

## Investigating The effects of accounting and business cycles in the evolution of the Tehran Stock Exchange

Alireza Askarpour<sup>1</sup>, Zahra Rahmati<sup>2</sup>

<sup>1</sup>Department of Management, Shoushtar Branch, Islamic Azad University, Shoushtar, Iran

<sup>2</sup>Department of Accounting, Abdanan Branch, Islamic Azad University, Abdanan, Iran.

[alireza\\_askarpour@yahoo.com](mailto:alireza_askarpour@yahoo.com)

**Abstract:** In this research we study the effect of accounting data behavior according to the business cycles in Tehran stock exchange. More over this research examines the behavior of accounting data according to the business cycles, by considering the special features of companies. The studied accounting data in clouded sales growth, gross profit margin changes, changes in profit before tax and net profit and total assets changes. The results of this research show that in Tehran stock exchange there are significant relationships between some of the accounting variables (sales growth and gross profit margin) with business cycles and no relationship is seen among some of the variables (such as total assets changes). Moreover this research's findings indicate that the relation between the accounting data and business cycles is affected by the size of company and cyclical or non-cyclical nature of company (special features of companies). [Alireza Askarpour, Zahra Rahmati.

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**Key words:** accounting data behavior, business cycles, Tehran stock exchange, the special features of company and industry.

### Introduction:

One of the developed countries features is that in these countries there are efficient financial market and institutions that also play an important role in the country's economy and lead to the economic growth and development. Dynamic financial markets are one of the essential and affecting elements on each country's economy. A dynamic market requires clear and reliable information to make appropriate decisions. Most of the used information in the financial markets are processed and reported by the accounting systems. The provided information via the accounting system that is a basis for predicting the exact future information is not enough, but also we must pay attention to the other factors like the economic condition of country (economic downturn or economic growth).

The economic conditions can have different effects on the companies and affect the accounting data behavior. For example, in the economic downturn, we expect that the level of sales growth and the gross profit margin of companies and also the investing level of companies decrease and vice versa. In the period of economic growth we expect the reverse of this event. Therefore we can say that economic conditions have a different effect on the accounting data. So knowing the changes of accounting data behavior according to the business cycles can help investors and other decision makers in official markets in predicting the future accounting data more exactly, and leads to a better source allocation. On the other hand the effect of business

cycles on the accounting variables may be different according to the special features of companies.

In other words, the special features of companies such as cyclical or non-cyclical nature of a company or the size of company can affect the relation between the accounting data and the business cycles. For example in downturn condition the accounting data of non-cycling companies (such as food industry and public services) is not affected too much. While the accounting data of cyclical companies (such as durable goods producers) is affected too much and in fact their sales, earnings and investing are decreased significantly. This research tries to show whether changing the economic conditions affect the performance of business companies, and whether this impact is different according to the special features of companies? This study provides an exact sight about the dynamic accounting data behavior in the major port of economy and provides a helpful guidance for analysts and the other users of financial data to predict the basic accounting variables.

This study provides an opportunity for decision makers so that they can improve their prediction about the company's performance according to the major economic conditions. There fore based on the mentioned cases, the aim of this research is to examine the relation between the accounting data and the business cycles according to the special institute's features. In this direction, at first the background of this research will be stated and after that the hypotheses will be provided, that the research method and after that the test results, hypotheses and research

finding will be stated. Finally the limitations and recommendations will be provided.

### Research background:

Up to now no research has been done about studying the accounting data behavior according to the business cycles in Iran. But in the international level many researches have been done. In a research which the title "business cycle and accounting variable", the way of accounting variables' movement was studied according to the major economic conditions. He used the board data in his study. The studied period was from 1978 to 2003. The results of Colingo's study show that the accounting variables such as sales and the stable assets growth are totally related to the business cycles; and these variables are more sensitive to the economic downturn than the economic growth. Of course the range of these changes was not equal in all industries. For example the effect of business cycles on the accounting variable is totally significant for the cyclical industry such as automobile industry. While for non cyclical industry such as drug industry, this effect is only significant for sales and investment, and it doesn't have any significant effect on the earnings.

Johnson studied the relation between the business cycles and stock return and companies' earnings. The period of his study was from the years 1970 to 1987 with the consolidated regression method. His result showed that companies' profit was affected by business cycles. And the profits' stability is significantly greater than the great depression, due to the creation of investment opportunities. Moreover the research result show that stock exchange's return in growth period is greater than the great depression. Liyo and Vasalou studied this topic that companies regarding risk indicators such as the ratio of book value to market value of the company's size, how they are affected by economic conditions? Their period of study was between 1976 and 1997 by using the liner regression method. The result of their research indicate that stocks with the ratio of B/M face with a good condition and also a good performance in the economic growth period and viceversa in economic downturn condition they have a poor state. Choordiya and Shiva Koomar in a research which its title is "profits, Business cycles and stock Returns", investigated the role of business cycles in asset pricing experiments. They believed that companies' profit were related to the business conditions. The period of their study was between 1972 to 1999 and they studied their research hypotheses by multiple variables regression method. Their research result show that there is relation between business cycles and companies' profit. Moreover, they indicate that there is a relationship between stock return and business cycles and in fact the business cycles have a basic role in

assets pricing. Pers Koruz and Timerman investigated stock return's fluctuations in changing levels of business cycles. The result of their study show that the stock returns' fluctuations are significant in changing level of business cycles. Antonio, Lam and Padiyan investigated that whether business cycles' variables and profit biased behavior can explain the speed of trading in three main Europe markets. The result of their study show that the profit of trading speed in Europe markets is affected by the international trading condition.

The behavior of the accounting data regarding the business cycles, the macroeconomic evidence suggests that consumption and investment behavior is highly correlated with the behavior of real GDP. Therefore it is expected that growth in sales and growth in total assets of the company is also actively associated with real growth. Zarnovit proved that the companies' profit and their changes are significantly related to the real growth of GDP. Moreover Tilwer concluded that the change in earnings (profit margin, net profit before extraordinary items and net profit) is strongly related to the real concurrent and has a positive relations. Based on the mentioned cases, we can state the first hypothesis as follows: the first hypothesis: there is a positive and significant relationship between the accounting variables and the real GPP. The growth of real GDP will decrease in the downturn period, but in the period of development, the real GDP has a significant growth. So it is expected that in economic downturn condition, the growth of accounting variables such as the sales growth of companies and even for some of the industries it will be negative. Collinglo states that although the accounting variables reflect the real changes in the economic conditions, but it is expected that the impact of economic conditions on the variable accounting during the recession, is more than that of the growing economic period.

Therefore we can state the second hypothesis as follows:

The second hypothesis: the effect of the real GDP on the accounting variables in downturn period is more that of the growing economic period is more that of the growing economic period. The accounting data behavior may be affected by the special features of companies, regarding the business cycles one of the special features of companies, cyclical or non- cyclical nature of a company. In fact the changing range of business periods can be totally different regarding the kind of industry which the companies operate in it. The cyclical business companies are usually faced with a variable application for their products affected by the downturn and growing economic condition. For example the application for automotive companies will be decreased in downturn economic condition, because

people preserve their funds for more critical applications such as food and medicine and spend less for unnecessary purchases such as cars. Then due to decrease in application, investment in these industries during a recession is more limited. In contrast, non-cyclical companies have been affected by the economic boom and bust, and faced with a more stable condition. For example medicine and food industry are non-cyclical, because even if business conditions are deteriorating and revenue could decline, as people attempt to buy drugs and food. So because of stability of application for the non-cyclical companies, investment and earnings of these industries are affected less by the economic condition, and in fact don't decrease too much. Beckman, Dobius and Isakof, in an investigation about the relation between the special features of industry and stock return, found that the cyclical industrial output in 66 countries is more than the non-cyclical industries. Regarding the mentioned cases, we can state the third hypothesis as follows:

Third hypothesis: the susceptibility of the accounting variables to the business cycles for the cyclical companies is more than the non-cyclical companies.

One of the special features of companies that can be effective in predicting the financial information in several economic condition, is the size of company. Gertler and Jil Christ in their study found that due to insufficient internal resources and less access to external sources, small companies have more limited investment in recession, so the performance of these companies is worse. In contrast, in term of economic growth and the relatively enough internal and external investment create a bed for investment for small companies and their performance will be improved. Because of the diversity of products, big companies have the ability to finance and new investment, so it is expected that in a recession period see less damage. The alone analysis clears the source of risks for accounting variables and also a related range to the size of company. Based on the mentioned topics, it is expected that small companies are more sensitive to changes of economic condition than big companies. Therefore we can state the fourth hypothesis as follows:

The fourth hypothesis: the susceptibility of accounting variables to the business cycles is greater, for small companies than big companies. The method of the present research is quasi-experimental and its methodology is after the events. The purpose of this research is application study that the result of this study can be useful for a wide spectrum, such as investors, stakeholders, the management of stock exchange, financial analysts, government and researchers.

### Statistical Population:

The statistical population of this research is all of the accepted companies in Tehran stock exchange the accepted companies in Tehran stock exchange. The sample was selected according to the following criteria:

- 1- The company related to the industry is not a financial inter mediator.
- 2- The company was accepted in stock exchange before 1998, and after that it didn't leave the stock exchange.
- 3- The company's financial year end is on 29 March (Persian data Esfand 29)
- 4- The mentioned company's information is available and the trading halt should not be more than six months.

Based on the mentioned criteria, 253 companies were selected as a sample which were related to 29 different industries and 24 industries were cyclical and the other 5 industries were non-cyclical. The period in this research is from 1998 until 2007.

### Research Models:

To test the research hypotheses, the following four models are used:

In these models it Acct is the company's accounting variables,  $\Delta GPP$  is the real percent of GPP growth, time is the time figurative variable, EXP is the figurative variable for the economic condition, which is one for the economic growth period and is zero economic downturn period, cyclical is a figurative variable, that is one for cyclical industries and zero for non-cyclical industries, size is a figurative variable for the size of company and are variables' coefficients.

The accounting variable include the sales growth ( $\Delta Sales$ ), change in percentage of gross profit margin ( $\Delta PM$ ), change in profit before tax ( $\Delta EBT$ ), change in net profit ( $\Delta NI$ ) and change in total net assets ( $\Delta TA$ ).

### Measurement of research variables:

The dependent variables and the way of calculating them, the dependent variable of all models, are accounting variables, there are measured as follow. The annual sales growth of a company was measured with regard to the last year.

Change in the percentage of gross profit margin ( $\Delta PM$ ): this relation has been computed via the difference between the operating gross profit of a company divided by total salary of stakeholders in the previous period of the company.

The change in earnings before tax ( $\Delta EBT$ ): This relation has been computed via the change in earnings before tax of one period with the previous

period divided by total salary of stakeholders of the company.

The change in the net profit ( $\Delta NI$ ): this relation was obtained in the beginning of the period via the change in the net profit of a period divided by the total salary of the company's stakeholders. The total assets' growth of this relation has been computed via the change in the total assets of one period divided by the total assets in the beginning period of the company. The independent variables and the way of computing them, business cycles: what we mean by business cycles are the fluctuation in the economic activities and usually the national production. Every business period included the economic boom and bust stages. In this research the figurative variable has used to measure the economic boom and bust, that number one has been used for boom period and number zero has been used for bust period. Based on the mentioned cases, the economic boom and bust periods are as follows:

- 1- From 1959 until 1971, the partial busts period.
- 2- From 1972 until 1980, the partial busts period.
- 3- From 1980 until 1983, the partial busts period.
- 4- From 1983 until 1985, the partial busts period.
- 5- From 1985 until 1991, the partial busts period.
- 6- From 1991 until 1994, the partial busts period.
- 7- From 1994 until 2002, the partial busts period.
- 8- From 2002 until 2010, the partial busts period.

The change in real GDP: this variable has been computed via the change in real GDP divided by the real GDP of the previous period. The aforementioned information were extracted from the site and library of the Islamic Republic of Iran's central bank. The cyclical and non-cyclical industries (companies). The cyclical industries are those which usually faced with a changing demand for their product and by the economic boom, the demand will increase and by the economic bust, the demand will decrease. In contrast, the cyclical industries faced with a stable demand and generally the change in the economic condition does not affect their products' demand. In this research, to define the cyclical and non-cyclical industries- Fama

and French classification has been used. Fama and French classified food industries, drug industries, financial services, public utilities (water, electricity, telephone and gas industries) as the non-cyclical industries and the other industries as the cyclical ones. To measure this variable, figurative variable has been used, that number one has been used for cyclical industries and number zero has been used for non-cyclical industries.

The size of company: one of the other specific features studied in this research was the size of company. The researchers used different indexes in their studies to measure the size of company, such as the total assets logarithm, the number of personal and the total sales logarithm. In Iran the most appropriate index for size in the total sale, because it is partially based on the current price and less affected by inflation. To determine the small and big companies, first the average sales of the sample companies and then the sales of each company has been compared with the average sale. If the sales of company was greater than the average sales of companies, the company was classified as the major company and otherwise it was classified as the small company. To measure this variable, the figurative variable has been used and number one for small companies and number zero for big companies were used.

#### The research's finding:

##### The results of descriptive statistics:

The results obtained from descriptive statistics for the dependent variable are provided in table (1). The descriptive statistics shows that the selected sample enjoys much diversity. For example the descriptive statistic about the change in sales indicate that the average and the median of change in sales is zero. 0% and 170% compared to the last year is 274 and also the maximum and minimum of change in sales were 0-, accordingly. The standard deviation of change was 69% and /99 times more than 174. This statistics shows that sales also equals to 786 and to generalize these result to the society, it enjoys the necessary diversity.

Table (1): descriptive statistics

| Statistics                | UTA    | UNI     | UEB T   | UPM     | Usual e |
|---------------------------|--------|---------|---------|---------|---------|
| Average                   | 0.232  | 0.0382  | 0.052   | 0.154   | 0.274   |
| Median                    | 0.160  | 0.050   | 0.050   | 0.080   | 0.170   |
| Maximum                   | 10.60  | 12.110  | 12.110  | 32.900  | 69.740  |
| Minimum                   | -0.770 | -49.460 | -45.580 | -41.280 | 0.990   |
| Standard deviation        | 0.452  | 1.799   | 1.765   | 1.792   | 1.786   |
| The number of observation | 1760   | 1750    | 1757    | 1760    | 1756    |

##### The results of the first hypothesis testing:

The first hypothesis of this research was mooted in such a way that there is a positive and

significant relationship between the accounting variables and the real GDP. The result obtained from the first hypothesis testing are provided in table (2). As

one can see in table (2), the real GDP's unstable coefficient in error level 5 is not significant for any of the studied accounting variables. Therefore we can say that in Iran there is not a significant relationship between the accounting variables and the real GDP. It

is worthy to mention that the changeable mark for the real GDP is position which is compatible with the predicted mark.

Table (2): the result of the first hypothesis testin

$$Acct_{it} = \alpha_1 + \beta_1 \Delta GDP_t + \lambda_1 Acct_{it-1} + \lambda_2 Time + \epsilon_{it}$$

| Wanson camera | Determining the balance coefficient | Time    |             | Acct      |             | ΔGDP    |             | The dependent variable |
|---------------|-------------------------------------|---------|-------------|-----------|-------------|---------|-------------|------------------------|
|               |                                     | Value t | coefficient | Value t   | coefficient | Value t | coefficient |                        |
| 2.255         | 0.037                               | -2.24** | -0.022      | -10.27*** | -0.207      | 1.577   | 1.614       | ΔSale                  |
| 2.060         | 0.064                               | -1.13   | -0.016      | -9.5***   | -0.094      | 0.655   | 2.880       | ΔPM                    |
| 1.999         | 0.002                               | -0.34   | -0.004      | -         | -0.017      | 0.233   | 0.540       | ΔEBT                   |
| 2.092         | 0.000                               | -1.092  | -0.029      | 0.08      | 0.000       | 1.640   | 9.388       | ΔNI                    |
| 2.135         | 0.024                               | -0.006  | -1.475      | 0.064*    | 3.137       | 1.519   | 0.807       | ΔTA                    |

\*\*\*, \*\*, \* are significant in error levels 1%, 5%, 10% accordingly.

Examining the accounting variables effect of previous year's accounting variables indicates the effect of the previous year's accounting variable on the current year's ones, especially in relation with the sales variable, the operating profit margin and the total assets. Moreover studying the impact of time on the accounting variables shows that time is an affective factor on sales. The maximum balanced assigning coefficient for the 5 studied models, equals to 7 percentage which is not too much considerable. Also the value of Watson camera for each of the 5 studied model is about 2 that indicates the non-existence of autocorrelation of auto correlation between data. The results obtained from the first hypothesis testing are in contrast with Collingo and Zaranovit's research results.

One can guess several reasons to deny this hypothesis, such as unused capacity of the companies and the non-competitive market in Iran.

The result of the second hypothesis testing:

The second hypothesis of this research has examined the effect of the real GDP growth on the accounting variables in the economic bust period

compared to the economic boom period and it has been explained that the impact of the real GDP growth on the accounting variables in the economic bust period is more than that of in the economic boom period.

The results obtained from the second hypothesis testing are provided in table (3).

As one can see in table (3), the changeable coefficient EXP\*ΔGDP in each of the 5 studied models is negative that indicates the negative effect of recession on the accounting variables, but from the viewpoint of statistics, in the error level 5, just the first and second models (the change in sales and gross earnings margin) are significant and the other models (the accounting variables) are not meaningful.

In other words, the accounting variables of the change in the total assets, profit before tax deduction and change in the net profit, compared with the economic boom period, are not more sensitive to the change in the economic condition in the economic bust period.

And only the variables of the sales and the gross earnings margin are affected by the business cycles.

Table (3): the results of the second hypothesis testing:

$$Acct_{it} = \alpha_{11} + \beta_{12} EXP + \beta_{11} \Delta GDP_t + \beta_{12} EXP * \Delta GDP_t + \lambda_1 Acct_{it-1} + \lambda_2 Time + \epsilon_{it}$$

| Wanson camera | Assigning coefficient | Time   | Acct               | EXP*ΔGDP             | ΔGDP             | EXP              | The dependent variable |
|---------------|-----------------------|--------|--------------------|----------------------|------------------|------------------|------------------------|
| 2.200         | 0.060                 | -0.054 | -0.185             | -4.789               | 2.262            | 0.406            | ΔSale                  |
| 2.060         | 0.066                 | -0.044 | -0.69              | -10.380<br>(-1.660*) | 6.040<br>(1.268) | 0.768            | ΔPM                    |
| 2.000         | 0.002                 | -0.034 | -0.018<br>(-1.318) | -6.450               | 2.900<br>(1.070) | 0.574<br>(1.251) | ΔEBT                   |
| 2.010         | 0.003                 | -0.026 | -0.001<br>(-0.551) | -6.755               | 9.317<br>(1.306) | 0.384<br>(0.496) | ΔNI                    |
| 2.135         | 0.031                 | -0.030 | 0.057<br>(2.811*)  | -1.067               | 0.612<br>(1.093) | 0.220<br>(1.306) | ΔTA                    |

\*\*\*, \*\*, \* are significant in error levels 1%, 5%, 10% accordingly.

The value of t is brought in the parenthesis.

It is compatible in relation with the variables of sales and the gross earnings margin [the results of this study are compatible with result of Collingo, Zarnovit and Tilver's research], but it is not compatible about the other variables. The non-impressiveness of profit before tax deduction and the accounting net profit via the business cycles that are accepted in Tehran stock exchange may be due to the profit management by using the non-operating items, such as selling the fixed assets, long-term and short-term investment, which leads to earnings stability before tax deduction and net profit and thus non-impressiveness of them of the business cycles.

**The results of the third hypothesis testing**

The third hypothesis of this research predicts that the susceptibility of the accounting variables toward the business cycles in the cyclical companies is greater than that of the non-cyclical companies. The results obtained from the third hypothesis testing are provided in table 4. As one can see in table (4) based on the value t, the unstable coefficient EX cyclical\*ΔGDP (B14) is not significant in relation with the accounting variables, ΔNI, ΔEBT, ΔPM, ΔTA in

the cyclical industries in the economic boom period and only the variable Δsales with error level 10% is meaningful. Also the coefficient cyclical\*ΔGDP 13 is not significant in relation with the accounting variables ΔNI, ΔEBT, ΔPM, ΔT in the cyclical industries in the economic boom or bust period, and it is only meaningful in relation with the variable Δsales with error level 90%. Therefore the third hypothesis is denied and we can say that the cyclical or non-cyclical nature of the companies does not have any considerable impact on the accounting variables, according to the changes in the business cycles.

Generally, the result obtained from the third hypothesis testing of this research are compatible with the western finding such as Collingo, only in relation with the sales variable, and it is not compatible in relation with the other variable. Some of the main reasons that can be considered effective to deny this hypothesis in the economic environment of Iran, are price control and management and thus insignificant changelessness in the percentage of gross earnings margin and the operating profit in the cyclical and non-cyclical industries.

Table (4): the result of the third hypothesis testing:

$$Acct_{it} = \alpha_{11} + \alpha_{12}EXP + \alpha_{13}cyclical + \alpha_{14}EXP * cyclical + B_{11}\Delta GDP_t + B_{12}EXP * \Delta GDP_t$$

| Wanson camera | Assigning coefficient | EXP* cyclical* ΔGDP | cyclical* ΔGDP   | EXP* ΔGDP      | ΔGDP            | EXP* SIZE      | SIZE            | EXP             | Dependent variables |
|---------------|-----------------------|---------------------|------------------|----------------|-----------------|----------------|-----------------|-----------------|---------------------|
| 2.10          | 0.002                 | -12.410 (-1.752*)   | -4.253 (-1.710*) | 8.218 (1.326)  | 4.150 (1.889 *) | 0.788 (1.897*) | 0.147 (1.567)   | -0533 (-1.469)  | ΔSale               |
| 2.11          | -0.001                | -13.423 (-0.968)    | 6.179 (0.979)    | 5.630 (0.462)  | -2.859 (-0.508) | 0.773 (0.869)  | -0.309 (-1.093) | -0.323 (-0.413) | ΔPM                 |
| 2.05          | 0.000                 | -11.122 (-0.793)    | 3.626 (1.158)    | 5.910 (0.486)  | -1.396 (-0.509) | 0.779 (0.841)  | -0.281 (-1.530) | -0.407 (-0.506) | ΔEBT                |
| 2.01          | 0.002                 | -27.437 (-1.280)    | 16.190 (0.981)   | 10.876 (0.576) | -3.026 (-0.207) | 1.427 (0.366)  | -0.671 (-1.280) | -0.707 (-0.770) | ΔNI                 |
| 2.08          | 0.022                 | -4.696 (-0.836)     | -0.571 (-0.462)  | 1.817 (0.369)  | 0.549 (0.502)   | 0.249 (0.689)  | -0.003 (-0.052) | -0.055 (-0.174) | ΔTA                 |

\*\*\*, \*\*, \* are significant in error levels 1%, 5%, 10% accordingly.

The value of t is brought in the parenthesis.

**The results of the fourth hypothesis testing:**

The fourth hypothesis of this research predicts that the susceptibility of the accounting variables toward the business cycles for small companies is greater than that of big companies. The result obtained from this hypothesis testing are provided in table (5). The changeable coefficient EXP\*SIZE\*ΔGDP and the computed value t indicate that except for the accounting variable of the total assets changes (ΔTA) in small companies, the other accounting variables don't have any susceptibility toward the change in the economic conditions (business cycles). Among the studied variables, the total assets changes (ΔTA) in small companies are

susceptible toward the business cycles. In other words, in economic boom period, the small companies' assets increase significantly that is indicative of the considerable increase of small companies investment. Studying the impact of change in the real GDP on the accounting variables based on the size of companies showed that by decreasing the GDP, the gross earnings margin and the profit before tax deduction of small companies will reduce significantly. In other words, recession has a considerable negative effect on the profitability of the small companies, while the mentioned impact is not too much considerable on the big companies.

**Conclusion:**

The result of this research indicate that there is not a meaningful relationship between the most of accounting variables ( $\Delta EBT$ ,  $\Delta NI$ ,  $\Delta PM$ ,  $\Delta TA$ ) and the business cycles. The result of this study show that among the studied variables, the sales changes are affected by the business cycles, and the change in the sales of companies is greater in the economic boom period, as compared with the economic bust period. The study of business cycles effect on the accounting

variables based on the specific features of companies, such as cyclical or non-cyclical of them and their size showed that the range of impact is different according to the special features of companies. This study revealed that in the economic boom condition, the sales of cyclical companies takes a considerable change as compared to non-cyclical industries. In other words the sales of cyclical companies takes a noticeable increase, while the sales of non-cyclical companies doesn't take an expressive change.

Table (5): the result of the fourth hypothesis testing

$$Acct_{it} = \alpha_{11} + \alpha_{12}EXP + \alpha_{13}SIZE + \alpha_{14}EXP * SIZE + \beta_{11}\Delta GDP_t$$

| Wanso n camera | The assigning coefficient t of balance | EXP* SIZE* $\Delta GDP$ | SIZE* $\Delta GDP$  | EXP* $\Delta GDP$   | $\Delta GDP$       | EXP* SIZE           | SIZE               | EXP              | Dependen t variables |
|----------------|--|-------------------------|---------------------|---------------------|--------------------|---------------------|--------------------|------------------|----------------------|
| 2.12           | 0.024                                  | -0.583 (-0.064)         | -0.172 (-0.042)     | 0.199 (0.023)       | 0.641 (0.16)       | 0.173 (0.330)       | -0.369 (2.13)      | -0.169 (-0.349)  | $\Delta Sale$        |
| 2.21           | 0.008                                  | 26.950 (1.517)          | -42.308 (3.673**)   | -31.610 (-1.908*)   | 42.107 (3.731 ***) | -1.120 (-1.028)     | 1.938 (3.27 0 ***) | 1.415 (1.400)    | $\Delta PM$          |
| 2.11           | 0.012                                  | 8.829 (0.519)           | -29.711 (-4.226***) | -11.842 (-0.756)    | 29.545 (4.293 ***) | -0.608 (-0.542)     | 1.771 (3.78 6 ***) | 0.806 (0.781)    | $\Delta EBT$         |
| 2.11           | 0.011                                  | 20.871 (0.544)          | -40.239 (-1.149)    | -32.726 (-0.879)    | 48.543 (1.411)     | -1.135 (-0.744)     | 2.204 (1.93 3 **)  | 1.617 (1.114)    | $\Delta NI$          |
| 2.08           | 0.013                                  | 15.983 (2.642***)       | -0.229 (0.107)      | -14.867 (-2.507***) | 0.318 (0.154)      | -1.081 (-2.643** *) | 0.000 (0.001 )     | 1.022 (2.745** ) | $\Delta TA$          |

\*\*\*, \*\*, \* are significant in error levels 1%, 5%, 10% accordingly. The value of t is brought in the parenthesis.

The result of this study revealed that there is a meaningful relationship between the business cycles and the total assets changes of change of small companies. In other words, in the economic boom condition, the amount of small companies investment (the total assets changes) will increase significantly, while the total assets changes of large companies don't take a manifest change. Moreover studying the effect of change in GDP on the accounting variables based on the size of company showed that when the GDP decreases, the gross earnings margin and the profit before the tax deduction of small companies will take a considerable reduction. Generally the result of this research set forth limited evidence about the relationship between the accounting variables and the business cycles. Moreover the results of present study suggested that the effect of business cycles on some of the accounting variables is different according to the specific features of companies. This investigation provide us a more accurate insight about

the dynamic behavior of the accounting data in the major economy structure and can affect the knowledge and perception of financial analysts and users while analyzing the financial statements and predicting the future information of companies and also it can be effective for optimized economic decision makings of the users in regard to the transition of organization that is based on the specific features of companies.

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