



**Article history:**

Received: 2020-01-10

Revised: 2020-02-15

Accepted: 2020-03-24

**Keywords:**

Agency theory; Debt; Earnings management; Indonesia; Manufacturing firms

**JEL Classifications:** G32, G34, M41

**Kata kunci:**

Teori keagenan, Utang perusahaan, Manajemen laba, Indonesia, Perusahaan manufaktur

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## Debt and earnings management in Indonesia: An issue of free cash-flow or covenant?

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**Abstract**

This paper investigates the effect of corporate debt on the pattern of earnings management in Indonesia. The issues motivating the paper stems from research gap that has been left unattended. Specifically previous works has been found as failing to differentiate between trade payable and private debt and omitting the variation of liquidity, of which has been claimed as provide conditional effect to the magnitude of corporate debt. The conceptual framework borrows agency theory and follow the arguments of free-cash flow perspective as well as covenant hypothesis. Analysis is based on a sample set consisting of 497 firms engaging in manufacturing operations listed in Indonesia Stock Exchange during the period of 2009 to 2014. The results reveal that corporate debt is an important determinant of earnings management statistically and economically. The results are robust after controlling for debt specifications. Further tests reveal that the interaction between liquidity and specification of corporate debt shapes different pattern of the directions of earnings management. Yet, a due care is required in interpreting the results as this research might suffer from several shortcomings.

**Abstrak**

Penelitian ini menelaah pengaruh utang terhadap manajemen laba di Indonesia. Utang merujuk pada utang keseluruhan reguler dan utang bank. Motivasi penelitian bertolak dari celah riset yang ditinggalkan penelitian terdahulu yang mengabaikan perbedaan antara utang reguler dengan utang privat dan variasi tingkat likuiditas perusahaan sebagai kondisi pemicu kebutuhan pendanaan eksternal. Rerangka konseptual penelitian berbasis pada teori keagenan dengan merujuk perspektif free cash-flow dan perspektif covenant. Analisa dilakukan dengan menggunakan 497 observasi perusahaan manufaktur yang terdaftar pada Bursa Efek Indonesia periode tahun 2009 sampai dengan 2014. Hasil pengujian memperlihatkan utang merupakan determinan manajemen laba yang signifikan secara statistik maupun ekonomi dengan arah positif. Temuan tersebut robust terhadap definisi operasional utang. Selanjutnya ditemukan bahwa interaksi antara jenis utang dan likuiditas perusahaan membentuk kontinjensi yang dapat mempengaruhi arah hubungan antara utang dengan manajemen laba. Namun demikian, interpretasi hasil pengujian membutuhkan kecermatan karena penelitian ini mengandung beberapa kelemahan.

**How to Cite:** Prabowo, M. A., Winarna, J., Aryani, Y. A., Falikhatun, & Gantowati, E. (2020). The level of debt and earnings management in Indonesia: An issue of free cash-flow or covenant? *Jurnal Keuangan dan Perbankan*, 24(2), 142-55. <https://doi.org/10.26905/jkdp.v24i2.4043>

## **1. Introduction**

This study investigates the effect of debts on earnings management in Indonesia. A term debt in this study refers to regular and private debt; whereas earnings management refers to discretionary accruals level of financial statements. Some prior studies had investigated the effect of debt on earnings management (Rosena, Mulyani, & Prayogo, 2016; Risdawaty & Subowo, 2015; Puspita & Astika, 2015; Agustia, 2013) however they exclude discrepancy between regular and private debt. Consistent with Jha, Shankar, & Prakash (2015), private debt creditors have more steady resources in monitoring debt. Therefore considering regular debt as similar to bank debt would ignore the differences in the capacity of monitoring creditors that would influence the interpretation of research findings.

In addition, prior studies failed to mention the liquidity level of companies as a factor that raises an inquiry of external funding. The level of liquidity is considered one of the few incentive sources for management to take any opportunistic behavior. This assumption justifies a variety of incentives for earnings management depending on liquidity level. For this reason, excluding variation in earnings management incentives based on liquidity level will likely result in estimation errors in the econometric model. Addressing these issues, the generalization of such research findings should be put into question. Therefore, this study was designed to address a research gap of internal validity issues existing in prior studies.

A conceptual framework in this study underlined an agency theory. In terms of free-cash-flow, debt would likely reduce agency conflict and incentives for company managers in relation to earnings management. From the standpoint of the covenant, debt would increase the incentive of companies for earnings management. Based on observation on 497 manufacturing firms indexed on the Indonesia Stock Exchange from 2009 to 2014, some empirical findings were identified. First, debt is a statistically and

economically significant positive factor of earnings management. This finding is consistently aligned with the definition of operational debt. Second, company liquidity is a significant contingency variable that influences a relationship between debt and earnings management.

This study at least delivered two contributions to the literature of earnings management. First, this study carried out a test with sensitivity toward the operational definition of corporate debt by considering overall debt and bank debt. The research finding showed a variety of operational definitions related to corporate debt which could result in various impacts of debts on earnings management. It revealed a necessity to review operational definitions in the investigation of company characteristics' effects on earnings management in Indonesia. Therefore this study considered liquidity contingency as a factor that influences the relationship between debt and earnings management. Based on research findings, the contingency factors influence the change of relationship direction between debt and earnings management. This research finding justified a claim that research on earnings management should consider contingency factors to ensure more robust results.

## **2. Hypotheses Development**

### **Quality of financial statements and credit decisions**

Financial statements are an important factor of credit transactions and credit agreements because it is a primary source of information for creditors in making economic decisions (Ball et al., 2015). Although some creditors likely counted on information from outsiders, Coffee Jr. (1984) argued that it would absorb significant resources and time which eventually lead to a tremendous increment in financial situation. Henceforth in a specific argument, financial statements are a source of information or lending decisions, loan monitoring, and contingency

decisions upon credit (Christensen, Nikolaev, & Wittenberg-Moerman, 2016). From the standpoint of a binding hypothesis, the binding and credit agreement is based on ratios generated from financial statements (Paik et al., 2019). The primary function of financial statements was based upon the assumption that the quality of delivered information depends on the recipients' comprehension level (Ruch & Taylor, 2015).

The quality of financial statements had gained much attention from various backgrounds. Empirical research showed various indicators of quality of financial statements, yet they are regarded as complementary. As a case in point, Bonsall & Miller (2017) suggested the quality of financial statements as comprehensiveness and clarity of disclosure which likely influence rating improvement, rating differences among rating agencies, and debt costs. Another study suggested a timeline of announcements of financial statements as a measure of the quality of financial statements (Abernathy et al., 2015). The most controversial thing was found in research from Ball et al. (2015) that employed accounting standards by companies to measure the quality of financial statements. They found that IFRS lowers contractibility (an ability or strength as the basis of debt contract) of financial statements. In contrast, Eliwa, Gregoriou, & Paterson (2019) suggested the quality of accruals as a measure of the quality of financial statements. Moreover, a range of meta-analysis and literature suggested the accrual level as a measure of the quality of financial statements (Ruch, & Taylor, 2015; Inaam, & Khamoussi, 2016; Chen, & Komal, 2018). It paved the way for accrual quality to be the most frequently recommended measure in assessing the quality of financial statements.

Based on the accounting literature, accrual quality emerges from management discretion over the selection of accounting methods and techniques (Habib, Bhuiyan, & Islam, 2013; Kiswanto & Fitriani, 2019); and the selection of methods & techniques

were based on incentives deemed as substantial by management. From the brief perspective of agency theory, the prime incentive of management underlined the personal interests of company managers (Donaldson, 2013) leading to conflicts of interests between management and stakeholders. The conflict of interests would inflict opportunistic behavior among managements in a way of creating detrimental effects on stakeholders. For that reason, the governance framework considered accrual quality as a measure of management opportunistic behavior level (Fung & Goodwin, 2013; Sitompul, Purwohedi, & Warokka, 2017). This assumption suggested that management would favor accounting methods and techniques which supported their opportunistic behavior.

### **Debt and earnings management**

Finance literature indicates that cash balance is an important element for company operations. In terms of trade-off, companies should manage cash balances at a specific level to anticipate uncertainty on investment in the upcoming years (Park & Jang, 2013). In short, a policy concerning the optimal level of cash balances can generally apply to all companies based on costing costs and marginal benefits. Different points of view were portrayed through a perspective of financial hierarchy which pointed out a variety of optimal cash balance policies for each company (Chay et al., 2015) and tend to be skeptical toward the company's ability when encountering the uncertainty. Therefore, such a perspective favored investment opportunities mainly for generating optimal cash balance policy (Choi & Suh, 2017). Even though two previous perspectives recognize the benefits of determining a certain level of cash balances, the perspective of agency considers the establishment of cash balance levels likely inflict problems for companies. This point of view was generated from a hypothesis of free-cash-flow discussing the potential of opportunistic management actions (Kadioglu & Yilmaz, 2017).

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The hypothesis of free-cash-flow was generated from a variety of characteristics between internal financing sources and external sources (Rashid, 2016). Internal finance sets companies up to accumulate cash revenue earned from firm operations which significantly increases more cash balance than the company's assets. Rarely do companies have policies that regulate top management in managing cash balances. In a brief, the accumulation of cash balances that is free from any restrictions for management henceforth refers to free-cash-flow (Rashid, 2015). In such a situation, the existence of free cash flow creates any opportunistic behaviors among management such as increased remuneration and business expansion with uncertain returns (Choi, Chung, & Liu, 2018). Contrary to internal funding, debt is a type of funding that regulates scheduled loan repayment obligations.

The installment scheduled payment is cash outflows which act as a mechanism to prevent the accumulation of cash balances (Rashid, 2016). It generates the hypothesis of debt as a mechanism for mitigating opportunistic behaviors among management having conflicts of interest with shareholders (Ha, 2019). The reduction of opportunistic behavior likely lowers incentives for management by considering accounting methods and techniques (Al-dhamari & Ku Ismail, 2015). Therefore the perspective of free-cash-flow defines debt as a governance mechanism that could reduce earnings management.

Even though debt can reduce agency costs between managers and shareholders, a covenant perspective suggests the debt level as another cause of conflict between the company and creditors (Lopez-Gracia & Mestre-Barbera, 2015). In accordance with established practice, external funding requires certain terms of guarantee which can be either an obligation for companies to maintain financial ratios at a certain level or a prohibition for companies to make new investments or both of them. From the viewpoint of creditors, the guarantee is a mechanism to mitigate the risk of default on debt (Bradley & Roberts, 2015; Demerjian, 2017).

From the perspective of companies, the guarantee will restrain the operations of companies at both technical and strategic levels (Devos, Rahman, & Tsang, 2017).

In some specific circumstances, for example, if any investment opportunity with a positive return value occurs, debt guarantee likely prevent companies from taking advantage of this situation (Hillier et al., 2018). It is widely known as suboptimal investment, leading to opportunity loss for the companies. Encountering restrictions due to debt financing, companies can misallocate and relocate factors of production from one company to another (Uras, 2014). Adversely in aggregate this relocation likely lowers productivity which subsequently leads to the increase in inefficiencies (Ryzhenkov, 2016). As a consequence, the increase in inefficiencies is the key factor in poor performance.

At the same time, a hypothesis of guarantee indicates that creditors' monitoring of the company's compliance with credit terms can increase capital costs. In specific terms, breach of collateral will generate additional collateral, increased collateral threshold, increased borrowing interest costs, and repayment request for companies (Freudenberg et al., 2017; Cohen et al., 2018; Butt, 2019). Even in a number of cases, breach of collateral can lead to termination of credit (Gu, Mao, & Tian, 2017; Roberts, 2015). In such a condition, a decision to violate a credit agreement is always built upon the assumption that the feasible marginal benefits are greater than the increase in capital costs.

The guarantee hypothesis suggests that level of debt is a source of funding that can significantly reduce the company's operations and potentially increase capital costs. Some prior studies revealed that markets offer discounts upon company values because the debt balance was at a certain proportion (Choi & Richardson, 2016; Long, Tsui, & Zhang, 2014). The discounts likely reduce the welfare of shareholders. In such a condition, the agency framework predicts that shareholders will respond to such

a situation by reducing management fees (Ntim et al., 2015; Hussain, Rigoni, & Cavezzali, 2018). Thus, it would interfere with the personal interest of companies' management. To prevent a decline in stock performance which further inflicts management losses, the agency framework suggests management opt for discretion in earnings management (Zhang et al., 2018). In such a way, on the basis of collateral perspective, debt is a source of external funding that positively influences earnings management.

In a perspective of both free-cash-flow and guarantee, debt is a determining factor of earnings management level. However, both perspectives are contradictory. Therefore this study examines the influence of debt level on earnings management. The formal hypothesis was formulated in the following statement:

$H_1$ : debt affects the level of earnings management

### 3. Data, Method, and Analysis

The sampling of the study consisted of some manufacturing firms (industry type classification codes 31 to 56) that were indexed in the Indonesia Stock Exchange in the period 2009 to 2014. A sampling of company-year observation used the following criteria: (a) availability of annual reports, (b) debt guarantees was restricted only with covenants and collaterals, excluding personal guarantees, (c) Proportion of debt less than 40 percent were guaran-

teed by the group company. Both criteria b and c were aimed to guarantee free confounding effects on the sample due to the strength of the capital structure of business groups, not individual type. The preliminary sample consisted of 808 company-years over the period. After eliminating the company-years that failed to meet the established criteria, the final sample turned into 497 observations.

A research model used discretionary accruals as a dependent variable and an indicator of earnings management level. The primary independent variable was companies' debt balance. Technically, the research model was estimated in the following way:

$$DAC_{it} = \beta + \beta_1 LEV_{it} + \beta_2 BINDP_{it} + \beta_3 ACOSZ_{it} + \beta_4 OWN_{it} + \beta_5 ASSTLN10_{it} + \beta_6 MTBV_{it} + \beta_7 SLGRTH_{it} + \beta_8 ROA + \varepsilon_{it} \quad (1)$$

In the research model, each notation  $i$  and  $t$  represented company and year. The discretionary accrual ( $DAC$ ) referred to a modification model from Jones (1991) which was considered as free coefficient biases due to non-articulated events (Hribar & Collins, 2002), with the following estimation:

$$(DAC_{it}) = \beta_1 (1/A_{it-1}) + \beta_2 (\Delta REV_{it}/A_{it-1}) + \beta_3 (PPE_{it}/A_{it-1}) + \varepsilon_{it} \quad (2)$$

Symbol  $A$  was the value of assets,  $REV$  was accounts receivable, and  $PPE$  was land, buildings

**Table 1.** Procedure for constructing samples

Year	Amount	LKN	COV	AFI	Sample
2009	128	39	34	16	39
2010	132	16	27	24	65
2011	134	8	23	15	88
2012	135	5	20	11	99
2013	137	4	18	12	103
2014	142	5	25	9	103
	808	77	147	87	497

Amount: number of manufacturing firms listed on the Indonesia Stock Exchange,  $LKN$ : unavailable Financial Statements,  $COV$ : Debt guarantees only with covenants and collaterals, excluding personal guarantees,  $AFI$ : The proportion of debt less than 40 percent guaranteed by the group of companies

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and fixed assets of production. In this model, the discretionary accrual level indicated deviation between population value and observation value.

The level of debt (*LEV*) was the proportion of debt to assets. Control variables were groups of both governance characteristics (independence of the board of commissioners, audit committee size, ownership structure) and company characteristics (company size, book-market value, sales growth, and operating profit). The independence of the board of commissioners (*BINDP*) was the proportion of independent commissioners' number to the total number of members of the board of commissioners. The size of the audit committee (*ACOSZ*) was the number of members of the audit committee. Ownership structure (*OWN*) was the proportion of the number of shares owned by the 10 largest shareholders to the total number of shares. Company size (*ASSTLN10*) indicated the log value of 10 company

assets. Book-market value (*MTBV*) was measured based on the comparison of the book value of equity against the market value of equity. Meanwhile, sales growth (*SLGRTH*) was measured by comparing sales changes between the current year and last year divided by the sales balance of last year. Operating profit (*ROA*) was the proportion of profit compared to company assets.

The definition of variables was briefly presented in Table 2.

## 4. Results

Table 3 illustrated descriptive statistics of all variables in the study. This study employed winsorize up to 3 points of standard deviation among all variables with a ratio measurement scale. It was aimed at mitigating problems that occurred due to outliers.

**Table 2.** Definition of variables

Variable	Definition
<i>DAC</i>	The value of accrual discretion using the model of Jones (1991)
<i>LEV</i>	Debt to total assets ratio
<i>BINDP</i>	The proportion of independent commissioners to the total number of commissioners
<i>ACOSZ</i>	Number of audit committee members
<i>OWN</i>	The proportion of ownership by the 10 largest shareholders
<i>ASSTLN10</i>	Log 10 total assets
<i>MTBV</i>	Ratio of market value to book value
<i>SLGRTH</i>	Sales growth
<i>ROA</i>	Ratio of profit after tax to total assets

**Table 3.** Descriptive statistics

Variable	Mean	St.D	Min	Max
<i>DAC</i>	-0.01	0.09	-0.31	0.29
<i>LEV</i>	0.49	0.27	0.04	1.67
<i>BINDP</i>	0.40	0.12	0.20	1.00
<i>ACOSZ</i>	3.11	0.42	2.00	5.00
<i>OWN</i>	0.51	0.23	0.10	0.96
<i>ASSTLN10</i>	6.21	0.70	4.12	8.30
<i>MTBV</i>	2.07	2.96	0.01	17.18
<i>SLGRTH</i>	0.13	0.21	-0.67	0.95
<i>ROA</i>	0.13	0.14	-0.17	0.59

The highest value of accruals was 0.29 and the lowest value was -0.31 with an average value at the level of -0.01. It presented an overview of the distribution of positive accrual values which was equivalent to the value of negative accruals. Thus it might be argued that manufacturing firms in Indonesia carried out positive and negative earnings management in balanced proportions. Interestingly the average value of debt was 0.49 which was considerably less than 1.00. This figure showed that operating funding mostly relied on internal sources. Any possible interpretation of this phenomenon was the existence of relatively high-interest rates in Indonesia.

Table 4 showed a univariate analysis that illustrated correlations among research variables. The highest coefficient was 0.49, describing the correlation between *ROA* and *MTBV*. This figure was much smaller than 0.8 and 0.7 which was an established threshold of multicollinearity indicator suggested by Gujarati (1995) and Cooper & Schindler (2003). Empirically, the use of thresholds as a benchmark for research method had been validated by prior studies investigating earnings management (Lazzem & Jilani, 2018; Arun Almahrog, & Aribi, 2015; Haga, Höglund, & Sundvik, 2018). Therefore any potential issues were resolved regarding the existence of multicollinearity among independent variables in research models used for examining the relationship between debt and earnings management.

Table 5 showed the influence of debt on the discretionary accrual level as a measure of earnings management. In Panel A, the sampling included observations. Thus the accrual level was measured using absolute values (the unsigned). Meanwhile, in Panel B and C, dependent variables referred to, positive accruals and negative accruals respectively. The justification of such samplings was the use of the absolute value of discretionary accruals likely inflicted bias in testing. Consistent with Hribar & Nichols (2007), the bias was likely generated from alpha type errors (hypothesis rejection 0: no earnings management). To resolve the issue, prior research suggested splitting the sample into two groups: positive accruals and negative accruals (Khalil & Ozkan, 2016). 6 company-years were not included in both positive and negative accrual subsamples. As a result, the number of Panel A sample was different from the accumulated number of Panel B and Panel C samples.

In Panel A (all samples), debt had significantly positive influence on accruals at the level of 5 percent (coefficient = 0.05,  $z = 2.34$ ). In panel B (positive accruals), debt had significant influence on accruals with a significance level of 1 percent (coefficient = 0.11,  $z = 4.45$ ). In panel C (negative accruals), the test results showed the effect of debt on accruals is insignificant (coefficient = 0.01,  $z = 0.33$ ). A more in-depth analysis illustrated in Table 5 had revealed some interesting information. First, in panel

**Table 4.** Correlations

	1	3	4	5	6	7	8	9
<i>DAC</i>	1.00							
<i>LEV</i>	0.06	1.00						
<i>BINDP</i>	0.01	0.16	1.00					
<i>ACOSZ</i>	0.04	-0.09	0.09	1.00				
<i>OWN</i>	-0.06	-0.12	0.07	-0.01	1.00			
<i>ASSTLN10</i>	0.05	0.17	0.09	0.26	0.19	1.00		
<i>MTBV</i>	0.02	0.06	0.28	0.09	0.25	0.25	1.00	
<i>SLGRTH</i>	0.10	0.06	-0.03	0.01	0.00	0.06	-0.01	1.00
<i>ROA</i>	0.03	-0.19	0.12	0.18	0.27	0.18	0.49	0.12

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A, a comparison between column 1 and column 2 resulted in an increase in the value of  $R^2$  by 2 percent and the value of Wald  $\chi^2$  by 6 points. The same trend seemed more visibly in Panel B. The comparison between column 1 and column 2 indicated the increase in the value of  $R^2$  from 0.06 to 0.14 and Wald  $\chi^2$  value from 12.04 to 33.04. This trend indicated debt as a statistically significant and budget-friendly determinant of earnings management. Second, if column 2 of Panel A and Column 2 of Panel B were contrasted, it showed an increase in coefficient (from 0.05 to 0.11) and z value (from 2.34 to 4.45). This trend revealed that the effect of debt on earnings management was more evident in the positive accrual sub-sample group in the unconditional testing. It also underlined that splitting samples into sub-groups based on certain characteristics was a necessity.

Up till now, the bottom-line analysis revealed that total debt significantly affected earnings man-

agement. Despite that, prior studies opted for a restricted definition of debt referring to as a bank debt (Hsieh & Wu, 2012; Jha et al., 2015). This premise was built upon the assumption that the banking industry had more resources that allowed lenders to conduct more intensive monitoring. Addressing this assumption, this study opted for a bank debt to replace total debt. The result of the analysis was presented in Table 6.

In column 1 (all samples), the significance value of debt was much lower than both conservative and marginal levels. On the other hand, when the sample was divided based on the accrual direction, the test yielded different results. In column 2 (positive accruals), debt had a positive effect (coefficient = 0.08) significantly at the 1 percent level. In column 3 (negative accruals), the debt had a negative effect (coefficient = -0.08) with a significance level of 5 percent. A plausible reason for these phenomena was the opposite direction of the relationship between debt

**Table 5.** OLS regression of the effect of debt on earnings management

		Panel A		Panel B		Panel C	
		1	2	1	2	1	2
<i>LEV</i>	Coef.		0.05		0.11		0.01
	Z Value		2.34		4.45		0.33
<i>BINDP</i>	Coef.	-0.02	-0.03	-0.02	-0.04	-0.01	-0.01
	Z Value	-0.43	-0.72	-0.42	-1.00	-0.22	-0.26
<i>ACOSZ</i>	Coef.	-0.01	-0.01	-0.01	0.00	-0.01	-0.01
	Z Value	-1.22	-1.00	-0.63	-0.24	-0.94	-0.90
<i>OWN</i>	Coef.	-0.04	-0.03	-0.04	-0.03	-0.05	-0.05
	Z Value	-2.18	-1.84	-2.09	-1.32	-1.61	-1.57
<i>ASSTLN10</i>	Coef.	-0.01	-0.01	-0.01	-0.02	-0.01	-0.02
	Z Value	-1.57	-2.04	-1.24	-2.31	-1.46	-1.49
<i>MTBV</i>	Coef.	0.00	0.00	0.00	0.00	0.00	0.00
	Z Value	-1.62	-1.92	-1.11	-1.84	-0.77	-0.79
<i>SLGRTH</i>	Coef.	-0.01	-0.01	0.01	0.00	-0.02	-0.02
	Z Value	-0.84	-0.98	0.48	0.13	-0.72	-0.74
<i>ROA</i>	Coef.	0.04	0.06	0.06	0.11	0.00	0.00
	Z Value	1.34	1.82	1.56	2.77	-0.09	-0.02
<i>_cons</i>		Yes	Yes	Yes	Yes	Yes	Yes
$R^2$		0.06	0.08	0.06	0.14	0.06	0.06
Wald $\chi^2$		17.54	23.44	12.04	33.04	10.98	11.05
Prob > $\chi^2$		0.01	0.00	0.10	0.00	0.14	0.20
N		497	497	251	251	240	240

The notations a, b, and c respectively indicate significance at the level of 1 percent, 5 percent and 10 percent.



and accruals which subsequently canceled out both effects in the testing of the total sample. This trend gave additional support to an argument suggesting sample split based on particular characteristics in the studies of earnings management in Indonesia.

It was also pointed out that companies with liquidity problems would encounter an increase in capital costs (Ortiz-Molina & Phillips, 2014). Hence these companies likely had greater incentives to conduct moral hazard (Acharya & Viswanathan, 2011) leading to an increase in earnings management (Gombola, Ho, & Huang, 2016). Addressing this premise, this study divided the sample on a current ratio as an indicator of liquidity. The sample, in particular, was split into two groups: companies that have liquidity below and above the average sample value (mean = 1.74 percent). The test results were shown in Table 7.

Panel A presented a result test with a sample of companies with low liquidity. The independent

variable in column 1 was total debt and column 2 was bank debt. The test results revealed that the debt level positively influenced the accrual level. Panel B gave an analysis with a sample of companies' above-average liquidity levels. In column 1, the independent variable was total debt, whereas in column 2 the independent variable was bank debt. The analysis showed that overall debt had a significant effect on earnings management. Despite that, bank debt had significant influences on negative accruals in the opposite direction. Altogether the results were summarized in the following Table 7.

## 5. Conclusion

This study investigated the effect of debt on earnings management among manufacturing firms in Indonesia over the period 2011 to 2014. The theoretical framework in this study underlined the agency theory considering debt as a determinant of

**Table 6.** OLS regression illustrating the effect of bank debt on earnings management

		1	2	3
<i>LEV</i>	Coef.	0.00	0.08 a	-0.08 b
	Z value	0.06	2.88	-1.96
<i>BINDP</i>	Coef.	-0.01	-0.02	-0.01
	Z value	-0.43	-0.50	-0.13
<i>ACOSZ</i>	Coef.	-0.01	-0.01	-0.01
	Z value	-1.21	-0.49	-0.82
<i>OWN</i>	Coef.	-0.04 b	-0.03 b	-0.06 c
	Z value	-2.12	-1.38	-1.81
<i>ASSTLN10</i>	Coef.	-0.01	-0.01	-0.01
	Z value	-1.56	-1.60	-1.22
<i>MTBV</i>	Coef.	0.00	0.00	0.00
	Z value	-1.62	-1.10	-0.67
<i>SLGRTH</i>	Coef.	-0.01	0.00	-0.01
	Z value	-0.84	0.19	-0.67
<i>ROA</i>	Coef.	0.04	0.09 b	-0.03
	Z value	1.32	2.27	-0.58
<i>_cons</i>		Yes	Yes	Yes
<i>R</i> <sup>2</sup>		0.06	0.09	0.07
<i>Wald Chi</i> <sup>2</sup>		17.43	20.54	14.66
<i>Prob &gt; Chi</i> <sup>2</sup>		0.03	0.01	0.07
<i>N</i>		497	251	240

The notations a, b, and c respectively indicate significance at the level of 1 percent, 5 percent and 10 percent.

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accrual rate. Using 497 observations, the test results revealed some important information. First, overall debt has a significant effect on earnings management with a stronger effect in the positive accrual sub-sample, showing that companies would increase positive accruals in order to resolve issues on debt. The trend also applied similarly to bank debt. Second, debt was an economically substantial variable generated from the increase in  $R^2$  illustrated in the model when the debt was regarded as an equation. Third, the effect of debt on positive accruals illustrated a robust trend among companies with low liquidity. However, there was evidence that companies with high liquidity would likely reduce negative accruals.

As a matter of fact, this research has some limitations. First, it ruled out other types of debts such as bonds. Prior studies revealed that bonds have different characteristics from both regular debt and bank debt which likely lead to different effects

on earnings management (Fung & Goodwin, 2013; Lyu & Yang, 2019; Gottardo & Moisello, 2019). Despite that the characteristics of bond debt in this study were treated the same as regular debt, leading to a confounding effect on the test. Second, this study ruled out the effects of earnings management on organizational outcomes. Earnings management arguably increased capital costs (Vander Bauwhede, De Meyere, & Van Cauwenberge, 2015; Carmo, Moreira, & Miranda, 2016). Thus earnings management could influence the financial performance of companies. With reference to this premise, management would consider an optimal accrual level as an equilibrium point between the benefits of earnings management and the cost of earnings management. Therefore generalizing optimal accruals among all companies will likely mislead the test results. Other limitations were a coefficient bias and standard errors in earnings management which were indicated by residual values (Chen et al., 2018). One-stage

**Table 7.** OLS regression of the effect of debt on earnings management

		Panel A		Panel B	
		1	2	1	2
LEV	Coef.	0.12 b	0.09 b	-0.05	-0.15 a
	Z Value	2.68	1.97	-1.03	-2.84
BINDP	Coef.	-0.06	-0.04	-0.03	-0.04
	Z Value	-0.99	-0.67	-0.49	-0.60
ACOSZ	Coef.	0.00	-0.01	-0.03	-0.01
	Z Value	-0.14	-0.32	-1.12	-0.48
OWN	Coef.	-0.03	-0.03	-0.07 c	-0.08 c
	Z Value	-1.08	-0.95	-1.69	-1.85
ASSTLN10	Coef.	-0.02	-0.02	-0.02	-0.01
	Z Value	-1.34	-1.27	-1.02	-0.91
MTBV	Coef.	0.00	0.00	0.00	0.00
	Z Value	-1.24	-0.68	-0.28	-0.43
SLGRTH	Coef.	0.00	0.00	-0.01	-0.01
	Z Value	-0.06	0.02	-0.39	-0.43
ROA	Coef.	0.13 b	0.12 c	0.00	-0.04
	Z Value	2.10	1.91	-0.04	-0.53
_cons		Yes	Yes	Yes	Yes
R <sup>2</sup>		0.16	0.11	0.08	0.13
Wald Chi <sup>2</sup>		16.38	12.43	8.61	15.60
Prob > Chi <sup>2</sup>		0.04	0.13	0.38	0.05
N		136	125	115	115

The notations a, b, and c respectively indicate significance at the level of 1 percent, 5 percent, and 10 percent.

procedure and the use of a standard error estimation basis with a firm-level predictor could be used to resolve the issues. Otherwise, the procedure for measuring earnings management would be more accurate when using an innate method of estimation model (Chen, Hribar, Melessa, 2018; Chen & Zhu, 2013). Regarding this limitation, it is necessary to be rigorous when interpreting the results of the study.

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