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Article · July 2018

DOI: 10.22158/jepf.v4n3p223

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Journal of Economics and Public Finance
ISSN 2377-1038 (Print) ISSN 2377-1046 (Online)
Vol. 4, No. 3, 2018
www.scholink.org/ojs/index.php/jepf

Original Paper

Determinants of Profitability: Evidence from Brokerage Companies Listed at Amman Stock Exchange

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Received: June 25, 2018 Accepted: July 3, 2018 Online Published: July 13, 2018

doi:10.22158/jepf.v4n3p223 URL: http://dx.doi.org/10.22158/jepf.v4n3p223

Abstract

This paper examines the factors determining the profitability of the brokerage companies (Brokers) listed at Amman Stock Exchange during the period from 2013 to 2017. The profitability of brokerage companies is measured by Return on Assets (ROA) as a function of broker specific and macroeconomic determinants. Simple regression was also used to analyze the data, examine the relations, and measure the effect of determinants on brokerage companies' profitability. The findings revealed that assets quality and Capital adequacy have a positive and significant impact on broker profitability. Furthermore, the results of the study show that broker size has a negative (inverse) impact on broker profitability, while the analysis of macroeconomic variables records that economic activity measured by inflation and Gross Domestic Product (GDP) has no effect on brokers' profitability.

Keywords

brokerage companies, profitability, Assets quality, Capital adequacy, Broker size, macroeconomic variables

1. Introduction

Profitability is a fundamental and essential objective for any commercial organizations to continue and remain, and to maintain their financial position, increase their owners' equity, thereby increasing their ability to adequately deal with risks facing their businesses. To achieve this goal, it is important to know the elements that may increase profitability to promote these elements as well as strengthen their role in the business.

Brokerage companies play an important role in facilitating the buying and selling of financial securities between a buyer and a seller. They also provide a consultancy service to their clients, and contribute to

reduce the information asymmetries, and hence it is necessary to analyze their profitability and define the main determinants in this regard.

According to art.2 of the Securities Law, a financial broker can be defined as "a person who is engaged in the business of buying and selling securities for the account of others". A critical reading of securities legislation shows that a financial broker's role is generally broader than that of other intermediaries since he is entrusted with the responsibility of evaluating clients' orders, monitoring customer accounts and stopping excessive or inappropriate trades when necessary. Furthermore, he may offer margin loans for certain approved clients to purchase investments on credit, and hence he participates actively in the financial market rather than merely matching buy and sell orders (See art.26 of the Directives for Internet Trading on the Amman Stock Exchange for the year 2009. See also art.22 of the Directives for Financial Services Licensing and Registration for the year 2005).

The number of licensed brokerage companies in Jordan is (59), while the number of companies operating there currently (56)—Due to suspension of three companies—of these companies the number of listed brokerage companies (public shareholding companies) at the Amman Stock Exchange is (8) (Securities depository center web site). Given the difficult economic situation in Jordan, Amman stock exchange suffers currently from many challenges which led to considerable decline of the trading volume from 12,3 billion dinar in 2007 to 2.9 billion dinar in 2017 (Annual reports of Jordan securities commission 2007, 2017), This sharp decline, along with other factors that will be discussed in this study, has affected the performance of brokerage firms. Because of the importance of this sector and its impact on the national economy, this paper attempts to examine the determinants of the profitability of listed brokerage companies during the period from 2013 to 2017 in Jordan. The rest of the paper has been divided into the following sections: Section 2 provides a background of the existing literature, Section 3 describes research methodology; data collection and sample, definition of variables, research method, while Section 4 presents the empirical results. Conclusions are offered in the final section.

2. Literature Review

Previous studies have concluded many results that attempt to explain the determinants of profitability in several type of business, but there is a paucity of studies that dealt with brokerage companies. Okay and Kose (2015) evaluated the financial performance of some brokerage firms quoted on the Istanbul Stock exchange according to financial ratios using TOPSIS to determine the fluctuation of profitability ratios and its impact on the financial performance of such firms. They found that raising profitability ratios is relatively more important than raising other financial ratios.

Many studies dealt with banking sector. The study of Hoffmann (2011) examined the determinant of the US banks during the period 1995-2007 and found a negative relation between capital adequacy ratio and the profitability. Also, the studies of Ramadan et al. (2011), Shatti (2016) were applied on Jordanian banks for the period 2001-2010, and 2005-2014 Respectively. The results revealed that high profitability tends to be associated with well-capitalized banks. In addition, the results of Dahiyat (2016)

who also applied his study on banks listed on Amman exchange for the period 2012-2014, Showed that the liquidity has a negative (inverse) significant impact on profitability, whereas the solvency has a no impact on profitability.

On the other hand, Alalaya and Al Khattab (2015) concluded that Assets logarithm of banks had a significant negative relationship with ROA, whereas ROE had a positive and significant relationship, GDP and per capita inflation rate were found to be negatively signed. The study of Alpaer and Anbar (2011) has examined the Macroeconomic determinant of commercial banks profitability in Turkey, and it did not find relationship between profitability and GDP growth rate and inflation. The study of Kadioglo et al. (2017) Which dealt with the relationship between the quality of assets and the profitability of banks in turkey, found that the increase of non-performing loans leads to decrease in the quality of assets which leads to the lower return on equity and return on assets. This result was agreed with the results of other studies such as Adebisi and Matthew (2015), Ozurumba (2016). Furthermore, Akhavein et al. (1997) and Smirlock (1985) found a positive and significant relationship between size and bank profitability.

According to the study of Matar and Eneizan (2018) which was applied on industrial companies in Jordan, the variables of liquidity, profitability, and revenues are positively related with the Return on Assets (ROA), while the variables of leverage and firm size are negatively related with it. The empirical results of the study of Fareed et al. (2016) suggest that firm size, firm growth, and electricity crisis positively impact the profitability. However, firm age, financial leverage and productivity negatively influence the firm profitability. Also, the results of the study conducted by Jafari and Samman (2015) revealed a positive and statistical significant relationship between profitability, the firm size, growth, fixed assets and working capital. On the other hand, the average tax rate and the financial leverage variables showed a negative relationship with profitability. In Romania, Burja (2011) examined factors that influence profitability for the chemical industry. The results provided evidence of a strong positive relationship between efficiency of inventory, debt level, financial leverage, efficiency of capitals and profitability. In Indonesia, Katrikasari and Merianti (2016) studied the effect of leverage and the size of manufacturing company on profitability, and they found that debt ratio has a significant positive effect on profitability, while total assets has a significant negative effect on profitability. Returning to Turkey, Kaya (2015) investigated the firm-specific factors affecting the profitability of non-life insurance companies for the period 2006-2013. The empirical results found that the firm-specific factors affecting the profitability of Turkish non-life insurance companies are the size of the company, age of the company, loss ratio, current ratio, and premium growth rate.

Based on the above literatures, we can say that various studies have been done on this area, but a detailed and comprehensive study has not yet been conducted with regard to brokerage companies in Jordan. Hence, the present study is initiated to determine the profitability of listed Brokerage companies in Jordan.

3. Research Methodology

3.1 Data Collection and Sample

This study is descriptive, explanatory and analytical study, the variables to be examined in this study are derived from the income statement and the financial position statement of listed brokerage companies and data published in the Amman Stock Exchange, while the macroeconomic variables are derived from the Central banks and the Department of statistics, also literature review is conducted.

A sample of (8) listed brokerage companies (Public shareholding companies), that represent all listed brokerage companies over the period 2013-2017, and consisting interval were used to investigate the determinants of brokerage companies profitability in Jordan. The table below explains the sample of study:

Table 1. The Sample of Study

	Broker Name	Paid up Capital (in Jordanian Dinner)
1	Shareco Brokerage	9,000,000
2	Al Amal Financial Investment	15,000,000
3	United Financial Investment	8,000,000
4	The Arab Financial Investment	10,000,000
5	National Portfolio Securities	6,000,000
6	International Brokerage and Financial Markets	14,201,913
7	Rum Financial Brokerage	4,000,000
8	Al Bilad Securities and Investment	10,000,000

Source: Jordan Securities Depository Center.

3.2 Definitions of Variables

Dependent variable: one variable was used to measure the profitability of brokerage companies, Return on Assets (ROA), which indicate the ability of Brokerage Company to generate profit from its assets. Many studies have used this ratio as a measure of profitability such as the studies of Okay and Kose (2015), Shatti (2016), Ramadan et al. (2011), Alalaya and Al Khattab (2015).

Independent variables: Factors that affect the profitability could be divided into two groups, internal factors that are related to companies, and external factors that are related to macroeconomic variables, three independent variables were tested to determine the internal factors that may affect profitability, these are:

Assets quality which measured by non performing loans (accounts receivables) as has been measured in many studies such as Kadioglo et al. (2017), Adebisi and Matthew (2015), Ozurumba (2016), non performing loans measured by dividing allowance for doubtful accounts on net revenue from brokerage services, the increase of non performing accounts receivables leads to decrease in Assets quality.

Capital adequacy which measured by dividing owners equity on total Assetsas has been measured in many studies such as Flamini (2009), Ramadan et al. (2011), Anbar and Alper (2011).

Size of company which measured by natural logarithmic of total assetsas has been measured in many studies such as Alalaya and Al Khattab (2015), Anbar and Alper (2011).

Two independent variables were tested to determine the external factors that may affect profitability; these are:

- GDP Rate: It is a measure of the total economic activity it is adjusted for inflation.
- Inflation rate: This measures the overall percentage increase in Consumer Price Index (CPI) for all goods and services.
- GDP Rate and inflation discussed by many researchers as a macroeconomic determinants that may affect profitability (Bikker & Hu, 2002; Kosmidou, 2006; Anbar & Alper, 2011; Alalaya & Al Khattab, 2015).

Table 2 shows the definitions and measures of dependent and independent variables:

Table 2. Definition and Measures of Variables

	Variable	Measure
Dependent Variable	Profitability	Return on Assets(ROA) = Net Income/total assets
Broker specific independent variables	Assets quality	Non performing Accounts Receivable = allowance for doubtful accounts / net revenue from brokerage services
	Capital Adequacy	Owners Equity / total Assets
	Broker Size	Natural logarithmic of total assets (Log Assets)
Macroeconomic independent variables	Economic Activity	Annual Real GDP Growth Rate (GDP)
	Inflation	Annual Inflation Rate (Consumer Price Index "CPI")

3.3 Hypotheses of Study

This study has tested the following hypotheses to define the determinants of profitability of brokerage companies listed on Amman stock exchange:

H01: There is no significant impact of Assets Quality on broker's profitability.

H02: There is no significant impact of Capital Adequacy on broker's profitability.

H03: There is no significant impact of Size on broker's profitability.

H04: There is no significant impact of GDP rate on broker's profitability.

H05: There is no significant impact of Inflation rate on broker's profitability.

3.3.1 Research Model

The shape below represents the research model:

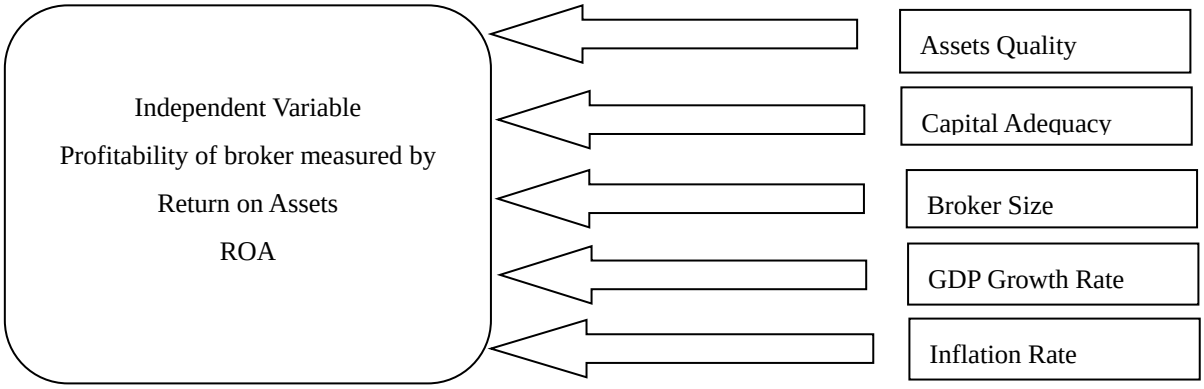

Figure 1. Research Model

3.4 Research Method

To examine the determinants of broker profitability, researcher used correlation and regression through MS Excel and Statistical Package for Social Science (SPSS) for (8) listed brokerage companies (public shareholding companies), that represent all listed brokerage companies over the period from 2013 to 2017.

4. Empirical Results

4.1 Descriptive Statistics

The main descriptive statistic of dependent and independent variables are presented in Table 3, for each variable; mean, standard deviation, minimum and maximum values are showed. Brokers in our sample have Return on Assets (ROA) of 0.087 over the study period. the mean of non-performing accounts receivable ratio varies greatly across brokers and periods, the mean is 188.5, the standard deviation 1115.1, and the minimum value is 0.32 and the maximum value is 7063.91, the mean of capital adequacy is 1.12, minimum and maximum values are 0.33 and 7.16 respectively, whereas the mean of natural logarithmic of total assets is 7.51. Macroeconomic variables indicated that average growth rate of real GDP is 0.0246 when the mean of inflation is 0.0268.

Table 3. Descriptive Statistics

	Minimum	Maximum	Mean	Std.Deviation
Non performing Acc. Receivable (Assets quality)	.32	7063.91	188.5237	1115.13086
Capital Adequacy	.33	7.16	1.1241	1.37916
Log Assets (Size)	6.09	7.51	7.0111	.38048
GDP	.02	.03	.0246	.00442
Inflation	.01	.06	.0268	.01790
ROA	-.06	.30	.0868	.07446

4.2 The Test of Hypotheses

H01: There is no significant impact of Assets Quality "measured by non performing accounts receivable ratio" on broker's profitability.

Tables 4 and 5 below show the result of statistical analysis:

Table 4. Analysis of Variances

ANOVA[b]					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	.022	1	.022	4.326	.044[a]
Residual	.194	38	.005		
Total	.216	39			

a. Predictors: (Constant), IND1

b. Dependent Variable: DEP

Table 5. Analysis of Regression Coefficient

Coefficients[a]					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.091	.011		7.920	.000
IND1	-2.13E-05	.000	-.320	-2.080	.044

a. Dependent Variable: DEP

The value of (f) is significant at α = 5%, hence the null hypothesis is rejected, which means that Assets quality of the of listed brokerage companies "measured by the non-performing accounts receivable" has an important influence on the profitability, Table 5 and Table 6 show that predictor variable (non-performing accounts receivable ratio) makes contribution to the prediction of ROA with a B-coefficient of (-0.320) also the T statistics and sig-values indicates that non-performing accounts receivable ratio generate significant negative impact on ROA.

Remember that the increase of non performing accounts receivables leads to decrease in Assets quality and vice versa, thus, the relationship between asset quality and profitability is positive.

H02: There is no significant impact of Capital Adequacy on broker's profitability.

Tables 6 and 7 below show the result of statistical analysis:

Table 6. Analysis of Variances

ANOVA[b]					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	.072	1	.072	19.071	.000[a]
Residual	.144	38	.004		
Total	.216	39			

a. Predictors: (Constant), IND2

b. Dependent Variable: DEP

Table 7. Analysis of Regression Coefficient

Coefficients[a]					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.052	.013		4.097	.000
IND2	.031	.007	.578	4.367	.000

a. Dependent Variable: DEP

The value of (f) is significant at α = 5%, hence the null hypothesis is rejected, which means that Capital adequacy of the of listed brokerage companies has an important influence on the profitability, Table 6 shows that predictor variable (owners' equity to total assets ratio) makes contribution to the prediction of ROA with a B-coefficient of (0.578) also the T statistics and sig-values indicates that capital adequacy ratio generate significant positive impact on ROA "Table 7".

H03: There is no significant impact of broker's Size on broker's profitability.

Tables 8 and 9 below show the result of statistical analysis:

Table 8. Analysis of Variances

ANOVA[b]					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	.050	1	.050	11.328	.002[a]
Residual	.167	38	.004		
Total	.216	39			

a. Predictors: (Constant), IND3

b. Dependent Variable: DEP

Table 9. Analysis of Regression Coefficient

Coefficients[a]					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.744	.196		3.804	.001
IND3	-.094	.028	-.479	-3.366	.002

a. Dependent Variable: DEP

The value of (f) is significant at α = 5%, hence the null hypothesis is rejected, which means that size of the of listed brokerage companies "measured by Log Assets" has an important influence on the profitability, table 8 shows that predictor variable (Size of broker) makes contribution to the prediction of ROA, Table 9 shows B-coefficient of (-0.479) also the T statistics and sig-values indicates that size of broker generate significant negative impact on ROA.

H04: There is no significant impact of GDP rate on broker's profitability.

Tables 10 and 11 below show the result of statistical analysis:

Table 10. Analysis of Variance

ANOVA[b]					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	.000	1	.000	.053	.819[a]
Residual	.216	38	.006		
Total	.216	39			

a. Predictors: (Constant), IND4

b. Dependent Variable: DEP

Table 11. Analysis of Regression Coefficient

Coefficients[a]					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.102	.068		1.499	.142
IND4	-.630	2.732	-.037	-.231	.819

a. Dependent Variable: DEP

The value of (f) is insignificant at α = 5%, (sig value is more than 5%), hence the null hypothesis is accepted, which means that the GDP growth rate has no influence on the profitability of brokerage companies.

H05: There is no significant impact of Inflation rate on broker's profitability.

Tables 12 and 13 below show the result of statistical analysis:

Table 12. Analysis of Variances

ANOVA[b]					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	.004	1	.004	.697	.409[a]
Residual	.212	38	.006		
Total	.216	39			

a. Predictors: (Constant), IND5

b. Dependent Variable: DEP

Table 13. Analysis of Regression Coefficient

Coefficients[a]					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.102	.021		4.740	.000
IND5	-.558	.669	-.134	-.835	.409

a. Dependent Variable: DEP

The value of (f) is insignificant at $\alpha = 5\%$, (sig value is more than 5%), hence the null hypothesis is accepted, which means that the Inflation rate has no influence on the profitability of brokerage companies.

5. Conclusions

This study empirically investigated the determinants of brokerage companies' profitability in Jordan. On the basis of result and analysis, it can be concluded that there is a negative relationship between the non-performing receivables of broker and the profitability, which means a positive relationship between Assets quality and profitability. It can also be concluded that the increase of non-performing receivables leads to decrease in the quality of assets which leads to the lower return on assets and vice versa, and hence it is important to oversee, and control the non-performing receivables in brokerage companies. This result is consistent with many studies that indicate the existence of a positive relationship between assets quality and profitability (Kadioglo et al., 2017; Adebisi & Matthew, 2015; Ozurumba, 2016).

Furthermore, this study found that the capital adequacy has an important positive effect on the profitability. This result supports the view that well-capitalized companies leads to higher profitability and is consistent with the views of many researchers including Ramadan et al. (2011), Shatti (2016). The study however found a negative relationship between the size of broker and the profitability, and

this result can be justified generally by the inability of relatively large companies to take advantage of their assets' size in generating profits, and because of using total assets as a denominator in calculating ROA ratio. This result is consistent with Study of Alalaya and Al Khattab (2015), Katrikasari and Merianti (2016), Matar and Eneizan (2018).

On the macroeconomic variables, the study found that GDP growth rate and inflation have no significant effect on broker's profitability. This result is consistent with Study of Alpaer and Anbar (2011).

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