

## Research Article

## Determinants of Bank's Health: Evidence from Tanzania

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**Abstract**

The study assesses on the determinants of bank's health. By employing explanatory research design and secondary panel data in the time interval of 2015 to 2022 were involved. The annual financial data from 5 banks listed in Dar Es Salaam Stock Exchange (DSE) were subjected into analysis. Analysis involved the use of descriptive statistics, partial least square regression and linear regression. From the analysis it was revealed that credit risk was negative significant determinant of bank company value. Moreover, good governance, return on assets and capital adequacy has positive and significant influence on bank company value. Thus, the study recommend that credit risks operation managers have to undertake effective lending assessment in determining credit worth customer. Also, the corporate and financial management has to ensure maximization on return on assets, maximized capital adequacy and exercise good governance for revelation of bank company value as well as its health.

**Keywords:** Bank's Health, Bank Company Value, Credit Risk Profile, Good Corporate Governance, Bank Earnings and Bank Capital Adequacy.

**1. Introduction**

The bank company health is the current topic which attracts most of financial development stakeholders into discussion. Bank company health is sustainability in its value. It is with sustained business value in which a trade-off function between firm growth and shareholder's wealth is maintained. Company shares value is signaling indicator that a business is financial adequate to finance short- and long-term plans. Maximized business value evoke out a message to interested parties transact with the bank [1]. Bank as a surplus unit in financial intermediation process, its value is to be maintained to give trust and confidence to creditors, investors, shareholders, debtors are other financial management stakeholders transact with it. Non sustainability of bank value conveys a message to interested parties not to partner or if they are in contracts withdrawal from the relationship [2]. Rise in bank value is a good signaling that price per book value is impressing for it operates in going concern. The signaling of this nature should be communicated between the interested parties to partner. Thus, for one party transact with another party say a seller and buyer to enters a contract there should be symmetric information flow between them [3]. Signaling flow of information function as a red-light signal that if something bad to happen it is to be controlled before causing distortions on business firm value. As it has noted above the indicator that is not performing efficiently, then the price per book value become non satisfactory given the ratio (ie PBV) is less than 1. The causes for business value disruptions might be due to risks, poor governance, deteriorated business earnings and capital inadequacy [4].

Risk profile is the exposure of a business to internal and external macroeconomic/market distortions. The internal exposures might be due to insolvency (liquidity risk) and credit risks [5]. External risks are macroeconomic-market exposures such as inflation, currency exchange rate and interest rate risks [6]. Credit risks are internal firm operation exposure resulting due to inefficiency lending process. Committing for adverse and moral hazards is a major cause of credit risks. Default risk is a common type of credit exposure which causes bank's financial incapability [7]. Credit risks have reported to be a cause of nonperforming loans and credit losses [8]. When the turning point of nonperforming loans reaches at 15%, this is abnormal to cause a business company realize insolvency before declared bankrupt. Credit risk distorts credit multiplier effect in manner that that a financial institution such that a bank become not able to execute lending. The obstructed lending business hinders investment and financial development.

Good corporate governance stipulates on effective administration [9]. This involves adhering to principle of management and administration. It is measured in terms of effective index the management pays in ensuring the firm objectives and goal is met [10]. The principles of good governance include transparency, independence, equity, accountability, execution towards realization of efficiency. Quantitatively management efficiency is made focus on proper management of assets in realizing sales maximization [11]. Thus, one of the indicators that management has performed is through the realized maximum sales obtained. Sales maximization improves business company value.

Business earnings measured in terms of return on assets (ROA), return on equity (ROE) and return on capital employed (ROCE) is a significant determinant of company value [12]. It is with increase in earnings (return on assets) which read firm performance. The financial performance revelation through maximized profit is a good signal that a business is financially adequate to finance its day-to-day operations and long-term plans [13]. More company earnings are the indicator of a business to operate perpetuity [14]. This gives trust and confidence to other interested parties' partner with such a company.

Capital adequacy is the measure of change in total capital to change in total assets turn over. It is when capital adequacy ratio (CAR) is greater than 1 when the company value is said to be attained [15]. By assets turnover management ratio (ATMR) being inversely proportional to CAR then if it happens that it become greater than total capital means net assets (net equity) is distorted for a company read unhealthy [16]. A positive capital adequacy ratio is sustainability on company value. This also indicates that shareholder's wealth is maximum for the prosperous. By a company achieving capital adequacy ratio of 1 means the firm is financial performing necessary for both the growth of firm and investors prosperity [17].

Exposure a non-banking financial institutions in India by foreign exchange risks found to distort macroeconomic variables such as national output (GDP) in India [18]. It is b being exposed to foreign exchange market risks where capital inflows and capital formation were drawn back. This facilitated leakage to economy which in turn disrupted the national output of India.

Good managerial practices revealed to enhance financial performance of insurance provident in Indonesia [19]. It is through execution of transparency; customers transact with such financial institutions. This, condition was reported to be sustained due to good communication the insurance companies had over their customers. This is what is called signaling indicators important in handling red lights (distorts) become worse. The transparency revealed to create trust and confidence for customers attracted to and continues transacting with such insurance provident.

Over-performance of mutual funds in BRICS revealed to be a cause for them become more attractive to investors [20]. It is by being more attractive where perpetual revelation of mutual funds' value was observed. Performance of mutual funds gives increase in its shares or unit's value for the funds continue to attract more shareholders injects their shares (units).

Efficient performance of commercial banks listed on the Nairobi Securities exchange (NSE) in Kenya was reported to be influenced by effective net asset management [21]. This is a capital adequacy management of commercial bank which enabled commercial banks outperform. Capital adequacy maintenance is a firm leveraging managerial practice which play role in retaining business company value.

The study investigations above revealed above has revealed on different determinants of business company value but none has aggregated those variables together in measuring the causal-effect strength relationship i.e. credit risk, good corporate governance, company return on assets and capital adequacy on bank's health/value. Contextually different measures variables involved in investigation between other studies reviewed above and this one under investigation hold another gap. For instance, while other studies such that by Jihadi, Vilantika, Hashemi, Arifin, Bachtiar and Sholichah have measured bank company value using price per book value, the current study has measured bank company value using earnings per shares [22]. More other, contextual difference has been with the variable, good corporate governance in which other studies such that by Bhagat and Bolton measured it using qualitative indicators such as transparency, accountability, equity but this study under investigation measure good corporate governance using the computed total assets turnover (ATMR) [10]. Moreover, empirically other studies have used different sample (or unit of analysis) such as mutual funds, non-banks, commercial banks, insurance provident; the current study involved 5 Banks listed in Dar Es Salaam stock exchange (DSE) in Tanzania.

### 1.1. Literature Review

Theoretical Literature Review: The study adopted signaling theory as a main theory supplemented by Bank health theory found by Spence and by Nisar, Susheng Jaleel and Ke respectively [23, 24]. Signaling theory proposes on the importance that exists between buyers and sellers or between directors and investors when there is symmetric information flow between them. It is through information flow where the company value is ascertained for both growth of the firm and investors prosperous. Asymmetric information flow causes the company health being questionable for either of the party i.e. either a buyer or seller and manager or investor withdrawal from the relationship [25]. Unhealthy business is the indicator that its value is not impressing not to transact with or simply it is red light i.e. signaling indicator that a business cannot operate in foreseeable future. Unhealthy business company signifies that a business is coming to the end not to contract with [26]. Thus, signaling theory proposes on symmetric flow of information between parties get trusted and become confident in continue transacting. Short of that one of the parties in relationship might decide to withdrawal, the issue not proposed by the theory.

Moreover, signaling theory did not explicitly reveal on the measures of health and unhealthy business company which has then explicitly examined by this study including credit risk profile, good corporate governance, earnings and capital adequacy ratio. As an investigation of this study, the bank health is determined by increase in firm value it was received by price per book value (PBV). Credit risk profile was measured by using non-performing loans (NPLs) being a degree of responsiveness on net working capital. With negative working capital means a great non-performing loans and credit losses a business is facing not to be able attract creditors transact with. Moreover, with better efficiency on corporate manager on the use of business assets (ATMR),

great earnings (ROA) and capital adequacy ratio (CAR) implies a significant business health it has to be trusted and other parties confidently transacted with such a company.

Empirical Literature Review: Legesse and Guo in China reported that market risks tend to distort cash flows of manufacturing companies [27]. The market macroeconomic exposures under investigation were inflation, exchange rate movement and interest rate. It is from price floatation brought in by those external macroeconomic variables which revealed to be the cause such distortions on cash flows. The distortions found to obstruct sales and profit maximizing profit.

Performance of service industries in Switzerland was revealed to be profound by more costs/loads incurred on transactions [28]. The greater the transaction costs involved, the more and diversified outputs were revealed. Expenses incurring is a fulfillment of the loads such as service duty, tax and other installation/preliminary expenses. Thus, the more installation cost incurred found to be the cause of over performance of such service industries in Switzerland.

Returns on assets revealed to be a significant determinant of efficiency of manufacturing firms listed in Dar Es Salaam Stock Exchange (DSE) in Tanzania [29]. It is from the efficiency determination of mutual funds that created health to such funds which then attracted for more investors inject their money. Thus, rise in mutual funds' value was due to return on assets revealed.

The studies reviewed above has reported on different determinant of different types of business firms' value but none has aggregated those variables together in a causal-effect model of relationship i.e. effect of credit risk, good corporate governance, firm earnings, capital adequacy on bank's health/value. Contextually, different measures reviewed above and this under investigation holds another gap. For instance, while other studies have measured bank company value using price to book value (PBV) the current study has employed earnings per share ratio (EPS). More other contextual difference is that while the current study has used corporate management efficiency on the use of assets defined in terms of total assets turn over (ATMR) but other studies have counted good corporate governance qualitatively using the items transparency, accountability and equity. Either, empirically other studies have used different sample as unit of analysis such as service industries, manufacturing companies, the current study involved 5 Banks listed in Dar Es Salaam stock exchange (DSE) in Tanzania. By hundred percent this study employed secondary data of annual financial reports retrieved from DSE in the time interval of 2015 to 2022.

## 2. Methodology

### 2.1. Population and Sample

The research population consisted of banking companies listed on Dar Es Salaam stock exchange in the time period of 2015 to 2022. Explanatory research design was used to examine the strength of causal-effect relationship between

bank's health and its determinants. The research sample consisted 5 banks. The five banks as a unit of analysis included CRDB Bank, Kenya Commercial Bank (KCB), National microfinance bank (NMB), Dar Es Salaam Commercial Bank (DCB) and Mwalimu Commercial Bank (MCB).

### 2.2. Variables Measurement

The explanatory variables included risk profile (non-performing loans-NPLs), good corporate governance (ATMR), earnings (ROA) and capital adequacy ratio (CAR). The explained variable was bank's health measured in terms of price per book value (PBV) represented by Earnings per share (EPS) as refers to this study. The operationalization of the variables was made using the equation model shown as: -

$$PBV = \alpha + \beta_1 NPL + \beta_2 ATMR + \beta_3 ROA + \beta_4 CAR + \epsilon$$

Were,

A= constant

PBV = Price per book value

NPLs= Non performing loans

ATMR = Assets weight (Total assets turn over)

ROA= Return on assets

CAR = Capital adequacy ratio

$\epsilon$ = stochastic error

The Bank's health being measured in terms of price per book value (PBV), the bank value from when its value is greater or equal to 1 the bank company' value is said to be sustained to attract for interested parties transact with such a bank. Short of that interested such as investors, creditors, debtors, shareholders and other financial stakeholders might obstructed not to transact [30]. Company's value might be measured in terms of adequacy in retained earnings it has to enable a company operate in foreseeable future. Moreover, with PBV less than 1 implies a company value deterioration indicating a company to be not able to operate in a going concern. Thus, it limits the prosperous of the company for interested parties not attracted. Simply with PBV less than 1 means a bank is not health not to contract with [22]. Company value is also measured using price per earnings (P/E) and earnings per share (EPS) [31].

Nonperforming loans (NPLs) imply on the bad debts or credit risks propound, bank is facing not to be able to fund or settle for short term liabilities. It is with this, therefore creditors cannot transact with such a bank because of being insolvent not able to meet short term obligations of such kind. NPL is a measure of credit risks/ bad debts or percentage measure of deficit working capital [32]. Thus, with negative working capital it implies great non-performing loans and a credit loss a bank is incurring not to be able to finance its daily operations or settle short term liabilities.

Good corporate governance is a measure of efficiency of corporate management in using assets companies have to realize sales (revenues) [33]. Good corporate governance is therefore measured using weighted assets i.e. assets turn-over management ratio (ATMR). Thus, the greater the sales revenue obtained from optimal use of fixed and current assets the company own is the efficiency on asset management the corporate managers become the causative agent of firms'

inefficiency which is a signaling sign that a business is not healthy.

Return on assets (ROA) is the measure of profit after tax divide by total assets [34]. This is a percentage measure of company's earnings. It is a measure of value of the firm once tax and interest is deducted from earnings. Return on assets is the tax deductible earnings resulted from transforming business assets [35].

Capital adequacy ratio (CAR) is a measure of change in total firm capital to total assets turnover [16]. Thus, CAR is inversely proportional to assets turnover but directly proportional to total capital. That means capital adequacy is influenced by increase in net asset or net equity. Either, the more positive net equity is the greater capital adequacy a company is said to be achieved important for improving the value of the firm. The more net asset/capital is the more

value of the business which then attract for more investors and shareholders. Company capital adequacy is the indicator that the business would operate in foreseeable future, without ceasing [36].

### 2.3. Analysis Model

The secondary data (annual financial reports) from the selected bank companies listed in Dar Es Salaam stock exchange were processed and analyzed by using SPSS version 25 software. Panel data regression analysis was used as a testing tool. Descriptive statistics was used to determine the average value, the highest and lowest values and the standard deviation of the independent variables. Partial least square regression was used determine the individual effect of the independent variables on the dependent variable and the coefficient of determination test (R<sup>2</sup>) was used to determine the percentage of the dependent variable that is influenced by the independent variables in the study.

**Table 1: Variables And Its Measures.**

Bank health (Company value) (PBV)	i) Price per book value (PBV)	Markonah, Salim & Franciska (2020)
	ii) Retained earnings (R)	
	iii) Earnings per share (EPS)	
	iv) Price per earnings (P/E)	
Non-Performing Loans (NPL)	i) Non performing loans (NPL)	Nabella, Rivaldo, Sumardin, Kurniawan & Sabri (2023)
	ii) Deficit working capital	
	iii) Company's bad debts	
Good corporate governance/Assets turnover management return (ATMR)	i) Total assets turnovers	Mayer (2021)
	ii) Percentage of sales to total assets	
Earnings/Return on assets (ROA)	i) Return on assets (ROA)	Husna & Satria (2019)
	ii) Return on equity (ROE)	
	iii) Return on capital employed (ROCE)	
Capital adequacy ratio (CAR)	i) Capital adequacy ratio (CAR)	Syafrizal, Alham & Muchtar (2023)
	ii) Total capital per unit total assets turnover	

## 3. Findings & Discussions

### 3.1. Descriptive Statistics

Under this subscription the study aims at determining the measure of central score and standard deviation regarding the bank health measured in-terms of its value and predictors in relationship. The predictors were determinants of bank company value. From Table 2; with mean = -30716294.4025 and standard deviation = 102783520.18126 shows a negative result the credit risks have on bank's value. With much deviation of such extent equals to percentage coefficient, this shows spreading to be high over bank's health. Credit

risk that leads into non-performing loans and credit losses which normally distort firm capital adequacy and liquidity [37]. It is at this time when the business working capital is insignificant not able to foster for short term debts. It is also at this time when the firm value is deteriorated for it not in a position to attract creditors transacted with [38]. The standard deviation= shows a great variation for a bank company become unable to settle for short term obligations and therefore investors, shareholders not interested in partnering with such a bank. The results of analysis were shown in Table 2

**Table 2: Descriptive Statistics.**

	N	Minimum	Maximum	Mean	Std. Deviation
PBV	40	-89.42	25165.00	1805.6123	6128.11486
NPL	40	-396516034.00	41933008.00	-30716294.4025	102783520.18126
ATMR	40	0.00	0.17	0.0753	0.03737
ROA	40	-0.27	0.04	0.0042	0.06729
CAR	35	-1655367709.40	17221739099.1	1672110158.26	4144361319.67

PBV= Price per Book Value; NPL=Non performing loans; ATMR =Total assets turnover/Good corporate governance; ROA=Returns on assets; CAR= Capital adequacy ratio

Source: Author's calculations (2023)

The minimum and insignificant coefficient of variation = 0.4963 (50%) regarding good corporate governance on company value shows exercising good corporate governance create efficient towards sustaining firm value. Good governance is an efficiency revealed by corporate on appropriate use of asset in realizing maximum sales. Proper assets management has found to enhance business health. The greater total assets turnover resulting from maximized revenues is an indicator of firm performance which attracts more interested parties transacted with [39].

With mean = 0.0042 and standard deviation = 0.06729 indicates that company earnings (ROA) is a significant determinant of growth in its value. This equals to deviation of 0.062 (6%) is significant showing the bank company value to be not obstructed reported on satisfactory return on assets to be a significant factor in sustaining business value [40]. It is with satisfactory firm value brought by greater earnings realized what has found to help a business retain its health. The healthy business company is a source of much interest paid to such business. Interested parties to healthy company can be creditors, debtors, competitors, government, shareholders, and investors [41].

At maximum value=17221739099.1 and minimum value=-1655367709.40, mean =1672110158.26 and standard deviation= 4144361319.67 it shows that company capital adequacy significantly maintains the company's value. This equals to coefficient of deviation of 2.48 which is insignificant to cause a company business remain health. The capital adequacy is a capital gearing ability of the firm to retain the business at its maximum shareholder's wealth [42]. With coefficient of variation =2.48 it shows that capital adequacy ratio (CAR) was greater than 1 and therefore firm value was sustained to attract for more interested parties. Sustainable capital adequacy ratio shows a long survival of the firm in foreseeable future before declared bankrupt [43].

### 3.2. Linear Regression Testing

Under linear regression testing, the strength of relationship between independent and dependent variables was revealed. Regression testing aim at determining the strength of influence of independent variables o dependent variables. The influencing nature defines the strength of effect or determination the explanatory variables had on explained variable. Using R-coefficients the percentage of strength was determined (See Table 3).

**Table 3: Regressions.**

	Model 1
(Constant)	0.452(-0.640)
NPL	-0.052***(-0.901)
ATMR	0.042**(0.653)
ROA	0.124*(0.730)
CAR	0.082(0.520)

a. Dependent Variable: Share per Book Value (PBV)

b. Predictors: NPL=Non performing loans; ATMR =Total assets turnover/Good corporate governance; ROA=Returns on assets; CAR= Capital adequacy ratio

c.\*\*\*p<0.01; \*\*p<0.05; \*p<0.1

Source: Author's calculations (2023)

With  $R = -0.901$  at  $\beta = -0.052$  indicates that credit risk and firm value are negatively significant related. This negative association shows that risks tend to distort firm value in which credit risk exposure by 1 unit lead into distortions of firm value by  $R = -90$  percent. Distortions of business company is due to a strained cash inflows or expected returns. Credit risks cause floatation over cash flows which reduce company earnings. Failure of customers to repay the loan is a cause of nonperforming loans and credit losses [44]. By a company facing credit losses its losses lending capacity. It is with great extent of nonperforming loans which increase company's bad debts where it is at this time when a company fail to settle for short term liabilities.

With  $R = 0.653$  and  $\beta = 0.042$  it shows a positive and significant effect, good corporate governance has on maintaining firm value. That means efficient corporate governance and administration by 1 unit lead into rise in firm value by  $R = 65$  percent. Good corporate governance implies on efficiency index of manager impose on optimal use of company assets. Optimization on the use of company assets in realizing maximum sales revenue enhances firm value [45]. With total assets turnover greater than 1 which implicate corporate managers ability in avoiding misallocation. The avoided misallocation of corporate resources is a managerial practice in enhancing company value [46].

Given  $R = 0.730$  and  $\beta = 0.124$  it indicates that return on assets positively related to firm value. Thus, increasingly return on assets means that company is for its prosperous capable to finance daily operations [14]. Moreover, increase in company earnings by 1 unit result into improvement in firm value by  $R = 73$  percent. Profit maximization gives confidence to management that they have performed. Company performance is a signaling indicator that management is effective which in-turn lead into improvement on company value [1]. The realized profit is an indicator that a business company is healthy to operate in going concern for the interested parties attracted and transact with a company.

**Table 4: Random And Fixed Effect Regression Results**

	R. E	F. E
(Constant)	0.007	0.059
NPL	0.001	0.082
ATMR	0.031	0.000
ROA	0.095	0.762
CAR	0.100	0.013

a. Dependent Variable: Share per Book Value (PBV)

b. Predictors: NPL=Non performing loans; ATMR =Total assets turnover/Good corporate governance; ROA>Returns on assets; CAR= Capital adequacy ratio

Source: Author's calculations (2023)

Given  $R = 0.520$  and  $\beta = 0.082$ , this shows that the two variables i.e. capital adequacy and firm company value are positively related. The  $R = 52$  percent is satisfactory to conclude on the positive determination effect the company's capital adequacy increase in 1 unit has on maintaining its value. Capital adequacy is the ratio of total assets to weighted assets (total assets turnover). With adequate in net equity, it indicates a permanent fund a company is sustained with towards realizing its value. The satisfactory capital adequacy implies the maximized share price value which tends to attract the interested party's contract with the business company for transaction.

### 3.3. Partial Least Square Regression

It is under this subtitle the causal-effect significance relationship between independent variable and dependent variable was examined. It is through application of random effect (R.E) and fixed effect (F.E) regressions functions were loading gave chi-squares test results. Leaving the constant parameters, the independent variables including non-performing loans (NPL), good corporate governance (ATMR) earnings (ROA) and capital adequacy ratio (CAR) showed different levels of strengths when subjected to firm value measured in terms of price per book value (PBV). With  $\chi^2 < 0.05$  indicate that the great level of non-performing loan significantly affects bank value. This is fixed effect (F.E) regression testing which shows that credit is a causal of great spreading over bank value because it causes non performing loan and credit losses contrarily to random effect (R.E) regression in which the two variables are revealed significant when  $\chi^2 > 0.05$ . Nonperforming loans due to default risk create more significant defaulters tend to propound credit losses which are a leakage to economy in which a firm fail to attain credit multipliers [47]. Freezing liquidity capacity of a business is a cause for it to wind up operations. Deterioration of liquidity of a firm due to non performing loan indeed if the turning point comes to 15% where the firm is said to be insolvent to be declared bankrupt [48].

Given the  $\chi^2 = 0.001 < 0.05$  for random effect and  $\chi^2 = 0.082 > 0.05$  for fixed effect indicate that noncredit risk measured in terms of nonperforming loans (NPL) is insignificant determinant of bank value. The insignificant effect revealed is from the fact that credit risk tends to cause floatation on the banks' earnings [49]. Thus, the distortions over return on assets simply expected Bank company returns cause dumping of its value. Distorted value of bank is the signaling indicator that it is an unhealthy [50].

With  $\chi^2 = 0.000 < 0.05$  shows good corporate governance (ATMR) to be significant determinant of company value. Good corporate governance implies pillars of effective corporate administration such as transparency, accountability, commitment, equity measured in-terms of efficiency index ratio [51]. This, it is through efficiently running and managing of the firm detailing on appropriate utilization of resource-assets which realizes maximum sales [52]. The sales maximization is a company's performance indicator which could attract interest parties such as debtors attracted to transact with such a business firm.

Given  $\chi^2 = 0.095 > 0.05$  indicating random effect regression shows a significant effect of bank company's earnings (ROA) has on raising its value. The greater the profit a company earns is a causal of its performance revelations [53]. Earnings realized by bank are a return on total assets measured in percentage of profit after interest and tax to total assets of the firm [54]. Normally profit maximization is for growth of the company which in turn led into rise in its value [55].

With  $\chi^2 = 0.013 < 0.05$  and  $\chi^2 = 0.100 > 0.05$  indicate fixed and random regression effect testing to be scented respectively. Sentiment of regression effects shows that capital adequacy (CAR) of a company and enhancement of its value is two variables significantly related. The fact is that capital adequacy of firm shows that net asset retentions capacity a company has is important for retaining investors and at the same time ensuring the growth of the firm [56]. Thus, with great capital adequacy ratio the trade-off between profit maximization and shareholder's maximization is attained needed for prosperous of the investors/shareholders and the same time sustaining the growth of the firm.

#### 4. Conclusion

Bank health revealed to a function of four variables which are credit risk profile, good corporate governance, earnings and capital adequacy. The bank's health measured in terms of Bank company value it is computed by taking price per book value. The findings moreover, found that risk/credit risk profile negatively and significantly relate to company value. Other variables such that good corporate governance, company earnings and capital adequacy are positive and significant determinants of Bank Company value as well as its health. A healthy pattern of Bank Company revealed to be a cause of most of interested parties transact with banks. Thus, these results are information to financial stakeholders that credit risks are to be controlled not to cause disruption over bank values. Credit risks management take all required procedures for effective lending process such as credit appli-

cant analysis, credit review, evaluation and selection of creditworthy customers (applicants). Credit operation managers are to undertake effective lending assessment not to commit adverse selection (Type I and II errors) and moral hazards. Financial managers moreover have to exercise principles of good governance to ensure maximized return on assets and maximized shareholders wealth (capital adequacy).

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