Highlighting Differences in Cash Flow from Investing Activities and Capital Adequacy Ratio Relationship between Indonesian and Malaysian Commercial Banks

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Abstract

This study compares the impact of Cash Flow from Investing Activities (CFI) on the Capital Adequacy Ratio (CAR) between Indonesian and Malaysian commercial banks. The study uses time-series data from the countries' big-five banks from 2009 to 2013. This study engages the regression model to measure the CFI's impact on CAR and then applies a Chow test to compare the discrete regression output between the two countries. The statistical tests reveal that the CFI of Indonesian banks correlated negatively with the CAR, while Malaysian banks showed a positive correlation. Consistent with the correlations, the influence of CFI on CAR in both countries is equally significant. By a Chow test, this study concluded that the CFI's impact on CAR significantly differs between the banks in the countries. From the literature perspective, the CFI and CAR relationship of Malaysian banks is closer to the findings of previous detached studies. The figures indicate that nowadays, Malaysian banking harvests cash inflow from their past investments. Otherwise, the Indonesian banks portray the ongoing spending for long-term investment during the recent five years. This preference results in a consistent decrease in CFI when the CAR moves upward. Departing from the existing differences, to optimize the CFI and CAR relationship, this study suggests the CFI and CAR equilibrium formulation for banks to avoid cash shortages and failure to earn interest due to capital buffer retaining to maintain a high ratio of capital adequacy.

Keywords: Cash Flows from Investing Activities, Capital Adequacy Ratio, Commercial Bank

1. Introduction

Capital and investment are the banks' sources and uses of funds to scale up and maintain viability in the long term. A capital adequacy ratio is a tool the Basel Committee on Banking Supervision recommends for measuring banking healthy. With an adequate capital adequacy ratio, the banks expect to ensure financial stability and reduce their financial risk. In addition, banks with high capital adequacy ratios provide a higher capital buffer to overcome their financial obligations. CAR formula compares the banks' total capital with Risk-Weighted Assets (RWA). The Tier 1 of the capital, among others, comprised retained earnings derived from accumulated net profit/loss over the bank's operation. On the other hand, RWA includes market, credit, and operational risks for the assets traded in bank operations (Dhanda & Rani, 2010).

Cash Flow from Investing Activities is a fund flow object for acquiring assets and providing long-life services with significant transaction figures. Expenditures for higher assets acquisition (Omoregie & Kelikume, 2017) guarantee sufficient bank capacity to generate profits (Majumder & Li, 2018) to raise capital, including the capital adequacy ratio in the long run. In financial reporting, the CFI increases the earnings assets value on the left side of the balance sheet after being previously funded by long-term debt and equity on the right side. Afterwards, capitalized CFI into long-term assets contributes to equity capitalization and long-term debt settlement, which in turn, shapes the CAR. Hence, both CFI and CAR contributed to informing the banks' financial strength.

Indonesian and Malaysian banks conducted CFI to hold earning assets and expect capital accumulation in the long term. The fact showed that Indonesian commercial banks practised higher CAR operations based on their investing activities but are still relatively vulnerable to global financial crises. On the other hand, Malaysian banks with lower CAR seemed more reliable to withstand the effect of such a crisis. Even though conceptually, a high CAR guarantees to secure customer funds from liquidity risk.

The relationship controversy between CAR and the commercial banks' reliability in facing the crisis raised suspicion of a different impact of Cash Flow from Investing Activities on the Capital Adequacy Ratio between Indonesian and Malaysian commercial banks. Hence, this study aims to compare the CFI's effect on the CAR between the two countries post crises of 2008.

1.1 Capital Adequacy Ratio

A capital adequacy ratio is a tool the banks adopt to show the ability to withstand losses on their assets' value (Sangmi & Nazir, 2010), comparing total capital to Risk-Weighted Asset Ratio (Dhanda & Rani, 2010). Capital comprises long-term funds contributed to a bank primarily by its owner, consisting mainly of stock, reserves, and retained earnings. The Capital to Risk-Weighted Assets ratio is a standard model for measuring the CAR. Including Risk-Weighted Assets (RWA) as the denominator in the formula, the CAR is also called the Capital to Risk-Weighted Assets Ratio (CRAR). Inadequacy with the banks' capital potentially leads to systemic banking risk.

The critical characteristic of bank capital is its ability to absorb losses and bear the banks to remain going concerned (Farag, Harland, & Nixon, 2013). Therefore, bank managers have to decide the amount of adequate capital to maintain and seek to obtain the source of funds at lower costs and risks to ensure bank capital availability (Bell & Hindmoor, 2017). Bank capital is a cushion against a drop in asset value, which could force the bank into insolvency or have more liabilities than assets, meaning that the bank can be forced into liquidation (Davies, 2015). Capital adequacy regulation not only intends to enlarge the banks' capital but, according to Laiola (2015), also aims to match the burden of credit losses with a capital buffer to absorb such losses. The vast capital amount is essential for the banks to overcome business risk changes that are difficult to predict (Maurin & Toivanen, 2015).

The regulation calls for an increase in their financing source quality and reduces the bank's propensity to rely on debt. In addition, it is a source of funds that serves as a buffer for the decline in bank assets' value, thus preventing the increase in liabilities from exceeding the number of assets. Upper Tier 2 is also a fixed capital, subordinated in repayment to other creditors, such as undated bonds and other irredeemable subordinated debts. Banks experiencing a lack of capital can experience insolvency or even force the bank into a liquidity shortage. Thus, it is relevant to Scannella (2012) that bank capital should be a bearing to maintain the banks' viability. Kunt, Detragiache & Merrouche (2013) found that banks with better capitalization tended to experience lesser pressure on their equity value during the crisis. The proposed Basel aims to support the strengthening of bank capital to enhance capital placement effectiveness (Ramona, 2013). Unfortunately, a very high CAR indicates that the bank is conservative and has not utilized its capital's full potential. In addition, the relatively high cost of equity encourages banks to lower the amount of loan capital to achieve a healthy capital ratio.

The capital structure consists of a firm's equity and debt financing proportion to carry out its operations and grow (Luu, 2021). The pure form of regulatory capital comprises the elements of a bank's equity (Adesina & Mwamba, 2016) that contains the shareholders' funds contribution through their purchases of the bank's stock. Thus, the bank's capital is net worth derived from share purchases by shareholders plus the proportion of profit or loss retained during the life of the bank's operations. In addition, included in bank capital are preferred stock, subordinated debt, and general reserves, all of which are loss-absorbing and eligible for calculating capital adequacy ratio (Belén & Gartner, 2016). The fulfilment of the higher capital amount stimulates new challenges in developing countries to proportionately use the new capital strength (Gupta & Bhat, 2014).

Kishore (2017) classified the core capital ratio as Tier 1 capital/Risk-weighted assets, while the Tier 1 capital ratio consists of the Eligible Tier 1 Capital/Risk-weighted assets. Tier 1 capital has the characteristic of the most permanent capital (Kunt, Detragiache, & Merrouche, 2013), often used as an indicator to assess the bank size. Tier 1 capital, also known as core capital, includes bank capital in ordinary share capital and noncumulative preferred stock. Understanding the net capital ratio leads to adjusting capital ratios to improve bank assets' quality (Ramona, 2013).

According to (Yuanjuan & Shishun, 2012), the public believes that banks operating with significant Tier 1 buffer capital tend to have higher reserves to absorb financial shocks' risks. The Tier 2 Capital or additional capital includes the source of funds in the form of gains derived from investment assets, funds derived from long-term debt with maturities of more than five years, and hidden reserves contour the excess provision to anticipate losses on loans and leases. The banks can bring together their total debt by adding Tier 2 capital as the reserves to cover credit risk losses. Additional Tier 2 capital consists of non-common equity, such as long-term liabilities with subordinate rights in repayment and long-dated subordinated bonds (Kishore, 2017). According to (Abbas & Younas, 2021), bank capital positively influences the bank's total risk.

1.2 Risk-Weighted Assets

Banking is a risk-intensive industry. The risk threatens financial transactions' success; it becomes a premise in economics that income is a function of the risk (Arnold, 2014). Therefore, Basel II strongly emphasizes the need for credit institutions' risk management functions to overcome the threats due to banking risk growth. Since risk assessment is the core of capital planning, one of the management's biggest challenges is to model risk dynamically.

To determine the RWA, subject to the Basel II supervisory validation and approval, the banks may recognize several risk categories, such as credit, market, and operational risks (Roy, 2016). Banks use the regulatory risk weight coefficient in the standard method according to the loan quality quantified by external ratings (Klepczarek, 2015). Banks' asset is mainly composed of loans and advances as the primary source of income and expect to influence the banks' profitability (Al Zaidanin, 2020). The bank's assets include all financial and nonfinancial assets in the form of tangible and intangible assets the bank owns or the third parties should pay at a specified time in the future. Assets are the probable future economic benefits an entity obtained or controlled as the result of past business transactions.

Basel Accord weighs each of these assets with a level of risk regulated by the BCBS to calculate the capital adequacy ratio providing the banks with some latitude in setting their capital requirements. The financial assets include investments in government mortgages, individual loans, loans by commercial enterprises, and interbank loans (Farag, Harland, & Nixon, 2013). In addition, liquidity risk refers to the liquidity market (Perobelli, Famá, & Sacramento, 2016) and the ease of converting assets into cash (Gideon, Petersen, Petersen, & Waal, 2012). Thus, Bassel Committee simplifies banking risk into three categories: credit risk, market risk, and operational risk.

Credit risk is related to the interest rate of loanable funds from consumer savings, business savings, government budget surplus, and reserve increases in the money supply. Behr, Schmidt, & Xie (2010) use the bank's loan portfolio's average default ratio as an indicator of credit risk. Credit risk includes losses from credit migration in the form of credit downgrades. Credit risk is related to the banks' debt financing and investing activities (Fuad, Disman, Nugraha, & Mayasari, 2021). Unfortunately, the low level of credit distribution indicates that the banks are concerned about running conservatively with lower credit risk (Pasiouras, Tanna, & Gaganis, 2011). In order to cultivate earning capitalization, credit risk requires special attention because some previous studies concluded that credit risk has a negative impact on profitability (Rasa, 2021).

Bank attention to credit risk is essential because inherent in the customers' failure to repay the debt (Arora, 2012), resulting in a loss and constituting a risk for the bank. Nevertheless, a lower credit level brought the bank into a conservative style. The term credit line refers to an agreement on lending-borrowing agreed upon by the parties under the bank's conditions to the borrower (Mora, 2010). On the other hand, creditors always face credit risks stemming from customers' failure to repay their debts. Hence, the bank must balance failure risk with potential acceptance from customers to prevent credit risk. According to Dedu & Nechif (2010), the bankruptcy of individual debtors may be due to the lack of timeliness in loan payments or banks holding inaccurate information on borrowers.

Market risk is a potential loss due to costs incurred regarding the market changes, including the threat from the changes in market prices of on and off-balance sheet commodities (Dhanda & Rani, 2010). In addition, the trigger of market risk is rather extensive due to the indirect role of the changes in political factors, social factors, and international market fluctuations in influencing the financial industry.

According to Rose & Hudgins (2013), a market risk arises due to changes in the value of bank assets, liabilities, and net worth, as well as the changes in interest and exchange rates. The risks are affected by the prevailing interest rates, foreign exchange, and public trust in the issuing banks' securities combination (Sbârcea, 2017). Market risk is more related to the bank's failure to sell its products, including off-balance sheets due to price changes, which the investors should pay. In addition, market risk may result in a loss of money due to changes in the value of assets investment (Sato, Tasca, & Isogai, 2019).

Operational risk develops due to internal factors such as personnel disability, system weakness, lack of technology, and external events (Xie, Wu, & Hu, 2011) such as natural disasters. Therefore, as a business institution, a bank should emphasize the need for adequate internal controls, quality supervision, policies and restrictions, and risk measurement and monitoring to minimize risk.

According to Ewa (2018), greater globalization and the increasing role of financial markets significantly influence operational banking risk. Hence, the Basel Committee on Banking Supervision underlined the

importance of operational risk categorization and the capital requirements to cover the losses connected with such a risk. In order to minimize operational risks, the banks require improvements in information systems, reporting structures, compliance monitoring, and funding gap minimization. Ames, Schuermann, & Scott, (2015) pointed out that operational risks contribute up to 10-30% of the overall banking risk, although it is severe to measure. Furthermore, Chang & Lin (2011) asserted that information asymmetry about the company's internal conditions could lead to risk management variances.

1.3 Cash Flows from Investing Activities

According to Gordon, Henry, Jorgensen, & Linthicum (2017), cash flow from investing activities covers the costs of obtaining returns on investment. Cash flows from investing involve cash in and out related to long-term assets ownership, loan provision and recollection, and acquisition and retirement of productive long-term assets. Cash inflows from investing activities include the receipts from the collected long-term loans, the sale of bonds and equity securities of other companies, and sales of property, factories, and equipment. In the long term, investment return affects cash flow because it increases operating capacity, results in profit and loss, and in turn raises capital. Conversely, cash outflows from investing activities include lending to other entities, purchasing bonds or equity securities from other parties, and purchasing property, factories, and equipment.

Investment is what someone does with the savings to increase over time, including the commitment of current resources to deriving greater resources in the future. Acquisition of such assets primarily increases the bank's size (Holloway, Rochman, & Laes, 2013) and financial performance, such as efficiency and profitability (Lee, Liang, & Huang, 2013). Investing activities cover a funding commitment to obtain an asset or assets group in the future concerning the ownership of various assets derived from current revenues, even though sensitive to cash flow because they cannot expect to withstand financial risks every time (Dasgupta, Noe, & Wang, 2011).

Ostergaard, Sasson, & Sørensen (2010) explained that investments that expect external sources of funds are very likely to experience cash flow constraints due to their characteristics as cost-based third-party's funds. Investment activity also means obtaining and disposing of non-cash assets in a broader scope. Investors place their funds in investment by agreeing on the timing of the execution, the applicable currency, the interest rate or other compensation, the investment period, and the risks of the pay and its anticipation.

In the cash flow statement, Cash Flow from Investing Activities reports the cash transactions for the acquisition and sale of assets with long economic service life, commonly over one year, besides cash flow from operating and financing activities (Jeppson, Ruddy, & Salerno, 2016). Therefore, placing an internal source of banks' funds for current investments will automatically reduce future liquidity and investment capability (Ostergaard, Sasson, & Sørensen, 2010).

Additionally, Farag, Harland & Nixon (2013) asserted that a bank might also have exposures, which are the 'off-balance-sheet,' such as commitments to lend or notional amounts of derivative contracts. During an accounting period, the investment value changes represent the cash in and out for such items. However, such assets improve the banks' capacity for profit in the long run. Included in this activity are lending funds and collecting back the loan principal.

1.4 Cash Flow from Investing Activities and Capital Adequacy Ratio Relationship

CFI has a relationship with CAR in terms of capital and risk. On the capital side, Molyneux, Liu, & Jiang, (2014) found that capital ratios positively linked to the degree of asset diversification. The banks consecutively fund the long-term assets with long-term debt or bank equity. Bakke & Whited (2010) confirmed that investment decisions refer to the private information embedded in the stock price related to equity issuance and capital structure. The use of long-term assets operation generates periodic net incomes the bank capitalized as a component of Return on Assets which has a positive and significant effect on the Capital Adequacy Ratio (Büyükkşalvarcı & Abdioğlu, 2011).

On the risk side, in line with the economics jargon of high-risk, high return, banks with more risks in their assets portfolio and capital to risk-weighted assets ratio enjoy high Return on Assets (Singh & Vyas, 2011). Moreover, in connection with the assets' ownership, financial leverage significantly affects asset tangibility (Baloch, Zahid, & Naveed, 2011), forming the banks' capital. Concerning the long-term debt engagement to fund investing activities and earning capitalization, Co, Uong, & Nguyen, (2021) asserted that the debt-to-asset ratio positively influenced profitability.

Table 1. Formulae of Capital Adequacy Ratio and Cash Flow from Investing Activities

Variables	Description	Formula
CAR	(Tier 1 Capital + Tier 2 Capital+ Tier 3 Capital)/(Credit Risk+ Market Risk + Operational Risk)	$(CAR=T_1C+T_2C+T_3C)/(CR+MR+OR)$
CFI	Initial CFI - Acquisition of Long-Term Assets + Gains from Long-Term Assets Retirement - Loss from Long-Term Assets Retirement	CFI= ICFI - ALTA+GLTAR- LLTAR

2. Research Question, Objective, and Hypothesis

Indonesian and Malaysian banks conducted investing activities to hold earning assets and expect a future capital increase. With the effort, Malaysian banks ran with lower CAR than the Indonesians from 2009 to 2013. The difference in CAR with the similar propensity to use cash to invest raises the research question of whether there are any differences in CFI's impact on CAR between Indonesian and Malaysian commercial banks. Accordingly, this study aims to distinguish the CFI's impact on CAR between Indonesian and Malaysian commercial banks. To answer the question and fulfil the research objective, this study proposes the following hypotheses:

Null hypothesis (H_0): There is no difference in the impact of Cash Flow from Investing Activities on the Capital Adequacy Ratio between Indonesian and Malaysian commercial banks.

Alternative hypothesis (H_a): There is a difference in the impact of Cash Flow from Investing Activities on the Capital Adequacy Ratio between Indonesian and Malaysian commercial banks.

3. Methodology

This study compares CFI and CAR data between Indonesian and Malaysian big-five commercial banks from 2009 to 2013. The host countries' purposive selection underlies their similarities as the ASEAN Economic Community members. Geographically, the countries have the most extensive land bordered in southern Southeast Asia. According to Chong (2012), the countries' populations share common historical roots and cultural heritage and rely on similar socio-political, economic, and development agendas. The two countries' historical backgrounds converged on the cultural dimensions of power distance in running the business.

The big-five banks' selection considers their leading position in national banking in the countries. Such big-five benchmarking has been a common practice in businesses such as oil companies, the stock markets (Malik, Wang, & Naseem, 2017), and banking (Baloch, Zahid, & Naveed, 2011). In addition, benchmarking with such peer companies could assist in setting new goals for improving performance (Maltz, Bi, & Bateman, 2018).

The time frame selection considers the feasibility of comparing the financial data, portraying the first five-year long-term investment and capital performance post-financial crisis of 2007 to 2008. This study applied three data analysis stages: descriptive statistics, regression, and comparative analysis. First, descriptive statistics the study applied to show the feasibility of the data usage in the study. Second, the study used two discrete regressions to analyze the impact of a related independent on the dependent variable. Finally, this study engaged the Chow statistic for a comparative purpose in testing the hypothesis. This study states the three steps with the following equations.

$$CAR_I = a_I + bCFI_I \tag{1}$$

$$CAR_M = a_M + bCFI_M \tag{2}$$

$$RSS = \sum_{i=1}^{n} (y_i - f(x_i))^2 \tag{3}$$

$$Chow = (1/k*(RSSp-(RSS_1+RSS_2)))/((RSS_1+RSS_2)/(N_1+N_2-2k)) \tag{4}$$

Based on the Chow statistic, this study accepts the null hypothesis (H_0) when the $F_{statstic} < F_{table}$ and rejects the alternative hypothesis (H_a). Conversely, the study accepts H_a and rejects the H_0 when the Chow test results in the $F_{statstic} > F_{table}$.

4. Data Description

The Capital Adequacy Ratio of Indonesian commercial banks from 2019 to 2013 was between 20.87% and 12.20%, with an average of 15.36%. On the other hand, Malaysian banks' CAR was between 17.27% and the lowest of 11.22%, with an average of 14.10%.

Table 2. Summary of Mean, Median, Maximum, Minimum, and Observations Number of Cash Flow and Capital Adequacy Ratio of Indonesian and Malaysian Commercial Banks 2009-2013

	Indonesian Commercial Banks		Malaysian Commercial Banks	
	CAR_I	CFI_I	CAR_M	CFI_M
Mean	15.36	-2283.72	14.10	-1880.40
Median	14.96	-2694.00	14.02	-2027.00
Maximum	20.87	13176.00	17.27	4948.00
Minimum	12.20	-12569.00	11.22	-8466.00
Observations	25	25	25	25

The visual trends of Indonesian and Malaysian CFI and CAR can be shown in the graph. *Figures 1 and 2* below depict the average CFI and CAR of the Big Five commercial banks in Indonesia and Malaysia from 2009 to 2013.
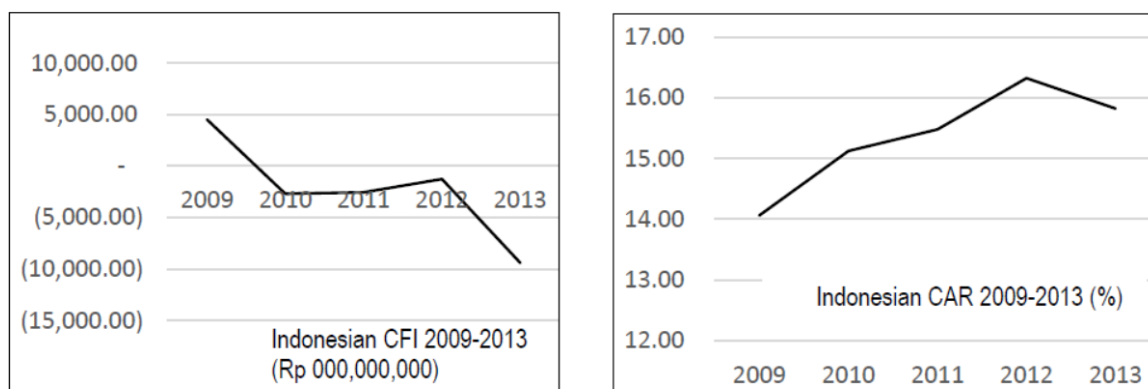

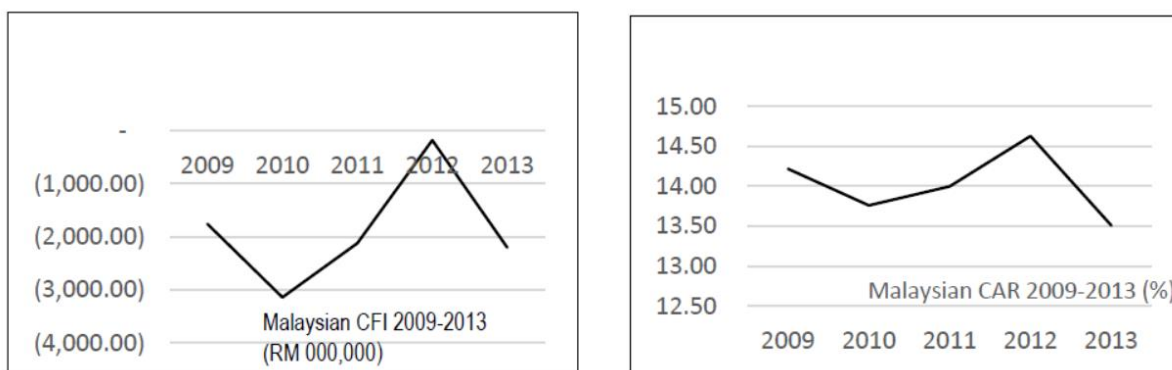Figure 1. The Trend of Indonesian CFI and CAR

Figure 2. The Trend of Malaysian CFI and CAR

5. Data Analysis and Discussion

5.1 Cash Flow from Investing Activities and Capital Adequacy Relationship: Indonesian Banks

This study presented the relationship between CAR and CFI in the equation of $CAR_I = a_I + b_2 CFI_I$. E-Views statistical application for the relationship between CFI and CAR of Indonesian banks showed the equation of $CAR_I = 15.0949 - 0.000118 * CFI_I$. The negative coefficient of CFI represents the negative relationship between CFI and CAR. The regression shows the CFI's negative value of -0.000118, which means that the CAR changed in the opposite direction against the CFI changes. The regression indicates that when the CFI decreased by Rp 1 billion, the CAR increased by 0.000118% simultaneously. Conversely, when the CFI increased by Rp 1 billion,

the CAR decreased by -0.000118% under the constant level of 15.0949. Thus, the higher the CFI, the lower the CAR; conversely, the lower the CFI, the higher the CAR.

The complete regression output by the EViews software for α = 5% resulted in the residual sum of square of 205.3125 and $t_{statistic}$ = 3.477. According to the results of statistical t_{tests}, the changes of CFI significantly affect the CAR. By using the two-tail table of t distribution, with n = 25, k=2, and α = 5%, it was found that t_{table} = 2.069. Referring to the significance criteria, with $t_{statistic}$ 3.477 > t_{table} 2.069, this study concludes that CFI significantly influences the CAR of Indonesian banks.

The average cash flow and capital adequacy ratio trend showed that Indonesian banks' CAR changed from 14.0% to 15.83% from 2009 to 2013. As described above, the Capital Adequacy Ratio of Indonesian banks' rose 1.77 points or 12.56%. Thus, resulting in average CAR growth of 2.51 points of 0.35% per year.

Table 2. Summary of the Regression of Cash Flows and Capital Adequacy Ratio of Indonesian Commercial Banks 2009-2013

Variable Relationship	Equation	p-value vs α	Significant (Yes/No)
CFI and CAR: $CAR_I=a+bCFI_I$	CAR_I = 15.09492 - 0.000118*CFI_I	0.0393<0.05	Y

The regression means that the higher the CFI, the lower the CAR in the Indonesian commercial banks. Otherwise, the lower the CFI, the higher the CAR. Therefore, coinciding with the CFI negatively correlated with CAR, Indonesian banks experienced crisis shocks followed by a liquidity crisis for some commercial banks (Kompas, 2010).

5.2 Cash Flow from Investing Activities and Capital Adequacy Ratio Relationship: Malaysian Banks

This study presents the relationship between CAR and CFI in the equation of $CAR_M=a_M+b_2CFI_M$. EViews statistical application for the relationship between CFI and CAR of Malaysian banks shows the regression of CAR_M = 14.53147 + 0.000229*CFI_M, based upon α = 5%.

Respecting the CAR spreading of Malaysian banks, it is noticeable that CFI and CAR's growth consistently changes in the same direction. In the regression for the CAR and CFI relationship, the skewness of these growths represented the positive value of the *b* coefficient is 0.000229%. The positive factor of the CFI represents the changes in the CFI's figures that shifted in the same direction as the CAR. It means the higher the CFI, the higher the CAR; conversely, the lower the CFI, the lower the CAR. The equation indicates that each RM 1 million rises in the CFI pushes the CAR of 0.000229% over the constant level of 14.53147%. On the contrary, a decrease of RM 1 million in CFI will decrease the CAR by 0.000229 %.

The regression also resulted in the statistical Residual Sum of squares of 17.04197 and $t_{statistic}$ of 4.066352. By using the two-tail table of t distribution, with n = 25, k=2, and α = 5%, it was found that t_{table} = 2.069. Referring to the significance criteria, with $t_{statistic}$ 3,249 > t_{table} 2.069, this study concluded that CFI significantly influences the Capital Adequacy Ratio of Malaysian commercial banks.

Average CFI has decreased by -12.75 times decrease in CAR. However, as described above, the CAR rose 2.38 points (19.47%) from 12.25% at the beginning of 2009 to 14.63% at the end of 2013. Thus, the CAR average growth was 3.89% for 0.48 points per year.

On the other hand, the CAR of Malaysian banks changes from 14.22% to 13.51% during the same period. It means the CAR of Malaysian banks decreases by 0.71 points of -4.98%. Thus, resulting in average growth of 0.14 points or 0.1% per year.

Table 3. Summary of the Regression of Cash Flow and Capital Adequacy Ratio of Malaysian Commercial Banks 2009-2013

Variable Relationship	Equation	p-value vs α	Significant (Yes/No)
CFI and CAR: $CAR_M=a+bCFI_M$	CAR_M = 14.5315 + 0.00023*CFI_M	0.0100<0.05	Yes

The regression means that in Malaysian commercial banks, the higher the CFI, the higher the CAR. Otherwise, the lower the CFI, the lower the CAR. Consistent with this analysis, Ibrahim, the Governor of the Central Bank of Malaysia (https://www.bis.org/publ), confirmed that the current global crisis impact on the Malaysian financial sector remains well-contained.

5.3 Residual Sum of Squares and Hypothesis Test

The residual sum of squares (RSS) represents the sum of squares of the residual or the predicted deviation from the actual empirical value of the data used to measure the difference between the data and the estimation model in linear regression. Data processing using E-views for the regression output of CAR = a + bCFI equations for Indonesian commercial banks, Malaysian commercial banks, and a combination of both resulted in the following Residual Sum of Squares.

Table 4. Residual Sum of Square (RSS) of the Cash Flow and Capital Adequacy Ratio Relationship of Indonesian and Malaysian Commercial Banks 2009-2013

CFI and CAR Relationship: Equation	Residual Sum of Square (RSS)		
	Indonesian Banks	Malaysian Banks	Pooled Indonesian and Malaysian Banks
CFI against the CAR: *CAR=a+bCFI*	48.8885	17.0420	80.5201

Using the regressions RSS, this section explains the hypothesis test. For this purpose, this section discusses whether there is any difference in the impact of Cash Flow from Investing Activities on the Capital Adequacy Ratio of Indonesian and Malaysian Commercial Banks

This section provides an analysis to prove the similarities or differences of the CFI impact on CAR between Indonesian and Malaysian banks. First, the study uses Chow statistics to confirm the null hypothesis that there is no difference in the CFI's effect on CAR between Indonesian and Malaysian banks. This study adopts the individual RSS of discrete Indonesian and Malaysian regressions. Secondly, it compares each RSS with the residual sum of square (RSS) data regression of pooled Indonesian and Malaysian commercial banks.

This study compares the residual sum of square (RSS) value derived from the pooling of Indonesian and Malaysian banks regression against the discrete RSS of Indonesian banks separately to test the differences in the CFI's impact on CAR between Indonesian and Malaysian banks.

As explained earlier, each RSS represents the error variances for the relevant regression. The statistical analysis for Indonesian banks showed that with n = 25, the significance level of 5%, and the statistical equation of CAR = 15.09492 - 0.000118*CFI resulted in an RSS of 48.8885. On the other hand, the regression of CAR = 14.53147 + 0.000229*CFI for Malaysian banks resulted in an RSS of 17.0420. Furthermore, with n = 50, the pooled Indonesian and Malaysian banks' regression yields the residual sum of squares (RSS) of 80.5201.

In order to measure the significance of the CFI's impact difference on CAR between Indonesian and Malaysian banks, the three RSS of the CFI and CAR relationship of Indonesian, Malaysian, and pooled data of both banks as listed above were fitted together into the following Chow Test.

Table 5. Chow Test for the Impact of Cash Flow from Investing Activities on Capital Adequacy Ratio between Indonesian and Malaysian Commercial Banks

	Indonesian Banks	Malaysian Banks	Pooled Model
Residual Sum of Square	48.8885	17.0420	80.5201
N	25	25	50
Chow Test (*F_{statistic}*)			5.0896
$F_{table\ (0.05, 2, 46)}$			3.1196

With a 5% significance level, the Chow Test results in a greater $F_{statistic}$ of 5.0896 than the F_{table} of 3.1196 for the statistical comparison between the CFI's impact on CAR of Indonesian and Malaysian banks. According to the

previous significance criteria, the higher $F_{statstic}$ over the F_{table} value represents a difference between the comparing items. Concerning the requirements of acceptance, this study rejected the H_0 and accepted H_a of the hypothesis. Thus, this study concluded a statistical difference in the CFI's impact on the CAR between Indonesian and Malaysian commercial banks.

5.4 Alignment with Previous Studies

In line with the earlier analyses, Bakke & Whited (2010) asserted that investment decisions refer to the capital structure and according to Baloch, Zahid, & Naveed (2011), financial leverage significantly affects asset tangibility. In addition, Molyneux, Liu, & Jiang (2014) assert that Capital Ratio positively correlates with asset diversification, so the asset increase should change in proportion to the capital ratio.

On the risk side, banks having more risks in the assets portfolio and capital-to-risk-weighted assets ratio enjoy a high Return on Assets (Singh & Vyas, 2011). As a shortcut, Sepehrdoust & Aeini (2014) explicitly stated that the Return on Assets positively and significantly influences Capital Adequacy Ratio. This finding suggests that the higher the cash flow from investing activities, the higher the CAR.

These studies reinforce the opinion that, in general, CFI should have a positive relationship with CAR. Hence, conclusively, the respective analyses show that instead of the Indonesians, the statistical relationships between CFI and CAR of Malaysian commercial banks are closer to the findings of previous studies. The earlier graph in *Figure 2* confirms that Malaysian banking has performed a significant investment before and now enjoys cash inflow. On the other hand, the sharp decrease in the CFI of Indonesian banking in *Figure 1* indicates the ongoing progressive investing activities in Indonesian banking but has not yielded adequate cash inflow to offset the CAR enhancement.

6. Conclusion and Implication

6.1 Conclusion

Shortly, this study accepts the alternative hypothesis (H_a) and rejects the null hypothesis (H_0). Based on the respective statistical analysis discussed above, this study concludes that the CFI's impact on CAR significantly differs between Indonesian and Malaysian commercial banks from 2009 to 2013. The CFI of Indonesian banks has a negative impact on CAR. On the contrary, the CFI of Malaysian banks positively affects the CAR. The positive impact on Malaysian banking means they are harvesting significant cash inflow from their past investments, especially from 2011 to 20212. On the contrary, the CFI's negative impact on the CAR of Indonesian banks assures continuous spending for long-term investment during the five years. This preference results in a consistent decrease in annual CFI concurrently with the CAR upward from 2019 to 2013.

6.2 Implication

CFI and capital are sources and uses of long-term funds to achieve the banks' targets. Given a broad range of parties interested in banks, this study's conclusion might contribute practical, managerial, theoretical and social implications. *(i) Practical implication.* With a positive CFI and CAR correlation, Malaysian banks enjoy cash inflow from direct returns on past investments. On the contrary, with a negative CFI and CAR correlation, Indonesian banks get ready to face a cash shortage that requires long-term financings injection with derivative charges *(ii) Managerial implication.* With positive CFI and CAR relationships, Malaysian banks have flexibility in cash allocation to expand into new profitable activities to achieve the targets. On the other hand, with a negative CFI and CAR relationship, Indonesian banks require careful financial planning and organizing to monitor and evaluate the day-to-day CFI and CAR achievements. From a managerial perspective, banks might pursue this policy as a tradeoff between short-term profitability and long-term economic benefits. *(iii) Theoretical implication.* However, the negative CFI and CAR relationship will suppress the banks' Return on Investment when the CAR moves upward. Theoretically, banks require CFI and CAR equilibrium to avoid cash shortages and failure to earn interest due to capital buffer retaining to maintain high CAR. *(iv) Social implication.* A positive CFI and CAR relationship shows the bank's increased cash flow from past investing activities. Better cash flow allows the banks to broaden their contributions to overcome social problems, such as unemployment and welfare makeup. On the contrary, the excessive negative CFI might force the banks to delay social benefits provisions and degrade employees' and customers' loyalty.

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