

Tran Van Hai, Pham Huy Hung, Vu Thuy Ha. (2021). Balancing Risk and Profitability of Securities Companies – A Case Study in Vietnam. *International Journal of Early Childhood Special Education (INT-JECSE)*, 13(2): 790-795. DOI: 10.9756/INT-JECSE/V13I2.211120

Received: 23.05.2021 Accepted: 28.08.2021

Tran Van Hai<sup>1</sup>  
Pham Huy Hung<sup>2</sup>  
Vu Thuy Ha<sup>3</sup>

## Balancing Risk and Profitability of Securities Companies – A Case Study in Vietnam

### Abstract

*The goal of creating, forming, and developing businesses in general and securities companies in particular, whose ultimate goal is profit, high and stable profitability is the goal of any company. However, due to their specific business lines, securities companies are affected by risks such as market risk (which is the value corresponding to the level of loss that may occur when the market price of assets currently owned and expected to be owned under the underwriting commitment fluctuates in an adverse direction); Payment risk (is the value corresponding to the level of loss that may occur when the counterparty is unable to make payment on time or deliver assets on time as committed; operational risk (is the value corresponding to the level of losses that may occur due to technical errors, system and business process errors, human errors in the operation process, due to lack of business capital arising from expenses and losses from investment activities, due to other objective reasons). The problem is how the securities company can balance the safety goal, limit the possible risks and at the same time still increase the ability of the enterprise profitability.*

*In practice, there are many methods to measure risk, but one of the most widely accepted methods of predicting risk and bankruptcy today is Z-score of the US economist's - Edward I. Altman – a lecturer of New York University faculty member set. In the US, about 95% of bankruptcies are forecast from the Z-score one year before the closing date, but this rate drops to just 74% for 2-year forecasts. From the initial Z-index forecast, Professor Edward I. Altman has developed it into Z' and Z'' to be applicable to each type and industry of the business. The Z'' coefficient is similar to the S&P credit rating.*

*Keywords: Z-score, Securities Companies, Vietnam.*

### Introduction

Studying the impact of the Z-score coefficient (component is 5 financial ratios X1; X2; X3; X4; X5) on the profitability of securities companies, through the Pooled Ordinary Least Square regression model (Pooled Ordinary Least Square - Pooled OLS). As a result, the Z-score has an impact on the profitability of securities companies (through the variable ROE/ROA return on equity and return on assets), specifically the independent variable (X2) coefficient of capital addition from profit (Retained profit/Total assets) and independent

variable (X5) Financial efficiency (Net revenue/ Total assets) have a positive effect on profitability the words of the securities company. Implications of governance for securities companies can simultaneously improve profitability and increase safety, and reduce risks for securities companies through reducing the use of debt capital to finance business capital (increasing equity capital through retained earnings) and at the same time enhancing management ability to increase market share and speed up sales of securities companies.

Tran Van Hai<sup>1</sup>, PhD Student, Academy of Finance.

Lecture, Hanoi University of Natural Resources and Environment, Vietnam.

Pham Huy Hung<sup>2</sup>, PhD Student, National Economics University, Vietnam.

Lecture, Hanoi University of Natural Resources and Environment, Vietnam.

Vu Thuy Ha<sup>3</sup>, PhD, Lecture, Hanoi University of Natural Resources and Environment, Vietnam.

## Literature Review

To run the operation of a business, every manager must always think and anticipate what will happen in the future of the business, proactively solve problems before they become deadlocked or take measures to promptly adjust inappropriate targets, seize new opportunities that arise for businesses. With the specific operation of securities companies, depending on various macro and micro factors, that's why the international organization of Securities Commissions (IOSCO) made specific recommendations in 1989, 1990 said that securities companies need to ensure sufficient capital, thereby minimizing the main risks of enterprises, as well as reducing risks for the system.

In the world, there are also many studies on the correlation between profitability and financial safety, some of which must be mentioned as follows:

Thomas Ng and partner (2011), using financial ratios in Altman's model (Z Model), using 7 financial ratios including profitability; solvency and cash flow show the fit of model Z for the sample of construction companies in the sample.

Altman (2013), in the new study, the author used the Z' coefficient instead of the Z-Score model version, through the financial ratios more suitable than the Z-score coefficient in one specific case.

Altman and partner (2016), re-examining the performance of the Z-Score model for mainly private firms from Europe (31 countries), and three non-European countries, the results show that Z-Score model fits most countries (about 0.75), accuracy (above 0.90) incorporating additional variables.

Trad and partner (2017), sampled 78 banks in 12 countries, period 2004-2013 to explain the bank's soundness in terms of profitability as measured by ROA and ROE, through dynamic panel data econometric method (GMM system), bank size results, capital will increase bank profitability and stability, reduce risk.

Erfani (2018), the author uses a sample of eight banks in the period 2006 to 2013, to study the global financial crisis on the efficiency and profitability of banks. The results showed that the financial crisis did not affect the Bank's profitability.

Pranata and partner (2018), study the effect of capital adequacy ratio; Bad debt; Operating expense ratio; Net profit margin; Loan to Deposit Ratio and Altman Z-score for ROA and ROE. The results show that the Z coefficient has no significant effect on (ROA), but the negative effect is not significant on (ROE).

Dirman (2020), using a research sample of 90 enterprises in manufacturing, basic industry and chemical industry in the 3-year period from 2016 to 2018, to analyze financial status and viability profitability through linear regression, the results show that profitability has a positive effect on financial distress, while liquidity, leverage and free cash flow do not cause distress. financial, firm size negatively affects financial distress.

Khan and partner (2020), liquidity and profitability research based on Z model, selection of top 10 telecom companies (research sample from 2006 to 2016) based on market capitalization field to carry out experiments, showing that the impact of profit on the Z coefficient is insignificant.

On the basis of inheriting research results of scientists around the world, the author deploys an empirical model: Risk and profitability of securities companies.

## Methodology

(1) *Quantitative research goals*. The author tests the impact of the Z-score coefficient (due to the combined financial ratios) on the profitability (ROA and ROE) of securities companies in the period 2015-2019, the results serve as a basis for accurate assessment on effects, helping securities companies have solutions to enhance operational efficiency and avoid risks for securities companies.

(2) *Research data*. The data used by the PhD student is secondary data, taken from the website (Vietstock.vn), from the annual reports of securities companies and the General Statistics Office (Gso.gov.vn). The data set includes financial statements of 49 securities companies for the period 2015-2019, 240 observations, the author will exclude newly established or consolidated securities companies, which makes financial data not comparable and securities companies are not fair to provide the necessary information for the study. According to Bollen (1989) when analyzing the model with linear structure, the sample size is calculated according to the formula  $n=5*2i$  (i is the observed variable in the model). According to Tabachnick and Fidell (2007) the sample size in multiple linear regression analysis is calculated by the formula  $n= 50 + 8q$  (q is the variable corresponding to financial ratios).

(3) *Research Methods*. The author uses STATA 14 software to test and estimate the least squares regression model (Pooled Ordinary Least Square - Pooled OLS). The model is tested for defects and corrected for defects in the model.

$$Y_{it} = \beta_1 X_{it1} + \beta_2 X_i + \dots + \mu_i$$

In which:

$\beta_1, \beta_2, \dots$  is the regression coefficient,  $\beta_1$  is the intercept,  $\mu$  is the residual.

- Select variables ROE (Return on equity) and ROA (Return on total assets) to represent the profitability of securities companies:

No.	Variable names and symbols	Formula	Source
The dependent variable is ROE/ROA representing the profitability of securities companies			
<b>Independent variables</b>			
1	Working capital ratio (X1)	(Current Assets – Current Liabilities)/Total Assets	S. Thomas Ng and partner (2011); Altman (2013); Altman and partner (2016); Trad và partner (2017); Erfani (2018); Pranata and partner (2018); Dirman (2020); Khan and partner (2020).
2	Coefficient of capital addition from profit (X2)	Retained earnings/Total assets	
3	Basic rate of return (X3)	Profit before interest and taxes/Total assets	
4	Capital structure coefficient (X4)	Market value of equity/Total debt	
5	Asset efficiency (X5)	Net Revenue/Total Assets	

#### Author considers 2 models

$$ROE = \beta_1 * X1 + \beta_2 * X2 + \beta_3 * X3 + \beta_4 * X4 + \beta_5 * X5 (*)$$

$$ROA = \beta_{01} * X1 + \beta_{02} * X2 + \beta_{03} * X3 + \beta_{04} * X4 + \beta_{05} * X5 (**)$$

Hypotheses:

H01: (X1) has Correlation coefficient to (ROE/ROA)

H02: (X2) has inverse correlation to (ROE/ROA)

H03: (X3) has Correlation coefficient to (ROE/ROA)

H04: (X4) has Correlation coefficient to (ROE/ROA)

H05: (X5) has Correlation coefficient to (ROE/ROA)

**Description of variables participating in the model (\*) and (\*\*)**

**Table 1.**

Statistics of Variables in the Regression Model (\*) and (\*\*)

Summarize ROA ROE X1 X2 X3 X4 X5

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	240	.0348036	.0814484	-.3438544	.5126692
ROE	240	.0538408	.1097984	-.4677417	.5206343
X1	240	.6486634	.210339	.1339595	.9943936
X2	240	.0293253	.0782874	-.4458428	.4075368
X3	240	.0480194	.0877968	-.4436966	.4080334
X4	240	3.150.313	935.654	.1781995	1.042.332
X5	240	.1657168	.1013745	.0020477	.5976548

(Source: Author of statistics on STATA 14 software)

Observe the statistical table in (Table 1) the sample has 240 observations, the average value of the ROA variables; ROE; X1; X2; X3; X4; X5 has an average value respectively of 0.0348036; 0.0538408; 0.64886634; 0.0293253; 0.0480194; 3,150,313; 0.1657168. Most variables have the value Std.Dev higher than average, this is reflected in the strong oscillator pattern. In

general, the operating efficiency of securities companies is relatively low due to low ROE/ROA (less than 6%).

**Correlation coefficient matrix.** The author tests the correlation between the variables in the models.

**Table 2.**

Correlation matrix between variables in the regression model (\*) and (\*\*)  
 pwcorr ROA ROE X1 X2 X3 X4 X5, sig

	ROA	ROE	X1	X2	X3	X4	X5
ROA	10.000						
ROE	0.9391	10.000					
	0.0000						
X1	0.1175	0.0144	10.000				
	0.0692	0.8247					
X2	0.9753	0.9391	0.0970	10.000			
	0.0000	0.0000	0.1338				
X3	0.9534	0.9395	0.0379	0.9789	10.000		
	0.0000	0.0000	0.5595	0.0000			
X4	-0.1224	-0.1591	0.3731	-0.1149	-0.1548	10.000	
	0.0583	0.0136	0.0000	0.0756	0.0164		
X5	0.4952	0.5129	0.1247	0.4674	0.5058	-0.1815	10.000
	0.0000	0.0000	0.0536	0.0000	0.0000	0.0048	

(Source: Author of statistics on STATA 14 software)

Observation (Table 2), the Sig coefficient of the variable (X1) is equal to >5% in both the correlation with (ROE) and (ROA), that is, between the variable (X1) there is no correlation with operation efficiency of securities companies should be excluded from 2 regression models.

**Check for multicollinearity.** To remove the variable (X3) due to the VIF>10 coefficient and at the same time check the multicollinearity phenomenon, the variables with VIF<10 are used in the model.

**Table 3.**

Check the model's multicollinearity (\*) và (\*\*) vif

Variable	VIF	1/VIF
X5	1.31	0.765039
X2	1.28	0.780640
X4	1.04	0.965909
Mean VIF	1.21	

(Source: Author of statistics on STATA 14 software)

## Results

**Table 4.**

Regression results of the Z-score coefficient (due to financial ratios) affecting the profitability of securities companies representing the dependent variable ROE

. reg ROE X2 X4 X5

Source	SS	df	MS	Number of obs =	240
				F(3, 236) =	639.22
Model	256.557.573	3	.855191911	Prob > F =	0.0000
Residual	.315735668	236	.001337863	R-squared =	0.8904
				Adj R-squared =	0.8890
Total	28.813.114	239	.012055696	Root MSE =	.03658
ROE	Coef.	Std. Err.	t	P>t [95% Conf.	Interval]
X2	1.252.782	.034205	36.63	0.000	1.185396 1.320.169
X4	-.0000475	.0000257	-1.85	0.066	-.0000982 3.19e-06
X5	.0953875	.0266831	3.57	0.000	.0428201 .147955
_cons	.0027916	.0048821	0.57	0.568	-.0068265 .0124096

(Source: Author of statistics on STATA 14 software)

Observation (Table 4) gives us Regression results with high relative confidence of 88.90%, variable (X2) has the opposite effect for (ROE) p-value less than 0.05, variable (X5) has positive effect. in the same direction (ROE) with P-value

less than 0.05. The remaining variables (X4) have no significant influence on (ROE).

$$ROE = 1.252.782 * X2 + 0.0953875 * X5 \quad (1)$$

**Table 5.**

Regression results of Z-score coefficient (due to financial ratios) affecting the profitability of securities companies representing the dependent variable ROA

. reg ROA X2 X4 X5

Source	SS	df	MS	Number of obs =	240
				F(3, 236) =	1601.21
Model	151.124.264	3	.503747546	Prob > F =	0.0000
Residual	.074246759	236	.000314605	R-squared =	0.9532
				Adj R-squared =	0.9526
Total	15.854.894	239	.006633847	Root MSE =	.01774
ROA	Coef.	Std. Err.	t	P>t [95% Conf.	Interval]
X2	.9899816	.0165869	59.68	0.000 .9573042	1.022.659
X4	-3.49e-06	.0000125	-0.28	0.780 -.0000281	.0000211
X5	.039982	.0129394	3.09	0.002 .0144906	.0654734
_cons	-.0007436	.0023675	-0.31	0.754 -.0054076	.0039205

(Source: Author of statistics on STATA 14 software)

Observation (Table 5) gives us Regression results, variable (X2) and variable (X5) have the same direction to (ROA) with P-value less than 0.05. The other variable (X4) has no effect on (ROA) because the P-value is greater than 0.05.

$$ROA = 0.9899816 * X2 + 0.39982 * X5 \quad (2)$$

To compare models, execute the command `esttab ROA ROE, r2 star (* 0.1 ** 0.05 *** 0.01)` brackets `nogap compress`, result:

**Table 6.**

Summary table of Z-score coefficient affecting the profitability of securities companies

	(1)	(2)
	ROA	ROE
X2	0.990***	1.253***
	[59.68]	[36.63]
X4	-0.00000349	-0.0000475*
	[-0.28]	[-1.85]
X5	0.0400***	0.0954***
	[3.09]	[3.57]
_cons	-0.000744	0.00279
	[-0.31]	[0.57]
N	240	240
R-sq	0.953	0.890
t statistics in brackets		
* p<0.1, ** p<0.05, *** p<0.01		

- **The impact of working capital on the performance of securities companies (models 1 and 2).**

Retained profit coefficient (X2) and Asset utilization efficiency (X5) have a positive influence on the profitability of securities companies. That is, (X2) and (X5) increase, the profitability increases respectively, this is consistent with the study of S. Thomas Ng and partner (2011); Trad and partner (2017); Pranata and partner (2018); Dirman (2020). The fact that

securities companies have a low coefficient (X2) means loss of business activities, and at the same time reflects a high level of financial leverage. A securities company with a low ratio shows that the enterprise is currently using debt to finance its business capital needs rather than using retained earnings, a part of equity. In contrast, a securities company with a high coefficient (X2) reflects a profitable business enterprise with low debt and low risk.

On the other hand, the coefficient (X5) reflects the management ability of the securities company in the competitive environment and the efficiency in using assets of the enterprise. Enterprises having difficulty in increasing market share means reducing the coefficient (X5), and enterprises with high (X5) mean high profitability because they hold the majority of market share. Asset utilization efficiency considers the efficiency of the management of all assets of a securities company. In general, the higher this coefficient, the lower the investment to generate sales and thus the greater the profit for the business. If asset utilization is relatively low compared to industry levels, or low to previous levels of the business, it means that the business has invested too much in assets or is selling and delivering services the business is too slow.

### Conclusion

The research results show that the goal of securities companies in balancing increasing profitability and ensuring safety, minimizing risks, securities companies implement the following measures:

*Firstly*, increasing equity capital and reducing debt capital is a measure to increase (X2), some measures such as increasing undivided profit (which is a part of profit after tax deducted by enterprises, contributing to equity increase); issue shares or participate in mergers and acquisitions to increase equity.

*Second*, Improve the management ability of the securities company through the goal of increasing market share, speeding up sales and service provision of securities companies, and adjusting business strategies accordingly (For example, focusing on brokerage market share, securities companies can restructure their market share into financial advisory on mergers and acquisitions, or underwriting advice, etc.) which means an increase in asset utilization efficiency (X5).

### References

- Altman, E.I. (2013). Predicting financial distress of companies: revisiting the Z-score and ZETA® models. *In Handbook of research methods and applications in empirical finance*. Edward Elgar Publishing.
- Altman, E.I., Iwanicz-Drozowska, M., Laitinen, E.K., & Suvas, A. (2017). Financial distress prediction in an international context: A review and empirical analysis of Altman's Z-score model. *Journal of International Financial Management & Accounting*, 28(2), 131-171.  
<https://doi.org/10.1111/jifm.12053>
- Dirman, A. (2020). Financial Distress: The Impacts of Profitability, Liquidity, Leverage, Firm Size, and Free Cash Flow. *International Journal of Business, Economics and Law*, 22(1), 17-25.
- Erfani, G., & Vasigh, B. (2018). The impact of the global financial crisis on profitability of the banking industry: a comparative analysis. *Economies*, 6(4), 66.  
<https://doi.org/10.3390/economies6040066>
- IOSCO (1989). *Capital Adequacy Standards for securities firms*.
- IOSCO (1990). *Comparison of Equity Position Risk and Scope for Harmonization*.
- Khan, M.M., & Raj, K.B. (2020). Liquidity-profitability analysis & prediction of bankruptcy-A study of select telecom companies. *Journal of Critical Reviews*, 7(3), 307-316.  
<https://doi.org/10.31838/jcr.07.03.62>
- Ng, S.T., Wong, J.M., & Zhang, J. (2011). Applying Z-score model to distinguish insolvent construction companies in China. *Habitat international*, 35(4), 599-607.  
<https://doi.org/10.1016/j.habitatint.2011.03.008>
- Trad, N., Trabelsi, M.A., & Goux, J.F. (2017). Risk and profitability of Islamic banks: A religious deception or an alternative solution?. *European Research on Management and Business Economics*, 23(1), 40-45.  
<https://doi.org/10.1016/j.iemeen.2016.09.001>
- Acar, S., & Akamoglu, Y. (2014). Practices for parent participation in early intervention/early childhood special education. *International Journal of Early Childhood Special Education*, 6(1), 80-101.