



AENSI Journals

Journal of Applied Science and Agriculture**ISSN 1816-9112**Journal home page: www.aensiweb.com/jasa/index.html

Examining the Relationship Between Macroeconomics Variables and Stock Market Return in Tehran Stock Exchange

¹Parviz Saeedi and ²Hami Fayaz¹Department of management and Accounting, Aliabad katoul Branch, Islamic Azad University, Aliabad katoul, Iran.²M.A student, Accounting Department, Branch of OlumTahghighat of Hormozgan, Islamic Azad University, Hormozgan, Iran

ARTICLE INFO

Article history:

Received 17 November 2013

Received in revised form 12

February 2014

Accepted 22 February 2014

Available online 25 March 2014

Keywords:

Interest rate, foreign currency rate, money volume, stock market return, self-Axis Regression (VAR).

ABSTRACT

Objective: The current research aims to examine the relationship between macroeconomics variables and stock market return in Tehran stock exchange. Macroeconomics variables have been used as independent variables including: interest rate, foreign currency rate, cash volume, and also, dependent variable is stock market return. The methodology is correlative in terms of studies, and descriptive in terms of method, and applied in terms of goal. The time period starts from 2001 to 2010. To analyze data, econometrics and Regression, value determining test of Regression, Expanded Dickey Foulter, Philips Prone, and Dourbin Watson statistic, and self-Axis Regression (VAR) have been implemented to test the research hypotheses. Conclusion: The research findings indicate the relationship between independent variables including: interest rate, inflation rate, cash volume, and dependent variable which is stock market return. All hypotheses of the research have been proved at the 99% confidence level.

© 2014 AENSI Publisher All rights reserved.

To Cite This Article: Parviz Saeedi and Hami Fayaz., Examining the Relationship Between Macroeconomics Variables and Stock Market Return in Tehran Stock Exchange. *J. Appl. Sci. & Agric.*, 9(2): 630-639, 2014

INTRODUCTION

Financial markets are one of the influential and basic markets of any country. Therefore, among the most important components of financial markets is stock exchange. Stock exchange, on the one hand, is the center of collecting savings and cash of the private sector to provide finance for long-run investment projects, and on the other hand, is a safe place for the owners of stagnant savings to use their funds to invest in stock firms. Nowadays, a lot of discussion has appeared dealing with the relationship between macroeconomics variables and stock market return. The current research examines the relationship between macroeconomics variables such as interest rate, foreign currency rate, cash volume, with stock exchange market return in Tehran stock exchange, and asks whether macroeconomics variables lead to change at stock price in stock exchange? It seems information relevant to future real activity may be reflected in stock price before it happens, and it basically shows stock market efficiency. Now we would like to know whether there is a relationship between macroeconomics variables and stock market return in Tehran stock exchange? If yes, of what type is the relationship? Regarding the importance of the issue, macroeconomics variables can have an effective role at stock market return, therefore, the studied issue at hand is of great importance because of the very important variables. Therefore, at this study, in the first part, macroeconomics variables concepts (interest rate, foreign currency rate, cash volume) are discussed then literature, and finally methodology and hypotheses analysis are presented.

Review of the literature:

Foreign currency rate:

When goods and services are transacted, the proportion between them is determined and the price of goods and services is determined. If goods and services are transacted in one country, the transaction is determined in terms of the internal currency with regard to the price of goods and services in the market. If goods and services are produced in different countries, determining the proportion of the transaction is not that easy regarding the multiplicity and variety of different currencies of other countries. Foreign currency should be realized.

In addition, as foreign currency rate like cash money, bank deposit, and stock are located at assets basket of investors, effects of foreign currency on stock market price index can be studied under theory of keeping assets in investment basket or portfolio theory. Changes of any of assets existing in assets basket such as cash money,

Corresponding Author: Parviz Saeedi, Department of management and Accounting, Aliabad katoul Branch, Islamic Azad University, Aliabad katoul, Iran
E-mail: Dr.parvizsaeedi@yahoo.com

stock, bank deposit, foreign currency rate, etc... affects demand for stock in this market, and consequently, it changes stock price. As foreign currency rate is included in unsecure and risky assets, changes of this variable can be studied under Marquitz model (Sharpe, 1995).

Interest rate:

Interest is an economic phenomenon having a lot of important effects on humans' activities and economic life. In terms of economics, many existencial reasons are presented which are not accepted from every body's viewpoint. In famous economics dictionary named Balfrief, as the first issue, interest is defined as: "...is one of the most important and chanllenging issues in economics, social sciences, and human history. Kinz summerized this basic sample about interest as follows: "investment is the indicator of demand for investable sources, and saving shows its supply. Interest rate is the price of investable sources which makes balance between demand and supply (John Minard Kinz, 1936).

Friedman and Polion presented two serious criticism against the way central bank to coordinate interest rate as a basis for measuring a money policy. First, nominal interest behavior is not a proper guide to direct money policy, and true interest rate is a rate which is necessary for determining investment. Second, central bank's attempts to control nominal interest rate may cause unstability and central bank may have to increase money supply to keep nominal interest rate down, and consequently increasing money supply in the next period cuases inflation rise, and it cuases that nominal interest rises again, and central bank has to increase money volume again to prevent that increase which leads to unstability (Gorji, 1997).

Generally speaking, interest rate is defined as a rate that is recieved from loan borrower to prevent decreasing paying money value today, and recieved money tomorrow because of the inflation rate. As interest rate is among the basic components of discounting rate, interest rate increase causes investors' expected return rate rise, and consequently stock price fall. It finally leads to decreasing stock exchange total index (Abasian, Moradpour Ouladi, 2007).

Cash volume:

Money and financial concepts of money and banking, these days, are among the most essential economic issues all around the world. Importance of studying money and banking is hidden in two points: first, regarding the very close relationship they have with money volume changes, inflation, unemployment, and economic changes, money and second, as dealing with different economic issues, there is no certain answer among economics authorities. Money is value, item, object or something which humans use it to interchange requirements, services, goods, and needs. Based on another definition, money is something is used by public and society in transaction. The simple definition is as follows $M1 = CU + DD$ in which M is money volume, CU is money paper and coins at people's hands, and DD is visual deposits (flow deposits which is withdrawal by cheque). Money volume plays important role at decreasing uncertainties in the market (Mosaei, Mehregan, 2010).

Stock return:

Investors, in stock markets, want to maximize their return. They look for the stock they think is the best, and they always would like to maintain this kind of stock. On the other hand, they believe that high risk should be accepted to reach higher return. In the literature dealing with effective factors on stock return, there are different views. Majority of experts pay attention only to the factor of market for obtaining stock return, and believe unsystematic risk can be removed by shaping portfolio. Therefore, the only factor which can affect on stock return is systematic risk of (β). They came into conclusion that there is a linear relationship between systematic risk (β) and expected return, while some other experts believe that beside the mentioned factor, some other factors have effect on stock return (Firouzjaei).

The research literature:

Yuhsing (2011): did a research on "the effects of macroeconomics on stock return". In this research, Garj economic model has been used from 2007 to 2009 in Czech stock exchange. Czech stock exchange index has been correlated positively with true gross domestic product. And the U.S and Germany stock market index has effect negatively on governmental liabilities for gross domestic product and true domestic interest rate, and foreign currency, and expected inflation rate, and government securities return of Europe. In these words, if inflation rate, and cash volume has upper or lower than 60% crisis, there is a negative and positive relationship between Czech stock market index and inflation rate and cash volume. Singh and Mahta (2010): did a research entitled: "Macroeconomics factors and stock return". In their methodology, VECM model (edited model) has been used from 2003 to 2008 in Tiwan stock exchange. Scientific researches have shown that Gross Domestic Product (GDP) and foreign currency rate have effect on all portfolio returns, while foreign currency inflation rate and cash volume behavior have negative relationship with portfolio return in big firms. Singh (2010): conducted a study entitled: "The scientific relationship between macroeconomics variables and stock market".

For the methodology, static test unit root, and Granger causality test has been used from 1995 to 2009 in India stock exchange. The results show that if stock market index and industrial products index, and foreign currency rate, and wholesale price index have a unit root, they are from one single group. Granger causality test shows that industrial products index is the only variable that has mutual causative relationship with stock exchange. And wholesale price index has a significant relationship with stock exchange, but it has a scientific relationship with market, and wholesale price index has a significant relationship with stock exchange. The results show that India stock market has no significant relationship with efficiency for two variables of inflation rate and foreign currency rate. Tan (2010): did a research entitled "The relationship between stock return and macroeconomics variables", in which OLS model has been implemented from 2005 to 2009 in China stock exchange. The results show that three independent variables of foreign currency rate, gold price, and consumer's confidence index had a positive relationship with stock return in commonwealth countries.

Aydmir and Erdel (2009): conducted a research entitled: "The relationship between stock market price and inflation rate" in which Expanded Dickey Foulner, Philips Prone, and KPSS test have been used from 2001 to 2008 in Turkey stock exchange. The results of experimental studied show that there is a mutual causality relationship between the type of foreign currency and all indexes of stockmarket and a negative relationship between financial services indexes and inflation rate and a positive relationship between technology indexes and foreign currency rate. On the other hand, there is a negative causality relationship between foreign currency rate and all stock market indexes.

Ozbay (2009): conducted a research on the relationship between stock return and macroeconomics variables. In methodology, Granger causality model has been used from 1998 to 2008 in Turkey stock exchange. It is obtained from this research that interest rate has a negative effect on stock price, while foreign currency transactions are among the positive factors on stock price in Turkey. Li and Huang (2009): conducted a research entitled "The relationship between stock return and foreign currency rate" in which Granger-Angel model has been used from 2000 to 2008 in Shanghai stock exchange. There is no balanced long-term between stock market and foreign currency rate, but there is ample evidence that there is a short-term neutral relationship between nominal foreign currency on stock market. Supaat and Juin (2003): conducted a research entitled "Examining the relationship between foreign currency rate change and variables change in macroeconomics". In this research, Garch model has been used from 1980 to 2002 in Singapor stock exchange. Their analysis showed a little evidence of a relationship between foreign currency rate change and macroeconomics variables. In addition, particularly foreign currency rate change effect on mutual trade flow in Singapor has been evaluated by using standard attraction and also by a multiple-variable model for removing the errors. And it is concluded that there is a relatively small relationship. The results show that there is evidence to support that foreign currency market can not be moved to other parts of economics. Peidaeei and Shahsavar (2007) examined macroeconomics variables effect on Iran stock exchange from 1991 to 2006 based on Arbitaj pricing model and doing root test. The results show that there is a direct relationship between stock price index and gross domestic product and general level of prices, and stock price has indirect relationship with money volume and foreign currency rate. The coefficient also shows that for each period, 15% of existing uncertainty has been removed which shows high rate of mediation. Saeedi and Kuhsarian (2008) examined the relationship between inflation and P/E and stock price behavior of the firms accepted in Tehran stock exchange from 2001 to 2006 by using econometrics and multiple-variable Regression. They concluded that two variables of macroeconomics should be determined as two indexes. Inflation can not explain stock return and is not appropriate for explaining it. In other words, none of these variables explains stock return changes. Saeedi and Amiri (2008) conducted a research named "Examining the relationship of macroeconomics variables and total indexes of Tehran stock exchange" and the methodology includes econometrics and OLS model, linear regression, and unit root test, Dickey Foulner, Philips-Prone, F-Test, and White test. The time period started from 2001 to 2007 in Tehran stock exchange. The results showed that there is no significant relationship between consumer index and free market rate with total index of stock exchange, but raw oil price has an indirect significant relationship with total index of stock exchange.

Methodology:

The present research is applied in terms of goal, causative in terms of method. After developing hypotheses, experts collected data relevant to the research variables. Finally, by the software of econometrics..... these hypotheses have been tested. And also, the procedure to analyze data is VAR. Statistic population contains all firms accepted in Tehran stock exchange, and samples have been selected by omission method.

Research time period:

It starts from 2001 to 2010. Therefore, in this study, macroeconomics variables including (interest rate, foreign currency rate, cash volume) and stock market return have been tested.

Data collection procedure:

In the current research, to collect data, field procedure is used. To do so, through referring to informational data in central bank of Islamic Republic of Iran and also Iran center of Statistics and stock exchange, data has been collected. To collect literature and theoretical considerations, books, journals papers, and researches have been reviewed. The instruments of the study contains the events happened which have been inserted in the special tables, and then they will be analyzed.

The research hypotheses:

1. There is a relationship between interest rate and stock market.
2. There is a relationship between foreign currency rate and stock market return.
3. There is a relationship between cash volume and stock market return.

*The research findings:**Data analysis:*

To analyze data, first Expanded Dickey-Fouler and Philips-Prone are used, and finally the research hypotheses are tested.

Testing unit root test and stationarity of model variables:

To determine the test of variables stationarity, Dickey-Fouler and Philips-Prone are among the most appropriate tests to evaluate data stationarity. Normally, using logarithm difference of prices causes to omit unstationarity effects and unit root from time series (Keshavarz, Haddad, Babaee, 2008, p:1-87). Therefore, H0 and H1 for this test are as follows: (Vakiloroaya, Eslami, Mofidabadi, 2007, 155-191). In this method, three amounts of crisis in levels 1, 5, 10 are considered, H0 standing for unstationarity is rejected, and the series is static.

H0: The given variable has unit root. (unstationarity of variable)

H1: The given variable has no unit root. (stationarity of variable)

Table 1: Test of Expanded Dickey-Fouler in time series 2001 to 2010.

Null Hypothesis: Unit root (individual unit root process)				
Date: 07/18/12 Time: 17:45				
Sample: 1380 1389				
Series: inflation, rate of excahnge money, industrial production, cashevulom, interest of rete, balance staticment, oil income				
Exogenous variables: Individual effects				
Automatic selection of maximum lags				
Automatic selection of lags based on SIC: 0 to 1				
Total number of observations: 20				
Cross-sections included: 3				
Method	Prob.**	Statistic		
ADF - Fisher Chi-square	-2.214553311	-3.17895500		
ADF - Choi Z-stat	-2.751880558	-1.84554541		
** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.				
Intermediate ADF test results UNTITLED				
Series	Prob	Lag	Max Lag	Obs
rate of excahnge money	0.00000	1	1	6
cashevulom	0.00000	1		7
interest of rete	0.00000	1	1	6

Source: the research findings

Table 2: Philips-Prone for data in time series 2001 to 2010.

Table 2: Phillips-Perron for data in time series 2001 to 2010:

Null Hypothesis: Unit root (individual unit root process)			
Date: 07/18/12 Time: 18:44			
Sample: 1380 1389			
Series: influation, rate of exachnge money, industrial production, cashevulom, interest of rete, balance staticment, oil income			
Exogenous variables: Individual effects			
Newey-West bandwidth selection using Bartlett kernel			
Total (balanced) observations: 21			
Cross-sections included: 3			
Method	Statistic	Prob.	
PP - Fisher Chi-square	- 3.6451201	0.00000	
PP - Choi Z-stat	-3.542155	0.00000	
** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.			
Intermediate Phillips-Perron test results UNTITLED			
Series	Prob	Bandwidth	Obs
rate of exachnge money	0.00000	1.0	7
cashevulom	0.00000	1.0	7
interest of rete	0.00000	1.0	7

Source: the research findings

The summary of the Advanced Foulter (ADF) and Philips Prone (PP) for data in time series have been inserted in tables (1) and (2). As shown, based on the results of these two tests, variables are static during the time. Therefore, as it can be seen from tests, all data belongs to time series from 2001 to 2010. The hypothesis of having unit root is significantly rejected and it has been shown that all data is static.

The first hypothesis results:

First hypotheis: There is a relationship between interest rate and stock market.

H0: There is no relationship between interest rate and stock market.

H1: There is a relationship between interest rate and stock market.

Table 3: VAR test relevant to the first hypothesis.

Vector Autoregression Estimates		
Date: 08/10/12 Time: 10:46		
Sample (adjusted): 1382 1389		
Included observations: 8 after adjustments		
Standard errors in () & t-statistics in []		
	SER01	SER02
SER01(-1)	0.324286 -1.88574 [0.17197]	4.40E-05 -0.00029 [0.15404]
SER01(-2)	0.560525 -1.48934 [0.37636]	-9.29E-05 -0.00023 [-0.41226]
SER02(-1)	-3761.05 -4682.19 [-0.80327]	0.677623 -0.70861 [0.95628]
SER02(-2)	-6332.29 -4971.71 [-1.27366]	-0.36922 -0.75242 [-0.49071]
C	133706.2 -142756 [0.93661]	13.39083 -21.6048 [0.61981]
R-squared	0.847316	0.436852
Adj. R-squared	0.643737	-0.31401
Sum sq. resids	2.94E+08	6.74018
S.E. equation	9904.194	1.498908
F-statistic	4.162105	0.581799
Log likelihood	-81.0339	-10.6661
Akaike AIC	21.50848	3.916522
SchwarzSC	21.55813	3.966173
Mean dependent	66485.1	13.6875
S.D. dependent	16593.34	1.307601
Determinant resid covariance (dof adj.)		1.73E+08
Determinant resid covariance		24317843
Log likelihood		-90.7299
Akaike information criterion		25.18248
Schwarz criterion		25.28178

Source: the research findings

Table 4: Construct equation (VAR) to test variables relevant to the model in the first hypothesis of Tehranstock exchange from 2001 to 2010.

Estimation Proc: LS 1 2 SER01 SER02 @ C VAR Model: SER01 = C(1,1)*SER01(-1) + C(1,2)*SER01(-2) + C(1,3)*SER02(-1) + C(1,4)*SER02(-2) + C(1,5) SER02 = C(2,1)*SER01(-1) + C(2,2)*SER01(-2) + C(2,3)*SER02(-1) + C(2,4)*SER02(-2) + C(2,5) VAR Model - Substituted Coefficients: =====
SER01 = 0.3242862448*SER01(-1) + 0.5605253641*SER01(-2) - 3761.050763*SER02(-1) - 6332.293407*SER02(-2) + 133706.2268 SER02 = 4.396142783e-005*SER01(-1) - 9.292247291e-005*SER01(-2) + 0.6776231718*SER02(-1) - 0.3692243986*SER02(-2) + 13.39082899

Source: the research findings

Generally speaking, in VAR test dealing with the research hypotheses to make a break in the model, Eviews software automatically implements the breaks 1 and 2. The correct way of finding breaks is using sequenced test. Break should begin to the model repeatedly so that the best results be given (regarding model statistics). Finally the break which has the best results based on informational indexes (Akaik, Shoartz, Likelihood) is chosen as the best break. It happens through repeating the test.

Self correlation Test:

Through observing inverse roots of AR, it can be found whether there is correlation between model remainings or not. It was shown in diagram (1) and proves that there is no correlation between remainings.

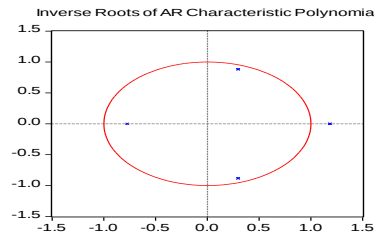


Diagram 1: Test of inverse roots of AR dealing with the second hypothesis.

Source: the research findings

The summary of test of VAR for the first hypothesis to determine and examine the relationship between interest rate and stock market return is presented in table (4). According to the results of this test, it is seen that variables during the time period and also regarding the comparison between this test statistic and crisis amounts, it shows that the amount of this test statistic is bigger than the amount in all significant levels. Therefore, H1 is significantly proved. In other words, according to the results of this test, it can be said that there is a relationship between interest rate and stock market return, and the test proves the significance of this relationship to 99%. Also, statistic coefficient of Dourbin Watson test determines existence of this relationship. Because it is supposed that if this test coefficient goes toward 2, the research data supports the research hypothesis. Therefore, because in testing the first hypothesis, Dourbin Watson coefficient is 1.99197, it can be said that there is a relationship between interest rate and stock market return, and it is significant up to 99%.

The second hypothesis results:

The second hypothesis:

There is a relationship between foreign currency rate and stock market return.

H0: There is no relationship between foreign currency rate and stock market return.

H1: There is a relationship between foreign currency rate and stock market return.

Table 5: VAR test dealing with the second hypothesis.

Vector Autoregression Estimates		
Date: 08/10/12 Time: 12:11		
Sample (adjusted): 1382 1389		
Included observations: 8 after adjustments		
Standard errors in () & t-statistics in []		
	SER01	SER02
SER01(-1)	5.7999 -1.10542 [5.24677]	-0.06943 -0.01842 [-3.76879]
SER01(-2)	-0.29312 -0.83781 [-0.34986]	0.017463 -0.01396 [1.25078]
SER02(-1)	141.6852 -38.409 [3.68885]	-0.57109 -0.64007 [-0.89223]
SER02(-2)	-106.159 -26.2098 [-4.05034]	1.116915 -0.43677 [2.55719]
C	-687044 -257659	8483.819 -4293.77

	[-2.66648]	[1.97584]
R-squared	0.961535	0.99427
Adj. R-squared	0.910249	0.986631
Sum sq. resids	74135916	20588.08
S.E. equation	4971.114	82.84137
F-statistic	18.74838	130.1463
Log likelihood	-75.5194	-42.7636
Akaike AIC	20.12985	11.9409
SchwarzSC	20.1795	11.99055
Mean dependent	66485.1	9369.006
S.D. dependent	16593.34	716.4601
Determinant resid covariance (dof adj.)		7.04E+10
Determinant resid covariance		9.91E+09
Log likelihood		-114.769
Akaike information criterion		31.19216
Schwarz criterion		31.29147

Source: the research findings

Table 4: Construct equation (VAR) to test variables relevant to the model in the second hypothesis of Tehran stock exchange from 2001 to 2010.

Estimation Proc: ===== LS 1 2 SER01 SER02 @ C VAR Model: ===== SER01 = C(1,1)*SER01(-1) + C(1,2)*SER01(-2) + C(1,3)*SER02(-1) + C(1,4)*SER02(-2) + C(1,5) SER02 = C(2,1)*SER01(-1) + C(2,2)*SER01(-2) + C(2,3)*SER02(-1) + C(2,4)*SER02(-2) + C(2,5) VAR Model - Substituted Coefficients: ===== SER01 = 5.799899883*SER01(-1) - 0.2931197008*SER01(-2) + 141.6852499*SER02(-1) - 106.1585987*SER02(-2) - 687043.8451 SER02 = - 0.06942630561*SER01(-1) + 0.01746301182*SER01(-2) - 0.5710919175*SER02(-1) + 1.116915338*SER02(-2) + 8483.818849

Source: the research findings

Self correlation Test:

Through observing invers roots of AR, it can be found whether there is correlation between model remainings or not. It was shown in diagram (2) and proves that there is no correlation between remainings.

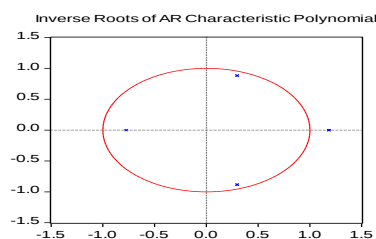


Diagram 2: Test of inverse roots of AR dealing with the second hypothesis.

Source: the research findings

The summary of test of VAR for the first hypothesis to determine and examine the relationship between foreign currency rate and stock market return is presented in table (5). According to the results of this test, it is seen that variables during the time period and also regarding the comparison between this test statistic and crisis amounts, it shows that the amount of this test statistic is bigger than the amount in all significant levels. Therefore, H1 is significantly proved. In other words, according to the results of this test, it can be said that there is a relationship between foreign currency rate and stock market return, and the test proves the significance of this relationship to 99%. Also, statistic coefficient of Dourbin Watson test determines existance of this relationship. Because it is supposed that if this test coefficient goes toward 2, the research data supports the research hypothesis. Therefore, because in testing the first hypothesis, Dourbin Watson coefficient is 1.950994, it can be said that there is a relationship between foreign currency rate and stock market return, and it is significant up to 99%.

The third hypothesis results:

The third hypothesis:

There is a relationship between cash volume and stock market return.

H0: The third hypothesis: There is no relationship between cash volume and stock market return.

H1: The third hypothesis: There is a relationship between cash volume and stock market return.

Table 7: VAR test dealing with the third hypothesis.

Vector Autoregression Estimates		
Date: 08/10/12 Time: 11:47		
Sample (adjusted): 1382 1389		
Included observations: 8 after adjustments		
Standard errors in () & t-statistics in []		
	SER01	SER02
SER01(-1)	2.784507 -1.4356 [1.93961]	-8.67654 -10.768 [-0.80577]
SER01(-2)	-2.92769 -1.78688 [-1.63844]	-9.60781 -13.4028 [-0.71685]
SER02(-1)	-0.11312 -0.08598 [-1.31555]	0.8576 -0.64494 [1.32975]
SER02(-2)	0.112442 -0.09768 [1.15108]	0.202797 -0.7327 [0.27678]
C	117193.9 -100994 [1.16041]	1681259 -757525 [2.21941]
R-squared	0.879148	0.997377
Adj. R-squared	0.718013	0.99388
Sum sq. resids	2.33E+08	1.31E+10
S.E. equation	8811.479	66092.36
F-statistic	5.455951	285.1941
Log likelihood	-80.0987	-96.2187
Akaike AIC	21.27467	25.30466
SchwarzSC	21.32432	25.35432
Mean dependent	66485.1	1532992
S.D. dependent	16593.34	844836.7
Determinant resid covariance (dof adj.)		2.81E+17
Determinant resid covariance		3.95E+16
Log likelihood		-175.559
Akaike information criterion		46.38982
Schwarz criterion		46.48912

Source: the research findings

Table 8: Construct equation (VAR) to test variables relevant to the model in the third hypothesis of Tehran stock exchange from 2001 to 2010.

Estimation Proc:
LS 1 2 SER01 SER02 @ C
VAR Model:
SER01 = C(1,1)*SER01(-1) + C(1,2)*SER01(-2) + C(1,3)*SER02(-1) + C(1,4)*SER02(-2) + C(1,5)
SER02 = C(2,1)*SER01(-1) + C(2,2)*SER01(-2) + C(2,3)*SER02(-1) + C(2,4)*SER02(-2) + C(2,5)
VAR Model - Substituted Coefficients:
SER01 = 2.784507105*SER01(-1) - 2.927686368*SER01(-2) - 0.1131152008*SER02(-1) + 0.1124418574*SER02(-2) + 117193.8766
SER02 = - 8.676541831*SER01(-1) - 9.60780948*SER01(-2) + 0.8575998431*SER02(-1) + 0.2027974768*SER02(-2) + 1681258.997

Source: the research findings

Self correlation Test:

Through observing invers roots of AR, it can be found whether there is correlation between model remainings or not. It was shown in diagram (3) and proves that there is no correlation between remainings.

Inverse Roots of AR Characteristic Polynomial

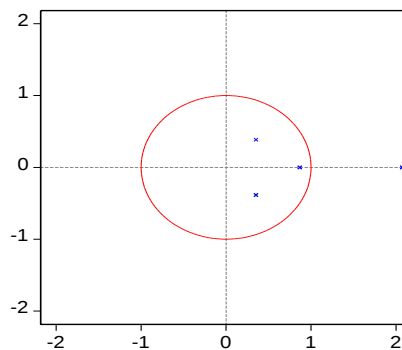


Diagram 3: Test of inverse roots of AR dealing with the third hypothesis.

Source: the research findings

The summary of test of VAR for the first hypothesis to determine and examine the relationship between cash volume and stock market return is presented in table (5). According to the results of this test, it is seen that variables during the time period and also regarding the comparison between this test statistic and crisis amounts, it shows that the amount of this test statistic is bigger than the amount in all significant levels. Therefore, H1 is significantly proved. In other words, according to the results of this test, it can be said that there is a relationship between cash volume and stock market return, and the test proves the significance of this relationship to 99%. Also, statistic coefficient of Dourbin Watson test determines existence of this relationship. Because it is supposed that if this test coefficient goes toward 2, the research data supports the research hypothesis. Therefore, because in testing the first hypothesis, Dourbin Watson coefficient is 1.950994, it can be said that there is a relationship between cash volume and stock market return, and it is significant up to 99%.

Discussion, Conclusion, and Suggestions:

Attempts, in this research, have been made to test the relationship between macroeconomics variables including: interest rate, foreign currency rate, and cash volume, and stock market return in Tehran stock exchange. First, data is statistically described which is of high importance in sampling, choosing time period. After the main goal of the study, some peripheral goals are also covered: 1. Determining the relationship between interest rate, and stock market return. 2. Determining the relationship between foreign currency rate and stock market rate. 3. Determining the relationship between cash volume and stock market return. In the study, multiple-variable regression has been used. To analyze data, econometrics software of EvIEWS has been used. Statistical features of time series of data and stocks. These features contain skewdness, mean, the number of observations, ... for each time series. The summery of Advanced Dickey Foluler, and Philips Prone is presented and also data is presented in time period from 2001 to 2010. It has been observed that all data is static. In addition the results of VAR test for the hypotheses of the research have been presented. According to the results, it is seen that the variables during the time and also regarding the crisis values, the value of this test statistic is higher than the value in all significance levels. Therefore, H1 is significantly proved. In other words, based on the results of this test, it can be said that there is a relationship between macroeconomics variables such as interest rate, foreign currency rate, and cash volume and stock market return.

Therefore, it is suggested that financial managers of firms consider interest rate to increase the firm stock market return, and interest rate be mediated with predicting the firm stock market return so that the managers reach their goals in stock exchange market. Regarding the fact that the results of this research showed there is a relationship between interest rate and stock market return. Therefore, it is suggested to increase stock market return as interest rate increases. As the research results showed there is a relationship between cash volume and stock market return, it is suggested to use financial instruments to increase the country's cash volume so that the firm stock market return increases.

REFERENCES

- Abdollahi, Ahmed, 2009. Investigating and studying reasons behind increase of monetary variables and liquidity size during 1991-2006).
- Abbasian, Ezatollah, Moradpour, Mehdi, Oladi, Vahid, 2007. Effect of macro economic variables on index of stock exchange of Tehran, economic researches in Iran, No36.

Aydemir Oguzhan, Erdal Demirhan, 2009. The relationship between stock prices and exchange rate :evidence from Torkey. International research journal of finance and economics.

Daneshvar, Masoume, 2007. "what is interest rate?" (WWW.shalehes84.blogfa.com).

Hagen, Robert, 2007. Translated by Ali Parsian, modern theory of investment, volume two, Tarme Publication.

Hsing, Yu, 2011. Effects of macroeconomic variables on the stock market: the case of the Czech Republic. Theoretical and applied economics volXVIII, No 7(560).

Karimzadeh, Mostafa, 2006. Investigating the relation of long-term relationship between macro economy variables and price index of stock using collective method, economic studies of Iran.

John maynard Keynes, 1936. The general theory of employment interest and mones.

Mousaei, Meisam, Mehregan, Nader Amiri, Hossain, 2010. The relation of stock market and macro economy variables in Iran, chapter of researches and economic policies, No 54.

Li Yagiong, Li Hong Huang, 2009. On the relationship between stock return and exchange rate:evidence on China.

Moradi, Mohammed Ali, 2009. Effect of oil on macro economy indicators in Iran by emphasizing transferring mechanism and effects of chapter of economic researches, No 20.

Mousaei, Meisam, Mehregan, Nader, Amiri, Hossain, 2010. The relation of stock market and macro economy variables in Iran, chapter of researches and economic policies, No 54.

Nasrollahi, Khadijeh, 2002. Level of turmoil (deviation from equilibrium long-term route) exchange rate in Iran and its effects on macro economy variable, MA thesis of Isfahan University. (WWW.bmi.ir), site of national bank of Iran.

Ozbay, Emrah, 2009. The Relationship Between stock returns and macroeconomic factors:Evidence for Torkey.MSC.financial analysis and fund management.

Piran, Khosro and Shahsavari, Mohammed Reza, 2007. Effect of macro economy variables on stock exchanges of Iran, chapter of economic researches, No 1, spring 2009.

Qassem Zadeh, Mostafa, 2007. Investigating long-term relation of price index of stock exchange or monetary macro variables using collective method in economy of Iran, No 27.

Reymond P. Neveu, 1989. Fundamentals of Managerial Finance.volume1.

Saeediy, Parviz and Kouhsarian, Ali, 2008. Investigating inflation the relation and P/E with price of stocks of companies accepted in stock exchange of Tehran, MA thesis, Azad University of Ali Abad Katoul.

Saeediy, Parviz and Amiri Abdollah, 2007. Investigating relation of macro economy variables with indices of stock exchange of Tehran, Chapter of economic modeling, No2.

Sajjadi, Seyyed Hossain, Farazmand, Hassan. Soufy, Hashem Ali, 2009. Investigating the relation of macro economy variables and index of cash return of stock in stock exchange of Tehran, economic sciences research, No2.

Singh, Dharmendra, 2010. Causal relationship between macro-economic variables and stock market:a case study for India.Pakistan journal of social sciences, 33(2).

Sing Tarika, Seema Mahta and M.S. Varsha, 2010. Macroeconomic factors and stock returns: evidence from Taiwan. Journal of economic and international finance, 2(4).

Supaat Saktiandi, Angela Angela Phang Seow Jiun Ng Heng Tiong, Edward Robinson, 2003. Investigating the relationship between exchange rate volatility and macroeconomic volatility in Singapore monetary authority of Singapore. Staff paper no 25.

Tun Rui, 2010. Relationship between stock returns and macroeconomic variables :a study of beverage and food companies listed no the Shenzhen stock exchange, china.

www.snaunes88.blogfa.com

www.saipaonline.com