

Market Efficiency and Information  
Content of Financial Statement  
Earning Announcements in Ise

MBA THESIS

Ç. ALP MELİT  
Ankara, June 1997

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1997

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S. ALP KELER

ANKARA, June 1997

**MARKET EFFICIENCY AND INFORMATION  
CONTENT OF FINANCIAL STATEMENT  
EARNING ANNOUNCEMENTS IN ISE**

**A THESIS**

**Submitted To The Department Of Management  
And Graduate School of Business Administration  
Of Bilkent University**

**In Partial Fulfillment Of The Requirements**

**For The Degree Of**

**Master Of Business Administration**

**By**

**S. ALP KELER**

**June, 1997**

I certify that I have read this thesis and in my opinion it is fully adequate in scope and in quality, as a thesis for the degree of Master of Business Administration.



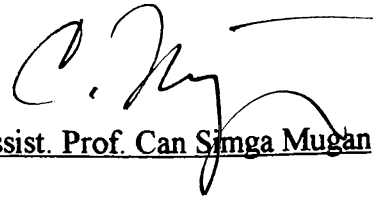
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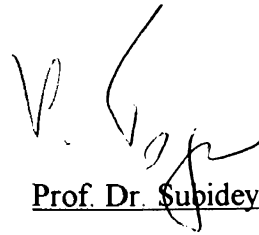
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ABSTRACT

MARKET EFFICIENCY AND INFORMATION

CONTENT OF FINANCIAL STATEMENT

EARNING ANNOUNCEMENTS IN ISE

BY

S. ALP KELER

M.B.A.

SUPERVISOR: ASSIST. PROF. AYŞE YÜCE

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This study investigates the impact of earning values of quarterly and annual financial statement announcements on stock prices and trade volumes for the stocks listed in Istanbul Stock Exchange National Market during the time period 1992-1995. The relationship between accounting information and price/trade volume is examined from two aspects.

The first aspect is "*information-content test*" and it measures the extent to which announcements convey information to the stock market. The results indicate that the price/trading volume changes on the day of the announcement is no different than any of the other date and no significance relationship is found between price/trading volume changes and earnings announcements.

The second aspect is "*market-efficiency test*" and it investigates whether accounting earnings reflect factors that affect stock prices and how soon that information is assimilated into stock prices. The results indicate that the accounting earnings does not reflect factors that affect stock prices and despite how strong the early information one has obtained, he can easily loose money.

## ÖZET

### MALİ TABLOLARDAKİ KAR AÇIKLAMALARININ PAZAR ETKİNLİĞİ VE BİLGİ İÇERİĞİ AÇISINDAN İSTANBUL MENKUL KIYMETLER BORSASINA ETKİSİ

Ş. ALP KELER

YÜKSEK LİSANS TEZİ, İŞLETME FAKÜLTESİ

TEZ DANIŞMANI: YRD. DOÇ. DR. AYŞE YÜCE

HAZİRAN 1997, 91 SAYFA

Bu çalışma dönemlik ve yıllık mali tablolardaki kar rakamlarının, 1992-1995 dönemi içinde İstanbul Menkul Kıymetler Borsası Ulusal Pazarı'nda işlem gören Hisse Senetlerinin fiyatları ve işlem hacimleri üzerindeki etkisini incelemektedir. Muhasebe haberleri ve fiyat/işlem hacmi arasındaki ilişki, iki bakış açısından incelenmiştir.

Birinci test "*bilgi içeriğinin ölçülmesi*" olup, kar açıklamalarının hisse senedi piyasasına bilgi taşıyıp taşımadığını ölçmek için kullanılmıştır. Sonuçlar muhasebe karlarının açıklandığı gün oluşan hisse senetleri fiyat/işlem hacmi değişimlerinin, diğer günlerden farkının olmadığını ve istatistikel açıdan fiyat/işlem hacmi ve kar açıklamaları arasında bir bağlantı olmadığını göstermektedir.

İkinci test "*piyasa etkinliğinin ölçülmesi*" olup, kar rakamlarının hisse senetleri fiyatlarını etkileyecek ne kadar bilgi taşıdığı ve bu rakamların hisse senetleri fiyatlarına ne kadar sürede yansıdığını ölçmek için kullanılmıştır. Sonuçlar kar rakamlarının hisse senetlerinin fiyatlarını etkileyecek düzeyde bir bilgi taşımadığını ve bir kişinin erken öğrendiği bilginin onemi ne olursa olsun, o kişinin zarar etme olasılığının bulunduğunu göstermektedir.

## ACKNOWLEDGEMENT

I wish to express my gratitude to Assist. Prof. Ayşe Yüce for her valuable supervision and constructive comments throughout this study. I would also like to express my thanks to the other members of the examining committee for their helpful comments.

I devote this thesis to my family for all of their contribution throughout my life.



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## I. INTRODUCTION

In today's world, there are various financial markets all of which are providing different alternatives for the individual to invest. Stock exchange market is one of the basic financial markets which provides an important alternative for the individual to allocate his resources in a profitable way.

The central aim of stock exchange markets is, to bring together a willing and informed buyer, and a willing and informed seller of a stock, so that an exchange can occur at a mutually agreeable price. It is in the stock market that investors express their opinions about the prospect of a company through the trades they make.

Another important role of a stock exchange market is to facilitate capital raising by the business community. While the companies obtain the necessary cash through initial or secondary public offerings, the holders of equity securities obtain an ownership interest in a corporation. Holders of equity securities are entitled to the earnings of the corporation when those earnings are distributed in the form of dividends, they are also entitled to a prorate share of the remaining equity in case of liquidation and they also have voting rights in the general assembly.

The main benefits of stock exchange to the economy is;

- to stimulate savings.
- to spread the capital ownership to the public.
- to act as a barometer in the economy.

- to ease the structural change in the industry.

In an economy, the growth of capital markets depends on the efficiency of the markets it consist of and whenever the efficiency is obtained, there will be a more growing attention of the investors to the markets. In the stock market the efficiency is obtained when the prices of the stocks reflect all possible information related to them and at any time the prices of the stocks show the agreed assesment value of the investors who use the available information.

Theories about fundamental determinants of stock prices have existed for many years. It can be said that, if the reasons behind price movements of the stock market were identified, then the investor by focusing on these could perform better in the stock market.

The major information sources affecting stock prices can be classified as (Ozer 1996);

1. Financial Reports (income statements, balance sheets, statement of cash flows, dividend announcements, production reports etc.)
2. Industry-Related Informations (wage-contracts, unions, strikes etc.)
3. Economy-Related Informations (money-supply, inflation rate, interest rates, capital transformation and international stock exchange movements etc.)

Among these; financial reports have various advantages; they are more related with the stock prices, more reliable, less costly and a more timely information source relative to

others. But it is important to note that, any information obtained from one of the sources can affect the demand to the information provided by the other sources.

The basic function of financial reports is to provide decision-related information to users of them. FASB ( Financial Accounting Standard Board) defines financial reporting as;

“Financial reporting must provide the necessary information for the current and potential investor, creditor and other users so that they can determine the amount and time of the expected future net cash flows and evaluate the uncertainty. By that way, the users give economic decisions after evaluating all available information they obtained about the firm and the risk they took by making these investments.”

The relationship between stock data (prices and trade volumes) and financial statements has been debated in American literature since 1960's. When these studies are analyzed, it can be concluded that, a high correlation exists between them. But by looking at the stock market in Turkey, this type of analysis is rarely used and only a few studies showing empirical evidence exists.

The aim of this study is “to analyze the impact of financial statements -in broader sense, the earnings values of the financial statements- on stock prices and trade volumes for the stocks that are listed in the Istanbul Stock Exchange National Market”.

The relationship between accounting information and stock-market data is examined from two aspects. The first is the extent to which the announcements convey information to the stock market. This aspect is referred to as **“information- content test”** and the study directs its attention to the market reaction to announcements, as reflected in the trading volume and price changes of common stocks during the days surrounding the announcement date.

The second aspect investigates whether accounting earnings reflect factors that affect stock prices, and how soon that information is assimilated into stock prices. We refer to this aspect as **“market efficiency test”** and this study concentrates on an association between accounting earnings and the behavior of daily security returns surrounding the announcement date.

The flow of this thesis is as follows: In Part II, some definitions and a brief review of the literature are given. In Part III, the data and methodology used in analyzing the effects of earning announcements are given. In Part IV the findings and conclusions are given.

## **II. LITERATURE REVIEW**

### **A. Some Definitions:**

#### **1) Efficient Market Hypothesis:**

A market will be called perfectly efficient if the prices at all times fully reflect all available information and if the prices adjust fully and instantaneously when new information becomes available (Fama 1976). In an efficient market, an investor can not make huge profits by buying or selling on the basis of an information, as that information has already been assimilated in the price. However, in an inefficient market the stock prices do not adjust to that new information and an investor can earn excess returns by trading on the basis of that information.

Fama (1970) defined three levels of market efficiency. The first one is the “weak” form of efficiency, implying that stock prices reflect the information contained in past prices. That is to say, there is no opportunity to make abnormal returns by studying historical price patterns, and hence technical analysis becomes an unprofitable activity.

The second level of market efficiency is the “semi-strong” form of efficiency implying that stock prices reflect not only past prices but all other published information. The researchers who tested the semi-strong efficiency by observing firm-related events such as earning and dividend announcements, stock splits, mergers, macroeconomic conditions in various stock markets concluded that, most of the information was rapidly and accurately impounded in the price of the stock.

The final level of efficiency is the “strong” form efficiency implying that stock prices reflect not only publicly available information, but all the information that can be known by insiders such as firm’s managers or directors. In the literature majority of the researchers don’t believe in this strong form of the efficient market theory.

Event studies provide a direct test of market efficiency and in the literature they are usually used to check the semi-strong form of efficiency. In this study, an event study is also used and the semi-strong form of market efficiency of the Istanbul Stock Exchange National Market is tested by using earning announcements covering 1992-1995 period.

## **2) The Effect of New Information:**

Beaver (1968) hypothesized that if an announcement contained new information about the expectations of a company, then that new information would be immediately impounded in the price of that company’s stock. This impounding could take place in several ways. Perhaps the most understood manner of the impounding of new information would be through the changes in the equilibrium price of a security.

A second reaction of the market to new information would be reflected in terms of higher volume. If information has been provided to investors, investors may not foresee a necessary change in the price; however, they may foresee a need to shift positions as a result of changes in risk characteristics or in some other characteristics of the stock.



This would manifest itself in the form of abnormal volume activity for a particular security.

Beaver hypothesised that either one or both of these reactions could take place depending upon risk preferences of investors and the extent of changes in the expectations of the market versus the expectations of individual investors. Abnormal price changes would result from changes in the expectations of the market as a whole and abnormal volume activity would reflect changes in the expectations of individual investors.

If, however, the market shows neither abnormal price changes nor abnormal volume activity during a week when announcements are made, then one might hypothesize that the market has either: 1) anticipated the announcement, thus the formal announcement itself has no information value, but the process which generated the announcement does; or 2) the announcement is of little or no use to the investor and the process which generated it is of no use to the investor; or 3) the market does not efficiently absorb new information as hypothesized in the efficient markets literature; or 4) sample design and the methodology chosen are insufficient to test these hypothesis.

### **3)Earning Values of Financial Statements:**

The earning values represents the observed results of the firm's management decisions of production, investment, financing under the surrounding conditions in a specific activity period. An investor use earning values;

1. to evaluate management performance
2. to estimate the earning gaining power
3. to estimate the future earning values
4. to appraise the risk of the investment made to the firm.

According to Lev (1989), earnings are widely believed to be the premier information item provided in financial statements. Economic theory ascribes to corporate earnings the crucial role of a signal optimally directing resource allocation in capital markets. Many equity valuation models, both theoretical and those used by practitioners, share a common element- expected earnings- as an explanatory variable. When asked to quantify their beliefs about future outcomes of securities, financial analysts express such beliefs almost exclusively in the form of earnings (rather than equity, sales or total assets) forecasts.

Because of the reasons stated above, it is important to evaluate the usefulness of quarterly and annual earning values.

#### **4)Market Price and Trading of a Stock:**

At any time, the price of a stock represents the agreed monetary value of the investors' expectations. This value shows investors' expectations of the current value of future cash flows and change in the cash gaining capacity of the security.

While making their investments, investors hope to obtain a price gain and a dividend gain. As future is full of uncertainties, these expectations can be explained by a probability distribution. After the announcement of new information, the views of the investors about the agreed price of stock expected within the probability distribution may change. Therefore, the change in the price of the stock is due to change of the investors' expectations as a result of the new information.

It is generally accepted that, in the stock exchange market, equilibrium prices are determined by aggregate demand while trading is determined by changes in individual demand. The factors affecting individual demand for securities can be categorized as (Morse 1980); (1) beliefs conditioned on information, (2) prices of securities, (3) wealth, (4) risk preferences, (5)consumption opportunities, and (6) the market mechanism for trading (such as transaction costs). However, there is no general theory of how each of these factors interacts to determine individual demand.

Changes in beliefs occur because of the arrival of new information. If an investor believes that the new price did not adjust correctly to the new information, then that investor would have incentives to trade. The greater the divergence between an

investor's perception of the correct price and the actual price, the more that investor would want to trade.

## **B. Empirical Tests:**

### **1)The Information-Content Test:**

Beaver (1968) carried out the first research to investigate the market reaction to the annual earnings announcement. Beaver analyzed the common stocks listed on the New York Stock Exchange around the announcement weeks for earnings in the period 1961-1965. Beaver compared trading volume and price changes in report weeks (17 weeks around the announcement) with none- report weeks. Significant changes in price and trading volume were found during the announcement week and he concluded that earnings reports possessed information content.

Lev and Yahalomi (1972) attempted to test the effect of corporate earnings releases on the Israeli Stock Exchange. The results of their study were quite different from Beaver's. While Beaver found that there was a reaction on the New York Stock Exchange to earnings announcements, Lev and Yahalomi were unable to find such a reaction on the Israeli Stock Exchange. According to them the correlation between earnings and stock returns is very low, sometimes negligible.

A related study by May (1971) assessed whether quarterly earnings announcements have significant impacts on investors' decisions as reflected by market price changes and his results indicate that the magnitude of price change responses in announcement weeks was greater than the magnitude of price change responses in non-announcement weeks (five weeks before, five weeks after announcement).

Kiger (1972) presented evidence that there were substantial volume and price reactions to quarterly earnings announcements of a sample of NYSE securities. He observed and analyzed reactions of the NYSE market to the release of 30 quarterly reports of industrial companies for each of the second and third quarters of 1968 and 1969. He excluded securities that had stock splits or stock dividends or news releases near the reporting date, and he also excluded companies that reported quarterly earnings more than five days after the quarter's close. In general, the evidence indicates that average trading volume and price change, adjusted for market fluctuations, was greater during the period in which the quarterly announcement of earnings was made than during a control period in which no new information about the company was introduced in the market.

Although a majority of studies relating published accounting statement data with stock price behavior suggest that the data are fully impounded in stock prices prior to or almost instantaneously at time of announcement, Joy, Litzenberger, Mc Enally (1977) by analyzing NYSE over the period 1963 through 1968 concluded that the information contained in quarterly earnings was not fully impounded into stock prices at the time of announcement. Also Foster, Olsen, Shevlin (1984) concluded that the speed of adjustment to information contained in earnings releases were gradual rather than instantaneous. Morse(1981), in addition, founded that the trading reaction lasted longer than the price reaction.

Brown (1978) analyzed the publication of EPS data and observed that the adjustment process - rather than being instantaneous - is lengthy, about 45 market days. Thus, with

respect to this particular sample of securities, the market exhibited inefficiencies. In a review of much of this literature, Joy and Jones (1979) conclude that at least with respect to quarterly earnings announcements there have been market inefficiencies.

Watts (1978) examined the abnormal returns following quarterly earnings announcements of a sample of 73 firms over the 1962-1968 period and reported that abnormal returns were found in the 1962-1965 period but not in the 1965-1968 period.

Ohtsuka (1981), by analyzing Tokyo Stock Exchange during the five-year period starting from September 1974, concluded that price changes were significantly larger in report weeks of both annual and semiannual announcements than in nonreport weeks, that significant price changes were also observed several weeks before the announcement, and that the price changes were larger in the annual announcement week than in the semiannual announcement week. He didn't find that a market reaction was reflected in the trading volume.

Morse (1981) added more precise evidence to Beaver (1968) by using daily data. Rather than determining the existence or non-existence of information content in earnings announcements, he examined when the market reacted relative to an earnings announcement.

Cready and Mynatt (1991) analyzed 320 firms of NYSE listed firms between 1981-1983 period. They analyzed the response of price, trading volume, number of transactions to the information content of annual reports. They concluded that any price

change accompanying the annual report is on average small (i.e., less than 0.75 percent) in terms of an observable one-day effect in the time period immediately surrounding the annual report release date.

## **2) The Market-Efficiency Test:**

Ball and Brown's (1968) research was the first of its kind to investigate the relation between abnormal rates of return on common stocks and unexpected annual earnings changes. On the basis of findings that a sample of positive (negative) earnings changes yielded an abnormal rate of return of the positive (negative) sign during a one-year period before the announcement, but that such behavior diminished in the months after the announcement, they concluded that it will be valuable to know the following year's annual accounting earnings in advance.

They also concluded that accounting earnings are therefore potentially useful for an investment decision, but annual earnings do not rate highly as a timely source of information, because 85-90% of the price adjustment to annual earnings changes occurs before the month of the announcement.

Latane and Jones (1979), measured the information content of quarterly earnings reports and the effects of this information on stock prices. The empirical evidence presented, covering early 1971 through mid 1974, suggested that unexpected earnings were very significantly related to excess holding period returns and that the adjustment to the unexpected earnings was relatively slow.



Rendleman, Jones and Latane (1982) found that roughly 50% of the adjustment of stock returns to unexpected quarterly earnings occurs over a 90-day period after the earnings are announced and abnormal returns could have been earned almost anytime. And their analysis also indicates that risk adjustments matter little in this type of work.

The studies above investigated the relation between unexpected earnings and the sign of abnormal rates of return. It is also expected that a relation exists between the magnitude of these variables -the larger the unexpected earnings, the larger the abnormal rates of return-.

Beaver, Clarke, and Wright (1979) investigated this relation concerning the New York Stock Exchange and concluded that there is a significant rank correlation between the magnitude of unexpected annual earnings changes and annual abnormal rates of return.

Bamber's (1986) results show continuous (positive) relationship between trading volume and the magnitude of unexpected earnings, analogous to Beaver, Clarke and Wright's(1979) security price results. In addition to Morse (1981)'s hypothesis (H1:Trading volume increases significantly when firms announce annual earnings), Bamber also investigates a second hypothesis ( H2: whether volume and earnings are related in a continuous manner) (When annual earnings are announced, unexpected trading volume is positively correlated with the absolute value of the magnitude of unexpected earnings). Based on the sample period 1977-1979, Bamber found that both magnitude of unexpected earnings and firm size were associated with the information

content of annual earnings announcements. Thus the previously observed dichotomous relationship between earnings releases and trading volume (Beaver (1968) , Morse (1981)) extends to an ordinal association as well. On average, the greater the absolute value of the earnings surprise, the greater the volume of trading around the announcement date. Moreover, the trading reaction to annual earnings announcements was greater for smaller firms than for larger firms.

Ozer (1996) examined the abnormal returns following quarterly earnings announcements over the 1988-1992 period in Istanbul Stock Exchange and concluded that a high correlation exists between earning values and stock prices. His results also show that there is a positive and a linear relationship between the stock prices and the magnitude of unexpected earnings.

Other studies made by Beaver and Dukes (1972), Brown and Kennelly (1972), Gonedes (1974), Foster(1975,1977), and Patell and Wolfson(1984), analyzing stock markets found that accounting earnings are potentially useful, but that they are assimilated in stock prices so quickly that investors cannot attain consistently superior rates of return by reacting to accounting earnings information. Such a market is referred to as efficient with respect to the publicly available accounting information.

### **III. DATA AND METHODOLOGY**

#### **A. DATA:**

This study covers common stocks listed in Istanbul Stock Exchange National Market during the time period 1992-1996. In this study, 13 accounting announcement periods between years 1992-1995 is analyzed. As there is an estimation period and a 200 days data prior to the announcement date is needed and as the 1995 yearly earning values are announced at March 1996, a time-span of 1992-March 1996 is used in this study.

The necessary data used in this study are obtained from the sources listed below;

1. The quarterly and yearly financial statements are obtained from ISE Yearbook of Companies, ISE weekly and monthly bulletins.
2. The financial statement announcement dates (the earliest time that the earning values reached to the market) are obtained from ISE Statistical Information Department.
3. The daily closing prices of stocks, daily volumes of stocks, daily closing of ISE composite index, daily total volume values are obtained from Bilkent University Management Department and from MetaStock files.
4. The inflation rates during 1992-1995 are obtained from Bilkent University Library, DIE Bulletins.

### **1) Regulations of Capital Market Board:**

According to Capital Market Law; the firms listed in Istanbul Stock Exchange must prepare second and fourth quarter audited, first and third quarter unaudited financial statements. It is also mentioned in the Capital Market Law that; the audited (second and fourth quarter) financial statements must be announced within six weeks after the period ends, the unaudited (first and third quarter) financial statements must be announced within three weeks after the period ends. For banks three more weeks are added to these intervals.

The financial statements and reports which must be prepared according to the Capital Market Board's requirements, and independent auditing report in the case of being subject to independent auditing; shall be sent to the Capital Market Board and disclosed in accordance with the principles and procedures stated by the Capital Market Board.

The independent auditing firms are legally responsible for the losses arising from false and misleading information and thoughts related to the financial statements and reports audited by themselves.

In this analysis, one of the major criteria for selecting the stock data is; the accounting announcements for that stock must be announced within the acceptable time period, as otherwise the statistical efficiency of the study decreases. In a related study, Givolry and Palmon (1982) investigated the timeliness of annual earnings announcements and

concluded that the price reaction to the early announcements is higher than to the late ones because information content of the late announcements decreases when time passes. They also concluded that if a firm doesn't announce its financial statements within the specified time period, the market interpret this information as bad news than expected.

The data in this study consist of first and third quarter unaudited, second and fourth quarter audited accounting announcements for the firms that meet the following criteria:

- The firms must be listed on the National Market of the Istanbul Stock Exchange during the time period 01/01/92 - 31/05/96.
- The firms must announce the accounting numbers regularly on each quarter within the specified time period.
- The firms that have different accounting periods are not included in this analysis such as Dogan Holding and Turk Siemens.
- In this analysis a period covering 15-days before to 15-days after the announcement is taken, and the stocks of the firms must be traded almost everyday within the 4 year time-span. (Within the 31 day period around the announcement days, it is a must that the stocks of the firms trade) The stocks which has low trading volume and which do not trade for a long time are not included in the sample.

- When the stock transactions for a stock is stopped for a specific reason, that stock is not included in the analysis.
- During the period, when there are two sessions, the closing price of the day (second session) is taken.
- The price data used are adjusted for dividend and split changes for the period 01/01/1992 through 31/05/1996.
- The stocks issued after January 1992 are not included in the analysis in order to make a comparison between subsequent years.

After applying these criteria for each stock listed in Istanbul Stock Exchange, 65 stocks are suitable for price analysis and 34 stocks are suitable for trading volume analysis. The stocks used in the analysis are listed in Appendix A.

## **B. METHODOLOGY:**

### **1) Definition of Variables:**

For each firm, the price and trade volume values are collected on a daily basis, for a period consistent with the aims of this research: the investigation period and the period for estimating the parameters of the market model. After collecting these values, the daily returns and trade volume changes for each stock are computed by the following equations,

$$\mathbf{R}_{it} = \log (\mathbf{P}_{it} / \mathbf{P}_{i,t-1})_i$$

$\mathbf{P}_{it}, \mathbf{P}_{i,t-1}$  = the closing price per share of firm  $i$  on days  $t$  and  $t-1$

respectively.

$$\mathbf{\Phi}_{it} = \log(\mathbf{v}_{it} / \mathbf{v}_{it-1})$$

$\mathbf{v}_{it}, \mathbf{v}_{it-1}$  = the number of shares of firm  $i$  traded on days  $t$  and

$t-1$  respectively.

The market composite index and market trade volume values are also collected within this period. After collecting these values, the market return and market trade volume changes are also computed using the following equations,

$$R_{mt} = \log (PI_t / PI_{t-1})$$

$PI_t, PI_{t-1}$  = the closing value of price index on days t and t-1

respectively.

$$\Phi_{mt} = \log(v_{mt} / v_{mt-1})$$

$v_{mt}, v_{mt-1}$  = the number of shares traded for all firms listed in the

National Market of the Istanbul Stock Exchange on

days t and t-1 respectively.

In this study a 31-trading day period is selected in order to investigate the market reaction to the earning announcements (the 15 trading days before the announcement day, and the 15 trading days after). It is expected that responses to earning announcements would be reflected in stock prices and trade volumes within these period.

## **2) Market Model:**

Stock price movements and trade volume movements around the date of the earning announcements were examined by using the market model. This method of analysis eliminates the effect of marketwide influences on individual stocks. Since the income report is evaluated as it relates to the individual firm, its contents and timing should be assessed relative to changes in the rate of return and trading volume on the firm's stocks net of market-wide efforts.



At first, an estimation period which is different than the calculation period of abnormal returns is determined. Then, a regression equation is formulated for the estimation (investigation) period in order to calculate the constants that is going to be used in abnormal return calculations. After calculating the constants, the regression equation is applied to the 31-day announcement period for computation of abnormal returns.

In this study an estimation period of 150 days is selected and during -200.....-50 days prior to the accounting announcement, the regression coefficients are calculated. Then using these values, one can calculate abnormal returns during -15.....+15 days surrounding the announcement date. This analysis is applied to 13 quarterly accounting announcement periods between years 1992-1995. As there is an estimation period and a 200 days data prior to the announcement date is needed and as the 1995 yearly earning values are announced at March 1996, a time-span of 1992-March 1996 is used in this study.

Therefore; for each firm in the sample, by the help of the equation,

$$R_{it} = a_i + b_i R_{mt} + \epsilon_{it}$$

(where  $\epsilon_{it}$  is the return residual for security i at time t)

the  $a_i$  and  $b_i$  values were estimated using the ordinary least squares regression technique.

Moreover, by the help of an equation of the form,

$$\Phi_{it} = c_i + d_i \Phi_{mt} + u_{it}$$

(where  $u_{it}$  is the volume residual for security i at time t)

the  $c_i$  and  $d_i$  values for each stock were estimated using the ordinary least squares regression technique based on the observations of  $\Phi_{it}$  and  $\Phi_{mt}$ .

### **3) Residual Approach:**

There are several reasons for using residuals. Trading and price changes from non-information factors may occur jointly throughout the market. Also private information is more likely to be more specific. By removing variances due to market-wide factors that are unrelated to variables of interest, a stronger statistical test can be performed.

In order to remove the effects of marketwide events upon the individual stock price and the trading volume, the returns and volume changes are transformed into residuals through the following equations:

$$E_{it} = R_{it} - a_i - b_i R_{mt}$$

and

$$u_{it} = \Phi_{it} - c_i - d_i \Phi_{mt}$$

where t indicates the trading day relative to the announcement day;

The residuals from the regression measures the extent to which the realized return differs from the expected return.

#### **4) Measurements in the Tests:**

##### **i) Measurements in the Information- Content Test:**

If an announcement conveys information to the stock market, more and a larger residual (return and volume) is expected on the announcement day than on any of the other days. A larger residual can be obtained if there is no leakage of information before the announcement date and there is not a substantive information-processing period after the announcement.

Therefore, it can be said that, whether the earnings announcements has information content or not, can be tested by observing the relative magnitude of daily residual (return and volume) surrounding the announcement date.

In this analysis, Morse's (1981) statistics is used to measure the relative magnitude of residuals.

The mean absolute standardized return residuals ( $\bar{E}_t$ ) is computed as follows:

- The return residual of each date  $t$  in the investigation period for firm  $i$  ( $\mathbb{E}_{it}$ ) is initially transformed into the standardized residual ( $\mathbb{E}_{it}$ ) by dividing by its own standard deviation to help attain some distributional comparability among the firms.
- Once the sign of ( $\mathbb{E}_{it}$ ) is removed, because the direction of the price changes is irrelevant, the absolute value of the standardized residual ( $\mathbb{E}_{it}$ ) is averaged over all the firms included in the sample by using the announcement period as the zero time unit.

$$E_t = 1/n \sum_{i=1}^n |\mathbb{E}_{it}| \quad t = -15, \dots, +15 \quad n = \# \text{ of samples}$$

The mean standardized volume residuals ( $U_t$ ) are also computed as;

- Volume residuals ( $u_{it}$ ) are standardized by using the mean and standard deviation of their own residuals for the investigation period. This procedure is indispensable, because trading-volume data in the study ( $\Phi_{it}$  and  $\Phi_{mt}$ ) are not scaled by the number of shares for each security outstanding. Otherwise the volume residual would not be comparable across the spectrum of firms.
- Once the standardized volume residuals ( $U_{it}$ ) are computed, they are then averaged out of the number of sample announcements in the same way as return residual.

$$U_t = 1/n \sum_{i=1}^n U_{it} \quad t = -15, \dots, +15$$

n = # of samples

The relative magnitude of  $E_t$  and  $U_t$  for each day in the investigation period provides evidence for the existence or nonexistence of information content and the process of information dissemination.

**ii) Measurements in the Market- Efficiency Test:**

It is generally accepted that, the accounting earnings numbers are expected to convey some degree of information to the market, but not all of it is necessarily new information.

Then to determine if part of this increase in accounting earnings can be expected with information contained in the firms' previous accounting earnings number, the expected and unexpected elements of earnings change are segregated. It is the unexpected part of the earnings that is meaningful to investors as new information. Therefore, the unexpected earnings can be computed as the reported actual earnings minus the expected earnings.

The expected earnings are computed as;

Expected earnings of the current period = the higher value of a) The actual earnings of the previous period \* (1+x) b) The actual earnings of the same quarter of the previous year \*(1+y)

x: correlation factor (the consumer price index for the last 3 months), as investors perform their operations on the basis of the outcome in the last period.

y: correlation factor (the consumer price index for the last 12 months), as investors perform their operations on the basis of the outcome in the last year

Positive (negative) unexpected earnings mean that the operating result was more favorable (unfavorable) than expected. In the current period if the firm has the actual reported earnings number higher than the expected earnings, that firm is included in the good news portfolio. In order to be included in the good news portfolio the firm's actual income numbers must be greater than both a) the actual earnings of the previous period \* (1+x) and b) the actual earnings of the same quarter of the previous year \*(1+y). If the firm's actual income number is lower than two of these values, it is treated as bad news. If the firm's actual income number is lower than one of these values, it is treated as neutral news and is not included in the analysis.

Moreover, the firms that are announcing a negative earning value, are included in the bad news portfolio whether they decrease their loss or not. The firms that are

announcing positive earning value after successive negative earnings values are included in the good news portfolio.

The samples are classified as good news or bad news for each quarter according to these benchmark.

In order to trace the behaviour of the abnormal return of each group of the firms whose earnings numbers are classified as either good news or bad news, the cumulative abnormal return (**CAR**) is calculated as:

$$\mathbf{CAR}_t = \sum_{t=-15}^T \left( \frac{1}{N} \sum_{i=1}^N (\epsilon_{it}) \right)$$

T= trading day relative to earnings-announcements day (trading day 0)

N= number of the firms with unexpected earnings in that particular group (good news or bad news)

It is expected that, if the annual earnings are related to stock prices, then

- **CAR**>0 for the subsample with the good news
- **CAR**<0 for the subsample with the bad news.

must be obtained.

If there is no relation between annual earnings and stock prices, **CAR**'s are expected to be approximately 0.

## **5) Statistical Testing of the Results:**

### **i) Information - Content Test:**

#### **a) Price Analysis:**

The price changes for each date are investigated by two different statistical tests. The first test used in the analysis is the parametric chi-square test and the second one is the nonparametric binomial test. A chi-square test is used because it is the most suitable goodness of fitness test for nominal data and it determines whether some observed pattern of frequencies corresponds to an expected pattern. A nonparametric test is also used because  $\mathcal{E}_{it}$  may not follow normal distribution.

In the chi- square test, we assume that  $\mathcal{E}_{it}$  follows normal distribution and in this test  $\hat{\mathcal{E}}_{it}$  is standardized so as to be distributed  $N(0, 1)$ . It can be said that the mean of the standardized residual variance  $\sigma^2(\hat{\mathcal{E}}_{it})$  will be 1, if the larger  $\hat{\mathcal{E}}_{it}$  does not cluster on a given day.

The hypothesis testing used in this part is,

$$H_0 : \sigma^2(\hat{\mathcal{E}}_{it}) = 1$$

$$H_1 : \sigma^2(\hat{\mathcal{E}}_{it}) > 1$$



After that, the chi- square statistic was generated by squaring and summing up each observation for each date. The degrees of freedom used in this analysis equals to  $(n - 1 = 64)$  . This chi- square statistic is computed for each of the quarter similarly. The chi- square statistics for each quarter are shown in Appendix B.

As  $\hat{\epsilon}_{it}$  may not follow the normal distribution and  $\hat{E}_{it}$  might not be distributed  $N(0, 1)$ , a nonparametric test is also performed. When one standard deviation is used as a benchmark for the larger residual, the probability that the absolute value of the standardized residual is greater than 1 is equal to

$$p = \text{total number of times absolute } \hat{E}_{it} > 1 / 65 \text{ (sample size)} / 31 \text{ (number of days)}$$

This probability value is calculated for each quarter in the analysis.

After calculating the probability values, the binomial test was conducted by counting the number of times ( $X_t$ ) the absolute value of  $\hat{E}_{it}$  is greater than 1 at each date.

The hypothesis testing used in this part is;

$$H_0 : X_t / 65 = p$$

$$H_1 : X_t / 65 > p$$

The test statistic for each date for each quarter are based on the following formula:

$$Z_t = (X_t - 65 * p) / (65 * p * (1-p))^{1/2}$$

In the analysis a one-tailed test is used because, the interest is observing unusually large price changes. The t statistics for each quarter are given in Appendix B.

**b) Trading Volume Analysis:**

The trading volume changes surrounding the accounting announcements are tested by two statistical tests. These are a parametric t-test and a nonparametric binomial test.

In the parametric t-test, whether the average  $U_t$  at each date is significantly greater than the average for the period under investigation is tested. It can be said that if larger volume residuals do not cluster on a given day, the average  $U_t$  is not significantly different from zero.

The hypothesis testing used in this part is;

$$H_0: \text{aver}(U_t) = 0$$

$$H_1: \text{aver}(U_t) > 0$$

The test statistic for each date is calculated using the following formula,

$$t_i = \frac{\text{aver}(U_t) - 0}{s_t(U_{it}) / (34-1)^{1/2}}$$

where  $s_i(U_{it})$  is the sample standard deviation of  $U_{it}$ . The calculated t-statistics for each quarter are shown in Appendix C.

The second test used in volume analysis is the nonparametric binomial test. This is similar to the one used for price analysis, but there is an exception. In this analysis the number of times that the standardized residual itself (instead of the absolute value of it) is greater than one is counted. The calculated statistics are shown for each quarter in Appendix C.

### **ii) Market - Efficiency Test:**

After classifying each earnings as either good news or bad news, the cumulative abnormal residuals for good news and bad news portfolio are computed. The composite **CAR** is the cumulative abnormal return from an investment policy that entails buying good-news firms and selling short bad- news firms. Appendix D shows, the Good news, Bad news and Composite news cumulative abnormal residual values for each quarter.

The second analysis used in market efficiency test is based on statistical testing. This statistical testing of market efficiency of the quarterly earning announcements is done as follows;

At first, in all of the 13 quarters, the abnormal rate of returns for each day in the investigation period is calculated for the good news, bad news and composite news

portfolios. Then, by equally weighting these calculated abnormal rate of returns, they are segregated into one data set for each of the three types of portfolios. After the segregation process, the **CAR**'s are calculated for the periods consistent with the aims of research.

The hypothesis testing used in this part is;

**H<sub>0</sub>**= in the time span investigated, no positive cumulative abnormal returns exist and an investor who has early information about the earnings announcements can not earn huge profits.

**H<sub>a</sub>**= there exists positive cumulative abnormal returns and huge profits can be earned on the basis of earnings information.

The significance of the results is tested by using t-tests. To test whether the cumulative abnormal return from day  $t_1$  until day  $t_2$  is significantly positive, the statistical significance of **CAR** is computed by;

$$t = \text{CAR} / \sigma (\text{CAR})$$

$$\sigma (\text{CAR}) = \sigma (\text{Ar}_t) * (t_2 - t_1 + 1)^{1/2}$$

7 time periods are selected and the t-test is applied to each period, in order to understand the behaviour surrounding announcement days more effectively.

## **IV. FINDINGS AND CONCLUSIONS:**

### **A. FINDINGS:**

#### **1. The Information Content Test:**

##### **i) Price Analysis:**

Based on the results shown in Appendix B, it can be concluded that there isn't any significant price changes occurring on the day of the announcement than any of the other day. We reach this conclusion by comparing two different test of significance.

In the first test of significance ( a parametric chi-square test) two significance levels were chosen,  $\alpha = 0.05$  and  $\alpha = 0.01$ . The tabled value of  $X^2$  for 64 degrees of freedom and  $\alpha = 0.05$  is approximately 83. Among the 13 quarter we investigated, in only 4 of them (31%), the  $X^2$  statistics for the announcement day has a higher value than 83. When the other days  $X^2$  statistics in these 4 periods are also investigated, mostly all of the other days has a higher value than 83. It is interesting that in all of the 13 periods, on the first day after the financial statement was announced, significant price changes occurred and it can be concluded that the market needs some time to perceive the information content of the earning values. Based on the results, it can be concluded that significant price changes does not occur on the day of the announcement and the null hypothesis of "the mean of the standardized residual variance  $\sigma^2(\hat{\epsilon}_{it})$  will be 1" is not rejected for 9 of the 13 periods (69%).

Also as in 3/13 (23%) of the quarters,  $X^2$  statistics of the announcement day are higher than the value 93 (the tabled value of  $X^2$  for 64 degrees of freedom and  $\alpha = 0.01$ ) and in 11/13 (85%) of the quarters,  $X^2$  statistics of the first day after the announcement are higher than the value 93, it can be concluded that accounting earnings has a information content, but the market needs some time to perceive the information content.

In the second test of significance ( a nonparametric binomial test) two significance levels were chosen,  $\alpha = 0.05$  and  $\alpha = 0.01$ . The tabled value of t statistics for 64 degrees of freedom and  $\alpha = 0.05$  is approximately 1.670. Since on the announcement date 2 /13 (15%) of the quarters t statistics are higher than the value 1.673, it can be concluded that significant price changes does not occur on the day of the announcement and the null hypothesis of " $H_0: X_t / 65 = p$ " is not rejected.

Also as in 9/13 (69%) of the quarters the t statistics on the first day after the announcement date is higher than the value of 1.673, the same result of "some time must pass so that the market can perceive the announcement" is concluded.

#### **ii) Trading Volume Analysis:**

Based on the results shown in Appendix C, it can be concluded that trading volume changes surrounding the announcement date is no different than any of the other date and no significance relationship was found between trade volume changes and earning announcements. We reach this conclusion by comparing two different test of significance.

In the first test of significance (parametric t test) two significance levels were chosen,  $\alpha = 0.05$  and  $\alpha = 0.01$ . The tabled value of Z for 64 degrees of freedom and  $\alpha = 0.05$  is approximately 1.645. Since 0 /13 (0%) of the quarters Z statistics on the date of announcement are higher than the value 1.645, it can be concluded that no significant trading volume changes occur on the day of the announcement and the null hypothesis of “average  $U_t = 0$ ” is not rejected.

In the second test of significance ( a nonparametric binomial test) also the same procedure is used as in the price analysis and two significance levels are chosen,  $\alpha = 0.05$  and  $\alpha = 0.01$ . The tabled value of t statistics for 64 degrees of freedom and  $\alpha = 0.05$  is approximately 1.645. Since in 0 /16 (0%) of the quarters t statistics on the date of announcement are higher than the value 1.645, it can be concluded that no significant trading volume changes occur on the day of the announcement and the null hypothesis of “ $H_0: X_t / 34 = p$ ” is not rejected.

## **2) The Market-Efficiency Test:**

In Appendix D, the results of the first analysis, cumulative abnormal return results of the market efficiency test is given. From the cumulative abnormal return values of good news portfolio, it can be concluded that in 6 / 13 (46%) of the quarters, an investor who has early knowledge of the earning announcements can earn a profit by buying the good news stocks 15 days before the announcement date.

From the cumulative abnormal return values of bad news portfolio, it can be concluded that in 9 / 13 (69%) of the quarters, an investor who has early knowledge of the earning announcements can earn a profit by selling the bad news stocks 15 days before the announcement date.

Lastly, from the cumulative abnormal return values of composite news portfolio, it can be concluded that in 8/ 13 (%62) of the quarters, an investor who has early knowledge of the earning announcements can earn a profit by buying good news stocks and by selling the bad news stocks 15 days before the announcement date.

When all of this results are combined, it can be said that a person who has early knowledge of the earnings announcements can not earn a guaranteed return in the 30-day time-span.

This results are supported by the statistical testing used in the second part of analysis.



The cumulative abnormal returns and the corresponding t statistics of this study for the years 1992-1995 are calculated for each of the 7 periods and given in tabular form.

**Table 1. Market Efficiency Test Results**

TIME	CAR (GOOD)	t-statistic (CAR <sub>GOOD</sub> )	CAR (BAD)	t-statistic (CAR <sub>BAD</sub> )	CAR (COMP)	t-statistic (CAR <sub>COMP</sub> )
FROM -15 TO 0	0.00277	0.04042	0.00746	0.09440	0.00019	0.00259
FROM -1 TO +1	0.00133	0.04493	0.01614	0.47136	-0.00303	-0.09773
FROM 0 TO 1	0.00143	0.05905	0.01523	0.54476	-0.00273	-0.10793
FROM 0 TO 2	0.00090	0.03043	0.01760	0.51412	-0.00371	-0.11970
FROM 0 TO 7	-0.00198	-0.04089	0.00971	0.17368	-0.00387	-0.07654
FROM 0 TO +15	0.00356	0.05193	-0.00673	-0.08505	0.00429	0.05998
FROM -15 TO +15	0.09543	0.06404	0.11007	-0.02597	0.09961	0.05231

When the Market Efficiency Test Results shown in Table 1 are analyzed, it can easily be seen that for all of the three portfolios (good, bad and composite), the absolute value of the calculated t statistics are very small. In the good news and in the bad news portfolio the highest t-statistic value is obtained in the 0-1 day period, but yet they are not statistically high. As in all of the periods the calculated t values are smaller than the t-critical values, the null hypothesis -“a person who has early information can not earn profits based on the information he has”- is not rejected.

## **B. CONCLUSIONS:**

Following inferences can be made by analysis of results:

- 1) By the information-content test performed; it can be concluded that, “Price changes on the day of the announcement is no different than any of the other date and no significance relationship and correlation is found between price changes and earnings announcements”.

- 2) It is also concluded that; “Trading volume changes surrounding the announcement date is no different than any of the other date and no significance relationship is found between trade volume changes and earning announcements”.
- 3) By the market-efficiency test performed; it can be concluded that, “A person who has early knowledge of the earnings announcements can not earn a guaranteed return in the 31-day time-span. Whatever the information he obtained is, he can not earn huge profits by buying or selling on the basis of that information.”
- 4) Istanbul Stock Exchange National Market is a very speculative market and most of the stock prices are manipulated by groups. These groups adjust the stock prices in such a manner that; despite the strongness of the information one has, he can loose money.
- 5) As the results found are different than expected, it can also be concluded that there are a lot of information leakage and insider trading in the Istanbul Stock Exchange National Market. Because the auditing system is not sophisticated in Turkey and because some time passes between the sending date of the earnings announcements to Capital Market Board and publicly announcement date, most of the information is disseminated.

In order to eliminate this leakage, maybe in a further study, the date that the announcements are sent to the Capital Market Board is taken as the announcement date or a longer time period than 31 days is selected to understand the effect financial statement announcements more accurately.

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**APPENDIX A: THE DATA SET USED IN PRICE AND TRADING  
VOLUME ANALYSIS**

**THE DATA SET USED IN PRICE ANALYSIS:** (65 Stocks)

ADANA A, ADANA C, AKAL TEKSTIL,AKBANK, AKSA, ALARKO HOLDING, ANADOLU CAM,ARCELIK, ASELSAN, AYGAZ, BAGFAS, BOLU CIMENTO, BRISA, CELIK HALAT, DEVA HOLDING,DOKTAS, ECZACIBASI ILAC, ECZACIBASI YATIRIM, EGE BIRA, EGE ENDUSTRI, EGE GUBRE, EREGLI DEMIR CELIK, FINANSBANK, GARANTI BANKASI, GOODYEAR, GUBRE FABRIKALARI, GUNEY BIRA, HEKTAS, INTEMA, IS BANKASI B, IS BANKASI C, IZOCAM, KARTONSAN, KAV, KOC HOLDING, KOC YATIRIM, KORDSA, KOYTAS, KUTAHYA PORSELEN, MAKINA TAKIM, MARDIN CIMENTO, MARET, MARSHALL BOYA, METAS, MIGROS, OLMUKSA, OTOSAN, PARSAN, PEG PROFILO, PETKIM, PETROKENT TURIZM, PETROL OFISI, PINAR ET, SARKUYSAN, SIFAS, SISE CAM, TOFAS OTOMOBIL FABRIKALARI, TRAKYA CAM, TUPRAS, UNYE CIMENTO, USAK SERAMIK, VESTEL, YAPI KREDI BANKASI, YASAS, YUNSA.

**THE DATA SET USED IN TRADING VOLUME ANALYSIS:** (34 Stocks)

ADANA A, ADANA C, AKAL TEKSTIL, ANADOLU CAM, ARCELIK, ASELSAN, BAGFAS, BRISA, CELIK HALAT, DEVA HOLDING, ECZACIBASI ILAC, ECZACIBASI YATIRIM, HEKTAS, INTEMA, IS BANKASI B, IS BANKASI C, KARTONSAN, KAV, KOC HOLDING, KORDSA, MAKINA TAKIM, MARDIN CIMENTO, OLMUKSA, PEG PROFILO, PETROL OFISI, PINAR ET, SARKUYSAN, SISE CAM, TRAKYA CAM, UNYE CIMENTO, VESTEL, YAPI KREDI BANKASI, YASAS, YUNSA.

**APPENDIX B: RESULTS OF THE INFORMATION CONTENT TEST:  
PRICE CHANGING SURROUNDING ACCOUNTING  
ANNOUNCEMENTS**

QUARTER 4,1992											
DATE	ABS (Et)	ABS (Aver Et)	(X2)	%5 level	%1 level	Times ABS(Eit)>1	SUM	AVERAGE	(t)	%5 level	%1 level
-15	82.2443	1.2653	168.7107	**	**	32	802	0.3980	1.5531		
-14	86.7778	1.3350	188.1846	**	**	37			2.8201	**	**
-13	91.3086	1.4047	188.7854	**	**	39			3.3269	**	**
-12	79.2894	1.2198	166.2066	**	**	31			1.2997		
-11	62.7436	0.9653	91.0881	**	**	27			0.2861		
-10	59.4702	0.9149	85.6689	**	**	26			0.0327		
-9	61.6149	0.9479	94.3402	**	**	23			-0.7275		
-8	63.0729	0.9704	98.4604	**	**	27			0.2861		
-7	60.0136	0.9233	102.4445	**	**	23			-0.7275		
-6	64.9027	0.9985	117.0693	**	**	25			-0.2207		
-5	68.3389	1.0514	142.0333	**	**	24			-0.4741		
-4	62.5737	0.9627	122.3340	**	**	23			-0.7275		
-3	63.2619	0.9733	99.8847	**	**	26			0.0327		
-2	54.6942	0.8414	72.1499			20			-1.4877		
-1	50.8666	0.7826	82.6781			15			-2.7547		
0	53.8457	0.8284	77.9068			22			-0.9809		
1	108.1961	1.6646	290.8700	**	**	39			3.3269	**	**
2	62.5249	0.9619	104.2981	**	**	24			-0.4741		
3	63.2981	0.9738	105.5966	**	**	23			-0.7275		
4	63.8551	0.9824	106.2178	**	**	28			0.5395		
5	57.6062	0.8862	91.4018	**	**	18			-1.9945		
6	54.8027	0.8431	79.8696			20			-1.4877		
7	57.5319	0.8851	80.3488			25			-0.2207		
8	55.3229	0.8511	79.9206			22			-0.9809		
9	61.6259	0.9481	97.7244	**	**	25			-0.2207		
10	61.2804	0.9428	104.3637	**	**	21			-1.2343		
11	79.2952	1.2199	157.7228	**	**	34			2.0599	**	
12	73.1917	1.1260	140.8129	**	**	32			1.5531		
13	53.0941	0.8168	88.1285	**	**	18			-1.9945		
14	70.2753	1.0812	115.2170	**	**	31			1.2997		
15	63.6934	0.9799	121.0107	**	**	22			-0.9809		

QUARTER 1, 1993											
DATE	ABS (Et)	ABS (Aver Et)	(X2)	%5 level	%1 level	Times ABS(Eit)>1	SUM	AVERAGE	(t)	%5 level	%1 level
-15	80.4581	1.2378	147.3500	**	**	34	972	0.4824	0.6566		
-14	69.2586	1.0655	120.7414	**	**	28			-0.8328		
-13	72.7240	1.1188	126.9199	**	**	33			0.4084		
-12	89.4221	1.3757	195.1050	**	**	37			1.4013		
-11	63.2310	0.9728	122.3469	**	**	22			-2.3221		
-10	62.5838	0.9628	103.3529	**	**	22			-2.3221		
-9	60.1839	0.9259	100.0229	**	**	24			-1.8256		
-8	82.9160	1.2756	160.3420	**	**	34			0.6566		
-7	78.5126	1.2079	153.7446	**	**	33			0.4084		
-6	98.5032	1.5154	251.8274	**	**	36			1.1530		
-5	87.3649	1.3441	197.5423	**	**	34			0.6566		
-4	73.9093	1.1371	137.2514	**	**	29			-0.5845		
-3	77.8002	1.1969	144.5903	**	**	31			-0.0881		
-2	94.4199	1.4526	190.0502	**	**	43			2.8906	**	**
-1	60.3757	0.9289	89.2712	**	**	28			-0.8328		
0	94.3654	1.4518	196.5657	**	**	42			2.6424	**	**
1	97.5630	1.5010	254.9359	**	**	38			1.6495		
2	121.5630	1.8702	350.0551	**	**	43			2.8906	**	**
3	88.3400	1.3591	182.7428	**	**	36			1.1530		
4	82.2418	1.2653	153.1780	**	**	38			1.6495		
5	90.7026	1.3954	235.7381	**	**	35			0.9048		
6	83.9754	1.2919	206.8122	**	**	29			-0.5845		
7	68.2082	1.0494	121.9567	**	**	25			-1.5774		
8	63.3164	0.9741	112.4397	**	**	25			-1.5774		
9	65.5024	1.0077	133.5826	**	**	23			-2.0739		
10	60.9160	0.9372	99.7511	**	**	24			-1.8256		
11	66.0103	1.0155	107.2386	**	**	27			-1.0810		
12	73.3213	1.1280	143.1086	**	**	28			-0.8328		
13	69.0800	1.0628	122.0631	**	**	26			-1.3292		
14	70.3380	1.0821	117.4762	**	**	29			-0.5845		
15	84.3333	1.2974	175.4216	**	**	36			1.1530		

QUARTER 2, 1993											
DATE	ABS (Et)	ABS (Aver Et)	(X2)	%5 level	%1 level	Times ABS(Eit)>1	SUM	AVERAGE	(t)	%5 level	%1 level
-15	49.8119	0.7663	55.8589			19	623	0.3092	-0.2944		
-14	48.0059	0.7386	55.9032			15			-1.3679		
-13	43.1771	0.6643	49.9519			14			-1.6363		
-12	43.9251	0.6758	56.9674			11			-2.4414		
-11	49.4505	0.7608	72.8429			15			-1.3679		
-10	42.3149	0.6510	47.9189			16			-1.0995		
-9	58.9986	0.9077	95.1710	**	**	25			1.3159		
-8	50.8411	0.7822	65.9667			20			-0.0260		
-7	60.4234	0.9296	99.7577	**	**	24			1.0476		
-6	56.2037	0.8647	73.2880			23			0.7792		
-5	52.7134	0.8110	65.9605			21			0.2424		
-4	51.6831	0.7951	66.8091			20			-0.0260		
-3	43.0453	0.6622	52.7301			11			-2.4414		
-2	45.7155	0.7033	61.0607			18			-0.5627		
-1	44.2103	0.6802	51.7485			15			-1.3679		
0	40.7284	0.6266	43.5297			13			-1.9047		
1	86.2493	1.3269	211.8408	**	**	30			2.6579	**	**
2	60.3543	0.9285	115.5935	**	**	22			0.5108		
3	50.8288	0.7820	65.4938			19			-0.2944		
4	59.2256	0.9112	87.8040	**		25			1.3159		
5	54.1020	0.8323	76.9388			22			0.5108		
6	53.5367	0.8236	84.1272	**		19			-0.2944		
7	53.7347	0.8267	77.3847			19			-0.2944		
8	60.0908	0.9245	82.8872			22			0.5108		
9	57.5898	0.8860	88.2926	**		27			1.8527	**	
10	63.1428	0.9714	93.2202	**	**	26			1.5843		
11	57.1575	0.8793	78.5729			24			1.0476		
12	55.2230	0.8496	85.1924	**		22			0.5108		
13	64.5499	0.9931	102.8099	**	**	26			1.5843		
14	56.4909	0.8691	102.7083	**	**	20			-0.0260		
15	50.7775	0.7812	68.1580			20			-0.0260		

QUARTER 3, 1993											
DATE	ABS (Et)	ABS (Aver Et)	(X2)	%5 level	%1 level	Times ABS(Eit)>1	SUM	AVERAGE	(t)	%5 level	%1 level
-15	59.2748	0.9119	85.3576	**		21	509	0.2526	1.3076		
-14	58.4237	0.8988	76.9139			22			1.5931		
-13	52.9850	0.8152	75.3118			19			0.7367		
-12	52.8660	0.8133	70.5573			22			1.5931		
-11	43.5430	0.6699	50.0876			18			0.4512		
-10	50.1405	0.7714	72.1023			19			0.7367		
-9	47.0892	0.7244	55.5057			16			-0.1197		
-8	45.4937	0.6999	49.4251			17			0.1658		
-7	41.6454	0.6407	48.0578			12			-1.2616		
-6	46.7509	0.7192	52.6153			20			1.0221		
-5	51.7937	0.7968	72.5895			22			1.5931		
-4	42.5782	0.6550	52.6081			17			0.1658		
-3	47.8082	0.7355	54.4374			17			0.1658		
-2	45.0432	0.6930	58.5369			20			1.0221		
-1	35.8384	0.5514	38.1540			9			-2.1179		
0	41.0358	0.6313	43.4819			14			-0.6906		
1	60.0699	0.9242	90.7447	**		26			2.7349	**	**
2	53.3724	0.8211	67.5297			19			0.7367		
3	45.4570	0.6993	51.7142			15			-0.4052		
4	38.2513	0.5885	38.9948			11			-1.5470		
5	35.7561	0.5501	35.4666			13			-0.9761		
6	48.2255	0.7419	59.8683			19			0.7367		
7	42.1564	0.6486	40.1542			14			-0.6906		
8	41.7278	0.6420	37.9312			12			-1.2616		
9	36.7869	0.5660	34.7371			10			-1.8325		
10	39.6287	0.6097	38.9185			11			-1.5470		
11	43.8025	0.6739	51.2884			15			-0.4052		
12	37.9120	0.5833	37.8443			15			-0.4052		
13	39.2421	0.6037	40.0819			10			-1.8325		
14	49.9646	0.7687	61.2034			21			1.3076		
15	41.5453	0.6392	40.1496			13			-0.9761		



QUARTER 4, 1993											
DATE	ABS (Et)	ABS (Aver Et)	(X2)	%5 level	%1 level	Times ABS(Eit)>1	SUM	AVERAGE	(t)	%5 level	%1 level
-15	76.2709	1.1734	155.7443	**	**	32	783	0.3886	1.7156	**	
-14	60.5174	0.9310	78.2573			29			0.9522		
-13	68.6416	1.0560	112.5885	**	**	26			0.1888		
-12	72.9300	1.1220	139.5447	**	**	29			0.9522		
-11	60.0842	0.9244	89.2537	**		25			-0.0657		
-10	66.5354	1.0236	119.6547	**	**	26			0.1888		
-9	65.9502	1.0146	115.1187	**	**	25			-0.0657		
-8	64.0634	0.9856	99.8731	**	**	29			0.9522		
-7	61.5904	0.9475	84.7193	**		31			1.4611		
-6	68.4330	1.0528	112.6985	**	**	26			0.1888		
-5	60.9489	0.9377	95.7613	**	**	25			-0.0657		
-4	61.6555	0.9485	88.7249	**		29			0.9522		
-3	62.4888	0.9614	96.5484	**	**	24			-0.3201		
-2	65.6188	1.0095	104.6367	**	**	31			1.4611		
-1	63.0301	0.9697	102.7939	**	**	28			0.6977		
0	56.7640	0.8733	86.3488	**		23			-0.5746		
1	57.2699	0.8811	85.1572	**		24			-0.3201		
2	59.8267	0.9204	87.3209	**		27			0.4433		
3	52.2586	0.8040	69.8721			17			-2.1014		
4	64.2373	0.9883	92.0423	**		30			1.2067		
5	60.7732	0.9350	90.4989	**		19			-1.5925		
6	61.0034	0.9385	91.7259	**		25			-0.0657		
7	77.1304	1.1866	129.8740	**	**	36			2.7335	**	**
8	61.6754	0.9489	105.2951	**	**	23			-0.5746		
9	61.8759	0.9519	102.8385	**	**	23			-0.5746		
10	67.3508	1.0362	100.1250	**	**	29			0.9522		
11	56.3447	0.8668	83.1967			20			-1.3380		
12	55.9135	0.8602	85.0269	**		21			-1.0835		
13	42.4453	0.6530	46.1234			14			-2.8648		
14	46.3499	0.7131	58.8936			15			-2.6103		
15	55.3486	0.8515	70.3513			22			-0.8291		

QUARTER 1, 1994											
DATE	ABS (Et)	ABS (Aver Et)	(X2)	%5 level	%1 level	Times ABS(Eit)>1	SUM	AVERAGE	(t)	%5 level	%1 level
-15	41.5724	0.6396	61.3410			10	916	0.4546	-4.8695		
-14	47.3009	0.7277	72.3044			14			-3.8731		
-13	47.8794	0.7366	63.7643			15			-3.6240		
-12	100.2677	1.5426	241.3744	**	**	38			2.1053	**	
-11	87.5910	1.3476	184.1408	**	**	39			2.3544	**	
-10	93.4121	1.4371	187.3947	**	**	43			3.3508	**	**
-9	83.5103	1.2848	169.1225	**	**	38			2.1053	**	
-8	97.9943	1.5076	207.7447	**	**	43			3.3508	**	**
-7	77.8677	1.1980	141.8209	**	**	29			-0.1366		
-6	65.2668	1.0041	108.4542	**	**	27			-0.6348		
-5	73.4686	1.1303	128.2350	**	**	32			0.6107		
-4	79.1189	1.2172	165.9231	**	**	29			-0.1366		
-3	71.5609	1.1009	124.6593	**	**	34			1.1089		
-2	58.8196	0.9049	81.0918			25			-1.1330		
-1	77.7569	1.1963	123.8702	**	**	36			1.6071		
0	87.8417	1.3514	184.2894	**	**	38			2.1053	**	
1	84.1188	1.2941	176.1986	**	**	31			0.3616		
2	76.3707	1.1749	125.8968	**	**	37			1.8562	**	
3	98.1366	1.5098	230.1577	**	**	42			3.1017	**	**
4	69.8726	1.0750	128.3363	**	**	30			0.1125		
5	57.3934	0.8830	79.6232			24			-1.3821		
6	70.8988	1.0908	110.4912	**	**	35			1.3580		
7	63.9872	0.9844	107.2674	**	**	27			-0.6348		
8	62.5637	0.9625	90.9732	**	**	29			-0.1366		
9	46.9920	0.7230	57.1225			15			-3.6240		
10	66.3312	1.0205	113.2139	**	**	31			0.3616		
11	86.6104	1.3325	182.3937	**	**	36			1.6071		
12	57.7628	0.8887	98.3785	**	**	24			-1.3821		
13	51.7510	0.7962	73.2207			21			-2.1294		
14	59.0561	0.9086	95.4107	**	**	26			-0.8839		
15	53.0612	0.8163	82.7705			18			-2.8767		

QUARTER 2, 1994											
DATE	ABS (Et)	ABS (Aver Et)	(X2)	%5 level	%1 level	Times ABS(Eit)>1	SUM	AVERAGE	(t)	%5 level	%1 level
-15	67.3581	1.0363	108.1461	**	**	28	566	0.2809	2.6886	**	**
-14	52.4425	0.8068	78.4285			18			-0.0712		
-13	53.2271	0.8189	83.0484			18			-0.0712		
-12	49.2881	0.7583	74.9790			16			-0.6232		
-11	58.1644	0.8948	96.4803	**	**	23			1.3087		
-10	49.1694	0.7565	59.9806			17			-0.3472		
-9	36.0075	0.5540	35.5735			14			-1.1751		
-8	58.8032	0.9047	97.5650	**	**	22			1.0327		
-7	53.2156	0.8187	71.0241			19			0.2048		
-6	49.3137	0.7587	66.6019			20			0.4807		
-5	47.7092	0.7340	60.9112			12			-1.7271		
-4	37.2476	0.5730	36.5819			13			-1.4511		
-3	39.6785	0.6104	48.3822			11			-2.0031		
-2	31.9870	0.4921	33.4829			5			-3.6589		
-1	50.8438	0.7822	97.6405	**	**	13			-1.4511		
0	49.4227	0.7603	71.5066			17			-0.3472		
1	67.9083	1.0447	119.3656	**	**	29			2.9645	**	**
2	50.8549	0.7824	69.8812			20			0.4807		
3	50.8393	0.7821	68.0647			18			-0.0712		
4	55.2889	0.8506	84.7596	**		20			0.4807		
5	51.7767	0.7966	85.0817	**		19			0.2048		
6	55.9491	0.8608	87.3921	**		22			1.0327		
7	54.3592	0.8363	75.3913			18			-0.0712		
8	50.9624	0.7840	64.1517			22			1.0327		
9	49.3114	0.7586	92.2847	**		17			-0.3472		
10	58.8970	0.9061	99.7385	**	**	20			0.4807		
11	57.7864	0.8890	84.4351	**		23			1.3087		
12	44.7275	0.6881	52.6258			16			-0.6232		
13	44.6470	0.6869	50.7811			17			-0.3472		
14	53.0929	0.8168	77.1503			19			0.2048		
15	57.0190	0.8772	97.6968	**	**	20			0.4807		

QUARTER 3, 1994											
DATE	ABS (Et)	ABS (Aver Et)	(X2)	%5 level	%1 level	Times ABS(Eit)>1	SUM	AVERAGE	(t)	%5 level	%1 level
-15	42.4690	0.6534	53.5037			13	284	0.1409	1.3683		
-14	30.4701	0.4688	24.1700			5			-1.4833		
-13	36.9579	0.5686	35.8156			9			-0.0575		
-12	36.2617	0.5579	35.9069			12			1.0119		
-11	36.0952	0.5553	39.4453			9			-0.0575		
-10	37.8947	0.5830	41.9164			10			0.2990		
-9	32.5794	0.5012	28.7731			9			-0.0575		
-8	30.2132	0.4648	30.0639			5			-1.4833		
-7	31.1115	0.4786	28.6027			8			-0.4140		
-6	31.3934	0.4830	27.8671			7			-0.7704		
-5	31.4967	0.4846	25.0856			5			-1.4833		
-4	40.7997	0.6277	40.5001			12			1.0119		
-3	36.5225	0.5619	30.8321			11			0.6554		
-2	36.9585	0.5686	40.5317			12			1.0119		
-1	35.9298	0.5528	34.4933			9			-0.0575		
0	45.1871	0.6952	60.3263			13			1.3683		
1	58.9881	0.9075	99.4919	**	**	21			4.2200	**	**
2	32.9824	0.5074	28.1573			7			-0.7704		
3	33.1908	0.5106	31.7965			7			-0.7704		
4	39.0232	0.6004	43.2644			12			1.0119		
5	42.0238	0.6465	48.1975			13			1.3683		
6	31.9998	0.4923	25.8102			8			-0.4140		
7	37.9357	0.5836	40.4956			10			0.2990		
8	33.4785	0.5151	38.3135			10			0.2990		
9	40.0142	0.6156	43.0129			12			1.0119		
10	34.7261	0.5342	32.2047			9			-0.0575		
11	30.7468	0.4730	28.3752			4			-1.8398		
12	31.7668	0.4887	23.1129			5			-1.4833		
13	27.6688	0.4257	19.8242			4			-1.8398		
14	27.1753	0.4181	20.0322			5			-1.4833		
15	32.9392	0.5068	37.7536			8			-0.4140		

QUARTER 4, 1994											
DATE	ABS (Et)	ABS (Aver Et)	(X2)	%5 level	%1 level	Times ABS(Eit)>1	SUM	AVERAGE	(t)	%5 level	%1 level
-15	46.7046	0.7185	63.8126			17	534	0.2650	-0.0635		
-14	42.8815	0.6597	58.7609			14			-0.9066		
-13	40.2331	0.6190	41.0273			14			-0.9066		
-12	37.7441	0.5807	38.8523			9			-2.3118		
-11	41.7020	0.6416	46.5253			14			-0.9066		
-10	47.2204	0.7265	61.8021			15			-0.6255		
-9	39.8228	0.6127	45.8919			16			-0.3445		
-8	40.6864	0.6259	45.0569			11			-1.7497		
-7	40.7108	0.6263	40.2333			12			-1.4687		
-6	49.2971	0.7584	64.0270			17			-0.0635		
-5	49.1125	0.7556	70.1099			13			-1.1876		
-4	50.3067	0.7739	64.0072			19			0.4986		
-3	52.0280	0.8004	78.5229			20			0.7797		
-2	43.9103	0.6755	49.2744			13			-1.1876		
-1	54.9101	0.8448	94.6546	**	**	15			-0.6255		
0	53.0696	0.8165	77.2258			21			1.0607		
1	64.3674	0.9903	100.4223	**	**	25			2.1849	**	
2	47.6244	0.7327	62.1765			17			-0.0635		
3	57.0295	0.8774	95.2016	**	**	20			0.7797		
4	54.4446	0.8376	101.8310	**	**	14			-0.9066		
5	55.4364	0.8529	103.6764	**	**	16			-0.3445		
6	45.3235	0.6973	53.7645			18			0.2176		
7	53.3180	0.8203	77.3480			17			-0.0635		
8	54.8078	0.8432	89.4473	**		14			-0.9066		
9	49.8300	0.7666	69.3030			18			0.2176		
10	58.5162	0.9002	112.1734	**	**	20			0.7797		
11	58.6616	0.9025	96.3403	**	**	21			1.0607		
12	55.0922	0.8476	85.5770	**		18			0.2176		
13	56.1970	0.8646	83.7905	**		23			1.6228		
14	63.6309	0.9789	93.6931	**	**	30			3.5901	**	**
15	56.5080	0.8694	81.5944			23			1.6228		

QUARTER 1, 1995											
DATE	ABS (Et)	ABS (Aver Et)	(X2)	%5 level	%1 level	Times ABS(Eit)>1	SUM	AVERAGE	(t)	%5 level	%1 level
-15	62.2412	0.9576	135.0240	**	**	24	799	0.3965	-0.4499		
-14	53.9643	0.8302	84.0232	**		20			-1.4641		
-13	57.7197	0.8880	90.8024	**	**	22			-0.9570		
-12	67.0049	1.0308	110.1875	**	**	25			-0.1963		
-11	71.1779	1.0950	137.3845	**	**	26			0.0573		
-10	84.3031	1.2970	184.1607	**	**	30			1.0715		
-9	90.4842	1.3921	343.4944	**	**	26			0.0573		
-8	96.4430	1.4837	237.8487	**	**	37			2.8464	**	**
-7	83.8777	1.2904	202.9877	**	**	31			1.3250		
-6	83.7625	1.2887	185.1819	**	**	34			2.0857	**	
-5	95.6989	1.4723	226.4997	**	**	39			3.3535	**	**
-4	62.6356	0.9636	104.5157	**	**	27			0.3108		
-3	52.4828	0.8074	73.6900			20			-1.4641		
-2	77.5215	1.1926	136.6773	**	**	36			2.5928	**	**
-1	59.6529	0.9177	89.5703	**		24			-0.4499		
0	55.6732	0.8565	77.1687			21			-1.2105		
1	68.0175	1.0464	122.6866	**	**	27			0.3108		
2	66.7118	1.0263	135.4398	**	**	28			0.5644		
3	61.3714	0.9442	87.7451	**		28			0.5644		
4	46.5185	0.7157	53.5678			14			-2.9854		
5	57.8000	0.8892	104.6951	**	**	23			-0.7034		
6	58.1775	0.8950	87.8693	**		24			-0.4499		
7	58.0638	0.8933	91.5872	**		23			-0.7034		
8	69.3385	1.0667	166.1000	**	**	27			0.3108		
9	64.0141	0.9848	103.5035	**	**	24			-0.4499		
10	67.5653	1.0395	133.1985	**	**	25			-0.1963		
11	66.2870	1.0198	104.2897	**	**	29			0.8179		
12	59.9480	0.9223	99.6454	**	**	22			-0.9570		
13	62.2500	0.9577	101.9176	**	**	23			-0.7034		
14	58.2067	0.8955	92.3031	**		23			-0.7034		
15	52.0536	0.8008	64.8380			17			-2.2248		

QUARTER 2, 1995											
DATE	ABS (Et)	ABS (Aver Et)	(X2)	%5 level	%1 level	Times ABS(Eit)>1	SUM	AVERAGE	(t)	%5 level	%1 level
-15	40.1087	0.6171	54.5873			13	372	0.1846	0.3197		
-14	47.4628	0.7302	59.2057			15			0.9591		
-13	47.9336	0.7374	64.2812			14			0.6394		
-12	46.7829	0.7197	65.0930			14			0.6394		
-11	50.5116	0.7771	79.6508			20			2.5575	**	**
-10	37.1801	0.5720	47.2412			11			-0.3197		
-9	44.3906	0.6829	49.7692			13			0.3197		
-8	41.4193	0.6372	75.3554			9			-0.9591		
-7	35.4760	0.5458	33.1907			8			-1.2788		
-6	46.7329	0.7190	54.4220			19			2.2378	**	
-5	41.5714	0.6396	44.1637			15			0.9591		
-4	37.5802	0.5782	37.2127			11			-0.3197		
-3	41.8856	0.6444	54.9862			11			-0.3197		
-2	34.5473	0.5315	31.1494			11			-0.3197		
-1	40.1292	0.6174	61.0790			10			-0.6394		
0	36.2199	0.5572	41.9403			9			-0.9591		
1	78.3478	1.2054	168.8596	**	**	31			6.0741	**	**
2	43.9327	0.6759	54.8909			11			-0.3197		
3	44.1266	0.6789	50.1952			15			0.9591		
4	33.2889	0.5121	30.6659			9			-0.9591		
5	40.7154	0.6264	46.2719			14			0.6394		
6	30.9282	0.4758	22.8128			6			-1.9181		
7	32.1039	0.4939	26.4392			6			-1.9181		
8	38.4678	0.5918	40.1860			7			-1.5984		
9	33.6498	0.5177	29.7793			9			-0.9591		
10	36.5981	0.5630	36.1143			9			-0.9591		
11	37.1967	0.5723	34.2891			10			-0.6394		
12	36.2297	0.5574	33.1057			10			-0.6394		
13	36.3507	0.5592	40.6588			11			-0.3197		
14	40.6041	0.6247	50.2682			14			0.6394		
15	34.6750	0.5335	37.1476			7			-1.5984		

QUARTER 3, 1995											
DATE	ABS (Et)	ABS (Aver Et)	(X2)	%5 level	%1 level	Times ABS(Eit)>1	SUM	AVERAGE	(t)	%5 level	%1 level
-15	56.4766	0.8689	105.0605	**	**	19	396	0.1965	1.9433	**	
-14	43.0083	0.6617	56.3512			11			-0.5538		
-13	44.8635	0.6902	77.0835			13			0.0705		
-12	49.3826	0.7597	89.2029	**		17			1.3190		
-11	40.1369	0.6175	45.6286			10			-0.8659		
-10	37.9736	0.5842	39.9550			14			0.3826		
-9	46.7334	0.7190	55.3432			17			1.3190		
-8	54.7002	0.8415	83.6592			21			2.5676	**	**
-7	61.2558	0.9424	102.5601	**	**	21			2.5676	**	**
-6	41.2976	0.6353	58.8158			12			-0.2417		
-5	40.0684	0.6164	42.9806			11			-0.5538		
-4	58.8984	0.9061	115.0641	**	**	21			2.5676	**	**
-3	45.2547	0.6962	69.8245			12			-0.2417		
-2	45.7179	0.7034	60.7000			16			1.0069		
-1	48.8703	0.7519	74.2252			17			1.3190		
0	41.6327	0.6405	67.8944			10			-0.8659		
1	65.4062	1.0062	98.7478	**	**	28			4.7526	**	**
2	38.0656	0.5856	43.6191			12			-0.2417		
3	40.0879	0.6167	43.8340			14			0.3826		
4	40.7281	0.6266	42.4023			12			-0.2417		
5	37.3942	0.5753	46.6172			9			-1.1781		
6	42.4276	0.6527	51.5007			14			0.3826		
7	36.5358	0.5621	38.2070			6			-2.1145		
8	34.5222	0.5311	36.8026			8			-1.4902		
9	32.2457	0.4961	27.1379			9			-1.1781		
10	30.4742	0.4688	29.4533			6			-2.1145		
11	31.9209	0.4911	27.6718			7			-1.8023		
12	37.1114	0.5709	33.1111			11			-0.5538		
13	30.3573	0.4670	24.1110			6			-2.1145		
14	29.8999	0.4600	22.3341			4			-2.7388		
15	35.1625	0.5410	42.2151			8			-1.4902		



QUARTER 4, 1995											
DATE	ABS (Et)	ABS (Aver Et)	(X2)	%5 level	%1 level	Times ABS(Eit)>1	SUM	AVERAGE	(t)	%5 level	%1 level
-15	57.7211	0.8880	92.6451	**		22	684	0.3395	-0.0169		
-14	60.0582	0.9240	81.5332			24			0.5070		
-13	54.6242	0.8404	66.3896			21			-0.2788		
-12	48.7905	0.7506	60.9365			17			-1.3266		
-11	58.8620	0.9056	112.2100	**	**	19			-0.8027		
-10	53.1357	0.8175	75.9155			17			-1.3266		
-9	65.7351	1.0113	98.1647	**	**	25			0.7689		
-8	58.3885	0.8983	88.6260	**		26			1.0309		
-7	50.5477	0.7777	72.5765			20			-0.5408		
-6	65.7116	1.0109	147.0159	**	**	21			-0.2788		
-5	51.2241	0.7881	64.1876			19			-0.8027		
-4	66.0442	1.0161	118.8726	**	**	26			1.0309		
-3	77.8579	1.1978	170.8393	**	**	28			1.5547		
-2	62.7487	0.9654	94.6463	**	**	24			0.5070		
-1	64.6375	0.9944	108.2654	**	**	30			2.0786	**	
0	61.7735	0.9504	111.9959	**	**	22			-0.0169		
1	110.5452	1.7007	347.6401	**	**	36			3.6503	**	**
2	58.9562	0.9070	119.4945	**	**	17			-1.3266		
3	63.0429	0.9699	100.3446	**	**	23			0.2450		
4	68.0623	1.0471	118.5574	**	**	25			0.7689		
5	52.4824	0.8074	70.6479			20			-0.5408		
6	64.4811	0.9920	110.0227	**	**	30			2.0786	**	
7	56.0040	0.8616	72.6699			22			-0.0169		
8	43.1369	0.6636	66.3118			12			-2.6363		
9	56.0137	0.8617	92.8477	**		21			-0.2788		
10	59.3980	0.9138	99.4113	**	**	19			-0.8027		
11	66.0525	1.0162	126.4871	**	**	26			1.0309		
12	53.4195	0.8218	70.7570			21			-0.2788		
13	57.3009	0.8816	77.9800			21			-0.2788		
14	50.8683	0.7826	87.0531	**		16			-1.5885		
15	40.0989	0.6169	45.6576			14			-2.1124		

**APPENDIX C: RESULTS OF THE INFORMATION CONTENT TEST:  
TRADING VOLUME SURROUNDING ACCOUNTING  
ANNOUNCEMENTS**

QUARTER 4, 1992											
DATE	AVER (Uit)	ST DEV	(t)	%5 level	%1 level	Times Uit>1	SUM	AVERAGE	(Z)	%5 level	%1 level
-15	-0.0511	0.9664	-0.3035			4	121	0.1148	0.0521		
-14	0.2051	0.8707	1.3529			8			2.2040	**	
-13	-0.2255	0.8516	-1.5209			3			-0.4859		
-12	0.1062	0.7500	0.8132			4			0.0521		
-11	-0.1282	0.8095	-0.9099			1			-1.5619		
-10	-0.0939	1.0147	-0.5314			5			0.5900		
-9	-0.0316	0.7062	-0.2572			2			-1.0239		
-8	0.0345	0.9559	0.2071			5			0.5900		
-7	0.1200	0.8701	0.7923			5			0.5900		
-6	0.0128	0.7881	0.0935			4			0.0521		
-5	-0.2305	0.7920	-1.6718			1			-1.5619		
-4	-0.1867	0.6321	-1.6963			1			-1.5619		
-3	0.1224	0.9652	0.7284			6			1.1280		
-2	-0.0907	0.8737	-0.5964			3			-0.4859		
-1	-0.0835	0.8304	-0.5774			2			-1.0239		
0	-0.1913	0.8830	-1.2443			3			-0.4859		
1	0.3683	1.2152	1.7412	**		9			2.7420	**	**
2	0.2115	0.9427	1.2891			3			-0.4859		
3	-0.3230	1.1224	-1.6530			5			0.5900		
4	-0.0708	1.0483	-0.3880			2			-1.0239		
5	-0.0494	0.9689	-0.2927			5			0.5900		
6	-0.2050	0.9383	-1.2550			2			-1.0239		
7	0.0826	0.9086	0.5221			6			1.1280		
8	0.1934	0.9068	1.2251			5			0.5900		
9	-0.0009	1.2870	-0.0042			3			-0.4859		
10	0.0053	1.4747	0.0207			4			0.0521		
11	-0.0548	1.2388	-0.2543			4			0.0521		
12	0.3242	0.8594	2.1674	**		9			2.7420	**	**
13	0.1245	0.7770	0.9208			4			0.0521		
14	-0.3539	1.0616	-1.9152			2			-1.0239		
15	-0.0797	0.9158	-0.4997			1			-1.5619		

QUARTER 1, 1993											
DATE	AVER (Uit)	ST DEV	(t)	%5 level	%1 level	Times Uit>1	SUM	AVERAGE	(Z)	%5 level	%1 level
-15	-0.0546	0.9620	-0.3257			4	142	0.1347	-0.2917		
-14	0.1766	0.9625	1.0537			7			1.2152		
-13	0.3203	0.7836	2.3477	**		6			0.7129		
-12	0.0144	0.8964	0.0924			5			0.2106		
-11	-0.0255	0.9878	-0.1483			6			0.7129		
-10	-0.3393	0.9269	-2.1032			1			-1.7985		
-9	-0.0091	0.7952	-0.0655			2			-1.2962		
-8	0.2875	0.9301	1.7756	**		6			0.7129		
-7	-0.0053	0.7877	-0.0383			5			0.2106		
-6	0.2591	0.6401	2.3252	**		7			1.2152		
-5	0.0105	0.7276	0.0831			3			-0.7940		
-4	0.0946	0.8307	0.6542			4			-0.2917		
-3	-0.2723	0.8538	-1.8324			2			-1.2962		
-2	0.0359	0.9591	0.2152			6			0.7129		
-1	0.0187	0.9431	0.1140			6			0.7129		
0	-0.0529	0.9278	-0.3277			4			-0.2917		
1	-0.4719	1.0017	-2.7061			1			-1.7985		
2	0.1053	1.0855	0.5571			9			2.2198	**	
3	0.0679	1.1510	0.3388			5			0.2106		
4	0.0777	1.1996	0.3721			7			1.2152		
5	-0.0612	0.8945	-0.3928			1			-1.7985		
6	-0.1119	0.7827	-0.8211			3			-0.7940		
7	0.1454	0.7132	1.1716			3			-0.7940		
8	-0.0848	0.7647	-0.6373			4			-0.2917		
9	0.0278	0.9345	0.1709			5			0.2106		
10	-0.5105	0.8055	-3.6408			1			-1.7985		
11	0.3410	0.8603	2.2767	**		8			1.7175	**	
12	-0.0950	0.8895	-0.6137			2			-1.2962		
13	0.0367	0.8527	0.2471			5			0.2106		
14	0.3796	1.1078	1.9687	**		9			2.2198	**	
15	-0.0309	1.5230	-0.1167			5			0.2106		

QUARTER 2, 1993											
DATE	AVER (Uit)	ST DEV	(t)	%5 level	%1 level	Times Uit>1	SUM	AVERAGE	(Z)	%5 level	%1 level
-15	-0.1420	0.7637	-1.0679			3	109	0.1034	-0.2907		
-14	0.1236	0.6649	1.0677			3			-0.2907		
-13	-0.1599	0.7312	-1.2560			1			-1.4171		
-12	-0.1310	0.7316	-1.0287			2			-0.8539		
-11	0.1969	0.7290	1.5513			4			0.2725		
-10	-0.1772	0.6213	-1.6380			1			-1.4171		
-9	0.1708	0.8832	1.1111			6			1.3989		
-8	-0.0865	0.7826	-0.6351			4			0.2725		
-7	0.0396	0.6616	0.3441			1			-1.4171		
-6	-0.0852	0.6201	-0.7895			1			-1.4171		
-5	0.0871	0.9848	0.5078			4			0.2725		
-4	0.0825	0.7543	0.6283			5			0.8357		
-3	0.0972	0.8855	0.6304			4			0.2725		
-2	0.0351	0.7395	0.2725			2			-0.8539		
-1	-0.1836	0.8599	-1.2263			2			-0.8539		
0	-0.1219	0.9543	-0.7340			3			-0.2907		
1	0.2714	1.0646	1.4645			6			1.3989		
2	-0.0303	1.1480	-0.1515			5			0.8357		
3	-0.1736	0.8202	-1.2161			3			-0.2907		
4	0.1348	0.6940	1.1158			5			0.8357		
5	0.0594	0.7643	0.4463			2			-0.8539		
6	-0.0969	0.8803	-0.6322			4			0.2725		
7	0.3144	0.7596	2.3780	**		7			1.9622	**	
8	-0.2343	0.6917	-1.9455			1			-1.4171		
9	0.2470	0.9325	1.5217			8			2.5254	**	**
10	-0.1098	0.9274	-0.6802			3			-0.2907		
11	0.0887	0.7879	0.6467			5			0.8357		
12	-0.2259	0.5902	-2.1989			2			-0.8539		
13	0.1168	0.7181	0.9341			4			0.2725		
14	0.1197	0.7515	0.9150			4			0.2725		
15	0.0839	0.7988	0.6031			4			0.2725		

QUARTER 3, 1993											
DATE	AVER (Uit)	ST DEV	(t)	%5 level	%1 level	Times Uit>1	SUM	AVERAGE	(Z)	%5 level	%1 level
-15	-0.0230	0.9046	-0.1460			6	124	0.1176	1.0646		
-14	-0.3040	0.8083	-2.1601			2			-1.0646		
-13	0.0019	0.8900	0.0123			4			0.0000		
-12	0.3327	0.9033	2.1160	**		7			1.5969		
-11	-0.2169	0.8483	-1.4688			2			-1.0646		
-10	-0.0421	0.7157	-0.3377			2			-1.0646		
-9	0.0323	0.7334	0.2529			3			-0.5323		
-8	-0.0556	0.7098	-0.4497			3			-0.5323		
-7	-0.0133	0.7951	-0.0958			3			-0.5323		
-6	0.1039	0.8153	0.7319			5			0.5323		
-5	0.0204	0.8692	0.1346			3			-0.5323		
-4	0.0216	0.7199	0.1724			3			-0.5323		
-3	-0.0319	0.8439	-0.2174			4			0.0000		
-2	-0.1597	1.0175	-0.9014			3			-0.5323		
-1	-0.3414	1.7843	-1.0990			2			-1.0646		
0	0.2395	1.6063	0.8566			7			1.5969		
1	0.1005	1.0512	0.5491			5			0.5323		
2	0.0443	1.3618	0.1867			6			1.0646		
3	-0.2169	1.2659	-0.9844			3			-0.5323		
4	-0.0826	1.1915	-0.3980			5			0.5323		
5	0.1233	0.8589	0.8248			5			0.5323		
6	-0.2178	0.9549	-1.3101			4			0.0000		
7	0.1194	1.0309	0.6853			6			1.0646		
8	0.0483	0.8562	0.3243			2			-1.0646		
9	0.1125	1.3719	0.4712			3			-0.5323		
10	-0.3677	1.3911	-1.5186			3			-0.5323		
11	0.0862	0.9550	0.5183			5			0.5323		
12	0.3001	1.0675	1.6148			6			1.0646		
13	-0.3501	0.9119	-2.2055			2			-1.0646		
14	0.2109	0.7991	1.5159			6			1.0646		
15	-0.0555	0.8376	-0.3806			4			0.0000		

QUARTER 4, 1993											
DATE	AVER (Uit)	ST DEV	(t)	%5 level	%1 level	Times Uit>1	SUM	AVERAGE	(Z)	%5 level	%1 level
-15	-0.0788	1.6654	-0.2719			7	174	0.1651	0.6408		
-14	0.1464	1.6446	0.5113			6			0.1788		
-13	-0.2543	1.1765	-1.2415			3			-1.2070		
-12	0.0507	1.5603	0.1868			9			1.5646		
-11	0.2273	1.8809	0.6943			8			1.1027		
-10	-0.0502	1.3210	-0.2185			5			-0.2831		
-9	-0.2306	1.0274	-1.2893			4			-0.7451		
-8	-0.0904	1.0801	-0.4807			5			-0.2831		
-7	0.0197	1.4015	0.0806			5			-0.2831		
-6	0.0931	1.1068	0.4832			8			1.1027		
-5	-0.0323	0.8504	-0.2179			4			-0.7451		
-4	-0.2122	0.9122	-1.3362			2			-1.6689		
-3	0.4285	0.8554	2.8775	**	**	10			2.0266	**	
-2	-0.3364	1.1526	-1.6763			4			-0.7451		
-1	0.1053	1.3457	0.4494			5			-0.2831		
0	0.2203	1.1153	1.1345			6			0.1788		
1	-0.0744	1.2408	-0.3443			7			0.6408		
2	0.1039	0.9388	0.6356			4			-0.7451		
3	-0.0857	1.0212	-0.4820			4			-0.7451		
4	-0.3006	0.8961	-1.9269			2			-1.6689		
5	-0.0248	1.1969	-0.1190			4			-0.7451		
6	-0.3276	1.8576	-1.0130			7			0.6408		
7	0.3634	1.5259	1.3683			8			1.1027		
8	0.2113	1.4258	0.8513			6			0.1788		
9	-0.5950	1.1568	-2.9548			2			-1.6689		
10	0.0143	1.2783	0.0644			7			0.6408		
11	0.1895	1.0334	1.0533			8			1.1027		
12	0.1068	0.8680	0.7068			6			0.1788		
13	0.0688	0.9018	0.4381			5			-0.2831		
14	-0.0210	1.2269	-0.0985			7			0.6408		
15	0.2593	1.1028	1.3505			6			0.1788		

QUARTER 1, 1994											
DATE	AVER (Uit)	ST DEV	(t)	%5 level	%1 level	Times Uit>1	SUM	AVERAGE	(Z)	%5 level	%1 level
-15	0.3834	0.8686	2.5360	**	**	8	180	0.1708	0.9997		
-14	0.1128	0.9924	0.6527			5			-0.3675		
-13	-0.3096	1.3873	-1.2821			4			-0.8233		
-12	-0.3675	1.5604	-1.3528			8			0.9997		
-11	0.3008	1.6596	1.0413			10			1.9111	**	
-10	0.1614	0.9328	0.9937			6			0.0882		
-9	-0.1707	0.7980	-1.2290			1			-2.1905		
-8	-0.1496	1.1178	-0.7689			5			-0.3675		
-7	0.3942	1.2364	1.8315	**		8			0.9997		
-6	-0.5071	1.2277	-2.3730			0			-2.6462		
-5	-0.0155	1.2618	-0.0705			6			0.0882		
-4	0.4694	1.5319	1.7603	**		11			2.3689	**	**
-3	-0.0074	1.5996	-0.0266			7			0.5439		
-2	0.5122	1.2618	2.3319	**		8			0.9997		
-1	-0.1816	1.5071	-0.6920			8			0.9997		
0	-0.1791	1.4040	-0.7328			4			-0.8233		
1	-0.5178	1.8988	-1.5665			6			0.0882		
2	0.4124	2.0377	1.1626			8			0.9997		
3	0.0070	1.5458	0.0260			8			0.9997		
4	0.0642	1.6731	0.2206			6			0.0882		
5	-0.4046	1.2930	-1.7977			2			-1.7347		
6	0.4083	1.2116	1.9357	**		10			1.9111		
7	-0.2309	1.3081	-1.0141			2			-1.7347		
8	0.0775	0.9737	0.4570			5			-0.3675		
9	0.1906	1.4988	0.7305			8			0.9997		
10	-0.4545	1.8248	-1.4308			4			-0.8233		
11	0.0982	0.9663	0.5837			5			-0.3675		
12	-0.2405	0.7783	-1.7751			3			-1.2790		
13	0.0737	1.0603	0.3992			4			-0.8233		
14	0.1337	1.0846	0.7079			5			-0.3675		
15	-0.4133	1.4554	-1.6314			5			-0.3675		



QUARTER 2, 1994											
DATE	AVER (Uit)	ST DEV	(t)	%5 level	%1 level	Times Uit>1	SUM	AVERAGE	(Z)	%5 level	%1 level
-15	-0.7261	1.7505	-2.3829			4	113	0.1072	0.1967		
-14	0.0951	0.9173	0.5956			4			0.1967		
-13	0.0104	1.7105	0.0350			4			0.1967		
-12	-0.3204	1.5602	-1.1797			3			-0.3576		
-11	0.1313	1.0887	0.6930			6			1.3054		
-10	-0.2331	0.8456	-1.5838			1			-1.4663		
-9	-0.2303	0.7416	-1.7837			1			-1.4663		
-8	-0.0357	0.5797	-0.3542			2			-0.9120		
-7	0.2235	0.9117	1.4085			4			0.1967		
-6	-0.0780	1.1193	-0.4006			3			-0.3576		
-5	-0.2784	0.9691	-1.6500			2			-0.9120		
-4	0.0988	1.1091	0.5116			5			0.7510		
-3	-0.0348	0.5509	-0.3631			1			-1.4663		
-2	-0.0264	0.8401	-0.1803			1			-1.4663		
-1	0.1924	0.8556	1.2916			5			0.7510		
0	0.1137	1.1865	0.5506			6			1.3054		
1	0.2305	0.9094	1.4559			6			1.3054		
2	-0.4210	0.8464	-2.8574			2			-0.9120		
3	0.3197	0.8500	2.1604	**		8			2.4140	**	**
4	-0.2158	1.0660	-1.1627			4			0.1967		
5	0.0744	0.9886	0.4324			4			0.1967		
6	0.1486	0.8481	1.0069			6			1.3054		
7	0.0116	0.7033	0.0945			3			-0.3576		
8	-0.0782	0.8456	-0.5315			4			0.1967		
9	0.3391	0.6876	2.9178	**	**	7			1.8597	**	
10	-0.1302	0.8186	-0.9139			1			-1.4663		
11	-0.0371	0.6898	-0.3094			3			-0.3576		
12	-0.0193	0.8025	-0.1383			5			0.7510		
13	0.1911	0.7237	1.5168			3			-0.3576		
14	-0.1510	0.6418	-1.3517			2			-0.9120		
15	-0.1036	0.6099	-0.9755			3			-0.3576		

QUARTER 3, 1994											
DATE	AVER (Uit)	ST DEV	(t)	%5 level	%1 level	Times Uit>1	SUM	AVERAGE	(Z)	%5 level	%1 level
-15	0.1990	0.8770	1.3033			4	109	0.1034	0.2725		
-14	0.0367	0.8785	0.2398			4			0.2725		
-13	-0.0616	1.1648	-0.3037			2			-0.8539		
-12	0.1814	0.8045	1.2950			3			-0.2907		
-11	-0.0743	0.7128	-0.5988			3			-0.2907		
-10	-0.0631	0.7387	-0.4907			2			-0.8539		
-9	-0.1817	0.6896	-1.5134			0			-1.9803		
-8	-0.1395	0.7642	-1.0488			2			-0.8539		
-7	-0.0711	0.9199	-0.4437			4			0.2725		
-6	0.0987	0.7327	0.7742			4			0.2725		
-5	0.1548	0.7440	1.1954			3			-0.2907		
-4	-0.0934	0.8582	-0.6251			3			-0.2907		
-3	-0.2294	0.6927	-1.9025			0			-1.9803		
-2	-0.0193	0.6883	-0.1611			4			0.2725		
-1	-0.2002	0.5560	-2.0683			1			-1.4171		
0	0.0555	0.6888	0.4627			3			-0.2907		
1	0.5166	0.7004	4.2367	**	**	8			2.5254	**	**
2	-0.6747	0.7095	-5.4621			0			-1.9803		
3	-0.0156	0.8596	-0.1039			3			-0.2907		
4	0.2336	0.9943	1.3495			6			1.3989		
5	-0.0685	0.9042	-0.4355			3			-0.2907		
6	0.2916	1.0556	1.5871			8			2.5254	**	**
7	-0.1777	0.9062	-1.1264			3			-0.2907		
8	0.3887	1.0791	2.0689			9			3.0886	**	**
9	0.0262	1.0419	0.1446			4			0.2725		
10	-0.1744	0.9124	-1.0978			1			-1.4171		
11	0.0953	1.0750	0.5094			6			1.3989		
12	0.0152	0.9400	0.0929			4			0.2725		
13	-0.1012	0.8121	-0.7158			2			-0.8539		
14	0.1135	0.9169	0.7108			5			0.8357		
15	0.1449	0.7260	1.1466			5			0.8357		

QUARTER 4, 1994											
DATE	AVER (Uit)	ST DEV	(t)	%5 level	%1 level	Times Uit>1	SUM	AVERAGE	(Z)	%5 level	%1 level
-15	0.1903	1.0729	1.0191			9	206	0.1954	1.0184		
-14	-0.0267	1.0820	-0.1417			6			-0.2790		
-13	0.1651	1.2181	0.7787			7			0.1535		
-12	-0.1705	1.1396	-0.8594			6			-0.2790		
-11	0.1648	0.8661	1.0932			5			-0.7115		
-10	-0.1600	1.0740	-0.8559			5			-0.7115		
-9	-0.0493	1.4493	-0.1953			5			-0.7115		
-8	-0.2232	1.3493	-0.9504			6			-0.2790		
-7	0.1410	1.2606	0.6424			7			0.1535		
-6	0.3272	1.2084	1.5553			11			1.8834	**	
-5	0.1018	1.2695	0.4607			7			0.1535		
-4	0.1040	1.1095	0.5384			4			-1.1440		
-3	-0.1025	1.4743	-0.3996			6			-0.2790		
-2	0.0185	1.0674	0.0995			4			-1.1440		
-1	0.2087	1.2584	0.9529			10			1.4509		
0	-0.0801	1.3746	-0.3347			5			-0.7115		
1	-0.0044	1.1107	-0.0229			6			-0.2790		
2	-0.2150	1.1361	-1.0874			5			-0.7115		
3	0.3682	1.2849	1.6461			10			1.4509		
4	-0.0538	1.2383	-0.2495			9			1.0184		
5	-0.1122	1.2472	-0.5167			5			-0.7115		
6	0.2191	1.2601	0.9991			10			1.4509		
7	-0.1289	1.2595	-0.5879			5			-0.7115		
8	0.0553	1.1475	0.2769			7			0.1535		
9	0.0799	1.0630	0.4316			5			-0.7115		
10	0.0063	0.6898	0.0521			4			-1.1440		
11	-0.0288	1.1700	-0.1415			7			0.1535		
12	0.0252	1.1634	0.1244			6			-0.2790		
13	0.4838	1.4266	1.9482	**		15			3.6133	**	**
14	-0.1341	1.5155	-0.5085			4			-1.1440		
15	-0.0896	1.0214	-0.5039			5			-0.7115		

QUARTER 1, 1995											
DATE	AVER (Uit)	ST DEV	(t)	%5 level	%1 level	Times Uit>1	SUM	AVERAGE	(Z)	%5 level	%1 level
-15	-0.1895	0.8666	-1.2561			2	133	0.1262	-1.1829		
-14	-0.3855	1.1323	-1.9558			1			-1.6994		
-13	-0.1381	0.8178	-0.9700			3			-0.6664		
-12	0.3728	1.4932	1.4342			9			2.4324	**	**
-11	0.2139	1.0669	1.1519			6			0.8830		
-10	-0.4776	2.1475	-1.2775			6			0.8830		
-9	0.3900	1.7374	1.2895			4			-0.1499		
-8	0.1036	0.9084	0.6550			6			0.8830		
-7	0.0529	0.7939	0.3829			4			-0.1499		
-6	-0.1047	1.2444	-0.4832			3			-0.6664		
-5	-0.0736	0.5729	-0.7383			2			-1.1829		
-4	-0.1350	1.0827	-0.7163			2			-1.1829		
-3	-0.2506	1.0752	-1.3387			2			-1.1829		
-2	0.1272	1.1310	0.6460			6			0.8830		
-1	-0.2843	0.9260	-1.7639			2			-1.1829		
0	-0.0318	0.6315	-0.2895			2			-1.1829		
1	-0.3285	0.7558	-2.4967			1			-1.6994		
2	0.0317	0.7817	0.2329			5			0.3665		
3	0.5579	0.6071	5.2787	**	**	10			2.9489	**	**
4	-0.2713	0.7393	-2.1085			0			-2.2158		
5	-0.4696	1.1731	-2.2998			3			-0.6664		
6	-0.1156	1.0921	-0.6081			4			-0.1499		
7	0.1763	1.0546	0.9604			8			1.9159	**	
8	0.2097	0.9745	1.2360			7			1.3995		
9	-0.4117	1.0259	-2.3053			1			-1.6994		
10	-0.0460	0.9636	-0.2741			4			-0.1499		
11	0.4262	1.0914	2.2434	**		8			1.9159	**	
12	-0.2207	0.7552	-1.6792			2			-1.1829		
13	0.0036	1.0434	0.0201			6			0.8830		
14	0.1518	1.1230	0.7763			9			2.4324	**	**
15	-0.1830	1.0571	-0.9944			5			0.3665		

QUARTER 2, 1995											
DATE	AVER (Uit)	ST DEV	(t)	%5 level	%1 level	Times Uit>1	SUM	AVERAGE	(Z)	%5 level	%1 level
-15	0.0783	0.7739	0.5812			5	161	0.1528	-0.0923		
-14	-0.1241	1.2213	-0.5837			5			-0.0923		
-13	0.4229	1.0011	2.4269	**		8			1.3379		
-12	0.1005	0.7175	0.8045			4			-0.5690		
-11	0.2517	1.2035	1.2015			10			2.2913	**	
-10	-0.2430	0.8608	-1.6216			3			-1.0457		
-9	0.0505	1.1407	0.2542			7			0.8612		
-8	-0.4093	0.8768	-2.6820			2			-1.5224		
-7	-0.3638	0.9234	-2.2629			3			-1.0457		
-6	0.1248	1.0345	0.6930			7			0.8612		
-5	0.0609	1.0017	0.3495			8			1.3379		
-4	-0.1988	1.0456	-1.0924			4			-0.5690		
-3	-0.0408	0.6778	-0.3458			3			-1.0457		
-2	0.0042	0.7982	0.0302			4			-0.5690		
-1	-0.0235	1.0577	-0.1278			5			-0.0923		
0	-0.0724	0.6499	-0.6396			1			-1.9991		
1	0.6136	0.8704	4.0498	**	**	11			2.7680	**	**
2	-0.4284	0.7503	-3.2794			0			-2.4759		
3	-0.1838	0.6867	-1.5376			1			-1.9991		
4	-0.0347	0.9460	-0.2106			4			-0.5690		
5	-0.1590	1.2105	-0.7546			5			-0.0923		
6	0.0070	0.8974	0.0446			4			-0.5690		
7	-0.1904	0.8015	-1.3649			3			-1.0457		
8	0.2980	0.9070	1.8874	**		7			0.8612		
9	0.0533	0.8020	0.3818			4			-0.5690		
10	-0.0368	1.0191	-0.2072			6			0.3845		
11	0.3661	1.2157	1.7298	**		12			3.2448	**	**
12	-0.5006	1.0552	-2.7253			3			-1.0457		
13	0.0389	0.9540	0.2340			5			-0.0923		
14	-0.0090	1.4050	-0.0368			8			1.3379		
15	0.3203	1.2269	1.4998			9			1.8146	**	

QUARTER 3, 1995											
DATE	AVER (Uit)	ST DEV	(t)	%5 level	%1 level	Times Uit>1	SUM	AVERAGE	(Z)	%5 level	%1 level
-15	0.1598	1.1251	0.8161			7	165	0.1585	0.7917		
-14	-0.5639	1.0738	-3.0168			3			-1.0962		
-13	-0.0191	0.8724	-0.1258			4			-0.6242		
-12	0.2060	1.2632	0.9368			9			1.7356	**	
-11	-0.0507	0.9004	-0.3234			3			-1.0962		
-10	-0.3186	1.2489	-1.4655			6			0.3197		
-9	0.4809	1.2623	2.1886	**		17			5.5113	**	**
-8	0.1864	1.3506	0.7927			9			1.7356	**	
-7	0.2668	0.9581	1.5996			9			1.7356	**	
-6	-0.3142	1.1085	-1.6283			6			0.3197		
-5	-0.4074	1.0675	-2.1921			4			-0.6242		
-4	0.5376	1.2004	2.5727	**	**	10			2.2076	**	
-3	-0.3065	1.0888	-1.6173			5			-0.1522		
-2	-0.3555	0.9908	-2.0610			2			-1.5681		
-1	-0.0195	1.2350	-0.0905			6			0.3197		
0	-0.1682	1.0648	-0.9073			3			-1.0962		
1	0.1498	0.9875	0.8712			5			-0.1522		
2	-0.1604	1.1038	-0.8350			3			-1.0962		
3	0.0201	0.9436	0.1225			5			-0.1522		
4	-0.0461	0.7904	-0.3348			2			-1.5681		
5	-0.0403	0.9982	-0.2318			3			-1.0962		
6	-0.0207	1.0938	-0.1088			7			0.7917		
7	-0.3233	0.9769	-1.9015			3			-1.0962		
8	0.5171	0.7662	3.8773	**	**	9			1.7356	**	
9	-0.3695	0.9661	-2.1969			2			-1.5681		
10	-0.4417	1.1429	-2.2202			1			-2.0401		
11	-0.1539	0.7918	-1.1164			2			-1.5681		
12	0.1543	0.6861	1.2917			3			-1.0962		
13	0.2291	0.9268	1.4201			7			0.7917		
14	0.0377	0.9334	0.2321			5			-0.1522		
15	-0.3268	1.1534	-1.6277			5			-0.1522		

QUARTER 4, 1995											
DATE	AVER (Uit)	ST DEV	(t)	%5 level	%1 level	Times Uit>1	SUM	AVERAGE	(Z)	%5 level	%1 level
-15	-0.0301	1.0982	-0.1574			5	161	0.1528	-0.0923		
-14	-0.0308	1.1686	-0.1513			4			-0.5690		
-13	0.2687	1.0334	1.4940			5			-0.0923		
-12	-0.0715	1.1642	-0.3529			7			0.8612		
-11	0.0901	1.1322	0.4573			8			1.3379		
-10	-0.0630	1.3124	-0.2758			5			-0.0923		
-9	0.1728	1.0658	0.9312			5			-0.0923		
-8	0.3443	0.9170	2.1571	**		6			0.3845		
-7	-0.2423	0.8455	-1.6464			4			-0.5690		
-6	-0.0849	0.8886	-0.5486			4			-0.5690		
-5	0.2125	1.1623	1.0504			6			0.3845		
-4	0.1385	1.0707	0.7429			7			0.8612		
-3	0.1177	0.9291	0.7275			4			-0.5690		
-2	-0.3725	0.9602	-2.2286			5			-0.0923		
-1	0.0520	0.8053	0.3708			3			-1.0457		
0	-0.1102	0.8523	-0.7428			2			-1.5224		
1	0.2000	0.8460	1.3582			6			0.3845		
2	-0.4972	0.7912	-3.6102			0			-2.4759		
3	-0.0870	0.8975	-0.5568			2			-1.5224		
4	0.1263	1.0409	0.6971			5			-0.0923		
5	0.1035	0.6751	0.8803			4			-0.5690		
6	0.0050	1.0473	0.0272			9			1.8146	**	
7	0.1550	1.0362	0.8592			9			1.8146	**	
8	-0.4030	1.1842	-1.9552			5			-0.0923		
9	0.1841	1.1244	0.9404			7			0.8612		
10	0.2347	0.8107	1.6628			8			1.3379		
11	0.2033	1.0017	1.1657			5			-0.0923		
12	-0.0642	1.1868	-0.3107			7			0.8612		
13	-0.2217	1.1524	-1.1049			7			0.8612		
14	-0.1326	1.1594	-0.6572			4			-0.5690		
15	-0.1433	0.8196	-1.0043			3			-1.0457		

**APPENDIX D: RESULTS OF THE MARKET EFFICIENCY TEST**



QUARTER 4,1992						
DATE	BAD NEWS	CUM BAD NEWS	GOOD NEWS	CUM GOOD NEWS	COMP NEWS	CUM COMP NEWS
-15	0.0029	0.0029	-0.0094	-0.0094	-0.0080	-0.0080
-14	-0.0103	-0.0073	-0.0016	-0.0110	0.0011	-0.0069
-13	-0.0201	-0.0274	0.0005	-0.0105	0.0049	-0.0021
-12	-0.0126	-0.0400	0.0054	-0.0052	0.0070	0.0049
-11	0.0033	-0.0367	0.0053	0.0001	0.0034	0.0083
-10	0.0014	-0.0353	0.0016	0.0017	0.0009	0.0092
-9	0.0017	-0.0336	0.0015	0.0032	0.0008	0.0099
-8	0.0085	-0.0251	-0.0045	-0.0013	-0.0054	0.0045
-7	-0.0009	-0.0259	-0.0048	-0.0061	-0.0036	0.0010
-6	0.0050	-0.0209	-0.0027	-0.0088	-0.0032	-0.0022
-5	0.0009	-0.0200	-0.0063	-0.0151	-0.0051	-0.0073
-4	0.0130	-0.0070	-0.0020	-0.0171	-0.0045	-0.0118
-3	-0.0178	-0.0248	-0.0012	-0.0183	0.0030	-0.0087
-2	-0.0096	-0.0344	0.0038	-0.0145	0.0051	-0.0037
-1	-0.0027	-0.0371	-0.0030	-0.0176	-0.0017	-0.0054
0	0.0013	-0.0358	0.0040	-0.0135	0.0028	-0.0026
1	0.0273	-0.0086	-0.0069	-0.0204	-0.0114	-0.0140
2	-0.0074	-0.0160	-0.0038	-0.0243	-0.0013	-0.0153
3	0.0069	-0.0091	0.0036	-0.0207	0.0013	-0.0140
4	-0.0149	-0.0241	0.0061	-0.0146	0.0081	-0.0060
5	0.0043	-0.0197	-0.0014	-0.0160	-0.0021	-0.0081
6	-0.0074	-0.0271	0.0021	-0.0139	0.0033	-0.0048
7	0.0050	-0.0221	-0.0030	-0.0169	-0.0034	-0.0082
8	-0.0025	-0.0246	-0.0016	-0.0184	-0.0007	-0.0089
9	0.0033	-0.0214	0.0006	-0.0178	-0.0003	-0.0091
10	-0.0022	-0.0236	0.0054	-0.0125	0.0047	-0.0045
11	0.0010	-0.0226	-0.0024	-0.0149	-0.0021	-0.0065
12	0.0009	-0.0217	-0.0003	-0.0152	-0.0004	-0.0070
13	-0.0093	-0.0310	0.0002	-0.0150	0.0022	-0.0048
14	0.0008	-0.0302	0.0016	-0.0135	0.0010	-0.0038
15	-0.0066	-0.0367	-0.0046	-0.0180	-0.0021	-0.0059

QUARTER 1,1993						
DATE	BAD NEWS	CUM BAD NEWS	GOOD NEWS	CUM GOOD NEWS	COMP NEWS	CUM COMP NEWS
-15	-0.0030	-0.0030	-0.0011	-0.0011	0.0003	0.0003
-14	-0.0059	-0.0089	-0.0018	-0.0029	0.0008	0.0011
-13	-0.0013	-0.0102	-0.0021	-0.0050	-0.0009	0.0001
-12	0.0020	-0.0081	0.0027	-0.0023	0.0011	0.0012
-11	0.0030	-0.0051	-0.0023	-0.0046	-0.0025	-0.0013
-10	0.0004	-0.0047	0.0029	-0.0017	0.0018	0.0005
-9	0.0049	0.0001	0.0045	0.0028	0.0013	0.0018
-8	0.0040	0.0041	0.0074	0.0101	0.0035	0.0053
-7	0.0021	0.0062	-0.0020	0.0081	-0.0020	0.0033
-6	0.0016	0.0078	0.0003	0.0084	-0.0003	0.0029
-5	-0.0073	0.0005	-0.0021	0.0063	0.0011	0.0040
-4	-0.0068	-0.0063	-0.0066	-0.0003	-0.0021	0.0019
-3	-0.0036	-0.0099	-0.0040	-0.0043	-0.0015	0.0005
-2	-0.0031	-0.0129	-0.0004	-0.0047	0.0008	0.0012
-1	-0.0001	-0.0131	0.0034	-0.0014	0.0023	0.0035
0	0.0003	-0.0127	0.0025	0.0011	0.0015	0.0051
1	0.0172	0.0045	0.0077	0.0089	-0.0007	0.0043
2	0.0070	0.0115	0.0034	0.0123	-0.0001	0.0042
3	-0.0012	0.0103	0.0006	0.0129	0.0008	0.0051
4	-0.0054	0.0049	-0.0036	0.0093	-0.0006	0.0045
5	-0.0110	-0.0061	0.0021	0.0114	0.0051	0.0096
6	-0.0143	-0.0204	-0.0028	0.0085	0.0030	0.0126
7	-0.0047	-0.0251	-0.0005	0.0080	0.0012	0.0138
8	0.0013	-0.0239	0.0013	0.0093	0.0005	0.0143
9	-0.0015	-0.0254	-0.0004	0.0089	0.0002	0.0145
10	0.0015	-0.0239	-0.0026	0.0063	-0.0022	0.0123
11	-0.0032	-0.0271	0.0035	0.0098	0.0034	0.0157
12	0.0018	-0.0254	0.0025	0.0123	0.0010	0.0167
13	-0.0014	-0.0268	0.0031	0.0154	0.0025	0.0193
14	-0.0012	-0.0279	0.0036	0.0191	0.0028	0.0221
15	-0.0069	-0.0348	0.0006	0.0197	0.0027	0.0248

QUARTER 2, 1993						
DATE	BAD NEWS	CUM BAD NEWS	GOOD NEWS	CUM GOOD NEWS	COMP NEWS	CUM COMP NEWS
-15	0.0026	0.0026	-0.0024	-0.0024	-0.0024	-0.0024
-14	-0.0098	-0.0072	-0.0028	-0.0052	-0.0006	-0.0031
-13	0.0021	-0.0051	-0.0035	-0.0088	-0.0033	-0.0064
-12	-0.0066	-0.0117	0.0032	-0.0055	0.0038	-0.0025
-11	0.0035	-0.0082	-0.0024	-0.0079	-0.0026	-0.0051
-10	0.0064	-0.0018	0.0009	-0.0069	-0.0003	-0.0054
-9	0.0012	-0.0007	0.0043	-0.0027	0.0033	-0.0021
-8	0.0117	0.0111	0.0060	0.0033	0.0029	0.0008
-7	0.0010	0.0121	0.0016	0.0049	0.0011	0.0019
-6	0.0080	0.0200	0.0010	0.0059	-0.0005	0.0014
-5	-0.0135	0.0065	-0.0036	0.0023	-0.0007	0.0007
-4	-0.0072	-0.0007	-0.0069	-0.0047	-0.0045	-0.0037
-3	-0.0022	-0.0029	-0.0060	-0.0106	-0.0046	-0.0083
-2	0.0014	-0.0015	-0.0037	-0.0143	-0.0033	-0.0116
-1	0.0050	0.0035	0.0023	-0.0120	0.0010	-0.0106
0	-0.0043	-0.0008	0.0026	-0.0095	0.0029	-0.0077
1	0.0330	0.0323	0.0034	-0.0061	-0.0029	-0.0106
2	0.0170	0.0493	0.0034	-0.0027	-0.0001	-0.0107
3	0.0005	0.0498	0.0014	-0.0013	0.0010	-0.0097
4	-0.0113	0.0386	-0.0061	-0.0074	-0.0031	-0.0128
5	-0.0184	0.0202	0.0011	-0.0063	0.0041	-0.0087
6	-0.0164	0.0038	-0.0029	-0.0092	0.0004	-0.0083
7	0.0025	0.0063	-0.0016	-0.0108	-0.0018	-0.0100
8	0.0081	0.0145	0.0016	-0.0092	-0.0001	-0.0101
9	0.0007	0.0152	-0.0017	-0.0109	-0.0015	-0.0116
10	-0.0019	0.0133	-0.0044	-0.0153	-0.0033	-0.0150
11	0.0025	0.0157	0.0015	-0.0139	0.0008	-0.0142
12	-0.0030	0.0127	0.0029	-0.0110	0.0029	-0.0113
13	-0.0085	0.0042	0.0043	-0.0066	0.0050	-0.0062
14	-0.0068	-0.0026	0.0040	-0.0026	0.0045	-0.0017
15	-0.0102	-0.0127	0.0001	-0.0026	0.0018	0.0001

QUARTER 3,1993						
DATE	BAD NEWS	CUM BAD NEWS	GOOD NEWS	CUM GOOD NEWS	COMP NEWS	CUM COMP NEWS
-15	-0.0074	-0.0074	-0.0019	-0.0019	-0.0005	-0.0005
-14	-0.0118	-0.0193	-0.0006	-0.0024	0.0013	0.0008
-13	-0.0105	-0.0298	-0.0015	-0.0040	0.0003	0.0003
-12	-0.0032	-0.0330	0.0025	-0.0015	0.0026	0.0029
-11	0.0045	-0.0285	0.0002	-0.0012	-0.0005	-0.0005
-10	0.0046	-0.0240	-0.0001	-0.0013	-0.0008	-0.0013
-9	-0.0022	-0.0262	-0.0035	-0.0048	-0.0026	-0.0026
-8	0.0132	-0.0130	0.0027	-0.0021	0.0003	-0.0023
-7	0.0019	-0.0112	0.0030	0.0009	0.0022	0.0022
-6	-0.0019	-0.0131	-0.0008	0.0001	-0.0004	0.0018
-5	-0.0053	-0.0184	-0.0035	-0.0034	-0.0022	-0.0022
-4	0.0072	-0.0112	-0.0060	-0.0094	-0.0061	-0.0083
-3	0.0074	-0.0038	0.0047	-0.0047	0.0029	0.0029
-2	0.0116	0.0078	0.0047	0.0000	0.0022	0.0051
-1	0.0000	0.0078	-0.0021	-0.0021	-0.0018	-0.0018
0	0.0059	0.0137	0.0051	0.0030	0.0035	0.0017
1	0.0183	0.0320	0.0038	0.0068	0.0004	0.0004
2	0.0082	0.0402	0.0039	0.0107	0.0021	0.0025
3	0.0042	0.0444	-0.0011	0.0096	-0.0016	-0.0016
4	-0.0008	0.0435	0.0009	0.0105	0.0009	-0.0007
5	-0.0041	0.0394	-0.0020	0.0085	-0.0011	-0.0011
6	-0.0034	0.0360	0.0033	0.0118	0.0033	0.0023
7	-0.0127	0.0232	-0.0031	0.0087	-0.0007	-0.0007
8	-0.0025	0.0208	0.0039	0.0126	0.0037	0.0030
9	-0.0120	0.0088	-0.0007	0.0119	0.0012	0.0012
10	-0.0095	-0.0007	-0.0012	0.0107	0.0004	0.0016
11	-0.0080	-0.0087	-0.0011	0.0096	0.0003	0.0003
12	-0.0091	-0.0178	-0.0007	0.0090	0.0008	0.0011
13	0.0000	-0.0178	-0.0005	0.0085	-0.0004	-0.0004
14	-0.0105	-0.0283	-0.0009	0.0076	0.0009	0.0004
15	0.0010	-0.0273	-0.0028	0.0049	-0.0025	-0.0025

QUARTER 4,1993						
DATE	BAD NEWS	CUM BAD NEWS	GOOD NEWS	CUM GOOD NEWS	COMP NEWS	CUM COMP NEWS
-15	-0.0139	-0.0139	0.0077	0.0077	0.0078	0.0078
-14	-0.0325	-0.0464	0.0028	0.0105	0.0035	0.0113
-13	-0.0009	-0.0473	0.0090	0.0195	0.0088	0.0201
-12	0.0244	-0.0229	0.0003	0.0198	-0.0003	0.0199
-11	-0.0237	-0.0466	0.0060	0.0258	0.0064	0.0263
-10	-0.0103	-0.0569	0.0046	0.0304	0.0047	0.0310
-9	-0.0357	-0.0926	0.0042	0.0346	0.0050	0.0359
-8	-0.0280	-0.1206	0.0029	0.0375	0.0035	0.0394
-7	0.0006	-0.1200	-0.0002	0.0373	-0.0002	0.0392
-6	-0.0917	-0.2117	0.0053	0.0427	0.0073	0.0465
-5	-0.0002	-0.2119	0.0086	0.0513	0.0085	0.0550
-4	-0.0045	-0.2164	0.0065	0.0578	0.0065	0.0614
-3	0.0405	-0.1759	0.0035	0.0613	0.0025	0.0639
-2	-0.0356	-0.2115	0.0054	0.0667	0.0061	0.0700
-1	-0.0008	-0.2124	0.0044	0.0711	0.0043	0.0743
0	0.0142	-0.1982	0.0058	0.0769	0.0054	0.0797
1	-0.0020	-0.2001	0.0025	0.0794	0.0025	0.0822
2	0.0611	-0.1390	-0.0023	0.0771	-0.0036	0.0785
3	-0.0125	-0.1516	-0.0025	0.0746	-0.0021	0.0764
4	0.0308	-0.1207	-0.0035	0.0711	-0.0041	0.0722
5	0.0134	-0.1074	0.0043	0.0754	0.0039	0.0761
6	0.0448	-0.0626	0.0032	0.0786	0.0021	0.0782
7	0.0394	-0.0232	0.0010	0.0796	0.0001	0.0783
8	-0.0356	-0.0588	0.0031	0.0827	0.0039	0.0822
9	0.0266	-0.0322	-0.0011	0.0816	-0.0017	0.0804
10	0.0198	-0.0124	0.0055	0.0870	0.0049	0.0853
11	0.0105	-0.0019	0.0043	0.0913	0.0039	0.0893
12	-0.0396	-0.0416	-0.0021	0.0892	-0.0011	0.0881
13	0.0080	-0.0336	0.0043	0.0935	0.0040	0.0921
14	-0.0003	-0.0339	-0.0039	0.0896	-0.0038	0.0883
15	-0.0230	-0.0570	-0.0014	0.0882	-0.0008	0.0875

QUARTER 1,1994						
DATE	BAD NEWS	CUM BAD NEWS	GOOD NEWS	CUM GOOD NEWS	COMP NEWS	CUM COMP NEWS
-15	-0.0024	-0.0024	-0.0016	-0.0016	0.0005	0.0005
-14	0.0016	-0.0008	0.0007	-0.0009	-0.0005	0.0000
-13	0.0033	0.0025	-0.0024	-0.0033	-0.0029	-0.0029
-12	0.0115	0.0140	0.0139	0.0107	0.0007	-0.0022
-11	0.0056	0.0196	0.0019	0.0125	-0.0020	-0.0020
-10	0.0024	0.0220	0.0066	0.0191	0.0019	-0.0002
-9	0.0095	0.0314	0.0070	0.0261	-0.0016	-0.0016
-8	0.0133	0.0447	0.0129	0.0390	-0.0008	-0.0024
-7	0.0073	0.0520	-0.0041	0.0349	-0.0058	-0.0058
-6	0.0017	0.0537	0.0092	0.0441	0.0035	-0.0023
-5	-0.0028	0.0509	-0.0053	0.0387	-0.0011	-0.0011
-4	-0.0025	0.0484	-0.0129	0.0259	-0.0048	-0.0059
-3	-0.0064	0.0420	-0.0090	0.0169	-0.0009	-0.0009
-2	-0.0045	0.0374	-0.0014	0.0155	0.0017	0.0008
-1	0.0075	0.0449	0.0028	0.0183	-0.0026	-0.0026
0	0.0025	0.0474	-0.0114	0.0069	-0.0067	-0.0093
1	0.0031	0.0505	0.0006	0.0076	-0.0013	-0.0013
2	0.0104	0.0610	-0.0072	0.0003	-0.0089	-0.0102
3	0.0094	0.0704	-0.0188	-0.0185	-0.0139	-0.0139
4	0.0083	0.0787	-0.0122	-0.0307	-0.0101	-0.0241
5	0.0037	0.0824	0.0017	-0.0289	-0.0011	-0.0011
6	0.0071	0.0895	0.0046	-0.0243	-0.0015	-0.0026
7	-0.0040	0.0855	0.0024	-0.0219	0.0032	0.0032
8	-0.0001	0.0854	-0.0028	-0.0247	-0.0013	0.0019
9	-0.0024	0.0830	-0.0046	-0.0294	-0.0009	-0.0009
10	-0.0035	0.0795	0.0085	-0.0209	0.0059	0.0049
11	0.0028	0.0823	0.0124	-0.0084	0.0044	0.0044
12	-0.0032	0.0791	-0.0011	-0.0095	0.0012	0.0056
13	-0.0028	0.0763	0.0028	-0.0067	0.0028	0.0028
14	0.0006	0.0770	0.0028	-0.0040	0.0010	0.0038
15	0.0000	0.0770	0.0055	0.0015	0.0026	0.0026

QUARTER 2,1994						
DATE	BAD NEWS	CUM BAD NEWS	GOOD NEWS	CUM GOOD NEWS	COMP NEWS	CUM COMP NEWS
-15	-0.0044	-0.0044	-0.0068	-0.0068	-0.0030	-0.0030
-14	-0.0072	-0.0116	-0.0048	-0.0117	-0.0007	-0.0038
-13	-0.0025	-0.0141	0.0012	-0.0105	0.0017	-0.0021
-12	-0.0090	-0.0231	-0.0050	-0.0154	-0.0002	-0.0023
-11	-0.0045	-0.0276	-0.0056	-0.0210	-0.0022	-0.0044
-10	-0.0080	-0.0356	0.0032	-0.0178	0.0048	0.0004
-9	-0.0016	-0.0371	0.0024	-0.0154	0.0022	0.0025
-8	-0.0079	-0.0450	-0.0060	-0.0214	-0.0013	0.0012
-7	0.0051	-0.0400	-0.0006	-0.0220	-0.0021	-0.0009
-6	0.0082	-0.0318	-0.0008	-0.0228	-0.0033	-0.0042
-5	0.0016	-0.0302	0.0041	-0.0187	0.0022	-0.0020
-4	-0.0017	-0.0319	-0.0020	-0.0206	-0.0007	-0.0027
-3	0.0082	-0.0237	0.0006	-0.0200	-0.0024	-0.0051
-2	0.0024	-0.0214	0.0014	-0.0186	0.0001	-0.0050
-1	-0.0063	-0.0276	-0.0042	-0.0228	-0.0006	-0.0056
0	0.0041	-0.0235	-0.0053	-0.0281	-0.0049	-0.0105
1	-0.0070	-0.0305	0.0058	-0.0223	0.0062	-0.0044
2	-0.0113	-0.0418	-0.0001	-0.0224	0.0038	-0.0005
3	-0.0022	-0.0440	-0.0019	-0.0243	-0.0005	-0.0010
4	-0.0015	-0.0456	-0.0026	-0.0269	-0.0012	-0.0022
5	-0.0106	-0.0562	0.0001	-0.0269	0.0037	0.0014
6	-0.0200	-0.0761	-0.0034	-0.0302	0.0046	0.0060
7	-0.0134	-0.0895	-0.0027	-0.0329	0.0028	0.0087
8	-0.0029	-0.0925	0.0008	-0.0322	0.0015	0.0102
9	-0.0100	-0.1025	-0.0033	-0.0355	0.0012	0.0115
10	-0.0050	-0.1075	-0.0041	-0.0396	-0.0010	0.0105
11	-0.0035	-0.1110	0.0034	-0.0362	0.0035	0.0139
12	-0.0004	-0.1114	0.0014	-0.0348	0.0010	0.0150
13	-0.0074	-0.1187	-0.0049	-0.0397	-0.0007	0.0142
14	-0.0186	-0.1373	-0.0010	-0.0407	0.0057	0.0199
15	-0.0175	-0.1548	-0.0035	-0.0442	0.0036	0.0236

QUARTER 3,1994						
DATE	BAD NEWS	CUM BAD NEWS	GOOD NEWS	CUM GOOD NEWS	COMP NEWS	CUM COMP NEWS
-15	0.0066	0.0066	-0.0068	-0.0068	-0.0067	-0.0067
-14	0.0002	0.0068	0.0042	-0.0025	0.0034	-0.0033
-13	0.0008	0.0076	0.0038	0.0038	0.0029	-0.0004
-12	-0.0051	0.0025	-0.0009	0.0029	0.0002	-0.0002
-11	0.0024	0.0048	-0.0024	-0.0024	-0.0024	-0.0026
-10	-0.0033	0.0015	-0.0007	-0.0031	0.0001	-0.0025
-9	0.0012	0.0027	0.0028	0.0028	0.0020	-0.0005
-8	0.0033	0.0060	0.0052	0.0079	0.0035	0.0031
-7	0.0043	0.0103	0.0010	0.0010	0.0000	0.0030
-6	0.0047	0.0150	0.0024	0.0034	0.0010	0.0041
-5	0.0019	0.0169	-0.0010	-0.0010	-0.0012	0.0029
-4	0.0110	0.0279	0.0034	0.0024	0.0007	0.0036
-3	-0.0003	0.0276	-0.0003	-0.0003	-0.0002	0.0034
-2	0.0054	0.0330	-0.0018	-0.0021	-0.0025	0.0009
-1	-0.0106	0.0224	-0.0008	-0.0008	0.0014	0.0023
0	-0.0050	0.0174	-0.0035	-0.0042	-0.0019	0.0004
1	0.0102	0.0276	-0.0040	-0.0040	-0.0051	-0.0047
2	-0.0088	0.0188	-0.0003	-0.0042	0.0015	-0.0032
3	-0.0025	0.0163	-0.0026	-0.0026	-0.0016	-0.0049
4	0.0012	0.0175	0.0004	-0.0022	0.0001	-0.0047
5	-0.0036	0.0139	0.0011	0.0011	0.0016	-0.0032
6	-0.0026	0.0113	-0.0023	-0.0012	-0.0013	-0.0045
7	-0.0112	0.0000	0.0027	0.0027	0.0044	-0.0002
8	-0.0127	-0.0127	-0.0011	0.0016	0.0015	0.0013
9	-0.0146	-0.0273	-0.0009	-0.0009	0.0021	0.0034
10	0.0047	-0.0225	0.0008	0.0000	-0.0002	0.0032
11	0.0001	-0.0225	-0.0003	-0.0003	-0.0003	0.0029
12	0.0050	-0.0174	0.0035	0.0032	0.0019	0.0048
13	0.0041	-0.0133	0.0040	0.0040	0.0024	0.0072
14	-0.0029	-0.0163	0.0028	0.0068	0.0028	0.0100
15	-0.0121	-0.0284	-0.0008	-0.0008	0.0017	0.0117



QUARTER 4, 1994						
DATE	BAD NEWS	CUM BAD NEWS	GOOD NEWS	CUM GOOD NEWS	COMP NEWS	CUM COMP NEWS
-15	-0.0073	-0.0073	-0.0029	-0.0029	0.0000	0.0000
-14	-0.0171	-0.0243	0.0034	0.0005	0.0072	0.0072
-13	0.0003	-0.0240	-0.0001	0.0004	-0.0002	0.0071
-12	0.0024	-0.0216	-0.0016	-0.0012	-0.0018	0.0052
-11	-0.0062	-0.0277	-0.0096	-0.0108	-0.0052	0.0001
-10	-0.0063	-0.0340	0.0009	-0.0099	0.0024	0.0025
-9	-0.0031	-0.0371	0.0026	-0.0073	0.0027	0.0052
-8	-0.0014	-0.0385	0.0012	-0.0061	0.0013	0.0065
-7	0.0030	-0.0356	0.0015	-0.0046	0.0002	0.0067
-6	-0.0004	-0.0359	0.0006	-0.0040	0.0005	0.0073
-5	-0.0079	-0.0438	-0.0004	-0.0044	0.0019	0.0092
-4	-0.0024	-0.0462	0.0040	-0.0004	0.0036	0.0128
-3	-0.0055	-0.0518	0.0000	-0.0004	0.0016	0.0143
-2	0.0037	-0.0480	0.0007	0.0004	-0.0005	0.0138
-1	0.0093	-0.0387	-0.0012	-0.0008	-0.0034	0.0104
0	0.0015	-0.0372	-0.0009	-0.0017	-0.0011	0.0093
1	0.0245	-0.0128	-0.0010	-0.0027	-0.0076	0.0016
2	-0.0046	-0.0173	-0.0004	-0.0032	0.0010	0.0026
3	-0.0077	-0.0250	0.0031	-0.0001	0.0044	0.0070
4	0.0081	-0.0169	-0.0052	-0.0052	-0.0060	0.0010
5	-0.0077	-0.0246	0.0016	-0.0037	0.0033	0.0043
6	0.0015	-0.0231	0.0027	-0.0009	0.0016	0.0059
7	0.0089	-0.0143	0.0043	0.0034	0.0006	0.0064
8	0.0088	-0.0055	-0.0020	0.0014	-0.0039	0.0025
9	0.0001	-0.0054	-0.0019	-0.0005	-0.0014	0.0012
10	-0.0099	-0.0153	-0.0053	-0.0058	-0.0010	0.0001
11	0.0016	-0.0137	0.0040	-0.0018	0.0025	0.0026
12	0.0023	-0.0114	0.0056	0.0039	0.0034	0.0060
13	0.0054	-0.0061	0.0032	0.0070	0.0008	0.0068
14	0.0192	0.0131	0.0042	0.0113	-0.0024	0.0044
15	0.0032	0.0162	0.0020	0.0133	0.0005	0.0049

QUARTER 1,1995						
DATE	BAD NEWS	CUM BAD NEWS	GOOD NEWS	CUM GOOD NEWS	COMP NEWS	CUM COMP NEWS
-15	-0.0023	-0.0023	-0.0028	-0.0028	-0.0012	-0.0012
-14	0.0036	0.0013	-0.0038	-0.0066	-0.0037	-0.0049
-13	0.0022	0.0034	0.0009	-0.0057	-0.0001	-0.0050
-12	0.0018	0.0052	0.0027	-0.0029	0.0014	-0.0036
-11	-0.0005	0.0047	0.0025	-0.0004	0.0019	-0.0017
-10	-0.0029	0.0018	-0.0105	-0.0109	-0.0064	-0.0081
-9	-0.0041	-0.0023	-0.0101	-0.0210	-0.0057	-0.0138
-8	0.0034	0.0011	-0.0036	-0.0246	-0.0036	-0.0174
-7	-0.0070	-0.0059	-0.0022	-0.0268	0.0007	-0.0167
-6	0.0112	0.0052	-0.0036	-0.0304	-0.0059	-0.0226
-5	0.0080	0.0132	0.0045	-0.0259	0.0007	-0.0220
-4	0.0033	0.0165	0.0097	-0.0161	0.0057	-0.0163
-3	0.0074	0.0239	0.0052	-0.0110	0.0013	-0.0150
-2	0.0012	0.0251	0.0097	-0.0012	0.0064	-0.0086
-1	0.0009	0.0260	-0.0006	-0.0018	-0.0007	-0.0093
0	0.0055	0.0315	0.0013	-0.0005	-0.0008	-0.0101
1	0.0096	0.0411	-0.0025	-0.0030	-0.0047	-0.0148
2	0.0026	0.0438	-0.0044	-0.0075	-0.0039	-0.0186
3	0.0058	0.0495	0.0004	-0.0071	-0.0015	-0.0202
4	0.0069	0.0564	0.0010	-0.0061	-0.0014	-0.0216
5	-0.0015	0.0549	-0.0025	-0.0086	-0.0013	-0.0229
6	0.0002	0.0551	0.0019	-0.0068	0.0012	-0.0216
7	0.0044	0.0595	-0.0017	-0.0085	-0.0026	-0.0242
8	-0.0032	0.0563	-0.0022	-0.0107	-0.0005	-0.0247
9	-0.0022	0.0541	-0.0022	-0.0129	-0.0009	-0.0256
10	0.0011	0.0553	0.0022	-0.0107	0.0011	-0.0244
11	0.0082	0.0635	0.0022	-0.0085	-0.0010	-0.0255
12	0.0074	0.0708	0.0032	-0.0054	-0.0001	-0.0255
13	-0.0006	0.0702	0.0043	-0.0011	0.0031	-0.0224
14	-0.0011	0.0692	-0.0007	-0.0017	-0.0001	-0.0225
15	-0.0006	0.0686	0.0061	0.0044	0.0044	-0.0181

QUARTER 2,1996						
DATE	BAD NEWS	CUM BAD NEWS	GOOD NEWS	CUM GOOD NEWS	COMP NEWS	CUM COMP NEWS
-15	-0.0105	-0.0105	-0.0001	-0.0001	0.0004	0.0004
-14	0.0028	-0.0077	0.0034	0.0033	0.0031	0.0035
-13	-0.0117	-0.0195	-0.0068	-0.0035	-0.0059	-0.0024
-12	0.0092	-0.0103	-0.0011	-0.0046	-0.0015	-0.0039
-11	-0.0074	-0.0177	-0.0015	-0.0061	-0.0011	-0.0050
-10	0.0059	-0.0118	0.0062	0.0001	0.0056	0.0006
-9	-0.0016	-0.0135	-0.0059	-0.0059	-0.0056	-0.0049
-8	0.0008	-0.0127	0.0026	-0.0032	0.0025	-0.0025
-7	0.0008	-0.0119	-0.0018	-0.0051	-0.0018	-0.0042
-6	0.0175	0.0056	0.0003	-0.0047	-0.0005	-0.0048
-5	0.0059	0.0115	-0.0031	-0.0078	-0.0032	-0.0080
-4	0.0003	0.0118	-0.0012	-0.0090	-0.0012	-0.0091
-3	-0.0110	0.0008	0.0023	-0.0066	0.0028	-0.0064
-2	0.0063	0.0072	-0.0003	-0.0069	-0.0005	-0.0069
-1	0.0012	0.0084	-0.0007	-0.0076	-0.0008	-0.0077
0	0.0007	0.0091	0.0002	-0.0074	0.0002	-0.0075
1	0.0286	0.0378	0.0045	-0.0029	0.0029	-0.0046
2	-0.0057	0.0321	0.0053	0.0023	0.0053	0.0007
3	0.0213	0.0533	-0.0021	0.0003	-0.0030	-0.0023
4	0.0039	0.0572	0.0000	0.0003	-0.0002	-0.0025
5	-0.0038	0.0534	-0.0031	-0.0028	-0.0028	-0.0053
6	0.0007	0.0541	0.0008	-0.0020	0.0008	-0.0045
7	0.0077	0.0618	0.0019	-0.0001	0.0014	-0.0031
8	-0.0050	0.0568	-0.0038	-0.0039	-0.0034	-0.0064
9	0.0005	0.0573	-0.0005	-0.0044	-0.0005	-0.0070
10	0.0067	0.0640	0.0009	-0.0035	0.0005	-0.0064
11	-0.0047	0.0594	0.0004	-0.0032	0.0006	-0.0059
12	0.0054	0.0648	-0.0007	-0.0039	-0.0009	-0.0068
13	0.0027	0.0675	-0.0029	-0.0067	-0.0029	-0.0096
14	-0.0109	0.0566	0.0016	-0.0051	0.0021	-0.0076
15	-0.0052	0.0515	-0.0026	-0.0077	-0.0022	-0.0097

QUARTER 3,1995						
DATE	BAD NEWS	CUM BAD NEWS	GOOD NEWS	CUM GOOD NEWS	COMP NEWS	CUM COMP NEWS
-15	0.0064	0.0064	0.0057	0.0057	0.0039	0.0039
-14	0.0008	0.0071	0.0007	0.0064	0.0005	0.0044
-13	-0.0036	0.0036	-0.0014	0.0050	-0.0007	0.0038
-12	-0.0127	-0.0091	-0.0034	0.0016	-0.0011	0.0027
-11	0.0004	-0.0087	0.0025	0.0041	0.0021	0.0048
-10	0.0010	-0.0077	-0.0023	0.0018	-0.0021	0.0026
-9	0.0047	-0.0030	0.0016	0.0034	0.0007	0.0034
-8	-0.0006	-0.0035	-0.0049	-0.0014	-0.0041	-0.0007
-7	0.0061	0.0025	0.0032	0.0017	0.0018	0.0011
-6	-0.0052	-0.0027	0.0000	0.0018	0.0008	0.0019
-5	-0.0075	-0.0101	-0.0009	0.0008	0.0003	0.0022
-4	-0.0191	-0.0292	-0.0018	-0.0010	0.0013	0.0034
-3	-0.0040	-0.0332	-0.0010	-0.0020	-0.0003	0.0032
-2	0.0173	-0.0160	-0.0053	-0.0073	-0.0071	-0.0039
-1	-0.0019	-0.0178	-0.0016	-0.0089	-0.0011	-0.0050
0	0.0266	0.0088	-0.0031	-0.0120	-0.0065	-0.0116
1	0.0063	0.0150	0.0010	-0.0110	-0.0001	-0.0116
2	-0.0024	0.0126	-0.0050	-0.0161	-0.0039	-0.0156
3	-0.0034	0.0092	0.0008	-0.0153	0.0012	-0.0144
4	-0.0116	-0.0025	-0.0002	-0.0155	0.0015	-0.0129
5	-0.0073	-0.0098	0.0010	-0.0145	0.0019	-0.0110
6	-0.0093	-0.0191	-0.0029	-0.0174	-0.0011	-0.0120
7	-0.0054	-0.0245	0.0008	-0.0166	0.0014	-0.0106
8	0.0047	-0.0197	-0.0017	-0.0183	-0.0021	-0.0127
9	-0.0079	-0.0276	-0.0016	-0.0199	-0.0002	-0.0129
10	0.0021	-0.0255	0.0047	-0.0152	0.0037	-0.0092
11	-0.0032	-0.0287	-0.0001	-0.0153	0.0004	-0.0089
12	-0.0064	-0.0351	0.0007	-0.0146	0.0015	-0.0073
13	0.0034	-0.0317	-0.0010	-0.0156	-0.0014	-0.0087
14	-0.0016	-0.0332	0.0049	-0.0107	0.0044	-0.0043
15	0.0026	-0.0306	0.0038	-0.0070	0.0028	-0.0015

QUARTER 4,1995						
DATE	BAD NEWS	CUM BAD NEWS	GOOD NEWS	CUM GOOD NEWS	COMP NEWS	CUM COMP NEWS
-15	-0.0053	-0.0053	-0.0021	-0.0021	0.0005	0.0005
-14	0.0037	-0.0016	0.0043	0.0022	0.0015	0.0020
-13	-0.0010	-0.0026	0.0029	0.0051	0.0022	0.0042
-12	0.0002	-0.0024	0.0003	0.0054	0.0001	0.0044
-11	0.0015	-0.0008	-0.0031	0.0024	-0.0025	0.0018
-10	0.0049	0.0040	0.0026	0.0050	0.0000	0.0019
-9	0.0006	0.0046	0.0026	0.0076	0.0015	0.0033
-8	0.0065	0.0111	-0.0030	0.0046	-0.0042	-0.0008
-7	0.0044	0.0154	-0.0006	0.0040	-0.0019	-0.0028
-6	-0.0040	0.0115	-0.0049	-0.0009	-0.0018	-0.0046
-5	-0.0015	0.0100	0.0024	0.0015	0.0021	-0.0025
-4	0.0035	0.0135	0.0020	0.0035	0.0001	-0.0024
-3	-0.0023	0.0112	-0.0057	-0.0022	-0.0029	-0.0054
-2	0.0057	0.0169	0.0020	-0.0003	-0.0007	-0.0060
-1	-0.0044	0.0125	-0.0030	-0.0033	-0.0004	-0.0065
0	0.0091	0.0216	-0.0002	-0.0035	-0.0033	-0.0098
1	0.0120	0.0336	-0.0013	-0.0048	-0.0050	-0.0148
2	-0.0036	0.0300	-0.0015	-0.0063	0.0002	-0.0146
3	-0.0041	0.0259	0.0006	-0.0057	0.0018	-0.0127
4	-0.0059	0.0199	-0.0006	-0.0063	0.0017	-0.0110
5	0.0004	0.0204	-0.0003	-0.0066	-0.0004	-0.0114
6	-0.0046	0.0158	-0.0033	-0.0099	-0.0006	-0.0119
7	0.0071	0.0229	-0.0011	-0.0110	-0.0032	-0.0151
8	-0.0031	0.0198	-0.0003	-0.0113	0.0009	-0.0142
9	-0.0032	0.0166	0.0028	-0.0085	0.0029	-0.0113
10	-0.0092	0.0075	0.0009	-0.0076	0.0038	-0.0076
11	-0.0153	-0.0078	-0.0011	-0.0087	0.0046	-0.0030
12	-0.0003	-0.0081	-0.0018	-0.0105	-0.0011	-0.0040
13	-0.0041	-0.0123	0.0015	-0.0090	0.0024	-0.0016
14	-0.0040	-0.0163	0.0030	-0.0060	0.0034	0.0018
15	0.0004	-0.0159	-0.0005	-0.0065	-0.0005	0.0013