45395E-01	4.803	-0.009	0.99246
%ΔReturn on total assets	0.10148E-01	0.7926E-01	0.128	0.89812
Return on closing equity	-0.69096E-03	0.1102E-01	-0.063	0.95000
ΔReturn on closing equity	0.43468E-02	0.1315E-01	0.330	0.74107
%ΔReturn on closing equity	-0.93270E-01	0.7946E-01	-1.174	0.24047
Operating profit/sales	0.67518	0.9739	0.693	0.48814
ΔOperating profit/sales	-9.8628	4.949	-1.993	0.04629
%ΔOperating profit/sales	2.1958	1.044	2.103	0.03548
Net profit margin	-0.35300E-01	0.4856E-01	-0.727	0.46730

ΔNet profit margin	-0.59115E-01	0.9142E-01	-0.647	0.51789
%ΔNet profit margin	-0.59630E-01	0.7821E-01	-0.762	0.44579
Sales/cash	-0.10429E-03	0.1197E-03	-0.871	0.38360
ΔSales/cash	-0.41391E-03	0.3635E-03	-1.139	0.25489
%ΔSales/cash	0.22381E-02	0.4649E-01	0.048	0.96161
Sales/inventory	0.82635E-02	0.7530E-02	1.097	0.27247
ΔSales/inventory	0.48206E-02	0.1288E-01	0.374	0.70816
%ΔSales/inventory	0.90496	0.8482	1.067	0.28601
Sales/working capital	0.24668E-02	0.2222E-02	1.110	0.26683
ΔSales/working capital	0.34087E-02	0.3017E-02	1.130	0.25857
%ΔSales/working capital	0.47137	0.2376	1.984	0.04724
Sales/total assets	0.47203E-01	0.3546E-01	1.331	0.18315
ΔSales/total assets	0.61131E-01	0.6361E-01	0.961	0.33651
%ΔSales/total assets	2.1957	0.8402	2.613	0.00897
ΔTotal assets	-0.90240E-05	0.4981E-05	-1.812	0.07006
%ΔTotal assets	-0.60762	0.5859	-1.037	0.29972
Cash flow/total debt	-0.75962E-04	0.6306E-03	-0.120	0.90412
Working capital/total assets	-0.53360	0.6311	-0.845	0.39784
ΔWorking capital/total assets	-4.7847	2.309	-2.072	0.03827
%ΔWorking capital/total assets	-0.10460	0.2037	-0.513	0.60762
ΔFunds	-0.43826E-04	0.2392E-04	-1.833	0.06687
ΔTuses	-0.41343E-04	0.1773E-04	-2.332	0.01973
Working capital	-0.23512E-05	0.1468E-05	-1.601	0.10934
ΔWorking capital	-0.25682E-04	0.1146E-04	-2.242	0.02497
%ΔWorking capital	-0.96433E-01	0.1373	-0.702	0.48247
Total income/cash flow	0.51252E-01	0.7131E-01	0.719	0.47233



**Table A4b: Univariate Logit Estimation For The Stores industry For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1982-86.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
Current ratio	-0.31910E-02	0.3605E-01	-0.089	0.92947
Δcurrent ratio	-0.23838E-01	0.5874E-01	-0.406	0.68487
%Δcurrent ratio	-1.8805	0.7517	-2.502	0.01236
Quick asset ratio	-0.27590	0.2285	-1.207	0.22727
ΔQuick asset ratio	-0.54543	0.5553	-0.982	0.32595
%ΔQuick asset ratio	-0.51759	0.4338	-1.193	0.23281
Debtors ratio	-0.77344E-03	0.2822E-02	-0.274	0.78403
ΔDebtors ratio	-0.12176E-01	0.9385E-02	-1.297	0.19449
%ΔDebtors ratio	-0.41574	0.3900	-1.066	0.28640
Inventory turnover	-0.12073	0.4824E-01	-2.503	0.01233
ΔInventory turnover	0.60233E-01	0.7191E-01	0.838	0.40227
%ΔInventory turnover	0.37363	0.8933	0.418	0.67575
Inventory/total assets	1.5608	0.8511	1.834	0.06668
ΔInventory/total assets	3.0291	2.322	1.304	0.19215
Inventory	-0.61313E-05	0.2650E-05	-2.314	0.02066
ΔInventory	-0.68773E-06	0.1144E-04	-0.060	0.95207
%ΔInventory	1.1175	0.7062	1.583	0.11352
Sales	-0.86953E-06	0.3515E-06	-2.474	0.01337
ΔSales	-0.46356E-06	0.1376E-05	-0.337	0.73626
%ΔSales	1.5190	0.9009	1.686	0.09177
ΔDepreciation	-0.33101E-04	0.4774E-04	-0.693	0.48813
Depreciation	-0.50726E-04	0.2420E-04	-2.096	0.03606
%ΔDepreciation	-0.46312E-01	0.1012	-0.458	0.64716
ΔDividend per share	-0.59045	0.2562	-2.305	0.02118
%ΔDividend per share	-0.73833	0.5457	-1.353	0.17605
Depreciation/fixed assets	1.8438	2.385	0.773	0.43951
ΔDepreciation/fixed assets	-1.7783	4.680	-0.380	0.70398
Return on opening equity	0.34661E-02	0.6367E-02	0.544	0.58619
ΔReturn on opening equity	0.29173E-01	0.2903E-01	1.005	0.31489
%ΔReturn on opening equity	0.17218	0.1162	1.482	0.13829
Capital expenditure/total assets	-14.831	8.082	-1.835	0.06650
ΔCapital expenditure/total assets	-9.9631	8.496	-1.173	0.24091
%ΔCapital expenditure/total assets	0.93708E-02	0.5489E-01	0.171	0.86445
Capital Expenditure	-0.47176E-04	0.2609E-04	-1.808	0.07055
ΔCapital Expenditure	0.20617E-04	0.4885E-04	0.422	0.67299
%ΔCapital Expenditure	0.14520E-01	0.5206E-01	0.279	0.78032
Debt/equity	0.46166E-01	0.5580E-01	0.827	0.40802
ΔDebt/equity	-0.39713E-02	0.1130	-0.035	0.97195
%ΔDebt/equity	0.61731	0.3857	1.600	0.10952
Equity/fixed assets	-0.24510	0.2479	-0.989	0.32274
ΔEquity/fixed assets	-0.75212	0.7356	-1.022	0.30658
%ΔEquity/fixed assets	-0.36648	0.3430	-1.069	0.28529
Times interest earned	-0.27112E-01	0.1251E-01	-2.167	0.03027
ΔTimes interest earned	-0.16553E-01	0.1537E-01	-1.077	0.28145
%ΔTimes interest earned	0.16336E-01	0.3407E-01	0.479	0.63159
Sales/total assets	0.23470E-01	0.1932E-01	1.215	0.22444
ΔSales/total assets	0.53673E-01	0.5936E-01	0.904	0.36591
%ΔSales/total assets	1.1688	0.6519	1.793	0.07297
Return on total assets	-4.0535	3.148	-1.287	0.19793
ΔReturn on total assets	-3.9262	5.488	-0.715	0.47437
%ΔReturn on total assets	-0.17721E-01	0.8211E-01	-0.216	0.82912
Return on closing equity	-0.90226E-02	0.1104E-01	-0.817	0.41384
ΔReturn on closing equity	0.14481E-03	0.1316E-01	0.011	0.99122
%ΔReturn on closing equity	-0.10863	0.8895E-01	-1.221	0.22204
Operating profit/sales	-1.6181	1.268	-1.276	0.20201
ΔOperating profit/sales	-5.6383	4.113	-1.371	0.17046
%ΔOperating profit/sales	1.7118	0.8760	1.954	0.05070
Net profit margin	0.11420E-03	0.3901E-01	0.003	0.99766

ΔNet profit margin	-0.66426E-01	0.9687E-01	-0.686	0.49288
%ΔNet profit margin	-0.72367E-01	0.8231E-01	-0.879	0.37930
Sales/cash	0.53642E-05	0.4902E-04	0.109	0.91285
ΔSales/cash	-0.18477E-04	0.2426E-04	-0.762	0.44630
%ΔSales/cash	0.17750E-01	0.2592E-01	0.685	0.49352
Sales/inventory	0.61175E-02	0.5959E-02	1.027	0.30460
ΔSales/inventory	0.53283E-02	0.1309E-01	0.407	0.68397
%ΔSales/inventory	0.26459	0.3989	0.663	0.50709
Sales/working capital	0.44516E-02	0.3084E-02	1.443	0.14894
ΔSales/working capital	0.91029E-02	0.6395E-02	1.423	0.15463
%ΔSales/working capital	0.49471	0.2490	1.987	0.04697
Sales/fixed assets	0.23222E-01	0.1922E-01	1.115	0.46444
ΔSales/fixed assets	0.22225E-01	0.5000E-01	1.004	0.36591
%ΔSales/fixed assets	1.2688	0.7819	1.078	0.17297
ΔTotal assets	-0.30380E-05	0.2795E-05	-1.087	0.28803
%ΔTotal assets	-0.10916	0.3063	-0.356	0.87954
Cash flow/total debt	-0.19760E-03	0.6120E-03	-0.323	0.74678
Working capital/total assets	-1.0749	0.5843	-1.840	0.06583
ΔWorking capital/total assets	-6.0356	2.514	-2.401	0.01634
%ΔWorking capital/total assets	-0.21194	0.2127	-0.997	0.31894
ΔFunds	-0.36359E-04	0.2025E-04	-1.795	0.07260
ΔTuses	0.23959E-05	0.6417E-05	0.373	0.70885
Working capital	-0.25109E-05	0.1331E-05	-1.887	0.05917
ΔWorking capital	-0.12179E-04	0.7919E-05	-1.538	0.12407
%ΔWorking capital	-0.13402	0.1951	-0.687	0.49204
Total income/cash flow	-0.78698E-01	0.8996E-01	-0.875	0.38169

**Table A4c: Univariate Logit Estimation For The Stores industry For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1983-87.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob t &gt;=x</i>
Current ratio	0.27228E-01	0.3178E-01	0.857	0.39164
Δcurrent ratio	-0.17365E-01	0.5729E-01	-0.303	0.76181
%Δcurrent ratio	-1.4951	0.6728	-2.222	0.02627
Quick asset ratio	-0.25438	0.2324	-1.095	0.27367
ΔQuick asset ratio	0.57720E-01	0.3075	0.188	0.85110
%ΔQuick asset ratio	-0.38071	0.4059	-0.938	0.34832
Debtors ratio	0.58785E-03	0.2944E-02	0.200	0.84173
ΔDebtors ratio	0.26510E-02	0.5709E-02	0.464	0.64238
%ΔDebtors ratio	-0.98814E-01	0.3492	-0.283	0.77720
Inventory turnover	-0.74573E-01	0.4210E-01	-1.771	0.07654
ΔInventory turnover	0.47535E-01	0.6551E-01	0.726	0.46807
%ΔInventory turnover	-0.35073	0.8007	-0.438	0.66136
Inventory/total assets	0.71014	0.7135	0.995	0.31961
ΔInventory/total assets	1.3592	1.761	0.772	0.44032
Inventory	-0.51721E-05	0.2395E-05	-2.160	0.03079
ΔInventory	0.38169E-05	0.1110E-04	0.344	0.73087
%ΔInventory	1.2573	0.7092	1.773	0.07626
Sales	-0.80482E-06	0.3343E-06	-2.407	0.01607
ΔSales	-0.97428E-06	0.1254E-05	-0.777	0.43703
%ΔSales	0.73705	0.7669	0.961	0.33651
ΔDepreciation	-0.53828E-04	0.4939E-04	-1.090	0.27579
Δpreciation	-0.45179E-04	0.2134E-04	-2.117	0.03423
%ΔDepreciation	-0.64720E-01	0.1207	-0.536	0.59195
ΔDividend per share	-0.51468	0.2360	-2.181	0.02919
%ΔDividend per share	-0.60156	0.6004	-1.002	0.31642
Depreciation/fixed assets	2.3445	3.004	0.780	0.43517
ΔDepreciation/fixed assets	-17.279	8.457	-2.043	0.04103
Return on opening equity	0.14564E-02	0.6479E-02	0.225	0.82215
ΔReturn on opening equity	0.40053E-01	0.3930E-01	1.019	0.30811
%ΔReturn on opening equity	0.21272	0.1393	1.527	0.12668
Capital expenditure/total assets	-12.405	7.668	-1.618	0.10568
ΔCapital expenditure/total assets	1.2828	7.732	0.166	0.86823
%ΔCapital expenditure/total assets	0.46354E-01	0.5578E-01	0.831	0.40600
Capital Expenditure	-0.41142E-04	0.2447E-04	-1.681	0.09275
ΔCapital Expenditure	0.39398E-04	0.5344E-04	0.737	0.46101
%ΔCapital Expenditure	0.48435E-01	0.5456E-01	0.888	0.37471
Debt/equity	0.34234E-01	0.5314E-01	0.644	0.51943
ΔDebt/equity	0.77042E-01	0.9992E-01	0.771	0.44068
%ΔDebt/equity	0.84313	0.4082	2.066	0.03886
Equity/fixed assets	-0.13681	0.2047	-0.668	0.50394
ΔEquity/fixed assets	-0.70089	0.6392	-1.096	0.27288
%ΔEquity/fixed assets	-0.51800	0.3846	-1.347	0.17799
Times interest earned	-0.30448E-01	0.1445E-01	-2.107	0.03510
ΔTimes interest earned	-0.30601E-02	0.7025E-02	-0.436	0.66312
%ΔTimes interest earned	0.97924E-02	0.3433E-01	0.285	0.77547
Sales/total assets	0.31938E-02	0.1696E-01	0.188	0.85066
ΔSales/total assets	0.25550E-01	0.5800E-01	0.441	0.65956
%ΔSales/total assets	0.26671	0.3034	0.879	0.37930
Return on total assets	-8.6703	3.610	-2.402	0.01631
ΔReturn on total assets	-7.7881	7.973	-0.977	0.32867
%ΔReturn on total assets	0.72633E-01	0.1200	0.605	0.54496
Return on closing equity	-0.77941E-02	0.1217E-01	-0.640	0.52206
ΔReturn on closing equity	0.32285E-02	0.1689E-01	0.191	0.84837
%ΔReturn on closing equity	-0.16238	0.1442	-1.126	0.26022
Operating profit/sales	-1.2935	1.270	-1.019	0.30842
ΔOperating profit/sales	-4.8324	4.501	-1.074	0.28297
%ΔOperating profit/sales	0.52762	0.6192	0.852	0.39414
Net profit margin	-0.19270E-02	0.3244E-01	-0.059	0.95263

ΔNet profit margin	0.36361E-01	0.1620	0.224	0.82238
%ΔNet profit margin	-0.27664E-02	0.1066	-0.026	0.97930
Sales/cash	0.48458E-04	0.4560E-04	1.063	0.28793
ΔSales/cash	0.41676E-04	0.4626E-04	0.901	0.36760
%ΔSales/cash	0.32954E-01	0.3028E-01	1.088	0.27649
Sales/inventory	-0.42450E-03	0.6180E-02	-0.069	0.94523
ΔSales/inventory	-0.10842E-02	0.1344E-01	-0.081	0.93573
%ΔSales/inventory	0.19616	0.2488	0.789	0.43036
Sales/working capital	0.14434E-02	0.2232E-02	0.647	0.51791
ΔSales/working capital	0.19873E-02	0.2566E-02	0.774	0.43864
%ΔSales/working capital	0.71220E-01	0.6985E-01	1.020	0.30791
Sales/fixed assets	0.17458E-02	0.2456E-01	0.188	0.85066
ΔSales/fixed assets	0.21470E-01	0.4580E-01	0.541	0.65956
%ΔSales/fixed assets	0.16671	0.4034	0.779	0.44430
ΔTotal assets	-0.17991E-05	0.2617E-05	-0.475	0.44183
%ΔTotal assets	0.10231	0.2964	0.345	0.87995
Cash flow/total debt	-0.52147E-03	0.6253E-03	-0.834	0.40428
Working capital/total assets	-0.65980	0.4990	-1.322	0.18613
ΔWorking capital/total assets	-3.0840	1.625	-1.898	0.05765
%ΔWorking capital/total assets	-0.16504	0.2047	-0.806	0.42020
ΔFunds	-0.30608E-04	0.1759E-04	-1.740	0.08190
ΔTuses	0.60175E-05	0.5834E-05	1.031	0.30232
Working capital	-0.15114E-05	0.1051E-05	-1.439	0.15029
ΔWorking capital	-0.88735E-05	0.6516E-05	-1.362	0.17327
%ΔWorking capital	-0.74482E-01	0.1143	-0.651	0.51476
Total income/cash flow	0.27686E-01	0.8384E-01	0.330	0.74123

**Table A4d: Univariate Logit Estimation For The Stores industry For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1984-88.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
current ratio	0.22094E-01	0.2467E-01	0.895	0.37053
Δcurrent ratio	0.39483E-01	0.6129E-01	0.644	0.51944
%Δcurrent ratio	-0.53436	0.7077	-0.755	0.45019
Quick asset ratio	-0.94494E-01	0.2408	-0.392	0.69472
%ΔQuick asset ratio	-0.34202	0.5302	-0.645	0.51889
Debtors ratio	0.59541E-02	0.3233E-02	1.842	0.06549
ΔDebtors ratio	0.49208E-02	0.8503E-02	0.579	0.56278
%ΔDebtors ratio	0.68998E-01	0.3750	0.184	0.85401
Inventory turnover	-0.21377E-01	0.4057E-01	-0.527	0.59824
ΔInventory turnover	0.85376E-01	0.8132E-01	1.050	0.29380
%ΔInventory turnover	-0.30755	0.8937	-0.344	0.73074
Inventory/total assets	-0.24157	0.7600	-0.318	0.75059
ΔInventory/total assets	-4.4452	3.024	-1.470	0.14154
Inventory	-0.88840E-05	0.3617E-05	-2.456	0.01404
ΔInventory	-0.21575E-05	0.1006E-04	-0.214	0.83017
%ΔInventory	0.24515	0.3086	0.794	0.42697
Sales	-0.18648E-05	0.8037E-06	-2.320	0.02033
ΔSales	-0.50739E-05	0.2567E-05	-1.977	0.04806
%ΔSales	0.15101	0.2814	0.537	0.59151
ΔDepreciation	-0.54490E-04	0.4965E-04	-1.097	0.27244
Depreciation	-0.85875E-04	0.3783E-04	-2.270	0.02322
%ΔDepreciation	-0.63675E-01	0.1332	-0.478	0.63262
ΔDividend per share	-0.41465	0.2365	-1.753	0.07962
%ΔDividend per share	-0.27126	0.4758	-0.570	0.56863
Depreciation/fixed assets	4.1288	2.986	1.383	0.16669
ΔDepreciation/fixed assets	0.96794	2.099	0.461	0.64465
Return on opening equity	0.58934E-02	0.6367E-02	0.926	0.35468
ΔReturn on opening equity	-0.17374E-02	0.5426E-02	-0.320	0.74880
%ΔReturn on opening equity	0.43566	0.2239	1.945	0.05173
Capital expenditure/total assets	-5.6906	7.077	-0.804	0.42134
ΔCapital expenditure/total assets	-4.9968	8.497	-0.588	0.55650
%ΔCapital expenditure/total assets	-0.49748E-01	0.8192E-01	-0.607	0.54369
Capital Expenditure	-0.65465E-04	0.3931E-04	-1.665	0.09585
ΔCapital Expenditure	-0.17491E-04	0.4292E-04	-0.408	0.68363
%ΔCapital Expenditure	-0.62155E-02	0.6669E-01	-0.093	0.92574
Debt/equity	0.29069E-01	0.4798E-01	0.606	0.54459
ΔDebt/equity	0.50289E-02	0.7549E-01	0.067	0.94689
%ΔDebt/equity	0.36113	0.2200	1.641	0.10075
Equity/fixed assets	0.18409	0.1539	1.196	0.23173
ΔEquity/fixed assets	-0.87677E-01	0.2024	-0.433	0.66484
%ΔEquity/fixed assets	-0.98377E-01	0.2270	-0.433	0.66471
Times interest earned	-0.51198E-01	0.2353E-01	-2.176	0.02958
ΔTimes interest earned	-0.47885E-02	0.7357E-02	-0.651	0.51514
%ΔTimes interest earned	0.40471E-01	0.4307E-01	0.940	0.34742
Sales/total assets	-0.48387E-01	0.5072E-01	-0.954	0.34008
ΔSales/total assets	-0.32276E-01	0.1215	-0.266	0.79055
%ΔSales/total assets	-0.92334	0.7675	-1.203	0.22894
Return on total assets	-11.475	3.889	-2.951	0.00317
ΔReturn on total assets	-33.157	11.41	-2.905	0.00367
%ΔReturn on total assets	-0.56005E-01	0.1574	-0.356	0.72193
Return on closing equity	0.29410E-02	0.3833E-02	0.767	0.44287
ΔReturn on closing equity	0.35374E-02	0.7040E-02	0.502	0.61534
%ΔReturn on closing equity	-0.39563	0.2437	-1.623	0.10457
Operating profit/sales	-6.7200	3.472	-1.935	0.05294
ΔOperating profit/sales	-0.74544	7.950	-0.094	0.92529
%ΔOperating profit/sales	-1.1505	1.034	-1.113	0.26565
Net profit margin	-0.15687E-01	0.3243E-01	-0.484	0.62855
ΔNet profit margin	-0.23586	0.1902	-1.240	0.21490

%ΔNet profit margin	0.32463E-01	0.1660	0.196	0.84498
Sales/cash	0.52880E-04	0.4103E-04	1.289	0.19747
ΔSales/cash	0.45753E-04	0.4528E-04	1.010	0.31227
%ΔSales/cash	0.52245E-01	0.3312E-01	1.577	0.11470
Sales/inventory	-0.61285E-02	0.6915E-02	-0.886	0.37546
ΔSales/inventory	0.15694E-01	0.2739E-01	0.573	0.56661
%ΔSales/inventory	0.77606E-01	0.1707	0.455	0.64935
Sales/working capital	-0.11907E-02	0.2444E-02	-0.487	0.62619
ΔSales/working capital	0.53922E-02	0.5263E-02	1.025	0.30555
%ΔSales/working capital	0.82426E-01	0.8507E-01	0.969	0.33258
Sales/fixed assets	-0.39787E-01	0.6452E-01	-0.854	0.24008
ΔSales/fixed assets	-0.24576E-01	0.1554	-0.234	0.69055
%ΔSales/fixed assets	-0.87934	0.8975	-1.103	0.32894
ΔTotal assets	-0.18970E-05	0.2906E-05	-0.653	0.51383
%ΔTotal assets	0.79327	0.4748	1.671	0.09477
Cash flow/total debt	-0.24972E-04	0.2013E-03	-0.124	0.90127
Working capital/total assets	-0.27214	0.4531	-0.601	0.54811
ΔWorking capital/total assets	-0.30455	2.297	-0.133	0.89450
%ΔWorking capital/total assets	-0.96513E-01	0.2456	-0.393	0.69436
ΔFunds	-0.36500E-04	0.2019E-04	-1.808	0.07065
ΔTuses	0.25582E-05	0.4841E-05	0.528	0.59718
Working capital	-0.15203E-05	0.1045E-05	-1.455	0.14569
ΔWorking capital	-0.27096E-05	0.6073E-05	-0.446	0.65546
%ΔWorking capital	0.10223	0.2325	0.440	0.66012
Total income/cash flow	-0.99065E-01	0.9462E-01	-1.047	0.29511

**Table A4e: Univariate Logit Estimation For The Stores industry For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1980-88.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob t &gt;=x</i>
current ratio	0.17184E-06	0.7112E-06	0.242	0.80908
Δcurrent ratio	-1.0909	4.284	-0.255	0.79899
%Δcurrent ratio	-0.51912E-01	0.4247E-01	-1.222	0.22156
Quick asset ratio	-0.33298E-01	0.1503	-0.222	0.82461
ΔQuick asset ratio	-0.60171E-01	0.9445E-01	-0.637	0.52407
Debtors ratio	0.45240E-02	0.2044E-02	2.213	0.02686
ΔDebtors ratio	-0.70866E-02	0.7812E-02	-0.907	0.36435
%ΔDebtors ratio	0.22549E-06	0.9512E-05	0.024	0.98109
Inventory turnover	-0.11341E-01	0.1844E-01	-0.615	0.53851
ΔInventory turnover	-0.21302	0.1698	-1.255	0.20960
%ΔInventory turnover	0.28105E-02	0.2173E-02	1.294	0.19580
Inventory/total assets	-0.37109	0.4934	-0.752	0.45201
ΔInventory/total assets	0.22367	0.2854	0.784	0.43328
%ΔInventory/total assets	0.10628	0.1404	0.757	0.44913
Inventory	-0.82646E-06	0.5274E-06	-1.567	0.11708
ΔInventory	0.81901E-02	0.1786E-01	0.459	0.64658
%ΔInventory	0.14016E-01	0.2274E-01	0.616	0.53761
Sales	-0.14863E-06	0.8728E-07	-1.703	0.08857
ΔSales	0.19291	0.1706	1.131	0.25824
%ΔSales	-0.13754E-03	0.2105E-03	-0.653	0.51353
ΔDepreciation	0.33799	0.2302	1.468	0.14203
Depreciation	-0.33016E-05	0.4528E-05	-0.729	0.46588
%ΔDepreciation	0.69379E-01	0.1214	0.571	0.56779
ΔDividend per share	-0.13251	0.2601	-0.510	0.61040
%ΔDividend per share	-0.22481E-02	0.8678E-02	-0.259	0.79560
Depreciation/fixed assets	0.16915	0.1892	0.894	0.37121
ΔDepreciation/fixed assets	0.32205	0.2037	1.581	0.11390
Return on opening equity	-0.12569E-02	0.2968E-02	-0.424	0.67192
ΔReturn on opening equity	-0.56970E-01	0.2456	-0.232	0.81655
%ΔReturn on opening equity	0.23116E-05	0.1725E-05	1.340	0.18017
Capital expenditure/total assets	0.11084E-05	0.2063E-05	0.537	0.59104
ΔCapital expenditure/total assets	0.53865E-05	0.1092E-04	0.493	0.62182
Capital Expenditure	-0.49845E-05	0.4340E-05	-1.148	0.25079
ΔCapital Expenditure	0.13692	0.1211	1.130	0.25827
%ΔCapital Expenditure	0.53287E-01	0.3266E-01	1.632	0.10277
Debt/equity	-0.79391E-02	0.1807E-01	-0.439	0.66037
ΔDebt/equity	-0.29918	0.3162	-0.946	0.34406
%ΔDebt/equity	0.10862E-01	0.4111E-01	0.264	0.79163
Times interest earned	0.11927E-01	0.8101E-02	1.472	0.14093
ΔTimes interest earned	0.57881E-02	0.4892E-02	1.183	0.23675
%ΔTimes interest earned	-0.29332E-01	0.2591E-01	-1.132	0.25760
Sales/total assets	-0.49959E-05	0.4551E-05	-1.098	0.27231
ΔSales/total assets	0.13872	0.1316	1.054	0.29181
%ΔSales/total assets	-0.13493	0.9851E-01	-1.370	0.17078
Return on total assets	0.60644E-01	0.5213E-01	1.163	0.24467
ΔReturn on total assets	-0.40582	0.3329	-1.219	0.22277
%ΔReturn on total assets	0.24493E-03	0.7351E-03	0.333	0.73899
Return on closing equity	0.16637E-02	0.2614E-02	0.636	0.52454
ΔReturn on closing equity	-0.13954E-01	0.2019E-01	-0.691	0.48944
%ΔReturn on closing equity	0.13189E-02	0.9748E-02	0.135	0.89238
Operating profit/sales	-0.24385E-05	0.2466E-05	-0.989	0.32277
ΔOperating profit/sales	-0.16105E-01	0.2911E-01	-0.553	0.58011
%ΔOperating profit/sales	-0.25354E-01	0.3975E-01	-0.638	0.52359
Net profit margin	0.10853E-01	0.2029E-01	0.535	0.59268
ΔNet profit margin	0.28051	0.3465	0.809	0.41823
%ΔNet profit margin	-1.5192	0.8714	-1.743	0.08128
Sales/cash	0.33441E-05	0.2177E-04	0.154	0.87789
ΔSales/cash	0.17847E-01	0.8439E-01	0.211	0.83252

%ΔSales/cash	-0.28216E-01	0.3109E-01	-0.908	0.36412
Sales/inventory	0.25293E-05	0.8434E-05	0.300	0.76425
ΔSales/inventory	0.11971E-01	0.1108E-01	1.081	0.27980
%ΔSales/inventory	0.22434E-02	0.2638E-02	0.850	0.39518
Sales/working capital	0.54934E-02	0.4250E-02	1.293	0.19616
ΔSales/working capital	-0.92141E-05	0.1067E-04	-0.863	0.38797
%ΔSales/working capital	-0.36450E-01	0.5537E-01	-0.658	0.51036
Sales/fixed assets	-0.33359E-05	0.4551E-05	-1.098	0.27231
ΔSales/fixed assets	0.23872	0.1222	1.154	0.36981
%ΔSales/fixed assets	-0.13493	0.9851E-01	-1.370	0.17078
ΔTotal assets	-0.22333E-01	0.6544E-01	-0.367	0.71344
%ΔTotal assets	0.74503	3.256	0.181	0.97419
Cash flow/total debt	0.78222E-01	0.3805E-01	2.056	0.25482
Working capital/total assets	0.18391E-02	0.5135E-02	0.358	0.72022
ΔWorking capital/total assets	-0.65607E-06	0.4078E-06	-1.609	0.10764
%ΔWorking capital/total assets	-0.40026E-01	0.5148E-01	-0.778	0.43686
ΔFunds	-0.43491E-01	0.5138E-01	-0.847	0.39726
ΔTuses	-0.91275E-01	0.6145E-01	-1.485	0.13746
Working capital	0.37079E-01	0.2379	0.156	0.87615
ΔWorking capital	-0.75923E-01	0.6281	-0.121	0.90379
%ΔWorking capital	-0.26361E-01	0.5458E-01	-0.483	0.62912
Total income/cash flow	0.44195E-01	0.3413E-01	1.295	0.19530



## Chemical Industry

**Table A5: Univariate Logit Estimation For The Chemical industry For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1980-84.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob t &gt;=x</i>
Current ratio	-0.93367E-02	0.6616E-01	-0.141	0.88777
Δcurrent ratio	-0.54240E-02	0.1635E-01	-0.332	0.74012
%Δcurrent ratio	-0.11569	0.4052	-0.286	0.77525
Quick asset ratio	0.39603	0.8725	0.454	0.64991
ΔQuick asset ratio	0.20375E-03	0.1429E-02	0.143	0.88661
%ΔQuick asset ratio	0.20318E-03	0.1429E-02	0.142	0.88693
Debtors ratio	0.30791E-01	0.1183E-01	2.603	0.00923
ΔDebtors ratio	0.43864E-03	0.1425E-02	0.308	0.75828
%ΔDebtors ratio	0.20784E-03	0.1429E-02	0.145	0.88435
Inventory turnover	-0.98938E-01	0.5825E-01	-1.698	0.08944
ΔInventory turnover	0.22782E-03	0.1429E-02	0.159	0.87329
%ΔInventory turnover	0.20639E-03	0.1429E-02	0.144	0.88515
Inventory/total assets	-0.82080	2.277	-0.361	0.71844
ΔInventory/total assets	-3.2664	4.190	-0.780	0.43561
Inventory	0.49842E-06	0.9525E-06	0.523	0.60079
ΔInventory	-0.72328E-05	0.9449E-05	-0.765	0.44402
%ΔInventory	0.20975E-03	0.1429E-02	0.147	0.88328
Sales	0.83495E-07	0.1778E-06	0.470	0.63859
ΔSales	-0.36437E-07	0.1494E-05	-0.024	0.98054
%ΔSales	0.20579E-03	0.1429E-02	0.144	0.88547
ΔDepreciation	0.24776E-05	0.4686E-04	0.053	0.95783
Depreciation	0.15524E-05	0.8683E-05	0.179	0.85811
%ΔDepreciation	0.92191E-03	0.1241E-02	0.743	0.45769
ΔDividend per share	0.51835E-03	0.7898E-03	0.656	0.51162
%ΔDividend per share	0.52481E-03	0.7901E-03	0.664	0.50654
Depreciation/fixed assets	0.30846	0.3096	0.996	0.31903
ΔDepreciation/fixed assets	-0.50758E-03	0.8878E-03	-0.572	0.56752
Return on opening equity	0.19523E-03	0.1428E-02	0.137	0.89124
ΔReturn on opening equity	0.22403E-03	0.6647E-03	0.337	0.73609
%ΔReturn on opening equity	0.19511E-03	0.6650E-03	0.293	0.76923
Capital expenditure/total assets	14.625	13.46	1.087	0.27717
ΔCapital expenditure/total assets	0.45264E-04	0.4125E-03	0.110	0.91263
%ΔCapital expenditure/total assets	0.42399E-04	0.4122E-03	0.103	0.91807
Capital Expenditure	0.59086E-05	0.1068E-04	0.553	0.58023
ΔCapital Expenditure	-0.13042E-04	0.1639E-04	-0.796	0.42630
%ΔCapital Expenditure	-0.54164E-04	0.4159E-03	-0.130	0.89639
Debt/equity	-0.88979E-01	0.5492E-01	-1.620	0.10518
ΔDebt/equity	0.21635E-03	0.1429E-02	0.151	0.87965
%ΔDebt/equity	0.20868E-03	0.1429E-02	0.146	0.88389
Equity/fixed assets	-0.42381	0.7666	-0.553	0.58036
ΔEquity/fixed assets	0.20620E-03	0.1429E-02	0.144	0.88526
%ΔEquity/fixed assets	0.20581E-03	0.1429E-02	0.144	0.88548
Times interest earned	-0.86011E-04	0.1639E-03	-0.525	0.59972
ΔTimes interest earned	-0.10981E-03	0.2527E-03	-0.435	0.66387
%ΔTimes interest earned	-0.17280E-03	0.3093E-03	-0.559	0.57640
Sales/total assets	-0.93264	0.4025	-2.317	0.02049
ΔSales/total assets	0.20426E-03	0.1429E-02	0.143	0.88634
%ΔSales/total assets	0.20273E-03	0.1429E-02	0.142	0.88718
Return on total assets	0.50231E-01	0.2857E-01	1.758	0.07873
ΔReturn on total assets	0.48747E-03	0.7026E-03	0.694	0.48778
%ΔReturn on total assets	0.45157E-03	0.7010E-03	0.644	0.51945
Return on closing equity	0.53564E-02	0.1306E-01	0.410	0.68163
ΔReturn on closing equity	0.21968E-03	0.7357E-03	0.299	0.76524
%ΔReturn on closing equity	0.18405E-03	0.7359E-03	0.250	0.80251
Operating profit/sales	10.804	4.948	2.183	0.02901

ΔOperating profit/sales	0.94760E-03	0.8894E-03	1.065	0.28667
%ΔOperating profit/sales	-0.87393	0.8745	-0.999	0.31760
Net profit margin	0.10389	0.7311E-01	1.421	0.15536
ΔNet profit margin	0.21467E-03	0.7359E-03	0.292	0.77050
%ΔNet profit margin	0.18755E-03	0.7360E-03	0.255	0.79887
Sales/cash	0.74128E-04	0.1167E-03	0.635	0.52523
ΔSales/cash	0.13036E-02	0.6555E-03	1.989	0.04674
%ΔSales/cash	0.13057E-02	0.8221E-03	1.588	0.11223
Sales/inventory	-0.72833E-01	0.6719E-01	-1.084	0.27835
ΔSales/inventory	0.22319E-03	0.1429E-02	0.156	0.87586
%ΔSales/inventory	0.20522E-03	0.1429E-02	0.144	0.88580
Sales/working capital	-0.29660E-01	0.2423E-01	-1.224	0.22091
ΔSales/working capital	0.35355E-03	0.1430E-02	0.247	0.80476
%ΔSales/working capital	0.20976E-03	0.1429E-02	0.147	0.88329
Sales/fixed assets	-0.87264	0.4025	-2.317	0.02049
ΔSales/fixed assets	0.32126E-03	0.1111E-02	0.253	0.88634
%ΔSales/fixed assets	0.41573E-03	0.1245E-02	0.178	0.97718
ΔTotal assets	0.43186E-06	0.1345E-05	0.245	0.63086
%ΔTotal assets	1.1130	0.8208	1.356	0.24512
Cash flow/total debt	0.28183E-03	0.4259E-03	0.662	0.50816
Working capital/total assets	0.18285	1.064	0.172	0.86354
ΔWorking capital/total assets	0.74211E-02	0.3648E-01	0.203	0.83882
%ΔWorking capital/total assets	0.56761E-02	0.1531E-01	0.371	0.71078
ΔFunds	0.11111E-05	0.4736E-05	0.235	0.81451
ΔTuses	0.54971E-05	0.6031E-05	0.911	0.36207
Working capital	0.87269E-06	0.9374E-06	0.931	0.35188
ΔWorking capital	0.16660E-05	0.2561E-05	0.651	0.51536
%ΔWorking capital	0.11677	0.2713	0.430	0.66691
Total income/cash flow	0.49180E-05	0.1179E-04	0.417	0.67669
ΔWorking capital	0.16660E-05	0.2561E-05	0.651	0.51536
%ΔWorking capital	0.11677	0.2713	0.430	0.66691
Total income/cash flow	0.12192E-05	0.2911E-05	0.419	0.67531

**Table A5a: Univariate Logit Estimation For The Chemical industry For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1981-85.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
current ratio	0.45278E-01	0.7187E-01	0.630	0.52866
Δcurrent ratio	0.10750	0.1044	1.030	0.30308
%Δcurrent ratio	0.23211	0.4633	0.501	0.61635
Quick asset ratio	-0.37405	0.6884	-0.543	0.58687
ΔQuick asset ratio	-0.71558	0.7896	-0.906	0.36477
%ΔQuick asset ratio	-1.0420	0.9175	-1.136	0.25608
Debtors ratio	0.14126E-01	0.1008E-01	1.401	0.16123
ΔDebtors ratio	0.37727E-02	0.1004E-01	0.376	0.70717
%ΔDebtors ratio	-0.24791E-02	1.007	-0.002	0.99804
Inventory turnover	-0.65010E-01	0.5065E-01	-1.283	0.19933
ΔInventory turnover	0.11839	0.9343E-01	1.267	0.20513
%ΔInventory turnover	0.31893	0.6617	0.482	0.62980
Inventory/total assets	-0.66117	2.181	-0.303	0.76181
ΔInventory/total assets	-2.8246	4.155	-0.680	0.49666
Inventory	-0.64041E-06	0.8168E-06	-0.784	0.43299
ΔInventory	-0.78031E-05	0.7461E-05	-1.046	0.29566
%ΔInventory	-0.30181	0.9910	-0.305	0.76071
Sales	-0.12931E-06	0.1509E-06	-0.857	0.39143
ΔSales	-0.10217E-05	0.1097E-05	-0.931	0.35170
%ΔSales	-0.43583	0.7290	-0.598	0.54996
ΔDepreciation	0.15957E-04	0.3679E-04	0.434	0.66446
Depreciation	0.17867E-05	0.7145E-05	0.250	0.80253
%ΔDepreciation	-0.31527	0.5658	-0.557	0.57736
ΔDividend per share	-0.16070	0.1530	-1.050	0.29359
%ΔDividend per share	-0.23391	0.3247	-0.720	0.47131
Depreciation/fixed assets	0.30733	0.3877	0.793	0.42800
ΔDepreciation/fixed assets	4.2918	2.624	1.635	0.10196
Return on opening equity	-0.54607	0.2809	-1.944	0.05191
ΔReturn on opening equity	-0.23768E-01	0.2668	-0.089	0.92902
%ΔReturn on opening equity	-0.16392	0.2014	-0.814	0.41571
Capital expenditure/total assets	12.004	12.21	0.983	0.32537
ΔCapital expenditure/total assets	-1.2558	11.45	-0.110	0.91265
%ΔCapital expenditure/total assets	-0.89692E-01	0.8578E-01	-1.046	0.29572
Capital Expenditure	-0.49545E-05	0.1066E-04	-0.465	0.64223
ΔCapital Expenditure	-0.68318E-05	0.2079E-04	-0.329	0.74249
%ΔCapital Expenditure	-0.68094E-01	0.7244E-01	-0.940	0.34719
Debt/equity	-0.16485	0.6598E-01	-2.498	0.01247
ΔDebt/equity	0.15927	0.1255	1.270	0.20423
%ΔDebt/equity	-0.80783E-01	0.6641	-0.122	0.90319
Equity/fixed assets	0.35740	0.5100	0.701	0.48347
ΔEquity/fixed assets	0.18293	0.7025	0.260	0.79456
%ΔEquity/fixed assets	-0.12064	0.1617	-0.746	0.45558
Times interest earned	0.31977E-01	0.2806E-01	1.139	0.25453
ΔTimes interest earned	0.20098E-03	0.1723E-02	0.117	0.90712
%ΔTimes interest earned	0.25083E-03	0.7475E-03	0.336	0.73721
Sales/total assets	-0.91986	0.4272	-2.153	0.03132
ΔSales/total assets	-0.43733	0.7154	-0.611	0.54098
%ΔSales/total assets	-0.77101	0.8629	-0.893	0.37161
Return on total assets	0.46325E-02	0.2594E-01	0.179	0.85827
ΔReturn on total assets	-0.18038E-01	0.4505E-01	-0.400	0.68889
%ΔReturn on total assets	-0.56012E-01	0.8721E-01	-0.642	0.52069
Return on closing equity	-0.55840	0.2823	-1.978	0.04791
ΔReturn on closing equity	-0.28028E-01	0.2670	-0.105	0.91639
%ΔReturn on closing equity	-0.17026	0.2071	-0.822	0.41092
Operating profit/sales	2.5004	4.054	0.617	0.53741
ΔOperating profit/sales	-2.5663	3.705	-0.693	0.48855
%ΔOperating profit/sales	-1.1967	0.9881	-1.211	0.22586
Net profit margin	0.40133E-02	0.6057E-01	0.066	0.94717

ΔNet profit margin	-0.76374E-01	0.1120	-0.682	0.49546
%ΔNet profit margin	-0.98373E-01	0.1520	-0.647	0.51739
Sales/cash	0.15003E-03	0.2819E-03	0.532	0.59464
ΔSales/cash	0.13697E-03	0.2285E-03	0.600	0.54884
%ΔSales/cash	0.36886E-02	0.9299E-02	0.397	0.69161
Sales/inventory	-0.25722E-01	0.5583E-01	-0.461	0.64500
ΔSales/inventory	0.96564E-01	0.9253E-01	1.044	0.29669
%ΔSales/inventory	-0.22493	0.6892	-0.326	0.74417
Sales/working capital	-0.32526E-01	0.2301E-01	-1.413	0.15752
ΔSales/working capital	0.31821E-01	0.2912E-01	1.093	0.27449
%ΔSales/working capital	-0.63703E-01	0.1932	-0.330	0.74163
Sales/fixed assets	-0.81986	0.4233	-2.003	0.00132
ΔSales/fixed assets	-0.53733	0.6154	-0.711	0.61498
%ΔSales/fixed assets	-0.76101	0.9629	-0.993	0.98761
ΔTotal assets	0.93413E-07	0.8662E-06	0.108	0.91412
%ΔTotal assets	1.2908	0.9077	1.422	0.15503
Cash flow/total debt	0.66198E-02	0.1035E-01	0.640	0.52242
Working capital/total assets	1.1002	1.112	0.989	0.32263
ΔWorking capital/total assets	0.23899	1.633	0.146	0.88368
%ΔWorking capital/total assets	-0.30908	0.4198	-0.736	0.46155
ΔFunds	-0.39754E-06	0.3654E-05	-0.109	0.91336
ΔTuses	-0.28447E-06	0.2986E-05	-0.095	0.92411
Working capital	-0.14324E-06	0.6784E-06	-0.211	0.83277
ΔWorking capital	0.31608E-05	0.2992E-05	1.056	0.29081
%ΔWorking capital	0.29757	0.3243	0.918	0.35882
Total income/cash flow	0.25963E-05	0.1146E-04	0.227	0.82078
ΔWorking capital	0.31608E-05	0.2992E-05	1.056	0.29081
%ΔWorking capital	0.29757	0.3243	0.918	0.35882

**Table A5b: Univariate Logit Estimation For The Chemical industry For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1982-86.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob(t) ≥ x</i>
current ratio	-0.13544E-01	0.6802E-01	-0.199	0.84217
Δcurrent ratio	0.76018E-01	0.8893E-01	0.855	0.39264
%Δcurrent ratio	0.59427E-01	0.4056	0.147	0.88350
Quick asset ratio	-2.0981	1.025	-2.047	0.04061
ΔQuick asset ratio	-0.81718	0.7132	-1.146	0.25188
%ΔQuick asset ratio	-1.4742	0.9995	-1.475	0.14023
Debtors ratio	0.14030E-01	0.9494E-02	1.478	0.13949
ΔDebtors ratio	0.12030E-01	0.1153E-01	1.043	0.29673
%ΔDebtors ratio	1.1178	0.9650	1.158	0.24673
Inventory turnover	0.26164E-01	0.4043E-01	0.647	0.51756
ΔInventory turnover	0.13129	0.9311E-01	1.410	0.15850
%ΔInventory turnover	1.4383	0.9498	1.514	0.12994
Inventory/total assets	-1.0719	2.102	-0.510	0.61011
ΔInventory/total assets	-3.1376	4.381	-0.716	0.47390
Inventory	-0.45497E-06	0.7856E-06	-0.579	0.56251
ΔInventory	-0.36882E-05	0.8054E-05	-0.458	0.64701
%ΔInventory	0.76934	0.9026	0.852	0.39400
Sales	-0.10148E-06	0.1421E-06	-0.714	0.47511
ΔSales	-0.47797E-06	0.9990E-06	-0.478	0.63234
%ΔSales	0.38817	0.8493	0.457	0.64765
ΔDepreciation	0.91022E-05	0.3587E-04	0.254	0.79966
Depreciation	-0.42828E-05	0.7091E-05	-0.604	0.54586
%ΔDepreciation	0.36648	1.012	0.362	0.71739
ΔDividend per share	-0.13976	0.1309	-1.068	0.28571
%ΔDividend per share	-0.92964E-01	0.2977	-0.312	0.75486
Depreciation/fixed assets	0.65861	0.6389	1.031	0.30264
ΔDepreciation/fixed assets	2.6438	2.273	1.163	0.24484
Return on opening equity	-0.72407	0.2935	-2.467	0.01362
Δreturn on opening equity		0.2919	0.087	0.93053
%ΔReturn on opening equity	-0.13353	0.1534	-0.870	0.38410
Capital expenditure/total assets	-4.5819	12.77	-0.359	0.71978
ΔCapital expenditure/total assets	-9.9650	13.30	-0.749	0.45360
%ΔCapital expenditure/total assets	-0.18377	0.1589	-1.156	0.24755
Capital Expenditure	-0.71825E-05	0.9785E-05	-0.734	0.46295
ΔCapital Expenditure	-0.88795E-04	0.4904E-04	-1.811	0.07019
%ΔCapital Expenditure	-0.83383E-01	0.9912E-01	-0.841	0.40024
Debt/equity	-0.37879E-01	0.6033E-01	-0.628	0.53011
ΔDebt/equity	0.36452	0.1746	2.088	0.03677
%ΔDebt/equity	0.46177	0.6586	0.701	0.48322
Equity/fixed assets	0.29473	0.3295	0.894	0.37114
ΔEquity/fixed assets	0.40785	0.4947	0.824	0.40972
%ΔEquity/fixed assets	-0.85424E-01	0.1493	-0.572	0.56732
Times interest earned	0.29259E-02	0.2364E-01	0.124	0.90150
ΔTimes interest earned	0.16399E-03	0.1019E-02	0.161	0.87213
%ΔTimes interest earned	0.21357E-03	0.6428E-03	0.332	0.73969
Sales/total assets	-0.45659	0.4163	-1.097	0.27278
ΔSales/total assets	-1.1557	0.7490	-1.543	0.12284
%ΔSales/total assets	-0.97881	1.058	-0.925	0.35504
Return on total assets	-0.49068E-01	0.2552E-01	-1.923	0.05453
ΔReturn on total assets	-0.14846E-01	0.4808E-01	-0.309	0.75752
%ΔReturn on total assets	-0.72342E-01	0.1037	-0.698	0.48541
Return on closing equity	-0.70761	0.2914	-2.428	0.01518
ΔReturn on closing equity	0.2598E-01	0.2922	0.070	0.94381
%ΔReturn on closing equity	-0.13711	0.1547	-0.886	0.37542
ΔOperating profit/sales	0.41174	0.5133	0.802	0.42251
%ΔOperating profit/sales	-0.11636	0.8888E-01	-1.309	0.19045
Net profit margin	-0.23694E-01	0.1266E-01	-1.872	0.06127
ΔNet profit margin	-0.18411E-01	0.2504E-01	-0.735	0.46218

%ΔNet profit margin	-0.58834E-02	0.4135E-02	-1.423	0.15474
Sales/cash	0.19393E-04	0.1221E-04	1.588	0.11227
ΔSales/cash	0.12845E-04	0.8683E-05	1.479	0.13905
%ΔSales/cash	0.45603E-03	0.3799E-03	1.200	0.23000
Sales/inventory	0.11140E-01	0.1060E-01	1.051	0.29344
ΔSales/inventory	0.32029E-01	0.2108E-01	1.519	0.12871
%ΔSales/inventory	0.10486	0.2397	0.437	0.66179
Sales/working capital	0.27650E-02	0.4477E-02	0.618	0.53684
ΔSales/working capital	0.10711E-01	0.5925E-02	1.808	0.07067
%ΔSales/working capital	-0.36087E-02	0.4900E-02	-0.737	0.46142
Sales/fixed assets	-0.11115	0.8777E-01	-1.402	0.34151
ΔSales/fixed assets	-0.25666	0.1555	-1.352	0.18767
%ΔSales/fixed assets	-0.24764E-01	0.4574E-01	-1.341	0.34519
ΔTotal assets	0.21352E-06	0.2406E-06	0.887	0.37486
%ΔTotal assets	0.16056	0.9762E-01	1.645	0.10002
Cash flow/total debt	-0.41316E-02	0.2217E-02	-1.864	0.06237
Working capital/total assets	-0.32440	0.2636	-1.231	0.21850
ΔWorking capital/total assets	-0.24975	0.4063	-0.615	0.53881
%ΔWorking capital/total assets	-0.15525	0.8860E-01	-1.752	0.07974
ΔFunds	0.15982E-05	0.3599E-05	0.444	0.65698
ΔTuses	0.63515E-06	0.2830E-05	0.224	0.82242
Working capital	-0.17348E-06	0.6646E-06	-0.261	0.79407
ΔWorking capital	0.23439E-05	0.2222E-05	1.055	0.29145
Total income/cash flow	-0.28992E-04	0.2684E-04	-1.080	0.28001
ΔWorking capital	0.23439E-05	0.2222E-05	1.055	0.29145
%ΔWorking capital	0.77760E-01	0.2440	0.319	0.75001
Total income/cash flow	-0.50769E-05	0.3712E-05	-1.368	0.17143

**Table A5c: Univariate Logit Estimation For The Chemical industry For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1983-87.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>probt &gt;=x</i>
Current ratio	0.19993E-01	0.1909E-01	1.122	0.36564
Δcurrent ratio	0.18093E-01	0.1719E-01	1.052	0.29264
%Δcurrent ratio	0.63386E-01	0.9723E-01	0.652	0.51445
Quick asset ratio	-0.30830	0.1445	-2.134	0.03287
ΔQuick asset ratio	-0.50896E-01	0.1294	-0.393	0.69419
%ΔQuick asset ratio	-0.39753	0.6345	-0.626	0.53100
Debtors ratio	0.21722E-01	0.1004E-01	2.164	0.03048
ΔDebtors ratio	0.20711E-01	0.1178E-01	1.759	0.07862
%ΔDebtors ratio	2.0000	0.9881	2.024	0.04296
Inventory turnover	0.15735E-01	0.4162E-01	0.378	0.70540
ΔInventory turnover	0.74925E-01	0.7121E-01	1.052	0.29273
%ΔInventory turnover	0.45000	0.6941	0.648	0.51679
Inventory/total assets	-2.2114	2.153	-1.027	0.30427
ΔInventory/total assets	-4.3035	4.531	-0.950	0.34221
Inventory	-0.16308E-07	0.6214E-06	-0.026	0.97906
ΔInventory	-0.27064E-05	0.7271E-05	-0.372	0.70974
%ΔInventory	0.41133	0.5773	0.713	0.47612
Sales	-0.26841E-07	0.1092E-06	-0.246	0.80577
ΔSales	-0.12454E-05	0.1099E-05	-1.133	0.25704
%ΔSales	0.14082	0.7535	0.187	0.85174
ΔDepreciation	-0.26709E-04	0.4257E-04	-0.627	0.53041
Depreciation	-0.18242E-04	0.1381E-04	-1.321	0.18667
%ΔDepreciation	0.11472	0.8519	0.135	0.89288
ΔDividend per share	-0.15960	0.1435	-1.112	0.26594
%ΔDividend per share	-0.16472	0.3379	-0.488	0.62590
Depreciation/fixed assets	0.60485	0.7000	0.864	0.38751
ΔDepreciation/fixed assets	1.4776	1.837	0.804	0.42120
Return on opening equity	-0.57431	0.2624	-2.188	0.02865
ΔReturn on opening equity	-1.2963	0.7931	-1.634	0.10216
%ΔReturn on opening equity	-0.28449	0.3326	-0.855	0.39235
Capital expenditure/total assets	-5.2093	11.56	-0.450	0.65235
ΔCapital expenditure/total assets	-7.4462	15.41	-0.483	0.62892
%ΔCapital expenditure/total assets	-0.12729	0.1687	-0.754	0.45057
ΔCapital Expenditure	0.14102E-05	0.5490E-05	0.257	0.79728
%ΔCapital Expenditure	-0.54740E-01	0.8689E-01	-0.630	0.52870
Debt/equity	-0.39959E-01	0.4875E-01	-0.820	0.41244
ΔDebt/equity	-0.12088E-01	0.3171E-01	-0.381	0.70302
%ΔDebt/equity	-0.13499	0.2990	-0.451	0.65166
Equity/fixed assets	0.78005E-01	0.1174	0.665	0.50631
ΔEquity/fixed assets	0.59419	0.5488	1.083	0.27894
%ΔEquity/fixed assets	-0.57273E-01	0.1321	-0.433	0.66466
Times interest earned	0.31761E-01	0.2342E-01	1.356	0.17513
ΔTimes interest earned	0.18575E-03	0.1746E-02	0.106	0.91529
%ΔTimes interest earned	0.14368	0.3220	0.446	0.65545
ΔSales/total assets	-0.26784	0.1150	-2.329	0.01983
%ΔSales/total assets	-1.8013	0.9732	-1.851	0.06417
ΔReturn on total assets	-0.19822E-01	0.1174E-01	-1.689	0.09123
%ΔReturn on total assets	-0.55248	0.4704	-1.175	0.24015
Return on closing equity	-0.57431	0.2624	-2.188	0.02865
ΔReturn on closing equity	-1.3016	0.7958	-1.636	0.10192
%ΔReturn on closing equity	-0.29325	0.3395	-0.864	0.38767
Operating profit/sales	-5.3010	3.981	-1.332	0.18295
ΔOperating profit/sales	2.1792	8.892	0.245	0.80640
%ΔOperating profit/sales	-2.1938	1.153	-1.902	0.05718
Net profit margin	-0.61425E-01	0.5521E-01	-1.112	0.26593
ΔNet profit margin	-0.19169E-01	0.1736	-0.110	0.91209
%ΔNet profit margin	-0.11906	0.2939	-0.405	0.68537
Sales/cash	0.62789E-03	0.3514E-03	1.787	0.07398

ΔSales/cash	0.30786E-03	0.4288E-03	0.718	0.47275
%ΔSales/cash	0.19050	0.1305	1.459	0.14449
Sales/inventory	0.28470E-01	0.4481E-01	0.635	0.52517
ΔSales/inventory	0.90672E-01	0.8183E-01	1.108	0.26785
%ΔSales/inventory	-0.27152	0.7526	-0.361	0.71828
Sales/working capital	0.16918E-02	0.2015E-01	0.084	0.93310
ΔSales/working capital	0.32023E-01	0.3210E-01	0.998	0.31852
%ΔSales/working capital	-0.53635E-01	0.1716	-0.313	0.75456
Sales/fixed assets	-0.78420	0.5474	-1.009	0.17565
ΔSales/fixed assets	-1.4111	0.7024	-1.193	0.16232
%ΔSales/fixed assets	-1.6453	0.9732	-1.551	0.11417
ΔTotal assets	0.12217E-05	0.1047E-05	1.167	0.24336
%ΔTotal assets	2.2707	0.8904	2.550	0.01076
Cash flow/total debt	-0.12344E-01	0.9271E-02	-1.331	0.18305
Working capital/total assets	-0.64352	1.166	-0.552	0.58107
ΔWorking capital/total assets	0.10085	1.683	0.060	0.95222
%ΔWorking capital/total assets	-0.16619	0.2578	-0.645	0.51921
ΔFunds	0.21240E-05	0.3497E-05	0.607	0.54364
ΔTuses	0.20293E-05	0.2670E-05	0.760	0.44719
Working capital	0.27507E-06	0.5564E-06	0.494	0.62107
DWorking capital	0.56296E-05	0.3922E-05	1.436	0.15113
%ΔWorking capital	0.14913	0.1758	0.848	0.39625
Total income/cash flow	-0.37604E-05	0.2758E-04	-0.136	0.89153



**Table A5d: Univariate Logit Estimation For The Chemical industry For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1984-88.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
current ratio	-0.10101	0.1466	-0.689	0.49082
Δcurrent ratio	0.43590E-01	0.1032	0.422	0.67281
%Δcurrent ratio	-0.31303	0.8140	-0.385	0.70058
Quick asset ratio	-0.74898	0.5694	-1.315	0.18836
ΔQuick asset ratio	-0.99988E-01	0.5142	-0.194	0.84581
%ΔQuick asset ratio	-0.19310	0.5595	-0.345	0.72999
Debtors ratio	0.25398E-01	0.9760E-02	2.602	0.00926
ΔDebtors ratio	0.19144E-01	0.9462E-02	2.023	0.04305
%ΔDebtors ratio	1.2171	0.7056	1.725	0.08454
Inventory turnover	0.42481E-01	0.3485E-01	1.219	0.22283
ΔInventory turnover	0.81001E-01	0.6134E-01	1.320	0.18667
%ΔInventory turnover	0.54883	0.5771	0.951	0.34156
Inventory/total assets	-3.7524	2.266	-1.656	0.09779
ΔInventory/total assets	-5.9095	5.699	-1.037	0.29979
Inventory	-0.65424E-06	0.7105E-06	-0.921	0.35715
ΔInventory	-0.79631E-05	0.7749E-05	-1.028	0.30412
%ΔInventory	0.35425	0.4959	0.714	0.47496
Sales	-0.13132E-06	0.1266E-06	-1.037	0.29962
ΔSales	-0.25142E-05	0.1616E-05	-1.556	0.11980
%ΔSales	0.34002	0.7425	0.458	0.64699
ΔDepreciation	0.53021E-05	0.3522E-04	0.151	0.88035
Depreciation	-0.40204E-05	0.6564E-05	-0.612	0.54021
%ΔDepreciation	0.62364	0.7984	0.781	0.43476
ΔDividend per share	-0.23685	0.2546	-0.930	0.35214
%ΔDividend per share	-0.14740	0.3315	-0.445	0.65662
Depreciation/fixed assets	0.75508	0.6589	1.146	0.25184
ΔDepreciation/fixed assets	0.50077	1.395	0.359	0.71970
Return on opening equity	-0.51698	0.2315	-2.233	0.02556
ΔReturn on opening equity	-0.32638	0.4002	-0.816	0.41475
%ΔReturn on opening equity	-0.19850	0.2603	-0.763	0.44576
Capital expenditure/total assets	-9.3955	10.82	-0.868	0.38520
ΔCapital expenditure/total assets	-2.8491	11.55	-0.247	0.80513
%ΔCapital expenditure/total assets	-0.15967	0.1343	-1.189	0.23464
Capital Expenditure	-0.41387E-05	0.6108E-05	-0.678	0.49805
ΔCapital Expenditure	-0.15640E-04	0.2175E-04	-0.719	0.47211
%ΔCapital Expenditure	-0.52376E-01	0.7192E-01	-0.728	0.46643
Debt/equity	-0.43291E-01	0.4969E-01	-0.871	0.38368
ΔDebt/equity	0.33409E-02	0.1851E-01	0.180	0.85677
%ΔDebt/equity	-0.16779	0.3019	-0.556	0.57831
Equity/fixed assets	0.53153E-01	0.1101	0.483	0.62940
ΔEquity/fixed assets	0.53892	0.4406	1.223	0.22129
%ΔEquity/fixed assets	-0.66016E-01	0.1137	-0.580	0.56164
Times interest earned	-0.12793E-02	0.1265E-01	-0.101	0.91945
ΔTimes interest earned	-0.15248E-01	0.1973E-01	-0.773	0.43964
%ΔTimes interest earned	-0.46154E-01	0.1939	-0.238	0.81186
Sales/total assets	-0.67317	0.4259	-1.580	0.11400
ΔSales/total assets	-0.75072	0.5052	-1.486	0.13731
%ΔSales/total assets	-1.1431	0.7976	-1.433	0.15179
Return on total assets	-0.44261E-01	0.2562E-01	-1.728	0.08403
ΔReturn on total assets	-0.21925E-01	0.4513E-01	-0.486	0.62706
%ΔReturn on total assets	-0.86136E-03	0.6970E-03	-1.236	0.21652
%ΔReturn on total assets	-0.23560	0.2849	-0.827	0.40832
Return on closing equity	-0.51698	0.2315	-2.233	0.02556
ΔReturn on closing equity	-0.32638	0.4002	-0.816	0.41475
%ΔReturn on closing equity	-0.19850	0.2603	-0.763	0.44576
Operating profit/sales	-5.0164	3.571	-1.405	0.16006
ΔOperating profit/sales	4.5304	8.778	0.516	0.60577
%ΔOperating profit/sales	-2.2960	1.152	-1.993	0.04629

Net profit margin	-0.51540E-01	0.4644E-01	-1.110	0.26710
ΔNet profit margin	0.64821E-01	0.1462	0.443	0.65755
%ΔNet profit margin	0.49840E-01	0.2184	0.228	0.81947
Sales/cash	0.39543E-04	0.2651E-03	0.149	0.88143
ΔSales/cash	-0.12187E-03	0.4476E-03	-0.272	0.78542
%ΔSales/cash	0.40420E-01	0.1156	0.350	0.72667
Sales/inventory	0.53966E-01	0.3990E-01	1.353	0.17615
ΔSales/inventory	0.87835E-01	0.6696E-01	1.312	0.18958
%ΔSales/inventory	0.10038	0.5098	0.197	0.84389
Sales/working capital	0.10531E-01	0.1920E-01	0.548	0.58337
ΔSales/working capital	0.20816E-01	0.3212E-01	0.648	0.51696
%ΔSales/working capital	-0.37568E-01	0.7892E-01	-0.476	0.63405
Sales/fixed assets	-0.57317	0.4219	-1.450	0.15400
ΔSales/fixed assets	-0.65072	0.6452	-1.404	0.14731
%ΔSales/fixed assets	-1.2431	0.8076	-1.045	0.15179
ΔTotal assets	0.11907E-06	0.1007E-05	0.118	0.90690
%ΔTotal assets	2.1704	0.7841	2.768	0.00564
Cash flow/total debt	-0.15937E-01	0.8956E-02	-1.780	0.07515
Working capital/total assets	-1.7787	1.264	-1.407	0.15952
ΔWorking capital/total assets	-0.46509	1.662	-0.280	0.77964
%ΔWorking capital/total assets	-0.12230	0.2650	-0.461	0.64449
ΔFunds	-0.32721E-05	0.4561E-05	-0.717	0.47316
ΔTuses	-0.10959E-05	0.2891E-05	-0.379	0.70464
Working capital	-0.60217E-06	0.6761E-06	-0.891	0.37312
DWorking capital	0.22007E-05	0.2556E-05	0.861	0.38917
%ΔWorking capital	0.11741	0.1919	0.612	0.54074
Total income/cash flow	-0.49272E-05	0.2974E-04	-0.166	0.86839

**Table A5e: Univariate Logit Estimation For The Chemical industry For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1980-88.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
current ratio	-0.23126E-01	0.5918E-01	-0.391	0.69596
Δcurrent ratio	0.62007E-01	0.7663E-01	0.809	0.41839
%Δcurrent ratio	-0.30975E-02	0.3575	-0.009	0.99309
Quick asset ratio	-0.37399	0.4349	-0.860	0.38986
ΔQuick asset ratio	-0.57133	0.4629	-1.234	0.21714
%ΔQuick asset ratio	-0.54776	0.4906	-1.117	0.26419
Debtors ratio	0.29803E-01	0.7780E-02	3.831	0.00013
ΔDebtors ratio	0.12296E-01	0.6893E-02	1.784	0.07444
%ΔDebtors ratio	0.88005	0.5747	1.531	0.12568
Inventory turnover	-0.39192E-02	0.2566E-01	-0.153	0.87859
ΔInventory turnover	0.45128E-01	0.4218E-01	1.070	0.28463
%ΔInventory turnover	0.14053E-01	0.4086	0.034	0.97256
Inventory/total assets	-2.4357	1.558	-1.563	0.11802
ΔInventory/total assets	-3.4732	3.316	-1.047	0.29495
Inventory	-0.62781E-06	0.5310E-06	-1.182	0.23707
ΔInventory	-0.67359E-05	0.5712E-05	-1.179	0.23826
%ΔInventory	0.38089	0.3616	1.053	0.29218
Sales	-0.12517E-06	0.9540E-07	-1.312	0.18948
ΔSales	-0.20124E-05	0.1070E-05	-1.880	0.06010
%ΔSales	-0.22876	0.5618	-0.407	0.68384
Depreciation	-0.69323E-06	0.1222E-05	-0.567	0.57067
%ΔDepreciation	-0.41378E-02	0.1094	-0.038	0.96983
ΔDividend per share	-0.21022E-01	0.1531E-01	-1.373	0.16968
%ΔDividend per share	-0.34407E-01	0.6319E-01	-0.545	0.58608
Depreciation/fixed assets	0.45458E-01	0.4125E-01	1.102	0.27049
ΔDepreciation/fixed assets	0.62601E-01	0.3322E-01	1.885	0.05948
ΔDepreciation/fixed assets	1.6813	1.254	1.340	0.18015
Return on opening equity	-0.17328	0.1298	-1.335	0.18199
ΔReturn on opening equity	0.95785E-01	0.2192	0.437	0.66220
%ΔReturn on opening equity	-0.12474	0.1323	-0.943	0.34565
Capital expenditure/total assets	-0.59611	7.484	-0.080	0.93651
ΔCapital expenditure/total assets	-4.3150	7.488	-0.576	0.56443
%ΔCapital expenditure/total assets	-0.11144	0.7262E-01	-1.535	0.12490
Capital Expenditure	-0.66375E-05	0.5262E-05	-1.261	0.20716
ΔCapital Expenditure	0.70842E-06	0.9101E-05	0.078	0.93795
%ΔCapital Expenditure	-0.68559E-01	0.5130E-01	-1.337	0.18138
Debt/equity	-0.77329E-01	0.4026E-01	-1.921	0.05476
ΔDebt/equity	0.29920E-02	0.1786E-01	0.168	0.86694
%ΔDebt/equity	-0.13764	0.2484	-0.554	0.57955
Equity/fixed assets	0.21065E-01	0.1079	0.195	0.84526
ΔEquity/fixed assets	0.36727	0.3171	1.158	0.24681
%ΔEquity/fixed assets	-0.11016	0.1234	-0.893	0.37202
Times interest earned	0.17980E-03	0.1075E-02	0.167	0.86715
ΔTimes interest earned	0.32261E-02	0.1188E-01	0.271	0.78605
%ΔTimes interest earned	0.24638E-03	0.7339E-03	0.336	0.73709
Sales/total assets	-1.0410	0.3043	-3.421	0.00062
ΔSales/total assets	-0.95051	0.4304	-2.208	0.02722
%ΔSales/total assets	-1.4698	0.6369	-2.308	0.02101
Return on total assets	0.16594E-01	0.1719E-01	0.966	0.33424
ΔReturn on total assets	0.26770E-01	0.2512E-01	1.066	0.28650
%ΔReturn on total assets	-0.63267E-01	0.9067E-01	-0.698	0.48533
Return on closing equity	-0.17802	0.1300	-1.369	0.17103
ΔReturn on closing equity	0.93069E-01	0.2190	0.425	0.67086
%ΔReturn on closing equity	-0.12736	0.1335	-0.954	0.34010
Operating profit/sales	2.5138	2.508	1.002	0.31616
ΔOperating profit/sales	-0.81949	2.136	-0.384	0.70122
%ΔOperating profit/sales	-1.0534	0.6552	-1.608	0.10792
Net profit margin	0.41671E-01	0.3460E-01	1.204	0.22842

ΔNet profit margin	0.86058E-01	0.8080E-01	1.065	0.28682
%ΔNet profit margin	-0.50676E-01	0.8586E-01	-0.590	0.55505
Sales/cash	0.49748E-04	0.7320E-04	0.680	0.49673
ΔSales/cash	0.88505E-04	0.1018E-03	0.869	0.38474
%ΔSales/cash	0.33529E-02	0.7019E-02	0.478	0.63288
Sales/inventory	0.12080E-01	0.2767E-01	0.437	0.66247
ΔSales/inventory	0.44252E-01	0.4336E-01	1.020	0.30750
%ΔSales/inventory	-0.31595	0.4178	-0.756	0.44954
Sales/working capital	-0.62744E-02	0.1438E-01	-0.436	0.66271
ΔSales/working capital	0.24904E-01	0.2055E-01	1.212	0.22551
%ΔSales/working capital	-0.45607E-01	0.9222E-01	-0.495	0.62093
Sales/fixed assets	-1.4410	0.4012	-3.421	0.00062
ΔSales/fixed assets	-0.87951	0.5741	-1.208	0.12422
%ΔSales/fixed assets	-1.5648	0.6369	-1.318	0.45101
ΔTotal assets	0.23529E-06	0.7615E-06	0.205	0.65468
%ΔTotal assets	1.7093	0.6014	2.842	0.00448
Cash flow/total debt	-0.11886E-03	0.1319E-03	-0.901	0.36758
Working capital/total assets	-0.64374	0.7853	-0.820	0.41236
%ΔWorking capital/total assets	-0.17656E-01	0.5345E-01	-0.330	0.74114
ΔFunds	0.12128E-07	0.7324E-06	0.017	0.98679
ΔTuses	0.34868E-06	0.5891E-06	0.592	0.55390
Working capital	-0.94176E-07	0.1149E-06	-0.820	0.41250
ΔWorking capital	0.51466E-06	0.3096E-06	1.662	0.09646
%ΔWorking capital	0.51806E-01	0.3497E-01	1.482	0.13844
Total income/cash flow	0.12048E-05	0.2701E-05	0.446	0.65556

## Stores and Chemical Industries

**Table A6: Univariate Logit Estimation For The Stores and Chemical industries For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1980-84.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
Current ratio	0.10511E-05	0.1482E-05	0.709	0.47815
ΔCurrent ratio	12.768	9.313	1.371	0.17041
%ΔCurrent ratio	-0.12828E-01	0.9379E-01	-0.137	0.89121
Quick asset ratio	0.47433	0.2893	1.639	0.10114
ΔQuick asset ratio	0.37655	0.4241	0.888	0.37465
%ΔQuick asset ratio	-0.12326	1.842	-0.067	0.94666
Debtors ratio	0.20720E-02	0.3122E-02	0.664	0.50693
ΔDebtors ratio	0.14026E-02	0.4893E-02	0.287	0.77439
%ΔDebtors ratio	-0.10624E-04	0.1540E-04	-0.690	0.49022
Inventory turnover	0.47649E-01	0.3686E-01	1.293	0.19607
ΔInventory turnover	-0.37801E-01	0.4219E-01	-0.896	0.37028
%ΔInventory turnover	-0.40994E-03	0.2035E-02	-0.201	0.84034
Inventory/total assets	-1.9551	0.8779	-2.227	0.02594
ΔInventory/total assets	1.0240	0.6153	1.664	0.09606
%ΔInventory/total assets	-0.18511E-01	0.3530	-0.052	0.95818
Inventory	0.13242E-05	0.1274E-05	1.040	0.29848
ΔInventory	0.70950E-01	0.8003E-01	0.887	0.37534
%ΔInventory	0.53937E-01	0.6551E-01	0.823	0.41029
Sales	0.33372E-06	0.2452E-06	1.361	0.17354
ΔSales	0.14359	0.1537	0.934	0.35030
%ΔSales	-0.43871E-03	0.8510E-03	-0.516	0.60620
ΔDepreciation	0.41561	0.5149	0.807	0.41954
Depreciation	0.72853E-05	0.9920E-05	0.734	0.46269
%ΔDepreciation	-0.21199E-01	0.8725	-0.024	0.98062
ΔDividend per share	0.17547E-01	0.4080	0.043	0.96570
%ΔDividend per share	-0.14663E-01	0.1788E-01	-0.820	0.41218
Depreciation/fixed assets	-0.44490E-01	0.1732	-0.257	0.79729
ΔDepreciation/fixed assets	0.68533	0.4823	1.421	0.15529
Return on opening equity	-0.17076E-02	0.9660E-02	-0.177	0.85969
ΔReturn on opening equity	0.14233	0.4779	0.298	0.76587
%ΔReturn on opening equity	0.22112E-05	0.3180E-05	0.695	0.48683
Capital expenditure/total assets	0.91329E-05	0.7913E-05	1.154	0.24845
ΔCapital expenditure/total assets	0.12874E-04	0.1184E-04	1.088	0.27675
Capital Expenditure	0.13765E-04	0.1161E-04	1.186	0.23562
ΔCapital Expenditure	0.33054	0.3545	0.932	0.35119
%ΔCapital Expenditure	0.34871E-01	0.3324E-01	1.049	0.29421
Debt/equity	0.13521E-03	0.3944E-01	0.003	0.99726
ΔDebt/equity	-0.11223	0.5601	-0.200	0.84118
%ΔDebt/equity	0.16690E-01	0.7869E-01	0.212	0.83203
Times interest earned	0.43819E-01	0.1827E-01	2.399	0.01646
ΔTimes interest earned	-0.17108E-02	0.7478E-02	-0.229	0.81904
%ΔTimes interest earned	-0.89867E-01	0.1025	-0.877	0.38075
Sales/total assets	-0.15791E-05	0.8025E-05	-0.197	0.84400
ΔSales/total assets	0.48403	0.3917	1.236	0.21660
%ΔSales/total assets	0.12821	0.2427	0.528	0.59729
Return on total assets	0.88808E-01	0.6583E-01	1.349	0.17729
ΔReturn on total assets	-0.32246	0.6107	-0.528	0.59746
%ΔReturn on total assets	-0.59774E-02	0.1594E-01	-0.375	0.70762
Return on closing equity	0.17497E-02	0.1137E-01	0.154	0.87775
ΔReturn on closing equity	-0.20210E-01	0.3820E-01	-0.529	0.59676
%ΔReturn on closing equity	0.11459E-01	0.1992E-01	0.575	0.56507
Operating profit/sales	-0.15621E-05	0.5183E-05	-0.301	0.76313
ΔOperating profit/sales	-0.23193E-01	0.3197E-01	-0.725	0.46820
%ΔOperating profit/sales	0.47624	0.4551	1.046	0.29540
Net profit margin	0.44736E-01	0.4319E-01	1.036	0.30033

ΔNet profit margin	0.16065	0.5650	0.284	0.77614
%ΔNet profit margin	-1.2604	1.191	-1.059	0.28977
Sales/cash	0.38588E-04	0.5274E-04	0.732	0.46436
ΔSales/cash	-0.12702	0.3332	-0.381	0.70307
%ΔSales/cash	-0.84365E-02	0.3020E-01	-0.279	0.77995
Sales/inventory	-0.42545E-05	0.1167E-04	-0.365	0.71543
ΔSales/inventory	0.57207E-02	0.1722E-01	0.332	0.73969
%ΔSales/inventory	0.94456E-03	0.2203E-02	0.429	0.66806
Sales/working capital	0.95564E-03	0.7311E-02	0.131	0.89600
ΔSales/working capital	-0.71114E-05	0.9142E-05	-0.778	0.43664
%ΔSales/working capital	0.14566	0.1752	0.831	0.40585
Sales/fixed assets	-0.17891E-05	0.7025E-05	-0.189	0.94400
ΔSales/fixed assets	0.38403	0.2917	1.524	0.31660
%ΔSales/fixed assets	0.22821	0.2432	0.547	0.69429
ΔTotal assets	-0.28641E-02	0.1549	-0.018	0.98525
%ΔTotal assets	3.4049	6.670	0.510	0.60972
Cash flow/total debt	0.10237	0.7240E-01	1.414	0.15738
Working capital/total assets	0.87400E-02	0.1757E-01	0.497	0.61895
ΔWorking capital/total assets	0.81664E-06	0.8685E-06	0.940	0.34707
%ΔWorking capital/total assets	0.64112	0.4900	1.308	0.19075
ΔFunds	-0.15699E-01	0.2927E-01	-0.536	0.59167
ΔTuses	-0.23122E-01	0.3775E-01	-0.613	0.54019
Working capital	-0.20683	0.5328	-0.388	0.69787
ΔWorking capital	1.6673	1.328	1.255	0.20940
%ΔWorking capital	0.14967	0.2621	0.571	0.56803

**Table A6a: Univariate Logit Estimation For The Stores and Chemical industries For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1981-85.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob t &gt;=x</i>
Current ratio	-0.32414E-06	0.8244E-06	-0.393	0.69419
ΔCurrent ratio	3.1178	5.701	0.547	0.58446
%ΔCurrent ratio	0.15868E-01	0.7223E-01	0.220	0.82612
Quick asset ratio	-0.12532	0.2154	-0.582	0.56061
ΔQuick asset ratio	0.30696	0.3743	0.820	0.41223
%ΔQuick asset ratio	-3.5762	2.888	-1.238	0.21560
Debtors ratio	-0.52843E-03	0.2778E-02	-0.190	0.84912
ΔDebtors ratio	0.26239E-01	0.2255E-01	1.164	0.24450
%ΔDebtors ratio	-0.69904E-05	0.1359E-04	-0.514	0.60702
Inventory turnover	-0.45321E-01	0.2920E-01	-1.552	0.12058
ΔInventory turnover	-0.21476	0.1965	-1.093	0.27452
%ΔInventory turnover	0.36468E-02	0.3025E-02	1.205	0.22805
Inventory/total assets	0.51869	0.7607	0.682	0.49533
ΔInventory/total assets	0.88901	0.5299	1.678	0.09338
%ΔInventory/total assets	0.51698	0.3418	1.513	0.13035
Inventory	-0.10610E-05	0.8499E-06	-1.248	0.21192
ΔInventory	0.44771E-01	0.8221E-01	0.545	0.58601
%ΔInventory	-0.38159E-01	0.4878E-01	-0.782	0.43402
Sales	-0.23506E-06	0.1547E-06	-1.519	0.12864
ΔSales	0.32440	0.2787	1.164	0.24444
%ΔSales	-0.95451E-05	0.3900E-04	-0.245	0.80664
ΔDepreciation	0.49042	0.6024	0.814	0.41557
Depreciation	-0.50861E-06	0.6607E-05	-0.077	0.93864
%ΔDepreciation	-0.21629	0.2984	-0.725	0.46855
ΔDividend per share	-0.11862	0.3484	-0.340	0.73348
%ΔDividend per share	0.74020E-02	0.1290E-01	0.574	0.56605
Depreciation/fixed assets	0.28829	0.3646	0.791	0.42915
ΔDepreciation/fixed assets	-0.89119E-01	0.2434	-0.366	0.71424
Return on opening equity	0.16026E-02	0.1407E-02	1.139	0.25470
ΔReturn on opening equity	0.75603E-02	0.7384E-02	1.024	0.30587
%ΔReturn on opening equity	0.16408E-05	0.1729E-05	0.949	0.34261
Capital expenditure/total assets	-0.17628E-05	0.2949E-05	-0.598	0.54994
ΔCapital expenditure/total assets	0.32087E-05	0.1137E-04	0.282	0.77781
Capital Expenditure	-0.62542E-05	0.8137E-05	-0.769	0.44210
ΔCapital Expenditure	-0.11122	0.2514	-0.442	0.65816
%ΔCapital Expenditure	0.76460E-01	0.4598E-01	1.663	0.09630
Debt/equity	-0.76091E-01	0.3943E-01	-1.930	0.05361
ΔDebt/equity	-0.27727E-01	0.3234	-0.086	0.93167
%ΔDebt/equity	-0.29196E-01	0.5962E-01	-0.490	0.62435
Times interest earned	0.93338E-02	0.1338E-01	0.698	0.48544
ΔTimes interest earned	0.10046E-01	0.9091E-02	1.105	0.26916
%ΔTimes interest earned	-0.13242	0.1175	-1.127	0.25981
Sales/total assets	-0.79630E-05	0.6978E-05	-1.141	0.25384
ΔSales/total assets	-0.17616	0.2494	-0.706	0.47991
%ΔSales/total assets	-0.12119	0.1258	-0.964	0.33519
Return on total assets	-0.56570E-01	0.6958E-01	-0.813	0.41618
ΔReturn on total assets	-0.29591E-02	0.5268	-0.006	0.99552
%ΔReturn on total assets	0.25045E-03	0.7093E-03	0.353	0.72403
Return on closing equity	0.64336E-02	0.1082E-01	0.595	0.55210
ΔReturn on closing equity	-0.12441E-01	0.2058E-01	-0.605	0.54545
%ΔReturn on closing equity	0.25779E-01	0.2074E-01	1.243	0.21399
Operating profit/sales	-0.50374E-05	0.4021E-05	-1.253	0.21029
ΔOperating profit/sales	-0.18771E-01	0.3127E-01	-0.600	0.54830
%ΔOperating profit/sales	-0.23656E-01	0.3615E-01	-0.654	0.51287
Net profit margin	-0.34378E-01	0.3712E-01	-0.926	0.35440
ΔNet profit margin	0.48083	0.5623	0.855	0.39251
%ΔNet profit margin	-1.9045	1.175	-1.621	0.10502
Sales/cash	0.27757E-04	0.3342E-04	0.830	0.40628

ΔSales/cash	0.25222E-01	0.1989	0.127	0.89908
%ΔSales/cash	-0.34946E-01	0.3140E-01	-1.113	0.26572
Sales/inventory	0.82180E-05	0.1645E-04	0.500	0.61728
ΔSales/inventory	0.10511E-01	0.1633E-01	0.644	0.51986
%ΔSales/inventory	0.33677E-02	0.7752E-02	0.434	0.66399
Sales/working capital	-0.73858E-02	0.6988E-02	-1.057	0.29057
ΔSales/working capital	-0.16312E-04	0.2015E-04	-0.809	0.41823
%ΔSales/working capital	-0.50328E-01	0.6467E-01	-0.778	0.43642
Sales/fixed assets	-0.79550E-05	0.7888E-05	-1.241	0.35384
ΔSales/fixed assets	-0.15516	0.3454	-0.806	0.47741
%ΔSales/fixed assets	-0.16419	0.1234	-0.984	0.45619
ΔTotal assets	0.89697E-01	0.1566	0.573	0.56675
%ΔTotal assets	6.2409	6.598	0.946	0.34423
Cash flow/total debt	0.84858E-01	0.5426E-01	1.564	0.11783
Working capital/total assets	0.20429E-01	0.1860E-01	1.098	0.27218
ΔWorking capital/total assets	-0.62186E-06	0.6177E-06	-1.007	0.31404
%ΔWorking capital/total assets	-0.29646E-01	0.4087E-01	-0.725	0.46822
ΔFunds	-0.67819E-01	0.6755E-01	-1.004	0.31542
ΔTuses	-0.97124E-01	0.7027E-01	-1.382	0.16690
Working capital	-0.36851	0.4367	-0.844	0.39875
ΔWorking capital	2.1951	1.410	1.557	0.11956
%ΔWorking capital	0.26190	0.3847	0.681	0.49606
Total income/cash flow	0.10288	0.7136E-01	1.442	0.14943



**Table A6b: Univariate Logit Estimation For The Stores and Chemical industries For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1982-86.**

Accounting Descriptors	Coefficient	Standard Error	t-statistic	prob( t >=x)
Current ratio	0.37816E-06	0.9141E-06	0.414	0.67909
Δcurrent ratio	-13.499	6.826	-1.977	0.04799
%Δcurrent ratio	-0.24456E-02	0.7115E-01	-0.034	0.97258
Quick asset ratio	-0.41266	0.2348	-1.758	0.07877
ΔQuick asset ratio	-0.37785E-01	0.9963E-01	-0.379	0.70451
%ΔQuick asset ratio	-0.42340	1.734	-0.244	0.80712
Debtors ratio	0.30735E-04	0.2592E-02	0.012	0.99054
ΔDebtors ratio	-0.24235E-01	0.3378E-01	-0.717	0.47307
%ΔDebtors ratio	-0.64087E-05	0.1168E-04	-0.549	0.58324
Inventory turnover	-0.40670E-01	0.2920E-01	-1.393	0.16371
ΔInventory turnover	-0.26161	0.2646	-0.989	0.32274
%ΔInventory turnover	0.82899E-02	0.5274E-02	1.572	0.11600
Inventory/total assets	1.3395	0.7210	1.858	0.06318
ΔInventory/total assets	0.69882	0.5241	1.333	0.18237
%ΔInventory/total assets	0.24863	0.2131	1.167	0.24329
Inventory	-0.15742E-05	0.1158E-05	-1.359	0.17419
ΔInventory	0.13579	0.9101E-01	1.492	0.13571
%ΔInventory	0.20515E-03	0.3175E-01	0.006	0.99484
Sales	-0.38922E-06	0.2185E-06	-1.781	0.07486
ΔSales	0.87264E-01	0.2999	0.291	0.77106
%ΔSales	-0.13468E-03	0.6088E-03	-0.221	0.82492
ΔDepreciation	1.1014	0.5549	1.985	0.04715
Depreciation	-0.29854E-04	0.1548E-04	-1.929	0.05374
%ΔDepreciation	-0.15498E-01	0.1370	-0.113	0.90992
ΔDividend per share	-0.44115	0.3601	-1.225	0.22057
%ΔDividend per share	0.73043E-02	0.1373E-01	0.532	0.59473
Depreciation/fixed assets	0.73586	0.6328	1.163	0.24491
ΔDepreciation/fixed assets	0.18192	0.2423	0.751	0.45271
Return on opening equity	0.14056E-02	0.5829E-02	0.241	0.80945
ΔReturn on opening equity	-0.19868	0.3277	-0.606	0.54438
%ΔReturn on opening equity	0.18635E-05	0.1831E-05	1.018	0.30878
Capital expenditure/total assets	0.64102E-06	0.2584E-05	0.248	0.80409
ΔCapital expenditure/total assets	-0.28339E-04	0.2646E-04	-1.071	0.28414
Capital Expenditure	-0.21605E-04	0.1096E-04	-1.972	0.04864
ΔCapital Expenditure	0.57118	0.3356	1.702	0.08875
%ΔCapital Expenditure	0.68637E-01	0.4317E-01	1.590	0.11184
Debt/equity	-0.10005E-01	0.3934E-01	-0.254	0.79925
ΔDebt/equity	-0.30085E-01	0.3277	-0.092	0.92686
%ΔDebt/equity	0.18638E-01	0.4388E-01	0.425	0.67099
Times interest earned	-0.23566E-02	0.1316E-01	-0.179	0.85783
ΔTimes interest earned	0.11542E-01	0.7398E-02	1.560	0.11872
%ΔTimes interest earned	-0.12310E-01	0.9777E-01	-0.126	0.89980
Sales/total assets	-0.67369E-06	0.6346E-05	-0.106	0.91545
ΔSales/total assets	0.47880	0.2912	1.644	0.10010
%ΔSales/total assets	-0.14268	0.1597	-0.894	0.37153
Return on total assets	-0.10077	0.7414E-01	-1.359	0.17405
ΔReturn on total assets	-1.1655	0.5099	-2.286	0.02227
%ΔReturn on total assets	0.22080E-03	0.7040E-03	0.314	0.75378
Return on closing equity	0.35624E-02	0.4611E-02	0.773	0.43979
ΔReturn on closing equity	-0.15908E-01	0.1932E-01	-0.823	0.41034
%ΔReturn on closing equity	0.26959E-01	0.2034E-01	1.325	0.18510
Operating profit/sales	-0.17915E-05	0.3939E-05	-0.455	0.64927
ΔOperating profit/sales	-0.32448E-02	0.3150E-01	-0.103	0.91796
%ΔOperating profit/sales	-0.16223E-01	0.3735E-01	-0.434	0.66398
Net profit margin	-0.49501E-01	0.3142E-01	-1.575	0.11520
ΔNet profit margin	0.79849	0.6226	1.283	0.19966
%ΔNet profit margin	-2.4797	1.206	-2.056	0.03975
Sales/cash	-0.30416E-04	0.3165E-04	-0.961	0.33649

$\Delta$ Sales/cash	0.75943E-01	0.1184	0.641	0.52135
% $\Delta$ Sales/cash	-0.21291E-01	0.3240E-01	-0.657	0.51108
Sales/inventory	-0.24611E-04	0.2479E-04	-0.993	0.32091
$\Delta$ Sales/inventory	0.18689E-01	0.1444E-01	1.295	0.19548
% $\Delta$ Sales/inventory	0.24237E-01	0.2478E-01	0.978	0.32794
Sales/working capital	-0.18544E-02	0.6748E-02	-0.275	0.78345
$\Delta$ Sales/working capital	0.57569E-04	0.4478E-04	1.286	0.19859
% $\Delta$ Sales/working capital	-0.77311E-01	0.1041	-0.743	0.45748
Sales/fixed assets	-0.64449E-06	0.5876E-05	-0.206	0.92545
$\Delta$ Sales/fixed assets	0.475544	0.3642	1.512	0.14510
% $\Delta$ Sales/fixed assets	-0.16452	0.1477	-0.974	0.47173
$\Delta$ Total assets	0.94886E-01	0.1736	0.547	0.58457
% $\Delta$ Total assets	-8.5601	6.944	-1.233	0.21769
Cash flow/total debt	0.75558E-01	0.4494E-01	1.681	0.09273
Working capital/total assets	0.17179E-01	0.2470E-01	0.695	0.48681
$\Delta$ Working capital/total assets	-0.92997E-06	0.6909E-06	-1.346	0.17831
% $\Delta$ Working capital/total assets	-0.24014E-01	0.4421E-01	-0.543	0.58703
$\Delta$ Funds	-0.90138E-01	0.7051E-01	-1.278	0.20110
$\Delta$ Tuses	-0.12547	0.8144E-01	-1.541	0.12340
Working capital	-0.39090	0.4161	-0.939	0.34755
$\Delta$ Working capital	-3.1000	1.787	-1.734	0.08287
% $\Delta$ Working capital	0.25917	0.3400	0.762	0.44596
Total income/cash flow	0.84558E-01	0.5832E-01	1.450	0.14710

**Table A6c: Univariate Logit Estimation For The Stores and Chemical industries For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1983-87.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
current ratio	0.88507E-06	0.9110E-06	0.972	0.33127
Δcurrent ratio	-4.6979	5.870	-0.800	0.42355
%Δcurrent ratio	0.59211E-01	0.7526E-01	0.787	0.43142
Quick asset ratio	-0.27793	0.2183	-1.273	0.20301
ΔQuick asset ratio	-0.51333E-01	0.1135	-0.452	0.65100
%ΔQuick asset ratio	-3.6128	3.663	-0.986	0.32404
Debtors ratio	0.30381E-02	0.2684E-02	1.132	0.25772
ΔDebtors ratio	-0.19869E-02	0.3324E-01	-0.060	0.95233
%ΔDebtors ratio	0.56781E-04	0.4542E-04	1.250	0.21125
Inventory turnover	-0.32847E-01	0.2897E-01	-1.134	0.25694
ΔInventory turnover	-0.23639	0.2599	-0.909	0.36313
%ΔInventory turnover	0.96409E-02	0.5792E-02	1.665	0.09598
Inventory/total assets	0.59172	0.6396	0.925	0.35489
ΔInventory/total assets	-0.38605	0.5540	-0.697	0.48592
%ΔInventory/total assets	0.72638E-01	0.1630	0.446	0.65592
Inventory	-0.41458E-06	0.6531E-06	-0.635	0.52558
ΔInventory	-0.40912E-02	0.2668E-01	-0.153	0.87811
%ΔInventory	0.35487E-01	0.3002E-01	1.182	0.23709
Sales	-0.15406E-06	0.1277E-06	-1.206	0.22768
ΔSales	0.58778	1.595	0.368	0.71257
%ΔSales	-0.13803E-02	0.8981E-03	-1.537	0.12429
ΔDepreciation	0.83059	0.4561	1.821	0.06861
Depreciation	-0.28524E-04	0.1409E-04	-2.024	0.04298
%ΔDepreciation	0.94477E-02	0.1315	0.072	0.94274
ΔDividend per share	-0.35316	0.3404	-1.038	0.29946
%ΔDividend per share	-0.39193E-02	0.1312E-01	-0.299	0.76520
Depreciation/fixed assets	0.93904	0.7324	1.282	0.19982
ΔDepreciation/fixed assets	0.55017	0.3213	1.712	0.08686
Return on opening equity	-0.37908E-02	0.4685E-02	-0.809	0.41845
ΔReturn on opening equity	0.28212	0.3198	0.882	0.37774
%ΔReturn on opening equity	0.28471E-05	0.2076E-05	1.372	0.17019
Capital expenditure/total assets	0.25537E-05	0.2425E-05	1.053	0.29230
ΔCapital expenditure/total assets	-0.47338E-05	0.2730E-04	-0.173	0.86233
Capital Expenditure	-0.47981E-05	0.6680E-05	-0.718	0.47257
ΔCapital Expenditure	0.35437	0.2548	1.391	0.16425
%ΔCapital Expenditure	0.24526E-01	0.3750E-01	0.654	0.51315
Debt/equity	-0.12244E-01	0.2443E-01	-0.501	0.61622
ΔDebt/equity	-0.35575	0.4166	-0.854	0.39314
%ΔDebt/equity	0.19316E-01	0.4370E-01	0.442	0.65850
Times interest earned	0.86909E-02	0.1296E-01	0.671	0.50254
ΔTimes interest earned	-0.28882E-02	0.7165E-02	-0.403	0.68687
%ΔTimes interest earned	0.50276E-01	0.5264E-01	0.955	0.33950
Sales/total assets	-0.61585E-06	0.6005E-05	-0.103	0.91832
ΔSales/total assets	0.27182	0.2041	1.332	0.18301
%ΔSales/total assets	-0.19444	0.1861	-1.045	0.29611
Return on total assets	0.27955E-01	0.1156	0.242	0.80897
ΔReturn on total assets	-0.46395	0.4405	-1.053	0.29224
%ΔReturn on total assets	0.18151E-01	0.3421E-01	0.531	0.59569
Return on closing equity	0.16272E-02	0.3422E-02	0.476	0.63438
ΔReturn on closing equity	0.10847	0.7923E-01	1.369	0.17100
%ΔReturn on closing equity	0.47448E-02	0.1912E-01	0.248	0.80396
Operating profit/sales	-0.19147E-05	0.3374E-05	-0.568	0.57037
ΔOperating profit/sales	0.62726E-01	0.5430E-01	1.155	0.24799
%ΔOperating profit/sales	-0.19278E-01	0.4156E-01	-0.464	0.64275
Net profit margin	-0.18301E-01	0.2610E-01	-0.701	0.48316
ΔNet profit margin	0.40016E-02	0.5211	0.008	0.99387
%ΔNet profit margin	-1.7153	1.028	-1.669	0.09513
Sales/cash	-0.38204E-04	0.3289E-04	-1.161	0.24545

ΔSales/cash	0.33648E-01	0.9657E-01	0.348	0.72751
%ΔSales/cash	0.16096E-01	0.3533E-01	0.456	0.64871
Sales/inventory	0.11296E-04	0.2177E-04	0.519	0.60383
ΔSales/inventory	-0.16796E-01	0.1799E-01	-0.934	0.35054
%ΔSales/inventory	0.45678E-01	0.3203E-01	1.426	0.15386
Sales/working capital	0.72002E-02	0.6165E-02	1.168	0.24284
ΔSales/working capital	0.72344E-04	0.5032E-04	1.438	0.15052
%ΔSales/working capital	-0.40753E-01	0.6864E-01	-0.594	0.55269
Sales/fixed assets	-0.67845E-06	0.6005E-05	-0.103	0.87832
ΔSales/fixed assets	0.27112	0.6541	1.425	0.28301
%ΔSales/fixed assets	-0.19444	0.1897	-1.032	0.34711
ΔTotal assets	0.14449	0.1745	0.715	0.40280
%ΔTotal assets	-0.96096	6.780	-0.142	0.88728
Cash flow/total debt	0.55925E-01	0.4193E-01	1.334	0.18229
Working capital/total assets	0.32962E-01	0.3844E-01	0.857	0.39121
ΔWorking capital/total assets	-0.11171E-06	0.4865E-06	-0.230	0.81838
%ΔWorking capital/total assets	-0.27943E-01	0.5132E-01	-0.545	0.58608
ΔFunds	0.84090E-02	0.9852E-01	0.085	0.93198
ΔTuses	-0.16858	0.1315	-1.282	0.19999
Working capital	0.30485E-01	0.2685	0.114	0.90960
ΔWorking capital	-1.4965	1.274	-1.175	0.23996
%ΔWorking capital	0.16512	0.1901	0.869	0.38498
Total income/cash flow	0.60305E-01	0.4870E-01	1.238	0.21557

**Table A6d: Univariate Logit Estimation For The Stores and Chemical industries For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1984-88.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
current ratio	-0.36765E-06	0.1034E-05	-0.355	0.72226
Δcurrent ratio	-6.7608	6.071	-1.114	0.26547
%Δcurrent ratio	0.54193E-02	0.3207E-01	0.169	0.86579
Quick asset ratio	-0.27113	0.2347	-1.155	0.24801
ΔQuick asset ratio	-0.39841E-01	0.1107	-0.360	0.71885
%ΔQuick asset ratio	-1.7890	5.983	-0.299	0.76494
Debtors ratio	0.59192E-02	0.2863E-02	2.067	0.03869
ΔDebtors ratio	0.32909E-03	0.3559E-01	0.009	0.99262
%ΔDebtors ratio	0.45115E-04	0.4483E-04	1.006	0.31421
Inventory turnover	-0.28739E-01	0.2877E-01	-0.999	0.31789
ΔInventory turnover	-0.11019	0.2713	-0.406	0.68466
%ΔInventory turnover	0.57726E-02	0.5184E-02	1.114	0.26544
Inventory/total assets	0.76069E-01	0.6583	0.116	0.90800
ΔInventory/total assets	0.35064E-01	0.3506	0.100	0.92033
%ΔInventory/total assets	0.14527E-01	0.1602	0.091	0.92775
Inventory	-0.68299E-05	0.2362E-05	-2.892	0.00383
ΔInventory	0.70455E-02	0.1951E-01	0.361	0.71803
%ΔInventory	0.22308E-01	0.2416E-01	0.923	0.35577
Sales	-0.15562E-05	0.4915E-06	-3.166	0.00154
ΔSales	0.58094E-02	0.6551	0.009	0.99292
%ΔSales	0.25766E-04	0.2038E-03	0.126	0.89939
ΔDepreciation	0.49985	0.2799	1.786	0.07417
Depreciation	-0.50347E-04	0.1856E-04	-2.713	0.00667
%ΔDepreciation	0.12368	0.1285	0.962	0.33581
ΔDividend per share	-0.22787	0.3921	-0.581	0.56118
%ΔDividend per share	0.89281E-02	0.1779E-01	0.502	0.61571
Depreciation/fixed assets	0.31520	0.5019	0.628	0.52996
ΔDepreciation/fixed assets	1.3721	0.4667	2.940	0.00328
Return on opening equity	-0.88970E-04	0.3321E-02	-0.027	0.97863
ΔReturn on opening equity	0.50622	0.3128	1.618	0.10559
%ΔReturn on opening equity	0.29500E-06	0.1765E-05	0.167	0.86726
Capital expenditure/total assets	0.11479E-05	0.2457E-05	0.467	0.64030
ΔCapital expenditure/total assets	-0.19652E-04	0.2952E-04	-0.666	0.50557
Capital Expenditure	-0.30587E-04	0.1553E-04	-1.970	0.04887
ΔCapital Expenditure	0.36186	0.1808	2.001	0.04540
%ΔCapital Expenditure	0.16179E-01	0.5593E-01	0.289	0.77238
Debt/equity	-0.28471E-01	0.3353E-01	-0.849	0.39585
ΔDebt/equity	-1.3550	0.7644	-1.773	0.07628
%ΔDebt/equity	0.36018E-01	0.5353E-01	0.673	0.50105
Times interest earned	0.50880E-02	0.6359E-02	0.800	0.42364
ΔTimes interest earned	-0.49333E-03	0.6284E-02	-0.079	0.93743
%ΔTimes interest earned	-0.17191E-01	0.2213E-01	-0.777	0.43722
Sales/total assets	-0.18835E-06	0.5687E-05	-0.033	0.97358
ΔSales/total assets	0.24088	0.1522	1.583	0.11339
%ΔSales/total assets	-0.10729	0.1308	-0.820	0.41208
Return on total assets	-0.85428E-01	0.1192	-0.717	0.47364
ΔReturn on total assets	-0.29205	0.4153	-0.703	0.48189
%ΔReturn on total assets	0.35050E-01	0.4030E-01	0.870	0.38450
Return on closing equity	0.32752E-02	0.2704E-02	1.211	0.22589
ΔReturn on closing equity	0.16079	0.1013	1.588	0.11229
%ΔReturn on closing equity	0.26615E-01	0.2982E-01	0.892	0.37219
Operating profit/sales	-0.11389E-05	0.2916E-05	-0.391	0.69612
ΔOperating profit/sales	-0.13040	0.1319	-0.989	0.32272
%ΔOperating profit/sales	-0.43022	0.4593	-0.937	0.34892
Net profit margin	-0.28940E-01	0.2552E-01	-1.134	0.25687
ΔNet profit margin	-0.27362	0.5132	-0.533	0.59395
%ΔNet profit margin	-0.58553E-01	1.390	-0.042	0.96639
Sales/cash	-0.24710E-04	0.2960E-04	-0.835	0.40379

ΔSales/cash	0.13292	0.9262E-01	1.435	0.15125
%ΔSales/cash	-0.34703	0.2470	-1.405	0.16003
Sales/inventory	-0.18383E-04	0.2238E-04	-0.822	0.41133
ΔSales/inventory	-0.27371E-01	0.2298E-01	-1.191	0.23357
%ΔSales/inventory	0.46481E-01	0.3004E-01	1.547	0.12179
Sales/working capital	0.15243E-01	0.7367E-02	2.069	0.03853
ΔSales/working capital	0.54482E-04	0.4043E-04	1.348	0.17779
%ΔSales/working capital	0.81384E-01	0.1369	0.594	0.55226
Sales/fixed assets	-0.18745E-06	0.5787E-05	-0.133	0.99358
ΔSales/fixed assets	0.24128	0.1645	1.573	0.14339
%ΔSales/fixed assets	-0.12149	0.1415	-0.920	0.45555
ΔTotal assets	0.36338E-02	0.9351E-01	0.039	0.96900
%ΔTotal assets	-0.95783	6.904	-0.139	0.88966
Cash flow/total debt	0.62237E-01	0.4501E-01	1.383	0.16676
Working capital/total assets	-0.17377E-02	0.5396E-02	-0.322	0.74742
ΔWorking capital/total assets	-0.20252E-05	0.9236E-06	-2.193	0.02834
%ΔWorking capital/total assets	-0.24251E-01	0.5070E-01	-0.478	0.63244
ΔFunds	0.71478E-01	0.1316	0.543	0.58704
ΔTuses	-0.31194	0.1912	-1.631	0.10285
Working capital	0.13187	0.3157	0.418	0.67620
ΔWorking capital	-6.3740	2.340	-2.724	0.00644
%ΔWorking capital	0.46678E-01	0.1019	0.458	0.64702
Total income/cash flow	0.81902E-02	0.3526E-01	0.232	0.81631

**Table A6e: Univariate Logit Estimation For The Stores and Chemical industries For The Identification Of The Accounting Descriptors Exhibiting Information About Future Earnings Changes Throughout The Period 1980-88.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
Current ratio	0.17184E-06	0.7112E-06	0.242	0.80908
Δcurrent ratio	-1.0909	4.284	-0.255	0.79899
%Δcurrent ratio	-0.51912E-01	0.4247E-01	-1.222	0.22156
Quick asset ratio	-0.33298E-01	0.1503	-0.222	0.82461
ΔQuick asset ratio	-0.60171E-01	0.9445E-01	-0.637	0.52407
Debtors ratio	0.45240E-02	0.2044E-02	2.213	0.02686
ΔDebtors ratio	-0.70866E-02	0.7812E-02	-0.907	0.36435
%ΔDebtors ratio	0.22549E-06	0.9512E-05	0.024	0.98109
Inventory turnover	-0.11341E-01	0.1844E-01	-0.615	0.53851
ΔInventory turnover	-0.21302	0.1698	-1.255	0.20960
%ΔInventory turnover	0.28105E-02	0.2173E-02	1.294	0.19580
Inventory/total assets	-0.37109	0.4934	-0.752	0.45201
ΔInventory/total assets	0.22367	0.2854	0.784	0.43328
%ΔInventory/total assets	0.10628	0.1404	0.757	0.44913
Inventory	-0.82646E-06	0.5274E-06	-1.567	0.11708
ΔInventory	0.81901E-02	0.1786E-01	0.459	0.64658
%ΔInventory	0.14016E-01	0.2274E-01	0.616	0.53761
Sales	-0.14863E-06	0.8728E-07	-1.703	0.08857
ΔSales	0.19291	0.1706	1.131	0.25824
%ΔSales	-0.13754E-03	0.2105E-03	-0.653	0.51353
ΔDepreciation	0.33799	0.2302	1.468	0.14203
Depreciation	-0.33016E-05	0.4528E-05	-0.729	0.46588
%ΔDepreciation	0.69379E-01	0.1214	0.571	0.56779
ΔDividend per share	-0.13251	0.2601	-0.510	0.61040
%ΔDividend per share	-0.22481E-02	0.8678E-02	-0.259	0.79560
Depreciation/fixed assets	0.16915	0.1892	0.894	0.37121
ΔDepreciation/fixed assets	0.32205	0.2037	1.581	0.11390
Return on opening equity	-0.12569E-02	0.2968E-02	-0.424	0.67192
ΔReturn on opening equity	-0.56970E-01	0.2456	-0.232	0.81655
%ΔReturn on opening equity	0.23116E-05	0.1725E-05	1.340	0.18017
Capital expenditure/total assets	0.11084E-05	0.2063E-05	0.537	0.59104
ΔCapital expenditure/total assets	0.53865E-05	0.1092E-04	0.493	0.62182
Capital Expenditure	-0.49845E-05	0.4340E-05	-1.148	0.25079
ΔCapital Expenditure	0.13692	0.1211	1.130	0.25827
%ΔCapital Expenditure	0.53287E-01	0.3266E-01	1.632	0.10277
Debt/equity	-0.79391E-02	0.1807E-01	-0.439	0.66037
ΔDebt/equity	-0.29918	0.3162	-0.946	0.34406
%ΔDebt/equity	0.10862E-01	0.4111E-01	0.264	0.79163
Times interest earned	0.11927E-01	0.8101E-02	1.472	0.14093
ΔTimes interest earned	0.57881E-02	0.4892E-02	1.183	0.23675
%ΔTimes interest earned	-0.29332E-01	0.2591E-01	-1.132	0.25760
Sales/total assets	-0.49959E-05	0.4551E-05	-1.098	0.27231
ΔSales/total assets	0.13872	0.1316	1.054	0.29181
%ΔSales/total assets	-0.13493	0.9851E-01	-1.370	0.17078
Return on total assets	0.60644E-01	0.5213E-01	1.163	0.24467
ΔReturn on total assets	-0.40582	0.3329	-1.219	0.22277
%ΔReturn on total assets	0.24493E-03	0.7351E-03	0.333	0.73899
Return on closing equity	0.16637E-02	0.2614E-02	0.636	0.52454
ΔReturn on closing equity	-0.13954E-01	0.2019E-01	-0.691	0.48944
%ΔReturn on closing equity	0.13189E-02	0.9748E-02	0.135	0.89238
Operating profit/sales	-0.24385E-05	0.2466E-05	-0.989	0.32277
ΔOperating profit/sales	-0.16105E-01	0.2911E-01	-0.553	0.58011
%ΔOperating profit/sales	-0.25354E-01	0.3975E-01	-0.638	0.52359
Net profit margin	0.10853E-01	0.2029E-01	0.535	0.59268
ΔNet profit margin	0.28051	0.3465	0.809	0.41823
%ΔNet profit margin	-1.5192	0.8714	-1.743	0.08128
Sales/cash	0.33441E-05	0.2177E-04	0.154	0.87789
ΔSales/cash	0.17847E-01	0.8439E-01	0.211	0.83252

%ΔSales/cash	-0.28216E-01	0.3109E-01	-0.908	0.36412
Sales/inventory	0.25293E-05	0.8434E-05	0.300	0.76425
ΔSales/inventory	0.11971E-01	0.1108E-01	1.081	0.27980
%ΔSales/inventory	0.22434E-02	0.2638E-02	0.850	0.39518
Sales/working capital	0.54934E-02	0.4250E-02	1.293	0.19616
ΔSales/working capital	-0.92141E-05	0.1067E-04	-0.863	0.38797
%ΔSales/working capital	-0.36450E-01	0.5537E-01	-0.658	0.51036
Sales/fixed assets	-0.54159E-05	0.5551E-05	-1.498	0.17231
ΔSales/fixed assets	0.15552	0.1476	1.154	0.39181
%ΔSales/fixed assets	-0.14613	0.9771E-01	-1.480	0.18798
ΔTotal assets	-0.27523E-01	0.7494E-01	-0.367	0.71344
%ΔTotal assets	0.74503	4.356	0.171	0.86419
Cash flow/total debt	0.78222E-01	0.3805E-01	2.056	0.03982
Working capital/total assets	0.18391E-02	0.5135E-02	0.358	0.72022
ΔWorking capital/total assets	-0.65607E-06	0.4078E-06	-1.609	0.10764
%ΔWorking capital/total assets	-0.40026E-01	0.5148E-01	-0.778	0.43686
ΔFunds	-0.43491E-01	0.5138E-01	-0.847	0.39726
ΔTuses	-0.91275E-01	0.6145E-01	-1.485	0.13746
Working capital	0.37079E-01	0.2379	0.156	0.87615
ΔWorking capital	-0.75923E-01	0.6281	-0.121	0.90379
%ΔWorking capital	-0.26361E-01	0.5458E-01	-0.483	0.62912
Total income/cash flow	0.44195E-01	0.3413E-01	1.295	0.19530



## Multinomial Logit Estimations

### Stores Industry

**Table A4i: Multinomial Logit Estimation For The Stores Industry For The Identification Of The The Accounting Descriptors Which Jointly Describe Future Earnings Changes Throughout The Period 1980-84.**

Accounting Descriptors	Coefficient	Standard Error	t-statistic	prob t >x
capital expenditure/total assets	31.218	41.67	0.749	0.45378
capital expenditure	0.19704E-03	0.2217E-03	0.889	0.37421
Δcapital expenditure	0.40453E-03	0.2543E-03	1.591	0.11165
sales/cash	-0.98824E-03	0.5783E-03	-1.709	0.08748
%Δsales/working capital	0.50387	0.5852	0.861	0.38926
Δworking capital/total assets	-4.7067	3.573	-1.317	0.18774
Δfunds	0.10236E-03	0.1237E-03	0.827	0.40804
Δuses	-0.36138E-04	0.6835E-04	-0.529	0.59702

**Table A4ai: Multinomial Logit Estimation For The Stores Industry For The Identification Of The The Accounting Descriptors Which Jointly Describe Future Earnings Changes Throughout The Period 1981-85.**

Accounting Descriptors	Coefficient	Standard Error	t-statistic	prob t >x
%Δsales/working capital	-0.38002	1.279	-0.297	0.76643
Δworking capital/total assets	-17.778	11.95	-1.487	0.13693
Δfunds	0.29942E-03	0.2539E-03	1.179	0.23830
sales	-0.29559E-04	0.1668E-04	-1.772	0.07634
depreciation	0.15391E-02	0.9450E-03	1.629	0.10339
%Δsales	-3.8174	3.237	-1.179	0.23822
%Δcapital expenditure/total assets	0.54645E-01	0.6874E-01	0.795	0.42664
%Δsales/total assets	7.1986	4.446	1.619	0.10539
Δoperating profit/sales	-17.292	13.89	-1.245	0.21325
%Δoperating profit/sales	-2.9781	4.512	-0.660	0.50924
Δnet profit margin	0.77969	0.4168	1.871	0.06137
Δsales/cash	-0.23995E-03	0.1016E-02	-0.236	0.81338
Δworking capital	0.17446E-04	0.6040E-04	0.289	0.77273

**Table A4bi: Multinomial Logit Estimation For The Stores Industry For The Identification Of The The Accounting Descriptors Which Jointly Describe Future Earnings Changes Throughout The Period 1982-86.**

Accounting Descriptors	Coefficient	Standard Error	t-statistic	prob t >=x
capital expenditure/total assets	-15.071	10.27	-1.468	0.14207
%Δsales/working capital	0.74626	0.4615	1.617	0.10590
Δworking capital/total assets	-8.2726	3.699	-2.236	0.02533
Δfunds	-0.79980E-04	0.7276E-04	-1.099	0.27164
sales	-0.45915E-06	0.1680E-05	-0.273	0.78466
depreciation	-0.51067E-05	0.1070E-03	-0.048	0.96194
%Δsales/total assets	0.21137	1.323	0.160	0.87311
Δoperating profit/sales	-5.2451	6.065	-0.865	0.38714
%Δoperating profit/sales	-0.38688	2.004	-0.193	0.84692
Δnet profit margin	0.20800	0.2219	0.938	0.34847
Δsales/cash	-0.22026E-04	0.4018E-04	-0.548	0.58354
Δworking capital	0.14734E-04	0.1308E-04	1.126	0.25997

**Table A4ci: Multinomial Logit Estimation For The Stores Industry For The Identification Of The The Accounting Descriptors Which Jointly Describe Future Earnings Changes Throughout The Period 1983-87.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob(t) ≥ x</i>
capital expenditure	0.15504E-04	0.9560E-04	0.162	0.87117
Δworking capital/total assets	-3.8108	2.964	-1.286	0.19857
sales	-0.16878E-05	0.1855E-05	-0.910	0.36287
depreciation	0.11006E-03	0.1438E-03	0.765	0.44419
%Δcurrent ratio	0.52755	1.144	0.461	0.64471
inventory	-0.96687E-05	0.2214E-04	-0.437	0.66232
Δdepreciation/fixed assets	-12.973	11.05	-1.174	0.24048
%Δreturn on opening equity	0.19844	0.1746	1.137	0.25571
%Δdebt/equity	0.81035	0.6862	1.181	0.23766
Δsales	0.29683E-05	0.2447E-05	1.213	0.22514

**Table A4di: Multinomial Logit Estimation For The Stores Industry For The Identification Of The The Accounting Descriptors Which Jointly Describe Future Earnings Changes Throughout The Period 1984-88.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob(t) ≥ x</i>
debtors ratio	0.25564E-04	0.7890E-04	0.142	0.79917
inventory	-2.8108	2.784	-1.366	0.200857
sales	-0.15278E-05	0.1955E-05	-0.714	0.23287
Δ sales	0.10006E-03	0.1038E-03	0.705	0.44319
depreciation	0.14555	1.178	0.851	0.75271
%Δ return on opening equity	-0.76687E-05	0.3214E-04	-0.537	0.75632
capital expenditure	-10.973	12.05	-1.274	0.34048
return on total assets	0.17844	0.1186	1.527	0.34671
Δ_return on total assets	0.71035	0.7462	1.132	0.45766
operating profit/ales	0.31283E-05	0.4527E-05	1.413	0.65514
% Δ_total assets	0.02102	0.04520	1.516	0.89000

**Table A4e: Multinomial Logit Estimation For The Stores Industry For The Identification Of The The Accounting Descriptors Which Jointly Describe Future Earnings Changes Throughout The Period 1980-88.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob(t) ≥ x</i>
debtors ratio	21.218	45.67	0.749	0.36378
% Δ_net profit margin	0.14504E-03	0.2237E-03	0.789	0.45221
cash flow/total debt	0.60123E-03	0.2546E-03	1.471	0.15465
sales	-0.99924E-03	0.54578E-03	-1.709	0.08748

### Chemical Industry

**Table A5i: Multinomial Logit Estimation For The Chemical Industry For The Identification Of The The Accounting Descriptors Which Jointly Describe Future Earnings Changes Throughout The Period 1980-84.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
debtors ratio	0.52804E-02	0.1555E-02	3.395	0.00069
sales/total assets	0.48462E-01	0.6749E-01	0.718	0.47272
operating profit/sales	0.88048	0.9837	0.895	0.37076
Δsales/cash	0.11336E-04	0.8844E-05	1.282	0.19994
%Δtotal assets	0.11848	0.1141	1.038	0.29921

**Table A5ai: Multinomial Logit Estimation For The Chemical Industry For The Identification Of The The Accounting Descriptors Which Jointly Describe Future Earnings Changes Throughout The Period 1981-85.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
return on closing equity	-0.46095E-02	0.6316E-01	-0.073	0.94182
quick assets ratio	0.22104	0.9485E-01	2.330	0.01978
Δcapital expenditure	-0.11672E-04	0.6045E-05	-1.931	0.05352
Debt/equity	0.65254E-01	0.3090E-01	2.111	0.03473
return on total assets	0.53472E-02	0.7587E-02	0.705	0.48096
%Δreturn on total assets	0.51116E-02	0.3711E-01	0.138	0.89044
sales/cash	0.24776E-04	0.6307E-04	0.393	0.69445
Δsales/working capital	0.10881E-01	0.6961E-02	1.563	0.11801

**Table A5bi: Multinomial Logit Estimation For The Chemical Industry For The Identification Of The The Accounting Descriptors Which Jointly Describe Future Earnings Changes Throughout The Period 1982-86.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
Quick assets ratio	-0.55555E-02	0.6216E-01	-0.073	0.94182
return on opening equity	0.23334	0.9285E-01	1.546	0.51978
Δ_debt/equity	-0.12145E-04	0.6042E-05	-1.541	0.24352
return on closing equity	0.65145E-01	0.2090E-01	1.111	0.12373
net profit margin	0.52451E-02	0.7521E-02	0.905	0.98796
Δ sales/working capital	0.47516E-02	0.3123E-01	0.124	0.45624
Δ_total assets	0.200145-04	0.6457E-04	0.698	0.78545
%_Δ total assets	0.102365-01	0.6789E-02	1.578	0.12351

**Table A5ci: Multinomial Logit Estimation For The Chemical Industry For The Identification Of The The Accounting Descriptors Which Jointly Describe Future Earnings Changes Throughout The Period 1983-87.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
debtors ratio	0.23704E-01	0.1011E-01	2.345	0.01903
%Δtotal assets	1.6751	1.330	1.260	0.20779
return on closing equitiy	-0.77695	0.3604	-2.156	0.03110
quick assets ratio	-2.1734	0.8489	-2.560	0.01045
return on total assets	0.39270E-02	0.3305E-01	0.119	0.90541
%Δdebtors ratio	2.1769	1.678	1.297	0.19451
%Δsales/total assets	1.8135	1.493	1.215	0.22443
%Δoperating profit/sales	-3.6337	1.948	-1.865	0.06217
Δworking capital	0.63974E-05	0.4668E-05	1.371	0.17052

**Table A5di: Multinomial Logit Estimation For The Chemical Industry For The Identification Of The Accounting Descriptors Which Jointly Describe Future Earnings Changes Throughout The Period 1984-88.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob(t)&gt;x</i>
debtors ratio	0.23112E-02	0.5893E-02	0.392	0.69491
%Δtotal assets	1.9761	1.042	1.896	0.05790
return on closing equity	-0.71366	0.3189	-2.238	0.02521
%Δoperating profit/sales	-3.1217	1.499	-2.083	0.03725
Δdebtors ratio	0.12837E-01	0.1298E-01	0.989	0.32269
Δsales	-0.41863E-06	0.1056E-05	-0.396	0.69187
cash flow/total debt	-0.18742E-01	0		

**Table A5ei: Multinomial Logit Estimation For The Chemical Industry For The Identification Of The Accounting Descriptors Which Jointly Describe Future Earnings Changes Throughout The Period 1980-88.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob(t)≥x</i>
debtors ratio	0.72944E-02	0.9008E-03	8.098	0.00000
sales/total assets	-0.10818E-01	0.4477E-01	-0.242	0.80904
%Δtotal assets	0.21708E-01	0.1012	0.215	0.83011
Δdepreciation/fixed assets	0.60739E-01	0.3201E-01	1.897	0.05777
debt/equity	-0.10444E-01	0.4824E-02	-2.165	0.03041
Δsales/total assets	-0.81908E-01	0.1255	-0.653	0.51398
%Δsales/total assets	0.56628E-01	0.1051	0.539	0.58999
%Δoperating profit/sales	-0.36359	0.1501	-2.422	0.01542
Δsales	0.15229E-06	0.5268E-06	0.289	0.77250

### *Stores and Chemical Industries Together*

**Table A6i: Multinomial Logit Estimation For The Stores and Chemical Industries For The Identification Of The The Accounting Descriptors Which Jointly Describe Future Earnings Changes Throughout The Period 1980-84.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>probt &gt;=x</i>
%Δcapital expenditure	0.25519E-02	0.5309E-01	0.048	0.96166
debt/equity	-0.20942E-01	0.2679E-01	-0.782	0.43441
cash flow/total debt	0.98387E-01	0.7522E-01	1.308	0.19089

**Table A6ai: Multinomial Logit Estimation For The Stores and Chemical Industries For The Identification Of The The Accounting Descriptors Which Jointly Describe Future Earnings Changes Throughout The Period 1981-85.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>probt &gt;=x</i>
Δ inventory/total assets	0.35669E-02	0.4529E-01	0.0154	0.96000
%_Δ capital expenditure	-0.224511E-01	0.2333E-01	-0.978	0.74541

**Table A6bi: Multinomial Logit Estimation For The Stores And Chemical Industry For The Identification Of The The Accounting Descriptors Which Jointly Describe Future Earnings Changes Throughout The Period 1982-86.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>probt &gt;=</i>
cash flow/total debt	0.15629	0.1413	1.106	0.26872
Δcurrent ratio	-0.19369	9.098	-0.021	0.98302
%Δinventory/turnover	0.11659E-01	0.9021E-02	1.292	0.19621
sales	-0.77706E-06	0.4653E-06	-1.670	0.09494
Δdepreciation	1.3929	0.9959	1.399	0.16193
depreciation	-0.44682E-04	0.2173E-04	-2.056	0.03980
capital expenditure	0.56774E-04	0.3621E-04	1.568	0.11690
Δreturn on total assets	-1.1276	0.7616	-1.480	0.13875
%Δnet profit margin	-1.2031	1.439	-0.836	0.40312
%Δsales/inventory	0.45813E-01	0.2980E-01	1.537	0.12424
Δuses	-0.17434	0.1278	-1.365	0.17236
Δworking capital	-1.4813	1.465	-1.011	0.31185

**Table A6ci: Multinomial Logit Estimation For The Chemical Industry For The Identification Of The The Accounting Descriptors Which Jointly Describe Future Earnings Changes Throughout The Period 1983-87.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statisitc</i>	<i>probt &gt;=x</i>
% Δ_inventory/turnover	0.15158E-01	0.8782E-02	1.726	0.08433
Deprecation	-0.62865E-04	0.1954E-04	-3.217	0.00130
%Δ sales/inventory	0.36657E-01	0.3663E-01	1.001	0.31699
Δ depreciation/fixed assets	0.78441	0.4975	1.577	0.11489

**Table A6di: Multinomial Logit Estimation For The Chemical Industry For The Identification Of The The Accounting Descriptors Which Jointly Describe Future Earnings Changes Throughout The Period 1984-88.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
debtors ratio	0.12228E-01	0.4661E-02	2.624	0.00870
%Δcapital expenditure	0.67166E-01	0.9668E-01	0.695	0.48723
Δdebt/equity	-1.1797	2.783	-0.424	0.67166
sales	-0.80546E-05	0.2815E-05	-2.861	0.00422
Δdepreciation	-0.95938	2.060	-0.466	0.64137
depreciation	-0.19078E-04	0.3626E-04	-0.526	0.59877
capital expenditure	0.10655E-03	0.4269E-04	2.496	0.01256
%Δsales/inventory	0.48334E-01	0.4682E-01	1.032	0.30186
Δdepreciation/fixed assets	2.0869	2.482	0.841	0.40039
Δworking capital	-19.104	4.739	-4.031	0.00006
inventpru	0.28401E-04	0.1253E-04	2.267	0.02337
Δreturn on closing equity	0.32635	0.1853	1.761	0.07824
%Δsales/cash	-0.49526	0.5094	-0.972	0.33092
sales/ working capital	0.14506E-01	0.1245E-01	1.165	0.24395
Δworking capital/total assets	-0.14472E-05	0.2550E-05	-0.567	0.57042

**Table A6ei: Multinomial Logit Estimation For The Chemical Industry For The Identification Of The The Accounting Descriptors Which Jointly Describe Future Earnings Changes Throughout The Period 1980-88.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
debtors ratio	0.16898E-02	0.1235E-02	1.368	0.17123
cash flow./total debt	0.95668E-01	0.5385E-01	1.777	0.07564
Δuses	-0.86884E-01	0.6520E-01	-1.333	0.18268

## Univariate Regression Estimations

**Table A7: Univariate Regression Estimation For The Stores Industry For The Identification Of The Accounting Descriptors Predicting Future Earnings\* Sign and Size Changes Throughtout The Period 1980-84.**

<i>Accounting Descriptors</i>	<i>Accounting Coefficient</i>	<i>Standard Error</i>	<i>t-ratio</i>	<i>prob( t &gt;=x)</i>
current ratio	-0.61130E-02	0.5773E-01	-0.106	0.91582
Δcurrent ratio	-0.47698E-01	0.6448E-01	-0.740	0.46068
%Δcurrent ratio	-0.57106E-01	0.1149	-0.497	0.61994
Quick asset ratio	0.19570	0.1689	1.158	0.24863
Δquick asset ratio	-0.37224	0.3857	-0.965	0.33613
%Δquick asset ratio	0.85395E-01	0.2853	0.299	0.76511
Debtors ratio	0.16441E-02	0.1392E-02	1.181	0.23762
Δdebtors ratio	0.57541E-03	0.3186E-02	0.181	0.85666
%Δdebtors ratio	0.52030	0.3800	1.369	0.17309
inventory/turnover	-0.11095E-01	0.2572E-01	-0.431	0.66684
Δinventory/turnover	-0.32149E-01	0.8309E-01	-0.387	0.69880
%Δinventory/turnover	0.18288	0.6544	0.279	0.78029
inventory/total assets	-0.66162	0.5841	-1.133	0.25736
Δinventory/total assets	1.0907	1.177	0.926	0.35577
inventory	0.35706E-06	0.6385E-06	0.559	0.57600
Δinventory	0.31048E-05	0.4957E-05	0.626	0.53104
%Δinventory	0.17493	0.5034	0.348	0.72873
sales	0.66901E-07	0.7761E-07	0.862	0.38866
Δsales	0.47077E-06	0.9412E-06	0.500	0.61774
%Δsales	0.28984E-01	0.6569E-01	0.441	0.65973
Δdepreciation	0.16975E-04	0.2106E-04	0.806	0.42012
%Δdepreciation	-0.16860E-01	0.3104	-0.054	0.95676
Δdividend per share	0.68287E-01	0.1485	0.460	0.64553
%Δdividend per share	-0.20462E-02	0.1844E-01	-0.111	0.91179
Depreciation/fixed assets	-0.75113	0.5561	-1.351	0.17897
Δdepreciation/fixed assets	-0.43845	0.3308	-1.325	0.18721
return on opening equity	0.12624E-02	0.6732E-02	0.188	0.85125
Δreturn on opening equity	0.28561E-01	0.3333E-01	0.857	0.39145
%Δreturn on opening equity	0.48146E-01	0.9473E-01	0.508	0.61128
Δcapital expenditure/total assets	2.0542	5.393	0.381	0.70330
%Δcapital expenditure/total assets	0.14286E-01	0.1047E-01	1.364	0.17693
capital expenditure	0.27611E-05	0.2514E-05	1.098	0.27200
Δcapital expenditure	0.20330E-05	0.1361E-04	0.149	0.88168
%Δcapital expenditure	0.35487E-03	0.2086E-02	0.170	0.86534
Debt/equity	0.26732E-01	0.3867E-01	0.691	0.49046
Δdebt/equity	0.19691	0.1207	1.631	0.10293
%Δdebt/equity	0.79593	0.3449	2.308	0.02101
Times interest earned	0.12051E-02	0.2413E-02	0.499	0.61744
Δtimes interest earned	0.18221E-02	0.6557E-02	0.278	0.78158
%Δtimes interest earned	0.19391E-01	0.2131E-01	0.910	0.36286
Sales/total assets	0.81332E-02	0.1203E-01	0.676	0.50006
Δsales/total assets	0.39919E-02	0.3483E-01	0.115	0.90891
%Δsales/total assets	0.56909E-01	0.9320E-01	0.611	0.54243
Return on total assets	-0.61542	2.289	-0.269	0.78800
Δreturn on total assets	3.0347	3.803	0.798	0.42487
%Δreturn on total assets	0.15980E-01	0.5956E-01	0.268	0.78848
return on closing equity	-0.81870E-03	0.6562E-02	-0.125	0.90070
Δreturn on closing equity	0.90045E-02	0.5469E-02	1.646	0.09969
%Δreturn on closing equity	0.29143E-02	0.2374E-01	0.123	0.90231
Operating profit/sales	0.17034E-01	0.2608	0.065	0.94792
Δoperating profit/sales	-0.59709	1.705	-0.350	0.72668
%Δoperating profit/sales	-0.16713E-02	0.1687E-01	-0.099	0.92126
Net profit margin	-0.39412E-01	0.3268E-01	-1.206	0.22781

$\Delta$ net profit margin	0.22496E-01	0.4300E-01	0.523	0.60085
% $\Delta$ net profit margin	0.55129E-02	0.4281E-01	0.129	0.89754
Sales/cash	-0.78434E-06	0.5685E-05	-0.138	0.89047
$\Delta$ sales/cash	-0.60122E-05	0.6443E-05	-0.933	0.35247
% $\Delta$ sales/cash	-0.18013E-01	0.1967E-01	-0.916	0.36142
Sales/inventory	0.34085E-02	0.3578E-02	0.953	0.34238
$\Delta$ sales/inventory	-0.92434E-03	0.7823E-02	-0.118	0.90611
% $\Delta$ sales/inventory	0.34008E-01	0.8002E-01	0.425	0.67147
Sales/working capital	0.15080E-02	0.1030E-02	1.465	0.14521
$\Delta$ sales/working capital	0.10882E-02	0.1181E-02	0.921	0.35854
% $\Delta$ sales/working capital	0.10945	0.6017E-01	1.819	0.07127
Sales/fixed assets	0.25680E-02	0.10111E-02	1.355	0.12421
$\Delta$ sales/fixed assets	0.109874E-02	0.1254E-02	0.945	0.36354
% $\Delta$ sales/fixed assets	0.11123	0.7847E-01	1.412	0.21127
$\Delta$ total assets	0.42590E-06	0.6934E-06	0.614	0.53906
% $\Delta$ total assets	-0.56946E-01	0.2000	-0.285	0.77626
Cash flow/total debt	-0.21509E-05	0.2035E-05	-1.057	0.29302
Working capital/total assets	-0.28138	0.4443	-0.633	0.52761
$\Delta$ working capital/total assets	-0.97754	0.7411	-1.319	0.18954
% $\Delta$ working capital/total assets	-0.18010	0.1625	-1.108	0.26975
$\Delta$ funds	0.13151E-04	0.9225E-05	1.426	0.15400
% $\Delta$ funds	0.99066E-01	0.1722	0.575	0.56514
$\Delta$ uses	0.64335E-05	0.4905E-05	1.312	0.18962
% $\Delta$ uses	0.43059E-01	0.3956E-01	1.088	0.27639
Working capital	0.68584E-07	0.8910E-06	0.077	0.93875
$\Delta$ working capital	-0.12555E-05	0.6194E-05	-0.203	0.83969
% $\Delta$ working capital	-0.72676E-02	0.3299E-01	-0.220	0.82598
Total income/cash flow	-0.14058	0.1146	-1.227	0.21976



**Table A7a: Univariate Regression Estimation For The Stores Industry For The Identification Of The Accounting Descriptors Predicting Future Earnings\* Sign and Size Changes Throughtout The Period 1981-85.**

<i>Accounting Descriptors</i>	<i>Accounting Coefficient</i>	<i>Standard Error</i>	<i>t-ratio</i>	<i>prob( t &gt;=x)</i>
current ratio	-0.58420E-02	0.1235E-01	-0.116	0.89542
Δcurrent ratio	-0.43338E-01	0.5468E-01	-0.362	0.74168
%Δcurrent ratio	-2.5171	0.0009	-1.242	0.15994
Quick asset ratio	0.00070	0.1659	1.368	0.78163
Δquick asset ratio	-0.35464	0.2145	-1.021	0.56313
%Δquick asset ratio	0.45652E-01	0.7843	0.3214	0.75621
Debtors ratio	0.12311E-02	0.1546E-02	1.147	0.36262
Δdebtors ratio	0.50001E-03	0.4512E-02	0.365	0.45786
%Δdebtors ratio	0.62450	0.4120	1.610	0.11109
inventory/turnover	-0.23545E-01	0.25784-01	-1.431	0.67784
Δinventory/turnover	-0.22249E-01	0.8562E-01	-0.3451	0.77880
%Δinventory/turnover	0.16541	0.1144	0.379	0.77929
inventory/total assets	-0546162	0.58234	-1.245	0.26314
Δinventory/total assets	1.0456	1.145	0.846	0.22447
inventory	0.35706E-06	0.0685E-06	-1.369	0.17625
Δinventory	0.12458E-05	0.4887E-05	0.452	0.12304
%Δinventory	0.16493	0.5444	0.3789	0.62873
sales	0.66901E-07	0.7761E-07	-0.677	0.18866
Δsales	0.46377E-06	0.4562E-06	1.451	0.91799
%Δsales	2.0979	0.6451E-01	0.042	0.15973
depreciation	0.0000	0.8976E-01	-0.091	0.6789
Δdepreciation	0.16444E-04	0.4215E-04	1.456	0.78012
%Δdepreciation	-0.16860E-01	0.3104	-0.054	0.95676
Δdividend per share	0.47897E-01	2.0145	0.460	0.69653
%Δdividend per share	-0.11162E-02	0.1814E-01	-0.154	0.56879
Depreciation/fixed assets	-0.64213	0.4511	-1.451	0.17897
Δdepreciation/fixed assets	-0.14545	0.3322	-1.225	0.17811
return on opening equity	0.10004E-02	0.5472E-02	1.188	0.94125
Δreturn on opening equity	0.34761E-01	0.3745E-01	0.694	0.95145
%Δreturn on opening equity	0.00146E-01	0.94874-01	0.658	0.94728
capital expenditure/total assets	-0.00031	0.45780	-1.361	0.16687
Δcapital expenditure/total assets	1.0542	5.193	0.541	0.84130
%Δcapital expenditure/total assets	0.15556E-01	0.1557E-01	1.464	0.17954
capital expenditure	0.22145E-05	0.8454E-05	1.598	0.64200
Δcapital expenditure	0.20123E-05	0.1784E-04	0.178	0.84798
%Δcapital expenditure	0.24567E-03	0.2556E-02	0.670	0.87844
Debt/equity	0.27772E-01	0.3877E-01	0.771	0.84746
Δdebt/equity	0.14561	0.4512	1.456	0.44443
%Δdebt/equity	0.78793	0.8549	1.236	0.45601
Times interest earned	0.16661E-02	0.2466E-02	0.689	0.66664
Δtimes interest earned	0.19997E-02	0.7547E-02	0.647	0.78456
%Δtimes interest earned	0.99391E-01	0.9961E-01	0.841	0.54686
Sales/total assets	0.88888E-02	0.15241-01	0.6879	0.65406
Δsales/total assets	0.49919E-02	0.3443E-01	0.315	0.74891
%Δsales/total assets	0.58809E-01	0.9880E-01	0.711	0.57415
Return on total assets	-0.74542	2.369	-0.298	0.96200
Δreturn on total assets	3.3337	3.456	0.654	0.44123
%Δreturn on total assets	0.11110E-01	0.2546E-01	0.625	0.78452
return on closing equity	-0.821336-03	0.6666E-02	-0.178	0.87470
Δreturn on closing equity	0.81445E-02	0.56645-02	1.456	0.19969
%Δreturn on closing equity	0.29143E-02	0.24562-01	1.123	0.90231
Operating profit/sales	0.17777E-01	0.26145	0.165	0.87992
Δoperating profit/sales	-0.67909	1.789	-1.452	0.87458
%Δoperating profit/sales	-0.45613E-02	0.1677E-01	-0.789	0.75466
Net profit margin	-0.44412E-01	0.4448E-01	-1.566	0.34581
Δnet profit margin	0.223445-01	0.4300E-01	0.523	0.60085
%Δnet profit margin	0.55129E-02	0.45879-01	1.129	0.99754

Sales/cash	-0.88434E-06	0.4565E-05	-01138	0.45647
Δsales/cash	-0.63212E-05	0.5443E-05	-0.781	0.74147
%Δsales/cash	-0.18013E-01	0.1967E-01	-0.916	0.36142
Sales/inventory	0.34444E-02	0.3222E-02	0.562	0.34788
Δsales/inventory	-0.99934E-03	0.6223E-02	-1.118	0.94121
%Δsales/inventory	0.34118E-01	0.8412E-01	1.425	0.76147
Sales/working capital	0.155462E-02	0.1546E-02	1.235	0.15521
Δsales/working capital	0.10882E-02	0.1181E-02	0.921	0.35854
%Δsales/working capital	0.10245	0.6035E-01	1.619	0.47127
Sales/fixed assets	0.25550E-02	0.15511E-02	1.455	0.12551
Δsales/fixed assets	0.109874E-02	0.1254E-02	0.945	0.36354
%Δsales/fixed assets	0.11123	0.7847E-01	1.412	0.21127
Δtotal assets	0.425333E-06	0.6784E-06	0.6247	0.56546
%Δtotal assets	-0.52214E-01	0.6540	-1.285	0.78746
Cash flow/total debt	-0.21509E-05	0.2035E-05	-1.557	0.19302
Working capital/total assets	-0.11138	0.4578	-0.6347	0.56411
Δworking capital/total assets	-0.57754	0.74312	-1.519	0.47854
%Δworking capital/total assets	-0.19010	0.1478	-1.208	0.28455
Δfunds	0.13151E-04	0.9225E-05	1.426	0.15400
%Δfunds	0.99877E-01	0.1945	0.674	0.58454
Δuses	0.65555E-05	0.49345605	14312	0.12178
%Δuses	0.47849E-01	0.4566E-01	11088	0.57899
Working capital	0.88884E-07	0.8923E-06	0.147	0.78875
Δworking capital	-0.12456E-05	0.6544E-05	-1.252	0.45669
%Δworking capital	-0.75556E-02	0.33336E-01	-0.620	0.45698
Total income/cash flow	-0.14254	0.1566	-1.0041	0.78976

**Table A7b: Univariate Regression Estimation For The Stores Industry For The Identification Of The Accounting Descriptors Predicting Future Earnings' Sign and Size Changes Throughout The Period 1982-86.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-statistic</i>	<i>prob( t &gt;=x)</i>
current ratio	0.72407E-03	0.2301E-01	0.031	0.97490
Δcurrent ratio	0.64325E-02	0.2729E-01	0.236	0.81367
%Δcurrent ratio	-0.73030E-01	0.9750E-01	-0.749	0.45507
Quick asset ratio	0.26080E-01	0.8763E-01	0.298	0.76600
Δquick asset ratio	-0.62782	0.3710	-1.690	0.09061
%Δquick asset ratio	-0.41743	0.3782	-1.104	0.26973
Debtors ratio	0.38095E-03	0.9315E-03	0.409	0.68255
Δdebtors ratio	-0.56879E-02	0.2594E-02	-2.193	0.02830
%Δdebtors ratio	-0.23788	0.2786	-0.854	0.39316
inventory/turnover	-0.47593E-01	0.2202E-01	-1.571	0.19875
Δinventory/turnover	0.71079E-01	0.3212E-01	2.213	0.02847
%Δinventory/turnover	0.22367	0.4699	0.476	0.63477
inventory/total assets	-0.13361E-01	0.2778	-0.048	0.96164
Δinventory/total assets	0.58058	0.9523	0.610	0.54304
%Δinventory/total assets	0.40896	0.2525	1.620	0.10533
inventory	-0.15190E-06	0.5777E-06	-1.314	0.14258
Δinventory	0.48709E-05	0.3281E-05	1.485	0.13761
%Δinventory	0.48276	0.2836	1.702	0.08869
sales	-0.25332E-07	0.6367E-07	-1.474	0.19074
Δsales	0.43413E-06	0.2963E-06	1.465	0.14289
%Δsales	1.5190	0.5622E-01	1.586	0.17454
depreciation	-0.90000	0.87654	-1.096	0.18976
Δdepreciation	0.11923E-01	0.2100E-01	0.568	0.57027
%Δdepreciation	-0.91078E-01	0.6696E-01	-1.360	0.17621
Δdividend per share	-0.59045	0.1611E-01	-1.305	0.16939
%Δdividend per share	-0.48228	1.144	-0.422	0.67394
Depreciation/fixed assets	-0.35226	0.2844	-1.239	0.21756
Δdepreciation/fixed assets	0.52117E-02	0.2581E-02	1.343	0.18363
return on opening equity	0.52116E-02	0.2428E-02	1.743	0.12353
Δreturn on opening equity	0.54150E-01	0.2414E-01	1.243	0.16676
%Δreturn on opening equity	-3.0286	3.183	-0.952	0.34134
Δcapital expenditure/total assets	0.56825E-02	0.1663E-01	0.342	0.73253
%Δcapital expenditure/total assets	-2.4756	0.9876	0.543	0.8745
capital expenditure	-0.78275E-06	0.2155E-05	-0.363	0.71640
Δcapital expenditure	0.57791E-06	0.2672E-04	0.022	0.98279
%Δcapital expenditure	0.46992E-02	0.1630E-01	0.288	0.77309
Debt/equity	0.23699E-01	0.1982E-01	1.196	0.23186
Δdebt/equity	0.10047E-01	0.5961E-01	0.169	0.86640
%Δdebt/equity	0.11158	0.1283	0.870	0.38429
Times interest earned	-0.69121E-03	0.1019E-02	-0.678	0.49755
Δtimes interest earned	-0.30532E-02	0.2298E-02	-1.329	0.18657
%Δtimes interest earned	0.45566E-02	0.8445E-02	0.540	0.59053
Sales/total assets	0.93849E-02	0.8482E-02	1.106	0.27040
Δsales/total assets	0.31595E-01	0.2700E-01	1.170	0.24393
%Δsales/total assets	0.43061E-01	0.7936E-01	0.543	0.58825
Return on total assets	-0.69236	1.412	-0.490	0.62381
Δreturn on total assets	-1.7945	1.063	-1.680	0.09407
%Δreturn on total assets	-0.20293E-01	0.1731E-01	-1.172	0.24349
return on closing equity	-0.23361E-02	0.5143E-02	-0.454	0.64966
Δreturn on closing equity	-0.10549E-02	0.4985E-02	-0.212	0.83240
%Δreturn on closing equity	-0.26226E-01	0.2066E-01	-1.270	0.20666
Operating profit/sales	-0.78738E-01	0.2428	-0.324	0.74568
Δoperating profit/sales	-1.1061	0.7262	-1.523	0.13019
%Δoperating profit/sales	-0.98174E-02	0.7165E-02	-1.370	0.17304
Net profit margin	0.33991E-02	0.1229E-01	0.277	0.78205
Δnet profit margin	-0.37926E-01	0.3053E-01	-1.242	0.21660
%Δnet profit margin	-0.29438E-01	0.2469E-01	-1.192	0.23557
Sales/cash	0.17724E-04	0.2626E-04	0.675	0.50083

$\Delta$ sales/cash	-0.47036E-05	0.6235E-05	-0.754	0.45195
% $\Delta$ sales/cash	0.70125E-02	0.1335E-01	0.525	0.60034
Sales/inventory	0.34133E-02	0.2770E-02	1.232	0.21995
$\Delta$ sales/inventory	0.43716E-02	0.6589E-02	0.663	0.50810
% $\Delta$ sales/inventory	0.23170E-01	0.6843E-01	0.339	0.73543
Sales/working capital	0.13032E-02	0.8889E-03	1.466	0.14485
$\Delta$ sales/working capital	0.11723E-02	0.1058E-02	1.109	0.26977
% $\Delta$ sales/working capital	0.82783E-01	0.5273E-01	1.570	0.11892
Sales/fixed assets	0.93849E-02	0.8482E-02	1.106	0.27040
$\Delta$ sales/fixed assets	0.78951	0.6789E-02	1.432	0.34560
% $\Delta$ sales/fixed assets	0.31595E-01	0.2700E-01	1.170	0.24393
$\Delta$ total assets	0.43061E-01	0.7936E-01	0.543	0.58825
% $\Delta$ total assets	0.42654E-06	0.7148E-06	0.597	0.55068
Cash flow/total debt	0.58810E-01	0.1545	0.381	0.70402
Working capital/total assets	-0.20475E-05	0.1616E-05	-1.267	0.20719
$\Delta$ working capital/total assets	-0.33741	0.2619	-1.289	0.19757
% $\Delta$ working capital/total assets	-0.72057	0.6424	-1.122	0.26415
$\Delta$ funds	-0.69835E-01	0.1060	-0.659	0.51111
% $\Delta$ funds	-0.20876E-06	0.4097E-05	-0.051	0.95936
$\Delta$ uses	0.41103E-01	0.2304	0.178	0.85841
% $\Delta$ uses	0.27827E-05	0.3311E-05	0.841	0.40219
Working capital	0.62097E-01	0.5101E-01	1.217	0.22350
$\Delta$ working capital	-0.31307E-06	0.5550E-06	-0.564	0.57355
% $\Delta$ working capital	0.35956E-06	0.3410E-05	0.105	0.91619
Total income/cash flow	-0.80121E-02	0.2871E-01	-0.279	0.78062

**Table A7c: Univariate Regression Estimation For The Stores Industry For The Identification Of The Accounting Descriptors Predicting Future Earnings' Sign and Size Changes Throughout The Period 1983-87.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>Standard Error</i>	<i>prob( t &gt;=x)</i>
current ratio	0.38527E-02	0.1405E-01	0.274	0.78386
Δcurrent ratio	0.23062E-02	0.2868E-01	0.080	0.93602
%Δcurrent ratio	-0.80811E-01	0.9783E-01	-0.826	0.41023
Quick asset ratio	-0.32850E-02	0.8964E-01	-0.037	0.97077
Δquick asset ratio	-0.10346	0.1575	-0.657	0.51224
%Δquick asset ratio	-0.38781	0.3416	-1.135	0.25630
Debtors ratio	0.43937E-03	0.9122E-03	0.482	0.63004
Δdebtors ratio	0.50305E-03	0.2730E-02	0.184	0.85408
%Δdebtors ratio	-0.15191	0.2587	-0.587	0.55702
inventory/turnover	-0.12702E-02	0.2208E-01	-0.058	0.95412
Δinventory/turnover	0.66466E-01	0.3061E-01	2.171	0.03159
%Δinventory/turnover	0.53324E-01	0.4135	0.129	0.89756
inventory/total assets	-0.89139E-01	0.2334	-0.382	0.70255
Δinventory/total assets	-0.12273	0.7740	-0.159	0.87401
%Δinventory/total assets	-0.31607E-01	0.3195	-0.099	0.92134
inventory	-0.11763E-06	0.5328E-06	-0.221	0.82525
Δinventory	0.48995E-05	0.3166E-05	1.547	0.12179
%Δinventory	0.50704	0.2822	1.797	0.07239
sales	-0.36469E-07	0.5794E-07	-0.629	0.52906
Δsales	0.22129E-06	0.2725E-06	0.812	0.41669
%Δsales	0.27684E-01	0.5630E-01	0.492	0.62369
depreciation	0.51422E-06	0.4155E-04	0.145	0.99878
Δdepreciation	0.71442E-06	0.2045E-04	0.035	0.97218
%Δdepreciation	0.77093E-02	0.4518E-01	0.171	0.86475
Δdividend per share	-0.36615E-01	0.5662E-01	-0.647	0.51782
%Δdividend per share	-0.92998E-02	0.2555E-02	-1.542	0.14527
Depreciation/fixed assets	-0.10780	1.247	-0.086	0.93112
Δdepreciation/fixed assets	-1.9157	3.644	-0.526	0.59996
return on opening equity	0.21624E-02	0.3278E-02	0.660	0.51057
Δreturn on opening equity	0.32783E-02	0.2348E-02	1.396	0.16535
%Δreturn on opening equity	0.53702E-01	0.2336E-01	2.299	0.02335
capital expenditure/total assets	-0.65839	2.219	-0.297	0.76669
Δcapital expenditure/total assets	-2.2727	3.188	-0.713	0.47592
%Δcapital expenditure/total assets	0.10196E-01	0.1748E-01	0.583	0.55978
capital expenditure	-0.54145E-06	0.2198E-05	-0.246	0.80545
Δcapital expenditure	0.28519E-06	0.2795E-04	0.010	0.99188
%Δcapital expenditure	0.10778E-01	0.1829E-01	0.589	0.55572
Debt/equity	0.21263E-01	0.1875E-01	1.134	0.25678
Δdebt/equity	0.31428E-01	0.4785E-01	0.657	0.51236
%Δdebt/equity	0.13939	0.1225	1.138	0.25503
Times interest earned	0.12197E-02	0.8967E-02	0.136	0.89200
Δtimes interest earned	0.19515E-01	0.2853E-01	0.684	0.49515
%Δtimes interest earned	0.16764E-01	0.7867E-01	0.213	0.83155
Sales/total assets	-1.9618	1.830	-1072	0.28372
Δsales/total assets	-4.0154	1.454	-1.322	0.17663
%Δsales/total assets	-0.31825E-01	0.2413E-01	-1.319	0.18965
Return on total assets	-0.39951E-02	0.6809E-02	-0.587	0.55737
Δreturn on total assets	-0.16190E-02	0.7165E-02	-0.226	0.82123
%Δreturn on total assets	-0.37601E-01	0.1546E-01	-1.432	0.41500
return on closing equity	-0.18017	0.3071	-0.587	0.55744
Δreturn on closing equity	-1.0807	0.7694	-1.405	0.16255
%Δreturn on closing equity	0.28206E-02	0.8114E-02	0.348	0.72872
Operating profit/sales	-0.88852E-02	0.1350E-01	-0.658	0.51032
Δoperating profit/sales	-0.70526E-01	0.4902E-01	-1.439	0.15023
%Δoperating profit/sales	-0.36562E-01	0.2367E-01	-1.544	0.12251
Net profit margin	0.20322E-04	0.2195E-04	0.926	0.35613
Δnet profit margin	0.15591E-04	0.2159E-04	0.722	0.47148
%Δnet profit margin	0.15858E-01	0.1391E-01	1.140	0.25629

Sales/cash	0.55736E-03	0.3215E-02	0.173	0.86261
Δsales/cash	0.20225E-02	0.7080E-02	0.286	0.77555
%Δsales/cash	0.19720E-01	0.6847E-01	0.288	0.77377
Sales/inventory	0.62248E-03	0.1152E-02	0.540	0.58988
Δsales/inventory	0.62244E-03	0.1075E-02	0.579	0.56366
%Δsales/inventory	0.86730E-02	0.2225E-01	0.390	0.69737
Sales/working capital	0.12197E-02	0.8967E-02	0.136	0.89200
Δsales/working capital	0.19515E-01	0.2853E-01	0.684	0.49515
%Δsales/working capital	0.19515E-01	0.2853E-01	0.684	0.49515
Sales/total assets	0.16764E-01	0.7867E-01	0.213	0.83155
Δsales/total assets	0.62915E-06	0.6884E-06	0.914	0.36074
Δtotal assets	0.16181	0.1553	1.042	0.29931
%Δtotal assets	-0.59805E-04	0.1344E-03	-0.445	0.65642
Cash flow/total debt	-0.31465	0.2250	-1.399	0.16196
Working capital/total assets	-0.73521	0.6241	-1.178	0.24110
Δworking capital/total assets	-0.81332E-01	0.1070	-0.760	0.44853
%Δworking capital/total assets	0.14457E-06	0.3074E-05	0.047	0.96248
Δfunds	0.83902E-02	0.2561	0.033	0.97386
%Δfunds	0.22838E-05	0.2891E-05	0.790	0.43108
Δuses	-0.31530E-03	0.6247E-03	-0.505	0.61377
%Δuses	-0.18192E-06	0.4709E-06	-0.386	0.69985
Working capital	0.71707E-06	0.2804E-05	0.256	0.79862
Δworking capital	-0.71969E-02	0.2937E-01	-0.245	0.80681
%Δworking capital	0.79171E-01	0.8769E-01	0.903	0.36661
Total income/cash flow	0456221E-01	0.7485E-01	1.023	0.78452

**Table A7d: Univariate Regression Estimation For The Stores Industry For The Identification Of The Accounting Descriptors Predicting Future Earnings' Sign and Size Changes Throughout The Period 1984-88.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-ratio</i>	<i>prob( t &gt;=x)</i>
current ratio	0.82213E-03	0.1529E-01	0.054	0.95720
Δcurrent ratio	0.81507E-02	0.3716E-01	0.219	0.82673
%Δcurrent ratio	-0.69188	0.3849	-1.797	0.07452
Quick asset ratio	-0.97806E-01	0.1300	-0.752	0.45323
Δquick asset ratio	-0.87707E-01	0.1973	-0.444	0.65741
%Δquick asset ratio	-0.71183	0.4531	-1.571	0.11621
Debtors ratio	-0.12445E-03	0.1095E-02	-0.114	0.90953
Δdebtors ratio	0.76452E-03	0.3510E-02	0.218	0.82791
%Δdebtors ratio	-0.36091	0.2825	-1.278	0.20138
inventory/turnover	0.18428E-01	0.2165E-01	0.851	0.39620
Δinventory/turnover	0.96325E-01	0.3674E-01	2.622	0.00974
%Δinventory/turnover	0.61861	0.4983	1.241	0.21656
inventory/total assets	-0.11035	0.2005	-0.550	0.58215
Δinventory/total assets	-1.8962	1.565	-1.212	0.22766
inventory	-0.54182	0.4809	-1.127	0.26180
Δinventory	-0.66255E-06	0.5658E-06	-1.171	0.24158
%Δinventory	0.70701E-06	0.3005E-05	0.235	0.81398
sales	0.23721E-01	0.1139	0.208	0.83498
Δsales	-0.88384E-07	0.6303E-07	-1.402	0.16084
%Δsales	-0.26957E-06	0.4614E-06	-0.584	0.55902
depreciation	0.76779E-01	0.1148	0.669	0.50351
Δdepreciation	-0.48391E-05	0.2290E-04	-0.211	0.83294
%Δdepreciation	0.18949E-03	0.5095E-01	0.004	0.99704
Δdividend per share	-0.38173E-01	0.6304E-01	-0.606	0.54482
%Δdividend per share	-0.11533	0.1004	-1.148	0.25083
Depreciation/fixed assets	0.15360	0.4311	0.356	0.72216
Δdepreciation/fixed assets	0.96917E-01	0.4198	0.231	0.81775
%Δ depreciation/fixed assets	0.66374E-02	0.2945E-02	1.354	0.12582
return on opening equity	-0.24069E-02	0.5015E-02	-0.480	0.63124
Δreturn on opening equity	0.35313E-01	0.3467E-01	1.019	0.31053
%Δreturn on opening equity	-2.1598	2.328	-0.928	0.35361
Δcapital expenditure/total assets	-2.2080	2.331	-0.947	0.34363
%Δcapital expenditure/total assets	-0.11963E-02	0.2076E-01	-0.058	0.95406
capital expenditure	-0.22890E-05	0.2211E-05	-1.035	0.30065
Δcapital expenditure	-0.15845E-05	0.1807E-04	-0.088	0.93031
%Δcapital expenditure	0.38252E-02	0.2031E-01	0.188	0.85058
Debt/equity	0.94599E-02	0.1725E-01	0.548	0.58352
Δdebt/equity	0.22933E-01	0.4334E-01	0.529	0.59758
%Δdebt/equity	0.57993E-01	0.1101	0.527	0.59925
Times interest earned	-0.18420E-02	0.1086E-02	-1.596	0.18996
Δtimes interest earned	-0.26375E-02	0.3192E-02	-0.826	0.41027
%Δtimes interest earned	0.71064E-03	0.1973E-01	0.036	0.97132
Sales/total assets	0.59277E-03	0.9989E-02	0.059	0.95277
Δsales/total assets	0.87295E-01	0.6709E-01	1.301	0.19538
%Δsales/total assets	-0.62714E-01	0.3352	-0.187	0.85186
Return on total assets	-2.9840	1.109	-1.290	0.14715
Δreturn on total assets	-13.606	7.835	-1.437	0.18247
%Δreturn on total assets	-0.79419E-01	0.5440E-01	-1.460	0.14434
return on closing equity	0.45304E-02	0.1460E-02	3.102	0.00192
Δreturn on closing equity	0.45994E-02	0.7134E-02	0.645	0.51910
%Δreturn on closing equity	-0.14226	0.9122E-01	-1.559	0.11889
Operating profit/sales	-0.60766	0.4523	-1.344	0.17909
Δoperating profit/sales	-5.3597	3.858	-1.389	0.16474
%Δoperating profit/sales	-0.57721	0.2828	-1.041	0.14121
Net profit margin	-0.66779E-02	0.1375E-01	-0.486	0.62726
Δnet profit margin	-0.23116	0.1522	-1.519	0.12872
%Δnet profit margin	-0.90554E-01	0.8016E-01	-1.130	0.25861

Sales/cash	0.16023E-04	0.2330E-04	0.688	0.49285
Δsales/cash	0.14754E-04	0.2284E-04	0.646	0.51945
%Δsales/cash	0.30903E-01	0.1510E-01	1.046	0.14270
Sales/inventory	0.28062E-03	0.3235E-02	0.087	0.93099
Δsales/inventory	0.44072E-02	0.7646E-02	0.576	0.56530
%Δsales/inventory	0.56908E-02	0.3361E-01	0.169	0.86580
Sales/working capital	0.10859E-02	0.1331E-02	0.816	0.41602
Δsales/working capital	0.30062E-02	0.2878E-02	1.044	0.29632
%Δsales/working capital	0.27561E-01	0.3352E-01	0.822	0.41099
Sales/total assets	0.59277E-03	0.9989E-02	0.059	0.95277
Δsales/total assets	0.87295E-01	0.6709E-01	1.301	0.19538
%Δsales/total assets	-0.62714E-01	0.3352	-0.187	0.85186
Δtotal assets	0.13148E-06	0.7753E-06	0.170	0.86534
%Δtotal assets	0.22564	0.2306	0.978	0.32960
Cash flow/total debt	-0.39368E-05	0.1192E-03	-0.033	0.97370
Working capital/total assets	-0.24826	0.2053	-1.209	0.22666
Δworking capital/total assets	-2.2351	1.959	-1.141	0.25385
%Δworking capital/total assets	-0.10151	0.1459	-0.696	0.48810
Δfunds	-0.20238E-05	0.3335E-05	-0.607	0.54391
%Δfunds	-0.18874E-01	0.3714E-01	-0.508	0.61134
Δuses	0.73281E-06	0.1328E-05	0.552	0.58109
%Δuses	0.67881E-06	0.5555E-05	0.342	0.89109
Working capital	-0.18730E-06	0.4790E-06	-0.391	0.69637
Δworking capital	0.72240E-06	0.3320E-05	0.218	0.82816
%Δworking capital	-0.53966E-01	0.8658E-01	-0.623	0.53310
Total income/cash flow	-0.10518	0.1639	-0.642	0.52103



## Chemical Industry

**Table A8: Univariate Regression Estimation For The Chemical Industry For The Identification Of The Accounting Descriptors Predicting Future Earnings' Sign and Size Changes Throughout The Period 1980-84.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-ratio</i>	<i>prob( t &gt;=x)</i>
current ratio	0.38538E-01	0.4216E-01	0.914	0.36064
Δcurrent ratio	0.16075	0.6292E-01	2.555	0.01063
%Δcurrent ratio	0.58865	0.2004	2.938	0.00330
Quick asset ratio	-0.54204	0.4680	-1.158	0.24970
Δquick asset ratio	1.3323	1.582	0.842	0.39978
%Δquick asset ratio	0.57090	1.151	0.496	0.61988
Debtors ratio	0.64691E-02	0.3029E-02	2.136	0.03270
Δdebtors ratio	-0.22262E-02	0.5821E-02	-0.382	0.70214
%Δdebtors ratio	-0.56715	0.8652	-0.656	0.51214
inventory/turnover	0.13134E-01	0.4013E-01	0.327	0.74342
Δinventory/turnover	0.62812E-01	0.7653E-01	0.821	0.41181
%Δinventory/turnover	0.58222	0.5444	1.069	0.28484
inventory/total assets	-0.65370	1.215	-0.538	0.59187
Δinventory/total assets	0.41776	4.829	0.087	0.93106
%Δinventory/total assets	-0.74069E-01	0.7467	-0.099	0.92098
inventory	-0.57111E-07	0.3009E-06	-0.190	0.84947
Δinventory	-0.23744E-05	0.4443E-05	-0.534	0.59436
%Δinventory	0.12493	0.1976	0.632	0.52875
sales	-0.10102E-07	0.5641E-07	-0.179	0.85788
Δsales	-0.23040E-06	0.7849E-06	-0.294	0.76977
%Δsales	0.36896	0.5152	0.716	0.47389
depreciation	0.55947E-05	0.8830E-05	0.634	0.52634
Δdepreciation	0.21497	0.2149	1.001	0.31706
%Δdepreciation	0.18055E-01	0.5748E-01	0.314	0.75413
Δdividend per share	0.47552	0.5053	0.941	0.34667
%Δdividend per share	-0.22600E-02	0.1048	-0.022	0.98284
Depreciation/fixed assets	0.25720E-01	0.7796E-01	0.330	0.74223
Δdepreciation/fixed assets	-0.90580E-02	0.5951E-01	-0.152	0.87902
return on opening equity	-0.13173E-02	0.1402	-0.009	0.99253
Δreturn on opening equity	-0.58950E-01	0.2419E-01	-2.437	0.01480
%Δreturn on opening equity	0.46390	3.163	0.147	0.88339
Δcapital expenditure/total assets	-0.71736	6.149	-0.117	0.90748
%Δcapital expenditure/total assets	-0.35671E-01	0.3563E-01	-1.001	0.32044
capital expenditure	-0.82048E-06	0.2490E-05	-0.330	0.74172
Δcapital expenditure	0.49245E-06	0.6195E-05	0.079	0.93688
%Δcapital expenditure	-0.23818E-01	0.2250E-01	-1.059	0.29361
Debt/equity	-0.22801E-03	0.1738E-01	-0.013	0.98953
Δdebt/equity	-0.59644E-02	0.4646E-01	-0.128	0.89812
%Δdebt/equity	-0.25858	0.4018	-0.644	0.51981
Times interest earned	-0.95634	0.7073	-1.352	0.17631
Δtimes interest earned	-3.3786	1.113	-3.036	0.00239
%Δtimes interest earned	-0.81200	0.4042	-2.009	0.04456
Sales/total assets	-0.19820E-06	0.2435E-04	-0.008	0.99352
Δsales/total assets	-0.59888E-06	0.2564E-05	-0.234	0.81532
%Δsales/total assets	-0.11602E-05	0.4592E-04	-0.025	0.97990
Return on total assets	-0.19952	0.1953	-1.022	0.30686
Δreturn on total assets	0.61731	1.053	0.587	0.55754
%Δreturn on total assets	-0.34843E-02	0.6746	-0.005	0.99588
return on closing equity	0.75985E-02	0.2252E-01	0.337	0.73585
Δreturn on closing equity	-0.18582E-04	0.1144E-01	-0.002	0.99871
%Δreturn on closing equity	-0.35071E-01	0.7821E-01	-0.448	0.65383
Operating profit/sales	-0.93478E-02	0.5905E-01	-0.158	0.87421
Δoperating profit/sales	-0.13428E-02	0.1386	-0.010	0.99229
%Δoperating profit/sales	-0.58873E-01	0.6267E-01	-0.939	0.35002

Net profit margin	2.8733	3.670	0.783	0.43373
$\Delta$ net profit margin	-0.33884E-01	1.076	-0.031	0.97494
% $\Delta$ net profit margin	-0.32930E-02	0.5076E-01	-0.065	0.94827
Sales/cash	0.13804E-01	0.4730E-01	0.292	0.77040
$\Delta$ sales/cash	-0.25498E-01	0.5040E-01	-0.506	0.61412
% $\Delta$ sales/cash	-0.49454E-01	0.5378E-01	-0.919	0.36028
Sales/inventory	-0.50420E-03	0.7985E-03	-0.631	0.52775
$\Delta$ sales/inventory	0.11767E-03	0.1519E-03	0.775	0.44050
% $\Delta$ sales/inventory	-0.72797E-02	0.1409E-01	-0.517	0.60669
Sales/working capital	-0.26127E-01	0.3435E-01	-0.761	0.44691
$\Delta$ sales/working capital	0.15675E-01	0.6164E-01	0.254	0.79928
% $\Delta$ sales/working capital	0.19424	0.3815	0.509	0.61067
Sales/fixed assets	0.44411E-02	0.11547-01	0.626	0.69916
$\Delta$ sales/fixed assets	0.12225E-01	0.1229E-01	0.835	0.47242
% $\Delta$ sales/fixed assets	0.92231E-01	0.1287	0.717	0.47367
$\Delta$ total assets	-0.19952	0.1953	-1.022	0.30686
% $\Delta$ total assets	0.61731	1.053	0.587	0.55754
Cash flow/total debt	0.61731	1.053	0.587	0.55754
Working capital/total assets	-0.34843E-02	0.6746	-0.005	0.99588
$\Delta$ working capital/total assets	0.67788E-06	0.6207E-06	1.092	0.27756
% $\Delta$ working capital/total assets	0.36902E-02	0.9662E-02	0.382	0.70252
$\Delta$ funds	-0.27663	0.8045	-0.344	0.73096
% $\Delta$ funds	2.2822	2.554	0.893	0.37164
$\Delta$ uses	0.14452	0.1807	0.800	0.42395
% $\Delta$ uses	0.69971E-06	0.2372E-05	0.295	0.76867
Working capital	-0.62770E-01	0.6464E-01	-0.971	0.33154
$\Delta$ working capital	0.12212E-05	0.2352E-05	0.519	0.60485
% $\Delta$ working capital	0.28808E-01	0.8315E-01	0.346	0.72901
Total income/cash flow	0.37942E-06	0.4015E-06	0.945	0.34700

**Table A8a: Univariate Regression Estimation For The Chemical Industry For The Identification Of The Accounting Descriptors Predicting The Future Earnings' Changes Throughout The Period 1981-85.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-ratio</i>	<i>prob(t)≥x</i>
current ratio	0.44076E-01	0.3946E-01	1.117	0.26396
Δcurrent ratio	0.94728E-01	0.4643E-01	2.040	0.04133
%Δcurrent ratio	0.66233	0.1964	3.372	0.00075
Quick asset ratio	-0.35302	0.3482	-1.014	0.31317
Δquick asset ratio	0.87334	1.189	0.735	0.46258
%Δquick asset ratio	0.33754	0.7532	0.448	0.65406
Debtors ratio	0.28859E-02	0.3827E-02	0.754	0.45078
Δdebtors ratio	-0.53125E-02	0.4994E-02	-1.064	0.28739
%Δdebtors ratio	-0.80107	0.6499	-1.233	0.21770
inventory/turnover	0.11192E-01	0.2950E-01	0.379	0.70441
Δinventory/turnover	0.94067E-01	0.5976E-01	1.574	0.11549
%Δinventory/turnover	0.76190	0.5837	1.305	0.19180
inventory/total assets	-0.55411	1.122	-0.494	0.62261
Δinventory/total assets	0.21444	4.619	0.046	0.96297
inventory	-0.13977	0.9579E-01	-1.459	0.14454
Δinventory	-0.10860E-06	0.2312E-06	-0.470	0.63859
%Δinventory	-0.18564E-05	0.3274E-05	-0.567	0.57207
sales	-0.36419	0.2250	-1.618	0.10557
Δsales	-0.19502E-07	0.4027E-07	-0.484	0.62815
%Δsales	-0.19291E-06	0.2520E-06	-0.765	0.44405
Δdepreciation	0.10217	0.3624	0.282	0.77799
%Δdepreciation	0.20304E-05	0.5606E-05	0.362	0.71723
Δdividend per share	0.45090E-01	0.1708	0.264	0.79177
%Δdividend per share	0.46488E-02	0.3255E-01	0.143	0.88675
Depreciation/fixed assets	0.70730E-01	0.1445	0.490	0.62555
Δdepreciation/fixed assets	-0.35396	0.3625	-0.977	0.33124
return on opening equity	0.22334E-01	0.1069	0.209	0.83497
Δreturn on opening equity	-0.31761E-01	0.7035E-01	-0.451	0.65165
%Δreturn on opening equity	-0.64543E-02	0.1382	-0.047	0.96286
Δcapital expenditure/total assets	-0.63606E-01	0.5943E-01	-1.070	0.28735
%Δcapital expenditure/total assets	1.1151	3.079	0.362	0.71720
capital expenditure	-0.36559E-01	0.3240E-01	-1.128	0.26280
Δcapital expenditure	-0.13139E-05	0.2930E-05	-0.448	0.65386
%Δcapital expenditure	0.51728E-05	0.1082E-04	0.478	0.63384
Debt/equity	-0.24688E-01	0.2052E-01	-1.203	0.23258
Δdebt/equity	-0.17865E-01	0.1635E-01	-1.093	0.27459
%Δdebt/equity	-0.10046E-01	0.5950E-01	-0.169	0.86628
Times interest earned	-0.45958	0.3569	-1.288	0.20098
Δtimes interest earned	0.31663E-06	0.2359E-04	0.013	0.98932
%Δtimes interest earned	-0.61182E-06	0.2528E-05	-0.242	0.80880
Sales/total assets	-0.11578E-05	0.4519E-04	-0.026	0.97962
Δsales/total assets	-0.16736	0.1869	-0.896	0.37051
%Δsales/total assets	0.57328	0.8868	0.646	0.51799
Return on total assets	-0.51430E-01	0.5330E-01	-0.965	0.33463
Δreturn on total assets	0.80278E-02	0.1985E-01	0.405	0.68584
%Δreturn on total assets	0.41986E-02	0.2214E-01	0.190	0.84961
return on closing equity	-0.40935E-01	0.7093E-01	-0.577	0.56387
Δreturn on closing equity	-0.31984E-01	0.6973E-01	-0.459	0.64647
%Δreturn on closing equity	-0.65615E-02	0.1367	-0.048	0.96182
Operating profit/sales	-0.63607E-01	0.5876E-01	-1.082	0.28187
Δoperating profit/sales	1.9727	3.433	0.575	0.56559
%Δoperating profit/sales	-0.22672E-01	1.040	-0.022	0.98265
Net profit margin	0.25009E-02	0.3414E-01	0.073	0.94160
Δnet profit margin	0.11478E-01	0.4352E-01	0.264	0.79198
%Δnet profit margin	-0.16377E-01	0.4548E-01	-0.360	0.71879
Sales/cash	-0.48969E-01	0.5225E-01	-0.937	0.35106
Δsales/cash	-0.51313E-03	0.2231E-03	-2.300	0.02363
%Δsales/cash	0.60514E-04	0.9860E-04	0.614	0.54090

Sales/inventory	-0.14354E-01	0.1736E-01	-0.827	0.41058
Δsales/inventory	-0.94484E-02	0.2441E-01	-0.387	0.69867
%Δsales/inventory	0.45530E-01	0.4795E-01	0.950	0.34233
Sales/working capital	0.25436	0.3795	0.670	0.50266
Δsales/working capital	0.91631E-04	0.5859E-02	0.016	0.98752
%Δsales/working capital	0.11649E-01	0.1453E-01	0.801	0.42485
Sales/total assets	-0.58557E-02	0.1005E-01	-0.583	0.56147
Δsales/total assets	0.40691E-06	0.4315E-06	0.943	0.34799
Δtotal assets	0.36871	0.2179	1592	0.12959
%Δtotal assets	0.24747E-02	0.5695E-02	0.435	0.66489
Cash flow/total debt	-0.78317E-01	0.7882	-0.099	0.92085
Working capital/total assets	1.8657	1.398	1.334	0.18215
Δworking capital/total assets	0.27553	0.2017	1.366	0.17194
%Δworking capital/total assets	0.34750E-06	0.1828E-05	0.190	0.84961
Δfunds	0.52630E-01	0.1678	0.314	0.75373
%Δfunds	0.21024E-06	0.5662E-06	0.371	0.71038
Δuses	0.51598E-02	0.1880E-01	0.274	0.78432
%Δuses	0.24103E-06	0.3425E-06	0.704	0.48323
Working capital	0.13612E-05	0.6663E-06	2.043	0.04380
%Δworking capital	0.31939	0.1269	2.517	0.01348
Δworking capital	-0.17786	0.9703	-0.183	0.85456
Total income/cash flow	-0.18546	0.1235	-0.784	0.98556

**Table A8b: Univariate Regression Estimation For The Chemical Industry For The Identification Of The Accounting Descriptors Predicting Future Earnings' Sign and Size Changes Throughout The Period 1982-86.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-ratio</i>	<i>prob( t &gt;=x)</i>
current ratio	0.50141E-01	0.3593E-01	1.395	0.16292
Δcurrent ratio	0.68487E-01	0.3208E-01	2.135	0.03275
%Δcurrent ratio	0.45409	0.7700E-01	5.897	0.00000
Quick asset ratio	-0.32893	0.1349	-2.439	0.01474
Δquick asset ratio	-0.19923	0.1292	-1.542	0.12612
%Δquick asset ratio	-0.30258	0.9905E-01	-3.055	0.00225
Debtors ratio	0.32301E-02	0.3491E-02	0.925	0.35481
Δdebtors ratio	-0.10789E-02	0.2373E-02	-0.455	0.65039
%Δdebtors ratio	-0.26379E-01	0.2136	-0.124	0.90195
inventory/turnover	0.10761E-02	0.9081E-02	0.118	0.90591
Δinventory/turnover	0.32112E-01	0.4079E-01	0.787	0.43113
%Δinventory/turnover	0.71011	0.4656	1.525	0.12721
inventory/total assets	-0.47924	0.6641	-0.722	0.47055
Δinventory/total assets	-4.3523	2.116	-2.057	0.03969
inventory	-0.21287	0.9141E-01	-2.329	0.01987
Δinventory	-0.68577E-07	0.1498E-06	-0.458	0.64806
%Δinventory	-0.29521E-06	0.1614E-05	-0.183	0.85527
sales	0.54377E-01	0.2097	0.259	0.79597
Δsales	-0.14997E-07	0.2558E-07	-0.586	0.55905
%Δsales	-0.12233E-06	0.1975E-06	-0.619	0.53701
Δdepreciation	-0.20768	0.1950	-1.065	0.28947
%Δdepreciation	0.42687E-06	0.7730E-05	0.055	0.95607
Δdividend per share	-0.18164E-01	0.2739	-0.066	0.94712
%Δdividend per share	0.22501E-02	0.1706E-01	0.132	0.89504
Depreciation/fixed assets	0.29410E-01	0.1024	0.287	0.77392
Δdepreciation/fixed assets	-0.37613E-01	0.1437	-0.262	0.79411
%Δ depreciation/fixed assets	0.75871E-01	0.7022	0.108	0.91395
return on opening equity	-0.12034	0.5406E-01	-2.226	0.02601
Δreturn on opening equity	0.58275E-02	0.6307E-01	0.092	0.92638
%Δreturn on opening equity	-0.72509E-01	0.2254E-01	-3.216	0.00178
capital expenditure/total assets	-2.3787	1.940	-1.226	0.22025
Δcapital expenditure/total assets	-1.3498	2.027	-0.666	0.50734
%Δcapital expenditure/total assets	-0.30684E-01	0.8591E-02	-3.572	0.00060
capital expenditure	-0.11295E-05	0.1858E-05	-0.608	0.54468
Δcapital expenditure	-0.36155E-05	0.3883E-05	-0.931	0.35442
%Δcapital expenditure	-0.20341E-01	0.5692E-02	-3.574	0.00058
Debt/equity	-0.18579E-01	0.1283E-01	-1.448	0.15067
Δdebt/equity	0.18886E-01	0.2470E-01	0.764	0.44637
%Δdebt/equity	-0.24796	0.2213	-1.121	0.26243
Times interest earned	0.30811E-05	0.1007E-04	0.306	0.76036
Δtimes interest earned	0.24204E-05	0.9433E-05	0.257	0.79808
%Δtimes interest earned	0.45479E-05	0.1777E-04	0.256	0.79860
Sales/total assets	-0.27012	0.1452	-1.861	0.06281
Δsales/total assets	-0.41739	0.1760	-2.372	0.01769
%Δsales/total assets	-0.10669	0.3529E-01	-3.023	0.00250
Return on total assets	-0.10296E-01	0.7315E-02	-1.408	0.15926
Δreturn on total assets	-0.14515E-01	0.1548E-01	-0.938	0.34849
%Δreturn on total assets	-0.89078E-01	0.3121E-01	-2.854	0.00527
return on closing equity	-0.11926	0.5364E-01	-2.223	0.02620
Δreturn on closing equity	0.53309E-02	0.6314E-01	0.084	0.93272
%Δreturn on closing equity	-0.72760E-01	0.2232E-01	-3.259	0.00154
Operating profit/sales	-1.3359	0.9531	-1.402	0.16102
Δoperating profit/sales	-0.27046E-01	0.4120	-0.066	0.94779
%Δoperating profit/sales	-0.12289E-01	0.2667E-01	-0.461	0.64495
Net profit margin	-0.18744E-01	0.1185E-01	-1.582	0.11672
Δnet profit margin	-0.28379E-01	0.3226E-01	-0.880	0.37902
%Δnet profit margin	0.18251E-03	0.1304E-03	1.400	0.16148
Sales/cash	0.40711E-04	0.9572E-04	0.425	0.67155

$\Delta$ sales/cash	-0.13873E-01	0.1021E-01	-1.358	0.17434
% $\Delta$ sales/cash	-0.29125E-02	0.9882E-02	-0.295	0.76881
Sales/inventory	-0.24078E-02	0.2595E-01	-0.093	0.92625
$\Delta$ sales/inventory	-0.18971	0.2386	-0.795	0.42834
% $\Delta$ sales/inventory	0.87865E-03	0.4872E-02	0.180	0.85687
Sales/working capital	0.245636E-01	0.5624E-02	1.063	0.15246
$\Delta$ sales/working capital	0.11536E-01	0.5876E-02	1.963	0.05246
% $\Delta$ sales/working capital	-0.71855E-02	0.4213E-02	-1.705	0.09129
Sales/fixed assets	-0.27012	0.1452	-1.0861	0.106281
$\Delta$ sales/fixed assets	-0.41739	0.1760	-1.372	0.11769
% $\Delta$ sales/fixed assets	-0.10669	0.3529E-01	-1.023	0.17250
$\Delta$ total assets	0.75184E-06	0.5494E-06	1.369	0.17116
% $\Delta$ total assets	0.46999	0.1215	1.067	0.17011
Cash flow/total debt	-0.27665E-02	0.2627E-02	-1.053	0.29222
Working capital/total assets	0.48163	0.4697	1.025	0.30521
$\Delta$ working capital/total assets	0.62095	0.6065	1.024	0.30594
% $\Delta$ working capital/total assets	0.68672E-01	0.8743E-01	0.785	0.43405
$\Delta$ funds	0.15724E-06	0.7090E-06	0.222	0.82494
% $\Delta$ funds	-0.38737E-01	0.6274E-01	-0.617	0.53835
$\Delta$ uses	-0.92903E-07	0.5608E-06	-0.166	0.86875
% $\Delta$ uses	0.20268E-02	0.7455E-02	0.272	0.78630
Working capital	0.20784E-06	0.2698E-06	0.770	0.44108
$\Delta$ working capital	0.14282E-05	0.2509E-06	5.692	0.00000
% $\Delta$ working capital	0.27153	0.4547E-01	5.972	0.00000
Total income/cash flow	0.35852	0.6161	0.582	0.56060

**Table A8c: Univariate Regression Estimation For The Chemical Industry For The Identification Of The Accounting Descriptors Predicting Future Earnings' Sign and Size Changes Throughout The Period 1983-87.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-ratio</i>	<i>prob t &gt;=x</i>
current ratio	0.60567E-01	0.3811E-01	1.589	0.11198
Δcurrent ratio	0.68468E-01	0.3171E-01	2.159	0.03082
%Δcurrent ratio	0.43867	0.6944E-01	6.317	0.00000
Quick asset ratio	-0.25208	0.1217	-2.071	0.04090
Δquick asset ratio	-0.14653	0.1058	-1.384	0.16922
%Δquick asset ratio	-0.20787	0.1169	-1.778	0.07832
Debtors ratio	0.29331E-02	0.3292E-02	0.891	0.37300
Δdebtors ratio	-0.79785E-03	0.2109E-02	-0.378	0.70593
%Δdebtors ratio	0.46038E-01	0.1923	0.239	0.81130
inventory/turnover	0.82236E-02	0.8447E-02	0.974	0.33253
Δinventory/turnover	0.20697E-01	0.2037E-01	1.016	0.30953
%Δinventory/turnover	0.61104	0.3884	1.573	0.11570
inventory/total assets	-0.81086	0.5962	-1.360	0.17382
Δinventory/total assets	-4.7010	2.021	-2.327	0.01999
inventory	-0.22684	0.9473E-01	-2.395	0.01664
Δinventory	-0.58471E-07	0.1226E-06	-0.477	0.63433
%Δinventory	-0.36890E-06	0.1385E-05	-0.266	0.79052
sales	-0.23166E-01	0.1185	-0.196	0.84535
Δsales	-0.12335E-07	0.2091E-07	-0.590	0.55645
%Δsales	-0.11748E-06	0.1633E-06	-0.719	0.47360
Δdepreciation	-0.13929	0.1604	-0.868	0.38732
%Δdepreciation	0.63892E-06	0.7354E-05	0.087	0.93093
Δdividend per share	0.13539E-01	0.2163	0.063	0.95021
%Δdividend per share	0.24296E-02	0.1183E-01	0.205	0.83772
Depreciation/fixed assets	0.36267E-01	0.1047	0.346	0.72899
Δdepreciation/fixed assets	0.84686E-01	0.1122	0.755	0.45053
%Δ depreciaton/fixed assets	-0.26991	0.3110	-0.868	0.38545
return on opening equity	-0.10930	0.4227E-01	-2.586	0.00971
Δreturn on opening equity	-0.25901	0.1357	-1.908	0.05635
%Δreturn on opening equity	-0.17358	0.9062E-01	-1.915	0.05543
capital expenditure/total assets	-2.3747	2.401	-0.989	0.32269
Δcapital expenditure/total assets	-1.7977	2.718	-0.661	0.51023
%Δcapital expenditure/total assets	-0.24036E-01	0.1718E-01	-1.399	0.16563
capital expenditure	-0.61971E-06	0.1402E-05	-0.442	0.65950
Δcapital expenditure	-0.21519E-05	0.1861E-05	-1.156	0.24761
%Δcapital expenditure	-0.16431E-01	0.6600E-02	-2.490	0.01469
Debt/equity	-0.83031E-02	0.2113E-02	-3.930	0.00009
Δdebt/equity	-0.82435E-02	0.5189E-02	-1.589	0.11523
%Δdebt/equity	-0.11783	0.4001E-01	-2.945	0.00323
Times interest earned	0.35057E-05	0.9479E-05	0.370	0.71228
Δtimes interest earned	0.55263E-05	0.1642E-04	0.336	0.73727
%Δtimes interest earned				
Sales/total assets	-0.23329	0.1403	-1.662	0.09642
Δsales/total assets	-0.32276	0.1317	-2.450	0.01429
%Δsales/total assets	-0.10591	0.3255E-01	-3.254	0.00114
Return on total assets	-0.10993E-01	0.6715E-02	-1.637	0.10160
Δreturn on total assets	-0.18202E-01	0.1592E-01	-1.144	0.25278
%Δreturn on total assets	-0.73054E-01	0.5886E-01	-1.241	0.21459
return on closing equity	-0.10930	0.4227E-01	-2.586	0.00971
Δreturn on closing equity	-0.25879	0.1357	-1.907	0.05651
%Δreturn on closing equity	-0.17493	0.9070E-01	-1.929	0.05378
Operating profit/sales	-0.96555	0.6530	-1.479	0.13925
Δoperating profit/sales	-0.47660	1.525	-0.313	0.75463
%Δoperating profit/sales	0.11112E-01	0.1940E-01	0.573	0.56805
Net profit margin	-0.11428E-01	0.1054E-01	-1.084	0.28092
Δnet profit margin	0.56749E-02	0.3167E-01	0.179	0.85813
%Δnet profit margin	0.12685	0.1209	1.049	0.29649
Sales/cash	0.83261E-04	0.7984E-04	1.043	0.29702

$\Delta$ sales/cash	0.75329E-04	0.8687E-04	0.867	0.38791
% $\Delta$ sales/cash	0.11586E-01	0.1251E-01	0.926	0.35421
Sales/inventory	0.49600E-02	0.8863E-02	0.560	0.57574
$\Delta$ sales/inventory	0.80862E-02	0.1512E-01	0.535	0.59403
% $\Delta$ sales/inventory	0.22311E-01	0.1807	0.123	0.90196
Sales/working capital	-0.19978E-02	0.4398E-02	-0.454	0.65060
$\Delta$ sales/working capital	-0.15397E-03	0.6910E-02	-0.022	0.98227
% $\Delta$ sales/working capital	-0.75604E-02	0.3912E-02	-1.032	0.15611
Sales/fixed assets	-0.23329	0.1403	-1.562	0.19642
$\Delta$ sales/fixed assets	-0.32276	0.1317	-1.450	0.13429
$\Delta$ total assets	-0.10591	0.3255E-01	-1.254	0.18114
% $\Delta$ total assets	0.67017E-06	0.4958E-06	1.352	0.17652
Cash flow/total debt	0.51280	0.6793E-01	1.549	0.27000
Working capital/total assets	-0.82867E-03	0.1941E-02	-0.427	0.66936
$\Delta$ working capital/total assets	0.49068	0.4894	1.003	0.31600
% $\Delta$ working capital/total assets	0.70163	0.5568	1.260	0.20764
$\Delta$ funds	-0.12156E-01	0.5422E-01	-0.224	0.82305
% $\Delta$ funds	0.35891E-07	0.6347E-06	0.057	0.95502
$\Delta$ uses	0.55339E-01	0.7308E-01	0.757	0.45068
% $\Delta$ uses	-0.55533E-07	0.4825E-06	-0.115	0.90860
Working capital	0.42001E-02	0.6896E-02	0.609	0.54381
$\Delta$ working capital	0.15205E-06	0.1990E-06	0.764	0.44490
% $\Delta$ working capital	0.12996E-05	0.5696E-06	2.281	0.02253
Total income/cash flow	0.80590E-01	0.8315E-01	0.969	0.33242



**Table A8d: Univariate Regression Estimation For The Chemical Industry For The Identification Of The Accounting Descriptors Predicting Future Earnings' Sign and Size Changes Throughout The Period 1984-88.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-ratio</i>	<i>prob t &gt;=x</i>
current ratio	0.26577E-01	0.2666E-01	0.997	0.31875
Δcurrent ratio	0.28886E-01	0.1940E-01	1.489	0.13958
%Δcurrent ratio	0.18443	0.2183	0.845	0.39811
Quick asset ratio	0.16719	0.2946	0.567	0.57040
Δquick asset ratio	-0.23271E-01	0.1304	-0.179	0.85833
%Δquick asset ratio	-0.79538E-01	0.1283	-0.620	0.53525
Debtors ratio	0.65306E-02	0.5134E-02	1.272	0.20332
Δdebtors ratio	0.70701E-02	0.5347E-02	1.322	0.18611
%Δdebtors ratio	0.79490	0.4311	1.844	0.06522
inventory/turnover	0.15614E-02	0.5893E-02	0.265	0.79105
Δinventory/turnover	-0.23695E-02	0.7435E-02	-0.319	0.74995
%Δinventory/turnover	-0.13584	0.2463	-0.552	0.58126
inventory/total assets	-0.35859	0.4796	-0.748	0.45633
%inventory/total assets	0.28748E-01	2.204	0.013	0.98959
Δ inventory/total assets	-0.11660	0.4594E-01	-2.538	0.01114
inventory	-0.10831E-06	0.5169E-07	-2.095	0.03614
Δinventory	-0.65884E-06	0.1459E-05	-0.452	0.65246
%Δinventory	0.19346	0.1981	0.976	0.32884
sales	-0.19683E-07	0.8907E-08	-2.210	0.02712
Δsales	-0.17376E-06	0.1737E-06	-1.000	0.31940
%Δsales	-0.33077	0.2502	-1.322	0.18615
Δdepreciation	0.22979E-05	0.7631E-05	0.301	0.76390
%Δdepreciation	0.78870	0.4777	1.551	0.19870
Δdividend per share	-0.10201E-01	0.1657E-01	-0.616	0.53938
%Δdividend per share	-0.23419E-02	0.6670E-01	-0.035	0.97206
Depreciation/fixed assets	0.12614	0.1314	0.960	0.33931
Δdepreciation/fixed assets	-0.21456	0.1986	-1.080	0.28005
return on opening equity	-0.10349	0.4405E-01	-2.350	0.01879
Δreturn on opening equity	-0.60820E-01	0.8555E-01	-0.711	0.47875
%Δreturn on opening equity	-0.44315E-01	0.1024	-0.433	0.66531
Δcapital expenditure/total assets	-1.4769	1.456	-1.014	0.31055
%Δcapital expenditure/total assets	-1.3982	4.496	-0.311	0.75654
ΔCapital expenditure	-0.22456E-01	0.2221E-01	-1.011	0.31491
capital expenditure	-0.85405E-06	0.5219E-06	-1.636	0.10178
%Δcapital expenditure	-0.19570E-05	0.4311E-05	-0.454	0.65098
ΔDebt/equity	-0.16641E-01	0.1083E-01	-1.536	0.12800
debt/equity	-0.89945E-02	0.2473E-02	-3.637	0.00028
%Δdebt/equity	-0.64844E-04	0.3970E-02	-0.016	0.98700
Times interest earned	-0.82401E-01	0.5248E-01	-1.570	0.11944
Δtimes interest earned	0.39339E-05	0.1680E-02	0.002	0.99813
%Δtimes interest earned	-0.38653E-03	0.3256E-02	-0.119	0.90576
Sales/total assets	0.30055E-01	0.5620E-01	0.535	0.59281
Δsales/total assets	-0.18631	0.1496	-1.246	0.21289
%Δsales/total assets	-0.10178	0.3183E-01	-3.198	0.00138
Return on total assets	-0.73642E-02	0.6305E-02	-1.168	0.24283
Δreturn on total assets	0.32713E-02	0.1232E-01	0.266	0.79107
%Δreturn on total assets	0.44979E-02	0.1537	0.029	0.97665
return on closing equity	-0.10349	0.4405E-01	-2.350	0.01879
Δreturn on closing equity	-0.60820E-01	0.8555E-01	-0.711	0.47875
%Δreturn on closing equity	-0.44315E-01	0.1024	-0.433	0.66531
Operating profit/sales	-0.68618	0.5115	-1.342	0.17976
Δoperating profit/sales	2.6100	2.963	0.881	0.37841
%Δoperating profit/sales	0.38923E-01	0.4388E-01	0.887	0.37501
Net profit margin	-0.37987E-02	0.9669E-02	-0.393	0.69523
Δnet profit margin	0.82195E-01	0.7639E-01	1.076	0.28192
%Δnet profit margin	0.62588	0.2046	3.058	0.00223
Sales/cash	-0.19877E-04	0.6116E-04	-0.325	0.74585
Δsales/cash	0.88605E-06	0.1195E-03	0.007	0.99410

% $\Delta$ sales/cash	-0.48201E-02	0.1840E-01	-0.262	0.79334
Sales/inventory	0.22402E-02	0.5927E-02	0.378	0.70546
$\Delta$ sales/inventory	-0.26714E-02	0.7731E-02	-0.346	0.72970
% $\Delta$ sales/inventory	-0.18383	0.2174	-0.845	0.39786
Sales/working capital	-0.13005E-02	0.2833E-02	-0.459	0.64621
$\Delta$ sales/working capital	-0.24560E-02	0.7379E-02	-0.333	0.73995
% $\Delta$ sales/working capital	-0.74618E-02	0.6660E-03	-11.204	0.00000
Sales/total assets	-0.18631	0.1496	-1.246	0.21289
$\Delta$ sales/total assets	-0.33423	0.1722	-1.942	0.05220
$\Delta$ total assets	-0.10178	0.3183E-01	-3.198	0.00138
% $\Delta$ total assets	0.10253E-06	0.2202E-06	0.466	0.64250
Cash flow/total debt	0.35878	0.1628	1.204	0.81753
Working capital/total assets	-0.28778E-04	0.1157E-03	-0.249	0.80406
$\Delta$ working capital/total assets	0.34916	0.3618	0.965	0.33456
% $\Delta$ working capital/total assets	0.49034	0.3675	1.334	0.18207
$\Delta$ funds	-0.70002E-03	0.6039E-01	-0.012	0.99077
% $\Delta$ funds	-0.52866E-06	0.8325E-06	-0.635	0.52681
$\Delta$ uses	0.10916	0.7649E-01	1.427	0.15353
% $\Delta$ uses	-0.87850E-07	0.6105E-06	-0.144	0.88586
Working capital	0.14921E-01	0.1375E-01	1.085	0.27802
$\Delta$ working capital	-0.10711E-06	0.1252E-06	-0.856	0.39417
% $\Delta$ working capital	0.51523E-06	0.3533E-06	1.458	0.14788
Total income/cash flow	0.15123E-01	0.2714E-01	0.557	0.57739

**Table A8e: Univariate Regression Estimation For The Chemical Industry For The Identification Of The Accounting Descriptors Predicting Future Earnings' Sign and Size Changes Throughout The Period 1980-88.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-ratio</i>	<i>prob( t &gt;=x)</i>
current ratio	0.26577E-01	0.2666E-01	0.997	0.31875
Δcurrent ratio	0.28886E-01	0.1940E-01	1.489	0.13958
%Δcurrent ratio	0.18443	0.2183	0.845	0.39811
Quick asset ratio	0.16719	0.2946	0.567	0.57040
Δquick asset ratio	-0.23271E-01	0.1304	-0.179	0.85833
%Δquick asset ratio	-0.79538E-01	0.1283	-0.620	0.53525
Debtors ratio	0.65306E-02	0.5134E-02	1.272	0.20332
Δdebtors ratio	0.70701E-02	0.5347E-02	1.322	0.18611
%Δdebtors ratio	0.79490	0.4311	1.844	0.06522
inventory/turnover	0.15614E-02	0.5893E-02	0.265	0.79105
Δinventory/turnover	-0.23695E-02	0.7435E-02	-0.319	0.74995
%Δinventory/turnover	-0.13584	0.2463	-0.552	0.58126
inventory/total assets	-0.35859	0.4796	-0.748	0.45633
Δinventory/total assets	0.28748E-01	2.204	0.013	0.98959
inventory	-0.11660	0.4594E-01	-2.538	0.01114
Δinventory	-0.10831E-01	0.5169E-07	-1.095	0.13614
%Δinventory	-0.65884E-06	0.1459E-05	-0.452	0.65246
sales	0.19346	0.1981	0.976	0.32884
Δsales	-0.19683E-07	0.8907E-08	-2.210	0.02712
%Δsales	-0.17376E-06	0.1737E-06	-1.000	0.31940
Δdepreciation	-0.33077	0.2502	-1.322	0.18615
%Δdepreciation	0.22979E-05	0.7631E-05	0.301	0.76390
Δdividend per share	0.78870	0.4777	1.0651	0.18870
%Δdividend per share	-0.10201E-01	0.1657E-01	-0.616	0.53938
Depreciation/fixed assets	-0.23419E-02	0.6670E-01	-0.035	0.97206
Δdepreciation/fixed assets	0.12614	0.1314	0.960	0.33931
return on opening equity	-0.21456	0.1986	-1.080	0.28005
Δreturn on opening equity	-0.10349	0.4405E-01	-2.350	0.01879
%Δreturn on opening equity	-0.60820E-01	0.8555E-01	-0.711	0.47875
Δcapital expenditure/total assets	-0.44315E-01	0.1024	-0.433	0.66531
%Δcapital expenditure/total assets	-1.4769	1.456	-1.014	0.31055
capital expenditure	-1.3982	4.496	-0.311	0.75654
Δcapital expenditure	-0.22456E-01	0.2221E-01	-1.011	0.31491
%Δcapital expenditure	-0.85405E-06	0.5219E-06	-1.636	0.10178
Debt/equity	-0.19570E-05	0.4311E-05	-0.454	0.65098
Δdebt/equity	-0.16641E-01	0.1083E-01	-1.536	0.12800
%Δdebt/equity	-0.89945E-02	0.2473E-02	-3.637	0.00028
Times interest earned	-0.64844E-04	0.3970E-02	-0.016	0.98700
Δtimes interest earned	-0.82401E-01	0.5248E-01	-1.570	0.11944
%Δtimes interest earned	0.39339E-05	0.1680E-02	0.002	0.99813
Sales/total assets	-0.38653E-03	0.3256E-02	-0.119	0.90576
Δsales/total assets	0.30055E-01	0.5620E-01	0.535	0.59281
%Δsales/total assets	-0.18631	0.1496	-1.246	0.21289
Return on total assets	-0.33423	0.1722	-1.942	0.05220
%Δreturn on total assets	-0.10178	0.3183E-01	-3.198	0.00138
Δreturn on total assets	-0.73642E-02	0.6305E-02	-1.168	0.24283
return on closing equity	0.32713E-02	0.1232E-01	0.266	0.79107
Δreturn on closing equity	0.44979E-02	0.1537	0.029	0.97665
%Δreturn on closing equity	-0.10349	0.4405E-01	-2.350	0.01879
Operating profit/sales	-0.60820E-01	0.8555E-01	-0.711	0.47875
Δoperating profit/sales	-0.44315E-01	0.1024	-0.433	0.66531
%Δoperating profit/sales	-0.68618	0.5115	-1.342	0.17976
Net profit margin	2.6100	2.963	0.881	0.37841
Δnet profit margin	0.38923E-01	0.4388E-01	0.887	0.37501
%Δnet profit margin	-0.37987E-02	0.9669E-02	-0.393	0.69523
Sales/cash	0.82195E-01	0.7639E-01	1.076	0.28192
Δsales/cash	0.62588	0.2046	1.058	0.79223
%Δsales/cash	-0.19877E-04	0.6116E-04	-0.325	0.74585

Sales/inventory	0.88605E-06	0.1195E-03	0.007	0.99410
Δsales/inventory	-0.48201E-02	0.1840E-01	-0.262	0.79334
%Δsales/inventory	0.22402E-02	0.5927E-02	0.378	0.70546
Sales/working capital	-0.26714E-02	0.7731E-02	-0.346	0.72970
Δsales/working capital	-0.18383	0.2174	-0.845	0.39786
%Δsales/working capital	-0.13005E-02	0.2833E-02	-0.459	0.64621
Sales/fixed assets	-0.24560E-02	0.7379E-02	-0.333	0.73995
Δsales/fixed assets	-0.74618E-02	0.6660E-03	-1.204	0.78900
Δtotal assets	-0.18631	0.1496	-1.246	0.21289
%Δtotal assets	-0.33423	0.1722	-1.042	0.15220
Cash flow/total debt	-0.10178	0.3183E-01	-1.198	0.78138
Working capital/total assets	0.10253E-06	0.2202E-06	0.466	0.64250
Δworking capital/total assets	0.35878	0.1628	0.204	0.72753
%Δworking capital/total assets	-0.28778E-04	0.1157E-03	-0.249	0.80406
Δfunds	0.34916	0.3618	0.965	0.33456
%Δfunds	0.49034	0.3675	1.334	0.18207
Δuses	-0.70002E-03	0.6039E-01	-0.012	0.99077
%Δuses	-0.52866E-06	0.8325E-06	-0.635	0.52681
Working capital	0.10916	0.7649E-01	1.427	0.15353
Δworking capital	-0.87850E-07	0.6105E-06	-0.144	0.88586
%Δworking capital	0.14921E-01	0.1375E-01	1.085	0.27802
Total income/cash flow	-0.10711E-06	0.1252E-06	-0.856	0.39417

## Stores and Chemical Industries Together

**Table A9: Univariate Regression Estimation For The Stores And Chemical Industries For The Identification Of The Accounting Descriptors Predicting Future Earnings' Sign and Size Changes Throughout The Period 1980-84.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-ratio</i>	<i>prob( t &gt;=x)</i>
current ratio	0.67493E-06	0.6434E-06	1.049	0.29521
Δcurrent ratio	6.2873	3.124	2.013	0.04416
%Δcurrent ratio	-0.14210E-01	0.3889E-01	-0.365	0.71554
Quick asset ratio	0.13997	0.1502	0.932	0.35231
Δquick asset ratio	0.90854E-01	0.2158	0.421	0.67410
%Δquick asset ratio	-0.20810	0.9252	-0.225	0.82223
Debtors ratio	0.22022E-02	0.1450E-02	1.519	0.12878
_debtors ratio	0.32045E-03	0.2196E-02	0.146	0.88417
%Δdebtors ratio	-0.54438E-05	0.5236E-05	-1.040	0.29962
inventory/turnover	-0.40156E-02	0.1936E-01	-0.207	0.83566
Δinventory/turnover	-0.18356E-02	0.4243E-02	-0.433	0.66525
%Δinventory/turnover	0.11412E-02	0.1098E-02	1.040	0.29968
inventory/total assets	-0.67778	0.5374	-1.261	0.20726
Δinventory/total assets	-0.96261E-01	0.3659	-0.263	0.79275
inventory	0.22491	0.2267	0.992	0.32105
Δinventory	0.19507E-07	0.2737E-06	0.071	0.94318
%Δinventory	0.33978E-01	0.4596E-01	0.739	0.46043
sales	0.24529E-01	0.3115E-01	0.787	0.43188
Δsales	0.10065E-07	0.4709E-07	0.214	0.83074
%Δsales	-0.62401E-02	0.8264E-01	-0.076	0.93987
Δdepreciation	-0.21849E-05	0.1934E-05	-1.130	0.26010
%Δdepreciation	0.14206	0.1970	0.721	0.47162
Δdividend per share	-1.4790	0.7857	-1.882	0.05978
%Δdividend per share	0.16887	0.3162	0.534	0.59327
Depreciation/fixed assets	-0.69833E-03	0.7305E-02	-0.096	0.92392
Δdepreciation/fixed assets	-0.30189E-01	0.1125	-0.268	0.78868
return on opening equity	0.12597	0.1446	0.871	0.38459
Δreturn on opening equity	0.57375E-03	0.6624E-02	0.087	0.93098
%Δreturn on opening equity	0.26969	0.3841	0.702	0.48259
Δcapital expenditure/total assets	0.21475E-05	0.5942E-06	3.614	0.00030
%Δcapital expenditure/total assets	0.16965E-05	0.6276E-06	2.703	0.00687
capital expenditure	-0.13420	0.1140	-1.177	0.23928
Δcapital expenditure	0.81021E-02	0.4859E-01	0.167	0.86758
%Δcapital expenditure	0.48918E-06	0.1908E-05	0.256	0.79763
Debt/equity	0.35649	0.2478	1.439	0.15158
Δdebt/equity	-0.95111E-02	0.3028E-01	-0.314	0.75372
%Δdebt/equity	0.87768E-02	0.1199E-01	0.732	0.46427
Times interest earned	0.29744	0.3133	0.949	0.34249
Δtimes interest earned	0.59677E-01	0.5340E-01	1.117	0.26378
%Δtimes interest earned	0.93870E-02	0.5813E-02	1.615	0.10637
Sales/total assets	-0.82625E-03	0.5659E-02	-0.146	0.88391
Δsales/total assets	-0.18162	0.1802	-1.008	0.31350
%Δsales/total assets	-0.14505E-05	0.2507E-05	-0.579	0.56286
Return on total assets	0.47396	0.2714	1.746	0.08073
Δreturn on total assets	-0.10419	0.1054	-0.989	0.32273
%Δreturn on total assets	0.35271E-02	0.3126E-01	0.113	0.91018
return on closing equity	-0.25126	0.3589	-0.700	0.48386
Δreturn on closing equity	-0.32391E-05	0.4607E-04	-0.070	0.94401
%Δreturn on closing equity	-0.13738E-02	0.5936E-02	-0.231	0.81696
Operating profit/sales	-0.86205E-02	0.1177E-01	-0.732	0.46400
Δoperating profit/sales	-0.90563E-06	0.1680E-05	-0.539	0.58979
%Δoperating profit/sales	0.82109E-03	0.1422E-01	0.058	0.95394
Net profit margin	0.28352E-01	0.8493E-01	0.334	0.73880

Δnet profit margin	-0.13044E-01	0.2560E-01	-0.510	0.61031
%Δnet profit margin	0.47631	0.4286	1.111	0.26638
Sales/cash	-0.29280	0.5786	-0.506	0.61284
Δsales/cash	0.92051E-05	0.7942E-05	1.159	0.24641
%Δsales/cash	-0.29349	0.2011	-1.460	0.14435
Sales/inventory	-0.23271E-02	0.1220E-01	-0.191	0.84867
Δsales/inventory	0.12812E-05	0.5310E-05	0.241	0.80966
%Δsales/inventory	0.24765E-02	0.1039E-01	0.238	0.81188
Sales/working capital	-0.16432E-01	0.1394E-01	-1.179	0.23959
Δsales/working capital	-0.67107E-03	0.3007E-02	-0.223	0.82340
%Δsales/working capital	-0.13060E-05	0.5276E-05	-0.248	0.80473
Sales/total assets	0.49729E-02	0.3003E-01	0.166	0.86862
Δsales/total assets	-0.14505E-05	0.2507E-05	-0.579	0.56286
Δtotal assets	0.47396	0.2714	1.746	0.08073
%Δtotal assets	-0.10419	0.1054	-0.989	0.32273
Cash flow/total debt	0.18991E-01	0.9316E-01	0.204	0.83847
Working capital/total assets	1.0573	3.545	0.298	0.76597
Δworking capital/total assets	-0.93408E-01	0.8552E-01	-1.092	0.27472
%Δworking capital/total assets	0.28121E-01	0.3282E-01	0.857	0.39148
Δfunds	0.32920E-06	0.3885E-06	0.847	0.39761
%Δfunds	0.55860E-02	0.9980E-01	0.056	0.95541
Δuses	-0.14749E-01	0.3118E-01	-0.473	0.63617
%Δuses	-0.16998E-05	0.2445E-04	-0.070	0.94465
Working capital	-0.10093E-01	0.2241E-01	-0.450	0.65241
Δworking capital	-0.33975	0.2127	-1.597	0.11024
%Δworking capital	0.18954	0.6088	0.311	0.75555
Total income/cash flow	0.11134	0.2698	0.413	0.67980

**Table A9a: Univariate Regression Estimation For The Stores And Chemical Industries For The Accounting Descriptors Selected For The Period 1981-85.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-ratio</i>	<i>prob( t &gt;=x)</i>
current ratio	0.32794E-06	0.4985E-06	0.658	0.51124
Δcurrent ratio	2.1183	2.818	0.752	0.45224
%Δcurrent ratio	0.29309E-03	0.3297E-01	0.009	0.99291
Quick asset ratio	0.63182E-01	0.1333	0.474	0.63604
Δquick asset ratio	0.20000	0.2075	0.964	0.33513
%Δquick asset ratio	-0.36068	0.8706	-0.414	0.67905
Debtors ratio	0.10618E-02	0.1480E-02	0.717	0.47315
Δdebtors ratio	0.64457E-02	0.9748E-02	0.661	0.50936
%Δdebtors ratio	-0.66550E-05	0.6412E-05	-1.038	0.30041
inventory/turnover	0.56512E-02	0.1852E-01	0.305	0.76022
Δinventory/turnover	-0.32851E-02	0.1873E-01	-0.175	0.86094
%Δinventory/turnover	0.10336E-02	0.1161E-02	0.890	0.37430
inventory/total assets	-0.30603	0.4546	-0.673	0.50080
Δinventory/total assets	-0.18580E-01	0.3730	-0.050	0.96032
inventory	0.23962	0.1026	2.335	0.01954
Δinventory	-0.14843E-06	0.2209E-06	-0.672	0.50158
%Δinventory	0.93397E-02	0.5149E-01	0.181	0.85621
sales	-0.94585E-02	0.3864E-01	-0.245	0.80661
Δsales	-0.23117E-07	0.3647E-07	-0.634	0.52621
%Δsales	-0.27728E-01	0.1193	-0.232	0.81637
Δdepreciation	-0.21760E-05	0.1864E-05	-1.167	0.24429
%Δdepreciation	0.85950E-01	0.3817	0.225	0.82205
Δdividend per share	-0.21907	0.1656	-1.323	0.18711
%Δdividend per share	-0.16801	0.2216	-0.758	0.44908
Depreciation/fixed assets	0.21486E-02	0.7636E-02	0.281	0.77865
Δdepreciation/fixed assets	-0.43799	0.4059	-1.079	0.28163
return on opening equity	0.93257E-01	0.1540	0.605	0.54550
Δreturn on opening equity	0.42521E-02	0.3477E-02	1.223	0.22262
%Δreturn on opening equity	-0.25669	0.3243	-0.792	0.42861
Δcapital expenditure/total assets	0.12454E-05	0.8187E-06	1.521	0.12962
%Δcapital expenditure/total assets	0.16368E-06	0.5905E-06	0.277	0.78164
capital expenditure	-0.60795E-01	0.1138	-0.534	0.59321
Δcapital expenditure	0.10784E-02	0.3801E-01	0.028	0.97737
%Δcapital expenditure	-0.93598E-06	0.2150E-05	-0.435	0.66327
Debt/equity	-0.69133E-01	0.3454	-0.200	0.84138
Δdebt/equity	0.49877E-02	0.2991E-01	0.167	0.86768
%Δdebt/equity	0.10252E-03	0.1426E-01	0.007	0.99426
Times interest earned	-0.44271E-02	0.2037	-0.022	0.98268
Δtimes interest earned	0.38625E-01	0.3520E-01	1.097	0.27368
%Δtimes interest earned	0.28672E-02	0.5630E-02	0.509	0.61059
Sales/total assets	0.24963E-02	0.3744E-02	0.667	0.50491
Δsales/total assets	-0.72719E-02	0.1909	-0.038	0.96961
%Δsales/total assets	-0.16500E-05	0.1745E-05	-0.946	0.34425
Return on total assets	-0.54655E-01	0.3351	-0.163	0.87043
Δreturn on total assets	-0.62137E-01	0.5639E-01	-1.102	0.27165
%Δreturn on total assets	-0.10418E-01	0.2708E-01	-0.385	0.70041
return on closing equity	-0.28520	0.3070	-0.929	0.35285
Δreturn on closing equity	0.16572E-05	0.4470E-04	0.037	0.97046
%Δreturn on closing equity	0.11960E-02	0.5639E-02	0.212	0.83205
Operating profit/sales	0.23963E-01	0.2562E-01	0.935	0.34963
Δoperating profit/sales	-0.26100E-02	0.1059E-01	-0.246	0.80539
%Δoperating profit/sales	-0.97705E-06	0.8647E-06	-1.130	0.25853
Net profit margin	-0.36894E-02	0.1315E-01	-0.281	0.77898
Δnet profit margin	-0.79059E-02	0.1841E-01	-0.429	0.66802
%Δnet profit margin	-0.62283E-02	0.2039E-01	-0.305	0.76000
Sales/cash	0.63317	0.4256	1.488	0.13680
Δsales/cash	0.20208E-01	0.6087	0.033	0.97355
%Δsales/cash	0.20715E-05	0.4070E-05	0.509	0.61073
Sales/inventory	-0.97947E-01	0.1265	-0.774	0.43957

$\Delta$ sales/inventory	-0.62747E-02	0.1172E-01	-0.535	0.59247
% $\Delta$ sales/inventory	0.43503E-05	0.9387E-05	0.463	0.64366
Sales/working capital	0.55473E-02	0.1062E-01	0.522	0.60181
$\Delta$ sales/working capital	-0.13574E-01	0.2177E-01	-0.623	0.53360
% $\Delta$ sales/working capital	-0.41695E-02	0.2709E-02	-1.539	0.12378
Sales/total assets	-0.20261E-05	0.7243E-05	-0.280	0.77995
$\Delta$ sales/total assets	0.32883E-02	0.3200E-01	0.103	0.91823
$\Delta$ total assets	-0.16500E-05	0.1745E-05	-0.946	0.34425
% $\Delta$ total assets	-0.54655E-01	0.3351	-0.163	0.87043
Cash flow/total debt	-0.62137E-01	0.5639E-01	-1.102	0.27165
Working capital/total assets	0.12153	0.1508	0.806	0.42036
$\Delta$ working capital/total assets	0.99964	3.810	0.262	0.79338
% $\Delta$ working capital/total assets	-0.16422E-01	0.5147E-01	-0.319	0.74969
$\Delta$ funds	0.65680E-02	0.6065E-02	1.083	0.27884
% $\Delta$ funds	0.11452E-06	0.3599E-06	0.318	0.75063
$\Delta$ uses	-0.96752E-02	0.1851E-01	-0.523	0.60172
% $\Delta$ uses	-0.15818E-01	0.2650E-01	-0.597	0.55065
Working capital	0.89247E-06	0.2372E-04	0.038	0.97003
$\Delta$ working capital	-0.20258E-01	0.1951E-01	-1.038	0.29908
% $\Delta$ working capital	-0.14750	0.5840E-01	-2.526	0.01248
Total income/cash flow	-0.45108E-01	0.4756	-0.095	0.92444



**Table A9b: Univariate Regression Estimation For The Stores And Chemical Industries For The Identification Of The Accounting Descriptors Predicting Future Earnings' Sign and Size Changes Throughout The Period 1982-86.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-ratio</i>	<i>prob( t &gt;=0)</i>
current ratio	0.70613E-06	0.3816E-06	1.851	0.06543
Δcurrent ratio	-0.78504	1.754	-0.448	0.65446
%Δcurrent ratio	0.38195E-02	0.3045E-01	0.125	0.90018
Quick asset ratio	-0.16781E-02	0.7988E-01	-0.021	0.98324
Δquick asset ratio	0.11558E-01	0.3608E-01	0.320	0.74897
%Δquick asset ratio	-0.34538	0.3784	-0.913	0.36230
Debtors ratio	0.57581E-03	0.9947E-03	0.579	0.56268
Δdebtors ratio	-0.11374E-01	0.9075E-02	-1.253	0.21010
%Δdebtors ratio	-0.46563E-05	0.5004E-05	-0.931	0.35305
inventory/turnover	0.15379E-03	0.1381E-01	0.011	0.99112
Δinventory/turnover	-0.82307E-02	0.2014E-02	-1.086	0.87004
%Δinventory/turnover	0.12204E-02	0.8326E-03	1.466	0.14410
inventory/total assets	-0.62345E-01	0.2765	-0.225	0.82160
Δinventory/total assets	0.55166E-01	0.2777	0.199	0.84269
inventory	0.20052	0.6675E-01	3.004	0.00294
Δinventory	-0.76914E-07	0.1094E-06	-0.703	0.48212
%Δinventory	0.14401E-01	0.3430E-01	0.420	0.67495
sales	0.11923E-01	0.1705E-01	0.699	0.48444
Δsales	-0.16800E-07	0.1793E-07	-0.937	0.34870
%Δsales	-0.32315	0.2234	-1.447	0.14927
Δdepreciation	-0.20441E-05	0.1301E-05	-1.571	0.11742
%Δdepreciation	0.35487	0.2061	1.022	0.18513
Δdividend per share	-0.15589	0.8304E-01	-1.077	0.16165
%Δdividend per share	-0.38780	0.2888	-1.343	0.17940
Depreciation/fixed assets	0.42815E-02	0.5286E-02	0.810	0.41873
Δdepreciation/fixed assets	-0.74165E-01	0.2122	-0.349	0.72676
return on opening equity	0.19938	0.1002	1.090	0.14771
Δreturn on opening equity	0.51158E-02	0.2528E-02	2.024	0.04302
%Δreturn on opening equity	-0.21387	0.2503	-0.854	0.39289
Δcapital expenditure/total assets	0.13806E-05	0.5597E-06	2.467	0.01438
%Δcapital expenditure/total assets	0.36268E-06	0.1061E-05	0.342	0.73279
Δcapital expenditure	0.55962E-01	0.7623E-01	0.734	0.46288
capital expenditure	-0.33866E-01	0.1496E-01	-2.263	0.02461
%Δcapital expenditure	-0.97041E-06	0.1071E-05	-0.906	0.36482
Debt/equity	0.51399E-01	0.1857	0.277	0.78194
Δdebt/equity	0.16587E-01	0.2023E-01	0.820	0.41315
%Δdebt/equity	0.39794E-02	0.1414E-01	0.281	0.77840
Times interest earned	-0.76614E-01	0.1406	-0.545	0.58626
Δtimes interest earned	0.29865E-01	0.1850E-01	1.614	0.10647
%Δtimes interest earned	-0.15010E-02	0.4999E-02	-0.300	0.76396
Sales/total assets	0.29862E-02	0.2641E-02	1.131	0.25927
Δsales/total assets	0.13261	0.1731	0.766	0.44349
%Δsales/total assets	0.12539E-05	0.1674E-05	0.749	0.45374
Return on total assets	0.67442E-01	0.1267	0.532	0.59445
Δreturn on total assets	-0.60857E-01	0.3910E-01	-1.556	0.12090
%Δreturn on total assets	-0.36189E-01	0.1435E-01	-1.523	0.47165
return on closing equity	-0.17958	0.2264	-0.793	0.42759
Δreturn on closing equity	0.56758E-05	0.2026E-04	0.280	0.77968
%Δreturn on closing equity	-0.23870E-02	0.4435E-02	-0.538	0.59043
Operating profit/sales	0.25820E-01	0.1772E-01	1.457	0.14647
Δoperating profit/sales	0.12934E-01	0.1280E-01	1.010	0.31230
%Δoperating profit/sales	-0.79134E-08	0.1552E-05	-0.005	0.99594
Net profit margin	-0.75822E-02	0.1188E-01	-0.638	0.52321
Δnet profit margin	-0.97043E-02	0.1286E-01	-0.754	0.45131
%Δnet profit margin	-0.35946E-02	0.1139E-01	-0.316	0.75223
Sales/cash	0.45198	0.2725	1.059	0.19848
Δsales/cash	-0.27596	0.3262	-0.846	0.39761
%Δsales/cash	0.18288E-05	0.1162E-04	0.157	0.87505

Sales/inventory	-0.11362	0.8141E-01	-1.396	0.16411
Δsales/inventory	-0.95190E-02	0.6348E-02	-1.500	0.13509
%Δsales/inventory	-0.30860E-05	0.9269E-05	-0.333	0.73955
Sales/working capital	0.66621E-02	0.4842E-02	1.376	0.16887
Δsales/working capital	0.47896E-02	0.1013E-01	0.473	0.63664
%Δsales/working capital	-0.39642E-02	0.1866E-02	-1.125	0.13363
Sales/total assets	0.19935E-04	0.2059E-04	0.968	0.33386
Δsales/total assets	0.40940E-02	0.2211E-01	0.185	0.85327
Δtotal assets	0.12539E-05	0.1674E-05	0.749	0.45374
%Δtotal assets	0.67442E-01	0.1032	0.653	0.51414
Cash flow/total debt	0.67442E-01	0.1032	0.653	0.51414
Working capital/total assets	-0.60857E-01	0.3910E-01	-1.556	0.12090
Δworking capital/total assets	0.10046E-01	0.1446	0.069	0.94460
%Δworking capital/total assets	-2.6235	2.423	-1.083	0.27893
Δfunds	0.39695E-01	0.1437E-01	0.763	0.45621
%Δfunds	0.35810E-02	0.1992E-02	1.198	0.17365
Δuses	0.64041E-07	0.2297E-06	0.279	0.78067
%Δuses	-0.11072E-01	0.1293E-01	-0.856	0.39280
Working capital	-0.35113E-01	0.1685E-01	-1.084	0.17836
Δworking capital	0.29258E-05	0.1076E-04	0.272	0.78587
%Δworking capital	-0.35512E-01	0.1213E-01	-1.028	0.45741
Total income/cash flow	0.12523	0.2168	0.578	0.56345

**Table A9c: Univariate Regression Estimation For The Stores And Chemical Industries For The Identification Of The Accounting Descriptors Predicting Future Earnings' Sign and Size Changes Throughout The Period 1983-87.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-ratio</i>	<i>prob( t &gt;=x)</i>
current ratio	0.66497E-06	0.3621E-06	1.036	0.16749
Δcurrent ratio	-0.92664	1.853	-0.500	0.61695
%Δcurrent ratio	0.20899E-01	0.3031E-01	0.689	0.49054
Quick asset ratio	-0.26497E-01	0.7936E-01	-0.334	0.73845
Δquick asset ratio	0.75154E-02	0.3583E-01	0.210	0.83402
%Δquick asset ratio	-1.0064	0.6726	-1.496	0.13597
Debtors ratio	0.64171E-03	0.1009E-02	0.636	0.52489
Δdebtors ratio	-0.39017E-02	0.9822E-02	-0.397	0.69120
%Δdebtors ratio	0.16108E-04	0.1697E-04	0.949	0.34346
inventory/turnover	0.23942E-02	0.1364E-01	0.175	0.86069
Δinventory/turnover	-0.86386E-02	0.1236E-01	-0.699	0.48545
%Δinventory/turnover	0.63135E-03	0.8265E-03	0.764	0.44575
inventory/total assets	-0.15880	0.2380	-0.667	0.50462
Δinventory/total assets	-0.16822	0.2785	-0.604	0.54577
inventory	0.16822	0.6453E-01	1.607	0.42969
Δinventory	-0.60199E-07	0.9455E-07	-0.637	0.52434
%Δinventory	-0.50933E-02	0.4055E-02	-1.256	0.20912
sales	0.11940E-01	0.1250E-01	0.955	0.33955
Δsales	-0.15913E-07	0.1596E-07	-0.997	0.31866
%Δsales	-0.35924	0.6804	-0.528	0.59798
Δdepreciation	-0.63952E-04	0.1151E-03	-0.555	0.57861
%Δdepreciation	0.22499	0.1564	1.438	0.15038
Δdividend per share	-0.13494	0.8086E-01	-1.069	0.19645
%Δdividend per share	-0.33413	0.2410	-1.386	0.16560
Depreciation/fixed assets	0.22273E-02	0.5540E-02	0.402	0.68799
Δdepreciation/fixed assets	0.76529E-01	0.1350	0.567	0.57090
return on opening equity	0.27750	0.1001	2.773	0.00598
Δreturn on opening equity	0.20160E-02	0.1507E-02	1.338	0.18102
%Δreturn on opening equity	-0.12997	0.2325	-0.559	0.57608
Δcapital expenditure/total assets	0.12638E-05	0.5369E-06	1.354	0.81944
%Δcapital expenditure/total assets	0.38232E-06	0.9726E-06	0.393	0.69463
capital expenditure	0.79362E-01	0.8457E-01	0.938	0.34802
Δcapital expenditure	-0.39575E-01	0.2813E-01	-1.407	0.15954
%Δcapital expenditure	-0.52894E-06	0.9128E-06	-0.579	0.56225
Debt/equity	-0.31756E-02	0.9343E-01	-0.034	0.97289
Δdebt/equity	0.68440E-02	0.2054E-01	0.333	0.73926
%Δdebt/equity	-0.33814E-02	0.5389E-02	-0.627	0.53037
Times interest earned	-0.17374	0.1324	-1.313	0.19055
Δtimes interest earned	0.26624E-01	0.1946E-01	1.368	0.17122
%Δtimes interest earned	-0.17674E-02	0.7087E-02	-0.249	0.80306
Sales/total assets	-0.20328E-03	0.2816E-02	-0.072	0.94250
Δsales/total assets	0.40378E-01	0.3541E-01	1.140	0.25423
%Δsales/total assets	0.10953E-05	0.1430E-05	0.766	0.44380
Return on total assets	0.84309E-02	0.8686E-01	0.097	0.92267
Δreturn on total assets	-0.61685E-01	0.3818E-01	-1.615	0.10749
%Δreturn on total assets	-0.39593E-01	0.3078E-01	-1.286	0.19832
return on closing equity	-0.18821	0.1948	-0.966	0.33408
Δreturn on closing equity	0.60528E-05	0.2144E-04	0.282	0.77798
%Δreturn on closing equity	-0.39261E-02	0.5198E-02	-0.755	0.45009
Operating profit/sales	0.47007E-01	0.1865E-01	1.520	0.47245
Δoperating profit/sales	0.94367E-02	0.1370E-01	0.689	0.49093
%Δoperating profit/sales	-0.50463E-06	0.1258E-05	-0.401	0.68867
Net profit margin	0.95569E-02	0.9765E-02	0.979	0.32875
Δnet profit margin	-0.10804E-01	0.1273E-01	-0.848	0.39700
%Δnet profit margin	-0.82032E-02	0.1106E-01	-0.741	0.45842
Sales/cash	0.31844	0.2374	1.342	0.18096
Δsales/cash	-0.28967	0.4033	-0.718	0.47341
%Δsales/cash	0.71109E-06	0.3404E-05	0.209	0.83452

Sales/inventory	-0.84017E-01	0.7335E-01	-1.145	0.25317
Δsales/inventory	0.38580E-02	0.7153E-02	0.539	0.59019
%Δsales/inventory	-0.18676E-05	0.8562E-05	-0.218	0.82757
Sales/working capital	-0.73168E-03	0.2834E-02	-0.258	0.79630
Δsales/working capital	0.15518E-01	0.1066E-01	1.456	0.14668
%Δsales/working capital	0.25437E-03	0.1641E-02	0.155	0.87684
Sales/total assets	0.20976E-04	0.1704E-04	1.231	0.21943
Δsales/total assets	0.16564E-02	0.2151E-01	0.077	0.93870
Δtotal assets	0.10953E-05	0.1430E-05	0.766	0.44380
%Δtotal assets	0.84309E-02	0.8686E-01	0.097	0.92267
Cash flow/total debt	-0.61685E-01	0.3818E-01	-1.615	0.10749
Working capital/total assets	0.23515E-01	0.1774	0.133	0.89456
Δworking capital/total assets	-2.2152	2.822	-0.785	0.43252
%Δworking capital/total assets	0.38443E-01	0.1419E-01	0.710	0.45725
Δfunds	0.31896E-02	0.1889E-02	1.088	0.19281
%Δfunds	0.58671E-07	0.1964E-06	0.299	0.76538
Δuses	-0.11839E-01	0.1281E-01	-0.924	0.35618
%Δuses	-0.30290E-01	0.2776E-01	-1.091	0.27634
Working capital	0.31318E-05	0.1138E-04	0.275	0.78343
Δworking capital	-0.41874E-01	0.1763E-01	-1.375	0.24756
%Δworking capital	0.27401	0.2384	1.149	0.25046
Total income/cash flow	-0.11310	0.1091	-1.037	0.30091

**Table A9d: Univariate Regression Estimation For The Stores And Chemical Industries For The Identification Of The Accounting Descriptors Predicting Future Earnings' Sign And Size Changes Throughout The Period 1984-88.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-ratio</i>	<i>prob( t &gt;=x)</i>
current ratio	0.66497E-06	0.3621E-06	1.083	0.17749
Δcurrent ratio	-0.92664	1.853	-0.500	0.61695
%Δcurrent ratio	0.20899E-01	0.3031E-01	0.689	0.49054
Quick asset ratio	-0.26497E-01	0.7936E-01	-0.334	0.73845
Δquick asset ratio	0.75154E-02	0.3583E-01	0.210	0.83402
%Δquick asset ratio	-1.0064	0.6726	-1.496	0.13597
Debtors ratio	0.64171E-03	0.1009E-02	0.636	0.52489
Δdebtors ratio	-0.39017E-02	0.9822E-02	-0.397	0.69120
%Δdebtors ratio	0.16108E-04	0.1697E-04	0.949	0.34346
inventory/turnover	0.23942E-02	0.1364E-01	0.175	0.86069
Δinventory/turnover	-0.86386E-02	0.1236E-01	-0.699	0.48545
%Δinventory/turnover	0.63135E-03	0.8265E-03	0.764	0.44575
inventory/total assets	-0.15880	0.2380	-0.667	0.50462
Δinventory/total assets	-0.16822	0.2785	-0.604	0.54577
inventory	0.000822	0.6453E-01	-1.848	0.00969
Δinventory	-0.60199E-07	0.9455E-07	-0.637	0.52434
%Δinventory	-0.50933E-02	0.4055E-02	-1.256	0.20912
sales	0.11940E-06	0.1250E-01	-2.017	0.03955
Δsales	-0.15913E-07	0.1596E-07	-0.997	0.31866
%Δsales	-0.35924	0.6804	-0.528	0.59798
Δdepreciation	-0.63952E-04	0.1151E-03	-0.555	0.57861
%Δdepreciation	0.22499	0.1564	1.438	0.15038
Δdividend per share	-0.13494	0.8086E-01	-1.069	0.19645
%Δdividend per share	-0.33413	0.2410	-1.386	0.16560
Depreciation/fixed assets	0.22273E-02	0.5540E-02	0.402	0.68799
Δdepreciation/fixed assets	0.76529E-01	0.1350	0.567	0.57090
return on opening equity	0.00661	0.1001	2.906	0.00598
Δreturn on opening equity	0.20160E-02	0.1507E-02	1.338	0.18102
%Δreturn on opening equity	-0.12997	0.2325	-0.559	0.57608
Δcapital expenditure/total assets	0.12638E-05	0.5369E-06	1.354	0.41944
%Δcapital expenditure/total assets	0.38232E-06	0.9726E-06	0.393	0.69463
capital expenditure	0.79362E-01	0.8457E-01	0.938	0.34802
Δcapital expenditure	-0.39575E-01	0.2813E-01	-1.407	0.15954
%Δcapital expenditure	-0.52894E-06	0.9128E-06	-0.579	0.56225
Debt/equity	-0.31756E-02	0.9343E-01	-0.034	0.97289
Δdebt/equity	0.68440E-02	0.2054E-01	0.333	0.73926
%Δdebt/equity	-0.33814E-02	0.5389E-02	-0.627	0.53037
Times interest earned	-0.17374	0.1324	-1.313	0.19055
Δtimes interest earned	0.26624E-01	0.1946E-01	1.368	0.17122
%Δtimes interest earned	-0.17674E-02	0.7087E-02	-0.249	0.80306
Sales/total assets	-0.20328E-03	0.2816E-02	-0.072	0.94250
Δsales/total assets	0.40378E-01	0.3541E-01	1.140	0.25423
%Δsales/total assets	0.10953E-05	0.1430E-05	0.766	0.44380
Return on total assets	0.84309E-02	0.8686E-01	0.097	0.92267
Δreturn on total assets	-0.61685E-01	0.3818E-01	-1.615	0.10749
%Δreturn on total assets	-0.39593E-01	0.3078E-01	-1.286	0.19832
return on closing equity	-0.18821	0.1948	-0.966	0.33408
Δreturn on closing equity	0.60528E-05	0.2144E-04	0.282	0.77798
%Δreturn on closing equity	-0.39261E-02	0.5198E-02	-0.755	0.45009
Operating profit/sales	0.47007E-01	0.1865E-01	1.520	0.41245
Δoperating profit/sales	0.94367E-02	0.1370E-01	0.689	0.49093
%Δoperating profit/sales	-0.50463E-06	0.1258E-05	-0.401	0.68867
Net profit margin	0.95569E-02	0.9765E-02	0.979	0.32875
Δnet profit margin	-0.10804E-01	0.1273E-01	-0.848	0.39700
%Δnet profit margin	-0.82032E-02	0.1106E-01	-0.741	0.45842
Sales/cash	0.31844	0.2374	1.342	0.18096
Δsales/cash	-0.28967	0.4033	-0.718	0.47341
%Δsales/cash	0.71109E-06	0.3404E-05	0.209	0.83452

Sales/inventory	-0.84017E-01	0.7335E-01	-1.145	0.25317
Δsales/inventory	0.38580E-02	0.7153E-02	0.539	0.59019
%Δsales/inventory	-0.18676E-05	0.8562E-05	-0.218	0.82757
Sales/working capital	-0.73168E-03	0.2834E-02	-0.258	0.79630
Δsales/working capital	0.15518E-01	0.1066E-01	1.456	0.14668
%Δsales/working capital	0.25437E-03	0.1641E-02	0.155	0.87684
Sales/total assets	0.20976E-04	0.1704E-04	1.231	0.21943
Δsales/total assets	0.16564E-02	0.2151E-01	0.077	0.93870
Δtotal assets	0.10953E-05	0.1430E-05	0.766	0.44380
%Δtotal assets	0.84309E-02	0.8686E-01	0.097	0.92267
Cash flow/total debt	-0.61685E-01	0.3818E-01	-1.615	0.10749
Working capital/total assets	0.23515E-01	0.1774	0.133	0.89456
Δworking capital/total assets	-2.2152E-04	2.822	-2.098	0.03252
%Δworking capital/total assets	0.38443E-01	0.1419E-01	1.010	0.74725
Δfunds	0.31896E-02	0.1889E-02	1.088	0.19281
%Δfunds	0.58671E-07	0.1964E-06	0.299	0.76538
Δuses	-0.11839E-01	0.1281E-01	-0.924	0.35618
%Δuses	-0.30290E-01	0.2776E-01	-1.091	0.27634
Working capital	0.31318E-05	0.1138E-04	0.275	0.78343
Δworking capital	-0.41874E-01	0.1763E-01	-1.375	0.21756
%Δworking capital	0.27401	0.2384	1.149	0.25046
Total income/cash flow	-0.11310	0.1091	-1.037	0.30091

**Table A9e : Univariate Regression Estimation For The Stores and Chemical Industries Together For The Identification Of The Accounting Descriptors Predicting Future Earnings' Size and Size Changes Throughout The Period 1980-88.**

<i>Accounting Descriptors</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>t-ratio</i>	<i>prob( t &gt;=x)</i>
current ratio	0.26577E-01	0.2666E-01	0.997	0.31875
Δcurrent ratio	0.28886E-01	0.1940E-01	1.489	0.13958
%Δcurrent ratio	0.18443	0.2183	0.845	0.39811
Quick asset ratio	0.16719	0.2946	0.567	0.57040
Δquick asset ratio	-0.23271E-01	0.1304	-0.179	0.85833
%Δquick asset ratio	-0.79538E-01	0.1283	-0.620	0.53525
Debtors ratio	0.65306E-02	0.5134E-02	1.272	0.20332
Δdebtors ratio	0.70701E-02	0.5347E-02	1.322	0.18611
%Δdebtors ratio	0.79490	0.4311	1.484	0.46522
inventory/turnover	0.15614E-02	0.5893E-02	0.265	0.79105
Δinventory/turnover	-0.23695E-02	0.7435E-02	-0.319	0.74995
%Δinventory/turnover	-0.13584	0.2463	-0.552	0.58126
inventory/total assets	-0.35859	0.4796	-0.748	0.45633
Δinventory/total assets	0.28748E-01	2.204	0.013	0.98959
inventory	-0.11660	0.4594E-01	-1.538	0.87114
Δinventory	-0.10831E-06	0.5169E-07	-1.095	0.33614
%Δinventory	-0.65884E-06	0.1459E-05	-0.452	0.65246
sales	0.19346	0.1981	0.976	0.32884
Δsales	-0.19683E-07	0.8907E-08	-1.210	0.12712
%Δsales	-0.17376E-06	0.1737E-06	-1.000	0.31940
Δdepreciation	-0.33077	0.2502	-1.322	0.18615
%Δdepreciation	0.22979E-05	0.7631E-05	0.301	0.76390
Δdividend per share	0.78870	0.4777	1.651	0.09870
%Δdividend per share	-0.10201E-01	0.1657E-01	-0.616	0.53938
Depreciation/fixed assets	-0.23419E-02	0.6670E-01	-0.035	0.97206
Δdepreciation/fixed assets	0.12614	0.1314	0.960	0.33931
return on opening equity	-0.21456	0.1986	-1.080	0.28005
Δreturn on opening equity	-0.10349	0.4405E-01	-0.350	0.41879
%Δreturn on opening equity	-0.60820E-01	0.8555E-01	-0.711	0.47875
Δcapital expenditure/total assets	-0.44315E-01	0.1024	-0.433	0.66531
%Δcapital expenditure/total assets	-1.4769	1.456	-1.014	0.31055
capital expenditure	-1.3982	4.496	-0.311	0.75654
Δcapital expenditure	-0.22456E-01	0.2221E-01	-1.011	0.31491
%Δcapital expenditure	-0.85405E-06	0.5219E-06	-1.036	0.14178
Debt/equity	-0.19570E-05	0.4311E-05	-0.454	0.65098
Δdebt/equity	-0.16641E-01	0.1083E-01	-1.536	0.12800
%Δdebt/equity	-0.89945E-02	0.2473E-02	-0.637	0.98028
Times interest earned	-0.64844E-04	0.3970E-02	-0.016	0.98700
Δtimes interest earned	-0.82401E-01	0.5248E-01	-1.570	0.11944
%Δtimes interest earned	0.34709	0.3200	1.085	0.27808
Sales/total assets	-0.41669	0.4067	-1.025	0.30558
Δsales/total assets	-0.31883E-01	0.2020E-01	-1.578	0.11755
%Δsales/total assets	0.39339E-05	0.1680E-02	0.002	0.99813
Return on total assets	-0.38653E-03	0.3256E-02	-0.119	0.90576
Δreturn on total assets	0.30055E-01	0.5620E-01	0.535	0.59281
%Δreturn on total assets	-0.18631	0.1496	-1.246	0.21289
return on closing equity	-0.33423	0.1722	-1.042	0.55220
Δreturn on closing equity	-0.10178	0.3183E-01	-0.198	0.78138
%Δreturn on closing equity	-0.73642E-02	0.6305E-02	-1.168	0.24283
Operating profit/sales	0.32713E-02	0.1232E-01	0.266	0.79107
Δoperating profit/sales	0.44979E-02	0.1537	0.029	0.97665
%Δoperating profit/sales	-0.10349	0.4405E-01	-1.350	0.71879
Net profit margin	-0.60820E-01	0.8555E-01	-0.711	0.47875
Δnet profit margin	-0.44315E-01	0.1024	-0.433	0.66531
%Δnet profit margin	-0.68618	0.5115	-1.342	0.17976
Sales/cash	2.6100	2.963	0.881	0.37841
Δsales/cash	0.38923E-01	0.4388E-01	0.887	0.37501

% $\Delta$ sales/cash	-0.37987E-02	0.9669E-02	-0.393	0.69523
Sales/inventory	0.82195E-01	0.7639E-01	1.076	0.28192
$\Delta$ sales/inventory	0.62588	0.2046	1.058	0.54223
% $\Delta$ sales/inventory	-0.19877E-04	0.6116E-04	-0.325	0.74585
Sales/working capital	0.88605E-06	0.1195E-03	0.007	0.99410
$\Delta$ sales/working capital	-0.48201E-02	0.1840E-01	-0.262	0.79334
% $\Delta$ sales/working capital	0.22402E-02	0.5927E-02	0.378	0.70546
Sales/total assets	-0.26714E-02	0.7731E-02	-0.346	0.72970
$\Delta$ sales/total assets	-0.18383	0.2174	-0.845	0.39786
$\Delta$ total assets	-0.13005E-02	0.2833E-02	-0.459	0.64621
% $\Delta$ total assets	-0.24560E-02	0.7379E-02	-0.333	0.73995
Cash flow/total debt	-0.74618E-02	0.6660E-03	-1.204	0.89756
Working capital/total assets	-0.18631	0.1496	-1.246	0.21289
$\Delta$ working capital/total assets	-0.33423	0.1722	-1.442	0.45220
% $\Delta$ working capital/total assets	-0.10178	0.3183E-01	-0.198	0.56138
$\Delta$ funds	0.10253E-06	0.2202E-06	0.466	0.64250
% $\Delta$ funds	0.35878	0.1628	0.204	0.74753
$\Delta$ uses	-0.28778E-04	0.1157E-03	-0.249	0.80406
% $\Delta$ uses	0.34916	0.3618	0.965	0.33456
Working capital	0.49034	0.3675	1.334	0.18207
$\Delta$ working capital	-0.70002E-03	0.6039E-01	-0.012	0.99077
% $\Delta$ working capital	-0.52866E-06	0.8325E-06	-0.635	0.52681
Total income/cash flow	0.10916	0.7649E-01	1.427	0.15353



## **APPENDIX C**

## Multivariate Regression Analysis

**Table A1: Multivariate Regression Estimation For Stores and Chemical Industries Examining Whether The Accounting Descriptors' Information About Future Earnings Changes Is Impounded In This Year's Or Next Year's Stock Returns Throughout The Period 1980-88.**

Accounting Descriptors	EMH	OP	OTHER	$a_0$	$X_t$	$R_t$	$R_{t+1}$
current ratio	*			0.082	0.758	3.111	*****
current ratio				0.892	0.976	*****	4.641
current ratio				-0.975	0.838	2.735	2.828
$\Delta$ current ratio	*			0.100	0.248	3.109	*****
$\Delta$ current ratio				0.500	0.976	*****	3.341
$\Delta$ current ratio				-0.932	0.476	2.719	2.817
$\Delta\%$ current ratio	*			0.779	-1.013	2.102	*****
$\Delta\%$ current ratio				2.084	-0.873	*****	2.062
$\Delta\%$ current ratio				-0.056	-1.035	1.994	1.652
quick asset ratio	*			-0.388	0.686	3.145	*****
quick asset ratio				0.196	0.528	*****	4.659
quick asset ratio				-1.174	0.900	2.778	2.815
$\Delta$ quick asset ratio	*			0.033	1.050	3.166	*****
$\Delta$ quick asset ratio				0.946	0.426	*****	4.564
$\Delta$ quick asset ratio				-1.012	1.044	2.788	2.827
$\Delta\%$ quick asset ratio	*			0.083	-0.803	2.343	*****
$\Delta\%$ quick asset ratio				1.501	-0.109	*****	2.626
$\Delta\%$ quick asset ratio				-0.640	-0.795	2.231	1.929
debtors ratio	*			-0.743	1.383	3.127	*****
debtors ratio				0.312	1.411	*****	3.342
debtors ratio				-1.464	1.489	2.753	2.850
$\Delta$ debtors ratio	*			0.730	0.177	3.655	*****
$\Delta$ debtors ratio				0.634	-0.573	*****	3.560
$\Delta$ debtors ratio				-0.835	0.010	3.210	3.750
$\Delta\%$ debtors ratio	*			0.471	-1.400	2.822	*****
$\Delta\%$ debtors ratio				1.161	-0.953	*****	5.290
$\Delta\%$ debtors ratio				-0.763	-1.803	2.439	3.032
inventory turnover	*			-0.533	1.053	3.150	*****
inventory turnover				-0.064	0.984	*****	3.339
inventory turnover				-1.241	1.144	2.779	2.848
$\Delta$ inventory turnover	*			0.024	-4.802	4.772	*****
$\Delta$ inventory turnover				0.307	-1.267	*****	3.499
$\Delta$ inventory turnover				1.151	-4.665	4.367	3.603
$\Delta\%$ inventory turnover	*			0.095	1.496	2.909	*****
$\Delta\%$ inventory turnover				1.102	1.614	*****	2.570
$\Delta\%$ inventory turnover				-0.675	1.582	2.644	2.066
inventory/total assets	*			1.429	-1.454	3.131	*****
inventory/total assets				2.681	-1.553	*****	3.365
inventory/total assets				0.451	-1.615	2.749	2.871
$\Delta$ inventory/total assets	*			0.200	-0.615	6.172	*****
$\Delta$ inventory/total assets				0.747	0.210	*****	4.806
$\Delta$ inventory/total assets				-0.940	-0.382	2.497	2.959
$\Delta\%$ inventory/total assets			+	0.174	2.549	3.138	*****
$\Delta\%$ inventory/total assets				0.968	2.375	*****	3.358
$\Delta\%$ inventory/total assets				-0.910	2.559	2.768	2.871
inventory	*			0.242	-0.647	3.132	*****

inventory			0.932	-0.329	*****	3.310
inventory			-0.814	-0.307	2.756	2.809
Δinventory	*		0.197	-0.125	3.127	*****
Δinventory			1.101	0.557	*****	4.564
Δinventory			-0.876	-0.268	2.742	2.818
Δ%inventory	*		0.098	0.225	3.122	*****
Δ%inventory			0.971	0.133	*****	3.302
Δ%inventory			-0.891	-0.319	2.761	2.835
sales	*		0.238	-0.550	3.130	*****
sales			0.938	-0.291	*****	3.308
sales			0.811	-0.142	2.756	2.806
Δsales	*		0.206	-0.464	3.110	*****
Δsales			1.103	-0.152	*****	4.606
Δsales			-0.869	-0.586	2.738	2.827
Δ%sales		+	0.645	-15.094	2.859	*****
Δ%sales			0.947	-1.271	*****	4.035
Δ%sales			-0.272	-15.100	2.548	2.519
Δdepreciation	*		0.139	0.390	3.079	*****
Δdepreciation			0.754	1.149	*****	4.676
Δdepreciation			-0.969	0.662	2.693	2.825
Δ%depreciation	*		0.206	-0.510	3.138	*****
Δ%depreciation			0.978	-0.718	*****	3.289
Δ%depreciation			-0.880	-0.804	2.762	2.789
Δdividend per share	*		0.334	-0.908	3.163	*****
Δdividend per share			1.258	-1.019	*****	4.577
Δdividend per share			-0.755	-0.771	2.777	2.748
Δ%dividend per share	*		0.203	0.375	3.128	*****
Δ%dividend per share			1.123	0.262	*****	4.625
Δ%dividend per share			-0.871	0.264	2.755	2.821
depreciation/fixed assets	*		0.264	-0.948	3.134	*****
depreciation/fixed assets			1.143	-0.253	*****	4.637
depreciation/fixed assets			-0.809	-1.022	2.758	2.821
Δdepreciation/fixed assets	*		0.049	0.689	2.991	*****
Δdepreciation/fixed assets			0.659	1.474	*****	4.568
Δdepreciation/fixed assets			-1.103	0.653	2.638	2.818
Δ%depreciation/fixed assets	*		0.050	0.562	1.001	*****
Δ%depreciation/fixed assets			0.562	1.562	*****	2.222
Δ%depreciation/fixed assets			0.045	0.689	2.586	2.451
return on opening equity		+	-0.236	1.986	3.134	*****
return on opening equity			0.771	1.783	*****	4.264
return on opening equity			-1.103	1.955	2.781	2.755
Δreturn on opening equity	*		0.223	-0.427	3.123	*****
Δreturn on opening equity			0.973	0.345	*****	3.348
Δreturn on opening equity			-0.889	-0.163	2.721	2.783
Δ%return on opening equity		+	-0.016	2.008	2.856	*****
Δ%return on opening equity			1.148	1.652	*****	3.343
Δ%return on opening equity			-0.741	1.977	2.608	1.967
capital expenditure/total assets	*		-0.274	0.558	3.242	*****
capital expenditure/total assets			0.526	1.801	*****	3.116
capital expenditure/total assets			-1.145	-0.002	2.729	2.244
Δcapital expenditure/t.assets	*		1.664	-1.189	3.139	*****
Δcapital expenditure/t.assets			2.252	-1.192	*****	2.776
Δcapital expenditure/t.assets			0.641	-1.150	2.976	2.403
Δ%capital expenditure/t.assets	*		-0.225	-1.156	2.532	*****
Δ%capital expenditure/t.assets			-1.562	-0.024	*****	2.199
Δ%capital expenditure/t.assets			-0.763	-1.218	2.437	1.464
capital expenditure	*		0.054	-0.141	3.176	*****
capital expenditure			0.765	0.207	*****	3.220
capital expenditure			-0.990	0.323	2.790	2.708
Δcapital expenditure	*		0.287	-1.058	3.057	*****

Δcapital expenditure		0.694	1.435	*****	4.768
Δcapital expenditure		-0.866	-0.384	2.572	2.703
Δ%capital expenditure	*	0.195	-0.353	3.131	*****
Δ%capital expenditure		1.117	-0.227	*****	4.626
Δ%capital expenditure		-0.876	-0.252	2.755	2.817
debt/equity	*	0.407	-0.941	3.142	*****
debt/equity		0.821	0.018	*****	3.136
debt/equity		-0.642	-0.625	2.759	2.797
Δdebt/equity	*	0.198	-0.563	3.130	*****
Δdebt/equity		1.102	-0.309	*****	4.261
Δdebt/equity		-0.880	-0.407	2.756	2.815
Δ%debt/equity		0.090	2.267	3.199	*****
Δ%debt/equity		1.121	0.947	*****	4.590
Δ%debt/equity		-0.928	1.893	2.822	2.767
times interest earned	*	0.098	1.067	2.311	*****
times interest earned		1.565	1.120	*****	2.531
times interest earned		-0.698	0.660	2.232	1.985
Δtimes interest earned	*	0.112	0.296	3.136	*****
Δtimes interest earned		0.984	0.186	*****	3.138
Δtimes interest earned		-0.950	0.254	2.759	2.813
Δ%times interest earned	*	1.206	-1.827	3.018	*****
Δ%times interest earned		1.861	-1.632	*****	2.271
Δ%times interest earned		-0.40	-2.042	2.989	2.023
sales/total assets	*	0.260	-0.906	3.138	*****
sales/total assets		0.936	-0.075	*****	3.320
sales/total assets		-0.816	-0.736	2.761	2.819
Δsales/total assets	*	0.208	-0.255	3.075	*****
Δsales/total assets		0.896	1.317	*****	4.372
Δsales/total assets		-0.896	0.171	2.645	2.794
Δ%sales/total assets	*	0.277	-2.838	3.137	*****
Δ%sales/total assets		1.191	-1.100	*****	4.637
Δ%sales/total assets		-0.815	-3.058	2.760	2.806
return on total assets	*	-0.123	-0.798	2.539	*****
return on total assets		1.191	0.210	*****	2.706
return on total assets		-1.014	-1.041	2.397	2.161
Δreturn on total assets	*	0.746	-1.041	3.070	*****
Δreturn on total assets		1.890	-1.466	*****	3.340
Δreturn on total assets		-0.353	-1.040	2.702	2.839
Δ%return on total assets	*	-0.019	1.946	2.905	*****
Δ%return on total assets		1.338	3.130	*****	2.632
Δ%return on total assets		-0.637	2.688	2.591	1.661
return on closing equity		-0.078	1.906	2.991	*****
return on closing equity		0.834	2.164	*****	3.224
return on closing equity		-0.096	1.469	2.701	2.824
Δreturn on closing equity	*	-0.243	0.141	2.842	*****
Δreturn on closing equity		0.731	0.640	*****	4.303
Δreturn on closing equity		-1.394	-0.054	2.578	3.661
Δ%return on closing equity	*	0.204	0.374	3.132	*****
Δ%return on closing equity		1.122	0.188	*****	4.624
Δ%return on closing equity		-0.867	0.220	2.756	2.805
operating profit/sales	*	0.255	-1.274	3.141	*****
operating profit/sales		0.961	0.035	*****	3.314
operating profit/sales		-0.831	-0.781	2.758	2.794
Δoperating profit/sales	*	0.251	-1.149	2.331	*****
Δoperating profit/sales		1.534	-0.428	*****	2.610
Δoperating profit/sales		-0.489	-1.113	2.216	1.913
Δ%operating profit/sales		0.224	-4.953	3.144	*****
Δ%operating profit/sales		1.146	-0.502	*****	4.620
Δ%operating profit/sales		-0.849	-3.791	2.766	2.803
net profit margin	*	0.328	-0.539	3.150	*****

net profit margin		0.595	0.260	*****	3.293
net profit margin		-0.636	-0.096	2.758	2.724
Δ net profit margin	*	0.015	1.087	3.091	*****
Δnet profit margin		0.681	1.305	*****	3.380
Δnet profit margin		-1.301	1.186	2.717	2.884
Δ%net profit margin	*	0.024	-0.571	2.900	*****
Δ%net profit margin		1.063	-0.750	*****	2.532
Δ%net profit margin		-0.717	-0.516	2.637	1.993
sales/cash	*	0.094	0.245	3.162	*****
sales/cash		0.865	0.819	*****	3.329
sales/cash		-0.957	0.347	2.783	2.821
Δsales/cash	*	-0.218	0.750	3.149	*****
Δsales/cash		0.690	0.537	*****	3.346
Δsales/cash		-1.108	0.705	2.770	2.845
Δ%sales/cash	*	0.145	-1.226	2.366	*****
Δ%sales/cash		1.495	-0.712	*****	2.644
Δ%sales/cash		-0.591	-1.343	2.254	1.942
sales/inventory	*	0.760	0.175	3.644	*****
sales/inventory		0.686	0.224	*****	4.142
sales/inventory		-0.840	0.135	3.210	3.752
Δsales/inventory	*	0.071	0.389	3.137	*****
Δsales/inventory		0.891	0.247	*****	2.456
Δsales/inventory		-0.997	0.543	2.762	2.830
Δ%sales/inventory	*	-0.562	0.452	2.762	*****
Δ%sales/inventory		1.002	0.676	*****	3.385
Δ%sales/inventory		-0.750	0.651	2.457	3.004
sales/working capital	*	0.210	0.856	3.133	*****
sales/working capital		0.983	1.299	*****	3.351
sales/working capital		-0.877	1.138	2.755	2.852
Δsales/working capital	*	0.139	-1.514	2.907	*****
Δsales/working capital		0.657	-0.070	*****	5.005
Δsales/working capital		-1.036	-0.965	2.513	3.082
Δ%sales/working capital	*	0.056	-0.093	2.898	*****
Δ%sales/working capital		1.231	0.044	*****	3.410
Δ%sales/working capital		-0.686	-0.104	2.636	1.995
sales/total assets	*	0.260	-0.906	3.138	*****
sales/total assets		0.936	-0.075	*****	3.320
sales/total assets		-0.816	-0.736	2.761	2.819
Δsales/total assets	*	0.208	-0.255	3.075	*****
Δsales /total assets		0.896	1.317	*****	4.732
Δsales/total assets		-0.896	0.171	2.645	2.794
Δ%sales/total assets		-0.277	-2.838	3.137	*****
Δ%sales/total assets		1.191	-1.100	*****	4.637
Δ%sales/total assets		-0.815	-3.058	2.760	2.806
Δtotal assets	*	-0.365	-0.568	2.515	*****
Δtotal assets		0.674	0.220	*****	2.557
Δtotal assets		-1.053	-0.489	2.370	1.859
Δ%total assets	*	0.166	-0.199	2.705	*****
Δ%total assets		0.766	0.118	*****	3.675
Δ%total assets		-0.775	0.007	3.240	3.713
cash flow/total debt	*	0.104	0.909	2.918	*****
cash flow/total debt		0.672	0.819	*****	3.140
cash flow/total debt		-0.991	0.995	2.529	3.011
working capital/total assets	*	-0.262	-0.147	2.889	*****
working capital/total assets		0.746	0.390	*****	4.003
working capital/total assets		-1.404	0.178	2.603	3.424
Δworking capital/total assets	*	0.165	0.228	3.131	*****
Δworking capital/total assets		0.900	0.312	*****	3.323
Δworking capital/total assets		-0.884	0.340	2.755	2.820
Δ% working capital/total assets		0.213	-5.555	3.149	*****

$\Delta\%$ working capital/total assets		1.141	-0.580	*****	4.629
$\Delta\%$ working capital/total assets					
$\Delta$ funds	*	-.114	-1.015	2.640	*****
$\Delta$ funds		1.184	-0.176	*****	2.748
$\Delta$ funds		-1.007	-1.192	2.461	2.124
$\Delta\%$ funds	+	-0.020	1.753	2.905	*****
$\Delta\%$ funds		1.388	3.095	*****	2.632
$\Delta\%$ funds		-0.637	2.561	2.591	1.660
$\Delta$ total uses	+	-0.110	-2.181	2.967	*****
$\Delta$ total uses		1.256	-1.011	*****	2.713
$\Delta$ total uses		-0.973	-2.223	2.517	2.071
$\Delta\%$ total uses	+	0.965	-1.309	2.767	*****
$\Delta\%$ total uses		1.880	-1.337	*****	2.035
$\Delta\%$ total uses		-0.042	-1.314	2.612	1.684
working capital	*	0.195	0.049	3.134	*****
working capital		0.969	0.084	*****	3.317
working capital		-0.878	0.199	2.760	2.818
$\Delta$ working capital	+	0.362	-0.763	3.134	*****
$\Delta$ working capital		0.840	-2.72	*****	3.394
$\Delta$ working capital		-0.664	-0.287	2.757	2.779
$\Delta\%$ working capital	*	0.199	0.198	3.130	*****
$\Delta\%$ working capital		1.116	0.008	*****	4.628
$\Delta\%$ working capital		-0.876	-0.226	2.757	2.821
total income/cash flow	*	0.120	1.238	3.101	*****
total income/cash flow		0.870	1.375	*****	3.351
total income/cash flow		-0.951	1.227	2.727	2.855

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**Table A2: Multivariate Regression Estimation For The Stores Industry Examining Whether The Accounting Descriptors' Information About Future Earnings Changes Is Impounded In This Year's Or Next Year's Stock Returns Throughout The Period 1980-88**

<i>Accounting Descriptors</i>	<i>EMH</i>	<i>OP</i>	<i>OTHER</i>	<i>ao</i>	<i>Xi</i>	<i>Rt</i>	<i>Rt+1</i>	
current ratio	*				-0.167	-0.176	3.027	*****
current ratio					0.596	-0.265	*****	3.857
current ratio					-0.517	-0.296	2.517	0.834
Δcurrent ratio	*				-0.272	0.765	3.051	*****
Δcurrent ratio					0.541	-0.392	*****	3.871
Δcurrent ratio					-0.635	1.908	2.564	0.716
Δ%current ratio	*				-0.182	-0.895	3.002	*****
Δ%current ratio					0.591	-1.032	*****	3.845
Δ%current ratio					-0.526	-0.170	2.419	0.825
quick ratio	*				-0.635	0.731	3.039	*****
quick ratio					0.110	0.328	*****	3.835
quick ratio					-0.357	-0.181	2.478	0.778
Δquick ratio	*				-0.202	-0.348	3.020	*****
Δquick ratio					0.550	-0.642	*****	3.767
Δquick ratio					-0.534	0.223	2.528	0.782
Δ%quick ratio	*				-0.059	-0.979	3.040	*****
Δ%quick ratio					0.663	-0.939	*****	2.795
Δ%quick ratio					-0.226	-1.169	2.466	0.720
debtors ratio	*				-0.503	0.832	3.025	*****
debtors ratio					0.026	0.800	*****	2.873
debtors ratio					-0.405	0.052	2.512	0.777
Δdebtors ratio	*				-0.204	0.354	3.027	*****
Δdebtors ratio					0.538	0.444	*****	3.845
Δdebtors ratio					-0.513	0.443	2.515	0.793
Δ%debtors ratio	*				-0.164	-1.074	3.082	*****
Δ%debtors ratio					0.532	-0.181	*****	2.848
Δ%debtors ratio					-0.267	-1.613	2.634	0.453
inventory turnover	*				0.883	1.053	3.060	*****
inventory turnover					0.444	0.889	*****	3.892
inventory turnover					-1.449	1.845	2.622	0.910
Δinventory turnover			+		-0.393	2.675	2.996	*****
Δinventory turnover					0.258	2.468	*****	4.010
Δinventory turnover					-0.664	5.919	2.449	0.860
Δ%inventory turnover	*				-0.384	0.856	2.963	*****
Δ%inventory turnover					0.099	1.598	*****	3.994
Δ%inventory turnover					-0.676	0.861	2.396	0.849
inventory/total assets	*				0.925	-1.358	3.030	*****
inventory/total assets					1.890	-1.386	*****	2.897
inventory/total assets					-0.199	-0.780	2.515	0.791
Δinventory/t. assets	*				-0.235	0.837	3.018	*****
Δinventory/t. assets					0.507	0.172	*****	3.830
Δinventory/t.assets					-0.509	0.106	2.398	0.797
Δ%inventory/t. assets	*				-0.219	0.031	3.025	*****
Δ%inventory/t. assets					0.505	0.106	*****	3.828
Δ%inventory/t. assets					-0.462	-1.535	2.523	0.650
inventory	*				-0.116	-0.360	3.029	*****
inventory					0.436	-0.221	*****	2.867

inventory			-0.278	-0.678	2.519	0.774
Δinventory	*		-0.198	-0.125	2.998	*****
Δinventory			0.300	1.045	*****	2.867
Δinventory			-0.455	-0.331	2.500	0.768
Δ%inventory	*		-0.131	-0.820	3.024	*****
Δ%inventory			0.347	0.590	*****	3.847
Δ%inventory			-0.406	-0.779	2.505	0.696
sales	*		-0.165	-0.146	3.026	*****
sales			0.432	-0.073	*****	2.863
sales			-0.340	-0.481	2.510	0.761
Δsales	*		-0.271	0.681	3.019	*****
Δsales			0.294	1.327	*****	2.877
Δsales			-0.466	0.028	2.516	0.770
Δ%sales	*		-0.219	0.138	3.004	*****
Δ%sales			0.379	0.810	*****	3.874
b%sales			-0.382	-0.755	2.454	0.629
Δdepreciation	*		-0.355	0.797	3.060	*****
Δdepreciation			0.377	0.283	*****	2.879
Δdepreciation			-0.527	0.529	2.513	0.778
Δ%depreciation	*		-0.363	0.896	3.060	*****
Δ%depreciation			-0.403	0.190	*****	3.834
Δ%depreciation			-0.558	1.129	2.515	0.785
Δdividend per share	*		-0.528	0.258	4.788	*****
Δdividend per share			-0.418	0.577	*****	2.936
Δdividend per share			-0.104	-0.582	3.850	1.180
Δ%dividend per share		+	-0.527	-5.556	4.613	*****
Δ%dividend per share			-0.271	-1.587	*****	2.926
Δ%dividend per share			-0.055	-0.970	3.885	1.171
depreciation/fixed assets	*		-0.012	-1.226	3.021	*****
depreciation/fixed assets			0.736	-0.764	*****	3.852
depreciation/fixed assets			-0.538	0.392	2.516	0.762
Δdepreciation/fixed assets		+	-0.315	-1.903	3.045	*****
Δdepreciation/fixed assets			0.417	-1.082	*****	3.877
Δdepreciation/fixed assets			-0.518	-0.098	2.514	0.774
Δ%depreciation/fixed assets	*		-0.215	-1.802	3.245	*****
Δ%depreciation/fixed assets			0.318	-1.075	****	3.954
Δ%depreciation/fixed assets			0.317	-0.085	2.023	0.879
return on opening equity	*		-0.720	2.029	3.033	*****
return on opening equity			0.114	1.610	*****	3.472
return on opening equity			-0.772	2.024	2.550	0.500
Δreturn on Opening equit	*		-0.582	-0.177	2.892	*****
Δreturn on opening equity			0.325	0.465	*****	3.356
Δreturn on opening equity			-1.089	-0.716	2.364	0.832
Δ%return on opening equity	*		-0.517	0.946	2.808	*****
Δ%return on opening equity			0.313	1.141	*****	4.106
Δ%return on opening equity			-1.121	1.256	2.303	0.881
capital expenditure/total assets			-0.165	-0.658	2.452	*****
capital expenditure/total assets			0.452	-0.056	*****	3.561
capital expenditure/total ssets			-0.264	-0.768	2.521	0.725
Δcapital expenditure/total assets		*	0.264	-0.043	2.429	*****
Δcapital expenditure/total assets			0.486	0.173	*****	3.158
Δcapital expenditure/total assets			-0.708	-0.422	1.575	1.481
Δ%capital expenditure/total assets		*	0.076	1.299	3.468	*****
Δ%capital expenditure/total assets			0.235	1.459	*****	3.672



$\Delta\%$ capital expenditure/total assets		-0.699	0.369	1.562	1.519
capital expenditure	*	-0.395	0.202	3.073	*****
capital expenditure		0.265	0.492	*****	2.774
capital expenditure		-0.742	0.017	2.585	0.697
$\Delta$ capital expenditure	*	0.377	-0.056	3.466	*****
$\Delta$ capital expenditure		0.340	0.250	*****	3.659
$\Delta$ capital expenditure		-0.695	0.548	1.593	1.292
$\Delta\%$ capita expenditure	*	0.305	0.381	3.486	*****
$\Delta\%$ capital expenditure		0.379	-0.070	*****	3.649
$\Delta\%$ capital expenditure		-0.667	0.184	1.578	1.280
debt/equity	*	-0.312	0.399	2.999	*****
debt/equity		-0.170	1.621	*****	2.877
debt/equity		-0.381	-0.119	2.506	0.769
$\Delta$ debt/equity	*	-0.214	1.156	2.978	*****
$\Delta$ debt/equity		0.414	1.522	*****	3.942
$\Delta$ debt/equity		-0.528	0.423	2.484	0.786
$\Delta\%$ debt/equity	*	-0.217	0.077	2.878	*****
$\Delta\%$ debt/equity		0.246	1.784	*****	3.973
$\Delta\%$ debt/equity		-0.496	-0.437	2.422	0.669
times interest earned	*	-0.278	-0.657	2.987	*****
times interest earned		0.401	-0.137	*****	2.667
times interest earned		-0.371	-0.846	2.491	0.731
$\Delta$ times interest earned	*	-0.407	-2.163	2.809	*****
$\Delta$ times interest earned		0.888	-0.698	*****	2.073
$\Delta$ times interest earned		0.458	-2.104	2.285	-0.505
$\Delta\%$ times interest earned	*	-0.430	0.562	2.784	*****
$\Delta\%$ times interest earned		0.833	0.736	*****	2.063
$\Delta\%$ times interest earned		0.212	0.569	2.271	-0.465
sales/total assets	*	-0.415	1.017	3.037	*****
sales/total assets		0.310	0.615	*****	3.840
sales/total assets		-0.575	0.842	2.516	0.779
$\Delta$ sales/total assets	*	-0.218	0.933	3.027	*****
$\Delta$ sales/total assets		0.514	0.927	*****	3.862
$\Delta$ sales/total assets		-0.607	1.334	2.512	0.798
$\Delta\%$ sales/total assets	*	-0.239	1.122	3.017	*****
$\Delta\%$ sales/total assets		0.445	0.694	*****	3.865
$\Delta\%$ sales/total assets		-0.455	-0.574	2.535	0.672
return on total assets	*	0.465	-1.812	3.109	*****
return on total assets		0.654	-0.745	*****	2.680
return on total assets		0.535	-1.781	2.503	0.207
$\Delta$ return on total assets	*	-0.683	-0.802	2.362	*****
$\Delta$ return on total assets		1.111	-0.161	*****	1.538
$\Delta$ return on total assets		2.468	-2.396	1.981	-0.962
$\Delta\%$ return on total assets	*	-0.670	-1.115	2.391	*****
$\Delta\%$ return on total assets		1.069	0.105	*****	1.505
$\Delta\%$ return on total assets		0.846	-1.726	1.876	-0.876
return on closing equity	*	-0.555	1.910	2.881	*****
return on closing equity		0.269	2.165	*****	2.738
return on closing equity		-0.834	3.697	2.507	0.437
$\Delta$ return on closing equity	*	-0.208	0.971	2.185	*****
$\Delta$ return on closing equity		1.121	1.094	*****	1.905
$\Delta$ return on closing equit		0.172	0.706	1.738	-0.067
$\Delta\%$ return on closing equity	*	-0.453	-1.830	2.556	*****
$\Delta\%$ return on closing equity		0.827	-0.521	*****	2.144

$\Delta\%$ return on closing equity		0.473	-2.048	1.987	0.053
operating profit/sales	*	-0.004	-0.862	3.021	*****
operating profit/sales		0.507	-0.507	*****	2.832
operating profit/sales		-0.280	-0.536	2.508	0.713
$\Delta$ operating profit/sales	*	-0.422	-1.601	2.245	*****
$\Delta$ operating profit/sales		0.925	-0.975	*****	1.997
$\Delta$ operating profit/sales		0.644	-1.768	1.788	-0.588
$\Delta\%$ operating profit/sales	*	-0.221	-1.365	2.230	*****
$\Delta\%$ operating profit/sales		0.993	-0.806	*****	1.976
$\Delta\%$ operating profit/sales		0.990	-2.515	1.965	0.470
net profit margin	*	0.029	-0.872	3.040	*****
net profit margin		0.444	-0.224	*****	2.812
net profit margin		-0.541	0.410	2.520	0.765
$\Delta$ net profit margin	*	-0.584	-1.198	2.479	*****
$\Delta$ net profit margin		0.783	0.019	*****	2.163
$\Delta$ net profit margin		1.728	-2.327	2.218	-0.004
$\Delta\%$ net profit margin	*	-0.463	-1.176	2.526	*****
$\Delta\%$ net profit margin		0.750	-0.060	*****	2.179
$\Delta\%$ net profit margin		0.463	-1.348	1.926	0.108
sales/cash	*	-0.364	-1.067	2.810	*****
sales/cash		0.004	0.043	*****	4.223
sales/cash		-0.632	-0.057	2.176	1.110
$\Delta$ sales/cash	*	-0.434	-1.498	2.885	*****
$\Delta$ sales/cash		-0.008	-0.829	*****	4.253
$\Delta$ sales/cash		-0.570	0.671	2.229	1.061
$\Delta\%$ sales/cash	*	-0.464	0.741	2.884	*****
$\Delta\%$ sales/cash		-0.069	0.800	*****	3.010
$\Delta\%$ sales/cash		-0.732	1.898	2.318	0.976
sales/inventory	*	-0.474	1.306	3.041	*****
sales/inventory		0.266	0.735	*****	3.837
sales/inventory		-0.563	0.739	2.515	0.773
$\Delta$ sales/inventory	*	-0.204	0.420	3.022	*****
$\Delta$ sales/inventory		0.542	0.247	*****	3.820
$\Delta$ sales/inventory		-0.487	0.531	2.507	0.753
$\Delta\%$ sales/inventory	*	-0.212	0.293	3.023	*****
$\Delta\%$ sales/inventory		0.532	0.022	*****	3.820
$\Delta\%$ sales/inventory		-0.527	-0.925	2.514	0.782
sales/working capital		-0.530	2.854	3.057	*****
sales/working capital		0.173	1.733	*****	3.901
sales/working capital		-0.637	1.038	2.514	0.795
$\Delta$ sales/working capital	*	-0.328	1.452	2.817	*****
$\Delta$ sales/working capital		0.647	1.539	*****	2.687
$\Delta$ sales/working capital		-0.352	0.549	2.415	0.004
$\Delta\%$ sales/w.capital	*	-0.367	1.103	2.778	*****
$\Delta\%$ sales/w.capital		0.601	1.574	*****	2.612
$\Delta\%$ sales/w.capital		-0.458	0.650	2.410	0.003
sales/total assets	*	-0.415	1.017	3.037	*****
sales/total assets		0.310	0.615	*****	3.840
sales/total sales		-1.184	1.123	2.582	2.140
$\Delta$ sales /total assets	*	-0.218	0.933	3.027	*****
$\Delta$ sales/total assets		0.514	0.927	*****	3.862
$\Delta$ sales/total assets		-1.005	1.037	2.570	2.155
$\Delta\%$ sales/total assets	*	-0.239	1.122	3.017	*****
$\Delta\%$ sales/total assets		0.445	0.694	*****	3.865

$\Delta\%$ sales/total assets		-1.035	1.787	2.555	2.150
$\Delta$ total assets	*	-0.225	0.181	3.006	*****
$\Delta$ total assets		0.340	0.823	*****	2.870
$\Delta$ total assets		-0.500	0.081	2.509	0.776
$\Delta\%$ total assets	*	-0.139	-0.608	2.993	*****
$\Delta\%$ total assets		0.379	0.736	*****	2.875
$\Delta\%$ total assets		-0.485	0.190	2.394	0.771
cash flow/total debt	*	0.350	-12.265	2.773	*****
cash flow/total debt		1.411	-1.095	*****	3.241
cash flow/total debt		-0.510	-0.727	2.513	0.773
working capital/t assets	*	0.227	-1.080	2.945	*****
working capital/t assets		1.197	-1.757	*****	2.903
working capital/t assets		-0.312	-0.815	2.448	0.806
$\Delta$ working capital/t assets	*	-0.474	-1.940	2.776	*****
$\Delta$ working capital/t asset		0.444	-1.787	*****	2.575
$\Delta$ working capital/t.asset		-0.484	-0.609	2.406	0.012
$\Delta\%$ working capital/t assets	*	-0.396	-1.723	2.810	*****
$\Delta\%$ working capital/t assets		0.581	-1.203	*****	2.629
$\Delta\%$ working capital/t assets		-0.811	-1.782	2.495	1.233
$\Delta$ funds	*	-0.801	-0.066	2.342	*****
$\Delta$ funds		0.096	0.887	*****	1.934
$\Delta$ funds		-1.139	-0.019	2.168	1.071
$\Delta\%$ funds	*	-0.812	-0.583	2.367	*****
$\Delta\%$ funds		0.193	0.331	*****	1.929
$\Delta\%$ funds		-0.453	-0.610	1.913	-0.279
$\Delta$ uses	*	-0.609	-0.403	3.107	*****
$\Delta$ uses		0.082	1.681	*****	2.369
$\Delta$ uses		-0.618	-0.419	2.353	0.380
$\Delta\%$ uses	*	-0.609	-0.403	3.107	*****
$\Delta\%$ uses		0.082	1.681	*****	2.639
$\Delta\%$ uses		-0.683	0.794	2.376	0.404
working capital	*	-0.175	-0.852	3.025	*****
working capital		0.584	-0.363	*****	3.833
working capital		-0.467	-1.242	2.508	0.790
$\Delta$ working capital	*	-0.384	0.207	2.797	*****
$\Delta$ working capital		0.545	0.300	*****	2.012
$\Delta$ working capital		-0.557	0.590	2.431	-0.016
$\Delta\%$ working capital	*	-0.347	-0.784	2.805	*****
$\Delta\%$ working capital		0.657	-0.372	*****	2.610
$\Delta\%$ working capital		-0.446	-0.495	2.435	0.009
total income/cash flow	*	1.361	-1.193	3.142	*****
total income/cash flow		1.881	-1.201	*****	2.267
total income/cash flow		-0.180	-0.355	3.038	0.776

**Table A3: Multivariate Regression Estimation For The Chemical Industry Examining Whether The Accounting Descriptors' Information About Future Earnings Changes Is Impounded In This Year's Or Next Year's Stock Returns Throughout The Period 1980-88**

<i>Accounting Descriptors</i>	<i>EMH</i>	<i>OP</i>	<i>OTHER</i>	$\alpha_0$	$X_t$	$R_t$	$R_{t+1}$
current ratio	*			0.503	0.948	1.438	*****
current ratio				0.377	0.928	*****	3.343
current ratio				-0.314	0.396	1.568	3.264
$\Delta$ current ratio			+	1.419	2.113	1.504	*****
$\Delta$ current ratio				1.570	1.961	*****	3.411
$\Delta$ current ratio				0.355	2.098	1.643	3.338
% $\Delta$ current ratio			+	1.385	3.022	1.216	*****
% $\Delta$ current ratio				1.174	2.941	*****	3.114
% $\Delta$ current ratio				0.300	3.028	1.403	3.317
quick ratio	*			0.341	0.126	1.454	*****
quick ratio				0.024	0.348	*****	3.072
quick ratio				-0.228	0.346	1.584	3.026
$\Delta$ quick ratio	*			1.515	0.655	1.612	*****
$\Delta$ quick ratio				1.150	0.701	*****	3.407
$\Delta$ quick ratio				0.282	0.646	1.821	3.404
% $\Delta$ quick ratio	*			1.328	0.182	1.673	*****
% $\Delta$ quick ratio				1.128	0.304	*****	3.350
% $\Delta$ quick ratio				0.220	0.171	1.842	3.317
debtors ratio			+	-1.638	2.021	1.307	*****
debtors ratio				-1.836	2.125	*****	2.271
debtors ratio				-1.962	2.042	1.463	3.194
$\Delta$ debtors ratio	*			1.398	0.837	1.345	*****
$\Delta$ debtors ratio				1.388	0.957	*****	3.549
$\Delta$ debtors ratio				0.229	0.906	1.498	3.440
% $\Delta$ debtors ratio	*			1.366	0.942	1.289	*****
% $\Delta$ debtors ratio				1.285	1.068	*****	3.607
% $\Delta$ debtors ratio				0.135	1.022	1.452	3.489
inventory/turnover	*			0.590	0.536	1.473	*****
inventory/turnover				0.514	0.465	*****	3.402
inventory/turnover				-0.003	0.413	1.607	3.329
$\Delta$ inventory/turnover	*			1.389	0.347	1.468	*****
$\Delta$ inventory/turnover				1.395	0.248	*****	3.368
$\Delta$ inventory/turnover				0.238	0.052	1.621	3.283
% $\Delta$ inventory/turnover	*			1.135	0.703	1.477	*****
% $\Delta$ inventory/turnover				1.214	0.590	*****	3.479
% $\Delta$ inventory/turnover				0.182	0.579	1.620	3.415
inventory/total assets	*			2.234	-1.388	1.411	*****
inventory/total assets				2.338	-1.499	*****	3.351
inventory/total assets				1.371	-1.436	1.548	3.271
$\Delta$ inventory/total assets	*			1.462	0.170	1.269	*****
$\Delta$ inventory/total assets				1.549	0.160	*****	2.915
$\Delta$ inventory/total assets				0.221	0.322	1.407	2.796
% $\Delta$ inventory/total assets	*			1.402	-1.033	1.433	*****
% $\Delta$ inventory/total assets				1.414	-0.903	*****	3.193
% $\Delta$ inventory/total assets				0.256	-0.795	1.572	3.110
inventory	*			1.388	-0.176	1.436	*****

inventory			1.346	-0.445	*****	3.195
inventory			0.269	-0.378	1.566	3.125
Δinventory	*		1.462	-1.153	1.465	*****
Δinventory			1.470	-0.990	*****	3.290
Δinventory			0.306	-1.118	1.603	3.214
%Δinventory		+	1.134	20.36	1.512	*****
%Δinventory			1.075	2.010	*****	3.371
%Δinventory			0.026	2.014	1.653	3.288
sales	*		1.385	-0.748	1.431	*****
sales			1.344	-0.469	*****	3.187
sales			0.267	-0.373	1.562	3.115
Δsales	*		1.455	-1.397	1.446	*****
Δsales			1.460	-1.164	*****	3.246
Δsales			0.306	-1.192	1.588	3.169
%Δsales	*		1.166	-0.283	1.516	*****
%Δsales			1.054	-0.186	*****	3.304
%Δsales			0.268	-0.285	1.662	3.234
Δdepreciation	*		1.383	0.454	1.452	1.313
Δdepreciation			1.313	0.940	*****	3.362
Δdepreciation			0.221	0.457	1.589	3.285
%Δdepreciation	*		0.644	1.487	1.397	*****
%Δdepreciation			0.397	1.529	*****	3.314
%Δdepreciation			-0.277	1.534	1.540	3.238
Δdividend per share	*		1.085	0.339	1.656	*****
Δdividend per share			1.193	0.300	*****	3.290
Δdividend per share			0.006	0.365	1.802	3.220
%Δdividend per share		+	0.919	0.666	1.662	*****
%Δdividend per share			0.962	0.662	*****	3.330
%Δdividend per share			-0.063	0.643	1.815	3.267
depreciation/fixed assets	*		1.415	-0.133	1.447	*****
depreciation/fixed assets			1.398	4.087	*****	3.283
depreciation/fixed assets			0.261	-0.393	1.581	3.225
Δdepreciation/fixed assets			1.482	2.345	1.456	*****
Δdepreciation/fixed assets			17802	1.639	*****	1.298
Δdepreciation/fixed assets			1.482	2.839	1.283	1.398
return on opening equity			1.257	-0.881	1.465	*****
return on opening equity			1.239	-0.862	*****	3.283
return on opening equity			0.455	-0.877	1.597	3.283
Δreturn on op. equity	*		1.113	-0.194	1.675	*****
Δreturn on op. equity			1.264	-0.299	*****	3.398
Δreturn on op. equity			0.016	-0.503	1.827	3.337
%Δreturn on op equity		\	1.114	-2.064	1.809	*****
%Δreturn on op equity			1.288	-1.845	*****	3.677
%Δreturn on op equity			-0.042	-2.521	1.985	3.614
capital expenditure/total assets	*		1.327	-0.600	1.504	*****
capital expenditure/total assets			1.131	-0.080	*****	3.245
capital expenditure/total assets			0.282	-0.428	1.631	3.186
Δcapital expenditure/total assets	*		0.757	-0.392	1.401	*****
Δcapital expenditure/total assets			0.854	-0.053	*****	2.799
Δcapital expenditure/total assets			-0.058	-0.463	1.536	2.724
%Δcapital expenditure/total assets		+	1.032	-4.167	1.541	*****
%Δcapital expenditure/total assets			1.223	-3.684	*****	2.592
%Δcapital expenditure/total assets			0.167	-4.474	1.637	2.582
capital expenditure	*		1.369	-0.630	1.436	*****

capital expenditure		1.321	-0.316	*****	3.205
capital expenditure		0.245	-0.185	1.566	3.131
Δcapital expenditure	*	0.790	0.665	1.305	*****
Δcapital expenditure		0.801	0.492	*****	2.901
Δcapital expenditure		-0.076	0.357	1.462	2.807
%Δcapital expenditure	+	1.079	-5.384	1.395	*****
%Δcapital expenditure		1.218	-5.076	*****	2.714
%Δcapital expenditure		0.169	-5.704	1.516	2.666
debt/equity	+	1.668	-2.429	1.490	*****
debt/equity		1.627	-1.959	*****	3.267
debt/equity		0.545	-2.175	1.611	3.198
bcdebt/equity	*	1.384	-0.240	1.455	*****
Δdebt/equity		0.235	-0.038	1.586	3.267
Δdebt/equity		1.403	0.164	*****	3.343
%debt/equity	+	1.495	-2.451	1.471	*****
%Δdebt/equity		0.324	-2.105	1.601	3.202
%Δdebt/equity		1.560	-2.080	*****	3.280
times interest earned	+	1.473	1.635	1.301	*****
times interest earned		1.390	4.493	*****	3.288
Δtimes interest earned	+	1.130	1.372	1.538	*****
Δtimes interest earned		1.192	4.222	*****	3.242
Δtimes interest earned		0.043	4.279	1.666	3.181
%Δtimes interest earned	+	1.130	1.370	1.538	*****
%Δtimes interest earned		1.192	4.206	*****	3.241
%Δtimes interst earned		0.043	4.260	1.666	3.181
sales/total assets	*	1.673	-1.587	1.320	*****
sales/total assets		1.702	-1.629	*****	3.145
sales/total assets		1.164	-1.523	1.466	3.065
Δsales/total assets	*	1.412	-0.107	1.412	*****
Δsales/total assets		1.438	-0.101	*****	3.174
Δsales/total assets		0.237	-0.093	1.574	3.095
%Δsales/total assets	*	1.413	-1.913	1.522	*****
%Δsales/total assets		1.430	-1.643	*****	3.258
%Δsales/total assets		0.267	-1.856	1.663	3.186
return on total assets	*	0.551	0.067	1.496	*****
return on total assets		0.360	0.199	*****	3.058
return on total assets		0.025	0.160	1.631	3.005
Δreturn on total assets	*	1.148	0.129	1.678	*****
Δreturn on total assets		1.269	0.607	*****	3.329
Δreturn on total assets		0.038	0.120	1.810	3.288
%Δreturn on t. assets	*	1.121	-0.531	1.848	*****
%Δreturn on t. assets		1.232	-0.287	*****	3.473
%Δreturn on t. assets		0.009	-0.581	2.001	3.457
return on closing equity		1.277	-0.891	1.474	*****
return on closing equity		1.238	-0.860	*****	3.333
return on closing equity		0.458	-0.882	1.611	3.266
Δreturn on cl equity	*	1.132	-0.198	13.668	*****
Δreturn on cl equity		1.257	-0.303	*****	3.380
Δreturn on cl equity		0.019	-0.508	1.822	3.317
%Δreturn on cl equity	\	1.134	-2.072	1.804	*****
%Δreturn on cl equity		1.281	-1.858	*****	3.661
%Δreturn on cl equity		-0.040	-2.540	1.981	3.597
operating profit/sales	*	0.356	0.475	1.532	*****
operating profit/sales		0.110	0.614	*****	3.198

operating profit/sales		-0.141	0.502	1.678	3.160
$\Delta$ operating profit/sales	*	1.221	0.761	1.633	*****
$\Delta$ operating profit/sales		1.298	0.991	*****	3.272
$\Delta$ operating profit/sales		0.068	1.028	1.776	3.208
% $\Delta$ operating profit/sales		1.187	0.394	1.642	*****
% $\Delta$ operating profit/sales		1.286	0.287	*****	3.480
% $\Delta$ operating profit/sales		0.066	0.179	1.797	3.400
net profit margin	*	0.685	0.355	1.527	*****
net profit margin		0.408	0.517	*****	3.217
net profit margin		0.005	0.373	1.669	3.177
$\Delta$ net profit margin	*	1.129	0.217	1.616	*****
$\Delta$ net profit margin		1.162	0.287	*****	3.638
$\Delta$ net profit margin		0.020	-0.004	1.815	3.533
% $\Delta$ net profitmargin	*	1.128	-0.166	1.702	*****
% $\Delta$ net profit margin		1.262	-0.185	*****	3.634
% $\Delta$ net profit margin		-0.022	-0.346	1.875	3.541
sales/cash	*	2.612	-0.700	1.356	*****
sales/cash		2.722	-0.734	*****	2.847
sales/cash		0.616	-0.754	1.455	2.805
$\Delta$ sales/cash	*	4.742	0.648	0.993	*****
$\Delta$ sales/cash		4.406	0.414	*****	2.664
$\Delta$ sales/cash		2.646	0.574	1.215	2.750
% $\Delta$ sales/cash	*	4.818	-0.507	0.846	*****
% $\Delta$ sales/cash		4.700	-0.950	*****	3.499
% $\Delta$ sales/cash		2.688	-0.302	1.103	2.734
sales/inventory	*	0.967	0.028	1.470	*****
sales/inventory		0.903	-0.019	*****	3.343
sales/inventory		0.238	-0.146	1.608	3.273
$\Delta$ sales/inventory	*	1.398	-0.209	1.493	*****
$\Delta$ sales/inventory		1.397	-0.242	*****	3.371
$\Delta$ sales/inventory		0.228	-0.571	1.653	3.288
% $\Delta$ sales/inventory	*	1.354	-0.338	1.564	*****
% $\Delta$ sales/inventory		1.332	-0.334	*****	3.460
% $\Delta$ sales/inventory		0.245	-0.527	1.730	3.389
sales/working capital	*	1.182	-0.031	1.493	*****
sales/working capital		0.936	0.353	*****	3.270
sales/working capital		0.200	0.074	1.622	3.213
$\Delta$ sales/working capital	*	1.416	1.465	1.356	*****
$\Delta$ sales/working capital		1.361	1.652	*****	3.372
$\Delta$ sales/working capital		0.251	1.772	1.495	3.279
% $\Delta$ sales/working capital	+	1.382	-8.830	1.439	*****
% $\Delta$ sales/working capital		1.379	-6.656	*****	3.302
% $\Delta$ sales/w.orking capital		0.236	-8.746	1.579	3.220
sales/total assets	*	1.673	-1.587	1.320	*****
sales/total assets		1.702	-1.629	*****	3.145
sales/total assets		1.164	-1.523	1.466	3.065
$\Delta$ sales /total assets	*	1.412	-0.107	1.412	*****
$\Delta$ sales/total assets		1.438	-0.101	*****	3.174
$\Delta$ sales/total assets		0.237	-0.093	1.574	3.095
% $\Delta$ sales/total assets	*	1.413	-1.913	1.522	*****
% $\Delta$ sales/total assets		1.430	-1.643	*****	3.258
% $\Delta$ ales/total assets		0.267	-1.856	1.663	3.186
$\Delta$ total assets	*	1.242	0.733	1.440	*****
$\Delta$ total assets		1.152	0.782	*****	3.357

$\Delta$ total assets		0.130	0.788	1.576	3.279
% $\Delta$ total assets	+	0.888	2.183	1.098	****
% $\Delta$ total assets		-0.132	1.994	1.236	2.877
cash flow/total debt	+	1.304	-4.127	1.424	*****
cash flow/total debt		1.453	-2.911	*****	3.128
cash flow/total debt		0.275	-3.889	1.529	3.054
working capital/total assets	*	1.327	-0.062	1.445	****
working capital/total assets		0.991	0.003	*****	3.352
working capital/t assets		0.251	-0.005	1.577	3.282
$\Delta$ working capital/total assets		0.163	1.213	1.384	*****
$\Delta$ working capital/total assets		1.433	1.241	*****	3.250
$\Delta$ working capital/total assets		0.332	1.242	1.539	3.214
% $\Delta$ working capital/total assets		1.386	0.446	1.412	*****
% $\Delta$ working capital/total assets		1.238	0.875	*****	3.222
% $\Delta$ working capital/total assets		1.113	0.567	1.567	1.678
$\Delta$ funds	*	1.129	-0.080	1.733	*****
$\Delta$ funds		1.141	0.530	*****	3.391
$\Delta$ funds		-0.010	0.138	1.874	3.337
% $\Delta$ funds	*	1.092	-0.360	1.764	*****
% $\Delta$ funds		0.041	-0.384	1.911	3.391
$\Delta$ tuses	*	1.126	-0.289	*****	3.438
$\Delta$ tuses		1.184	0.352	1.673	*****
$\Delta$ tuses		1.076	1.228	*****	3.411
% $\Delta$ tuses	*	1.073	1.210	1.676	*****
% $\Delta$ tuses		1.055	1.239	*****	3.434
% $\Delta$ tuses		-0.080	1.280	1.834	3.362
working capital	*	1.213	0.472	1.461	*****
working capital		1.085	0.626	*****	3.226
working capital		0.119	0.649	1.591	3.168
$\Delta$ working capital	+	1.355	2.042	1.237	****
$\Delta$ working capital		1.274	1.974	*****	3.291
$\Delta$ working capital		0.263	2.031	1.391	3.185
% $\Delta$ working capital	*	1.329	1.151	1.110	*****
% $\Delta$ working capital		0.969	1.439	*****	3.99
% $\Delta$ working capital		0.175	1.314	1.252	3.318
total income/cash flow	*	1.696	-0.318	1.488	****
total income/cash flow		1.660	-0.395	*****	3.135
total income/cash flow		1.345	-0.435	3.234	3.456



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