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AN INVESTIGATION OF THE RELATIONSHIP BETWEEN CHANGES OF BALANCE SHEET ITEMS AND STOCK FUTURE OUTPUT: IRANIAN VIEW

ИСТРАЖИВАЊЕ ВЕЗЕ ИЗМЕЂУ ПРОМЈЕНА У БИЛАНСНИМ СТАВКАМА И БУДУЋИХ ВРИЈЕДНОСТИ АКЦИЈА НА БЕРЗИ: ИРАНСКИ ПОГЛЕД

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Summary: *The present study investigates analytically the relation between changes of balance sheet items and stock future output of listed companies in Tehran Stock Exchange. Since, one of these informative sources which are available for investors and creditors and financial analysts are fiscal lists of companies and in principle one of the main instrument as final output of accounting process and financial reporting, so the research aims to predict the stock output changes by investigating the balance sheet items.*

Along with the subject, six hypotheses are postulated and the kind of research method is correlation during 2005-2010. The results show that changes of fixed assets and also shareholders emolument have influence on the future exchange output. Nevertheless, the determination coefficients in the following model were low. This reveals that independent coefficient in the model have a weak relation with the future exchange output. Consequently, there is a meaningful relationship between balance sheet and listed companies in Tehran Stock Exchange.

Keywords: *Exchange output, net operational assets, debts, Tehran Stock Exchange.*

JEL Classification: *D53*

Резиме: *Овај рад бави се аналитичким истраживањем везе између промјена билансних ставки и будућих вриједности акција на Техеранској берзи. С обзиром да су фискалне листе компанија један од извора информација како за инвеститоре и кредиторе тако и за финансијске аналитичаре те у принципу представљају и један од главних инструмената у погледу коначног резултата обрачунског процеса и финансијског извјештавања, тако и ово истраживање има за циљ да се предвиде будуће вриједности акција кроз истраживање промјена билансних ставки.*

У раду је постављено шест хипотеза а метод истраживања је корелација у периоду од 2005. до 2010. године. Резултати показују да промјене на ставкама основних средстава и прихода акционара имају утицај на будуће вриједности акција на берзи. Ипак, коефицијенти за одређивање у датом моделу су били ниски. Ово указује на то да независни коефицијент у датом моделу има слабу везу са будућим вриједностима акција на берзи. Сходно томе, постоји значајна веза између биланса стања и наведених компанија на Техеранској берзи.

Кључне ријечи: *будуће вриједности акција на берзи, нето оперативна средства, дугови, Техеранска берза.*

ЈЕЛ класификација: *D53*

1. INTRODUCTION

Nowadays, investment includes an important part of economic activities and investment is one of the necessities of development in any society.

We can claim that no society can progress without investment. We need some information for investing in a society. So, information is used for explanation of the status of economical units. Most

of investors are faced with this question, that is, which of the above information can lead them toward optimized decision making, a decision which leads to maximize investors' wealth and property. Accounting process provides thesaurus related to activity of operation result and also resource and consumption of companies' cash in an annual financial period. Investors and financial analysts can find the economical unit status by using this information. In recent years, reporting method and accounting information revelation have affected the intra organizational and extra organizational users and have been considered by accounting research. Most of the recent researches also investigate the ability of predicting accounting items. Users of financial sheets have more and profound consideration and ability of forecasting the mentioned items in the lists. Various studies investigate the changes in financial lists and their relation with exchange of output. In recent years, the information of balance sheet has enjoyed a special place in evaluating and forecasting the stock efficiency. Investors, in fact, are a group of users who are interested in some information about substantial risk and their own investment's output and as providers of capitals for commercial unit risk. In this respect, investors must perform some wide and profound investigations while investing in typical exchange. This subject is discussed in countries where their exchange market has not the necessary efficiency. One of these instruments is information mentioned in the financial list, so investors can invest in the exchange market of the accepted companies by using this information.

The purpose of the study is to investigate the informative content of balance sheet through analyzing real information and help in this way the investors in making their decisions in order that they can gain more output from their own investments. In this paper, the relationship between balance sheet and exchange future output has been investigated.

2. LITERATURE REVIEW

Rayburn studies the cash resulted from operation item with exchange output. His focus was mainly on operational cash progress instead of total cash progress. The results of Rayburn's research show that there is coordination between operational cash progress and Exchange output (Rayburn 1986).

Ohlso and Penmen perform a study on a case of listed companies on New York Stock Exchange. They investigated the relationship between accounting information and exchange output and they applied linear regression model with two or more variables. They investigated the relationship between exchange official value and exchange output which survey the relationship between single balance sheet items and exchange output such as current capital, stockpiled depreciation, properties, machines and equipment, rather assets, long-term debts and premier (superior) stock. They performed two series of regressions for the above instances. Following are the results of Ohlson and Penmen research.

1-The relationship between official value and exchange output in comparison with between income of every share and its output is very trivial.

2- Level of introducing the exchange output by single balance sheet items is less than introducing the exchange output by official value.

3- By increasing time periods, level of introducing the exchange output through the balance sheet items is increased (Ohlso and Penmen 1992).

Sloan investigated this subject where the informative share price concerning mandatory items and pecuniary currents would show us the future profits. In this research he concluded that there is a negative relationship between current capital and exchange future output (Sloan 1996).

Chen et al., investigate the relationship between 9 perform criteria stock price and exchange output by surveying 325 companies during 1991-1995. They compared 3 (three) new performance criteria; Economical Value Added, cash current of investment output and remained cash flow with 6 traditional criteria of accounting. Results show that the performance criteria of economical assets value and investment output cash have a weak correlation with price and share output (Chen et al. 2002).

Haw et al., investigated rate of using financial information in analyst's decision making. Regarding that the information was primarily under consideration of the company information break down into 3 parts, and then the question has been introduced:

A) Company annual financial report includes: management activity report, accounting report, management letter, balance sheet assets (fund), balance sheet debts, profit and loss invoices, cash flow statement, 3 months reports and stock holders salaries have been investigated.

B) Information related to economy and industry which included industrial and economical information has been investigated.

C) Company's other information which were company's history and specifications, stock price information, management and specifications, stock price information, management and staff, past profit summary and key proportions have been investigated. The analysts were questioned which sets of information they use to analyze the company's status. The previous fiscal year information had been present to analysts and they were asked to predict the company's next year status. Prediction accuracy level shows the relevance items in the prediction and deviation from real output represents mistake in the prediction. After analyzing received responses, they found that shareholder's salary statement, balance sheet debt balance sheet funds, probable debts, taxes, long term debts, inventory have a lower prediction accuracy level and analysts do not make use of them for predicating very often (Haw et al. 2004).

Fairfield, Whishenant and Lambardy investigate the connotative concepts for future profitability and market inappropriate pricing. It is stated in this research that obligations are progressive (growth) element in operational net assets (Funds) and also are a part of future profitability. They separated profitability inside obligation and cash flow from operation and also separated growth in obligatory operational net assets (fund) from growth in long operational net assets. They concluded that net growth of operational assets has a negative relation with exchange output (Fairfield et al. 2003).

Hirshlefir et al., investigate that if investors limit their consideration, they use the results of accounting in which a soft method and positive aspects of a company's performance will be confirmed. They state that when balance sheet is assessed, investors give a high value (position) to the company by their limited consideration they suggested in their conclusion on operational net assets (stock) output (Hirshlefir et al. 2004).

Richardson et al., investigate the effects of operational net funds and its influence on future exchange output (Richardson et al. 2010).

3. OBJECTIVE OF THE STUDY

Stock output as one of the important factors in making best choice for investors concerns the basic financial lists of companies which generally are one of the main instruments for transmitting the information to the related persons and are a final product of accounting process and financial reporting. So, this paper aims to help investors and analysts to make correct decisions by calculating the stock future output and investigate its relationship with balance sheet items.

Balance sheet items consist of various elements and this paper investigates current assets, fixed assets (funds), current debts, long term debts, shareholder's salaries and also operational net assets which are gained from balance sheet items. Following are its concepts:

Current Assets concept:

Current Assets concept means those groups of assets which change into cash by normal operation and those assets which the company speculates as cash available in future

Fixed assets concept:

Most of the commercial units have done considerable investments in physical properties using them in operation and making their investment profitable in many periods. Important assets in this class consist of land, building, machines, equipment, installments, optimizing rental properties and land.

There is a need for an asset included in this class and the company makes use of pertinent asset to have income through operation.

Current Debt concept:

A time debt should be classified as current debt when its anticipation is settled during an operational circle of commercial unit or during one year after balance sheet date. (Anyone longer)

Long term debt concept:

Non-current debts are obligations which will be settled after one year operational circle. The most common long term debts are bonds, movable taxes, obligations of retirement and other advantages after retirement and rental obligations.

The effects of above obligations are on company's future operation, conditions of their reimbursement include original debt and profit payments.

Shareholders' equity concept:

By replacement in accounting equation we have: ownership equity= debts- assets (funds).

Ownership's equity in single owner unites is merely an accounts name. Reporting of ownership's equity of a joint Stock Company is somehow more complicated. Legal limitations, accounting guidelines and also separation of ownership and management provide a need for gathering more information about owners' profits in Joint Stock Company.

Shareholder's equity typically consists of three classes: (1) paid assets (2) stock piled profit (3) other item stock plied of comprehensive profit.

Operational net assets concept:

To define the operational net asset, first we must determine its two main parts which are operational debts and operational assets.

Operational debts, in fact are equal to a figure which is calculated after detracting long term debts, short term debts and shareholder's salary from total debts. Operational asset is calculated by detracting cash and short term investment from total assets- finally, operational net assets is calculated by detracting operational debts from operational assets. Operational net assets are used as a measure for evaluating and predicting stock output.

Research question:

Regarding the research objective we investigate whether there is a meaningful relationship between changes of balance sheet items and changes of stock future output.

According to the above mentioned question the following hypotheses are postulated in the study.

4. RESEARCH HYPOTHESIS

1- There is a meaningful relationship between changes of current assets and changes of stock future output.
2- There is a meaningful relationship between changes of fixed assets and changes of stock future output.
3- There is a meaningful relationship between current debts and changes of stock future output.
4- There is a meaningful relationship between changes of current long term debts and changes of stock future output.
5- There is a meaningful relationship between changes of current operational net assets and changes of stock future output.
6- There is a meaningful relationship between changes of current share holder's salary and changes of stock future output.

Research variables and their measurement method:

In this paper, we investigate the relationship between dependent variable (stock future output changes) and independent variables (current assets, fixed assets, short term debts, long term debts, operational net assets and minority shareholders' salary). In this research, stock future output is

calculated as: total stock output: share priority value + share value + cash profit + increasing share price at the beginning of year.

1- In this research current assets are regarded as independent variable and to calculate it we detract the amount of current asserts in the past year from the amount of current asset in a year and then divide it to the absolute value of current asset amount in the past year.

$$\text{Current asset changes} = \frac{CA_t - AC_T - 1}{|CA_t - 1|}$$

2- The fixed assets are regarded as independent variable and to calculate it we detract the amount of fixed asset in the past year from the amount of fixed asset in a year, and then divide it to the absolute value of fixed asset in past year.

$$\text{Fixed assets changes} = \frac{FA_t - FA_T - 1}{|FA_t - 1|}$$

3- The short term debts are regarded as independent variable and to calculate it we detract the amount of short term debt in past year from the amount of short term debt in a year and then divide it to the absolute value of short term debts in the past year.

$$\text{Short term liability changes} = \frac{CL_t - CL_T - 1}{|CL_t - 1|}$$

4- Long term liabilities are regarded as independent variable and to calculate it we detract long term liability in pasty year from long term liability in a year then divide it to the absolute value of the amount of long term liability amount in past year.

$$\text{Long term liability changes} = \frac{Ncl_t - Ncl_T - 1}{|Ncl_t - 1|}$$

5- Net operational assets are regarded as independent variables and to calculate it we detract the amount of net operational assets in the past year from net operational assets in year and then divide it to the absolute value amount of net operational asset in past year.

$$\text{Net operational assets changes (variation)} = \frac{NoA_t - NoA_T - 1}{|NoA_t - 1|}$$

6- Shareholders' equity are regarded as independent variable and to calculate it we detract the amount of shareholders' emolument in past year from the amount of shareholders' equity in a year and then divide it to the amount of absolute value of shareholders' equity in the past year.

$$\text{Shareholders' equity changes} = \frac{SE_t - SE_T - 1}{|SE_t - 1|}$$

Statistical society:

In this paper, listed companies on the Tehran Stock Exchange are selected as statistical society. The reason for this selection is more consideration by investors and availability of information and also transparency of those companies' accounting information data. On the other hand, joint stock nature of listed companies on Tehran Stock Exchange and making the financial lists available for vast variety of users was reason for selecting these companies.

Statistical sample and sampling method:

Sampling is completely systematic. So, we selected qualified companies among listed companies on the Tehran Stock Exchange:

1- Regarded company must be listed before the year of 2005.
2- The end of regarded company's fiscal year must be 29 March of each year.
3- Regarded company should not have any transaction stop in the studied period.
4- Regarded company should not have any change in fiscal year in the studied period.

5- Regarded company must be among those active members in market.

Since we have calculated stock future output in this paper, it is required that existing company as the sample be an active one, thus, the number of company's transactions on Stock Exchange must reach a place so that we can say that share price reflects stock facts, consequently, regarded company transactions should not be below 40 times in a year.

6- The data of regarded company must be available (in access).

5. RESEARCH METHOD

Since, in the present research, the goal is investigation of relationship between variables, the research method is correlation.

In order to test hypothesis statistically, we use the multi variable regression and F, T and also the SPSS software to estimate coefficients and calculate needed figures for explaining and analyzing statistics.

Data collection method:

The required data are collected through observation including company's financial list information and also the information related to company stock in Tehran Stock Exchange. According to this, all applied formation in this paper is collected by Tadbirpardaz and Sahra software and also Tehran Stock Exchange archives.

Hypothesis test results:

First hypothesis: by considering the data Table, there is no relationship between changes of current assets and changes of stock future output.

Since, the meaningful level T is greater than 5% there is no meaningful relationship between changes of current assets and changes of stock future output at the confidence level of 95%.

Second hypothesis: by considering the data table, there is a relationship between changes of fixed assets and changes of stock future output since it is positive and direct. Because mean level T is less than 5%, there is a meaningful relationship between changes of fixed assets and changes of stock future output at the confidence level of 95%.

Third hypothesis: by considering the data table, there is no relationship between changes of current liabilities and changes of stock future output. Because meat level T is greater than 5%, there is no meaningful relationship between changes of current liabilities and changes of stock future output at the confidence level of 95%.

Fourth hypothesis: by considering the data table, there is no relationship between changes of long term liability and changes of stock future output. Since the mean level T is greater than 5%, there is no meaningful relationship between changes of long term liabilities and changes of stock future output at the confidence level of 95%.

Fifth hypothesis: according to the data table, there is no relationship between changes of operational assets and changes of stock future output.

Since the mean level T is greater than 5%, there is no meaningful relationship between changes of net operational asset and changes of stock future output at the confidence level of 95%

Sixth hypothesis: according to the data table, there is a relationship between changes of shareholders' salary and stock future output. Since it is negative, it is reverse. Since the mean level T is lesser than 5%, there is a meaningful relationship between changes of shareholder's salary and stock future output at the confidence level of 95%.

So, the main hypothesis, relationship between changes of balance sheet items changes and changes of stock future output has been tested. In order to test the hypothesis, we used a multivariable regression and the following is the equation $y=b_0+b_n1x1+ b_2x2+b_3*3+b_4*4+b_5*5+b_6*6$

The results according to regression model (multiple) stepwise are presented in Table 1.

Table 1. The regression model (multiple) stepwise of testing of hypotheses

Variable	Stock future out put	Current assets	Short term liability	Long-term liability	Net operational assets	Shareholder equity	Fixed asset
Correlation coefficient Stock future output by meaningful level total	1.000 0.000 480	0.000 0.994 480	-0.001 0.989 480	-0.001 0.989 480	0.003 0.954 480	-0.115 0.011 480	0.250 0.000 480
Correlation coefficient Current asset by meaningful level total	0.00 0.994 480	1 0.000 480	0.999 0.000 480	0.999 0.000 480	0.902 0.000 480	-0.004 0.000 480	0.000 0.994 480
Correlation coefficient Current liabilities by meaningful level total	-0.001 0.989 480	0.999 0.000 480	1 0.000 480	0.999 0.000 480	0.902 0.000 480	-0.006 0.000 480	-0.002 0.964 480
Correlation coefficient Long term liabilities by meaningful level Total	-0.001 0.988 480	0.999 0.000 480	0.999 0.000 480	1.000 0.00 480	0.902 0.000 480	0.011 0.806 480	-0.002 0.969 480
Correlation coefficient Net operational assets by meaningful level Total	0.003 0.954 480	0.902 0.000 480	0.902 0.000 480	0.902 0.000 480	1.000 0.000 480	0.188 0.000 480	-0.002 0.969 480
Correlation coefficient Share holders' salary by meaningful level total	-0.115 0.011 480	-0.004 0.933 480	-0.006 0.889 480	-0.011 0.806 480	0.188 0.000 480	1.000 0.000 480	-0.011 0.803 480
Correlation coefficient Fixed assets by meaningful level Total	0.250 0.000 480	0.000 0.994 480	-0.002 0.964 480	-0.002 0.961 480	-0.002 0.969 480	-0.011 0.803 480	1.000 0.000 480

Source: Author's calculations

At the first model, fixed assets changes are regarded as independent variable while at the second model, we use changes of shareholders' salary and also changes of fixed assets changes. So, these two models as shown in the table are investigated in terms of how much dependant variable states independent variable. At the first model R- square= 63% and in the second model R-square=- 75%. As a result, regarding the increase at the second model, this model is better for stating the relationship between changes of balance sheet items and changes of stock future output the results of which are shown in Table 2.

Table 2. The results according to regression model

model	R	R square	Adjusted R square	S.D	Durbin-Watson
1	0. 250	0.03	0.061	3513.48742215	2.016
2	0.275	0.075	0.072	3493.34024708	

Source: Author's calculations

At the ANOVA table, models are tested from the view of mean level F. and since the mean level F is less than 5%, there is a linear relationship between changes of stock future output and independent variable. The results are presented in Table 3.

Table 3. Variance analysis table (ANOVA)

model	Second square total	D.F	Second square average	F test	Sig.
Regression	3.95	1	394938740		
1 residual	5.90	478	12344593.87	31.933	0.000
total	6.30	479			
Regression	4.75	2	23710183.3		
1 residual	5.82	477	12203426.08	19.446	0.000
total	6.30	479			

Source: Author's calculations

In the coefficient table B, models are tested for the B amount. And since the second model is regarded in this research, the coefficients B0 are investigated in the investigation; regarding the mean level T concerning B0 since its level is 5%, so the amount of B in the model is not regarded as cross coefficient from offset. The results are shown in Table 4.

Table 4. Coefficients table

model	None-standardized Recessional Coefficients		Standardized Recessional coefficients	T	Sig.
	B	S.D	beta		
1 fixed value	8.856	160.535		0.053	0.957
			0.250		
Fixed assets	0.005	0.001		5.656	0.000
2 fixed value	76.681	161.824		0.474	0.636
Fixed assets	0.005	0.001	0.0249	5.659	0.00
Shareholders' equity	-172.872	67.653	0.113	2.555	0.011

Finally, the following model is concluded as case model.
$Y = 0.005 x_1 = -172.872 x_2$

Source: Author's calculations

6. CONCLUSION AND REMARKS

The research results show that there is no meaningful relationship between changes of current assets and changes of stock future output. Perhaps one of the reasons is that investor have less consideration to this item to invest in fiscal list. And they have much focus on profit and its content parts. So, it has no effect on stock output. In this paper, it is determined that there is a meaningful relationship between fixed assets and stock future output. One also shows that this relationship is direct. It means that by increasing the fixed assets changes, stock future output increases. One reason can be the fact that changes of fixed assets and increasing amount of it means that the company aims to increase its activity and production by applying these assets. Another result of this paper is that there is no meaningful relationship between current liabilities and stock future output. It suggests that financial analysts have not regarded this indicator to evaluate the stock. In this paper, the relationship

between long term liabilities changes and stock future output is investigated. Finally it is determines that there is no meaningful relationship between long term liabilities and stock future output.

The results of this paper show that there is no meaningful relationship between changes of shareholders' equity and future stock output. This relationship is reveres. What is determined is that company's financial assets can be provided through taking loans, emission of stock and current operations. Eventually, by the fact that there is a relationship between changes of fixed assets and shareholders' equity as balance sheet item and stock future output, but as determined by the above model this relationship is so weak and suggests that balance sheet items changes as one of the financial list had a little information content and cannot be applied to predict stock output of the listed companies on the Tehran Stock Exchange.

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