CURRENT ASSET TUNNELING AND FIRM PERFORMANCE
IN AN EMERGING MARKET

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Abstract
This study examines the effect of current asset tunneling on firm performance from the emerging market perspective. Although tunneling activities is a common practices by businesses especially in Indonesia, there exist obstacles in the measurement of tunneling activity because it is difficult to proof the existence of such practices. In this study, we measure tunneling by using accounts receivables and develop tunneling detection criteria. In addition, this study examines the effect of tunneling on firm performance and market reaction during the announcement of the related party transaction. The study finds that from the perspective of the being-tunneled companies, receivables to related parties negatively affect the company's profit margin. Companies which announce related party transaction indicating tunneling obtain negative abnormal return during the announcement of the related party transaction.

Keywords: current asset tunneling, related party transaction, firm performance, emerging market

INTRODUCTION
Tunneling is a transfer of resources out of the company for the benefit of controlling shareholders (Johnson et al. 2000). In a concentrated ownership structure, the controlling shareholders might take advantage of their control to expropriate minority shareholders’ wealth (La Porta et al. 2000; Shleifer and Vishny 1997), through activities such as tunneling. Controlling shareholders have the power to set corporate policy to obtain
benefits from the related party transaction. Some empirical evidences have suggested that related party transactions can be used for expropriation through tunneling activities (Aharony et al. 2010; Berkman et al. 2009; Cheung et al. 2006; Cheung et al. 2009a; Gao and Kling 2008; Jian and Wong 2003; Juliarto et al. 2013).

As to date, most of the studies undertaken on expropriation focus mainly on tunneling activities in countries with high levels of corporate governance and developed countries (Bae et al. 2002; Faccio and Stolin 2006; Cheung et al. 2006; Cheung et al. 2009a). However, in developing counties, such tunneling receives little attention (Juliarto et al. 2013). Tunneling can occur in country with high and low levels of corporate governance (Johnson et al. 2000). Nenova (2003) states that controlling shareholders in companies operating in countries with low level of corporate governance policies have more chances to expropriate the minority shareholders’ wealth. Therefore, our study focuses on the expropriation of noncontrolling shareholders through tunneling activity in countries with low levels of corporate governance and emerging economy.

Indonesia is an interesting case to be examined for this research considering governance issues, such as related party lending and crony capitalism. It is one of the institutional problems behind the 1997 Asian crisis. Moreover, Indonesia is a developing country having such characteristics low level of investor protection, low law enforcement, and group structures. These characteristics lead to related party transactions that could benefit the group members and at the end will destroy the value of the firm (Khanna and Palepu 2000).

One of the obstacles in studying tunneling activities is the difficulty to measure them. It is not surprising that most previous studies of tunneling focused on market reactions at the time of the announcements of related party transactions (Bae et al. 2002; Cheung et al. 2006; Cheung et al. 2009a; Faccio and Stolin 2006; Peng et al. 2011) or used the level of related party transactions as a proxy for tunneling (Gao and Kling 2008; Juliarto et al. 2013). The usage of the level of related party transactions to measure tunneling is problematic because companies conduct related party transactions not only for opportunistic reasons but also for efficiency reasons. It is for this reason that, in this study we develop tunneling detection criteria.

The following is an illustration of a tunneling activity using related party transactions that could decrease company’s financial performance. Public company in Indonesia, namely MI in this case is considered to be performing tunneling activity in the form of coal price manipulation by KC. KC employs a special purpose company that is RL in Cayman Island to transfer profits. Here is the structure of corporate ownership: KC and RL are subsidiaries of MI. GB is the ultimate owner of MI. KC does not sell coal directly to potential buyers; instead, they sell it to RL below market price, thus causes a decline in KC earnings. Then, RL resells the coal at market price to potential buyers, thereby increasing profits to RL. In this case, KC is tunnelled company. Local Government K, KC non-controlling shareholder, is harmed by the transaction. While the controlling shareholder (GB) as a whole benefits from the transaction, due to losses incurred in KC, it can be covered by higher profits in RL. These transactions are classified as cash flow tunneling because: (1) the transaction leads to a transfer of resources out of the firm in the form of liquid assets; and

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1Expropriation is defined as the process of using one’s control powers to maximize own welfare and redistribute wealth from others (Claessens et al. 2000b).

2Code for ethical purpose

3Ultimate owners concept consider direct and indirect ownership in public companies. Direct ownership is the percentage of shares owned by shareholders on behalf of him. Indirect ownership is ownership through the ownership chain. With ultimate ownership, major shareholders are traced in the major shareholders, and so on, until ultimate owners are identified.
(2) the transaction is beneficial to controlling shareholders at the expense of non-controlling shareholders. Cash flow tunneling transaction can also be employed as tax avoidance because it is a way to tunnel profits from Indonesia to Cayman Island which is a tax heaven country. The motivation of controlling shareholders to transfer profit from KC to RL is because their cash flow right in RL is greater than in KC. A cash flow right is financial claim of controlling shareholders to the company (La Porta et al. 1999).

Almost all public companies in Indonesia perform related party transactions (Sari 2013). Indonesia has group structure and low levels of law enforcement. These leads to abusive related party transactions which will benefit group members while at the end destroy the value of the firm (Khanna and Palepu 2000). Poor law enforcement in Indonesia makes tunneling cases untouched by the law (Sari 2013). If not controlled, tunneling can lead to reduction in investor confidence and financial crisis as it happened in the Asian financial crisis 1997.

Cheung et al. (2006), Cheung et al. (2009b) and Jian and Wong (2003) found that there were several ways for companies to conduct tunneling through related party transactions. For example, a company can provide a great number of accounts receivables, long credit periods, warranty to related party’s receivables, or writes-off of related party receivables. A receivable given to a related party can be treated as a put option, in which a related party can exercise such an option by not paying the receivable in a bad situation (Atanasov et al. 2008). Provision and elimination of related party loans will, in effect, decrease a company’s net earnings. The focus of this study is to examine the tunneling hypothesis whether a receivable to a related party is employed as a tunnel to transfer resource out from the company which hampers company’s performance.
LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

The theory used to explain the occurrence of tunneling activity is the agency theory. In this theory, a concentrated ownership structure – a common phenomenon in many companies around the world – has been suggested as one of the leading indicators of an agency problem between controlling and non-controlling shareholders (La Porta et al. 2000; Shleifer and Vishny 1997). In this process, the controlling shareholders might take advantage of their control to expropriate non-controlling’s wealth.

Expropriation of non-controlling shareholders by the controlling shareholders is principal agency conflict in the concentrated ownership company. Expropriation arises when there is a separation of cash flow rights and control rights. A cash flow right is a financial claim of shareholders to the company (La Porta et al. 1999). Control rights are voting rights to participate in determining the company’s key policies (La Porta et al. 1999). The incentive and ability to perform such expropriation will be greater if the controlling shareholders have control rights in excess of the cash flow (Gugler and Yurtoglu 2003). Cash flow rights leverage on controlling shareholders leading to high likelihood of agency conflicts. A cash flow right leverage is a deviation between cash flow rights with the rights of control. The increase in control right over cash flow rights is performed by controlling shareholders through a variety of mechanisms such as pyramid holdings, cross-ownership (La Porta et al. 1999). The ability of the controlling shareholders to use cash flow rights leverage to expropriate even greater if the controlling shareholder is also involved in management. Controlling shareholder involvement in management causes it not only to influence the policy of the company, but also to have flexibility to use the right control for the private benefit (La Porta et al. 1999).

Tunneling is generally defined as the agency problem between a controlling shareholder and minority shareholders. Controlling shareholders can implement policies that benefit them at the expense of minority shareholders (La Porta et al. 2000) through contractual policies with related parties i.e. tunneling (Gilson and Gordon 2003). Tunneling is divided into two types:

1. Controlling shareholder can move resources from the company to its interests through self-dealing transaction. The transaction either illegal or fraud. Examples of self-dealing transaction are sales of assets through contracts such as transfer pricing that benefit the controlling shareholders, excessive executive compensation, loan guarantees to related parties, etc.

2. Controlling shareholders can increase their ownership in the company without giving/transfer of assets through dilutive share issues, minority freeze-outs, insider trading, creeping acquisitions and other transactions that harm noncontrolling shareholders.

Atanasov et al. (2008) divide tunneling into three types of equity tunneling, asset tunneling and cash flow tunneling: (1) Equity tunneling increases the controller’s share of the firm but does not directly affect the firm’s productive assets. Examples of equity tunneling are dilutive offerings, freeze-outs of minority shareholders, and insider trading; (2) Asset tunneling comprises the transfer of productive, long-term tangible or intangible assets from the firm to the related party for less than market values, such that the transfer has a permanent effect on firm operations; (3) Cash flow tunneling is transfer cash flow out from the company, including transfer pricing (sale of outputs to related party below-market prices; or purchase of inputs from related party at above-market prices) and excessive executive salaries or perquisite consumption.

Companies conduct related party transactions for three motives; to minimize transaction costs (Cook 1977; Fisman and Khanna 1998), to manipulate earnings (Jian and Wong 2003; Aharony et al. 2010), and to tunnel or prop-up (Cheung et al. 2009a; Cheung et al. 2009b; Cheung et al. 2006; Juliarto et al. 2013). Tunneling results in transactions that are a priori likely to result in expropriation of minority shareholders such as
asset transactions, trading relationship, equity transactions, account receivables or loan guaranties (Cheung et al. 2009a). Propping are transactions likely to benefit the listed firm’s minority shareholders such as cash receipts by the listed company (Cheung et al. 2009a).

Some studies indicate that related party transaction is used for tunneling purposes. Jian and Wong (2003) found that the company uses receivables to related parties as a tunnel to transfer resources out of the company. Cheung et al. (2009b) find empirical evidence that the sale and purchase of assets to related party are used to perform tunneling. Asset tunneling occurs when the firm acquires assets from related parties at above market prices or sell asset to related parties at below market prices.

receivables to related party transaction can be used to conduct tunneling (Cheung et al. 2006; Cheung et al. 2009a). Jian and Wong (2003) state that there are ways to do tunneling. First, the company provides a high accounts receivable or long credit period to the related party when selling the product. Second, the company provides the loan to the related party (in the financial statements included in other receivables post). A loan to controlling shareholders and affiliates is one way of controlling shareholders to transfer resources to their interests.

Jian and Wong (2003) find empirical evidence that when firms have high free cash flows, they will tunnel the excess of such resources for the benefit of controlling shareholders through the provision of credits. Aharony et al. (2010) provide empirical evidence on tunneling activities in China through a credit transaction to related parties after the IPO. Receivables to related parties can also be understood as a put option; related parties can exercise such option by not paying their loan in a bad state (Atanasov et al. 2008).

Jian and Wong (2003) and Aharony et al. (2010) find empirical evidence that companies that have excess resources will transfer some of the resources for the benefit of controlling shareholders through related party receivables. We predict that receivables to related parties as a tunnel transfer resources for the benefit of the controlling shareholders. If credit to related party is used for tunneling, the company will provide a larger loan to related parties. In addition, the company will provide credits to related parties at lower interest rates than market rates. Providing credits to related party under the market interest rate will decrease net earnings. Also, warranties and write-offs of related party receivables will negatively affect company profits. Lo et al. (2010) found that tunneling through unfair transaction decrease being-tunneled profit. Utama and Utama (2009) that the stock price reaction (as measured by CAR) for RPT is lower than that for Non-RPT.

H1: Receivables to related party negatively affect performance of tunneled company.

Companies that conduct related party transactions considered as tunneling have values decreased at the announcement of the transaction (Cheung et al. 2006; Cheung et al. 2009a). It has been found that market participants react negatively to announcements of related party transactions which have indications of tunneling (Bae et al. 2002; Cheung et al. 2006; Cheung et al. 2009a; Faccio and Stolin 2006; Peng et al. 2011). Previous studies found that minority shareholders experienced large value of losses after the announcements of such related party transactions by publicly listed firms, which led to a suggestion of expropriation of minority shareholders.

H2: There is negative abnormal return during the announcement of the tunneling transactions for the tunneled company.

METHODOLOGY

The observation periods applied in this study were from 2009-2011. The lists of the companies were obtained from the IDX Fact Books 2009, 2010 and 2011 (Indonesia Stock Exchange 2009; 2010; 2011). There were nine industry classifications of listed companies on the IDX. In this study, finance classified companies that were listed on the
Variables and Measurement

The dependent variable of this study is net profit margin. Account receivables which are provided to related parties with soft credit terms (i.e. below market interest rates and longer loan period) have negative impacts on net income. Moreover, uncollectible related party receivables will also impact on the company’s net profit.

The independent variable is account receivables resulting from related party transactions. Related party transaction is a transfer of resources, services or obligations between a reporting entity with related parties, regardless of whether or not there is a price that is charged (IAI 2010).

Net receivables are the differences between accounts receivable and account payables. Cheung et al. (2009a) classifies accounts receivable to related party as tunneling transactions while account payables on related party as propping transactions. Direct cash payments by the listed firm to related parties are almost certainly tunneling. Receivables to related party transactions are associated with negative market reactions on average. On the other hand, when firms receive direct cash infusions or loan guarantees from their controlling shareholders, they are likely to be benefiting from these transactions. Firms that receive cash assistance from related parties earn highly positive and significant excess returns. These transactions are classified as propping (Cheung et al. 2009a).

| Table 1 |
|---|
| Measurement of Account Receivables to Related Parties |
| **Variables** | **Measurement** |
| Account Receivables/TA | Account receivables to related party total asset |
| Net Account Receivables/TA | Account receivables — account payables on related party total asset |
| Change in Account Receivables/TA | Account receivables (t) — Account receivables (t − 1) on related party total asset |
| Account Receivables/SA | Account receivables to related party total sales |
| Net Account Receivables/SA | Account receivables — account payables on related party total sales |
| Change Account Receivables/SA | Account receivables (t) — Account receivables (t − 1) on related party total asset |

IDX during 2009 to 2011 were excluded since they were subjects to specific financial sector regulations, and hence were not attuned to other companies in the other eight classifications (i.e. agriculture; mining; basic industry and chemicals; miscellaneous industry; consumer goods industry; property, real estate and building construction; infrastructure, utilities and transportation; trade, services and investment). There were 399, 407, and 428 companies listed on the IDX during 2009, 2010, and 2011 respectively. After the exclusion of the finance-classified companies, the remaining listed companies, which were used in this study, were 332, 338, and 357 during 2009, 2010, and 2011 respectively.

Data were obtained from annual reports and announcements of affiliations and conflicts of interest transactions from Capital Market and Financial Institutions Regulatory Bodies. Data were obtained from capital market regulatory body database, IDX websites and on the listed companies’ websites. Announcements of affiliation and conflict of interest transaction reports includes detail information on affiliate and conflicts of interest transactions such as objects of transactions, transaction values, transaction dates, announcement dates, and description of the relationship between two parties. Daily stock price data were obtained from Realtime Data Investment (RTI) at the Economics and Business Faculty, Gadjah Mada University.
Hence, net receivables measure how more likely companies do tunneling than propping. Positive net receivables show that account receivables are greater than account payables, meaning that the company has a higher propensity to do tunneling than propping.

**Tunneling Detection Criteria**

To test Hypothesis 2, we develop tunneling detection criteria to identify which related party transactions are classified as tunneling activities and which are not. Related party transactions are categorized as tunneling based on the following characteristics:

a. There are indications that related party transaction is for tunneling purposes. Cheung et al. (2006) and Cheung et al. (2009b) found that asset transactions, cash payments, receivable transactions, loan guarantees, and trading transactions to related parties had high tendencies toward tunneling activities. These transactions could be used to tunnel resources out to its related parties through unfair pricing, and thus lowering the value of the company at the expense of minority shareholders.

b. There is a similarity of controlling owners between company and related party. Goranova (2007) found that the controlling owner will transfer resources from the company’s low cash flow rights into the company’s high cash flow rights.

c. It has similar directors and commissioners for the company and the related party. Similar key management personnel provide the opportunity of using power to regulate the financial policies and operations, so as to obtain benefits from such activities.

d. There are family relationships between company and related party. Identification for family relationship transactions obtain from announcements of affiliations and conflicts of interest transactions from Capital Market and Financial Institutions Regulatory Bodies. This report allows us to identify the ultimate ownership (see Figure 1 and Figure 2) and the relationship between related parties. A public company is categorized as a company controlled by a family if the largest shareholder is an individual or family at the level of certain control rights. La Porta et al. (1999), Claessens et al. (2000a), and Faccio and Stolin (2006) identify families based on common last names and relationships of marriages. Company policy can be influenced by the family.

e. These transactions are not considered by the Office of Appraisal Services. Office of Appraisal Services is engaged in the valuation of the property/assets.

**Empirical Model**

Hypothesis 1 is tested using the following equation, where NPM is net profit margin, IP is industry performance, IT is industry type, and AR is account receivables to related party.

\[
NPM = \alpha_1 + \alpha_2 AR + \alpha_3 IP + \alpha_4 IT + \varepsilon \quad (1)
\]

In order for us to test for Hypothesis 2, we determine whether a certain RPT can be classified as tunneling using the tunneling detection criteria. Then, we measure abnormal return around the announcement of tunneling transaction in which return expectations are calculated using the mean-adjusted model as follows:

\[
E(R_{it}) = \frac{\sum_{t=100}^{T} R_{ij}}{T}
\]

**RESULTS AND ANALYSIS**

Analysis made for the period of 2009 to 2011 on the IDX websites and on the listed companies’ websites found announcements of affiliation and conflict of interest transactions made or related to 74 companies. Assessments based on the tunneling detection criteria showed 55 transactions which were indicated as asset tunneling transactions, 3 transactions which were indicated as equity tunneling transactions...
and 16 transactions which appeared to be propping transactions. This study focuses on current asset tunneling, and therefore, 27 being-tunneled companies were included for further analysis. Descriptive statistics for the companies based on the tunneling model used in this study are presented in Table 2.

Hypothesis 1 predicts that, from the perspective of the tunneled companies, receivables to related parties negatively affect the performance of the company. The empirical results of equation 1-6 are reported in Table 3.

In the first model, receivables to related party are negative and significant at 1% alpha. In the second model, net-receivables of related party transaction are negative and significant at alpha 1%. The test results show that firms which have account receivables greater than account payables will decrease the company’s performance. In the third measurement, change receivables to related parties are negative and significant coefficient on alpha 1%. The test results show that firms in the period t gives receivables greater than the previous period (t-1) will decrease the company’s net profit margin. Empirical evidence, as shown in Table 1, shows that hypothesis 1 is supported that receivables to related parties negatively affect the company’s net profit margin.

This finding is consistent with Bertrand et al. (2002) and Cheung et al. (2006), which found that companies experienced decreasing profitability when they performed tunneling transactions such as provisions of credits to related parties.

Analysis made for the period of 2009 to 2011 on the IDX websites and on the listed companies’ websites found announcements of affiliation and conflict of interest transactions made by 74 companies. Assessments based on the tunneling detection criteria showed 27 transactions were identified as current asset tunneling, such as elimination of related party transactions to related parties (9 transactions), receivable to related parties (10 transactions), and warranty account receivables (8 transactions).

Companies which announce current asset tunneling transaction obtain negative abnormal return (AR) negative at the time of announcement of the transaction to the period of the window (-3, +3).

On the average, during the window period (-3, +3), current asset tunneling obtains mean

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**Table 2**

| Variable                  | Mean | Max    | Min    | Median | SD  |
|---------------------------|------|--------|--------|--------|-----|
| Return on Assets          | 0.89 | 40.56  | -0.08  | 0.07   | 5.6 |
| Net Profit Margin         | 0.06 | 0.29   | -0.56  | 0.006  | 0.14|

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**Table 3**

| Model    | Receivables to Related Party Transaction (RPT) | Industry Performance | Industry Type |
|----------|-----------------------------------------------|----------------------|---------------|
| Model 1  | -0.826***                                     | 33.484**             | 12.256***     |
| Model 2  | -0.943***                                     | 33.493**             | 11.701***     |
| Model 3  | -0.047*                                       | 32.787**             | -4.442**      |
| Model 4  | -0.127***                                     | 33.376**             | 13.032***     |
| Model 5  | -0.149***                                     | 33.643**             | -4.624**      |
| Model 6  | -0.060***                                     | 34.065**             | -4.405**      |

R² 4.6% 4.4% 1.4% 5% 4.9% 3.3%

*** significant at alpha 1%, ** significant at alpha 5%, * significant at alpha 10%

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Propping transactions are transactions that are seemingly beneficial for minority shareholders, although their real benefits are difficult to judge since the nature of the transactions are often concealed.
adjusted abnormal return negative. Elimination of related party receivables obtains a mean adjusted abnormal return of -0.66%, account receivables to related parties gain -6.7% and warranty account receivables from related parties obtain -1.2%. This result is consistent with H2.

Based on the tunneling detection criteria, the following are examples of transactions which are indicated as current asset tunneling. The researchers used the code for ethical reasons. A public company in Indonesia, namely PT ED through DD conduct transactions with MM, family GQ as controlling shareholder of PT ED and MM. Figure 2 shows the nature of the related party transactions of PT ED/DD with MM.

PT ED and MM have the same commissioners and directors. The commissioners and directors are family members of the controlling shareholders.

On June 26, 2009, through the subsidiary of PT ED, DD, has signed a purchase agreement with MM to take over 99.9% of DTA and 99.9% of the DTI. PT ED also pays off the entire debt of DTA and the DTI to MM. Total

| Transaction                              | Mean Adjusted, (-3,+3) |
|------------------------------------------|------------------------|
| CURRENT ASSET TUNNELING:                 |                        |
| 1 Elimination of related party receivables| -0.00669               |
| 2 Account receivables to related party    | -0.06755               |
| 3 Warranty account receivables           | -0.01284               |

Figure 2
Ownership Structure PT ED
Source: Announcements of Affiliation and Conflict of Interest Transactions, Capital Market and Financial Institutions Regulatory Bodies 2009

Table 4
Cumulative Abnormal Return at the Time of Announcement of Receivables to Related Party 2009-2010
amount of the transaction and subrogation agreed was US$ 886,013 in which US$ 75,122 was used to buy shares of DTA and DTI and a total of US$ 810,891 was used to repay the debt of DTA and the DTI to MM.

Family GQ had 100% cash flow rights in MM and 50.7% cash flow rights in PT ED. Cash flow rights of controlling shareholders were greater in MM than in a public company (PT ED). The difference in cash flow rights was an incentive for companies to tunnel resources out from PT ED to MM.

Based on tunneling detection criteria, transaction of PT ED was indicated as current asset tunneling. Indicators are:
1. There was a negative abnormal return during the announcement of the transaction (-0.01079). Tunneled company and minority shareholders suffered losses as a result of the transaction.
2. Debt payment for related party credit and purchase share of loss that company owned by related parties were classified as tunneling (Cheung et al. 2006; Cheung et al. 2009b).
3. There were similarity of controlling shareholders between companies and related parties. PT ED and MM/DTI/DTA are owned by the same owner, GQ.
4. Both companies have same key management personal.

The information to develop tunneling detection criteria were obtained from announcements of affiliation and conflict of interest transaction. However, disclosures contained in the notes to the financial statements of company PT ED did not provide clear and detailed information about the relationships between the company and its related parties, the ultimate ownership structures of the companies involved in this transaction and the detailed description of the transaction. Low quality of disclosure led to a high likelihood of abusive related party transactions.

CONCLUSION

This study found the expropriation phenomenon through contractual policies with other parties, whereas past research focused on expropriation through operations policies. Expropriation can occur through related party transactions. This study found empirical evidence that account receivables to related party can be used as a tunnel to transfer resources out of the company to the controlling’s interests at the expense of minority shareholders. Tunneled companies will experience a decrease in financial and market performances. These results are consistent with the phenomenon of expropriation of minority shareholders through contractual policies. Controlling shareholders in companies operating in countries with a low level of investor protection policies have more chances to expropriate the minority shareholders’ wealth (Nenova 2003). The overall finding of this study indicates that tunneling occurs at companies in countries with low levels of investor protection. Moreover, disclosures of related party transaction are prepared in a minimal way. Disclosures of related party transactions are set forth in PSAK No. 7 of 2010. However, the level of compliance with mandatory disclosures of public companies in Indonesia on the financial statement items is still low, especially in the case of disclosure of related party transactions (Khomsiyah 2005).

There are some implications that can be gained from this study, especially for capital market regulators who could play a significant role in improving disclosures through more effective regulation and for potential investors, for accountants and executives who have significant roles in enhancing the knowledge of companies in the areas disclosures and tunneling. The limitations of this study that should be considered is sample used in this study are limited, and hence the generalizability of the findings should be treated cautiously.
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