Comparing the Cash Flows’ Influence on Capital Adequacy Ratio of Indonesian and Malaysian Commercial Banks

La Madjid Samryn and Issham bin Ismail

ABSTRACT

This study examines the difference in the simultaneous impact of Cash Flow from Operating Activities (CFO), Cash Flow from Investing Activities (CFI), and Cash Flow from Financing Activities (CFF) on Capital Adequacy Ratio (CAR) between Indonesian and Malaysian commercial banks. By considering the comparability of capital performance post-financial crisis of 2007 to 2008, this study adopted the purposive secondary data published by the big five banks from 2009 to 2013. An E-view statistical software was applied to the panel data to provide coefficients of discrete multivariate regressions between countries and a hypothesis test. The results showed that all Indonesian banks’ CF items negatively correlated with the CAR. Similar correlations also occur for both CFO and CFF on CAR of Malaysian commercial banks, but on the other hand, a positive correlation occurs in the CFI and CAR relationship for Malaysian Commercial banks. Based on a Chow test on the regression outputs, this study concludes that the CFI is the distinguishing factor in the CF’s impact on CAR in the comparison scenario. The finding confirms that Malaysian commercial banks enjoy the Cash Flow stemming from the gains of past investing activities to increase the CAR under study. On the Indonesian side, the negative correlations of CFI, along with CFO and CFF against the CAR alert that refers to the basic CAR formula, the increases in CAR occur concurrently with the annual CFI decreases to spend on investing activities by long term financing. Even though the newest investment contributes to low gains that are inadequate to raise the banks’ equity capital over the increase of risk-weighted assets sooner in the short run.

Keywords: Capital Adequacy Ratio, Cash Flow from Investing Activities, Cash Flows from Financing Activities, Cash Flow from Operating Activities, Commercial Banks.

I. INTRODUCTION

Capital Adequacy Ratio (CAR) is an indicator of bank capital reliability agreed upon by the Basel Committee on Banking Supervision (BCBS), an organization that oversees worldwide banking institutions. CAR describes the adequacy of the availability of buffer capital for a bank after considering all risk-weighted assets. The components of the CAR calculation adopt the accounts of long-term debt, equity, and risk-weighted assets according to the bank’s financial statements. However, these accounts represent the realized financial transactions represented as cash and cash equivalents in the accounting terminology.

The CAR computation includes capital consisting of long-term debt and shareholders’ equity divided by risk-weighted assets. The equity consists of common stock and retained earnings stemming from the accumulated net income and losses obtained during the bank operations. As with any business, all transactions constitute a CAR for banks after using cash as a payment medium through operating, investing, and financing activities. Such a way of CAR, cash receipts, disbursement mechanisms, and reporting standards apply to banking worldwide, including in Indonesia and Malaysia.

However, Malaysian banking hints a more reliable performance than its counterparts in Indonesia. During the 2007-2008 global crisis, Indonesian banking was fragile, marked by a commercial bank liquidation and threats to 17 others due to liquidity shortage and inadequate capital ratio (Kompas, 2010). Meanwhile, according to Ibrahim (2010), the global crisis impact on the Malaysian financial sector has remained well contained.

In common sense, the environmental business similarities surrounding the banking practices in both countries should produce a similar effect on banking capital performance. Nevertheless, the difference in banking resilience during the 2007-2008 crisis led to allegations of differences in capital resilience and liquidity shortage stemming from periodic cash flows. Hence, this study attempts to distinguish the influence of cash flows on the capital adequacy ratio between the commercial banks hosted in Indonesia and Malaysia post-financial crisis of 2007 to 2008.

II. LITERATURE REVIEW

A. Capital Adequacy Ratio

The capital adequacy ratio shows the ability of a bank to withstand losses in the value of its assets, reduce the risk of
banking finance, prevent potential failures (Eun & Resnick, 2014), and maintain survival (Sangmi & Nazir, 2010). Capital adequacy expresses the proportion of total assets funded by the equity capital. In the accounting perspective, capital represents the funds, distinguished into common equity and retained earnings (Farag et al. 2013). However, from the banking perspective, Rose & Hudgins (2013) revealed capital as long-term funds contributed to a bank or other financial institution primarily by its owner, consisting mainly of stock, reserves, and retained earnings.

Bank capital is a cushion against the drop in the value of assets, which could force into insolvency due to having liabilities over the bank assets, by which the bank might fall into liquidation (Davies, 2015). On the regulator side, the capital and liquidity regulation is necessary because the financial crisis strains show the need to strengthen the quality and amount of capital. In the banking practice, the bank managers must decide the amount of adequate capital to maintain and seek to obtain funds at lower costs and risks to ensure capital availability (Bell & Hindmoor, 2017).

The pure form of regulatory capital comprises the loss-absorbing balance sheet accounts eligible for calculating capital ratios. Such accounts include equity (Adesina & Mwambaa, 2016), preferred stock, subordinated debt, and general reserves (Belém & Gartner, 2016). In addition, financial authorities often use capital to assess the bank size (Kunt et al., 2013) and financial quality. The off-balance-sheet risk inclusion in the CAR computation convinced that the capital amount is adequate to withstand the absolute risk (Kishore, 2017).

The Basel Committee on Banking Supervision categorized the banking capital into Tier 1 capital and Tier 2 capital. Tier 1 capital is the core capital of the bank, which includes the cash reserves of the bank and the common equity (Gupta & Bhat, 2014). In addition, the Tier 1 capital includes the stock issues or shareholders' equity and the loan loss reserves set aside to cushion future losses or smooth out income variations beside noncumulative preferred stock (Yuanjuan & Shishun, 2012).

The public believes that banks operating with significant Tier 1 buffer capital tend to have higher reserves to anticipate the risks of financial shocks. On the contrary, Leung et al. (2015) stated that runs with lower Tier 1 capital potentially have higher financial risks for a bank. Moreover, since Tier 1 capital consists of common equity, the amount could affect the return on shareholder investment (Fouche et al. 2006) and annual net income accumulated in the retained earnings (Qandhari et al. 2016).

Tier 2 capital, on the other hand, includes an additional one other than capital stock, which consists of undisclosed reserves and reserves for revaluation (Gupta & Bhat, 2014). In addition, Tier 2 capital includes sources 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.

In the early stages, banks expect to meet the Common Equity Tier 1 to Risk-Weighted Assets (RWA) of 3.5%, Tier 1 capital to RWA of 4.5%, and total capital to RWA of 8.0%. With the Countercyclical Capital Buffer (CCB), the required net capital consists of a minimum amount plus the CCB of 11.5%. The new composition of the minimum total capital covers Tier 1 of 7%, tier 2 of 2%, and Tier 3 of 2.5%. As a result, (Gupta & Bhat, 2014) expected higher capital fulfillment to stimulate new challenges of proportionately having a new capital strength. Finally, in Basel III, the BCBS added a new Tier 3 capital consisting of subordinated debt and preferred stock, which matures at the earliest within five years.

B. Risk-Weighted Assets

Assets are the probable future economic benefits obtained and controlled by an entity as the results of past transactions or events. Banks classify their assets into current and long-term assets. Assets may be physical or intangible (De Souza & Lemes, 2016). However, the assets are mainly composed of loans and advances as the primary source of income and statistically have a positive correlation with banks’ performance (Isanu, 2016).

The assets include all financial assets, tangible and intangible assets that the bank currently owns or the third parties pay at a specified time. The financial assets are loans in the shape of government mortgages, individual loans, loans by commercial enterprises, and interbank loans (Farag et al., 2013). Basel Accord weighs each of these assets with a risk level the BCBS regulated to calculate the capital adequacy ratio and gives some latitude in setting capital requirements (Stowell, 2013).

According to Sufian (2012), risk exhibit a positive and significant impact on profitability, and the most risk-prone asset for banks is liquidity. Liquidity risk refers to the liquidity market (Perobelli et al., 2016) and the ease of converting assets into cash (Gideon et al. 2012). Although the risk is a threat to success for financial transactions, statistically, the risk positively correlates with the return (Theodossiou & Savva, 2016). Therefore, for determining the capital strength, the Basel Committee weighted the banks' assets with the various risks simplified into credit, market, and operational risks (Roy, 2016).

According to Choudhry (2011), credit risk includes losses arising from credit migration in the shape of credit downgrades. The term credit line refers to an agreement on lending-borrowing agreed upon by the parties under the conditions offered by the bank to the borrower (Mora, 2010). As an indicator of credit risk, Behr et al. (2010) use the average default ratio of the loan portfolio. The credit risk is related to an interest rate risk of loanable funds from consumer savings, business savings, government budget surplus, and reserve increase in the money supply (Kidwell et al., 2013).

In commercial banks, credit risk in lending activities includes the possibility of the borrower failing to repay the loan in a manner and time different from the creditor's expectations (Arora, 2012). Therefore, the bank might ensure the risk balance with potential customer acceptance to prevent credit risk. In addition, a bank may experience credit risks from within and outside, either through transactions or risk portfolios (Sarwar et al., 2011). Therefore credit risk relates to the loanable funds in consumer credit purchases, business investment, and government budget deficit.

Besides the corporate-based factors, macroeconomic conditions also influence credit risk. Hence, the banks burden
their customers with loan principal and an interest rate for each credit line. Special attention is essential for banks because the customers’ failure to repay the debt would result in a loss and credit risk (Hassan et al., 2013). In order to overcome such a problem, the banks require valid information about the economic and financial conditions of the debtor, the industrial nature of the transaction, the borrower's character, and their credit status to avoid credit risk (Dedu & Nechif, 2010).

Market risks arise due to declining investment values that occur in the movement of market factors such as losses in interest changes, and exchange rates are affected by prevailing interest rates, foreign exchange, and public trust in the securities issuing banks (Şbârcea, 2017). In addition, market risk is 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, market risk may result in a loss of money due to changes in the value of the traded instrument (Tiplea, 2001). According to Rose & Hudgins (2013), a market risk arises due to the changes in the value of bank assets, liabilities, and net worth. When the investor cannot pay a high price for a particular security, the incident raises an additional cost for the guarantee, as the owner loses the opportunity to acquire the investment gain. Such a risk might occur as a result of unfavourable market movements.

Market risk occurs due to stimulation from both domestic and foreign factors. Sarwar et al. (2011) asserted that the market risk trigger is more extensive due to the indirect role of the changes in political and social factors and the influence of international market fluctuations. In addition, (Dimitriu & Tabâră, 2009) revealed that market risk is more related to the failure to sell its products, including off-balance sheets, due to price changes the investors should pay. Due to its broad impact on macroprudential, market risk is often categorized as systemic risk. The more market risk exposures of the bank’s portfolios, the greater the systemic risk of the banking system (Hu et al, 2012).

Operational risk is the losses caused by internal bank failures. Operational risk may stem from a failure or improper process, resulting in a loss (Dhanda & Rani, 2010). Tănase & Şerbu (2010) confirmed that human or system error might cause internal failure or affect external events that may influence a loss. Operational risks can also stem from the obstacles to applying the applicable regulations. Therefore, operational risk could cover all potential losses on the assets.

Operational risk arises due to internal bank failures such as information asymmetry (Chang, 2011), personnel disability, system weakness, lack of technology, and external factors such as natural disasters (Sarwar et al., 2011). Ames et al. (2015) pointed out that operational risks contribute up to 10-30% of the overall banking risk. As a business entity, to minimize risk, a bank needs adequate internal controls, quality supervision, adequacy of policies and restrictions, and risk measurement and monitoring (Romney & Steinbart, 2015).

C. Cash Flow

Cash flow is the cash movement in a certain period. In the financial statements, the cash flows information explains the sources of where the cash came from and where to spend it. In the financial statements, the cash flows information explains the sources of where the cash came from and where to spend it (McKenzie, 2010). Based on the cash flow statement, stakeholders could decide on cash availability and priority in cash allocation (Karğın & Aktaş, 2011). The cash balance covers the difference in cash inflows and outflows during the operating period of a bank. Net cash flows, simplified as cash flows, refer to the difference between cash inflows and cash outflows for an accounting period (Magni, 2011).

The cash in and outflow listed in the financial statements reflect the current year's income and the changes in assets and liabilities other than the balance from the previous period (Jeppson et al., 2016). Scarborough (2012) explains that sales patterns, changes in outstanding debt and receivables, debt repayment schedules, and changes in the value of investments in long-term assets illustrate cash flow patterns in a bank.

Regarding the banks’ primary activity to receive funds and distribute them to the parties, the management might ensure sufficient liquidity (Rose & Hudgins, 2013) by providing cash as the dominant element. On the contrary, an increase in an asset, a decrease in liabilities, and a decrease in shareholders’ equity indicate cash disbursement in the current period. The cash instruments traded in money markets include time deposits, treasury bills, certificates of deposit, commercial papers, banker’s acceptances, federal funds, bills of exchanges, and broker’s calls (Bodie et al, 2011).

The cash shortage indicates that the bank encounter liquidity problems to meet its immediate payment. Although cash is an essential asset, the bank must limit the maximum and minimum amount to hold. Keeping sufficient cash allows the bank to operate efficiently (Lin et al., 2014). A bank converts cash into other assets or payables to other parties or otherwise exchanges other assets into cash or receivable from other parties through its operating, investing, and financing activities. The non-operating activities inform the source of cash for debt payments and the acquisition of new plant assets (Ross et al., 2013).

Cash flow from operating activities includes cash inflows and cash outflows relating to transactions and other events that generate a net income (Kieso et al., 2012). Due to the interconnection of operating activities with the net income acquisition, the cash circulating also correlates with the working capital accounts such as receivables, inventories, prepayments, short-term debts, and accrued expenses (Ross et al. 2013). Hence the CFOs are related to the working capital turnover due to corporate activity in cash conversion into short-term assets and vice versa.

Cash inflow from operating activities arises from the sale of goods or services, including cash receipt from interest on customers’ loans, loan payments, and return on investment in equity securities. The increase in net operating assets subsumes the change in working capital for net cash flows from operations and the increase in long-term operating assets and subsidizes the changes in working capital and increase in long-term operating assets (Wahlen et al. 2011). Conversely, according to (Jeppson, 2016), the cash outflow is typically due to the expenditures for inventory acquisitions, fees to employees, government payments, interest expenses, and payments to suppliers for other short-term spending.
In the banking operation, such cash flows include short-term credit distribution and current deposit receipts from customers, including cash receipts and disbursement for maturing interest and installment of the loan principal. Petruska (2011) confirms that profit is a good indicator for predicting the banks operating cash flow. Concerning the earnings and cash flow relationship, Huang & Zhang (2012) found that profitability is related to current capital usage and capital investment over the past period. The ability to generate liquidity from operating activities, increasing the stock market value, or selling unproductive assets without disrupting the continuation of bank operations (Schroeder et al. 2016) could enhance financial flexibility.

Cash flow from investing activities includes cash receipts and disbursements related to long-term asset ownerships. The cash flow comprises receipts from sales and disbursements to purchase long-term earning assets, including fund placement in acquiring other entity’s equity securities in mergers and acquisitions. Net cash flow from investing activities represents the difference between cash receipts and disbursements primarily of long-term assets acquisition and cash receipts from their retirements. Kieso et al. (2012) asserted that cash flows from investing activities involve cash in and out for long-assets acquisition, loan provision, recollection, and acquisition and retirement of productive long-term assets. The cash outflows from investing activities include loan channelling to other entities, purchasing long-term bonds or equity securities from other parties, and purchasing property, factories, and equipment.

According to Wahlen et al. (2011), the firms acquire such investments by using excess cash in other entities' securities, including stocks, government bonds, private companies, money market funds, and other assets referred to as financial assets. In addition, in order to support their investment activities, banks hold some assets, including liquid assets such as cash, central bank reserves, or government bonds; the buildings and other physical infrastructure; and intangible assets such as the value of a brand, and exposures which are the off-balance-sheet, such as commitments to lend or notional amounts of derivative contracts (Farag et al., 2013).

Principally, investment activities include acquiring and withdrawing assets other than cash. According to Dasgupta et al. (2011), investment in long-term assets is a sensitive activity for cash flow because such investments cannot expect to withstand financial risks every time. From an accounting perspective, investment activities include the creation of long-term assets, such as channelling the loan and its recollection, and investment to acquire and retirement dispose of any long-lived productive assets. In the long-term, investment return affects cash flow because it increases operating capacity, and profit ultimately raises the amount of capital. In the fundraising framework, the banks borrow money by issuing long-term debt securities and obtaining cash as liquidity elements the banks reinvest in long-term assets.

Cash flow from financing activities consists of the cash receipts and disbursements of long-term liabilities to creditors and shareholder equity (Siddiqua & Hossan, 2012). Specifically, Gibson (2011) explained that cash inflows from liability include the sale of bonds, mortgages, money orders, and other short-term or long-term loans, while outgoing cash comprises the payments on the mature debt amounts. In equity, financing activities include cash receipts and payments related to the share issuance, disbursements for share redundancy, dividends to shareholders, and annual net income accumulated in the retained earnings. The banks recognize the difference between total cash receipts and disbursements plus the opening balance of such cash flows as the net cash flow from financing activities (Kieso et al., 2012).

An essential factor of cash flow from financing activities is its function in forming the banks’ capital (Park, 2018). Therefore, banks should decide on the capital amount because a sufficient amount of capital could prevent failures due to the inability to fulfill obligations to depositors and other creditors. The origin of cash in financing activities is the external sources of long-term funds from investors as shareholders and creditors acting as lenders.

In banking terminology, financing activities are the source of capital funds. The CFF becomes vital for a bank because the principal bank capital comes from capital stock and debt securities issuance. Cash receipt from the sale of share capital increases the capital equity the banks recognize as Tier 1 capital. Tier 2 capital, on the other hand, includes long-term debt ranging from six to seven years of tenure in the capital structure, which the banks adopted as the numerator in CAR computations (Sangmi & Nazir, 2010). The bank used Tier 1 and Tier 2 capital to fund long-term investment activities and pay the cost of equities.

III. THEORETICAL FRAMEWORK

The previous literature review discusses the direct and indirect relationships between the Cash Flow and Capital Adequacy Ratio. Through the pathway of the cash flow from investing activities (CFI), the cash flow closely relates to long-term debt and equity as capital components in the capital adequacy ratio (CAR) formula. On the other hand, cash flow from the operating activities (CFO) pathway is related to equity through retained earnings capitalization in the cash flow from financing activities (CFF). However, this CFF is close to investment spending, inherently containing the Credit Risk, Market Risk, and Operational Risk concurrently making up the RWA. Hence, this study constructs the CF and CAR relationship shortcut in the following theoretical framework.

![Fig. 1. Theoretical Framework.](http://dx.doi.org/10.24018/ ejbmr.2022.7.4.1522)
Apart from the different jurisdictions, Indonesian and Malaysian commercial banks applied similar banking operations and financial reporting procedures; hence each country could adopt the above CF and CAR theoretical framework for the comparison base.

IV. RESEARCH OBJECTIVE AND HYPOTHESIS

Statistically, Indonesian commercial banks maintain a higher average CAR than Malaysian commercial banks from 2009 to 2013 instead of their Malaysian counterpart. However, Indonesian commercial banks encounter a financial shock facing the previous global crisis from 2007 to 2008. This symptom raises the question of the possible differences in the effect of CF on CAR between Indonesian and Malaysian commercial banks, even if they have many environmental business similarities. Hence, the objective of the study is to examine whether there is any difference between the CF impact on CAR with the following hypothesis:

H₀: there is no difference in the impact of Cash Flows on the Capital Adequacy Ratio between Indonesian and Malaysian commercial banks.

H₁: there is a difference in the impact of Cash Flows on the Capital Adequacy Ratio between Indonesian and Malaysian commercial banks.

V. RESEARCH DESIGN AND METHODOLOGY

This study is a comparative model using purposive countries, units of analysis, and purposive data. The selection of Indonesia and Malaysia underlies their similarities in geographical location, cultural roots heritage, and relying on similar socio-political, economic, and development agendas (Chong, 2012).

The units of analysis of the study are the Indonesian Big Five local commercial banks with highest total assets and consistent in providing financial data during the period under study. Accordingly, this study selected the Big Five banks in Malaysia as their counterparts. Such a top-five benchmarking has been a common practice in businesses such as oil companies, banking (Baloch et al., 2011), and the stock markets (Malik et al., 2017). In addition, Maltz et al. (2018) stated that benchmarking with such peer companies could assist in setting new goals for improving performance.

This study quoted the CF and CAR secondary quantitative data from 2009 to 2013 published by the Big Five Banks in Indonesia and Malaysia. The time frame selection considers the feasibility of comparing the financial data, portraying the first five-year performance post-financial crisis of 2007 to 2008. The five-year sample from five banks selection refers to Ahmed et al. (2015) when measuring the CAR’s influence on the banks’ profitability in Pakistan from 2009 to 2013. Liu et al. (2017) adopt such an approach in measuring the effect of the non-performing loan in Taiwan from 2010 to 2014, and Rahman & Nitu (2018) when comparing the performance of state-owned and private commercial banks from 2010 to 2014 in Bangladesh.

This study adopted CAR as the dependent variable and CF as the independent variable. The Capital Adequacy Ratio (CAR) represents the total dividing capital by risk-weighted assets. Cash flows represent the three categories of net cash flows from operating, investing, and financing activities. The relationships between variables are quantified using ordinary least squares by E-view statistics software comprises (1) descriptive statistics to show the feasibility of using the data in the study, (2) discrete regressions to analyze the simultaneous impact of independent variables on the dependent variable, and (3) a hypothesis testing using Chow statistic to distinguish the regression output from the second stage. Data analysis respectively applied the following four models:

\[ \text{CAR}_t = a_1 + b_1 \text{CFO}_t + b_2 \text{CFI}_t + b_3 \text{CFF}_t \] (1)

\[ \text{CAR}_t = a_M + b_1 \text{CFO}_{M_t} + b_2 \text{CFI}_{M_t} + b_3 \text{CFF}_{M_t} \] (2)

\[ \text{RSS} = \sum_{t=1}^{k} (y_t - f(x_t))^2 \] (3)

\[ \text{Chow} = \frac{1}{k} \left( \text{RSS}_p - \text{RSS}_i \right) / (\text{RSS}_s - \text{RSS}_j) / (n_1 + n_2 - 2k) \] (4)

VI. DATA DESCRIPTION AND ANALYSIS

A. Data Description

Table I below summarised the Mean, Median, Minimum, and Maximum of CFO, CFI, and CFF, and CAR of Indonesian and Malaysian commercial banks from 2009 to 2013.

As a preliminary test to ensure data validity, this study conducted Multicollinearities, Autocorrelations, Heteroscedasticities, and Linearity tests between independent and dependent variables. As a result, all data tests consecutively show the results of no multicollinearity, no autocorrelation, and no heteroscedasticity. In addition, all independent variables show linear relationships with the CAR as the dependent variable and the normality tests showed that all the research data had a normal distribution, making it feasible to adopt in further statistical analyses.

<table>
<thead>
<tr>
<th>TABLE I: SUMMARY OF MEAN, MODUS, MAXIMUM, AND MINIMUM OF CASH FLOW AND CAPITAL ADEQUACY RATIO</th>
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<tbody>
<tr>
<td>Indonesian Commercial Banks</td>
</tr>
<tr>
<td>CAR</td>
</tr>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>Median</td>
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<td>Maximum</td>
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<td>Minimum</td>
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</table>
B. Cash Flow and Capital Adequacy Ratio Relationship of Indonesian Commercial Banks

The relationship between CAR and CFO, CFI and CFF is stated in the equation of \( CAR = a + b_1CFO + b_2CFI + b_3CFF \). E-views statistical application for the simultaneous relationship between CFO, CFI, CFF, and CAR of Indonesian banks forms the equation of \( CAR = 15.0973 - 2.23E-06CFO - 0.0001CFI - 5.72E-05CFF \). The equation shows that the coefficient for each unit CFO is \(-2.23E-06\), CFI \(-0.0001\), and CFF \(-5.72E-05\), with a constant level of CAR of about 15.0973%. This study quantified all regression outputs by E-views software using \( \alpha = 5\% \).

Using the Ordinary Least Squares, Table II below summarises the multivariate regression output for the equation representing the simultaneous relationship between CFO, CFI, CFF and CAR of Indonesian commercial banks from 2009 to 2013.

The regression means that if CFF and CFI are constant, then for each change of 1 unit (Rp 1 billion) in CFO, the CAR changes by \( 2.23E-06\% \). Due to the negative coefficient of CFO, each unit increase in CFO will decrease CAR by \( 2.23E-06\% \), conversely increasing the CAR by \( 2.23E-06\% \). In addition, if CFO and CFF are constant, then for each change of 1 unit in CFI, the CAR changes by \( 0.0001\% \). Due to the negative coefficient of CFI, each unit increase in CFI will decrease the CAR by \( 0.0001\% \) and, conversely, increase the CAR by \( 0.0001\% \). If CFO and CFI are constant, each change of 1 unit in CFF will change the CAR by \( 5.72E-05\% \). By the negative coefficient of CFF, each unit increase in CFF decreases the CAR by \( 5.72E-05\% \) or, conversely, increase the CAR by \(-5.72E-05\% \).

The equation results in \( F_{\text{statistic}} = 3.952485 \) and a residual sum of square (RSS) of 46.9416. An analysis on the two-tailed table of F distribution with \( n = 25 \), \( k=4 \), and \( \alpha = 5\% \) found that \( F_{\text{table}} = 2.060 \). Referring to the significance criteria, with \( F_{\text{statistic}} > F_{\text{table}} \), this study concluded that simultaneously, CFO, CFI, and CFF have a significant effect on the CAR of Indonesian banks.

C. Cash Flows and Capital Adequacy Ratio Relationship of Malaysian Commercial Banks

The relationship between CAR and CFO, CFI and CFF is stated in the equation of \( CAR = a + b_1CFO + b_2CFI + b_3CFF \). E-views statistical application for the simultaneous regression between CFO, CFI, CFF, and CAR of Malaysian banks showed the equation of \( CAR = 14.4805 - 4.44E-05CFO + 0.0002CFI - 3.44E-05CFF \). The equation showed that the coefficient for every unit CFO was \(-4.44E-05\), CFI was \(0.0002\), and CFF was \(-3.44E-05\), with a constant level of CAR of about 14.48%. This study quantified all regression outputs by E-views software using \( \alpha = 5\% \).

Using the Ordinary Least Squares, Table III below summarises the multivariate regression output for the equation representing the simultaneous relationship between CFO, CFI, CFF and CAR of Malaysian commercial banks from 2009 to 2013.

The regression means that if CFF and CFI are constant, then for each change of RM1 million in CFO, the CAR changes by \( 4.44E-05\% \). Due to the negative coefficient of the CFO, then each RM1 million increase in CFO will decrease the CAR by \( 4.44E-05\% \) and conversely will increase the CAR by \( 4.44E-05\% \) over the constant level at about 14.48052. If the CFO and CFF are steady, then for each change of RM 1 million in CFI, the CAR changes by \( 0.0002\% \). Because the CFI coefficient is positive, each RM 1 million increase in CFI will increase the CAR by \( 0.0002\% \), conversely will decrease the CAR by \( 0.0002\% \). Suppose the CFO and CFI are constant; with each change of RM1 million in CFF, the CAR changes by \( 3.44E-05\% \). Due to the negative coefficient of the CFF, each RM 1 million increase in CFF will decrease the CAR by \( 3.44E-05\% \) or, conversely, increase the CAR by \( 3.44E-05\% \).

The regression's residual sum of square (RSS) was 15.1712 and \( F_{\text{statistic}} = 3.2187 \). The two-tailed t distribution table, with \( n = 25 \), \( k=4 \), and \( \alpha = 5\% \), results in the table of 1.984. Referring to the significance criteria, with \( F_{\text{statistic}} > F_{\text{table}} \), this study concluded that simultaneous CFO, CFI, and CFF significantly influence the CAR of Malaysian banks.

D. Cash Flows and Capital Adequacy Ratio Regression of Pooled Indonesian and Malaysian Commercial Banks

In order to meet the RSS requirement for a hypothesis test, this study regressed the 50 CF and CAR data combination of Indonesian and Malaysian commercial banks. Input data in the e-view software respectively result in the coefficients of \( CAR = 14.5822, CFO = -0.2608, CFI = 0.0231<0.05 \), and CFF = \(-0.2608\). The coefficients substitution into the equation \( CAR = a + b_1CFO + b_2CFI + b_3CFF \) becomes \( CAR = 14.5822 + 123.6278CFO - 0.2608CFF \) resulting in a residual sum of square (RSS) of 76.8039.

E. Hypothesis Test

This section discusses a Chow test to prove the hypothesis regarding the distinction between simultaneous CFO, CFI, and CFFs impact on CAR of Indonesian and Malaysian commercial banks. The test compares the residual sum of square (RSS) value derived from the proper regression for pooled Indonesian and Malaysian banks and the RSS for discrete Indonesian and Malaysian banks equations.
As explained earlier, each RSS represents the error variances for the relevant regression. With n = 25 and level of significance of 5%; the equation for the Indonesian banks is CAR = 15.0973 − 2.23E-06* CFO - 0.0001*CFI -5.72E-05* CFF resulted in the RSS of 46.9416. The equation for Malaysian banks is CAR = 14.4805 – 4.44E-06*CFO + 0.0002*CFI – 3.44E-05*CFF resulted in the RSS of 15.1712. On the other hand, with n = 50, the pooled Indonesian and Malaysian banks’ regression resulted in the CAR = 14.5822 + 123.6278*CFO – 0.0236*CFI - 0.2608*CFF equation with the residual sum of square (RSS) of 76.8039.

In order to measure the difference in the simultaneous impact of CFO, CFI, and CFF on the CAR between Indonesian and Malaysian banks, this study depicts the Chow test in Table IV below, showing the result of data application in the application of the Chow=(1/k×(RSSp-RSSp+RSS2))/((RSSs+RSS2)/(N1+N2-2k)) equation by E-view software.

In the table, the three RSS from the simultaneous CFO, CFI, and CFF on CAR regression of Malaysian banks, Indonesian banks, and the pooled scenario are plotted concurrently, by which this study compares the values of Fstatistic and Ftable of the regressions.

**Table IV: Chow Test for the Impact of Cash Flow on Capital Adequacy Ratio Between Indonesian and Malaysian Commercial Banks**

<table>
<thead>
<tr>
<th>Residual Sum of Square</th>
<th>Pooled Model</th>
<th>Indonesia Banks</th>
<th>Malaysian Banks</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>50</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Chow Test (Fstatistic)</td>
<td>2.4835</td>
<td>2.5943</td>
<td></td>
</tr>
<tr>
<td>Ftable (0.05,4,42)</td>
<td></td>
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</tbody>
</table>

Consistent with the 5% significance level regression, the Chow test results in a lower Fstatistic of 2.4835 than the Ftable of 2.5943. According to the proposed criteria, the lower Fstatistic value represents the difference between the comparing items. Hence, this study rejected H0, accepted Ha of the hypothesis, and concluded a difference between the impact of simultaneous CFO, CFI, and CFF on the CAR between Indonesian and Malaysian commercial banks.

**VII. Discussion**

The statistical tests above show that the effect of CF on CAR in Indonesia is different from their Malaysian counterparts. An advanced tracing found that the dominant factor inducing the difference lies in the CFI, due to their opposite impact on CAR. Indonesian CFI has a negative impact on CAR, which means the higher the CFI balance, the lower the CAR. Nevertheless, on the other hand, Malaysian CFI, has a positive impact means the higher the CFI, the higher the CAR.

This study interprets that cash receipts from CFI of Malaysian banks grow through the regular commercial transactions, capable of increasing capital by previous investment gains while spending cash on relatively higher-risk assets to strengthen the CAR. In contrast, the CFI of Indonesian commercial banks grow by current investment policy in lower-risk assets while the previous investment gains cannot make up significant capital to strengthen the CAR.

In line with the above descriptions, Fig. 2 and Fig. 3 below show the trend of CFO, CFI, CFF, and the CAR of Indonesian and Malaysian commercial banks from 2009 to 2013.

Fig. 2 shows that Indonesian banks’ cash flow movement appears regular. Passingly, it decreased from 2009 to 2013. On the other hand, CAR also regularly indicates an increase from 2009 to 2012 and a decrease in 2013. This movement is easy to understand when it is associated with the results of analysis showing that all CFO, CFI, and CFF are negatively correlated with CAR. Figure 3, on the other hand, shows that Malaysian banks’ CF and CAR moved with higher fluctuations from 2009 to 2013, indicating more volatile movements.

The negative relationship between CFI and CAR of Indonesian commercial banks indicates that they are in the stage to increase investments, indicated by an increase in CAR, followed by decreases in CFI, which means an increase in the cash outflow for physical investment. On the other hand, the positive correlation between CFI and CAR of Malaysian commercial banks indicated that Malaysia is enjoying the gain from investment returns where the increase in CFI leads to an increase in CAR. Therefore, the increase in CFI shows no longer focusing on implementing current investments but enjoying returns stemming from past investments.

**Fig. 2. Trends of Cash Flow and Capital Adequacy Ratio of Indonesian Commercial Banks.**

**Fig. 3. Trends of Average CAR of Indonesian and Malaysian Commercial Banks.**

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The negative correlation of CFO and CFF to CAR indicates that operating income, long-term loans, and increased shareholders' equity of commercial banks in both countries cannot cover the increase in RWA. Therefore, if Malaysian commercial banks are considered more reliable, Indonesian commercial banks are suggested to continue increasing low-risk investments in earning assets to acquire long-term gains.

The common sense of cash flow is that the higher the CFI, the better capital accumulation. Following such a premise, Malaysian banks have had a well-established investment on which the banks harvest the gains to make up the capital. On the other hand, Indonesian banks responded to the previous financial crisis by continuously increasing the cash disbursement for investing activities to make up the capital. With such an approach, Indonesian commercial banks attempt to catch up with the bank size, as indicated by the higher total assets of Malaysian commercial banks.

VIII. CONCLUSION AND IMPLICATIONS
This study concludes that the CF impact on CAR of Indonesian commercial banks is different from their counterparts in Malaysia. The respective regression showed that the principal difference lies in the CFI’s impact on CAR, where Indonesian banking CFI has a negative correlation, while Malaysian banking CFI has a positive correlation against the CAR. The positive correlation between CFI and CAR of Malaysian commercial banks indicated that Malaysian banks enjoyed the gains from investment returns, where the increase in CFI leads to an increase in CAR. Therefore, the increase in CFI shows no longer focusing on implementing current investments but enjoying returns stemming from past investments. On the other hand, the negative relationship between CFI and CAR of Indonesian commercial banks indicates that banks in the country are in the stage of increasing investments, indicated by the statistical increase in CAR followed by decreases in CFI, portraying an increase in the cash outflow for new investment.

REFERENCES