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Determinants of cash holdings: Analysis of Islamic and conventional banks in Indonesia

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Abstract

Purpose – This research aims to investigate the effect of dividend payment, cash conversion cycle, corporate social responsibility (CSR) disclosure, and corporate governance, which are integrated with the independence and size of the board of commissioners, on cash holdings in the banking industry in Indonesia, both in the conventional and Islamic banks.

Methodology – Samples in this research were selected using the purposive sampling technique with the criteria of conventional banks registered in the Indonesia Stock Exchange (ISE) and Islamic banks registered in the Financial Services Authority (FSA) that released annual reports and financial reports during 2014-2019. There were 17 conventional banks and 11 Islamic banks met the criteria. Data were analyzed using multiple linear regression through Statistical Product and Service Solutions (SPSS) software.

Findings – This research reveals that the effect of CSR disclosure and size of the board of commissioners on cash holdings is different between Islamic and conventional banks. Meanwhile, other variables used in this research have no significant effect on cash holding value, both in conventional and Islamic banks.

Research limitations – Related to the samples of conventional banks, this research only investigates the ones registered in the ISE, not all conventional banks in Indonesia.

Originality – This research provides empirical data related to the determinants of cash holdings in Islamic and conventional banks, which was rarely investigated in the previous research. Moreover, this research also uses the most updated data, Islamic and conventional banks during 2014-2019.

Introduction

Liquidity management in the banking industry means the bank's ability to meet all of its obligations by providing enough reserved liquid assets (Silaen, 2017). Commonly, a bank will establish a reserve of the usable liquid assets to maintain liquidity. Cash holding is a part of the most liquid assets and it is used by corporations to conduct corporate business transactions, maintain daily operations, pay the bills, maintain customers' credits, and finance investment project opportunities (Phaiboonvessawat & Thanatawee, 2020). The banking industry must manage an appropriate amount of cash holdings equivalent to its obligations or liabilities. A too-small amount of cash holdings will disrupt corporate liquidity, while too much cash holdings will lead to a big amount of asset maintenance cost (Kuncoro & Suhardjono, 2002).

Some banking corporations have experienced a problem related to the number of cash holdings; one of them is PT. Bank Century Tbk. This firm had a liquidity problem after its customers withdrew a big amount of cash while the amount of cash held by the bank could not meet the customers' needs. As the result, Indonesia Deposit Insurance Corporation (*IDIC*) took over more than 90% of its share (Satriawan, 2019). Another case is that experienced by PT. Bank Muamalat Indonesia Tbk. Since 2015, this firm had a problem related to the small amount of capital. The problem was peaked in 2017 when the Capital Adequacy Ratio (CAR) of the firm decreased to 11.5% (Saragih, 2019). With that problem, the firm had to meet an appropriate amount of liquidity to pay immediate needs, to meet customers' demand related to payments, and to provide flexibility in achieving interesting and beneficial investment opportunities (Adi, 2019). Considering those two cases, the amount of cash holdings must be determined appropriately to maintain bank liquidity.

Cash holdings in Indonesia's banking industry are determined by some factors or components. The only cash holding component that is determined and must be met by the banking corporation is the Statutory Reserve Requirement (SRR) (Silaen, 2017). According to Bank Indonesia (2013), *SRR* is the minimum balance that needs to be kept by banking corporations and the amount is determined by the Bank of Indonesia. Other than SRR, the other supporting components of cash holdings in the banking industry are determined by each firm's policy. Therefore, the determinant factors of cash holdings in the banking industry are important to be studeied.

Theories used in this research are focused on the Trade-off Theory and the Agency Theory. The trade-off theory explains the level of optimum cash holdings in a firm (Silaen, 2017). Meanwhile, the agency theory explains that the management will tend to keep cash holdings to get discretionary power. Based on this theory, there is no optimum corporate liquidity (Jensen, 1986). In this research, the trade-off theory will explain the correlation between cash holdings, dividend payment, and cash conversion cycle, while the agency theory will explain the correlation between cash holdings, the corporate social responsibility (CSR) disclosure, and corporate governance. The corporate governance discussed in this research is focused on the internal one, which is linked to the independence and the size of the board of commissioners.

Some previous researches about cash holdings using the variables of dividend payment, cash conversion cycle, CSR disclosure, and corporate governance have been conducted. A research conducted by Singh & Misra (2019) reveals that dividend payment negatively affects cash holdings. According to Silaen (2017), the cash conversion cycle positively affects the corporate cash holdings. Lu et al. (2016) explain that CSR disclosure positively affects the corporate cash holdings. Ozkan (2004) also explains that the independence of the board of commissioners negatively affects the corporate cash holdings. Then, a research conducted by Al-Najjar and Clark (2017) shows that there is a negative significant correlation between the board of commissioners and the corporate cash holdings. Even though the previous research has analyzed the determinants of cash holdings, yet there is no research comparing the determinant factors of cash holdings in the conventional and Islamic banking industry in Indonesia. Regarding this issue, this research is focused on comparing the factors affecting cash holdings in the conventional and Islamic banking industry in Indonesia. This research aims to investigate the effect of dividend payment, cash conversion cycle, CSR disclosure, and corporate governance, which are linked to the independence and the size of board of commissioners, on cash holdings in the banking industry in Indonesia, both conventional and Islamic banks.

Literature Review

Cash Holdings

According to Gill & Shah (2011), cash holding means a certain amount of cash owned by a firm or cash available to be invested in the form of physical assets and to be distributed to investors. Referring to this definition, it can be stated that cash holding is all assets owned by a firm that is easily converted or changed into cash. The reserve of cash holdings is very important for the firm

to provide its liquidity.

Keynes (1936) argues that there are three main motives of a firm in holding cash. The first motive is the transaction motive; the firm keeps the cash to meet its operational activities. The next motive is the precautionary motive; the firm holds the cash to meet unexpected conditions. The last motive is the speculation motive; the firm makes reserve cash to be saved or to be invested to take benefits of the effect of interest fluctuation in the future.

Banking corporations are obliged to maintain their cash holdings. The most important reason for cash holdings in the banking industry is that it is used to meet the regulation requirements and to make sure that the firm owns enough amount of cash to meet customers' withdrawal (Yeboah & Agyei, 2012). Besides, appropriate cash holdings in banking will also give optimum benefits because the cash is allocated to productive assets such as securities or lending (Silaen, 2017).

Cash holdings in the banking industry in Indonesia are regulated through the SRR that is determined by the Bank of Indonesia (Silaen, 2017). According to Bank Indonesia (2013), SRR is the minimum balance that needs to be kept by banking corporations and the amount is determined by the Bank of Indonesia. In 2018, it was regulated that SRR was 6.5% and 5% of Third Party Fund (DPK) in the conventional and Islamic banks, respectively (Bank Indonesia, 2018).

Trade-off Theory and Agency Theory

The trade-off is a situation when someone needs to decide on two or more aspects. In the process of decision-making, they will involve diminishing one aspect with certain reasons to gain another aspect with different and better quality (Romadhoni et al., 2019). Trade-off theory itself explains that there is a linear correlation between costs and benefits in every decision making in a firm (Myers & Majiuf, 1984). One of the examples of decision making in a firm is cash holdings.

Related to cash holdings, Keynes (1936) identifies that trade-off theory is a level of optimization in holding cash by measuring the marginal costs and benefits of holding the cash. A firm can take benefits from holding cash, such as decreasing the possibility of financial distress, making it possible to hold investment policy when the financial distress is relieved, and minimizing to seek external funding or corporate asset liquidation. Meanwhile, marginal costs in holding cash are an opportunity cost from the capital invested in cash (Ferreira & Vilela, 2004).

Jensen & Meckling (1976) in the agency theory describe the agency correlation as a form of contract between the principals involving agents to perform some services under their name. The principals will delegate some authorities of decision making to the agents. Therefore, the agents need to be responsible with all of their behaviors to the principals.

Related to cash holdings, agency theory explains that a firm with a high amount of free cash flow can lead to a high amount of agency cost when the cash is not invested in beneficial projects. This condition happens because firm management can increase their interests by storing a huge amount of money to gain discretionary power (Jensen, 1986). This statement is supported by Ozkan (2004) who explains that a firm in which the agency cost is bigger than the managerial policy will tend to have bigger cash reserve for their benefit, especially those who have bad shareholders rights and have a lack of mechanism of corporate governance.

Dividend Payment and Cash Holdings

Based on the Act No. 40 2007 about Corporation, a dividend is all net profit minus the allowance for reserves distributed to shareholders according to the decision made in the General Meeting of Shareholders (hereafter, *RUPS*) (Pemerintah Republik Indonesia, 2007). A dividend payment in this research is defined as the profit distribution to shareholders according to the number of shares owned. In other words, it is the profit received by shareholders that comes from the firm's profit in one period (Halim, 2019). Based on the trade-off theory, a firm can change the marginal cost from cash holdings with the dividend payment. Therefore, if the firm pays a dividend, the corporate cash holdings tend to decrease. This theory is strengthened by research conducted by Ferreira & Vilela (2004), Singh & Misra (2019), and Al-Najjar (2013) which reveals that dividend payment has a significant negative effect on cash holdings. Based on the abovementioned explanation, the

hypothesis proposed in this research can be formulated as follow:
H1: Dividend Payment negatively affects Cash Holdings in the banking industry.

Cash *Conversion Cycle and Cash Holdings*

The cash conversion cycle is a measure of a period needed to change one dollar (or other currencies based on the context) of cash disbursement to be turned into one dollar of cash reimbursement from the firm operation activities (Richards & Laughlin, 1980). In this research, the cash conversion cycle is defined as the difference of a period needed to collect debtors using a certain period of debtors' payment (Yeboah & Agyei, 2012). According to the trade-off theory, a firm having a long cash conversion cycle will also gain cash in a long period, so it will tend to save a big amount of cash holdings reserve to decrease financial distress. Research conducted by Opler et al. (1999), Bigelli & Sánchez-Vidal (2012), and Astuti et al. (2020) explain that there is a positive and significant correlation between the cash conversion cycle and cash holdings. Based on the abovementioned explanation, the hypothesis can be formulated as follow:
H2: Cash Conversion Cycle positively affects Cash Holdings in the banking industry.

CSR Disclosure and *Cash Holdings*

Corporate Social Responsibility (CSR) is an act done by a firm to contribute to society, starting from the staff and customers, the environment, and the local people (Liem et al., 2020). CSR disclosure in this research refers to the Act No. 40 2007 about Corporation explaining that a firm must reveal their social liabilities in their report as a form of their accountability about CSR implementation (Pemerintah Republik Indonesia, 2007). Based on the agency theory, a firm will use the mechanism of joint supervision through the policy of CSR disclosure to decrease the conflict between managers and stakeholders that can decrease the information asymmetry. Through the CSR disclosure, a firm can increase their profit and decrease the agency cost which could increase the corporate cash holdings. Lu et al. (2016), Cheung (2016), and Arouri & Pijourlet (2015) explain that CSR disclosure positively and significantly affects corporate cash holdings. Based on the abovementioned explanation, the hypothesis can be formulated as follow:
H3: CSR disclosure positively affects Cash Holdings in the banking industry.

Independence of Board of Commissioners and *Cash Holdings*

The independence of the board of commissioners is the number of external board of commissioners in the firm (Ujiyantho & Pramuka, 2007). Based on the agency theory, a firm having a big external board of commissioners tends to have a strong board of directors. Therefore, the information provided will be more qualified. When there is quality information, the agency cost needed by the firm will decrease, thus the corporate cash holdings will also decrease. Additionally, the more the external board of commissioners, the lower the corporate cash holdings. This explanation is in line with research conducted by Ozkan (2004), Masood & Shah (2014), and Roy (2018) showing that the independence of the board of commissioners negatively and significantly affects the corporate cash holdings. Based on the abovementioned explanation, the hypothesis can be formulated as follow:
H4: Independence of the board of commissioners negatively affects cash holdings in the banking industry.

Size of Board of Commissioners and *Cash Holdings*

The size of the board of commissioners consists of the internal and external boards of commissioners in a firm (Ujiyantho & Pramuka, 2007). Based on the agency theory, a firm having a big size of board of commissioners tends to produce more quality information and supervision. The more quality information and supervision makes the agency cost needed by the firm decrease, thus the corporate cash holdings will also decrease. Therefore, the more the board of commissioners in a firm, the lower the corporate cash holdings will be. Researches conducted by

Masood & Shah (2014), Al-Najjar and Clark (2017) and Roy (2018) also explain that there is a negative and significant correlation between the size of the board of commissioners and the corporate cash holdings. Based on the abovementioned explanation, the hypothesis can be formulated as follow:

H5: The size of the board of commissioners negatively affects cash holdings in the banking industry.

Based on the hypotheses development, a research model has been developed in Figure 1.
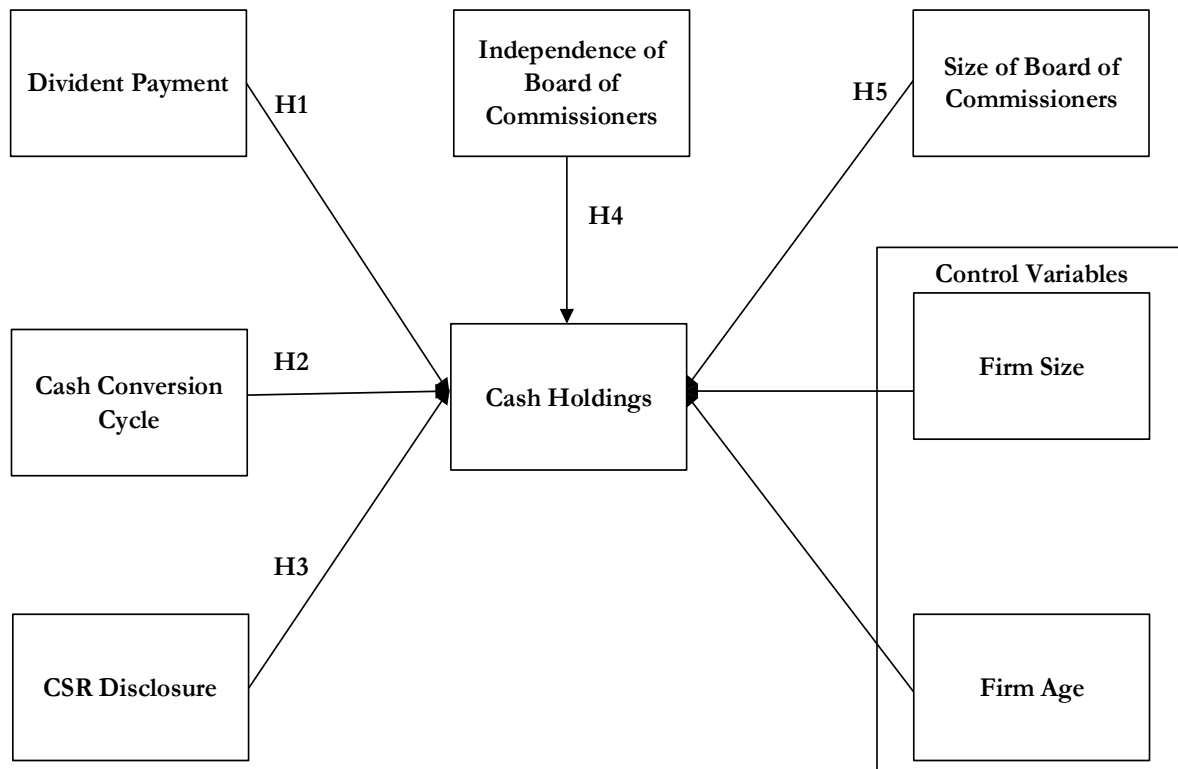

Figure 1: Research Model

Research Methods

Sample Selection and Data Sources

Populations selected in this research were the conventional banks registered in the Indonesia Stock Exchange and all Islamic banks in Indonesia. Samples were selected using the purposive sampling technique with the following criteria: (1) publishing annual reports during 2014-2019 and (2) publishing individual financial reports during 2014-2019. Based on those criteria, there were 17 conventional banks and 11 Islamic banks selected as the samples. With 6 year-period of observation, the total samples were 102 conventional banks and 66 Islamic banks. The process of selecting samples is presented in Table 1.

Table 1: The Process of Selecting Samples

Explanation	Number of Banks
The number of conventional banks	35
The number of conventional banks that did not publish the individual financial report completely	(18)
The number of samples of conventional banks per year	17
The number of Islamic banks	13
The number of Islamic banks that did not publish the individual financial report completely	(2)
The number of samples of Islamic banks per year	11

The source of data used in this research was secondary data collected from historical data of annual reports, sustainability reports, and annual financial reports of the banking corporations available on their websites and www.idx.co.id during 2014-2019.

Measurement of Variables

The variables in this research consist of dependent, independent, and control variables. The dependent variable in this research is cash holdings, while the independent variables consist of dividend payment, cash conversion cycle, CSR disclosure, independence of the board of commissioners, and size of the board of commissioners. The control variables in this research consist of the age and size of the firm. The explanation of the operational definition and measurement of each variable is presented in Table 2.

Table 2: Definitions and measurement of the variables

Variables	Definition	Measure Indicators
Cash Holdings	A certain amount of cash owned by a firm or of cash available to be invested in the form of physical assets and to be distributed to investors (Gill & Shah, 2011).	$\dfrac{\text{Cash and cash equivalent}}{\text{Total asset}}$
Dividend Payment	The profit distribution to shareholders according to the number of shares owned (Halim, 2019).	Dummy Variable (1 for those pay a dividend; 0 fot those not pay a dividend)
Cash Conversion Cycle	The difference of a period needed to collect debtors using a certain period of debtors' payment (Yeboah & Agyei, 2012).	$\left(\dfrac{\text{Current Asset}}{\text{Interest Income}} - \dfrac{\text{Short-term Debt}}{\text{Interst Exp}} \right) \times 365$
CSR Disclosure	The information disclosed by the management about the activities related to the corporate's responsibilities towards the society and environment (Amiq & Hadi, 2018).	Using the standard of Global Reporting Initiative (GRI) G-4 by the following formula: $\dfrac{\text{Number of indicators of disclosure}}{\text{Total of indicators of disclosure (91)}}$
Independence of Board of Commissioners	The proportion of the number of external board of commissioners in the firm (Ujiyantho & Pramuka, 2007).	Independence of Board of Commissioners/ Size of Board of Commissioners x 100%
Size of Board of Commissioners	The number of internal and external boards of commissioners in a firm (Ujiyantho & Pramuka, 2007).	Internal Board of Commissioners + External Board of Commissioners
Firm Size	The size of a firm based on the value of equity, sales, and assets (Riyanto, 2008).	Ln Total Asset
Firm Age	The total years since the firm was established legitimately (Shumway, 2001).	Year of research – the year of the firm established

Data Analysis Technique

The data analysis technique in this research used descriptive statistics, classical assumption test, and hypothesis test with multiple linear regression method. The classical assumption test done in this research consisted of the normality test, multicollinearity test, and heteroscedasticity test. The model of the regression equation to test the hypothesis is estimated by equation (1):

$$CH = \alpha + \beta_1 DIV + \beta_2 CCC + \beta_3 CSR + \beta_4 IBC + \beta_5 SBC + \beta_6 SIZE + \beta_7 AGE + € \qquad (1)$$

In the above equation, CH is the cash holdings; DIV is the dividend payment; CCC is the cash conversion cycle; CSR is the CSR disclosure; IBC is the independence of board of commissioners; SBC is the size of board of commissioners; SIZE is the firm size; AGE is the firm age; α is the constant value; $\beta_1, \ldots, \beta_7$ is the regression coefficient; and € is the error term.

Results and Discussion

Descriptive Statistics and Classical Assumption Test

Descriptive statistics of all variables including dependent, independent, and control variables for the samples of conventional banks are presented in Table 3, while for the samples of Islamic banks are presented in Table 4. Table 5 presents the result of the Kolmogorov Smirnov normality test is used for the conventional and Islamic banks. Meanwhile, Table 6 presents the result of the multicollinearity test and heteroscedasticity test for both conventional and Islamic banks.

Table 3: Descriptive Statistics of Conventional Banks

Variable	Min	Max	Mean	Std. Dev
Cash holdings	8.76%	36.86%	17.82%	6.36%
Dividend payment	0	1	0.32	0.47
Cash conversion cycle	-75126.39	1072.35	-4088.17	7270.88
CSR Disclosure	12.1%	42.9%	24.1%	6.05%
Independence of Board of Commissioners	0%	100%	60.4%	14.5%
Size of Board of Commissioners	2	7	3.93	1.31
Firm Size	28.30	32.17	30.26	0.85
Firm Age	6	113	39.56	27.58

Source: (Data processing)

Table 4: Descriptive Statistics of Islamic Banks

Nama Variabel	Min	Max	Mean	Std. Dev.
Cash holdings	4.0%	57.7%	16.60%	8.33%
Dividend payment	0	1	0.09	0.290
Cash conversion cycle	-7252.5	3660.64	-620.12	2175.35
CSR Disclosure	16.5%	45.1%	32.90%	7.49%
Independence of Board of Commissioners	0%	100%	55.96%	20.61%
Size of Board of Commissioners	2	6	3.71	0.873
Firm Size	27.22	32.35	29.98	1.33
Firm Age	4	53	25.50	15.48

Source: (Data processing)

As seen in Table 3, the highest percentage of cash holdings in conventional banks in Indonesia is 36.86% and the lowest one is 8.7%. Meanwhile, the highest percentage of cash holdings in Islamic banks is 57.7% and the highest one is 4.0%. Further, the average of dividend payment, cash conversion cycle, CSR disclosure, independence of the board of commissioners, and size of the board of commissioners of conventional banks are 0.32, -4088.17, 24.1%, 60.4%, and 3.93, respectively. Meanwhile, the average of dividend payment, cash conversion cycle, CSR

disclosure, independence of the board of commissioners, and size of the board of commissioners are 0.09, -620.12, 32.90%, 55.96%, and 3.71, respectively.

Table 5: Results of Kolmogorov Smirnov Test

		Unstandardized Residual	
		Conventional Banks	Islamic Banks
N		102	66
Normal Parameters[a,b]	Mean	.0000000	.0000000
	Std. Deviation	5.71603763	6.69643774
Most Extreme Differences	Absolute	.061	.092
	Positive	.061	.092
	Negative	-.040	-.055
Test Statistic		.061	.092
Asymp. Sig. (2-tailed)		.200	.200

Source: (Data processing)

Table 6: Results of Multicollinearity and Heteroscedasticity Tests

Variables	Conventional Banks		Islamic Banks	
	VIF	Sig.	VIF	Sig.
Dividend payment	1.165	0.838	1.196	0.989
Cash conversion cycle	1.119	0.307	1.099	0.458
CSR Disclosure	1.329	0.055	1.171	0.626
Independence of Board of Commissioners	1.530	0.144	1.218	0.079
Size of Board of Commissioners	1.820	0.285	2.055	0.465
Firm Size	1.780	0.134	1.233	0.717
Firm Age	1.226	0.872	2.149	0.071

Source: (Data processing)

Based on Table 5, 2-tailed P-value is 0.200, both conventional and Islamic banks. It means that the residuals have a normal distribution. Based on Table 6, it can be indicated that all the VIF are less than 10, both conventional and Islamic banks. This VIF implies that none of the variables is highly collinear. Then Table 6 also indicates that all the P-values are more than 0.05, both conventional and Islamic banks. This P-value implies that residuals have a constant variance. Based on Table 5 and 6, it can be concluded that the data have met the classical assumption test consisting of the normality test, multicollinearity test, and heteroscedasticity test, both for conventional and Islamic banks. Therefore, the hypothesis test using the multiple linear regression analysis method can be conducted.

Hypothesis Test and Discussion

The results of the hypothesis test using multiple linear regression analysis are presented in Table 7. Based on the table 7, R Square was 0.200 for conventional banks and 0.353 for Islamic banks. It means 20% related variable variation on cash holdings can be explained by seven variables variation in this research for conventional banks. Meanwhile, the rest of them (80%) are explained by variable outside the research. Further, 35.3% of the variation variables related to cash holdings can be explained by seven variables variation in this research for Islamic banks. Meanwhile, the rest of them (64.7%) are explained by variable outside the research. It is also known that the P-value is 0.003 for conventional banks and 0.000 for Islamic banks, thus this model is suitable to be utilized because all independent variables in this research can influence dependent variables, both for conventional and Islamic banks.

As seen in Table 7, dividend payment has no effect on cash holdings in both conventional and Islamic banks. Presumably, it is because the banking industry sampled in this research faces no problems in the credit market. The firms that do not pay dividends can still create liquid finance at

a low cost through the credit market. This research is in line with the research conducted by Wulandari & Setiawan (2019) that dividend payment does not affect cash holdings.

Table 7 also shows that the cash conversion cycle has no effect on cash holdings in both conventional and Islamic banks. Presumably, it is because the banking industry sample in this research uses the external fund for their operation activities such as long-term debt or paid-up capital. In this research sample, the cash conversion cycle is not a factor of cash holdings. This research is in line with Senjaya & Yadnyana (2016) who find that the cash conversion cycle does not affect cash holdings.

Table 7: The Results of Multiple Linear Regression Analysis

Variables	Islamic Banks				Conventional Banks			
	Coefficient	t-stats	Sig. T	Conclusion	Coefficient	t-stats	Sig. T	Conclusion
Dividend payment	-.093	-.028	.978	H1 Rejected	-1.017	-.743	.459	H1 Rejected
Cash conversion cycle	.000	1.172	.246	H2 Rejected	7.074	.825	.412	H2 Rejected
CSR Disclosure	-.063	-.495	.622	H3 Rejected	-.386	-3.419	.001	H3 Rejected
Independence of Board of Commissioners	1.025	1.174	.245	H4 Rejected	1.092	.311	.757	H4 Rejected
Size of Board of Commissioners	12.572	2.261	.028	H5 Rejected	-1.518	-2.493	.014	H5 Accepted
Firm Size	-4.891	-3.775	.000	Significant	2.666	2.872	.005	Significant
Firm Age	-3.795	-3.912	.000	Significant	-.009	-.394	.695	Not Significant
	F count: 4.528 , Sig : 0.000 R^2 : 0.350 Adjusted R^2: 0.275				F count: 3.312 , Sig : 0.003 R^2 : 0.200 Adjusted R^2: 0.139			

Source: (Data processing)

The result of multiple linear regression analysis shows that CSR disclosure negatively affects cash holdings in the conventional banks. It indicates that the more CSR disclosure, the fewer cash holdings in the firm. The negative result in this result is presumably caused by the conventional banking industry sampled in this research adopts signaling theory. In signaling theory, it is explained that a firm will try to decrease information asymmetry, so that they can decrease the capital cost when they need external costs (Senjaya & Yadnyana, 2016). It means that the firm providing more CSR disclosure will signal the investors or future investors about the firm condition, so the firm will hold less cash because it is expected that the capital cost to get liquid cash also decreases. This research, which is related to the conventional banks, is in line with research conducted by Liem et al. (2020) showing that there is a negative effect between CSR disclosure and cash holdings.

The result of the t-test of this research related to Islamic banks shows that the CSR disclosure variable does not affect cash holdings with a significance value of 0.622 > 0.05. Presumably, it is because the Islamic banking industry sampled in this research does not apply the GRI-G4 standard as the standard of CSR report. In Indonesia, the reporting standard of CSR disclosure is not regulated, so the measurement using GRI-G4 in Islamic banks is presumed as not effective. This is strengthened by a social performance report standard for Islamic-based firms, which is Islamic Social Reporting (ISR). This research, which is related to Islamic banks, is in line with research conducted by Moretao (2018) showing that there is no effect between CSR disclosure and cash holdings.

Table 7 also shows that the independence of the board of commissioner variable has no effect on cash holdings in both conventional and Islamic bank industry with significance value of 0.757 and 0.245 respectively, greater than 0.05. Presumably, it is because the banking industry sampled in this research places an independence of board of commissioners as a board of commissioners that does not have a special relationship with the firm's internal management. It

makes the independence of board of commissioners does not have deep international information of the firm and cannot directly involve in the firm's internal decision making like cash holdings policy in the firm. This research is in line with Senjaya & Yadnyana (2016) showing that there is no effect between the independence of the board of commissioners and cash holdings.

Based on the data analysis, the variable of the size of the board of commissioners negatively affects cash holdings in the conventional banks. However, in Islamic banks, it shows that size of the board of commissioners has a positive effect on cash holdings. The result of the conventional banks research is in line with research conducted by Masood & Shah (2014), Al-Najjar and Clark, (2017) and Roy (2018) showing that size of the board of commissioners negatively affects corporate cash holdings. This research is also in line with a theory that explains that a firm having a bigger board of commissioners tends to have more quality information and better supervision, so the agency cost needed by the firm will decrease. It means that the corporate cash holdings will also decrease.

Meanwhile, the result of the t-test of Islamic banks shows that the variable of the size of the board of commissioners has a positive effect on cash holdings with a significance value of 0.028 < 0.05 and a regression coefficient of 12.572. This positive result is presumably caused by the Islamic banking industry sampled in this research thinks that a firm with a smaller board of commissioners will be more efficient in making decisions. A more efficient decision making makes the agency cost needed by the firm smaller, so the corporate cash holdings will also decrease. This research is in line with research conducted by Lee & Lee (2009) that there is a positive effect between the size of the board of commissioners and cash holdings.

According to Boone et al. (2007), the size and composition of the board of commissioners of a firm have two opposite effects, namely better supervision with a bigger number and a more efficient decision making with a smaller number. Conventional banking puts more emphasis on supervision than decision making. It is because the supervisor structure in conventional banking is only held by the board of commissioners. It is different from Islamic banking that involves the size of the board of commissioners to make decisions. It is because the supervisor structure in Islamic banking is more complex, such as the board of commissioners, Sharia supervisory board, and Indonesian Ulema Council.

Conclusion

This research integrates the trade-off theory and agency theory to predict the variables that affect cash holdings in conventional and Islamic banking in Indonesia. Trade-off theory explains the variables of dividend payment and cash conversion cycle, while agency theory explains the variables of CSR disclosure, independence as well as size of the board of commissioners. Therefore, the research model is tested empirically using five hypotheses.

The result of this research shows that there is no effect of dividend payment, cash conversion cycle, and independence of the board of commissioners on cash holdings in the banking industry in Indonesia, both in conventional and Islamic banks. Meanwhile, the variable of CSR disclosure negatively affects cash holdings in conventional banking and does not affect cash holdings in Islamic banking. The variable of the size of the board of commissioners negatively affects cash holdings in conventional banking and positively affects cash holdings in Islamic banking.

Some limitations of this research are as follow: (1) the scope of this research related to conventional banking is only for those registered in Indonesia Stock Exchange (ISE), not covering all conventional banks in Indonesia, (2) control variables used in this research are only firm's size and firm's age. It is expected that future research will involve other control variables, and (3) R square in this study is still low, this means that further research can explore other variables that may affect cash holding, including the extended use of moderating variables.

Author Contributions

Conceptualization: Syifa Rahmatika, Muamar Nur Kholid
Data curation: Syifa Rahmatika
Formal analysis: Syifa Rahmatika

Investigation: Syifa Rahmatika, Muamar Nur Kholid
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Validation: Muamar Nur Kholid
Visualization: Syifa Rahmatika, Muamar Nur Kholid
Writing – original draft: Syifa Rahmatika, Muamar Nur Kholid
Writing – review & editing: Muamar Nur Kholid

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