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Research paper

Model and Financial Performance: Panel Data in Causality and Cointegration Test

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Abstract

This paper aims to analyze the interaction between financial performance variables and bankruptcy status of companies in the banking industry in Indonesia. This study used the test of causality and cointegration of panel data for variable bankruptcy status and variable of financial performance among others (variable of NPL, ROA, CAR, NIM, SIZE, GROWTH, LEVERAGE) at 43 banks listed on BEI during 2010-2016 financial reporting period. From the research conducted in the findings that between the status of bankruptcy and variable financial performance of banks in Indonesia are only a few variables that have a two-way relationship, this is seen in the test results of causality lags 1, using lags 5, 10 and 15 this causal relationship is getting smaller . However, cointegration has been confirmed by using lags 1-1 to 1-4 lags interval premises, there are 7 variables that in each cointegrated each other.

Keywords: *Bankruptcy status, financial performance of banking, causality, cointegration.*

1. Introduction

Cointegration is clearly discussed in [1,2,3,4], cointegration occurs between two or more series of variables that are individually integrated using time series but in some linear combinations, but in linear conditions the cointegration process has a lower integration sequence , thus the series is said to be cointegrated. In general this can be seen where each variable is a series of data and which has an integrated first order. But in some cases there are several vectors whose variables are cointegrating from the existing coefficients, will be able to form linear stationary combinations of the equations made from the collected variables. In this study using several variables of financial performance and bankruptcy related companies moving through the data series time, each variable in the analysis is estimated to follow the path randomly in accordance with the analysis techniques in use. The emergence of hypotheses about a statistically significant relationship between several financial performance variables and bankruptcy status, it can be done by examining the existence of a combination of two series cointegrasi of variables in the analysis.

Still using the proposals of [1,2,3,4] for causality analysis, this causality analysis is often called interrelated analysis or the term in biology can be known as symbiosis.

But this causality test is a natural metamorphosis that links one process to another. In the analysis of causality the most important thing to do is where the variable is considered as a determinant, and second where the variable is considered as a variable to be determined. Or in other words cause and variable variables that cause.

Whereas in metaphysical science it is explained that causality is an idea in time and space.

This research was made into 5 sections, part 1 introduction, part 2 theory, part 3 research methodology, part 4 discussion result, and part 5 conclusion from research.

2. Literature Review

Translating Sense of Causality Test

In [5,6,7] it describes the use of classical physics which has the effect of not being able to occur if there is no effect before that causes the cause. The principle of relativity theory explains that, there is a causal relationship between the causal effects. The causality relationship is associated with the use of momentum conservation in newton law, but in causality tests it can show that all effects must have a specific cause, which is the basis for the occurrence of a causality. But this is in contrast to a theory unrelated to the general use of causality in physics, so some provisions are violated in some of the major interpretations of quantum mechanics. In other cases, there are several provisions that apply, so the events that occur and experienced by humans in everyday situations is an explanation of cause and effect. In the vortex theory Descartes explains that the attractiveness of the earth is caused because the sun is in the distance, which replaces mechanistic theory. While Maxwell and Einstein can be made 3rd place as a basis for developing causal theory by restoring the theory of Descartes.

Translating Cointegration Test

To explain the notion of cointegration in simple language, there are 2 variables that exist with series of time series that are non-stationary as variable of bankruptcy status and financial performance of banking. So this we can explain further, if the series time series data has been stationary, thus making us have to distinguish the integration of the sequence of a series. Given the stationarity between the linear combination of bankruptcy status variables and the financial performance of banks, it can be said that bankruptcy status and financial performance of banking are mutually cointegrated. Thus, any time series data is thought about

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cointegration, such as describing a particular type of long-run equilibrium relationship. It is literally necessary to explain what cointegration is. Some use R-squared to determine the relationship between one variable and another.

Hypothesis

1. There is a two-way causal relationship between bankruptcy status and financial performance of banking in Indonesia during the period of research data.
2. There is a long-term equilibrium relationship between bankruptcy status and financial performance of banks in Indonesia during the period of research data.

3. Research Method

This research was conducted by the authors in March 2018, using data variable bankruptcy status and banking performance variables consisting of NPL, ROA, CAR, NIM, SIZE, GROWTH, LEVERAGE on 43 banking companies listed on the Stock Exchange. This study uses the data in though from the financial statements for financial book year book ending 2010 to book year 2016. This study uses the test of causality and cointegration to see the relationship among the variables in doing research.

4. Result and Discussion

depart from the illustration above, then this study will try to peel two fundamental question related bankruptcy status of bank in indonesia with financial performance of banking in indonesia, namely (i) how the causality relationship between the variables in carefully; and (ii) how variable the relationship is in the long term.

Table 1 : Result causality granger lags 1

Pairwise Granger Causality Tests

Lags: 1

Null Hypothesis:	Obs	F-Statistic	Prob.
LEVERAGE does not Granger Cause GROWTH	400	4.52140	0.0341
GROWTH does not Granger Cause LEVERAGE		3.21395	0.0738
NIM does not Granger Cause GROWTH	400	12.3754	0.0005
GROWTH does not Granger Cause NIM		0.00765	0.9303
OPERATION_EFICIENCY_CAR does not Granger Cause GROWTH	400	0.92922	0.3357
GROWTH does not Granger Cause OPERATION_EFICIENCY_CAR		3.76536	0.0530
RISK_PROFILE_NPL does not Granger Cause GROWTH	400	3.95460	0.0474
GROWTH does not Granger Cause RISK_PROFILE_NPL		3.37303	0.0670
ROA does not Granger Cause GROWTH	400	4.47125	0.0351
GROWTH does not Granger Cause ROA		0.78489	0.3762
SIZE does not Granger Cause GROWTH	400	12.7282	0.0004
GROWTH does not Granger Cause SIZE		0.14697	0.7017
STATUS_BANK does not Granger Cause GROWTH	400	26.7871	4.E-07
GROWTH does not Granger Cause STATUS_BANK		0.27100	0.6030
NIM does not Granger Cause LEVERAGE	400	11.6431	0.0007
LEVERAGE does not Granger Cause NIM		8.77676	0.0032
OPERATION_EFICIENCY_CAR does not Granger Cause LEVERAGE	400	13.3092	0.0003
LEVERAGE does not Granger Cause OPERATION_EFICIENCY_CAR		18.5563	2.E-05
RISK_PROFILE_NPL does not Granger Cause LEVERAGE	400	5.38028	0.0209
LEVERAGE does not Granger Cause RISK_PROFILE_NPL		4.00246	0.0461
ROA does not Granger Cause LEVERAGE	400	3.46544	0.0634
LEVERAGE does not Granger Cause ROA		0.14355	0.7050
SIZE does not Granger Cause LEVERAGE	400	0.41446	0.5201
LEVERAGE does not Granger Cause SIZE		2.19313	0.1394
STATUS_BANK does not Granger Cause LEVERAGE	400	48.2281	2.E-11
LEVERAGE does not Granger Cause STATUS_BANK		5.73215	0.0171
OPERATION_EFICIENCY_CAR does not Granger Cause NIM	400	13.5196	0.0003
NIM does not Granger Cause OPERATION_EFICIENCY_CAR		4.56979	0.0332
RISK_PROFILE_NPL does not Granger Cause NIM	400	2.98463	0.0848
NIM does not Granger Cause RISK_PROFILE_NPL		10.2634	0.0015
ROA does not Granger Cause NIM	400	1.16420	0.2813
NIM does not Granger Cause ROA		2.44819	0.1185
SIZE does not Granger Cause NIM	400	0.65209	0.4199
NIM does not Granger Cause SIZE		9.24981	0.0025
STATUS_BANK does not Granger Cause NIM	400	79.4402	2.E-17
NIM does not Granger Cause STATUS_BANK		4.06702	0.0444
RISK_PROFILE_NPL does not Granger Cause OPERATION_EFICIENCY_CAR	400	1.61234	0.2049
OPERATION_EFICIENCY_CAR does not Granger Cause RISK_PROFILE_NPL		7.24453	0.0074
ROA does not Granger Cause OPERATION_EFICIENCY_CAR	400	2.49101	0.1153
OPERATION_EFICIENCY_CAR does not Granger Cause ROA		1.06800	0.3020
SIZE does not Granger Cause OPERATION_EFICIENCY_CAR	400	0.78601	0.3758
OPERATION_EFICIENCY_CAR does not Granger Cause SIZE		2.79314	0.0955
STATUS_BANK does not Granger Cause OPERATION_EFICIENCY_CAR	400	12.1174	0.0006
OPERATION_EFICIENCY_CAR does not Granger Cause STATUS_BANK		1.24539	0.2651
ROA does not Granger Cause RISK_PROFILE_NPL	400	0.45450	0.5006
RISK_PROFILE_NPL does not Granger Cause ROA		0.75239	0.3862
SIZE does not Granger Cause RISK_PROFILE_NPL	400	0.25840	0.6115
RISK_PROFILE_NPL does not Granger Cause SIZE		0.09674	0.7559
STATUS_BANK does not Granger Cause RISK_PROFILE_NPL	400	19.5275	1.E-05
RISK_PROFILE_NPL does not Granger Cause STATUS_BANK		1.30749	0.2535
SIZE does not Granger Cause ROA	400	0.38348	0.5361
ROA does not Granger Cause SIZE		0.14579	0.7028
STATUS_BANK does not Granger Cause ROA	400	11.1583	0.0009
ROA does not Granger Cause STATUS_BANK		0.54651	0.4602
STATUS_BANK does not Granger Cause SIZE	400	22.3380	3.E-06
SIZE does not Granger Cause STATUS_BANK		0.57929	0.4470

Sourced : Proceed author by software

Table 2 : Result causality granger lags 5

Pairwise Granger Causality Tests			
Lags: 5			
Null Hypothesis:	Obs	F-Statistic	Prob.
LEVERAGE does not Granger Cause GROWTH	396	3.98234	0.0016
GROWTH does not Granger Cause LEVERAGE		2.45372	0.0331
NIM does not Granger Cause GROWTH	396	4.82563	0.0003
GROWTH does not Granger Cause NIM		0.28073	0.9236
OPERATION_EFICIENCY_CAR does not Granger Cause GROWTH	396	3.51281	0.0041
GROWTH does not Granger Cause OPERATION_EFICIENCY_CAR		2.48692	0.0311
RISK_PROFILE_NPL does not Granger Cause GROWTH	396	0.88480	0.4912
GROWTH does not Granger Cause RISK_PROFILE_NPL		2.56114	0.0269
ROA does not Granger Cause GROWTH	396	2.35680	0.0399
GROWTH does not Granger Cause ROA		1.48345	0.1942
SIZE does not Granger Cause GROWTH	396	2.67164	0.0217
GROWTH does not Granger Cause SIZE		0.96016	0.4421
STATUS_BANK does not Granger Cause GROWTH	396	4.28318	0.0008
GROWTH does not Granger Cause STATUS_BANK		0.27565	0.9264
NIM does not Granger Cause LEVERAGE	396	2.91571	0.0135
LEVERAGE does not Granger Cause NIM		1.16643	0.3251
OPERATION_EFICIENCY_CAR does not Granger Cause LEVERAGE	396	2.08273	0.0668
LEVERAGE does not Granger Cause OPERATION_EFICIENCY_CAR		9.27538	2.E-08
RISK_PROFILE_NPL does not Granger Cause LEVERAGE	396	1.63238	0.1504
LEVERAGE does not Granger Cause RISK_PROFILE_NPL		0.85749	0.5098
ROA does not Granger Cause LEVERAGE	396	2.58268	0.0258
LEVERAGE does not Granger Cause ROA		1.09652	0.3618
SIZE does not Granger Cause LEVERAGE	396	1.41679	0.2172
LEVERAGE does not Granger Cause SIZE		2.14367	0.0596
STATUS_BANK does not Granger Cause LEVERAGE	396	7.07990	2.E-06
LEVERAGE does not Granger Cause STATUS_BANK		1.56515	0.1689
OPERATION_EFICIENCY_CAR does not Granger Cause NIM	396	3.28876	0.0064
NIM does not Granger Cause OPERATION_EFICIENCY_CAR		2.53678	0.0282
RISK_PROFILE_NPL does not Granger Cause NIM	396	0.60233	0.6982
NIM does not Granger Cause RISK_PROFILE_NPL		2.89085	0.0141
ROA does not Granger Cause NIM	396	0.45022	0.8131
NIM does not Granger Cause ROA		1.17495	0.3208
SIZE does not Granger Cause NIM	396	0.88285	0.4925
NIM does not Granger Cause SIZE		2.60009	0.0250
STATUS_BANK does not Granger Cause NIM	396	9.84222	7.E-09
NIM does not Granger Cause STATUS_BANK		1.07580	0.3733
RISK_PROFILE_NPL does not Granger Cause OPERATION_EFICIENCY_CAR	396	1.02725	0.4012
OPERATION_EFICIENCY_CAR does not Granger Cause RISK_PROFILE_NPL		1.26632	0.2777
ROA does not Granger Cause OPERATION_EFICIENCY_CAR	396	0.83931	0.5224
OPERATION_EFICIENCY_CAR does not Granger Cause ROA		2.63755	0.0232
SIZE does not Granger Cause OPERATION_EFICIENCY_CAR	396	1.48459	0.1938
OPERATION_EFICIENCY_CAR does not Granger Cause SIZE		1.75921	0.1203
STATUS_BANK does not Granger Cause OPERATION_EFICIENCY_CAR	396	1.98753	0.0796
OPERATION_EFICIENCY_CAR does not Granger Cause STATUS_BANK		0.37660	0.8647
ROA does not Granger Cause RISK_PROFILE_NPL	396	1.11746	0.3505
RISK_PROFILE_NPL does not Granger Cause ROA		0.33253	0.8932
SIZE does not Granger Cause RISK_PROFILE_NPL	396	2.12961	0.0612
RISK_PROFILE_NPL does not Granger Cause SIZE		0.74406	0.5909
STATUS_BANK does not Granger Cause RISK_PROFILE_NPL	396	1.71426	0.1303
RISK_PROFILE_NPL does not Granger Cause STATUS_BANK		0.46183	0.8046
SIZE does not Granger Cause ROA	396	0.38466	0.8593
ROA does not Granger Cause SIZE		0.66523	0.6501
STATUS_BANK does not Granger Cause ROA	396	1.41172	0.2190
ROA does not Granger Cause STATUS_BANK		0.35276	0.8804
STATUS_BANK does not Granger Cause SIZE	396	3.55160	0.0038
SIZE does not Granger Cause STATUS_BANK		0.67724	0.6409

Sourced : Proceed author by software

Table 3 : Result causality granger lags 10

Pairwise Granger Causality Tests			
Lags: 10			
Null Hypothesis:	Obs	F-Statistic	Prob.
LEVERAGE does not Granger Cause GROWTH	391	1.56792	0.1142
GROWTH does not Granger Cause LEVERAGE		1.64751	0.0916
NIM does not Granger Cause GROWTH	391	3.31305	0.0004
GROWTH does not Granger Cause NIM		1.26448	0.2488
OPERATION_EFICIENCY_CAR does not Granger Cause GROWTH	391	2.43519	0.0080
GROWTH does not Granger Cause OPERATION_EFICIENCY_CAR		0.90036	0.5329
RISK_PROFILE_NPL does not Granger Cause GROWTH	391	1.35348	0.2003
GROWTH does not Granger Cause RISK_PROFILE_NPL		4.28921	1.E-05
ROA does not Granger Cause GROWTH	391	2.52124	0.0060
GROWTH does not Granger Cause ROA		0.91025	0.5237
SIZE does not Granger Cause GROWTH	391	1.69878	0.0792
GROWTH does not Granger Cause SIZE		3.25700	0.0005
STATUS_BANK does not Granger Cause GROWTH	391	1.51103	0.1332
GROWTH does not Granger Cause STATUS_BANK		0.39369	0.9492
NIM does not Granger Cause LEVERAGE	391	2.91952	0.0016
LEVERAGE does not Granger Cause NIM		1.52297	0.1290
OPERATION_EFICIENCY_CAR does not Granger Cause LEVERAGE	391	2.01796	0.0306
LEVERAGE does not Granger Cause OPERATION_EFICIENCY_CAR		4.29133	1.E-05
RISK_PROFILE_NPL does not Granger Cause LEVERAGE	391	2.08262	0.0250
LEVERAGE does not Granger Cause RISK_PROFILE_NPL		1.05557	0.3961
ROA does not Granger Cause LEVERAGE	391	2.57606	0.0050
LEVERAGE does not Granger Cause ROA		1.59339	0.1065
SIZE does not Granger Cause LEVERAGE	391	1.33766	0.2083
LEVERAGE does not Granger Cause SIZE		2.01258	0.0311
STATUS_BANK does not Granger Cause LEVERAGE	391	1.35315	0.2005
LEVERAGE does not Granger Cause STATUS_BANK		1.38185	0.1865
OPERATION_EFICIENCY_CAR does not Granger Cause NIM	391	2.28708	0.0131
NIM does not Granger Cause OPERATION_EFICIENCY_CAR		1.97600	0.0348
RISK_PROFILE_NPL does not Granger Cause NIM	391	1.01069	0.4336
NIM does not Granger Cause RISK_PROFILE_NPL		3.72808	9.E-05
ROA does not Granger Cause NIM	391	0.65853	0.7628
NIM does not Granger Cause ROA		1.14455	0.3277
SIZE does not Granger Cause NIM	391	2.51225	0.0062
NIM does not Granger Cause SIZE		3.59073	0.0001
STATUS_BANK does not Granger Cause NIM	391	2.76424	0.0027
NIM does not Granger Cause STATUS_BANK		0.57013	0.8383
RISK_PROFILE_NPL does not Granger Cause OPERATION_EFICIENCY_CAR	391	0.78215	0.6461
OPERATION_EFICIENCY_CAR does not Granger Cause RISK_PROFILE_NPL		1.12028	0.3456
ROA does not Granger Cause OPERATION_EFICIENCY_CAR	391	0.98084	0.4596
OPERATION_EFICIENCY_CAR does not Granger Cause ROA		1.85280	0.0505
SIZE does not Granger Cause OPERATION_EFICIENCY_CAR	391	0.84128	0.5890
OPERATION_EFICIENCY_CAR does not Granger Cause SIZE		0.99333	0.4486
STATUS_BANK does not Granger Cause OPERATION_EFICIENCY_CAR	391	0.33091	0.9726
OPERATION_EFICIENCY_CAR does not Granger Cause STATUS_BANK		0.38490	0.9530
ROA does not Granger Cause RISK_PROFILE_NPL	391	0.93278	0.5028
RISK_PROFILE_NPL does not Granger Cause ROA		0.51158	0.8819
SIZE does not Granger Cause RISK_PROFILE_NPL	391	1.23749	0.2653
RISK_PROFILE_NPL does not Granger Cause SIZE		1.12843	0.3395
STATUS_BANK does not Granger Cause RISK_PROFILE_NPL	391	0.62563	0.7920
RISK_PROFILE_NPL does not Granger Cause STATUS_BANK		0.28505	0.9843
SIZE does not Granger Cause ROA	391	0.64919	0.7712
ROA does not Granger Cause SIZE		1.06584	0.3878
STATUS_BANK does not Granger Cause ROA	391	0.60456	0.8101
ROA does not Granger Cause STATUS_BANK		0.29296	0.9826
STATUS_BANK does not Granger Cause SIZE	391	1.64181	0.0931
SIZE does not Granger Cause STATUS_BANK		1.23179	0.2688

Sourced : Proceed author by software

Table 4 : Result causality granger lags 15

Pairwise Granger Causality Tests			
Lags: 15			
Null Hypothesis:	Obs	F-Statistic	Prob.
LEVERAGE does not Granger Cause GROWTH	386	1.17585	0.2884
GROWTH does not Granger Cause LEVERAGE		1.01837	0.4351
NIM does not Granger Cause GROWTH	386	2.44995	0.0020
GROWTH does not Granger Cause NIM		0.47065	0.9543
OPERATION_EFICIENCY_CAR does not Granger Cause GROWTH	386	1.97320	0.0164
GROWTH does not Granger Cause OPERATION_EFICIENCY_CAR		0.77594	0.7045
RISK_PROFILE_NPL does not Granger Cause GROWTH	386	0.81032	0.6662
GROWTH does not Granger Cause RISK_PROFILE_NPL		3.12958	8.E-05
ROA does not Granger Cause GROWTH	386	1.92481	0.0200
GROWTH does not Granger Cause ROA		0.61424	0.8634
SIZE does not Granger Cause GROWTH	386	1.26142	0.2244
GROWTH does not Granger Cause SIZE		2.43870	0.0021
STATUS_BANK does not Granger Cause GROWTH	386	1.20961	0.2618
GROWTH does not Granger Cause STATUS_BANK		0.37648	0.9843
NIM does not Granger Cause LEVERAGE	386	3.12890	8.E-05
LEVERAGE does not Granger Cause NIM		1.36109	0.1640
OPERATION_EFICIENCY_CAR does not Granger Cause LEVERAGE	386	2.24954	0.0050
LEVERAGE does not Granger Cause OPERATION_EFICIENCY_CAR		2.58407	0.0011
RISK_PROFILE_NPL does not Granger Cause LEVERAGE	386	2.38313	0.0027
LEVERAGE does not Granger Cause RISK_PROFILE_NPL		1.54761	0.0864
ROA does not Granger Cause LEVERAGE	386	2.11310	0.0090
LEVERAGE does not Granger Cause ROA		1.46843	0.1143
SIZE does not Granger Cause LEVERAGE	386	1.03308	0.4200
LEVERAGE does not Granger Cause SIZE		1.58104	0.0765
STATUS_BANK does not Granger Cause LEVERAGE	386	1.66679	0.0556
LEVERAGE does not Granger Cause STATUS_BANK		1.12979	0.3276
OPERATION_EFICIENCY_CAR does not Granger Cause NIM	386	1.82660	0.0298

NIM does not Granger Cause OPERATION_EFICIENCY_CAR		2.17675	0.0069
RISK_PROFILE_NPL does not Granger Cause NIM	386	1.22229	0.2522
NIM does not Granger Cause RISK_PROFILE_NPL		3.71747	4.E-06
ROA does not Granger Cause NIM	386	0.80149	0.6761
NIM does not Granger Cause ROA		0.89558	0.5695
SIZE does not Granger Cause NIM	386	2.03363	0.0127
NIM does not Granger Cause SIZE		4.58167	5.E-08
STATUS_BANK does not Granger Cause NIM	386	3.80297	3.E-06
NIM does not Granger Cause STATUS_BANK		0.47265	0.9534
RISK_PROFILE_NPL does not Granger Cause OPERATION_EFICIENCY_CAR	386	1.58256	0.0761
OPERATION_EFICIENCY_CAR does not Granger Cause RISK_PROFILE_NPL		1.66007	0.0570
ROA does not Granger Cause OPERATION_EFICIENCY_CAR	386	0.86932	0.5993
OPERATION_EFICIENCY_CAR does not Granger Cause ROA		1.97820	0.0160
SIZE does not Granger Cause OPERATION_EFICIENCY_CAR	386	0.87383	0.5942
OPERATION_EFICIENCY_CAR does not Granger Cause SIZE		1.28189	0.2108
STATUS_BANK does not Granger Cause OPERATION_EFICIENCY_CAR	386	0.41782	0.9737
OPERATION_EFICIENCY_CAR does not Granger Cause STATUS_BANK		0.29825	0.9954
ROA does not Granger Cause RISK_PROFILE_NPL	386	1.14279	0.3162
RISK_PROFILE_NPL does not Granger Cause ROA		0.56350	0.9019
SIZE does not Granger Cause RISK_PROFILE_NPL	386	1.20489	0.2654
RISK_PROFILE_NPL does not Granger Cause SIZE		1.61837	0.0667
STATUS_BANK does not Granger Cause RISK_PROFILE_NPL	386	0.79494	0.6834
RISK_PROFILE_NPL does not Granger Cause STATUS_BANK		1.04346	0.4095
SIZE does not Granger Cause ROA	386	0.76418	0.7174
ROA does not Granger Cause SIZE		1.24514	0.2357
STATUS_BANK does not Granger Cause ROA	386	0.55348	0.9087
ROA does not Granger Cause STATUS_BANK		0.23487	0.9988
STATUS_BANK does not Granger Cause SIZE	386	1.24883	0.2331
SIZE does not Granger Cause STATUS_BANK		1.83568	0.0287

Sourced : Proceed author by software

From table 1,2,3 and 4 above, the result of the test of causal granger by using lasg 1, 5, 10 and 15. Seen the test result on lags that use the variables that have a significant correlation on lags that is leverage and growth, risk profile da growth, NIM and leverage, risk profle and leverage, CAR and NIM, NPL and NIM while others only have one-way and opposite relationships. For lags 5 significant variables of each leverage and growth, CAR and Growth, NIM and CAR. In lags 10 significant variables and have a two-way relationship that is SIZE and Growth, NIM and CAR, NIM and SIZE, whereas with lags 15 only 2 significant variables are Leverage and CAR, CAR and NPL, while other variables are not significant in two directions .[9]

Table 5 : Result for cointegration lags 1 to interval 1

Lags interval (in first differences): 1 to 1				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.310438	632.5431	159.5297	0.0000
At most 1 *	0.263424	484.2355	125.6154	0.0001
At most 2 *	0.210925	362.2439	95.75366	0.0000
At most 3 *	0.192125	267.7231	69.81889	0.0000
At most 4 *	0.170736	182.5975	47.85613	0.0000
At most 5 *	0.131953	107.8979	29.79707	0.0000
At most 6 *	0.120148	51.43571	15.49471	0.0000
At most 7	0.000910	0.363124	3.841466	0.5468
Trace test indicates 7 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Sourced : Proceed author by software

Table 6 : Result for cointegration lags 1 to interval 2

Lags interval (in first differences): 1 to 2				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.269333	502.9500	159.5297	0.0000
At most 1 *	0.222042	378.0585	125.6154	0.0000
At most 2 *	0.183230	278.1274	95.75366	0.0000
At most 3 *	0.156892	207.2012	69.81889	0.0000
At most 4 *	0.138636	139.2782	47.85613	0.0000
At most 5 *	0.112576	79.88138	29.79707	0.0000
At most 6 *	0.077137	32.34737	15.49471	0.0001
At most 7	0.001000	0.398248	3.841466	0.5280
Trace test indicates 7 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Sourced : Proceed author by software

Table 7 : Result for cointegration lags 1 to interval 3

Lags interval (in first differences): 1 to 3				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.246207	400.9372	159.5297	0.0000
At most 1 *	0.180621	288.7300	125.6154	0.0000
At most 2 *	0.134913	209.6442	95.75366	0.0000
At most 3 *	0.115595	152.1088	69.81889	0.0000
At most 4 *	0.095439	103.3414	47.85613	0.0000
At most 5 *	0.091843	63.52022	29.79707	0.0000
At most 6 *	0.060836	25.27386	15.49471	0.0012
At most 7	0.000897	0.356081	3.841466	0.5507
Trace test indicates 7 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Sourced : Proceed author by software

Table 8 : Result for cointegration lags 1 to interval 4

Lags interval (in first differences): 1 to 4				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.225126	361.4956	159.5297	0.0000
At most 1 *	0.162804	260.4937	125.6154	0.0000
At most 2 *	0.135729	190.1256	95.75366	0.0000
At most 3 *	0.095505	132.3613	69.81889	0.0000
At most 4 *	0.092018	92.61125	47.85613	0.0000
At most 5 *	0.075382	54.38496	29.79707	0.0000
At most 6 *	0.056395	23.34841	15.49471	0.0027
At most 7	0.000913	0.361674	3.841466	0.5476
Trace test indicates 7 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Sourced : Proceed author by software

For the results of cointegration test presented in table 5, 6, 7 and 8 above. It can be seen that by using interval lag interval from 1 to 1 interval interval lags 1-4 almost as a whole there is cointegration between bankruptcy variable variable and significant banking financial performance.[10]

5. Conclusion

In [8] explaining the important points are a number of reasons why the financial sector in particular can play an effective and significant role in promoting a country's economic growth. The financial sector, especially the banking sector, is considered a financial intermediary agency that is tasked with channeling available resources to the most profitable sectors in the economy. Thus the financial institution will allocate the available funding source from the economic unit that experienced a surplus of funds to the economic unit that deficit for investment. The existence of the exposure makes research conducted by this author, very provide input, especially for the banking sector in Indonesia. One conclusion that needs to be followed up is that related to the existence of long-term relationship to bankruptcy status of banks in Indonesia with the financial performance of banks in Indonesia.

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