



ISSN:1991-8178

Australian Journal of Basic and Applied Sciences

Journal home page: www.ajbasweb.com



The Financial Failure Predictions Model of Financial Institutions in the Stock Exchange of Thailand

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ARTICLE INFO

Article history:

Received 6 June 2015

Accepted 19 July 2015

Available online 1 August 2015

Keywords:

Failure, Financial ratios, LOGIT

ABSTRACT

This research aims to study the factors affecting the financial company's Failure. In this case, the sample selected was divided into 2 groups: 1) 20 failure companies and 2) 39 operating companies. All these companies are financial institutions registered in the Stock Exchange of Thailand. and has total assets value more than \$1 billion baht, total 59 companies and during the 2004-2015, that was Bubble Economy crisis which cause damage to the financial sector in Thailand. and this impact spread to financial sector in other countries around the South east asia. The variables in this study included 14 financial ratios and the statistics tools Logistic regression (LOGIT) are used in the study. The results from LOGIT analysis was significantly variables (financial ratios) which can be variables in prediction model are 1) Provision for Loan Losses to Gross Loan 2) Net income to Total equity 3) Interest income for loan to gross loans and 4) Interest income to non-interest income. The model from results correctly classifies 94.90% of the sample at significant 95%. There results can be extended to a general case of financial institutions failure and useful for predict and protect company from bankrupt in the future.

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To Cite This Article: Nakarin Sinamnuyaphol and Nongnit Chancharat., The Financial Failure Predictions Model of Financial Institutions in the Stock Exchange of Thailand. *Aust. J. Basic & Appl. Sci.*, 9(24): 1-7, 2015

INTRODUCTION

The Asian financial crisis was a period of financial crisis that gripped much of East Asia beginning in July 1997 and raised fears of a worldwide economic meltdown due to financial contagion.

The crisis started in Thailand (well known in Thailand as the *Tom Yum Goong crisis*; Thai) with the financial collapse of the Thai baht after the Thai government was forced to float the baht due to lack of foreign currency to support its fixed exchange rate, cutting its peg to the U.S. dollar, after exhaustive efforts to support it in the face of a severe financial over-extension that was in part real estate driven. At the time, Thailand had acquired a burden of foreign debt that made the country effectively bankrupt even before the collapse of its currency. As the crisis spread, most of Southeast Asia and Japan saw slumping currencies, devalued stock markets and other asset prices, and a precipitous rise in private debt.

Indonesia, South Korea and Thailand were the countries most affected by the crisis. Hong Kong, Laos, Malaysia and the Philippines were also hurt by the

slump. Brunei, China, Singapore, Taiwan and Vietnam were less affected, although all suffered from a loss of demand and confidence throughout the region.

Foreign debt-to-GDP ratios rose from 100% to 167% in the four large Association of Southeast Asian Nations (ASEAN) economies in 1993–96, then shot up beyond 180% during the worst of the crisis. In South Korea, the ratios rose from 13 to 21% and then as high as 40%, while the other northern newly industrialized countries fared much better. Only in Thailand and South Korea did debt service-to-exports ratios rise.

Although most of the governments of Asia had seemingly sound fiscal policies, the International Monetary Fund (IMF) stepped in to initiate a \$40 billion program to stabilize the currencies of South Korea, Thailand, and Indonesia, economies particularly hard hit by the crisis. The efforts to stem a global economic crisis did little to stabilize the domestic situation in Indonesia, however. After 30 years in power, President Suharto was forced to step down on 21 May 1998 in the wake of widespread rioting that followed sharp price increases caused by a drastic devaluation of the rupiah. The effects of the crisis lingered through 1998. In 1998 the Philippines

growth dropped to virtually zero. Only Singapore and Taiwan proved relatively insulated from the shock, but both suffered serious hits in passing, the former more so due to its size and geographical location between Malaysia and Indonesia. By 1999, however, analysts saw signs that the economies of Asia were beginning to recover. After the 1997 Asian Financial Crisis, economies in the region are working toward financial stability on financial supervision.

Until 1999, Asia attracted almost half of the total capital inflow into developing countries. The economies of Southeast Asia in particular maintained high interest rates attractive to foreign investors looking for a high rate of return. As a result the region's economies received a large inflow of money and experienced a dramatic run-up in asset prices. At the same time, the regional economies of Thailand, Malaysia, Indonesia, Singapore, and South Korea experienced high growth rates, 8–12% GDP, in the late 1980 and early 1993. This achievement was widely acclaimed by financial institutions including IMF and World Bank, and was known as part of the "Asian economic miracle". (1997 Asian financial crisis. from wikipedia, 1997)

Many authors are oriented towards the study of banking crises as destructive phenomena focalizing on the events which precede their happening. In particular, these studies aim at constructing statistic models that send an advanced early warning signal to banking bankruptcy "early warning system". This method is based upon the classification of banks into two groups discriminating the sound healthy banks from those that are in difficulties. the financial failure predictions it is one of the many researchers attention and bring education dramatically among financial institutions in the context of the United States (Kolari, Glennon, Shin & Caputo, 2002 ; Jin, J.Y., Kanagaretnam, K. & Lobo, G.J. 2011). and in the context of other countries, such as Venezuela (Molina, 2002), Turkey (Canbus, Cabuk&Kilic, 2005; Boyacioglu, Kara & Baykan, 2009), Russia (Lanine&Vennet, 2006), Taiwan (Lin. , 2009), etc. Most of the variables used in the study is a financial ratio that classification and CAMEL by the group's financial ratios letter follows the Capital adequacy: C , Assets quality: A, Management: M, Earnings ability: E and Liquidity: L to reflect the performance of financial institutions in the world. As well, because the financial institutions are different to other businesses such financial institutions as intermediaries important to mobilize savings from the public and led to the credit to the business sector and households. Make the financial statements, the proportion of debt than other businesses. Because the deposit is essentially (Lannie&Vennet, 2006). which considering the category of CAMEL already considered inappropriate because focused on the asset and capital is key. this is consistent with the financial institution where the proportion of liabilities arising from mobilizing savings from the

public. Therefore, the adequacy of assets and capital in the business of financial institutions, it is what financial institutions need special consideration category CAMEL is used widely in research involving financial institutions, both at home and abroad, such as research. Canbus, Cabuk&Kilic (2005) The researched banks in Turkey. And research of Kolari, Glennon, Shin & Caputo (2002); Jin, Kanagaretnam& Lobo (2011) the researched US bank with financial ratios by category of CAMEL In Thailand (RungthipSuksakol. 2011). it is the research of group of financial ratios, respectively CAMEL by measuring the financial performance and the risk of bankruptcy of banks including Bangkok Bank, Thailand. Thailand Commercial Banking Bank of Thailand TMB Bank And Bank of Ayudhya this is measure in the management of financial institutions.

In this study, the researchers divided the group according to the CAMEL financial ratios to analyze the relationship with the potential failure of financial institutions. And modeling to assist in predicting the failure of financial information to users of financial statements to make decisions in the future.

The reminder of the paper is organized as follows. Section 2 reviews the prior literature on failure prediction of financial institutions by logistic regression method. Section 3 provides the research design and methodologies in terms of data, and variables. The regression results are shown and discussed in Section 4, and the conclusions of the study are given in Section 5.

2. Literature review and theoretical development:

Altman (1968) is one of the masters of many. Research on modeling to predict the failure of financial ratios under the bankruptcy laws of the United States, the concept of Altman (1968) have been developed in many ways. Some research work was modified modeling techniques to predict in many ways since last year 1997 onwards have been studied in models of financial failure in many forms. The use of statistical methods are different, such as how to analyze classification (Multiple Discriminant Analysis: MDA), the basis of analysis of variance (ANOVA) and regression to linear equations. or discriminant function The discriminant function to predict financial failure

Kolari, J., Glennon, D., Shin, H. & Caputo, M. (2002) conducted research to predict the bankruptcy of large banks in the United States during 1989-1992. The samples used in the study, the total assets of more than US \$ 250 million. In this research, a sample of 18 banks that went bankrupt companies and banks that have operations in 1012 companies, a total of 1,030 companies by the company during the first two years and two years before the actual bankruptcy. The methods used to analyze the way Logistic Regression Analysis results showed that. The financial ratios that differ significantly between bankruptcy and the company operates a total of

seven ratios as follows: Net Interest income / Total Assets, Net Interest after taxes / Total Assets, Total equity / Total assets, Allowance for loan losses / Total Assets, Provision for loan losses / Total Assets, Total Securities / Total Assets, Certificates of Deposit / Total Deposits precision analysis methods Logistic Regression Analysis showed that the period of one year before the bankruptcy. The model is accurate when tested at 96 percent, and the 2-year period prior to the bankruptcy. The model with 95 percent.

Canbas, S., Cabuk, A. & Kilic, SB (2005) conducted research to predict the bankruptcy of a bank in Turkey during 1997-2003. The samples used in the study. A sample of 21 banks that went bankrupt companies and banks that have operations in 19 companies a total of 40 companies by the third period is one year, two years and three years before the actual bankruptcy.

The methods used to analyze the way Logistic Regression Analysis, how Principal Component Analysis (PCA), Discriminant methods and Probit results were found. The financial ratios that differ significantly between bankruptcy and the company operates a total of 12 ratios as follows: Interest expenses / Average profitable assets, Interest expenses / Average non-profitable assets, (Share's holder equity + T.income) / (Dep. + non-dep. Fund), Interest income / Interest expenses, (Share's holder equity + T.income) / (TA + Con. and Com.), (Share's holder equity + T.income.) / Total assets, Net working capital / Total assets, (Salary and Employee Benefit + Res. For Retire) / No. of personal, Liquid assets / (Deposits + Non-deposits fund), Interest expenses / Total expenses, Liquid assets / Total assets, Standard capital ratio analysis method accuracy Logistic Regression Analysis showed that the period of one year before the bankruptcy. The model has a 87.5 percent accuracy test period two years before the bankruptcy. The model is accurate when tested at 70 percent and the 3-year period prior to the bankruptcy. The model has a 72.5 percent accuracy.

Lanine, G and Vennet, RV (2006) conducted research to predict the bankruptcy of banks in Russia during 1997-2000 samples used in the study had a sample of 188 banks that went bankrupt. Companies and banks that still operates a total of 394 companies, 582 companies in the fourth quarter period is three months, six months, nine months, 12 months before the actual bankruptcy. The methods used to analyze the way Logistic Regression Analysis results showed that. The financial ratios that differ significantly between bankruptcy and the company operates a total of seven ratios as ROA, Liquid assets / Total assets, Government debt securities / Total assets, Capital / Total assets, (Overdue loans + over due promissory notes) / Total assets, Total loans / Total assets, SIZE (Log (total assets) analysis of precisely how Logistic Regression Analysis showed that the best time to

bring the forecast is three months earlier. The bankruptcy

Boyacioglu, MA, Kara, Y. and Baykan OM (2009) conducted research to predict the bankruptcy of a bank in Turkey during 1997-2003. The samples used in the study had a sample. 21 banks that went bankrupt companies and banks that operate in 44 companies a total of 65 companies by the second period is one year and two years before the actual bankruptcy. The methods used to analyze the way Logistic Regression Analysis, How Artificial Neural Networks (ANNs) and Multivariate discriminant analysis (MDA) The research found. The financial ratios that differ significantly between bankrupt companies and companies that operate a total of three ratios are as follows: Capital Adequacy, Asset Quality, Earnings ability of precision analysis methods Logistic Regression Analysis showed that on. 1-year period preceding the bankruptcy. Models with precision and 86.04 percent when tested at 2-year period prior to the bankruptcy. The model has a 81.81 percent accuracy.

Jin, JY, Kanagaretnam, K. & Lobo, GJ (2011) conducted research to predict the bankruptcy of a bank in Turkey during 2006-2007. The samples used in the study. For example, a bank that went bankrupt and the bank has 778 companies operating a total of 4,099 companies by 4877 companies was the first time one year before the actual bankruptcy. The methods used to analyze the way Logistic Regression Analysis results showed that. Financial ratios are statistically significant difference between bankruptcy and the company operates a total of two ratios, the NPL, Provision for loan and lease losses.

Research Methods:

The data sample for this failure prediction study consists of SET corporations that filed for failure in 2004 - 2015 as listed in a failure research database (<http://www.set.or.th>). Financial institutions such as commercial banks and investment banks are excluded from the data set because these Financial institutions can be affected by actions of government regulators. furthermore, financial ratio information was required for the failure firms. The sample group was divided into two groups: 1) failure companies a sample size of 20 companies and 2) operating companies a sample size of 39 companies. According to the database www.set.or.th by the financial statements of listed companies in the SET (THE STOCK EXCHANGE OF THAILAND) total 59 companies by the financial statements used to select the corresponding period of the match was to compare the group both two groups, so it is. In this three match series at 1 year, 2 years and 3 years before the financial failure.

The variables used in this study include financial ratios of the five groups (CAMEL) consists of 1) Capital Adequacy (C) 2) Asset Quality (A) 3) Management (M) 4) Earnings ability (E) and 5)

Liquidity (L) totaled 14 ratios as shown in Table 1 below.

Table 1:

Table 1 Financial ratio variables.			
CAMEL Category	Xi	Financial Ratio	Expected sign*
(C) Capital Adequacy	X1	Total equity / total assets	-
(A) Asset Quality	X2	Gross loans / total assets	+
	X3	Provision for loan losses / gross loans	+
(M) Management	X4	Net income / operating income	-
	X5	Net income / total assets	-
	X6	Net income / total equity	-
(E) Earnings ability	X7	Operating expenditure / total assets	+
	X8	Operating income / total assets	-
	X9	Interest income / interest expenditure	-
	X10	Operating income / operating expenditure	-
	X11	Interest income for loan / gross loans	-
	X12	Interest income/operating income	-
(L) Liquidity	X13	Cash + securities / total assets (Quick Ratio)	-
	X14	Gross loans / total deposits	+

Expected sign* Represents the statistical significance of the failure of financial ratios.

Step logistic regression analysis:

Step 1 Select an independent variable that is correlated with the dependent variable.

The Dependent Variable is a Dummy Variable is Financial institutions listed on the stock exchange. Divided into two groups, including non-financial institutions, financial failure. And the failure of financial institutions by requiring them.

$Y = 0$ means that financial institutions do not fail financially. A group of financial institutions that are still in operation. And is traded on the Stock Exchange of Thailand. Without the list of securities of a listed company that may be delisted. (Non-Compliance: NC) in the year 2015.

$Y = 1$ means financial institutions that failed financially. The financial institution was revoked registration. As the company has not been listed. Which was named as the company announced the revocation of registration. According to the revocation of the Stock Exchange of Thailand during 2004 to 2015. Independent Variables consists of 14 Financial Ratios. Variable from classification ratio CAMEL 5 groups: capital adequacy (C), the asset quality (A), the performance management (M), the effectiveness, profitability, (E) and the group. Liquidity (L) is derived from the financial statements of companies listed on the Stock Exchange of Thailand. The value is derived from the financial statements, one year and two years before the financial failure of financial institutions to cancel the registration. This was during the time after the revocation of the registration is revoked if the financial institution registered 2004 financial statement information is information that will be used during 2003 and 2002 respectively. By pairing with financial institutions failing financial assets of the two years are similar.

Step 2 Check for unusual values of each independent variable. (Multicollinearity)

The researchers analyzed the Spearman rank correlation coefficient or Spearman's rho symbol r_s is used to measure the relationship between two

variables or data sets by the distribution of information do not require a normal distribution.

Preliminary agreement:

1. The variables or data set in Article 2 ranking. Or perhaps interval Ratio or Section Then sorted out
2. Each set has to be independent.

The Spearman correlation coefficient was calculated from the formula.

$$r_s = 1 - \frac{6 \sum D^2}{N(N^2 - 1)}$$

When r_s a correlation coefficient Spearman.

$\sum D^2$ as the sum of the squares of the difference between the scores of each pair.

N is the sample size

Hypothesis testing:

H0: $p = 0$ (no correlation between the two variables).

H1: $p \neq 0$ (both variables are interrelated).

Distributions that reflect the nature of the two variables may be shown in Figure 3 below.

A positive correlation This means that when the variable. One of increase or decrease in one variable, it can be increased or decreased as well.

The negative correlation refers to as the variable one. Increased or decreased, another is the increase or decrease over time.

Zero Correlations means no two variables. Reciprocity

Analysis of the relationship is determined by the Sig. (2-tailed) if the Sig. (2-tailed) is less than 0.05 indicates that reject H0 and H1 which concluded that acceptance. Two variables are related if the Sig. (2-tailed) is greater than 0.05 indicates that the H0 and H1 rejected that conclusion. No relationship between two variables. Then analyzes the relationship between variables is determined by the correlation coefficient. According to the following criteria.

Table 2. Interpretation correlation.

Correlation means

0.85 to 1.00, with most relationships.

0.71 to 0.84 has many relations.

0.51 to 0.70 has little relation.
0.00 to 0.50 relative minimum.

Step 3 equation Logistic Response Function and then determine the optimum accuracy. The equation is based on the pseudo R^2 and the Wald Statistics.

In this study, total 14 independent variables used to select the independent variables.

How backward stepwise: likelihood ratio method is sometimes called backward LR is the leading predictors of both $p(x_1, x_2, x_3, \dots, x_p)$ into the simultaneous equations before. Then consider the variables that explain the variation of the variable threshold (variable) had the lowest out of the equation at one time, the variables, the first to be taken out of the equation is the variable which affects prediction. The event will take place at a minimum. For the introduction of variables out of the equation is determined by the ratio or the possibility of a change of $-2LL$ do this indefinitely. The remaining variables that can explain the variation of the threshold variables have statistically significant.

To determine the suitability of the equation. Used for testing the suitability of Hosmer and Lemeshow test model as appropriate.

$$\chi^2 = \sum_{i=1}^{10} \frac{(O_i - E_i)^2}{E_i}$$

The hypothesis is tested

H0: model fitting

H1: model inappropriate

X2 test if there is no statistically significant or accept H0 model that is appropriate to the level of significance 0.05

Step 4 Check the accuracy of prediction equations based Logistic Response Function table precision. (Classification Table), a display table to predict the likelihood that a financial institution will cause the failure of financial models built. The data is displayed as a percentage

Step 5 If the objective is to predict the case that the new upcoming events of interest or to apply for the Logistic Response Function in the forecast, or estimate the probability that happens, the case that when the independent variable

$P(\text{event}) < 0.5$ is $Y = 0$ or incident.

$P(\text{event}) \geq 0.5$ is $Y = 1$ or incident.

RESULTS AND DISCUSSION

The research and discussion of the findings. the analysis LOGIT to describe the relationship between variables and the possibility of financial failure. by the company's financial failure and used is variable from 14 financial ratios.

In our study, we maintain 14 ratios associated to different dimensions of financial analysis that represent the different indicators of banking vulnerability measure. These ratios are regrouped into five groups : 1) Capital Adequacy (C) 2) Asset Quality (A) 3) Management (M) 4) Earnings ability (E) and 5) Liquidity (L) descriptive statistics shown in Table 2.

Table 2: Descriptive statistics.

X_i	N	Minimum		Maximum		Mean		Std. Deviation	
		Failed	Non-failed	Failed	Non-failed	Failed	Non-failed	Failed	Non-failed
X_1	59	.0300	.0200	4.2100	.9900	.4935	.3521	.9124	.2764
X_2	59	.0200	.0000	.9200	1.1300	.5581	.5720	.2663	.3328
X_3	59	.0100	.0000	.4500	.9800	.0748	.0505	.1051	.1587
X_4	59	-4.2300	-6.4000	10.4600	7.1100	2.6631	.9745	4.1364	2.4072
X_5	59	-.0500	-.0400	.2000	.2100	.0299	.0427	.0572	.0483
X_6	59	-9.8000	-1.0500	.4200	.5800	.0002	.0982	.3133	.2476
X_7	59	.0100	.0100	.3000	.4000	.0591	.0835	.0736	.0981
X_8	59	.0000	.0000	.4000	.5100	.0566	.0894	.1039	.1251
X_9	59	.7000	.1800	134.6200	27.1800	12.3203	5.1636	30.1275	5.7904
X_{10}	59	.0400	.1200	2.0500	12.4000	.6869	1.4092	.6592	2.4560
X_{11}	59	.0000	.0000	.1700	11.9000	.0499	.7039	.0419	2.3485
X_{12}	59	.0100	.0400	11.6600	87.1400	1.4493	6.1145	3.1290	14.3797
X_{13}	59	.0300	.0000	7.6200	133.3700	1.0118	6.3578	1.7364	24.1547
X_{14}	59	.1800	.2600	126.4700	2130.3700	24.6870	170.3530	34.0249	433.8594

Table 2 showed that the Capital Adequacy: C comprising The ratio (X_1) the failure of financial institutions with an overall average mean of 0.4935, higher than the financial institutions are not financial failure. an overall average mean of 0.3521.

Asset Quality:

A comprising ratio (X_2), (X_3) the failure of financial institutions with an overall average mean of 0.7000, less than the financial institutions are not financial failure. an overall average mean of 1.055.

Management: M comprising ratio (X_4), (X_5), (X_6) the failure of financial institutions with an overall average mean of 0.8977, higher than the financial institutions are not financial failure. an overall average mean of 0.3718.

Earnings ability:

E comprising ratio (X_7), (X_8), (X_9), (X_{10}), (X_{11}), (X_{12}) the failure of financial institutions with an overall average mean of 2.4370, higher than the financial institutions are not financial failure. an overall average mean of 2.2607.

Liquidity:

L comprising ratio (X13),(X14) the failure of financial institutions with an overall average mean of 12.8494, higher than the financial institutions are not financial failure. an overall average mean of 88.3554.

The correlation analysis of the variables in the model used in the study. The researchers tested the method. Kolmogorov-Smirnov Test at the 0.05significance level that the test found. Sig significance or value equal to 0.000less than 0.05indicates that the variable is the sample distribution is not normal. Thus, by using Spearman correlation coefficients.To prevent Multicollinearity is a reasonable correlation between the two variables over which the independent variables are related to higher levels. May result equation models are used to forecast variables are inaccurate.

Therefore, you must examine the relationship between the independent variables to be sure. Variables can remain in the body for it. The statistical hypothesis as follows.

H0: There is no relationship between two variables.

H1: two variables are related.

The significant level of 0.05

Analysis of the relationship is determined by the Sig. (2-tailed) if the Sig. (2-tailed) is less than 0.05indicates that reject H0 and H1 which concluded that acceptance. Two variables are related. In contrast, if the Sig. (2-tailed) is greater than 0.05indicates that the H0 and H1 rejected the conclusion. No relationship between two variables. Then analyzes the relationship between variables is determined by the correlation coefficient.

Table 3: Analysis of the relationship between financial ratios and potential failure of financial institutions one year before financial failure.

Variables	β	S.E.	Wald	Sig.	Exp(β)
X ₃	83.273	39.217	4.509	.034*	6.839
X ₄	-2.448	1.081	5.132	.055	0.086
X ₆	-27.236	12.208	4.977	.026*	6.736
X ₉	-.242	.163	2.213	.137	.785
X ₁₁	-15.800	8.241	3.676	.023*	7.277
X ₁₂	-1.000	.394	6.441	.011*	2.719
X ₁₃	-2.298	1.319	3.035	.081	9.955
X ₁₄	.009	.011	.551	.458	1.009
Constant	-1.316	1.630	.651	.420	.268

Variable(s) entered on step 1: X1, X2, X3, X4, X5, X6, X7, X8, X9, X10, X11, X12, X13, X14.

*. Correlation is significant at the 0.05 level (2-tailed).

Table 3 showed that the independent variables were selected equations using backward stepwise: likelihood ratio

Considering the first ratio is statistically significant is Provision for Loan Losses to Gross Loan (X3) coefficient (β) in a model of 83.273 explained that if this ratio increases. The potential failure of financial institutions, it will increase the value Sig of 0.034 indicates a statistically significant 95 percent ($p < 0.05$) when the coefficients were calculated as the (Odds. Ratios) are Exp (β) equal to 6.839 times and the relationship with a financial institution to financial failure equals 0.872, or almost 87 percent.

The second ratio of Net income to total equity (X6)coefficient (β) in a model of -27.236explained that if this ratio increases. The potential failure of financial institutions, it will decrease the value Sig 0.026indicates a statistically significant 95percent ($p < 0.05$)when the coefficients were calculated as the (Odds. Ratios) are Exp (β) equal to 6.736times and the relationship with a financial institution to financial failure equals 0.871, or almost87percent.

The third ratio of Interest income for loan to gross loans(X11) with a coefficient (β) in a model of -15.800explained that if this ratio increases. The potential failure of financial institutions, it will decrease the value Sig of 0.023indicates a statistically significant 95percent ($p < 0.05$)when the coefficients were calculated as the (Odds. Ratios) are

Exp (β) equal to 7.277times the relationship with a financial institution to financial failure equals 0.879, or about 88percent.

The fourth ratio is Interest income to non-interest income (X12)with a coefficient (β) in a model of -1.000explained that if this ratio increases. The potential failure of financial institutions, it will decrease the value Sig of 0.011indicates a statistically significant 95 percent ($p < 0.05$)when the coefficients were calculated as the (Odds. Ratios) are Exp (β) equal to 2.719 times the relationship with a financial institution to financial failure equals 0.731, or about 73percent.

Test your accuracy in the prediction of the model. The research is divided into two groups: the test group test data one year before the financial failure. And test data, two years before the financial crash. To test whether the model of Logistic Regression forecasting accuracy much.

Table 4 showed that the model could predict financial ratios and potential failure of financial information 1 year before the financial failure. The overall accuracy was 94.9 percent, with an error of only (100-94.9), 5.1 percent.

Table 5 showed that the model could predict financial ratios and potential failure of financial information 2 years before the financial failure. The overall accuracy was 91.5 percent, with an error of only (100-91.5), 8.5 percent.

Table 4: shows accuracy of model with data 1 year before financial failure.

		Result of Predictions		
		The Sample		Total
		Failed	Non-Failed	
Number	Failed financial	18	2	20
	Non- Failed financial	1	38	39
Percentage	Failed financial	90.0	10.0	100.0
	Non- Failed financial	2.6	97.4	100.0
Total percentage of correct predictions.				94.9

Table 5: shows accuracy of model with data 2 years before financial failure.

		Result of Predictions		
		The Sample		Total
		Failed	Non-Failed	
Number	Failed financial	17	3	20
	Non- Failed financial	2	37	39
Percentage	Failed financial	85.0	15.0	100.0
	Non- Failed financial	5.1	94.9	100.0
Total percentage of correct predictions.				91.5

5. Conclusions:

This research aims to study the factors affecting the financial company's Failure. In this case, the sample selected was divided into 2 groups: 1) 20 failure companies and 2) 39 operating companies. All these companies are financial institutions registered in the Stock Exchange of Thailand. and has total assets value more than \$1 billion baht, total 59 companies and during the 2004-2015, that was Bubble Economy crisis which cause damage to the financial sector in Thailand. and this impact spread to financial sector in other countries around the South east asia. The variables in this study included 14 financial ratios and the statistics tools Logistic regression (LOGIT) are used in the study. The results from LOGIT analysis was significantly variables (financial ratios) which can be variables in prediction model are 1) Provision for Loan Losses to Gross Loan 2) Net income to Total equity 3) Interest income for loan to gross loans and 4) Interest income to non-interest income. The model from results correctly classifies 94.90% of the sample at significant 95%. There results can be extended to a general case of financial institutions failure and useful for predict and protect company from bankrupt in the future.

REFERENCES

- Altman, E.I. 1968. Financial ratios, Discriminant analysis and the prediction of corporate bankruptcy. *Journal of Finance*, 23: 589-609.
- Asian financial crisis, 1997. *Bubble Economy Crisis*. Retrieved, from http://en.wikipedia.org/wiki/1997_Asi_an_financial_crisis
- Beaver, W.G., 1966. Financial ratios as predictors of failure. *Empirical research in accounting: Selected Studies. Journal of Accounting Research*, 5: 71-111.
- Boyacioglu, M.A., Y. Kara and O.M. Baykan, 2009. Predicted bank financial failures using Neural networks, support vector machines and multivariate statistical methods: A comparative analysis in the sample of savings deposit insurance. *fund (SDIF) transferred banks in Turkey. Expert Systems with Applications* 36: 3355-3366.
- Canbas, S., Cabuk, A., and Kilic, S.B. 2005. Prediction of commercial bank failure via multivariate statistical analysis of financial structures: The Turkish case, *European. Journal of Operational Research* 166: 528-546.
- Jin, J.Y., K. Kanagaretnam, G.J. Lobo, 2011. Ability of accounting and audit quality variable to predict bank failure during the financial crisis. *Journal of banking & finance (Article in press)*.
- Kolari, J., D. Glennon, H. Shin, M. Caputo, 2002. Predicting large US commercial bank failures. *Journal of Economics and Business*, 54(4): 361-387.
- Lanine, G. and R.V. Vennet, 2006. Failure prediction in the Russian bank sector with logit and trait recognition models. *Expert Systems with Application* 30: 463-478.
- Lin, T.H., 2009. A cross model study of corporate financial distress prediction in Taiwan: Multiple discriminant analysis, logit, probit and neural networks models. *Neurocomputing*, 72: 3507-3516.
- RungthipSuksakol, 2011. The prediction of financial institutions bankruptcy in the U.S. The application of logistic regression analysis (Article in research).