ipmi INTERNATIONAL JOURNAL OF BUSINESS STUDIES

ISSN: 2580-0132
Vol. 2 | No. 1 (February 2018)

The Effect of Financial Performance and Financial Distress Indicators to the Stock Price of Bank Rakyat Indonesia

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ABSTRACT

The bank's financial report is the only lead for the public c to review, evaluate, and assess the soundness of a bank. By tinkering the available figures within the monthly financial reports, we have measured 52 variables comprised of the common indicators to calculate the effects of financial performance of the bank, its financial distress, to its stock price in the market. The common indicators used are the ratios of liquidity, rentability, and solvability. The bankruptcy prediction and financial distress indicators were considered to part of the solvability ratios. The data observed and collected was between January 2002 up to 18 July 2017. The time lag and IPO as of 10 November 2003 reduced the eligibility of monthly financial reports, leaving the data usable for the period of November 2003 to April 2017. As 10 variables were excluded by system, only 4 of 42 variables were found to be significant affecting the stock price variable. The 4 independent variables are market capitalization, the ratio of placement in BI to the third-party fund, debt to equity ratio, and debt to asset ratio.

ARTICLE INFO

Stock Price,
Financial Performance,
Financial Distress,
Bankruptcy.

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INTRODUCTION

Stock price is very vulnerable to any disseminated information. Any decrease in stock price can erode bank's capital exponentially. As the stock price fluctuates, so does the bank's capital. Likewise the bank's productive assets, either in value and/or quality in terms of loan disbursements, deals in the inter-bank money market, and in the clearing process with Bank Indonesia (BI).

The dynamics of stock price are determined by many factors. It can come from inside of the company, supporting companies, indirectly related, or totally unrelated. The externalities can be related or not in terms of business deals, financially, or economically. It is often the case that the causing factors mostly come from the changing situation and condition in politics, social, environmentalists,

or elses.

As the unfavorable market depressed the stock prices, some banks are doomed to fail as they cannot satisfy the minimum capital requirements. As is the case, such banks get some kind of warnings from the government officials, either from Bank Indonesia and/or Otoritas Jasa Keuangan (OJK). The penalties can take a form of excluded from the clearing process, or worst, gets liquidated.

Some early warning systems have been set to detect, signal, and notify the authorities once a bank begins to crumble and experience some level of financial distress, particularly the capital adequacy ratio (CAR) requirement. However, some troubled banks can and worth to be saved and salvaged. Especially when the epitome of 'too big to fail' takes precedence.

Some political and moral hazard usually steps in, building the fragile arguments. Some cherry picking usually creates criticisms, chain reactions, and snowballing. The patchy salvations create a mockery such as another day, another bail out. The usual stale arguments spoken out loud have been the highly potential of systemic nature of risks in banking, payment, financial, and economic, in partial or the whole.

The public can only know and be aware of the soundness of a bank through their published financial reports. The authorities have never been disclosing and publishing the health status of any bank, but when the markets begins to jitter and unravel. Some massive press release is usually issued and disseminated, then. Huge press conferences are held and covered by all media companies.

The published financial reports are the only tools available for the public to analyse the soundness of a bank and predict its probable financial distress and bankruptcy. This research intends to analyse 3 aspects of a bank, that is its financial soundness/performance, distress, and the actual and relative price of a bank's share.

Three common and primary financial performance indicators of a bank are liquidity, solvability, and rentability/profitability. These three parameters are a part of CAMELS rating and supervisory system. Three other indicators, that is C (for capital), M (for management), and S (for sensitivity), are confined to the 'subjective' definitions and interpretations of the authorities.

As a non-participant observer, the researchers stand independent and apart from various aspect of reassessing, recounting to the published unaudited financial reports. Some financial ratios reflecting the financial distress of a bank are used as an indication and initial predictor of probable financial distress of a bank.

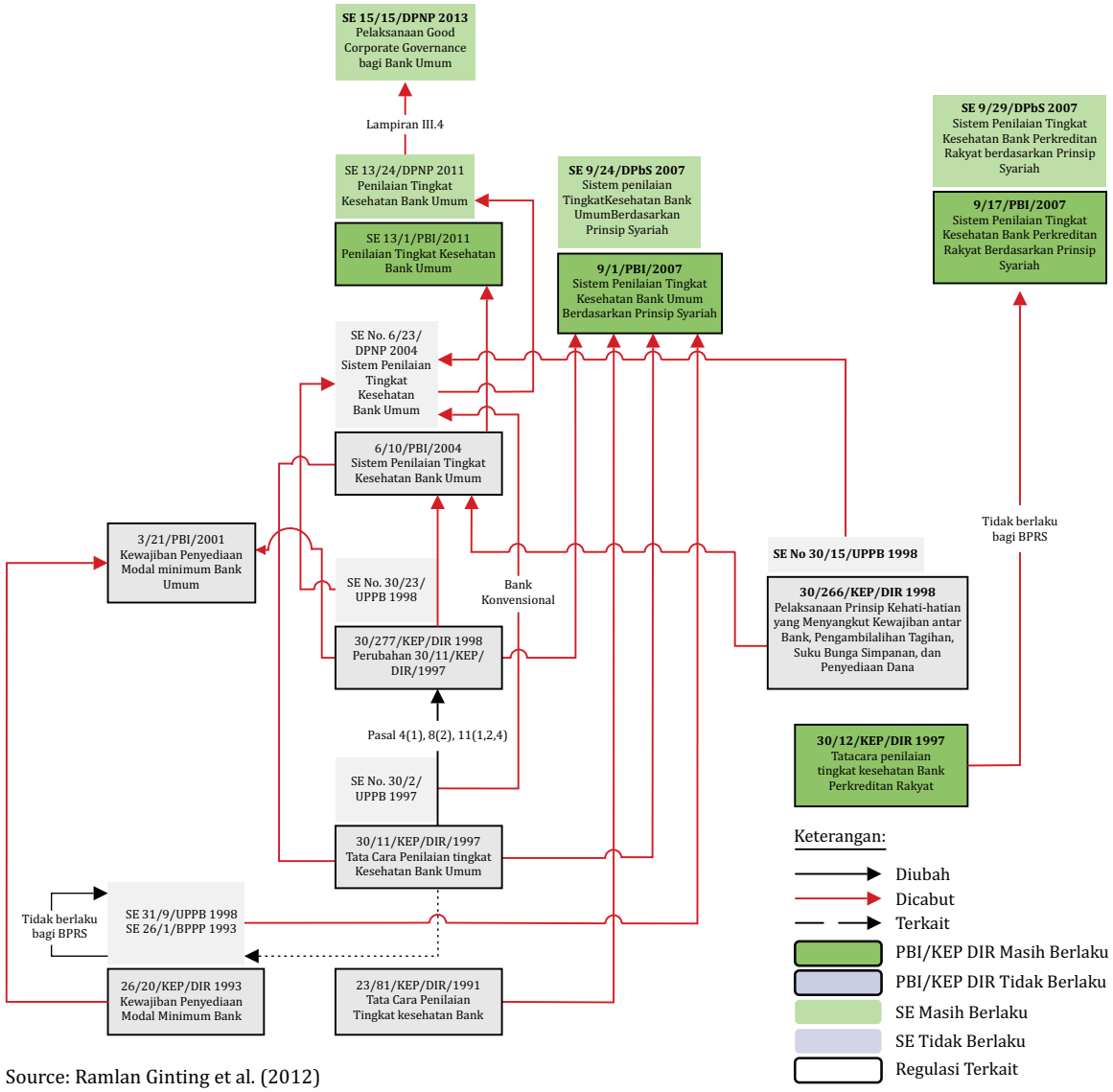
The randomly changing stock price (stochastic) is a resultant of changing various financial indicators cited in the financial reports. On the other hand, the stock price can somehow reflect and provide signs of a bank to fail. A bank is deemed to fail when the words spread out that such bank cannot fulfill its obligation in the clearing process, the inter-bank money market, loan defaults, or elses.

LITERATURE REVIEW

Bank Performance

The CAMEL supervisory system as mentioned above was set on the Decree of BI Director No.30/11/ KEP/1997. Alas, it cannot be implemented on any branch level. Therefore, some revisions were taken place later on. On the other hand, EAGLES (Earning ability, Asset Quality, Growth, Liquidity, Equity, Strategic management) was perceived as an alternative of CAMEL system (Irmayanto et al, 2007:92-94).

Soundness, healthiness is a mince word for performance. It can be defined further to profitability, rentability, liquidity, solvability. Some negative performance can be worded as financial distress. The indicators for profitability may include ROA (return on asset), ROE (return on equity), NPM (net profit margin), OCR (operating cost ratio), or elses. In terms of ROI (return on investment), failure to manage the revenues and profits accordingly can put the company as the



Source: Ramlan Ginting et al. (2012)

Figure 1. The evolving BI Regulations on bank health assessment

sitting duck for hostile takeover target. Likewise, to deal and close the liquidity issues.

Defined by the ability for the bank to settle its short-term debts by its liquid tools, liquidity indicators may include CR (cash ratio), RR (reserved requirements), LDR (loan to deposit ratio), LAR (loan to asset ratio), CMR (call money ratio), or elses. Defined by the ability for the bank to settle its long-term debts with its whole assets, solvability indicators may include CAR (capital adequacy ratio), DER (debt to equity ratio), LDAR (long-term debts to asset ratio), or elses.

Financial distress or signs of the upcoming bankruptcy can be predicted, whilst its acuracy highly depends on how good the predictors estimated from the model formation set. Altman's Z-score has been highly praised as the pioneer formalising the multiple variable analysis to predict corporates to fail.

The original financial ratios formulated by Altman to calculate the Z-score have been kept refined and developed. Chen and Shimerda (1981:51-60) found that financial ratios can predict corporate bankruptcy with an acuracy of more than 90%. The prominent 7 financial ratios suggested by Dugan dan Zavgren (1989:64-65) are cash position, short-term liquidity, financial leverage, ROI (return on investment), capital turnover, inventory turnover, and receivables turnover.

Stock Price

The marketable nature of securities has made the price of company's shares is vulnerable, highly dynamic, and to fully comply with the laws of demand and supply. The company's share gets acquired as long as there is some profit prospect offered against the risk of possession. If the risk premium of the stock is relatively lower than any other stocks, the company's shares are deemed to less value and least attracted, vice versa (Brealey and Myers, 1991:307-308).

Stock price is like a two-edged sword. It reflects and highly depends on economic prospects. The analysis on stock price can be distinguished on 2 aspects, either fundamental or technical. The first one tries to extrapolate many business aspects of a company against its industry, the whole economy, into the future value of the company's stock. If its FV is higher than its PV, then it is worth investing.

The second form of analysis is based on the movement of stock price, either individual, industrial, or the whole markets. It assumes that the market is the best predictor of fundamental variables such as revenues and risks, sooner than what has been perceived and anticipated by fundamental analysts (Reilly and Brown, 1997:772).

The herd instinct characterise and put the market as the place that highly full of sentiments and irrational. The rational and fundamental variables are factored and weighted in by the market players continually and automatically. Investors tend to capitalise the market, whenever and whatever possible, pricing in and cashing in (Levy, 1966:83).

The intrinsic value of a share depends on the company's book value, total dividends, dividend payout ratio, EPS, and PER (Gompers et al, 2003). The stock price that becomes an asset (asset pricing) is considered to be efficient as along as the price reflects the whole market information (Shleifer, 2000) is available to the stock traders, that aware or not (EMH theory) (Somoye et al, 2009:177-189).

PER, PBV (price/book value), PCF (price/cash flow), and PDR (price/dividends) indicators have been used since the beginning of first stock exchange, that is Amsterdam Stock Exchange in 16c. Scientific valuation began to take place when calculating DCF (Discounted Cash Flow) and DDM (Dividend Discount Model). DCF is perceived as the estimated price that fair (Coleman, 2006).

The next evolution of asset pricing theories are MPT (Modern Portfolio Theory) and CAPM (Capital Asset Pricing Model). Alas, these approaches can be implemented only on stock portfolio, but not on individual companies. Stock valuation theory then moved to put the stock price as the numerator and profit (yield) as the denominator.

The prominent indicators of this theory are the ratios of book/market equity, book/price, earnings/ price, dividend/price. This stage has become the foundation of FF3F (Fama-French Three-Factor), which is perceived to be inefficient, irrational, not-scientific, and very disadvantageous. The risk factors are related to market, size (market capitalisation), and value (book to market equity ratio).

Previous Studies on Bankruptcy and Bank Industry in Indonesia

From several studies on bankruptcy and bank industry in Indonesia, there are 8 references that worth to mention and recapitulated into the following table. This table also serves as the gap analysis. Four of 8 references needs further elaboration. They are Judijanto and Khmaladze (2003), Sori and Jalil (2009), Al-Rawi et al (2008), and Sugiarti & Suyanto (2007).

Sugiarti and Suyanto (2007) sought to measure the effects of BV (book value) and EPS to the stock price of 21 banks in Indonesia for the period of 2001-2005. By using the panel data analysis method and based on the Hausman test, they found that the FEM (Fixed Effect Model) regression method is the better estimator and predictor than the REM (Random Effect Model). The BV affects the stock price positively significant, while EPS is also positive, but insignificant.

Tabel 1. Previous Studies recapitulated and the gap analysis.

Researcher	Dep Var.	Indep. Var.						R^2	t	Metlit	Description
		Rentability	Liquidity	Solvability	Fin. distress	Micro	Macro				
Judijanto & Khmaladze (2003)	Z	ROE, ROEA, IM, PM, COF, ARCP, NII/EA, NIIL/L, EBT/SE	LA/D, NfA/L	E/EA, E/L	PLL/L			96%	1994-1996	AKF	213 banks, 29 unobserved, 32 variables
Widayani (2005)	ROE	OCR	LDR	CAR, NPL, DER				54.1%	2000-2002	ARB	61 of 81 banks
Sugiarti & Suyanto (2007)	HS					BV, EPS			2001-2005	DP	21 of 24 banks
Ardiani (2007)	HS	ROA, RORA, OCR, NMP	LDR	CAR				52.1%	2002-2004	ARB	15 of 26 banks
Fakhrurozie (2007)	HS				Z			21.5%	2003-2005	RLS	22 banks
Al-Rawi et al (2008)	Z	TP/S, NP/S, NP/TA, NP/NE, NP/SQ	WC, CR, AT, QR	LAR, EAR, LER, NP-loss					2002-2004	Z-ARK	Manuf ind.
Somoye, et al (2009)	SP					EPS, DPS	GDP, int, oil, infl, fx	99.996%	2001-2007	ARB	
Sori & Jalil (2009)	Z	aaaaa	CFS, DSR					82.2%	1990-2000	MDA	17 paired coys, 64 variables
Harsono (2011)	HS	NIM, NPM, OCR, ROA, ROE, ROI, Op.Inc, Op.Exp, Tot.Inc	Cash Ratio, RR, LWM, CMR, LDR, LAR, CR, CTO	Debt, LTD, DER, DAR, LTDAR	Z			88.38%	Jan. 2004-Okt. 2010	DP	20 of 31 publicly held banks

Notes:
Some financial distress indicators: Z, CR, DAR; CF/TD, CF/LTD, C/CL, NI/TA, CA/CL, TD/TA, S/TA, EBIT/TA, RE/TA, WC/TA, WC/S, MV/BVD
Some other financial indicators: BV, DPS, EPS, PER, EPR, PBV, PCF, PDR, DPR, DCF, DDM, BMR, BPR, market cap
Metlit (research methodology): DP = Data Panel; ARB = Analisis Regresi Berganda (multiple regression analysis); RLS = Regresi Linier Sederhana (ordinary least square); AKF = Analisis Korelasi (Spearman correlation analysis) and Factor (Eigen-Values from covariance matrix);
Z-ARK = Z-score and Analisis Rasio Keuangan (financial ratio analysis); MDA = Multivariate Discriminant Analysis.

Judijanto and Khmaladze (2003) calculated the financial reports of 213 banks in Indonesia for the period of 1994-1996. They ranked the score of 32 variables representing earnings, profitability, productivity and efficiency, asset quality, CAR, growth and aggressiveness, credibility, size, income and source of diversified funds, liquidity, and dependency on captive market.

After some sufficient calculations, they ranked and found that 12 variables that can discriminate significantly that 3 bank groups will fail within 2 years; 2 variables can discriminate significantly the failing banks within 1 year. The first bank group (L) comprised of 25 banks that forcefully closed, merged, liquidated, or takenover by BPPN (IBRA). The second group (P) group comprised of 33 banks that supervised by BPPN. The third group (N) comprised of 155 banks operating normally.

Sori and Jalil (2009) developed some methods to predict the probability of failure of companies listed on Singapore Stock Exchange for the period of 1990-2000. The failing companies were characterised as to be loss and suffered negative cash inflow consecutively in 3 years, under curator (receivership), and had obtained approval from the authorities for bankruptcy protection.

The failing 17 listed companies were paired with the non-failing companies in the same industries, years of fail, similar asset size and age. From 64 variables examined to cause the event status, only 2 variables were found to be significant in discriminating the company's status, either fail or not. They were Cash flow to Sales and Days Sales in Receivable.

Al-Rawi et al (2008) examined Altman's method that tries to predict corporate bankruptcy with Z-Score indicator in a manufacturing company in Jordan for the period of 2002-2004. They upheld the principles of 5 main variables defined by Altman (1968) and Taffler (1982). According to Altman and Taffler, EBIT to total sales ratio as a an indicator for profitability is the ultimate discriminant between a solvent (sound and health) and insolvent (bankrupt) company.

Nevertheless, some crucial points of the findings of Al-Rawi et al eventually had been perceived by other researchers. The method is only applicable in manufacturing industry, particularly in measuring the financial distress in the old days. The method is not applicable in the financial industries and present days that has offered more indicators and detailed figures, financially and not.

Gap Analysis and Analytical Framework

Based on the distribution of usage and derived variables, length of observation periods, and observed data from 8 references related with this research, some conclusions that can be withdrawn are as follows the use of annual data; a brief period of observation (3 years on 5 studies; 5 years on 1 study; and 7 years in 1 study, and 11 years on 1 study); and very limited variables observed (less than 10 in 6 studies; and more than 10 in 2 studies).

What has not been done is the monthly data of financial reports published and more variables. The relative price of share may include PER, EPS, and PBV. Four other forms of relative price of the share are PCF, DCF, DPS, and DDM. Dividends and cash flow have not been reported on the monthly basis, but quarterly and annually. Analytical framework for this study describe in figure 2.

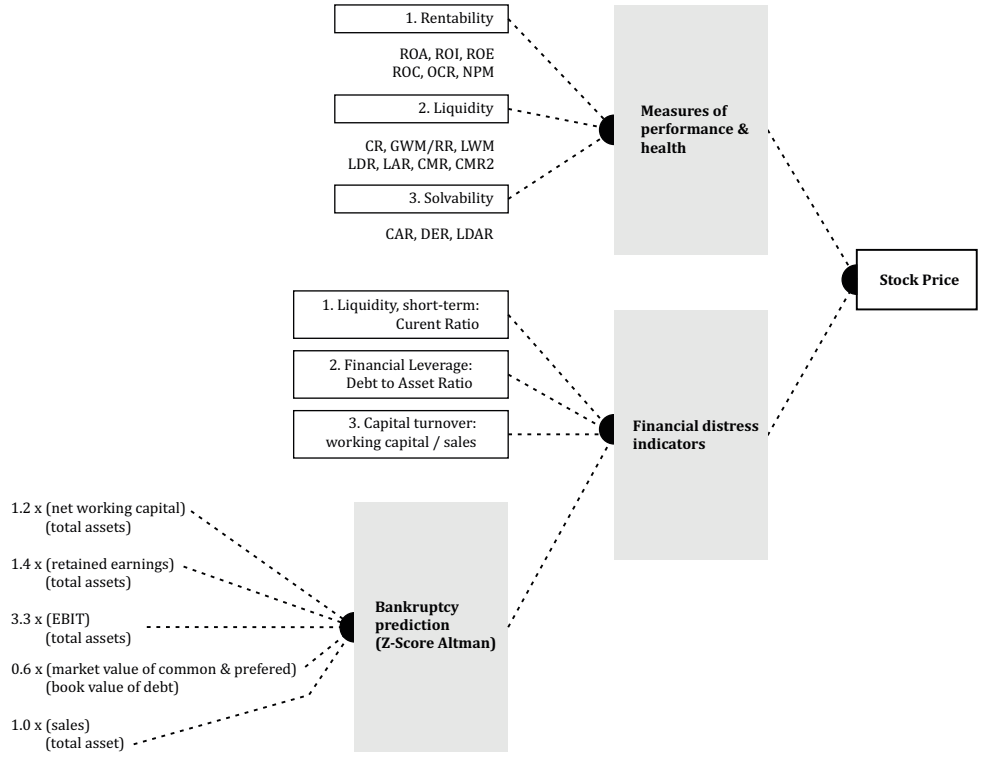


Figure 2. Analytical framework

METHODOLOGY

Research Object

The monthly published financial reports of and stock price BBRI has been collected for the period of January 2002 up to 18 July 2017. The time lag and IPO as of 10 November 2003 reduced the use of monthly financial reports, leaving the data usable for the period of November 2003 to April 2017. The time-series quantitative analysis was made on 52 variables derived from financial indicators, revealing both the performance and financial distress.

Research Variables

Research variables used in this report are productive assets, liquidity, rentability or profitability, solvability, and financial distress indicators. The variable of productive assets comprises of lending investment and non-loans disbursement. The liquidity variable comprises of indicators of cash ratio (CR), minimum requirement of liquidity (LWM), reserved requirement (RR, GWM), LDR (loan to deposit ratio), LAR (loan to asset ratio), call money ratio (CMR).

The profitability variable comprises of ROA (return on assets), ROE (return on equity), ROI (return on investment), OCR (operating cost ratio), NPM (net profit margin), and NIM (net interest margin). The solvency variable comprises of current liabilities, DER (debt to equity ratio), LDER (long-term debt to equity ratios), LDAR (long-term debt to asset ratios). The financial distress variable comprises of short-term liquidity, current ratio (CR), DAR (debt to asset ratio), financial leverage, capital turnover, working capital to sales ratio.

Model Formation

Stock price is set as a function of financial performance, financial distress, and bankruptcy prediction. Mathematically, this statement is formulated in a relational model as of follows:

$$\rho = f(\pi, \lambda, \varsigma, \delta)$$

whereas

ρ: stock price, measured nominally

π: rentability measures (ROA, ROI, ROE, OCR, NPM)

λ: liquidity measures (CR, GWM/RR, LWM, LDR, LAR, CMR, CMR2)

ς: solvency measures (DER, LDAR)

δ: other financial distress measures (CR, DAR, WCSR)

Method of Analysis

Data processing and calculation in this research were done with IBM SPSS. Violation of classical assumptions are tested to determine the eligibility and worthiness of variables and/or indicators in the model estimation and/or to show the statistical errors occur or not. The usual tests on the existence of violation on classical assumptions include:

1. The Kolmogorov-Smirnov test (the normal distribution of the data and variables).
2. The parametric statistic test with multiple linear regression and ANOVA (F-test).
3. Correlation calculation as a result of multiple linear regression.
4. Multicollinearity test.
5. Heteroscedasticity test.
6. Auto-correlation test.
7. Goodness of fit model (R2)
8. The t-test.

FINDINGS

Financial Highlights

Established on 16 December 1895, BRI had toppled Bank Mandiri (BMRI) as the largest bank in Indonesia as of October 2014. BRI's assets was IDR 712.45 trillion, whilst BMRI's was IDR 707.97 trillion. On that month, BMRI's asset only grew 0.62%, whereas BRI's was 4.28%. During the period of September 2014 up to April 2017, BRI's assets grew by 1.09% monthly.

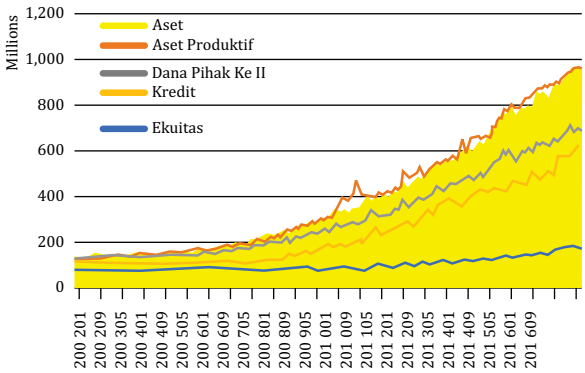


Figure 3. The Financial Performance of BRI, Jan. 2002 – April 2017

On 10 November 2003, BRI began to sell its shares to the public with a par value of IDR a share. As much as 11,647,057,950 shares were offered with the price of IDR 875 per share. The stock split with the ratio of 1:2 multiplied the paid up shares to an amount of 24,669,162,000 as of 11 January 2011. The Government of Indonesia owns BRI's shares by 43.25%.

As of May 2017, with an asset of IDR 996 trillion, the market capitalisation of BRI's stocks was IDR 353.52 trillion. It placed BRI as the fifth largest company listed on IDX. BRI's largest was also shown in terms of the third largest in stock trading value (IDR 8.23 trillion) and the ninth largest in trading frequency (103,789). However, with the trading volume of 584.92 million shares, it failed to put BRI as one of the largest 20 companies.

As of 31 December 2016, BRI has 93,333 employees, dispersed in 1 headquarter, 19 regional offices, 1 special branch, 462 regular branch offices, 4 offshore offices, 609 sub-branch offices, 984 cash offices, 5380 office units, 2545 terrace offices, and 636 mobile terrace offices. The total of 10,643 offices did not include 283,453 units integrated in e-channel networks.

The expansiveness of BRI can be seen through the monthly growth of its main financial indicators such as productive assets (1.83%), equity (1.78%), loan disbursements (1.67%), assets (1.44%), and the third party funds (1.44%). Although both assets and third party funds share the same monthly growth figures in average, each grew variedly by months. The stock performance of BRI in IDX for the period of 2006-Jan. 2017 as shown in table 2.

Empirical Results

Any theory, hypothesis, or whatever that tries to determine a relationship between a variable with other variables is relative in nature. The relationship relativity can be seen on the interpretation to a glass of water, either half full or half empty. Not often, some relationships are forcedfully interpreted according to the presumptions, contentions, expectations of each on every vested interest parties.

Likewise, the applications of theory, principles, fundamentals on various interconnected relationships. The polarisation of any relationship can be seen easily on the perspectives of risk and reward, short-term which is quick yielding or long-term which is a long play, a long game. In the perspective of corporate finance, 2 common perspectives are capital structure and financial structure. Included are the size and measures of standard financial ratios such as liquidity, solvency, rentability, or elses.

Regression Analysis on h1 as the Dependent Variable

From the estimation of 52 independent variables assumed to affect the stock price, as much as 10 variables were excluded automatically by the IBM SPSS v24 in the estimation calculation process. The 10 variables excluded are a, a1, a3, a6, p2, p4, q4, std, s1, y2. The definition of variables as described in the table 3.

Table 2. Summarized Stock Price Performance of BRI, 2006- Jan 2017

Year	Rep.date	Volume (MnShares)	Value (BnRp)	Frequency (X1000)	Day	High	Low	Close	Close*	(X)	(X)	(X)
2006	2010-07-30	5,115	21,594	114	242	5,750	3,000	5,150	5,150	14.84	18.29	3.74
2007	2010-07-30	4,170	25,356	106	246	8,700	4,400	7,400	7,400	18.90	12.57	4.97
2008	2012-01-31	5,569	28,597	233	240	7,800	2,400	4,575	2,288	9.47	16.77	2.52
2009	2012-01-31	5,146	32,540	291	241	8,700	3,550	7,650	3,825	12.91	13.41	3.46
2010	2012-01-31	4,920	44,926	278	245	12,800	6,950	10,500	5,250	11.29	16.00	3.53
2011	2012-07-31	10,695	65,512	625	247	10,750	4,525	6,750	6,750	10.89	6.61	3.34
2012	2014-01-30	9,285	62,701	514	246	7,850	5,150	6,950	6,950	9.18	6.58	2.64
2013	2014-01-30	9,932	78,393	730	244	9,950	6,200	7,250	7,250	8.69	17.01	2.43
2013	2017-01-31	9,932	78,393	730	244	9,950	6,200	7,250	7,250	8.38	17.20	2.25
2014-01-30	2014-01-30	935	7,534	87	20	8,850	7,000	8,325	8,325	9.97	18.74	2.78
2014	2017-01-31	9,096	91,875	1,071	242	12.200	7,000	11,650	11,650	11.86	27.72	2.94
2015	2017-01-31	8,366	92,492	1,264	244	13.450	7,975	11,425	11,425	10.99	25.09	2.49
2016	2017-01-31	7,679	86,255	1,248	246	12.975	9,525	11,675	11,675	11.40	20.71	2.04
2017-01-31	2017-01-31	378	4,503	69	21	12.325	11,575	11,725	11,725	11.45	21.21	2.05

Table 3. The Description of Variables

Variable	Variable Name
ASSET	
a	total assets
a1	credit investment
a2	non-credit investment
a3	productive assets, earning assets
a4	liquid tools
a5	current asset
a6	performing assets
FIN.	
DISTRESS x1	sales / assets
x2	3.3 x (EBIT / assets)
x3	1.4 x (retained earnings / assets)
x4	1.2 x (nwc / assets)
OTHERS	
h1	Stockprice, adj stock split
h2	Stockprice, adj stock split & div
LIQUIDITY	
cm	call money
q1	cash ratio (x)
q2	min. required liquidity
q3	min. required liquidity, 2
q4	reserved requirement
q5	reserved requirement, 2
q6	call money ratio
q7	call money ratio, 2
q8	call money ratio, 3
q9	loan to deposit ratio
q10	loan to deposit ratio, 2
q11	loan to asset ratio
q12	current ratio
q13	capital turnover

Variable	Variable Name
LIABILITIES	
p1	third party funds, 1
p2	third party funds, 2
p3	equity
p4	current liabilities
p5	net working capital (nwc)
RENTABILITY	
EBT	net earnings, earnings before tax
EAT	earnings after tax
π	profit, retained earnings
r1	net interest margin
r2	net profit margin
r3	operating cost ratio
r4	return on asset
r5	return on investment
r6	return on equity
r7	operational income
r8	operational expenses
r9	sales (revenues), 2
SOLVABILITY	
std	short-term debt
s1	debt
s2	long-term debt
od	other debts
s3	debt to equity ratio (x)
s4	long-term debt to asset ratio
s5	debt to asset ratio (fin. leverage)

The variation of 42 independent variable can affect the variation of h1 as the dependent variable, with the determination coefficient (R2) of 99.6%. The sig value of Fstat which is less than 0.05 is set as the basis of rejection of Ho, which is interpreted that the whole 42 independent variables is proved to significantly affect the h1 as the dependent variable.

Nevertheless, only 4 of the 42 independent variables that highly significant to affect the stock price variable, that is y3, q5, s3, and s5. It can be seen on the sig value of t-stat which is less than 0.05. As the sig value of t-stat is raised to 0.10, the 3 other independent variables appear to be significant in affecting the stock price are q9, a4, q1. The relationship of 7 independent variables with h1 as the dependent variable as shown in table 4.

Table 4. The Relationship of 7 Dependent Variables Affecting the Significant Estimation of h1 as the Dependent Variable

Code	Variable	Coefficient	Relationship
y3	Market capitalisation	3735.993	+
q5	RR2, placement on BI/third party fund	-7072.322	–
s3	Debt to equity ratio (DER)	925.452	+
s5	Debt to asset ratio (DAR)	-1088.228	–
q9	Loan to Deposit Ratio (LDR)	-14199.702	–
a4	Liquid tools	-1989.475	–
q1	Cash Ratio	-2.909	–

From the 42 independent variables observed, only 2 variables that have a value of VIF<10, that is q13 and y1. In other words, these 2 variables have a multicollinearity with h1 variable, the close price adjusted after stock split. Table 5 shows the estimation results with h1 as the dependent variable.

Table 5. The Estimation Results of Regression Equation with h1 as the Dependent Variable.

Var., dependent	h1				absres_h1		
Var., independent	β	t_{stat}	Sig.	FIV	B	t_{stat}	Sig.
(Constant)	40,716.434	2.200	0.030		40,716.434		
a2	157.934	0.679	0.499	117.754	157.934	2,231,530.174	0.000
a4	-1,989.475	-1.736	0.085	559.702	-1,989.475	-5,708,972.691	0.000
a5	1,780.330	1.465	0.145	2,039.259	1,780.330	4,818,157.458	0.000
p1	-1,059.287	-1.095	0.276	5,449.276	-1,059.287	-3,600,318.338	0.000
p3	1,698.585	1.012	0.314	781.329	1,698.585	3,326,280.255	0.000
p5	-219.379	-0.237	0.813	2,288.039	-219.379	-778,142.858	0.000
cm	1,729.186	0.664	0.508	125.589	1,729.186	2,182,631.509	0.000
q1	-24.943	-1.700	0.092	18.174	-24.943	-5,589,762.039	0.000
q2	15,058.753	0.783	0.435	2,441.238	15,058.753	2,573,922.899	0.000
q3	3,563.591	0.148	0.883	2,383.482	3,563.591	486,296.439	0.000
q5	-7,072.322	-3.777	0.000	14.220	-7,072.322	-12,419,695.200	0.000
q6	-11,598.568	-1.007	0.316	279.778	-11,598.568	-3,311,002.578	0.000
q7	1,555.992	0.233	0.816	308.534	1,555.992	767,224.569	0.000
q8	19,735.790	0.578	0.565	189.873	19,735.790	1,899,689.112	0.000
q9	-14,199.702	-1.932	0.056	610.482	-14,199.702	-6,351,878.009	0.000
q10	-629.726	-0.041	0.968	2,556.012	-629.726	-133,358.383	0.000
q11	27,911.803	1.591	0.114	1,821.086	27,911.803	5,229,692.301	0.000
q12	-12,799.882	-1.032	0.304	1,405.317	-12,799.882	-3,394,079.728	0.000
q13	-0.715	-0.167	0.867	3.734	-0.715	-550,574.272	0.000
EBT	-10,190.822	-0.805	0.422	1,822.684	-10,190.822	-2,646,448.012	0.000
EAT	-2,306.730	-0.168	0.867	1,367.292	-2,306.730	-553,588.121	0.000
π	199.805	0.132	0.895	487.051	199.805	433,858.532	0.000
r1	-7,122.828	-0.750	0.455	185.496	-7,122.828	-2,465,302.624	0.000
r2	2,751.366	1.536	0.127	13.614	2,751.366	5,050,213.096	0.000
r3	-144.345	-0.122	0.903	16.344	-144.345	-401,756.686	0.000
r4	-38,565.908	-0.733	0.465	810.000	-38,565.908	-2,411,576.860	0.000
r5	-10,397.800	-0.372	0.711	354.137	-10,397.800	-1,223,035.231	0.000
r6	5,227.089	1.462	0.146	211.907	5,227.089	4,806,495.553	0.000
r7	12,136.333	1.598	0.113	5,433.737	12,136.333	5,255,073.019	0.000
r9	-6,303.164	-1.396	0.165	930.117	-6,303.164	-4,588,779.811	0.000
r8	-3,982.778	-0.558	0.578	4,987.294	-3,982.778	-1,836,318.384	0.000
s2	1,568.900	1.021	0.309	92.420	1,568.900	3,357,501.057	0.000
od	1,953.931	0.730	0.467	66.530	1,953.931	2,400,861.853	0.000
s3	925.452	3.407	0.001	135.913	925.452	11,201,932.990	0.000
s4	-4,886.261	-0.379	0.705	59.969	-4,886.261	-1,245,902.041	0.000
s5	-52,208.643	-2.695	0.008	201.895	-52,208.643	-8,860,125.676	0.000
x1	8,312.429	0.774	0.440	403.867	8,312.429	2,546,189.271	0.000
x2	750.892	0.176	0.861	210.750	750.892	579,024.560	0.000
x3	-4,429.394	-0.832	0.407	86.330	-4,429.394	-2,735,891.686	0.000
x4	5,213.667	0.463	0.644	1,217.087	5,213.667	1,523,292.206	0.000
y1	-146.771	-1.112	0.268	1.535	-146.771	-3,655,515.126	0.000
y3	3,735.993	18.787	0.000	77.563	3,735.993	61,772,668.070	0.000

Dependent Variable: h1
Predictors in the model: (Constant), y3, s5, y1, q13, q3, q8, r2, r3, s4, x2, q9, r9, q5, od, q1, q12, x3, s2, r5, cm, q11, q7, r6, a4, EAT, a2, s3, p5, r1, x1, q6, π, x4, p3, r4, r7, a5, EBT, q2, q10, r8, p1

Excluded variables: a, a1, a3, a6, p2, p4, q4, std, s1, y2

SEM	291.130
R	.998
R2	.996
Adj R2	.994
F	642.000
sig-F	.000
DW	1.363

By using the Gletsjer method (setting the absolute value of residuals of regression result), and later put it as the dependent variable regressed with independent variables (the White test), the estimation result shows that all independent variables appear to have the sig value of t-stat of less than 0.05. It puts the null hypothesis accepted, interpreted as there are no heteroscedasticy existent.

With observation of n to 162 (months), independent variables (k) by 42, alfa of 0.01, the DW value to DL is set at 1.443 and DU at 2.040. The value of DW stat at 1.363 shows that the estimated equation appear to contain positive autocorrelation element.

Regression Analysis on h2 as the Dependent Variable

From the estimation of 52 independent variables assumed to effect the stock price, as much as 10 variables were excluded automatically by the IBM SPSS v24 in the estimation calculation process. The 10 variables excluded are a, a1, a3, a6, p2, p4, q4, std, s1, y2 . The definition of each variables a shown Table 3.

The variation of 42 independent variable can affect the variation of h2 as the dependent variable, with the determination coefficient (R2) of 99.7%. The sig value of Fstat which is less than 0.05 is set as the basis of rejection of Ho, which is interpreted that the whole 42 independent variables is proved to significantly affect the h2 as the dependent variable.

Nevertheless, only 4 of the 42 independent variables that highly significant to affect the stock price variable, that is y3, q5, s3, and s5. It can be seen on the sig value of t-stat which is less than 0.05. As the sig value of t-stat is raised to 0.10, the 5 other independent variables appear to be significant in affecting the stock price are r7, p3, q9, q11, q1. The relationship of 9 dependent variables affecting the significant estimation of h2 as the dependent variable shown in table 7.

Table 6. The Relationship of 7 Dependent Variables Affecting the Significant Estimation of h1 as the Dependent Variable

Code	Variable	Coefficient	Relationship
y3	Market capitalisation	3382.934	+
q5	RR2, placement on BI/third party fund	-5871.803	–
s3	Debt to equity ratio (DER)	971.811	+
s5	Debt to asset ratio (DAR)	-52037.615	–
r7	Operational income	11843.262	+
p3	Equity	2524.952	+
q9	Loan to Deposit Ratio (LDR)	.070	+
q11	Loan to Asset Ratio (LAR)	24615.328	+
q1	Cash Ratio	-20.368	–

From the 42 independent variables observed, only 2 variables that have a value of VIF<10, that is q13 and y1. In other words, these 2 variables have a multicollinearity with h2 variable, the close price adjusted after stock split and dividends. Table 8. shows the estimation result of regression equitation with h2 as the dependent variables.

Table 7. The estimation result of regression equitation with h2 as the dependent variables.

Var., dependent	H2				absres_h2		
Var., independent	β	t_{stat}	Sig.	FIV	B	t_{stat}	Sig.
(Constant)	40481.504	2.725	.007		40481.504	0.000	0.000
a2	67.429	.361	.719	117.754	67.429	0.000	0.000
a4	-1412.773	-1.536	.127	559.702	-1412.773	0.000	0.000
a5	1046.412	1.073	.285	2039.259	1046.412	0.000	0.000
p1	-493.537	-.636	.526	5449.276	-493.537	0.000	0.000
p3	2524.952	1.873	.063	781.329	2524.952	0.000	0.000
p5	166.110	.223	.824	2288.039	166.110	0.000	0.000
cm	1901.389	.909	.365	125.589	1901.389	0.000	0.000
q1	-20.368	-1.730	.086	18.174	-20.368	0.000	0.000
q2	14079.406	.912	.364	2441.238	14079.406	0.000	0.000
q3	2096.821	.108	.914	2383.482	2096.821	0.000	0.000
q5	-5871.803	-3.907	.000	14.220	-5871.803	0.000	0.000
q6	-11864.479	-1.283	.202	279.778	-11864.479	0.000	0.000
q7	3492.020	.652	.515	308.534	3492.020	0.000	0.000
q8	16149.643	.589	.557	189.873	16149.643	0.000	0.000
q9	-10772.372	-1.826	.070	610.482	-10772.372	0.000	0.000
q10	-3586.975	-.288	.774	2556.012	-3586.975	0.000	0.000
q11	24615.328	1.748	.083	1821.086	24615.328	0.000	0.000
q12	-13659.776	-1.372	.173	1405.317	-13659.776	0.000	0.000
q13	.668	.195	.846	3.734	.668	0.000	0.000
EBT	-14825.067	-1.459	.147	1822.684	-14825.067	0.000	0.000
EAT	6151.207	.559	.577	1367.292	6151.207	0.000	0.000
π	430.350	.354	.724	487.051	430.350	0.000	0.000
r1	-3857.448	-.506	.614	185.496	-3857.448	0.000	0.000
r2	1976.314	1.375	.172	13.614	1976.314	0.000	0.000
r3	328.732	.347	.729	16.344	328.732	0.000	0.000
r4	598.653	.014	.989	810.000	598.653	0.000	0.000
r5	-23603.249	-1.052	.295	354.137	-23603.249	0.000	0.000
r6	3070.583	1.070	.287	211.907	3070.583	0.000	0.000
r7	11843.262	1.943	.054	5433.737	11843.262	0.000	0.000

r9	-4391.543	-1.211	.228	930.117	-4391.543	0.000	0.000
r8	-5888.141	-1.029	.306	4987.294	-5888.141	0.000	0.000
s2	1616.352	1.311	.193	92.420	1616.352	0.000	0.000
od	2672.688	1.244	.216	66.530	2672.688	0.000	0.000
s3	971.811	4.457	.000	135.913	971.811	0.000	0.000
s4	-526.976	-.051	.959	59.969	-526.976	0.000	0.000
s5	-52037.615	-3.346	.001	201.895	-52037.615	0.000	0.000
x1	4543.755	.527	.599	403.867	4543.755	0.000	0.000
x2	569.576	.166	.868	210.750	569.576	0.000	0.000
x3	-6596.325	-1.544	.125	86.330	-6596.325	0.000	0.000
x4	4364.220	.483	.630	1217.087	4364.220	0.000	0.000
y1	-94.320	-.890	.375	1.535	-94.320	0.000	0.000
y3	3382.934	21.194	.000	77.563	3382.934	0.000	0.000

Dependent Variable: h2
Predictors in the model: (Constant), y3, s5, y1, q13, q3, q8, r2, r3, s4, x2, q9, r9, q5, od, q1, q12, x3, s2, r5, cm, q11, q7, r6, a4, EAT, a2, s3, p5, r1, x1, q6, π, x4, p3, r4, r7, a5, EBT, q2, q10, r8, p1

Excluded variables: a, a1, a3, a6, p2, p4, q4, std, s1, y2

SEM	233.684
R	.999
R2	.997
Adj R2	.996
F	993.775
sig-F	.000

By using the Gletsjer method (setting the absolute value of residuals of regression result), and later put it as the dependent variable regressed with independent variables (the White test), the estimation result shows that all independent variables appear to have the sig value of t-stat of less than 0.05. It puts the null hypothesis accepted, interpreted as there are no heteroscedasticy existent.

With observation of n to 162 (months), independent variables (k) by 42, alfa of 0.01, the DW value to DL is set at 1.443 and DU at 2.040. The value of DW stat at 1.402 shows that the estimated equation appears to contain positive autocorrelation element.

Conclusion and Recommendations

This study is to find the effects of 4 main financial indicators of a bank to its stock price, that is the measures of rentability, liquidity, solvability, and financial distress. As much as 52 variables were found to be worth and eligible, to be estimated in particular with their effects to the stock price. In the process of estimation calculation, as much as 10 variables were excluded by the system.

From the remaining 42 independent variables, only 4 variables were found to be significant affecting the stock price variable. The 4 independent variables are market capitalisation (y3), the ratio of placement in BI to third party fund (q5), debt to equity ratio (DER, s3), and debt to asset ratio (DAR, s5).

Although the data had been collected and variables calculation had been conducted as thorough and accurate as possible, some lacks, omissions, and errors did occur, either in absolute manner and/or relatively. The absolute lacks mainly come from the non-existent data directly from the source, either BI and/or OJK, in parts, or through some periods of reporting times and dates.

The changes in the accounting systems that forcefully upheld by the authorities should not leave and annihilate the reports on the quality of productive assets for the whole periods. The inconsistency performed by the authorities appears blatantly in the lack of methods, guidance, or leads of how to make necessary adjustments from the past data to the present time showing.

Many old and past items have been omitted without clarity of changes, and/or reclassification of accounts. On the other hand, many new and present items are shown and revealed without clarity how they are generated and sourced in the past. As a consequence, many data has suffered discontinuation, misleading, and lost its integrity.

The authorities should also present the monthly financial distress figures of a bank in some disguised manner. The obvious one is the age of financial assets in the right side and the age of paired debts in the left side of the balance sheet. Likewise, the presentation of cash flow and dividends. At present, this data is shown in a quarterly manner, the published financial reports.

This research can be actualised and updated when the initial prognosis presented, aka the gap analysis, after the previous studies summarised and tabulated. The model estimation should include the relative price of the stock such as PER, EPS, DPS, PBV, PCF, DCF, and DDM.

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