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THE EFFECTS of COLLATERAL AMOUNTS on STOCK MARKET RETURN

Master Thesis

Cansu TAN

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THE EFFECTS of COLLATERAL AMOUNTS on STOCK MARKET RETURN

Rehin Hesapların Hisse Senedi Getirisi Üzerindeki Etkisi/ The Effects of Collateral Amounts on Stock Market Return

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ABSTRACT

In this thesis, I estimate a comprehensive model for effects of collateral amounts on stock market return. The data set contains monthly collateral amounts of firms and their stock market returns from November 2005 until December 2014. Consistent with my theories the results show that there is an effect of total collateral amount on stock market return.

ÖZET

Bu tezde 37 firma için rehin miktarlarının hisse senedi getirisine olan etkilerini içeren kapsamlı bir model tahminliyorum. Kullandığım veri serisi Kasım 2005 yılından Aralık 2014 yılına kadar olan aylık toplam rehin miktarlarını ve hisse senedi getirilerini içermektedir. Sonuçlarım beklentilerimle tutarlı olarak rehin miktarlarının hisse senedi getirisi üzerinde etkisi olduğunu göstermektedir.

PREFACE

This thesis has been written to fulfill the graduation requirements of the M.Sc. program in Financial Economics at the Istanbul Bilgi University.

My original data was obtained with the help of Özgür Uysal and Setenay Batur from MKK (CSD of Turkey). My research question was formulated together with my supervisor, Asst. Prof. Dr. Serda Selin Öztürk.

I would like to thank my supervisor Asst. Prof. Dr. Serda Selin Öztürk for her excellent guidance and support during this process. I would not have been able to conduct this analysis without her cooperation.

Also, I would like to thank to my loving family who encouraged me to finish my work, always offering support.

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1. INTRODUCTION

This study aims to emphasize the importance of collateral amounts on firms, how collateral amounts influences on stock market returns.There are not many studies on the effects of collateral on stock market return in the literature. The data set I use in this thesis is a private data set which can be gathered together upon special request. Therefore the effects of collateral amounts on stock market return is not yet explored for Turkey. Increasing number of studies which show the importance of collateral amounts and insufficient number of studies on the effect of collateral amounts on stock market are the main motivations for this paper.

In the first part, I will review the main theoretical approaches regarding the collateral amounts and its importance for stock market returns.

In the second part, I will emphasize the importance of collateral giving to the relationship with theoretical methods. I will detail the results ten-year-period starting from November 2005 until December 2014 and show that there is an effect of collateral amounts on stock market returns and it is related with the quantity of collateral amount.

Finally, I summarize the results of the tests I used and the consequences of collateral amounts.

1.1 What is collateral?

A collateral value is the estimated fair market value of an asset that is being used as loan collateral. If we are talking about publicly traded securities, then the current price of the securities would be the collateral value. Collateral as a term is extensively used in credit contracts because there is a reality that the asymmetric information, adverse selection and moral hazard have existed between lenders and borrowers. [1] Collateral is therefore an important contractual device that affects the behavior of borrowers and lenders and also the design of debt contracts. [2]

Most of researches show us the collateral plays an important role in the financial markets. The economic functions of collateral are well understood in theory but it is really hard to show its direct effect clearly. Because collateral effects are not the only one used in a financial transaction. There are also other determinants such as buyer, seller, assets and payment models. On the other hand collecting correct data to survey its effect is not possible most of times.

Global financial crisis have forced authorities to make modification for regulations especially in banking and financial industries and it has been an obligatory change for all these institutes. One of the key areas impacted by this change is the collateral management function. It becomes an important factor within a financial transaction to make sure that resources are well priced and used as efficiently as possible.

Market behavior in assessing creditworthiness and pricing, and monitoring risk has changed significantly, leading to an increase of risk parameters. As a result of this action financial institutes have to monitor and price overtime, introducing more complexity to managing available resources. So they require a new type of capability and framework to assess, quantify, control and optimize scarce resources. [3]

In brief, it is really important to see how collateral role affects a financial transaction, not only because of its widespread use in finance world, but also because of its implications for monetary policy. As an example, under the financial accelerator view of monetary policy transmission, a tightening of monetary policy and the associated increase in interest rates impairs collateral values, making it more difficult for borrowers to obtain funds, which reduces investment and economic growth. [4] As you see its effects is big enough to discuss.

2. LITERATURE REVIEW

Although the literature on the effects of collateral amounts on stock market return is not having a satisfactory survey, I tried to gather some information what is done generally for the collateral on monetary policy.

According to credit market researches adverse selection causes the use of collateral (Bester 1985, Chan and Kanatas 1985; Besanko and Thakor 1987) and moral hazard (Boot, Thakor and Udell 1991), which problems arise in transactions between borrowers and lenders. Berger and Udell (1990) said that "most commercial loans are made on a secured basis, yet little is known about the relationship between collateral and credit risk until 90s." They presented that "empirical evidence strongly suggests that collateral is most often associated with riskier borrowers, riskier loans and riskier banks."

Several studies have examined the influence of the strength of the borrower–lender relationship on the use of collateral. An article was published for Global Capital (2015) predicts that collateral will, in a sense, be the markets' new currency. It highlighted "both sell-side and buy-side firms will need to make sure they can mobilize collateral efficiently, while infrastructure providers must be the conduits of collateral."

On the other hand unpredictable macroeconomic events in Europe such as the exit of a country from the Eurozone, has led sell-side firms to increase their on collateral inventory.

The International Securities Derivatives Association (ISDA) calculates that, "since 2012, the deficit of high quality collateral has risen to US$10trn (Depending on whether internal models or standardized schedules are used. See: ISDA 'Initial Margin of up to $10.2 Trillion Required for OTC Derivatives')."

According to changing regulations in global finance world, almost every firms or institutions started to take steps to be up-to-date. There are some firms which have already founded departments of collateral management. Because they aware of reviewing process to be sure that it can be handled with unexpected situations. It is getting more important every year.

Anlin Chen and Lanfeng Kaobshows (2011) claimed that "the risk (value) attributes of collateralized stocks increase (reduce) bank efficiency yet reduces (increase) bank profits." Ted Leveroni (2014) highlighted the importance of requiring additional collateral to increase margin calls. In recent years some analyses have been made to point out the effects of collateral for margin calls but it is not possible to know what the final collateral requirement will be as estimates are based on existing volumes.

Fabrizio Lillo and Davide Pirino (2015) analyzed the impact of systemic, illiquidity and volatility risk on the margin requirements for risky collateral. In their study "suggesting the repo volumes agreed by the European Central Bank reduced accordingly, focusing on to take the point of view of a financier (buyer of a repo contract) and tried several models with simple assumptions." As a consequence they said that "assets that are characterized by a low level of volatility but are shared among portfolios of highly levered institutions can be dangerously evaluated as good collaterals and, hence, improperly adopted to raise capital."

In other respects, since the collateral is important its damages also important and causes several effects. Bradford Cornell and James C. Rutten (2009) conclude that "while collateral damage can have a material impact on securities prices, declines associated with collateral damage are not, and should not be." Causation focuses on the stock price decline; damages focus on inflation before the decline. Once causation is established, the parties and their experts must set about estimating the amount of the inflation so as to avoid permitting recovery for collateral damage. Julio Garin (2015) showed the consequences of the fluctuations in collateral requirements in labor market variables and said that it generated significant movements. While productivity shocks are important for generating fluctuations in aggregates such as output and investment, credit shocks have significant effects on variables such as unemployment, labor market tightness. Because changes in collateral requirements do not entirely translate into changes in wages, these disturbances have a large impact on the ability of firms to create jobs. Contrary to the effects of productivity shocks, the adjustment that follows from changes in credit conditions is mainly through quantities and not prices. Fluctuations in collateral requirements are, hence, promising in explaining business cycle movements in labor market variables.

In sense of the amount of collateral there are not so much satisfied studies. Rajan and Winton (1995) predict that "the amount of collateral pledged is directly proportional to the borrower's difficulties with repayment.

The collateral as a variable that proxies the risk profile of the borrower as it is estimated by the lender. “Gabriel Jimenez, Vicente Salas and Jesus Saurina (2006) searched the determinants of collateral in loans extended to business firms. They studied the amount of collateral required in loans and their hypothesis showed that “the amount of collateral pledged in a particular loan will increase if the loan is granted in a period of higher real interest rates, and will decrease with the size of the loan.” This finding is consistent with the theory that I mentioned above which is collateral as a solution to problems of moral hazard (Boot, Thakor and Udell 1991). According to their theory in situations in which the risk-free interest rate is high, the additional risk premium in the interest rate of the loan will aggravate the moral hazard problem and using collateral instead of charging higher interest rates reduces the moral hazard problem and thereby increases efficiency.

3. DATA and METHODOLOGY

3.1 Data

This study was conducted in order to analyze the effects of collateral amounts on stock market return. Herein, my original data was collected from MKK (CSD of Turkey) and used a unique data set containing timely assessments of collateral values. We try to find whether there is an effect of total collateral amount of firms on the stock market returns.

The database contains 180 firms which have collateral accounts at a monthly frequency between 2005:11 and 2014:12. These data are classified into several broadly defined types of information. It contains for each firm's (in a total of 180 firms) ISIN code (it is unique and necessary to trade in the stock exchange), total nominal amount of the shares are traded in the stock exchange (public shares), number of investors holding firm's stock market traded shares (public shares), total collateral amount, number of investors holding firm's collateral stock market traded shares (public shares), second session closing price of every month's last day for each year (ten year period starting from November 2005 until December 2014), total nominal amount of both public and private shares and main industry information. Our analysis focuses on a particular type of information: logarithmic change.

All firms from various sectors which are food and agriculture, stone quarry, publishing, broadcasting, appliances,manifacture of transport equipment, retail,packaging and paper, auto and track parts, hospitality, hotels, transportation, insurance, financial services, tourism, steel manufacturing, consumer electronics, beverage, oil&gas, pharmaceutical, matal mining, defence, software electronics, polyester, steel, energy, construction,banking, conglomerate, investment banking and media.

On the other hand as we have main industry information for each firm we can summarize firms used in this work, here below the table sector based.

Table 1: Results from the original data MKK (CSD of Turkey)

Industury	**Firm Name**	**Number of Firm**
Conglomerate	Koç Holding, Alarko Holding, Doğan Holding, Eczacıbaşı Yatırım Holding, GSD Holding, Sabancı Holding, İhlas Holding, Petkim Petrokimya Holding	8
Banking, Financial Services, Investment Banking	Akbank, İşbank, Garanti Bank, Yapı Kredi Bank, TSKB (Türkiye Sınai Kalkınma Bankası),İş REIT (İş Gayrimenkul Yatırım Ortaklığı)	6
Automotive	Doğuş Automotive, Ford Automotive, Karsan Automotive, Tofaş Automotive	4
Energy	Akenerji, Aygaz, Park Elektrik	3
Pharmaceutical	Aksa Akrilik Chemist Company, Eczacıbaşı Pharmaceuticals Manufacturing	2
Glass and Chemicals Production	Şişecam Flat Glass, Trakya Glass	2
Steel Manufacturing	Ereğli Iron and Steel Factories	1
Consumer electronics & Home appliances	Arçelik	1
Beverage	Efes Beverage Group	1
Oil & Gas	Tüpraş	1
Metal Mining	Koza Anadolu Metal Mining Corporation	1
Defence, Software Electronics	Aselsan (Military Electronic Industries)	1
Polyester	Sasa Polyester	1
Steel	Kardemir Karabük	1
Construction	ENKA	1
Airline Transport	Turkish Airlines	1
Telecommunication	Turkcell	1
Media	Hürriyet	1
Total		**37**

This table may provide us to say that firms with the most collateral accounts are in conglomerate, banking and financial services, automotive and energy industry.

3.2 Methodology

To be able to gather the necessary data, i utilized different kind of methods using both qualitative and quantitative approaches. I started my analysis by selecting the firms having with most data which means having the closing price for each month's last day overall. This process resulted in a total of 56 firms at first. The last step was to choose the firms having with data for each month's last day of every year starting from November 2005 until December 2014. This means that I have to work total 110 data for each firm. I calculated monthly returns by using second session closing price for the last day of each month. Finally 37 of them were suitable for starting to make analysis. It gives us a rate of 20.56% and this rate can say us some results to determine of collateral accounts.

After lowering to 37 the number of firms having collateral accounts, I started to construct formulas to gather meaningful results. As the data includes total collateral amount I used them to see the effects on the stock market return. Under various assumptions, the model had to be fit with the goodness of fit model. The main method of the work was the least-squares estimation. I worked both $t-1$ and $t-2$ lag numbers but the results were not significant at lag $t-2$ so I continued with lag $t-1$. I also tried to add exchange rates and industrial production rates for consumer nondurables for each month's last day of the same ten-year-period as control variables to the model.

Unit root test results showed that industrial production is nonstationary therefore I used logarithmic return of the industrial production as an explanatory variable. Individual estimation results showed that these variables are insignificant therefore I excluded them from the final estimation. This result is consistent with the literature since studies in the literature show that stock market returns are mostly driven by the volatility. This work uses t-test to see whether if there is sign effect at logarithmic change of total collateral amount on stock market return of our firms. I have both at time t at time t-1, we test two different hypothesis related to significance of these variables.

I briefly named the main formula as below;

$$r_t = \beta_1 + \beta_2 x_t + \beta_3 x_{t-1} + u_t$$

Where

$r_t =$ Logarithmic return of stock market return (by using closing price for each month's last day)

$x_t =$ Logarithmic change of total collateral amount

$\beta_2 =$ Coefficient of logarithmic change of total collateral amount at time t

$\beta_3 =$ Coefficient of logarithmic change of total collateral amount at time t-1

Since we are interested in testing whether if collateral amount has any effects on stock return, the hypotheses that we are testing:

1) T-test hypothesis:

$$H_0 : \beta_2 = 0 \qquad H_0 : \beta_3 = 0$$
$$H_1 : \beta_2 \neq 0 \qquad H_1 : \beta_3 \neq 0$$

2) F-test hypothesis:

$$H_0 : \beta_2 = \beta_3 = 0$$

H_1 : At least one of them is not equal to zero

4. RESULTS

I will summarize the results in three sections based on the test statistics I used. I will show the t-test and F-test results and say that amount of collateral have effects on the stock market returns by explaining significant levels.

Finally I try to make common explanation for the insignificance firms and I will show where the tests failed for insignificant firms.

In the appendix section individual estimation results can be found.

4.1 T-test Results

The t-test results which can be found in the table 2 can be summarized as follows;

28 of them for β_2 we reject the null hypothesis for at least one of the significance levels. Therefore it is significant. If I examine the results sectorel based; 6 of them are in Banking and Financial Services, 5 of them are in Conglomerate, 4 of them are in Automovie industry and the rest of them are in others. 23 of them for β_2 we reject the null hypothesis for 1%. So it is significant 62.16% (23 out of 37). If we say that it is significant at 1% , we can easily say that it is significant for each levels that we tested for 1% , 5% and 10%. 2 of them for β_2 we reject the null hypothesis for 5% and 3 of them for β_2 we reject the null hypothesis for 10%. Our test results β_2 is consistent with our theory.

29 of them for β_3 we reject the null hypothesis for at least one of the significance levels. Therefore it is significant. If I examine the results sectorel based; 6 of them are in Banking and Financial Services, 5 of them are in Conglomerate, 3 of them are in Automovie industry and the others. 23 of them for β_3 we reject the null hypothesis for %1. So it is significant 62.16% (23 out of 37) .

If we say that it is significant at 1%, we can easily say that it is significant for each levels that we tested 1%, 5% and 10%. 4 of them for β_3 we reject the null hypothesis for 5% and 2 of them for β_3 we reject the null hypothesis for 10%. Our test results β_3 is consistent with our theory.

For 30 put of 37 we reject both hypothesis at least for one of the significance levels. Even if β_2 is not significance for at least one of the significance levels β_3 is significante or contrary. This give us highly significancy percentage 81.08%. Their sectorel based results as follows; 5 of them are in Banking and Financial Services, 5 of them are in Conglomerate, 4 of them are in Automovie industry and rest of them are in others. These results show us there is highly correlation between total collateral amounts and stock market returns. This correlation is especially in conglomerate and banking & financial services.

Table 2: T-test results

Firm Name	β_2	β_3
Efes Beverage Group	-4.074***	4.051***
Akbank	-4.258***	4.363***
Akenerji	-1.814*	1.668*
Aksa Akrilik Chemist Company	-3.853***	4.617***
Alarko Holding	-9.521***	10.101***
Arçelik	-3.318***	3.935***
Aselsan (Military Electronic Industries)	-6.210***	6.350***
Aygaz	-2.586**	2.633***
Doğuş Automotive	-3.822***	4.135***
Doğan Holding	-5.045***	5.172***
Eczacıbaşı Pharmaceuticals Manufacturing	-1.509	1.922*
Eczacıbaşı Yatırım Holding	0.084	-0.334
ENKA	-5.756***	5.772***
Ereğli Iron and Steel Factories	0.198	-0.178
Ford Automotive	-3.159***	3.640***
Garanti Bank	-3.029***	2.406**
GSD Holding	-0.936	0.318
Hürriyet	-3.358***	3.585***
İhlas Holding	-0.101	-0.180
İşbank	-6.491***	6689***
İş REIT (İş Gayrimenkul Yatırım Ortaklığı)	-2.494**	2.335**
Karsan Automotive	1.810*	-1.120
Koç Holding	-4.663***	4.108***
Koza Anadolu Metal Mining Corporation	-3.457***	3.604***
Kardemir Karabük	-1.447	1.530
Petkim Petrokimya Holding	-8.327***	8.289***
Park Elektrik	-0.432	0.636
Sabancı Holding	-5.322***	5.353***
Sasa Polyester	-0.337	0.663
Şişecam Flat Glass	-2.910***	2.616***
Turkcell	-1.940*	2.083**
Turkish Airlines	-5.982***	6.311***
Tofaş Automotive	-4.748***	4.929***
Trakya Glass	-2.022**	3.308***
TSKB (Türkiye Sınai Kalkınma Bankası)	-4.421***	4.195***
Tüpraş	-2.962***	2.492**
Yapı Kredi Bank	-3.977***	3.605***

Note: t-test results for parametrics “***” ,”**” , “*” indicate significance at 1%, 5% and 10%.

4.2 F-test Results

This work uses also F-test to support the results based on t-test hypothesis for F-test are given below. I expect accordance with the results of t-tests. If there is a logical correlation between the F-test and t-test it will be a verification for our theory.

The hypothesis that we are testing;

$$H_0 : \beta_2 = \beta_3 = 0$$

H_1 : At least one of them is not equal to zero

For 28 out of 37 we reject the null hypothesis at one of the significance levels. 24 of them we reject the null hypothesis for 1%. So it is significant 64.86% (24 out of 37) If we say that it is significant at %1 we can easily say that it is significant for each levels we tested 1%, 5% and 10%. 3 of them we reject the null hypothesis for 5% and 1 of them we reject the null hypothesis for 10%.

Table 3: F-test results

Firm Name	F-statistic	Prob(Fstatistic)
Efes Beverage Group	8.521***	0.000372
Akbank	10.028***	0.000103
Akenerji	1.725	0.183140
Aksa Akrilik Chemist Company	10880***	0.000051
Alarko Holding	51.330***	0.000000
Arçelik	7.927***	0.000622
Aselsan (Military Electronic Industries)	20.557***	0.000000
Aygaz	3.673**	0.028724
Doğuş Automotive	8.789***	0.000297
Doğan Holding	13.421***	0.000006
Eczacıbaşı Pharmaceuticals Manufacturing	2.132	0.123659
Eczacıbaşı Yatırım Holding	0.082	0.921135
ENKA	17.100***	0.000000
Ereğli Iron and Steel Factories	0.020**	0.019697
Ford Automotive	6.791***	0.001683
Garanti Bank	4917***	0.009093
GSD Holding	0.476	0.622319
Hürriyet	6.443***	0.002293
İhlas Holding	0.404	0.668680
İşbank	22.983***	0.000000
İş REIT (İş Gayrimenkul Yatırım Ortaklığı)	3.274**	0.041724
Karsan Automotive	2.838*	0.063012
Koç Holding	10.973***	0.000047
Koza Anadolu Metal Mining Corporation	6.503***	0.002173
Kardemir Karabük	1.265	0.286296
Petkim Petrokimya Holding	35.197***	0.000000
Park Elektrik	0.345	0.708864
Sabancı Holding	15.927***	0.000001
Sasa Polyester	0.276	0.759165
Şişecam Flat Glass	4.884***	0.009366
Turkcell	2.321	0.103166
Turkish Airlines	20.032***	0.000000
Tofaş Automotive	12.468***	0.000014
Trakya Glass	5.997***	0.003420
TSKB (Türkiye Sınai Kalkınma Bankası)	10.094***	0.000098
Tüpraş	6.155***	0.002967
Yapı Kredi Bank	8.145***	0.000515

Note: F-test results for parametrics “***” ,”**” , “*” indicate significance at 1%, 5% and 10%.

4.3 Insignificant firms

T-test and F-test results show us there is an effect of total collateral amount on stock market returns of our firms. But among these 37 firms some of them are not consistent with our theory.

If we take a look what is common between these 9 insignificant firms, we can start by sector based analysis. 3 of them are in conglomerate, 2 of them are in energy, 1 is in pharmaceutical, 1 is in steel, 1 is in polyester and 1 is in telecommunication. As we see that they are mostly common in conglomerate and energy.

Total collateral value percentage among these 37 firms is 2.70% in average (maximum 19.56% and minimum 0.05%) . 6 out of 9 firms below average (maximum 1.59% minimum 0.31%) and 3 out of 9 firms are above average. If we numerate total collateral value percentages starting from 1 to 37 and say that 1 symbolize the highest level, 37 is the lowest level ; below average 6 firms have numbers: 11, 18 ,19, 20, 23, 27 and above average firms have numbers: 2,5,7. Therefore the less collateral value means less effect on the stock return. This supports our theory.

If we construct a ratio which is total collateral amount / total nominal amount of the shares are traded in the stock exchange (public shares) ,it gives us 0.13% in avarege. According to this ratio 6 out of 9 insignificant firms are below average. If the ratio is low this means collateral is low relative to the traded shares therefore does not affect stock returns significantly. This supports our theory not only the collateral amount but its ratio to total nominal amount of the shares traded in the stock exchange matter.

5. CONCLUSION

In this work I present a comprehensive empirical analysis of the effect of collateral amount on stock market returns to 37 firms traded in the stock market. I conduct my analysis under two main hypothesis: t-test and F-test. To perform my analyses I use a unique database run by MKK (CSD of Turkey) which contains for every month of each year between 2005 and 2014 for total collateral amounts.

By using the selected sample, I was able to test theories that explain the amount of collateral. I control both t-1 lag and t-2 lag numbers to test hypothesis which will be answer for the significancy. Since t-2 wasn’t give me significant results I continued with t-1 lag numbers.

I started to conduct my analyses firstly using t-test and then continued with F-test to support my results. T-test results showed that for the coefficient of logarithmic change of total collateral amount at time t among 37 firms, 23 of them are significant at 1%, 2 of them are significant at 5%, 3 of them are significant at10%. If we take a general look these statistic results, we can say that 62.16% are significant since it is significant at 1% it is also significant 5% and 10%. In total 28 out of 37 firms are significant so this gives us highly correlated percentage (75.67%) with our theory.

T-test results showed that for the coefficient of logarithmic change of total collateral amount at time t-1 among 37 firms, 23 of them are significant at 1%, 4 of them are significant at 5%, 2 of them are significant at10%. If we take a general look these statistic results, we can say that 62.16% are significant since it is significant at 1% it is also significant 5% and 10%. In total 29 out of 37 firms are significant so this gives us highly correlated percentage (78.37%) with our theory.

T-test results showed that for both the coefficient of logarithmic change of total collateral amount at time t and t-1 among 37 firms, 30 of them are significant at least for one of the significance levels. This gives us highly correlated percentage (81.08%) with our theory.

As a verification the test results, our f-test results showed that among 37 firms, 24 of them are significant at 1%, 3 of them are significant at 5%, 1 of them are significant at10%. If we take a general look these statistic results, we can say that 64.86% are significant since it is significant at 1% it is also significant 5% and 10%. In total 28 out of 37 firms are significant so this gives us highly correlated percentage (75.67%) with our theory.

As a consequence I showed that the effect of total collateral amount on stock market return is clear and highly efficient according to statistics results.

Nevertheless, the database has some inconsistent firms with my theory. However I believe that it does not effect the results since percentage of insignificant firms is not high. (24.32%) and this ratio is equal to 9 out of 37 firms.

The results in my work confirms that the amount of total collateral value effects the stock market return. I reach this conclusion by analyzing the results of hypothesis tests.

Since the use of collateral is important in financial transactions, my conclusions also support the amount of collateral is important as well as the use of collateral.

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7. APPENDIX

Dependent Variable: AEFES_R
Method: Least Squares
Date: 10/17/16 Time: 21:12
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.040615	0.151584	-0.267935	0.7893
AEFES_LGR	-0.135107	0.033159	-4.074461	0.0001
AEFES_LGR(-1)	0.138311	0.034136	4.051746	0.0001

R-squared	0.139639	Mean dependent var	-0.004709
Adjusted R-squared	0.123251	S.D. dependent var	0.150990
S.E. of regression	0.141379	Akaike info criterion	-1.047360
Sum squared resid	2.098744	Schwarz criterion	-0.972856
Log likelihood	59.55742	Hannan-Quinn criter.	-1.017151
F-statistic	8.520877	Durbin-Watson stat	2.159698
Prob(F-statistic)	0.000372		

Dependent Variable: AKBNK_R
Method: Least Squares
Date: 10/17/16 Time: 21:18
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.031651	0.235018	0.134675	0.8931
AKBNK_LGR	-0.119908	0.028155	-4.258917	0.0000
AKBNK_LGR(-1)	0.117978	0.027036	4.363693	0.0000

R-squared	0.160373	Mean dependent var	-0.002215
Adjusted R-squared	0.144380	S.D. dependent var	0.121876
S.E. of regression	0.112735	Akaike info criterion	-1.500171
Sum squared resid	1.334461	Schwarz criterion	-1.425667
Log likelihood	84.00923	Hannan-Quinn criter.	-1.469962
F-statistic	10.02773	Durbin-Watson stat	2.338376
Prob(F-statistic)	0.000103		

Dependent Variable: AKENR_R
Method: Least Squares
Date: 10/17/16 Time: 21:19
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.115249	0.216650	0.531959	0.5959
AKENR_LGR	-0.109851	0.060534	-1.814704	0.0724
AKENR_LGR(-1)	0.101341	0.060730	1.668716	0.0982

R-squared	0.031816	Mean dependent var	-0.014458
Adjusted R-squared	0.013375	S.D. dependent var	0.187163
S.E. of regression	0.185907	Akaike info criterion	-0.499759
Sum squared resid	3.628938	Schwarz criterion	-0.425255
Log likelihood	29.98696	Hannan-Quinn criter.	-0.469550
F-statistic	1.725243	Durbin-Watson stat	1.878009
Prob(F-statistic)	0.183140		

Dependent Variable: AKSA_R
Method: Least Squares
Date: 11/13/16 Time: 13:06
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.596327	0.450765	-1.322923	0.1887
AKSA_LGR	-0.264689	0.068693	-3.853219	0.0002
AKSA_LGR(-1)	0.305042	0.066067	4.617166	0.0000

R-squared	0.171666	Mean dependent var	-0.004964
Adjusted R-squared	0.155888	S.D. dependent var	0.187089
S.E. of regression	0.171889	Akaike info criterion	-0.656554
Sum squared resid	3.102303	Schwarz criterion	-0.582050
Log likelihood	38.45391	Hannan-Quinn criter.	-0.626345
F-statistic	10.88021	Durbin-Watson stat	2.447509
Prob(F-statistic)	0.000051		

Dependent Variable: ALARK_R
Method: Least Squares
Date: 10/17/16 Time: 21:21
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.068321	0.299129	0.228400	0.8198
ALARK_LGR	-0.487545	0.051204	-9.521681	0.0000
ALARK_LGR(-1)	0.482363	0.047753	10.10126	0.0000

R-squared	0.494364	Mean dependent var	-0.023592
Adjusted R-squared	0.484733	S.D. dependent var	0.264122
S.E. of regression	0.189592	Akaike info criterion	-0.460500
Sum squared resid	3.774240	Schwarz criterion	-0.385996
Log likelihood	27.86698	Hannan-Quinn criter.	-0.430291
F-statistic	51.32964	Durbin-Watson stat	1.973705
Prob(F-statistic)	0.000000		

Dependent Variable: ARCLK_R
Method: Least Squares
Date: 10/23/16 Time: 14:20
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.126859	0.152563	-0.831519	0.4076
ARCLK_LGR	-0.051219	0.015436	-3.318096	0.0012
ARCLK_LGR(-1)	0.060826	0.015455	3.935764	0.0001

R-squared	0.131194	Mean dependent var	0.004327
Adjusted R-squared	0.114645	S.D. dependent var	0.132563
S.E. of regression	0.124733	Akaike info criterion	-1.297897
Sum squared resid	1.633626	Schwarz criterion	-1.223393
Log likelihood	73.08642	Hannan-Quinn criter.	-1.267688
F-statistic	7.927745	Durbin-Watson stat	1.883742
Prob(F-statistic)	0.000622		

Dependent Variable: ASELS_R
Method: Least Squares
Date: 10/17/16 Time: 21:22
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.106556	0.367545	-0.289912	0.7725
ASELS_LGR	-0.417003	0.067149	-6.210125	0.0000
ASELS_LGR(-1)	0.424182	0.066798	6.350200	0.0000

R-squared	0.281382	Mean dependent var	-0.008862
Adjusted R-squared	0.267694	S.D. dependent var	0.212544
S.E. of regression	0.181885	Akaike info criterion	-0.543504
Sum squared resid	3.473611	Schwarz criterion	-0.469000
Log likelihood	32.34921	Hannan-Quinn criter.	-0.513295
F-statistic	20.55690	Durbin-Watson stat	1.976953
Prob(F-statistic)	0.000000		

Dependent Variable: AYGAZ_R
Method: Least Squares
Date: 10/17/16 Time: 21:25
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.029724	0.269840	-0.110154	0.9125
AYGAZ_LGR	-0.091495	0.035378	-2.586178	0.0111
AYGAZ_LGR(-1)	0.093887	0.035650	2.633533	0.0097

R-squared	0.065384	Mean dependent var	0.004494
Adjusted R-squared	0.047582	S.D. dependent var	0.113018
S.E. of regression	0.110296	Akaike info criterion	-1.543911
Sum squared resid	1.277350	Schwarz criterion	-1.469407
Log likelihood	86.37118	Hannan-Quinn criter.	-1.513702
F-statistic	3.672791	Durbin-Watson stat	1.804424
Prob(F-statistic)	0.028724		

Dependent Variable: DOAS_R
Method: Least Squares
Date: 10/17/16 Time: 21:29
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.220935	0.377921	-0.584607	0.5601
DOAS_LGR	-0.176670	0.046224	-3.822036	0.0002
DOAS_LGR(-1)	0.192725	0.046607	4.135082	0.0001

R-squared	0.143348	Mean dependent var	0.005153
Adjusted R-squared	0.127031	S.D. dependent var	0.165310
S.E. of regression	0.154454	Akaike info criterion	-0.870462
Sum squared resid	2.504870	Schwarz criterion	-0.795958
Log likelihood	50.00493	Hannan-Quinn criter.	-0.840253
F-statistic	8.785102	Durbin-Watson stat	2.035001
Prob(F-statistic)	0.000297		

Dependent Variable: DOHOL_R
Method: Least Squares
Date: 10/17/16 Time: 21:29
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.103906	0.250521	-0.414761	0.6792
DOHOL_LGR	-0.246862	0.048923	-5.045923	0.0000
DOHOL_LGR(-1)	0.252038	0.048727	5.172491	0.0000

R-squared	0.203599	Mean dependent var	-0.016260
Adjusted R-squared	0.188429	S.D. dependent var	0.153688
S.E. of regression	0.138453	Akaike info criterion	-1.089185
Sum squared resid	2.012774	Schwarz criterion	-1.014681
Log likelihood	61.81599	Hannan-Quinn criter.	-1.058976
F-statistic	13.42157	Durbin-Watson stat	1.732376
Prob(F-statistic)	0.000006		

Dependent Variable: ECILC_R
Method: Least Squares
Date: 10/17/16 Time: 21:31
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.399952	0.388432	-1.029658	0.3055
ECILC_LGR	-0.101426	0.067180	-1.509781	0.1341
ECILC_LGR(-1)	0.126829	0.065976	1.922361	0.0573

R-squared	0.039032	Mean dependent var	-0.005799
Adjusted R-squared	0.020728	S.D. dependent var	0.147421
S.E. of regression	0.145885	Akaike info criterion	-0.984612
Sum squared resid	2.234653	Schwarz criterion	-0.910109
Log likelihood	56.16907	Hannan-Quinn criter.	-0.954404
F-statistic	2.132394	Durbin-Watson stat	1.908228
Prob(F-statistic)	0.123659		

Dependent Variable: ECZYT_R
Method: Least Squares
Date: 10/17/16 Time: 21:31
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.207010	0.609073	0.339877	0.7346
ECZYT_LGR	0.004723	0.056047	0.084266	0.9330
ECZYT_LGR(-1)	-0.018799	0.056157	-0.334761	0.7385

R-squared	0.001564	Mean dependent var	0.001515
Adjusted R-squared	-0.017454	S.D. dependent var	0.105855
S.E. of regression	0.106775	Akaike info criterion	-1.608798
Sum squared resid	1.197099	Schwarz criterion	-1.534294
Log likelihood	89.87508	Hannan-Quinn criter.	-1.578589
F-statistic	0.082213	Durbin-Watson stat	2.145019
Prob(F-statistic)	0.921135		

Dependent Variable: ENKAI_R
Method: Least Squares
Date: 10/17/16 Time: 21:32
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.019577	0.145787	-0.134286	0.8934
ENKAI_LGR	-0.181522	0.031532	-5.756653	0.0000
ENKAI_LGR(-1)	0.182491	0.031615	5.772305	0.0000

R-squared	0.245698	Mean dependent var	-0.010717
Adjusted R-squared	0.231330	S.D. dependent var	0.148119
S.E. of regression	0.129862	Akaike info criterion	-1.217310
Sum squared resid	1.770725	Schwarz criterion	-1.142806
Log likelihood	68.73472	Hannan-Quinn criter.	-1.187101
F-statistic	17.10075	Durbin-Watson stat	2.238445
Prob(F-statistic)	0.000000		

Dependent Variable: EREGL_R
Method: Least Squares
Date: 10/17/16 Time: 21:33
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.021467	0.279662	-0.076761	0.9390
EREGL_LGR	0.006669	0.033611	0.198434	0.8431
EREGL_LGR(-1)	-0.005836	0.032744	-0.178228	0.8589

R-squared	0.000375	Mean dependent var	-0.006449
Adjusted R-squared	-0.018665	S.D. dependent var	0.146551
S.E. of regression	0.147913	Akaike info criterion	-0.957006
Sum squared resid	2.297203	Schwarz criterion	-0.882503
Log likelihood	54.67834	Hannan-Quinn criter.	-0.926798
F-statistic	0.019697	Durbin-Watson stat	1.946245
Prob(F-statistic)	0.980499		

Dependent Variable: FROTO_R
Method: Least Squares
Date: 10/17/16 Time: 21:33
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.116001	0.169380	-0.684854	0.4949
FROTO_LGR	-0.062124	0.019663	-3.159462	0.0021
FROTO_LGR(-1)	0.072089	0.019803	3.640212	0.0004

R-squared	0.114546	Mean dependent var	0.009395
Adjusted R-squared	0.097681	S.D. dependent var	0.100088
S.E. of regression	0.095074	Akaike info criterion	-1.840935
Sum squared resid	0.949105	Schwarz criterion	-1.766431
Log likelihood	102.4105	Hannan-Quinn criter.	-1.810726
F-statistic	6.791647	Durbin-Watson stat	1.750212
Prob(F-statistic)	0.001683		

Dependent Variable: GARAN_R
Method: Least Squares
Date: 10/17/16 Time: 21:34
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.215050	0.144870	1.484431	0.1407
GARAN_LGR	-0.047665	0.015412	-3.092752	0.0025
GARAN_LGR(-1)	0.036196	0.015043	2.406121	0.0179

R-squared	0.085638	Mean dependent var	0.006052
Adjusted R-squared	0.068221	S.D. dependent var	0.136613
S.E. of regression	0.131870	Akaike info criterion	-1.186608
Sum squared resid	1.825932	Schwarz criterion	-1.112105
Log likelihood	67.07684	Hannan-Quinn criter.	-1.156400
F-statistic	4.917073	Durbin-Watson stat	2.121667
Prob(F-statistic)	0.009093		

Dependent Variable: GSDHO_R
Method: Least Squares
Date: 10/17/16 Time: 21:34
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.631047	0.936311	0.673972	0.5018
GSDHO_LGR	-0.056122	0.059937	-0.936352	0.3512
GSDHO_LGR(-1)	0.018968	0.059622	0.318139	0.7510

R-squared	0.008994	Mean dependent var	-0.003944
Adjusted R-squared	-0.009883	S.D. dependent var	0.166041
S.E. of regression	0.166860	Akaike info criterion	-0.715941
Sum squared resid	2.923431	Schwarz criterion	-0.641437
Log likelihood	41.66080	Hannan-Quinn criter.	-0.685732
F-statistic	0.476452	Durbin-Watson stat	1.703862
Prob(F-statistic)	0.622318		

Dependent Variable: HURGZ_R
Method: Least Squares
Date: 10/17/16 Time: 21:35
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.108307	0.220015	-0.492270	0.6236
HURGZ_LGR	-0.114944	0.034220	-3.358977	0.0011
HURGZ_LGR(-1)	0.120941	0.033730	3.585562	0.0005

R-squared	0.109322	Mean dependent var	-0.016838
Adjusted R-squared	0.092357	S.D. dependent var	0.147365
S.E. of regression	0.140395	Akaike info criterion	-1.061330
Sum squared resid	2.069628	Schwarz criterion	-0.986826
Log likelihood	60.31180	Hannan-Quinn criter.	-1.031121
F-statistic	6.443887	Durbin-Watson stat	1.943145
Prob(F-statistic)	0.002293		

Dependent Variable: IHLAS_R
Method: Least Squares
Date: 10/17/16 Time: 21:35
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.265993	0.307857	0.864016	0.3895
IHLAS_LGR	-0.005441	0.053863	-0.101017	0.9197
IHLAS_LGR(-1)	-0.009699	0.053642	-0.180816	0.8569

R-squared	0.007636	Mean dependent var	-0.009869
Adjusted R-squared	-0.011266	S.D. dependent var	0.168070
S.E. of regression	0.169014	Akaike info criterion	-0.690285
Sum squared resid	2.999403	Schwarz criterion	-0.615782
Log likelihood	40.27540	Hannan-Quinn criter.	-0.660077
F-statistic	0.403996	Durbin-Watson stat	1.731554
Prob(F-statistic)	0.668680		

Dependent Variable: ISCTR_R
Method: Least Squares
Date: 10/17/16 Time: 21:36
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.031075	0.235431	0.131992	0.8952
ISCTR_LGR	-0.207466	0.031959	-6.491634	0.0000
ISCTR_LGR(-1)	0.205491	0.030717	6.689880	0.0000

R-squared	0.304484	Mean dependent var	-0.005107
Adjusted R-squared	0.291236	S.D. dependent var	0.122922
S.E. of regression	0.103486	Akaike info criterion	-1.671374
Sum squared resid	1.124485	Schwarz criterion	-1.596870
Log likelihood	93.25417	Hannan-Quinn criter.	-1.641165
F-statistic	22.98350	Durbin-Watson stat	2.113307
Prob(F-statistic)	0.000000		

Dependent Variable: ISGYO_R
Method: Least Squares
Date: 10/17/16 Time: 21:36
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.062948	0.287848	0.218684	0.8273
ISGYO_LGR	-0.072195	0.028941	-2.494562	0.0142
ISGYO_LGR(-1)	0.067720	0.029002	2.335009	0.0214

R-squared	0.058714	Mean dependent var	-0.006801
Adjusted R-squared	0.040785	S.D. dependent var	0.116125
S.E. of regression	0.113733	Akaike info criterion	-1.482549
Sum squared resid	1.358185	Schwarz criterion	-1.408045
Log likelihood	83.05765	Hannan-Quinn criter.	-1.452341
F-statistic	3.274757	Durbin-Watson stat	2.105886
Prob(F-statistic)	0.041724		

Dependent Variable: KARSN_R
Method: Least Squares
Date: 10/17/16 Time: 21:37
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.503991	0.254655	-1.979118	0.0504
KARSN_LGR	0.080021	0.044194	1.810694	0.0730
KARSN_LGR(-1)	-0.048715	0.043470	-1.120656	0.2650

R-squared	0.051294	Mean dependent var	-0.013227
Adjusted R-squared	0.033223	S.D. dependent var	0.166421
S.E. of regression	0.163634	Akaike info criterion	-0.754989
Sum squared resid	2.811476	Schwarz criterion	-0.680485
Log likelihood	43.76940	Hannan-Quinn criter.	-0.724780
F-statistic	2.838507	Durbin-Watson stat	1.661658
Prob(F-statistic)	0.063012		

Dependent Variable: KCHOL_R
Method: Least Squares
Date: 10/17/16 Time: 21:38
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.249298	0.293551	0.849250	0.3977
KCHOL_LGR	-0.151698	0.032528	-4.663617	0.0000
KCHOL_LGR(-1)	0.135656	0.033015	4.108880	0.0001

R-squared	0.172881	Mean dependent var	0.006197
Adjusted R-squared	0.157126	S.D. dependent var	0.124028
S.E. of regression	0.113868	Akaike info criterion	-1.480169
Sum squared resid	1.361422	Schwarz criterion	-1.405665
Log likelihood	82.92912	Hannan-Quinn criter.	-1.449960
F-statistic	10.97334	Durbin-Watson stat	2.181363
Prob(F-statistic)	0.000047		

Dependent Variable: KOZAA_R
Method: Least Squares
Date: 10/17/16 Time: 21:38
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.134092	0.333781	-0.401735	0.6887
KOZAA_LGR	-0.233287	0.067479	-3.457173	0.0008
KOZAA_LGR(-1)	0.241539	0.067009	3.604580	0.0005

R-squared	0.110229	Mean dependent var	-0.009985
Adjusted R-squared	0.093281	S.D. dependent var	0.217408
S.E. of regression	0.207020	Akaike info criterion	-0.284617
Sum squared resid	4.500019	Schwarz criterion	-0.210113
Log likelihood	18.36932	Hannan-Quinn criter.	-0.254408
F-statistic	6.503929	Durbin-Watson stat	1.645798
Prob(F-statistic)	0.002173		

Dependent Variable: KRDMD_R
Method: Least Squares
Date: 10/17/16 Time: 21:39
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.074143	0.725410	-0.102208	0.9188
KRDMD_LGR	-0.085539	0.059103	-1.447297	0.1508
KRDMD_LGR(-1)	0.090397	0.059081	1.530043	0.1290

R-squared	0.023542	Mean dependent var	0.012015
Adjusted R-squared	0.004943	S.D. dependent var	0.137607
S.E. of regression	0.137266	Akaike info criterion	-1.106402
Sum squared resid	1.978417	Schwarz criterion	-1.031898
Log likelihood	62.74569	Hannan-Quinn criter.	-1.076193
F-statistic	1.265745	Durbin-Watson stat	1.896537
Prob(F-statistic)	0.286296		

Dependent Variable: PETKM_R
Method: Least Squares
Date: 10/17/16 Time: 21:39
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.081629	0.223679	0.364937	0.7159
PETKM_LGR	-0.401221	0.048180	-8.327625	0.0000
PETKM_LGR(-1)	0.396602	0.047842	8.289890	0.0000

R-squared	0.401353	Mean dependent var	-0.006359
Adjusted R-squared	0.389950	S.D. dependent var	0.182783
S.E. of regression	0.142764	Akaike info criterion	-1.027868
Sum squared resid	2.140052	Schwarz criterion	-0.953365
Log likelihood	58.50489	Hannan-Quinn criter.	-0.997660
F-statistic	35.19777	Durbin-Watson stat	1.802548
Prob(F-statistic)	0.000000		

Dependent Variable: PRKME_R
Method: Least Squares
Date: 10/17/16 Time: 21:40
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.305963	0.492437	-0.621324	0.5357
PRKME_LGR	-0.042513	0.098201	-0.432920	0.6660
PRKME_LGR(-1)	0.061877	0.097196	0.636623	0.5258

R-squared	0.006533	Mean dependent var	-0.005198
Adjusted R-squared	-0.012390	S.D. dependent var	0.177029
S.E. of regression	0.178123	Akaike info criterion	-0.585303
Sum squared resid	3.331410	Schwarz criterion	-0.510799
Log likelihood	34.60636	Hannan-Quinn criter.	-0.555094
F-statistic	0.345222	Durbin-Watson stat	2.002591
Prob(F-statistic)	0.708864		

Dependent Variable: SAHOL_R
Method: Least Squares
Date: 10/17/16 Time: 21:41
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.012587	0.302407	-0.041621	0.9669
SAHOL_LGR	-0.167457	0.031464	-5.322167	0.0000
SAHOL_LGR(-1)	0.168534	0.031479	5.353920	0.0000

R-squared	0.232759	Mean dependent var	0.002618
Adjusted R-squared	0.218145	S.D. dependent var	0.124759
S.E. of regression	0.110315	Akaike info criterion	-1.543569
Sum squared resid	1.277787	Schwarz criterion	-1.469065
Log likelihood	86.35271	Hannan-Quinn criter.	-1.513360
F-statistic	15.92700	Durbin-Watson stat	1.958779
Prob(F-statistic)	0.000001		

Dependent Variable: SASA_R
Method: Least Squares
Date: 10/17/16 Time: 21:42
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.246471	0.505870	-0.487223	0.6271
SASA_LGR	-0.017248	0.051143	-0.337247	0.7366
SASA_LGR(-1)	0.032756	0.049391	0.663202	0.5087

R-squared	0.005235	Mean dependent var	0.004044
Adjusted R-squared	-0.013713	S.D. dependent var	0.130335
S.E. of regression	0.131225	Akaike info criterion	-1.196417
Sum squared resid	1.808108	Schwarz criterion	-1.121914
Log likelihood	67.60654	Hannan-Quinn criter.	-1.166209
F-statistic	0.276261	Durbin-Watson stat	1.888689
Prob(F-statistic)	0.759165		

Dependent Variable: SISE_R
Method: Least Squares
Date: 10/17/16 Time: 21:43
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.126848	0.399172	0.317778	0.7513
SISE_LGR	-0.083503	0.028686	-2.910917	0.0044
SISE_LGR(-1)	0.074998	0.028661	2.616708	0.0102

R-squared	0.085123	Mean dependent var	-0.002366
Adjusted R-squared	0.067696	S.D. dependent var	0.140995
S.E. of regression	0.136139	Akaike info criterion	-1.122899
Sum squared resid	1.946047	Schwarz criterion	-1.048395
Log likelihood	63.63652	Hannan-Quinn criter.	-1.092690
F-statistic	4.884736	Durbin-Watson stat	2.179940
Prob(F-statistic)	0.009366		

Dependent Variable: TCELL_R
Method: Least Squares
Date: 10/17/16 Time: 21:44
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.040712	0.216702	-0.187871	0.8513
TCELL_LGR	-0.040620	0.020937	-1.940123	0.0550
TCELL_LGR(-1)	0.043704	0.020973	2.083778	0.0396

R-squared	0.042343	Mean dependent var	0.005149
Adjusted R-squared	0.024101	S.D. dependent var	0.085272
S.E. of regression	0.084238	Akaike info criterion	-2.082949
Sum squared resid	0.745090	Schwarz criterion	-2.008445
Log likelihood	115.4792	Hannan-Quinn criter.	-2.052740
F-statistic	2.321273	Durbin-Watson stat	2.307428
Prob(F-statistic)	0.103166		

Dependent Variable: THYAO_R
Method: Least Squares
Date: 10/17/16 Time: 21:44
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.063574	0.340060	0.186950	0.8521
THYAO_LGR	-0.309546	0.051745	-5.982112	0.0000
THYAO_LGR(-1)	0.306380	0.048546	6.311186	0.0000

R-squared	0.276185	Mean dependent var	0.001210
Adjusted R-squared	0.262398	S.D. dependent var	0.179945
S.E. of regression	0.154543	Akaike info criterion	-0.869302
Sum squared resid	2.507776	Schwarz criterion	-0.794799
Log likelihood	49.94232	Hannan-Quinn criter.	-0.839094
F-statistic	20.03234	Durbin-Watson stat	2.028040
Prob(F-statistic)	0.000000		

Dependent Variable: TOASO_R
Method: Least Squares
Date: 10/17/16 Time: 21:45
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.042242	0.195331	-0.216257	0.8292
TOASO_LGR	-0.148399	0.031254	-4.748144	0.0000
TOASO_LGR(-1)	0.152492	0.030933	4.929713	0.0000

R-squared	0.191918	Mean dependent var	0.015978
Adjusted R-squared	0.176526	S.D. dependent var	0.137015
S.E. of regression	0.124335	Akaike info criterion	-1.304296
Sum squared resid	1.623204	Schwarz criterion	-1.229793
Log likelihood	73.43201	Hannan-Quinn criter.	-1.274088
F-statistic	12.46865	Durbin-Watson stat	1.772548
Prob(F-statistic)	0.000014		

Dependent Variable: TRKCM_R
Method: Least Squares
Date: 10/17/16 Time: 21:45
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.515802	0.257380	-2.004050	0.0476
TRKCM_LGR	-0.056726	0.028044	-2.022768	0.0456
TRKCM_LGR(-1)	0.092132	0.027845	3.308784	0.0013

R-squared	0.102511	Mean dependent var	-0.003914
Adjusted R-squared	0.085416	S.D. dependent var	0.119314
S.E. of regression	0.114104	Akaike info criterion	-1.476023
Sum squared resid	1.367078	Schwarz criterion	-1.401520
Log likelihood	82.70526	Hannan-Quinn criter.	-1.445815
F-statistic	5.996564	Durbin-Watson stat	2.105902
Prob(F-statistic)	0.003420		

Dependent Variable: TSKB_R
Method: Least Squares
Date: 10/17/16 Time: 21:46
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.070330	0.185117	0.379924	0.7048
TSKB_LGR	-0.099185	0.022431	-4.421738	0.0000
TSKB_LGR(-1)	0.094095	0.022427	4.195649	0.0001

R-squared	0.161268	Mean dependent var	-0.007620
Adjusted R-squared	0.145293	S.D. dependent var	0.140026
S.E. of regression	0.129454	Akaike info criterion	-1.223592
Sum squared resid	1.759635	Schwarz criterion	-1.149088
Log likelihood	69.07397	Hannan-Quinn criter.	-1.193384
F-statistic	10.09452	Durbin-Watson stat	1.876638
Prob(F-statistic)	0.000098		

Dependent Variable: TUPRS_R
Method: Least Squares
Date: 10/17/16 Time: 21:46
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.121682	0.332705	0.365735	0.7153
TUPRS_LGR	-0.055054	0.018582	-2.962774	0.0038
TUPRS_LGR(-1)	0.047012	0.018865	2.492062	0.0143

R-squared	0.104938	Mean dependent var	0.007425
Adjusted R-squared	0.087889	S.D. dependent var	0.097363
S.E. of regression	0.092986	Akaike info criterion	-1.885358
Sum squared resid	0.907866	Schwarz criterion	-1.810854
Log likelihood	104.8093	Hannan-Quinn criter.	-1.855149
F-statistic	6.155142	Durbin-Watson stat	2.082187
Prob(F-statistic)	0.002967		

Dependent Variable: YKBNK_R
Method: Least Squares
Date: 10/17/16 Time: 21:47
Sample (adjusted): 2006M01 2014M12
Included observations: 108 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.350572	0.530168	0.661247	0.5099
YKBNK_LGR	-0.200893	0.050508	-3.977487	0.0001
YKBNK_LGR(-1)	0.180016	0.049923	3.605902	0.0005

R-squared	0.134315	Mean dependent var	-0.002346
Adjusted R-squared	0.117825	S.D. dependent var	0.142116
S.E. of regression	0.133481	Akaike info criterion	-1.162329
Sum squared resid	1.870806	Schwarz criterion	-1.087825
Log likelihood	65.76577	Hannan-Quinn criter.	-1.132121
F-statistic	8.145595	Durbin-Watson stat	1.943880
Prob(F-statistic)	0.000515		