Relationship between Financial Ratios and Stock Prices for the Food Industry Firms in Stock Exchange of Iran

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Abstract: Food stocks in the stock market is one of the serious debate in the industry is considered. The main subject of the relationship between financial ratios and stock prices of companies listed on the Stock Exchange of food. The data from the years 1992 to 2010 were used to stock the food of choice for companies. Financial variables including liquidity ratios (current ratio), the ratio of activity (asset turnover), the profitability (rate of return on assets and return on equity) and financial leverage (debt) and equity prices food stock. Some results indicate that there is a positive and significant response in food prices due to shocks of the current ratio, return on assets and return on equity rate. The results of this analysis also show that in the first period of greatest change in the current ratio is explained by this variable. But this share has been declining gradually. Variance of decomposition of the asset turnover ratio fluctuations in their asset turnover ratio on the performance. Analysis of financial leverage financial leverage on the shock of their impact is an important variable. As was shown, during this period of the shock on their first reaction is positive and significant but fluctuating after that.

Keywords: financial ratios, stock prices of food industry, Impulse response, Variance decomposition

I. INTRODUCTION

Economic development of every country depends on the money and capital markets in the economy of every country. Given the importance of mobilizing the savings of the capital market in the economic activity, it is important to identify the variables affecting the stock price [9]. The most important resource that can give visibility to investors about the company, the financial statements [2]. The financial statements give a decision on the guide. Using financial ratio analysis can be largely attributed to changes in stock prices can be discussed.

Gallizo and. Salvador (2006) the relationship between stock prices and accounting variables examined. Their results indicate that firm size and asset turnover ratio is the most relevant factor affecting stock prices.

Long Chen (2007) examined the factors affecting the price he pays, and the results show that the stock price has the greatest impact on cash flows.

Dimitropoulos and Asteriou (2009) titled "Communication with the financial statements and on stock prices," a survey of 101 companies listed in the Athens Stock Exchange for a period of 10 years accruals simultaneously, for each profit Share and six special relativity as an indicator of stock price manipulation in the financial statements were reviewed. This study indicates that the variable accounting profitability is the most relevant variable.

Esmeili (2002) between financial ratios and stock prices in the vehicle industry and has tile industry during the period 1996-2002. Results showed a significant relationship between the independent variables (financial ratios) and its affiliated companies existing there.

Rostami (2004) investigated the relationship between financial ratios of listed companies on the Stock Exchange stock returns paid rate. The results indicate that the two levels of firms and industries separately accepted by monitoring the financial ratios used in the rate of return on equity is a meaningful relationship.

Miri and Abrahimi (2011) examined the relationship between linear and nonlinear relationships Mai and non-metallic minerals industry stock prices in Tehran Stock Exchange for the years 2003 to 2009 were reviewed. Their results showed that the linear and nonlinear relationships between financial ratios and stock prices, there is no model in explaining stock prices have a greater ability to intercept to explain Competent.

Salehnejad and brave (2010) Effect of rate of return on assets and return on equity and financial leverage Stock Exchange listed companies multivariate regression variables are delayed. Shows the results of testing hypotheses rate of return on assets and return on equity stock listed companies on the Stock Exchange has a significant financial leverage ratio is not significant.

Hashemi and Behzadfar (2011) in a study evaluating the relationship between the information content of accruals and financial ratios of selected listed companies on the Stock Exchange stock quotes research hypotheses represent significant earnings per share, the ratio of working capital to assets, return on assets, net profit and sales turnover of the assets in the stock price.

This paper shows that the use of financial ratio alternative to the use of financial information that is contained in if shares will be tested. Population and requirements for companies in the food industry to take stock of the research sample are as follows: Access to financial information listed companies is possible. None of the companies during the financial year under review no. Also during the period under review is exchanged. Therefore the companies are listed companies, the food industry was selected.

Hypotheses
Significant correlation between the activity of (asset turnover) and food stocks exist.
Significant relationship between profitability ratio (return on assets and return on equity value) and food stocks exist.
Significant relationship between liquidity ratios (current ratio) and food stocks exist.
Significant relationship between financial leverage and stock price of food exist.
Variables and activity ratios include profitability ratios, return on assets, return on equity was chosen.

II. METHOD OF RESEARCH

In the present study, the effects on the financial ratios used in food industry stock prices. Usually the interaction of several variables time series of simultaneous equations system is used. In this context, there is a structural pattern that virtually every one of the equations is determined on the basis of economic theory. In fact, in such systems based on the theoretical foundations of each of the endogenous variables are functions of the variables should be decided. This pattern of positive features is as follows:

Method is very simple, with the exception of the width of the source, and the variables are dummy variables that sometimes enter the model, other variables are endogenous.

Coefficients of the model can be easily estimated using the OLS method.

Pattern is reduced. In other words, the delay values Yt, Yt set. However, some disadvantages of the VAR model is as follows:

Unlike VAR models with structural equation simultaneous equations model is based on economic theory, economic theory has no basis.

One of the major problems in modeling VAR model to determine the optimal number of variables.

The estimated VAR model coefficients are hard to interpret, especially when the symptoms are variable interval coefficients. VAR model in matrix form in the following form:

$$Y_t = A_1 Y_{t-1} + A_2 Y_{t-2} + ... + A_p Y_{t-p} + U_t \qquad\qquad (3\text{-}1)$$

Where Ut and Yt and its interrupt vectors and matrices Ai k × 1 and k × k are the model coefficients. Multivariate dynamic analysis of benefits, including the problem of simultaneity between the variables is considered.

It has been observed that forecasts based on VAR model better predicted by the model presented in equation [11]. In this study the possible relationship between financial ratios and stock prices in the food industry VAR model is discussed. Therefore, considering the above points, the model will be as follows:

$$x_t = \alpha_0 + \sum_{i=1}^{k} \alpha_1 x_{t-i} + \sum_{i=1}^{k} \alpha_2 y_{t-i} + \sum_{i=1}^{k} \alpha_3 z_{t-i} + u_{1t}$$

$$y_t = \beta_0 + \sum_{i=1}^{k} \beta_1 y_{t-i} + \sum_{i=1}^{k} \beta_2 x_{t-i} + \sum_{i=1}^{k} \beta_3 z_{t-i} + u_{2t}$$

$$z_t = \gamma_0 + \sum_{i=1}^{k} \gamma_1 z_{t-i} + \sum_{i=1}^{k} \gamma_2 x_{t-i} + \sum_{i=1}^{k} \gamma_3 y_{t-i} + u_{3t}$$

$$(2-3)$$

Where, xt, yt, zt represents the variables and financial ratios (liquidity ratios and profitability ratios, activity ratios and financial leverage), the stock price of food. For a more detailed explanation of volatility variables, the dynamic behavior can be modeled by an impulse response functions can be studied. In fact, the function of the VAR model for the dynamic creation of an impulse is considered to represent a specific variable. This change is called Innovation. The momentum that comes to white noise. Impulse response functions of the endogenous variables respond to shocks to the system describes the disruption clauses. To better illustrate this, consider the following model:

Yt = α10 + α11 Yt-1 + α12 Yt-2 + α13 Xt-1 + α14 Xt-2 + ε1   (3-3)
Xt = α20 + α21 Yt-1 + α22 Yt-2 + α23 Xt-1 + α24 Xt-2 + ε2   (4-3)

Reaction function of the size of one standard deviation shock on the current and future values of the endogenous variables shows. E1 and ε2 are uncorrelated if the disturbance terms, ε1 and ε2 represent sudden changes Yt ,Xt represents the sudden changes. Therefore, the response to changes in ε2 represent one standard deviation shock to the current and future values of Xt on Yt and Xt is. The overall shape of the impulse response is as follows:

A(L) Yt = Ut
A(L) = I + A1L + A2L2 +… + APLP   (5-3)

P model is a description of the model order. If A (L) to reverse its moving average model as a model is described in the following figure:

$$\frac{\partial Y_{ti}}{\partial U_{(t-s)j}} = b_{ij}^{(s)} \Rightarrow \Delta Y_i = \Delta U_{(t-s)j} b_{ij}^s$$

bij impulse response of variable j in i period after the initial shock of the variable j. Way analysis of variance to analyze the dynamic interaction of shocks generated offers. Granger causality chain approach relative strength or degree of exogenous variables beyond the sample period is measured. To investigate the relationship between financial ratios and stock price variables VAR model was used within the food industry. The information from 1992 to 2010 that financial variables including liquidity ratio (current ratio), the activity of (asset turnover), the relative profitability (rate of return on assets and return on equity) and financial leverage (debt) and price Food stocks (8 Pars oil company, including food, Dairy cleaners, Pichak, Barking animal feed, Salemin Factory, Food Mashhad, Mahram, Nab and Keyvan) Eviews7 software that was used to estimate the model.

III.   RESULTS AND DISCUSSION

To determine appropriate strategies for estimating, in the present study was to test static variables. Data reliability of this method is not sequential. Static test results are presented in Table 1. The results indicate that the reliability of the variables variables are stationary in levels significantly different. Accordingly, the objective of this study was to estimate VAR models were used. Hence the relationship between liquidity ratio (current ratio), the activity of (asset turnover), the profitability (rate of return on assets and return on equity) and financial leverage (debt) and equity prices in the way of food VAR was estimated that the results in tables 6 to 9 are presented. After estimating the model parameters can be calculated as a function of the impulse response and variance decomposition to examine the dynamics of the model.

Table 1. Results of stationary test for variables

variables		type of Stationary
Food price of stock	aa	I(0)
Liquidity ratio (current ratio of food)	bb	I(0)
Activity ratio(asset turnover food)	cc	I(0)
Relative profitability (rate of return for the food industry)	dd	I(0)
Relative profitability (rate of return on equity	ee	I(0)
leaverage ratio (debt ratio)	gg	I(0)

Figure 1 shows the response to food price shocks on the current ratio. According to this figure , food price of stock response positively and significantly in front of shock Liquidity ratio in first and seventh period. So this figure shows that Current shocks than positive reaction to this from the beginning of the study period 10.
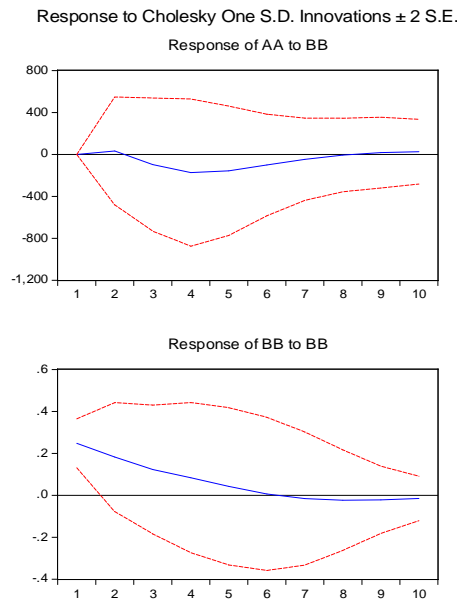

Figure 1. Impulse response function Liquidity ratio
Source: Research findings

The results of this analysis are presented in Table 2. The table shows that only 24 percent of the first period, the current ratio is explained by these variables. But this share gradually declined to about 0/015 in the tenth period. In general, what can be obtained from the table that the current momentum toward their most important variable affecting the current ratio. Shocks inflicted on this variable in a 10-year period are shown in Figure 2. As was observed during the period of the shock on the current ratio, the reaction has been positive and significant.

Table 2. varaiance decomposition liquidity ratio

BB	AA	Period
0.247956	0.000000	1
(0.05844)	(0.00000)	
0.182259	32.37373	2
(0.12998)	(257.085)	
0.122908	-97.48952	3
(0.15346)	(317.470)	
0.083802	-173.4522	4
(0.17903)	(350.998)	
0.042727	-156.4725	5
(0.18744)	(308.144)	
0.006480	-101.0133	6
(0.18252)	(242.150)	
-0.015568	-46.43350	7
(0.15859)	(196.427)	
-0.023292	-6.337766	8
(0.11979)	(175.391)	
-0.021470	16.91636	9
(0.08006)	(168.589)	
-0.015112	25.44026	10
(0.05293)	(154.285)	

Source: Research findings

The results of this analysis are presented in Table 2. Considerable fluctuations in asset turnover ratio, which forms an impulse response functions in the long run it is more volatile. Changes in this ratio are explained by these variables. In general, what can be obtained from the table that the current momentum toward their most important variable affecting the current ratio. Shocks inflicted on this variable in a 10-year period are shown in Figure 2. As was observed during the period of the shock on the current ratio, the reaction has been positive and significant.
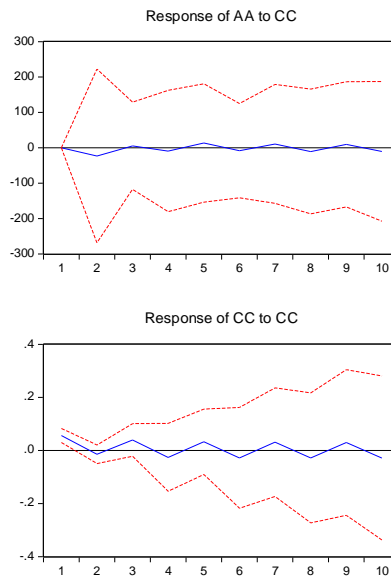

Figure 2. Impulse response function Activity ratio
Source: Research findings

Asset turnover ratio analysis as described in Table 3. According to this table, the variables have been studied in the last 10 period. Share this trend in asset turnover ratio 0/05 in the first round of the -0/02 But the share price variable is not significant. The asset turnover ratio of positive and negative self-variable analysis of variance to compare the performance period is 7.

Table 3. Variance decomposition Activity ratio

CC	AA	Period
0.056384	0.000000	1
(0.01329)	(0.00000)	
-0.014501	-23.11272	2
(0.01747)	(122.706)	
0.039631	5.500303	3
(0.03067)	(61.6041)	
-0.025987	-9.407197	4
(0.06397)	(85.7779)	
0.032711	13.59772	5
(0.06164)	(83.5935)	
-0.027987	-8.212471	6
(0.09490)	(66.6678)	
0.031324	10.81956	7
(0.10231)	(84.0338)	
-0.028151	-10.58771	8
(0.12246)	(88.1357)	
0.030023	9.620455	9
(0.13732)	(88.3848)	
-0.028456	-10.24310	10
(0.15448)	(98.6720)	

Source: research findings

The survey impulse response rate of return equity shows in table 3. Food price response positively and significantly in front of shock on rate return equity. Shocks on rate return equity on its variable response positively and significantly and after that until seventh period response significantly. Shocks on second and third and seventh effects significantly.
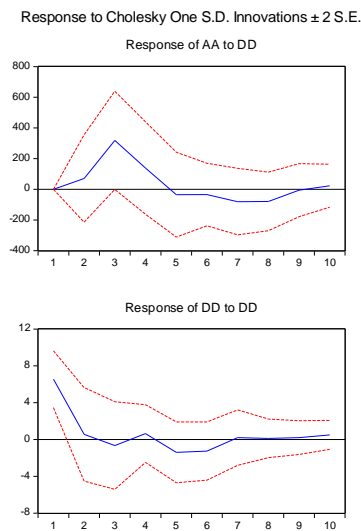

Response to Cholesky One S.D. Innovations ± 2 S.E.

Response of AA to DD

Response of DD to DD

Figure 3. Impulse response function profitability ratio
Source: Research findings

The results obtained in table 4 shows that 0/49 per cent rate of return on your investment by changing 22/80 food industry stock prices is explained by the variables. During this period shoes that share variables of rate return of equity ratio decrease but price food of stock increase that don't become significant.

Table 4. variance decomposition rate return of equity

DD	AA	Period
6.547154	0.000000	1
(1.54318)	(0.00000)	
0.557065	70.78802	2
(2.54477)	(142.317)	
-0.662168	318.6885	3
(2.38070)	(159.984)	
0.641876	138.2628	4
(1.56621)	(150.664)	
-1.399991	-34.92898	5
(1.65273)	(138.328)	
-1.261820	-34.26337	6
(1.58063)	(101.835)	
0.199178	-80.75463	7
(1.50515)	(108.504)	
0.116272	-79.23818	8
(1.04620)	(95.4139)	
0.200700	-5.873189	9
(0.91639)	(86.5334)	
0.497631	22.80780	10
(0.78460)	(69.8865)	

Source: Research findings

It appears, this means that the effect of these shocks cause price fluctuations. The rate of return on equity at the beginning of the reaction to the shock of the price of stock.
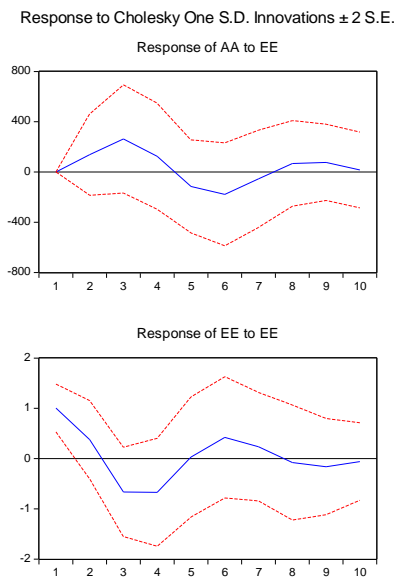

Response to Cholesky One S.D. Innovations ± 2 S.E.

Figure 4. Impulse response function rate of return on equity
Source: Research findings

Table 5 Analysis of variance of the stock rate of return on equity. According to this table, the variables have been studied in the last 10 period. The relationship between the rate of return on shares of rate of return on equity process from 1 to - 0/05 percent during the first. However, the contribution of food price variable is not significant. The fluctuation analysis of variance of returns on the stock rate of return on equity variable is not significant profitability.

Table 5. variance decomposition rate of return on equity

EE	AA	Period
1.006314	0.000000	1
(0.23719)	(0.00000)	
0.375565	138.1082	2
(0.38855)	(161.932)	
-0.664171	262.7724	3
(0.44506)	(215.360)	
-0.672034	124.6437	4
(0.53740)	(211.196)	
0.031735	-115.0195	5
(0.59740)	(185.438)	
0.422840	-178.2046	6
(0.60388)	(204.661)	
0.235247	-54.51273	7
(0.53952)	(193.568)	
-0.079512	68.10058	8
(0.57206)	(170.551)	
-0.160805	76.61231	9
(0.47852)	(151.932)	
-0.058704	15.91044	10
(0.38506)	(150.677)	

Source: research findings

It appears that incoming impulses from the financial leverage, the food industry has a significant effect on stock price fluctuations. Shock imposed by the financial leverage increases the volatility of the stock price and increasing volume of food, food price stability arises. The shock of the financial leverage variable is significant in itself 4.
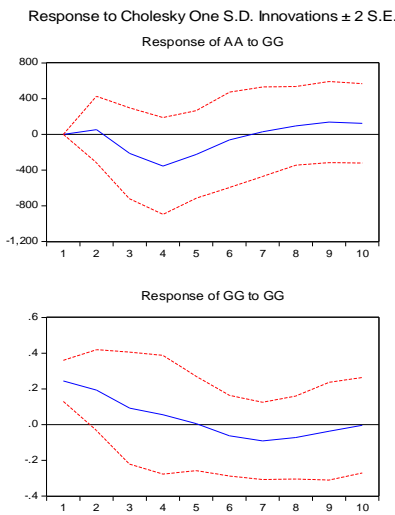

Figure 5. Impulse response function leverage finance
Source: Research finding

Statistical analysis of financial leverage ratios are presented in Table 6. The table shows that only 24 percent of the first period on a financial leverage ratio is explained by these variables. But this share gradually declined to about -/004 per cent in the tenth. In general, what can be obtained from the table that the current momentum towards financial leverage their impact is an important variable. As was observed during this period than the shock itself and in response to significant fluctuations after it is initially positive.

Table 6. Variance decomposition leverage finance

GG	AA	Period
0.244585	0.000000	1
(0.05765)	(0.00000)	
0.192936	53.08874	2
(0.11325)	(186.141)	
0.091738	-213.7153	3
(0.15681)	(254.653)	
0.054825	-354.8545	4
(0.16631)	(271.095)	
0.005883	-225.9753	5
(0.13191)	(245.337)	
-0.062514	-62.04412	6
(0.11302)	(267.140)	
-0.091602	29.14135	7
(0.10808)	(250.808)	
-0.072586	94.78114	8
(0.11626)	(220.255)	
-0.037443	137.3273	9
(0.13688)	(227.098)	
-0.004083	122.8603	10
(0.13359)	(222.246)	

Source: Research findings

IV.   CONCLUSIONS AND SUGGESTIONS

The results indicate that the food price shocks caused by current ratio show a positive and significant response in periodically. The result of this analysis also shows that in the first period of greatest change in the current ratio is explained by these variables. However, this share has been declining gradually. During this period, compared to shock their response has been positive and significant.

Response to shocks on asset turnover and asset turnover ratio variable is significant stock price during the period under review. Considerable fluctuations in asset turnover ratio, which forms an impulse response functions in the long run it is more volatile. The asset turnover ratio of positive and negative variance decomposition analysis asset turnover ratio is a function of the variable itself show. Momentum in the second period, the third and seventh will affect. It appears, this means that the effect of these shocks cause price fluctuations. Analysis shows that the rate of return for rights owners share food price variable is not significant. The fluctuation analysis of variance of equity returns on the variable itself is not significant profitability. Acting on the impulse of financial leverage, which resulted in a significant effect on stock price volatility in food industry. Shock imposed by the financial leverage increases the volatility of the stock price and increasing volume of food, food price stability arise. Financial leverage the current momentum towards its variance ratio is the most important variable affecting. As was observed during this period than the shock itself, and in response to significant fluctuations after it is initially positive. Financial leverage is obtained in the current momentum of their impact is an important variable. As was observed during this period than the shock itself, and in response to significant fluctuations after it is initially positive.

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