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To Be Smooth of The Interest and Output of Accepted Companies Stock at Negotiable Paper Exchange of Tehran

Mohammad Hadi Zohdi, Mohamad Reza Dalvand, and Maryam Zohdi

***Abstract*—**In this research relationship between to be smooth the interest and output of accepted companies stock at negotiable paper exchange of Tehran is studied. Static community capacity included 363 companies member of negotiable paper exchange of Tehran that 54 companies were, by considering research limitation, selected from 2004 to 2009. Needed data for model test in librarian method was chosen from RAH AVARDE NOVIN informative banks, TADBIR and collecting needed data was selected from Tehran negotiable paper exchange archive. Given results show that in spite of belief among people based on companies have more smooth interest have more output, but resulted outcomes of test-done reveals that there is no relation between smooth interest and stock output.

***Keywords*—**Smooth interest, interest fluctuation, interest level, output average, cost capital

I. Introduction

One of the important aspects related to financial reporting discussion is interest management and interest leveling. One of the related theories in this field in that managements often get into leveling the interest by using methods that include lessening the fluctuation of net interest. Because to management belief, investors are all ready to pay more money for investing in company that has a flown interest level. So, smooth interests can be caused high price of stock and also resulted high stock output.

Gordon (1964) found out that managements can, by using accounting rules, level interest and bring about stockholder satisfaction by this activity. He also believes that companies by leveling in different terms of the interest cause high interest division (long term), thus price of these companies are really high [7].

Investors prefer more stable and leveled interest instead of more fluctuation ones. In other words, it can be analyzed that although interest stability can be expressed as a qualified interest from viewpoint of data users of financial sheets, this quality can be resulted from management retouching in using accountant methods and principles.In regard to what was said, present research is seeking to study whether to be smooth of interest can be a data for predicting stock output? To be smooth of interest what kind of impact has on stock output? Recent research for anticipating output of stock used Fama and French method. In this model stock output is a function of company size, ratio of official profit into marketing profit and ratio of differences of marketing output into without risk output. Because effects of these factors on stock output were confirmed by various researches such as Jensen and Mercer (1997), Bildik and Gulay (2002), Chiao et al (2005), Michailidis, Tospoglou and Papanastasio (2006), Nartea and Ward (2009) and others, this model was selected.

Mohamad hadi zohdi is with Islamic Azad University, Zahedshahr branch, Zahedshahr, Iran (phone: +989177050153; fax: +98732-3523900; e-mail: hadi.zohdi@ gmail.com).

Mohammad Reza Dalvand is with Islamic Azad University, Zahedshahr branch, Zahedshahr, Iran (mr_dalvand@yahoo.com)

Maryam Zohdi is with Islamic Azad University, Zahedshahr branch, Zahedshahr, Iran (e-mail: hoda_zohdi@yahoo.com).

II. Research history

Albert and Richardson (1990), in research on effective factors on leveling the interest, found some testimonies that company size is an impactful factor in leveling the interest [1].

Michelson and Wooton (2000) pursued the test of this problem whether respond of stock marketing to company function related to interest level? They found out that companies which reported more leveled interest had more stocked strange average output towards other companies [12].

Wei and Zhang (2006) illustrated that there is a positive relation between output fluctuation and interest fluctuation. They declared that this problem is direct to the hypothesis which output fluctuation is resulted from recent interests [15].

Rahnamay roodposhti and Valipour (2010), by dividing interest fluctuation into short and long terms fluctuation, studied on impacts of mentioned variables on stock output [14].

McInnis (2010) revealed that in spite of the believes among companies managements based on that leveled interest regards to more output, but there have been no relation between to be planes of interests and stock output average in 30 previous years in US [10].

According what it was said in problem expression and research history, below hypothesis was given:To be smooth of interest positively influences on stock output of accepted companies in Tehran negotiable paper exchange.

III. Material and Method

A. Standard Smooth Interest Measurement

To evaluate this variable various models have been presented that the most significant one is traditional models of Imhaf and Ikel. In presented research regarding in showed model by McInnis (2010), standard interest-smooth is explained as following:

$$Smooth = \frac{SD(NI)}{SD(CFO)} \quad (1)$$

That smooth is given as a standard smooth interest, SD as a standard deviation of net interest and SD as a standard deviation of operational cash process.

B. Stock Output

To evaluate ordinary stock output in presented research below equation was used:

$$R = \frac{(1+\alpha)(P_1 + D) - P_0}{P_0} \quad (2)$$

R is company stock output, P_1 is company stock marketing price at the end of the term, P_0 is company stock marketing price at the beginning of the term, D is cash interest, delivery priority, stock analysis, belonged proportion interest to every interest of company and α is increasing invest percentage.

IV. Research Methodology

Whereas this research focused on relationship among variables, so this research is correlation researches kind. Recent research is a kind of correlation and regression one. In such these researches study of available relations among variables is aimed and data were collected and analyzed from environment that were merely nature or former events that were occurred without direct interfere of researcher. In present research, the prediction model of stock output Based on Fama and French model (1992), stock output of risk functional company is equal to company size and ration of official profit into company stock marketing profit. They believed capital asset pricing model (CAPM) is not able to predict and calculate stock output only by using companies' risk factor. Because of that they put two factors of company size and ratio of official profit in marketing profit into the stock output prediction model. They said that two factors of size and official profit ratio is able to express many risk aspects that CAPM is disable to do that. Their give model is as following [5]:

$$R_{i,t} = a + b_{1t}\beta_{i,t} + b_{2t}\ln(ME_{i,t}) + b_{3t}\ln(BE/ME)_{i,t} + e_{i,t} \quad (3)$$

In recent research to examine this hypothesis whether or not smooth interest has any relationship with output, below model is examined and illustrated:

$$R_{i,t} = \alpha + b_1(Smooth_{i,t}) + b_2(\beta_{i,t}) + b_3(Size_{i,t}) + b_4(BM_{i,t}) + \varepsilon_{i,t} \quad (4)$$

In above equation smooth is company standard smooth interest, β is company systematic risk, size is company size and BM is official profit ratio towards company stock marketing profit.Reason of omitting t term from coefficients is that analysis is done by panel and changes from one member to another and from term to term are controlled.

V. Static Community, Sampling Method and Sample Volume

Static community of this research is accepted companies at Tehran negotiable paper exchange. About sample selection, 54 companies were, in the best situation for a 10 years term (2004-2009), selected. In this research to edit research literature and history librarian method was used. Required data to examine the model by librarian method was done by Rah Avarde Novin informational banks, Tadbir pardaz and needed data was gathered from Tehran negotiable paper exchange archive.

VI. Data Analysis Method

Presented research to analyze data used Panel Analysis. The most significant advantages of these Panel data is controlling heterogeneous traits and considering persons, companies, provinces and countries individually. Whereas sectional and esoteric time study is not able to control this heterogeneous and there will be diagonal possibility in these methods by using estimate model [2].Whenever to use Panel data below examines is needed:

VII. Data Analysis

A. Chow exams

Zero hypotheses is expressing equivalence of coefficients and origin latitude so rejecting zero hypothesis is explaining to use Panel data method and absence of rejecting zero hypothesis is expressing using combined ordinary minimum squares methods.

TABLE I
Chow Exams

Chow Breakpoint Test: 6
Null Hypothesis: No breaks at specified breakpoints
Varying regressors: All equation variables
Equation Sample: 1 26

F-statistic	2.782478	Prob. F(3,20)	0.032
Log likelihood ratio	2.885463	Prob. Chi-Square(3)	0.0409
Wald Statistic	2.347436	Prob. Chi-Square(3)	0.0303

Whereas measured Prob.F 0.32 is less than 0.05, zero hypotheses are rejected. To analyze the data, thus Panel Analysis should be used.

B. successive correlation exams

To examine data fixed impacts of successive correlation this is used.

$$H_0: \rho = 0$$
$$H_1: |\rho| > 0 \quad (5)$$

ρ is lineal access of relationship between previous and current rests.

TABLE II
SUCCESSIVE CORRELATION EXAMS

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.020556	Prob. F(1,22)	0.3234
Obs*R-squared	1.152642	Prob. Chi-Square(1)	0.2830

Regarding in results of successive correlation exams given in above table, obtained P for F static is more than 0.05 (_Prob.F 0.3234), therefore there is no successive correlation between rest model.

C. Isotopic exams

For isotopic exams $H_0 = \sigma^2_i = \sigma^2$ and H_1 is given that σ^2 is not equal to all i. results of the exam is as following:

TABLE III
ISOTOPIC EXAMS

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.438640	Prob. F(3,22)	0.7276
Obs*R-squared	1.467406	Prob. Chi-Square(3)	0.6898
Scaled explained SS	1.276695	Prob. Chi-Square(3)	0.7347

To consider Prob.F is more than 0.05 in table 7 (0.7262), zero hypothesis is not confirmed anymore. It is meant that there are no standards isotopic.

D. Final estimation of stock output prediction model

Given results of first hypothesis exams by using random impacts model is as following:

TABLE IV
FINAL ESTIMATION OF STOCK OUTPUT PREDICTION MODEL

Dependent Variable: R
Method: Panel EGLS (Cross-section random effects)
Date: 01/20/11 Time: 14:51
Sample: 1383 1388
Periods included: 6
Cross-sections included: 54
Total panel (balanced) observations: 324
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-18.17014	32.03165	-0.567256	0.5709
SMOOTH	0.124057	0.382180	0.324604	0.7457
BETA	10.88929	2.875259	3.787237	0.0002
SIZE	4.742234	5.951552	0.796806	0.4262
BM	-5.103743	7.704907	-0.662402	0.5082

Effects Specification		
	S.D.	Rho
Cross-section random	0.000000	0.0000
Idiosyncratic random	56.84035	1.0000

Weighted Statistics

R-squared	0.048965	Mean dependent var	15.22012
Adjusted R-squared	0.037040	S.D. dependent var	60.27020
S.E. of regression	59.14348	Sum squared resid	1115847.
F-statistic	4.105985	Durbin-Watson stat	1.754307
Prob(F-statistic)	0.002933		

Unweighted Statistics

R-squared	0.048965	Mean dependent var	15.22012
Sum squared resid	1115847.	Durbin-Watson stat	1.754307

But given results from Hasmen exams that is illustrated as following is not reason to reject zero hypothesis and selecting stable impacts method.

TABLE V
HASMEN EXAMS

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	37.833501	4	0.0000

Therefore, to use stable impacts method, model is being re-studied:

TABLE VI
STABLE IMPACTS METHOD

Dependent Variable: R
Method: Panel Least Squares
Date: 01/20/11 Time: 14:53
Sample: 1383 1388
Periods included: 6
Cross-sections included: 54
Total panel (balanced) observations: 324

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-727.6804	149.5355	-4.866272	0.0000
SMOOTH	-0.103803	0.719923	-0.144187	0.8855
BETA	9.304145	3.332122	2.792258	0.0056
SIZE	137.8804	28.75906	4.794328	0.0000
BM	43.26617	22.20660	1.948347	0.0524

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.267534	Mean dependent var	15.22012
Adjusted R-squared	0.110577	S.D. dependent var	60.27020
S.E. of regression	56.84035	Akaike info criterion	11.07915
Sum squared resid	859399.6	Schwarz criterion	11.75595
Log likelihood	-1736.822	Hannan-Quinn criter.	11.34929
F-statistic	1.704508	Durbin-Watson stat	1.811307
Prob(F-statistic)	0.002811		

As it is being observed in mentioned table, according to F static and meaningful level that is equal to 0.0028, lineal model was chosen. However, regarding in t static and meaningful level of related coefficient to BETA, and company Size, these coefficients is getting meaningful and they have meaningful impact on stock output. But related meaningful level to smooth interest coefficients and official benefit ratio into marketing benefit are expressing absence of meaningful relationship to stock output. It can be, regarding in R2 model, said that expressed variables are expressing 26.7 percent of changes into dependent variables meant stock output. Watson-Dorbin static is said that there is no correlation between expressed variables by itself.

VIII. CONCLUSION

Former studied results are declared meaningful relationship between interest fluctuation and stock output. For example, Bidelman (1973), Michellson et al (2000), Wei and Zhang (2006) and Rahnamaye Roodposhty and Valipour (2010) showed that meaningful relationship exists between interest

fluctuation and stock output. But present research results reveal that in spite of belief that is among companies managements based on that smooth interest caused more stock output; there is no relationship between smooth interest and company stock output. Given results of present research is therefore unequal to Hougen and Beeker (1996), Albert and Richardson (1990) and Mcinnis (2010) findings.Thus, to suggest to investors and stockholders not to consider standard smooth interest as an effective factor on stock output. Because this standard is unable to be a perfect criterion to predict stock output.Other findings of research are that available variables in Fama and French model specially Beta and size had meaningful effect on stock output. This result is directed with most of the done researches in this field that mentioned in research history. But ratio of official benefit to marketing benefit has no impact on stock output. These variables in current research play a controlling role.

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