MODERATING ROLE OF AUDIT QUALITY AND FIRM SIZE ON PRETAX PROFIT MARGIN AND RELATED PARTY TRANSACTIONS: EVIDENCE FROM INDONESIA

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Abstract. This study examines the effect of related party transactions (RPTs) on pretax profit margin (PPM). It analyzes the moderating effect of audit quality and firm size based on a large panel of Indonesian-listed firms. The sample of three representative business groups from 2010–2021 and analysis uses the Generalized Method of Moments (GMM) estimator to control PPM as a proxy of taxable income. We document that this study finds that PPM(t-1) and RPT Sales negatively impact and are significant on firms’ PPM, consistent with the incentive alignment hypothesis. However, RPTs, RPT Loan, and RPT Receivables affect positively. We also find that audit quality strengthens the impact of RPT Loan and RPT Receivables on the PPM negatively and positively significantly; however weakens RPTs, RPT Sales, and RPT Expenses. Moreover, firm size weakens the effect RPTs on PPM. RPTs and tax avoidance are complex and multifaceted phenomena of corporate finance. Additional business groups and variables may have moderating and mediating effects on the impact of taxable income on the business group. Stakeholders, especially the government, should supervise and control RPTs activities comprehensively, especially on the types of RPT Sales and RPT Expenses transactions. The paper offers two contributions. First, it gathers the first evidence on the taxable income and RPTs practices and offers insights into Indonesian’s business group behavior. Second, the analysis examines eleven years considering the sensitivity of audit quality and firm size to RPTs and pretax profit margin.

Keywords: pretax profit margin, RPTs, audit quality, firm size.

JEL Classification: G32, G38.

Introduction

Government-created related party transactions (RPTs) or transfer pricing rules are included in the rules tax system to guarantee that businesses comply with each country’s tax mechanism and regulatory requirements (Minh Ha et al., 2022; Widadi et al., 2022). Considering the numerous adverse effects of RPTs, tax authorities in each country have now become increasingly strict in their monitoring of RPTs through the imposition of sanctions, the addition of new records, the addendum of specifics, the training of audit personnel, inspections, and specialist officers (Angelica et al., 2021; Ben Cheikh & Loukil, 2022). It is expected that RPTs by various parties in Indonesia influence the tax rate such that the Indonesian tax rate does not produce the maximum effects (Santosa et al., 2021). Minimize tax payment play a significant role in Indonesia’s economic growth because taxation through RPTs is the primary source of revenue for financing state expenditures, with taxation accounting for between 70 and 80 percent of total state revenue in the APBN (The State Revenue and Expenditure Budget) over the past decade (Angelica et al., 2021; Widadi et al., 2022).

Business groups take advantage of the current tax system with RPTs to minimize their tax payments by reducing their pretax profit margin and so enhance current earnings and the firm’s after-tax value (Angelica et al., 2021; Park, 2018; Santosa et al., 2021). However, reducing pretax profit margin or increasing tax avoidance can lower firm value when the costs are directly tied to a firm’s tax planning charges, such as adaption costs and agency fees (Ayers et al., 2009; Fuadah & Kalsum, 2021). According to Park (2018) and Supatmi et al. (2019), tax avoidance savings through the RPTs system are a source of finance that...
minimizes a firm's reliance on external borrowing and can therefore be factored into financial projections.

RPTs may diminish potential tax collections for the government. The relocation of corporate profits from countries with high tax rates to countries with low tax rates could impact the tax burden corporations should bear (Löffler, 2019). The greater the use of these mechanisms, the less tax money the state can generate. The Ministry of Finance has encouraged increased tax collection in Indonesia by encouraging taxpayers, law enforcement, and interagency cooperation; however, the target was not met (Zimon et al., 2021). In addition, reducing the pretax profit margin increases financial flexibility, thereby enhancing credit quality, decreasing bankruptcy risk, and decreasing a firm's average cost of capital and debt policy (Wang et al., 2019; Tambunan et al., 2017; Santosa, 2020a).

The practice of tax avoidance has received an increasing amount of attention in recent study publications (Gaaya et al., 2017; Gallemore et al., 2014). Different corporations or business groupings could have varying priorities when it comes to their participation in activities that help them avoid paying taxes. According to Nugroho and Agustia (2018), these operations are generally regarded as dangerous choices for a company (Gallemore et al., 2014). Numerous elements, such as RPTs, firm size, leverage, profitability, and corporate governance, can contribute to the incentives for business groups to engage in tax avoidance activities (Nugroho & Agustia, 2018; Zimon et al., 2021). However, there needs to be more research that explores how RPTs affect tax evasion and the margin of pretax profit (Santosa et al., 2021; Chen et al., 2014). As a result, the motivations for participating in such hazardous endeavors can differ throughout the economy's various sectors. Nugroho and Agustia (2018), Ashrafi et al. (2020) and Bona-Sánchez et al. (2017) are just a few examples of recent research that recognizes the importance of RPTs and family ownership as distinct forms of economic organization.

In this research, we examine the RPTs in one country in Southeast Asia, Indonesia. Specifically, we study the configuration of RPTs and the impact of these connected transactions on financial performance (pretax profit margin or EBT) for a sample of listed Indonesian business groups throughout 2011–2021. This study was conducted due to the phenomenon gaps revealed by the discrepancy between the analytical results of the variables and Indonesia’s inability to meet its tax target. Inconsistencies in these findings are likely due to variations in variable measurement, research objects, and data analysis procedures. Overall, minimizing the pretax profit margin in the RPT system can assist firms in decreasing their operational and debt costs by allowing them to save on state taxes temporarily. Consequently, this study uses GMM regression analysis to compare the two-variable RPTs measures and assess business groups listed on the Indonesian stock exchange. This study aimed to analyze the impact of RPT, RPT income, RPT expense, RPT loan, and RPT receivables on the pretax profit margin of the Indonesian business group. This study was innovative in its use of some RPTs intensity, which was consistent with a study (Santosa et al., 2021; Klassen et al., 2017; Tambunan et al., 2017).

1. Literature review and hypothesis

Related party transactions (RPTs), also known as transfer pricing, are any transfer of resources, services, or responsibilities between a reporting business and a related party, whether or not a price is charged. Related parties can include controlling shareholders, directors, and any other group influencing the firm’s choices; thus, they can transfer resources in or out of the organization (Rathke et al., 2020; Pozzoli & Venuti, 2014). In other words, RPTs are the price one corporate unit charges for items or services delivered to other firm units. The amount of this transfer fee may or may not be suitable, depending on market conditions. Businesses can shift their earnings to connected parties by implementing transfer pricing strategies. This result may be unfavorable to the interests of non-controlling shareholders, as a reduction in the firm’s profits will lower the rate of return on investment in the form of dividends they receive (Sari et al., 2017; Santosa et al., 2021).

Khaoula and Moez (2019) and Hanlon and Heitzman (2010) define tax avoidance as the reduction of pretax profit margin or pretax accounting income. During the past two decades, related party transactions (RPTs) have been identified as one of the primary sources of tax avoidance by reducing pretax profit margin or erasing before tax. Commonly, regulators, standard-setters, investors, and other stakeholders view such transactions as red flags that may negatively influence the business group financial performance (Pozzoli & Venuti, 2014; Cheung et al., 2006). Due to existing conflicting interests, RPTs can be used to abuse business resources, resulting in poor corporate performance. This type of RPT is referred to as “tunneling” or “conflict of interests transaction theory” in the academic literature (Pozzoli & Venuti, 2014; Hendratama & Barokah, 2020).

1.1. Hypothesis development

There are related party transaction activities in the form of sales and incomes, purchases and expenses, loans, receivables, and asset tunneling in all Indonesia Stock Exchange business group companies (Tambunan et al., 2017). Sales and income from related parties, as well as acquisitions and expenditures, have a positive impact on the value of a company. The value of a company is diminished by transactions involving loans, receivables, and asset tunneling involving related parties (Santosa et al., 2021). Related party transactions of sales and earnings as well as purchases and expenses can prop up the financial position of a financially distressed affiliate company (Wang et al., 2019; Wong et al., 2015). However, it is possible for these two types of related party transactions to exist only for the purpose of enhancing the financial statement in order to
avoid the risk of being delisted, maintaining a "shell," and losing the capacity to obtain funding. The tunneling aspect of related party transactions including loans, receivables, and asset tunneling results in the expropriation of majority owners at the expense of minority shareholders (Tambunan et al., 2017).

Numerous research has demonstrated that RPTs worsen the profitability of business groups in Indonesia; for instance, Hendratama and Barokah (2020) and Tambunan et al. (2017) indicate that RPTs have a substantial and negative impact on profitability and firm value. Recent studies discovered a negative correlation between RPTs and the valuation of the firms (Supatmi et al., 2019; Ashrafi et al., 2020; Fazli, 2019). Some recent research determined that related party transactions negative connection with pretax profit margin and had a negative relationship with a firm’s market value (Tariq & Mousa, 2020; Santosa et al., 2021).

Wang et al. (2019) discovered that while related party transactions are adversely correlated with firm performance, however businesses with greater similarity in industry features or a greater degree of vertical integration within business groups have stronger performance due to related party trades.

Hypothesis 1: There is relationship between RPTs and pretax profit margin (+/−).

A pretax profit margin and a company’s market value are closely tied to other RPTs, such as sales, expenses, loans, and receivables. According to Tambunan et al. (2017), sales to related parties have diverse perspectives from various research linked to related party transactions that sales to affiliate parties of an aberrant type might be used as propping up or lowering profitability. The risk of the listed firm being delisted from the stock exchange or losing its capacity to obtain refinancing means that earnings are propped up by employing abnormally linked sales (Jian & Wong, 2010; Yeh et al., 2012). In contrast, transfers of sales pricing to related parties below market value or purchases from related parties above market value are included in cash flow tunneling. Over the years, cash flow tunneling has been performed numerous times, however the proportion may occasionally change. These studies include sales and earnings as well as linked party purchases and expenses that have an impact on profitability (Tambunan et al., 2017; Wang et al., 2019).

Hypothesis 2: RPTs-sales effect on pretax profit margin (+/−).

Hypothesis 3: RPTs-expenses effect on pretax profit margin (+/−).

Hendratama and Barokah (2020) and Tambunan et al. (2017) studied the related party transactions between the companies their controlling shareholders. The findings showed that the controlling shareholders of the business groups in Indonesia performed tunneling through inter-corporate loans. Furthermore, Cheung et al. (2009) and Minh Ha et al. (2022) argue that loans to affiliate companies are part of profit tunneling out that it affects the profitability of the existing company assets and firm value (Andrikopoulos et al., 2021).

Hypothesis 4: RPTs-loans effect on pretax profit margin (+/−).

Suk et al. (2019) and Andrikopoulos et al. (2021) conclude that a transaction is lucrative for minority shareholders when there are cash receipts and subsidiary links. Cash receipts occur when a corporation receives cash or a loan in a transaction. When assets, equity shares, or commercial contacts are acquired, a subsidiary relationship is formed. Wang et al. (2019) and said that propping up exists over minority shareholder-profitable deals. These transactions will improve the profitability.

Hypothesis 5: RPTs-receivables effect on pretax profit margin (+/−).

1.2. Moderating hypothesis

Management’s decision-making on RPT related-party sales, an area where monitoring and auditing such transactions is challenging, is a neglected field of research. By manipulating transfer prices, stakeholders can shift resources, resulting in advantages for some and losses for others. In addition, these manipulations affect financial accounts, resulting in an increase in information asymmetry and a general degradation of trust in the company (Lo et al., 2010). To the best of our knowledge, there is no empirical research on whether and how corporate governance affects the extent of transfer pricing manipulation by management. Due to the RPTs being exerted by family enterprises, the implementation of corporate governance has less of an effect on firm performance. The study’s findings should aid regulatory bodies such as the Securities and Exchange Commission of Pakistan (SECP) in enhancing significant disclosure and enforcing the corporate governance code on the role of the independent non-executive director and family directorship (Fazli, 2019). However, the data also indicate a favorable association between the audit quality and audit committee and the firm’s value. In addition, the results indicate that different forms of RPTs have varying effects on the firm’s value. In addition, the data indicate that the audit quality and audit committee does not affect the correlation between RPTs and firm performance (Santosa et al., 2020; Angelica et al., 2021; Ashrafi et al., 2020).

Hypothesis 6: The moderating effect of audit quality on the between RPTs and pretax profit margin.

A firm’s size substantially affects firm performance and value, both directly and indirectly, because it influences the firm’s attributes, reputation, and goodwill. Previous studies find that firm size favors firm performance, considering diversity, product and service portfolio, collateral, business cycle, firm age, firm image, and capital structure (Utama & Utama, 2014; Santosa, 2020b). According to Santosa et al. (2021), a positive effect of firm size on firm value
is driven by the significance of firm size in the expansion of the firm’s operations and the ease of obtaining external capital. Larger companies often engage in a greater number of commercial operations and financial transactions than smaller ones, hence affording much more options to avoid paying corporation taxes (Nekhili & Cherif, 2011; Richardson et al., 2013). Larger firms are more likely to have large intercompany transactions that may have thin capitalization and/or transfer pricing consequences, tax-favored leasing and financing arrangements, and complicated flowthrough entities (including partnerships and trusts). In addition, the significance of firm size as a moderating variable for liquidity, leverage, profitability, and efficiency reinforces the influence of these factors on firm value owing to the possibility for diversification and group business affiliation (Sayidah et al., 2019; Freihat & Razaq, 2019).

Hypothesis 7: The moderating effect of firm size on the relationship between RPTs and pretax profit margin.

1.3. Framework

From the theoretical review and the hypothesis development, the variables in this study are RPTs, RPT-Income, RPT-Expenses, RPT-Loan and RPT-Receivable as independent variables and the firm size and audit quality as a as moderating variables. So the research mindset that formed is as follows Figure 1 which presents the main dependent variables pretax profit margin with the independent and moderating variable of audit committee and firm size respectively. This framework was classified into three models (1) all variable effect (five main variables) on pretax profit margin; (2) all variable effect on pretax profit margin with the interaction of moderating audit quality and five main independent variables (RPTs); (3) all variable effect on pretax profit margin with the interaction of moderating firm size and five main independent variables (RPTs).

Figure 1. Conceptual research frameworks

2. Data and method

The selection of business groups is based on the typology of the population of business groups listed on the Indonesia Stock Exchange from 2013 to 2020. The typology of three business groups is classified based on market capitalization, which is divided into capitalization categories, namely 1) business group capitalization over IDR 300 trillion (large group), 2) business group capitalization of IDR 150-300 trillion (medium group), and 3) business group capitalization below IDR 150 trillion as a small group (Santosa et al., 2021; Tambunan et al., 2017). IDX (https://www.idx.co.id), ICaMEL, and the websites of the Astra International business group, Tbk as a proxy for a large business group of seven companies (https://www.astra.co.id), the Lippo Group, Tbk (https://lippogroup.com/) with nine companies (medium group), and Bakrie Brothers, Tbk (https://bakriebrothers.com/).

2.1. Research variables and measurement scale

Some research studies have focused on specific pretax profit margin (EBT) as proxies of financial performance and “taxable income”. The independent variables we use in previous research have concentrated on certain RPTs, including asset buys and sales, lending and borrowing arrangements, loan guarantees, and receivables agreements. In this study, the pretax profit margin is the dependent variable as a proxy of financial performance, whereas RPTs, RPT-Sale, RPTs-Expenses, RPTs-Loan, and RPTs-Receivables are the independent variables. Other studies have a larger perspective by considering a full set of RPT variables. Furthermore, this study includes an analysis of a set of moderating variables commonly used in previous studies as potential determinants of firm performance, such as the quality of public auditors and the firm size are considered as moderating factors (Bona-Sánchez et al., 2017; Cheung et al., 2009; Berkman et al., 2009; Tambunan et al., 2017; Santosa et al., 2021). Table 1 provides more specifics about variables, definitions, and abbreviations.

Table 1. Summary of the operationalization of the variables and definitions

<table>
<thead>
<tr>
<th>Variables</th>
<th>Definitions</th>
<th>Notation</th>
<th>Expected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretax profit</td>
<td>Earning before tax</td>
<td>PPM</td>
<td>–</td>
</tr>
<tr>
<td>Independent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RPTs</td>
<td>Total Related Party Transactions</td>
<td>RPT</td>
<td>–</td>
</tr>
<tr>
<td>RPT-Income</td>
<td>Sales to related entities/Total Sales</td>
<td>RPT-INC</td>
<td>–</td>
</tr>
<tr>
<td>RPT-Expenses</td>
<td>Expenses to related entities/Total expenses</td>
<td>RPT-EXP</td>
<td>–</td>
</tr>
<tr>
<td>RPT-Loan</td>
<td>Loan to related entities/Total Loan</td>
<td>RPT-LON</td>
<td>+/–</td>
</tr>
<tr>
<td>RPT-Receivable</td>
<td>Receivables to related entities/Total receivables</td>
<td>RPT-REC</td>
<td>+/–</td>
</tr>
<tr>
<td>Moderating</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Audit Quality</td>
<td>Big 4 auditor: 1; otherwise: 0</td>
<td>QA</td>
<td>–</td>
</tr>
<tr>
<td>Firm size</td>
<td>Log natural of Total Assets</td>
<td>Size</td>
<td>+</td>
</tr>
</tbody>
</table>
According to the criteria, categorize RPT procedures as either simple or complicated. Simple transactions involve many financial statement accounts and stakeholders (loans, guarantees, borrowings, consulting, legal services, and leases). Typically, complex transactions include many financial statement accounts and linked parties (related business, unrelated business, overhead, and stock transactions). Following the criterion, some authors classify these transactions as follows: (a) transactions with directors, officers, shareholders, or their affiliates; and (b) investments (joint ventures or other operations in which the firm has less than a 100 percent, non-consolidated stake). Categorize these transactions as follows: (a) transactions between the principal owners, directors, or managers and the related firms (b) transactions with subsidiaries and linked enterprises (Bona-Sánchez et al., 2017; Kohlbeck & Mayhew, 2010; Nekhili & Cherif, 2011; Santosa et al., 2021).

2.2. GMM model

Previous research on the association and correlation of RPT influenced the specification model used to estimate the parameters in this study. Previous research on the association and correlation of RPT influenced the specification model used to estimate the parameters in this study. Previous research on the association and correlation of RPT influenced the specification model used to estimate the parameters in this study. Previous research on the association and correlation of RPT influenced the specification model used to estimate the parameters in this study. Previous research on the association and correlation of RPT influenced the specification model used to estimate the parameters in this study. Previous research on the association and correlation of RPT influenced the specification model used to estimate the parameters in this study. Previous research on the association and correlation of RPT influenced the specification model used to estimate the parameters in this study. Previous research on the association and correlation of RPT influenced the specification model used to estimate the parameters in this study. Previous research on the association and correlation of RPT influenced the specification model used to estimate the parameters in this study. Previous research on the association and correlation of RPT influenced the specification model used to estimate the parameters in this study.

Model 1:

\[
PPM_{it} = \alpha_{it} + \alpha_1 PPM_{i,t-1} + \alpha_3 RPT_{it} + \alpha_4 RPT_{-SAL_{it}} + \alpha_5 RPT_{-EXP_{it}} + \alpha_6 RPT_{-LN_{it}} + \alpha_7 RPT_{-REC_{it}} + \lambda_{it} + \eta_{it} + \epsilon_{it}. \tag{1}
\]

The second model investigates the moderating effect of audit quality on the link between RPTs and pretax profit margin to discover the quality that can influence this relationship. As a result, this model includes the moderator QA × RPTs.

Model 2:

\[
PPM_{it} = \beta_{it} + \beta_1 PPM_{i,t-1} + \beta_2 RPT_{it} + \beta_3 RPT_{-INC_{it}} + \beta_4 RPT_{-EXP_{it}} + \beta_5 RPT_{-LN_{it}} + \beta_6 RPT_{-REC_{it}} + \beta_7 (RPT \cdot QA)_{it} + \beta_8 (RPT \cdot INC \cdot QA)_{it} + \beta_9 (RPT \cdot EXP \cdot QA) + \beta_{10} (RPT \cdot LON \cdot QA)_{it} + \beta_{11} (RPT \cdot REC \cdot QA)_{it} + \eta_{it} + \lambda_{it} + \epsilon_{it}. \tag{2}
\]

The third model examines the moderating effect of firm size on the link between RPTs and pretax profit margins to find the firm size that can influence that relationship. As a result, this model includes the moderator Size × RPTs.

Model 3:

\[
PPM_{it} = \delta_{it} + \delta_1 PPM_{i,t-1} + \delta_2 RPT_{it} + \delta_3 RPT_{-INC_{it}} + \delta_4 RPT_{-EXP_{it}} + \delta_5 RPT_{-LN_{it}} + \delta_6 RPT_{-REC_{it}} + \delta_7 (RPT \cdot Size)_{it} + \delta_8 (RPT \cdot INC \cdot Size)_{it} + \delta_9 (RPT \cdot EXP \cdot Size)_{it} + \delta_{10} (RPT \cdot LON \cdot Size)_{it} + \delta_{11} (RPT \cdot REC \cdot Size)_{it} + \eta_{it} + \lambda_{it} + \epsilon_{it}. \tag{3}
\]


3. Results and discussion

3.1. Descriptive statistics

Table 2 summarizes the descriptive statistics of the variables. It shows that, whereas loans to and from related parties are less common, RPTs, related party sales, related party expenses, related party loans, and related party receivables transactions are typical among Indonesian business groups of Astra International Group, Lippo Group, and Bakrie Group which listed on the stock exchange. The mean RP sales over net sales are 0.11, and the mean RP expenses are 0.11 too. RP loan is 0.02, and RP receivables 0.24. The table also shows that the total RPTs are those related to RP sales, RP expenses, RP loans, and RP receivables, with 219 observations.

Overall, the descriptive analysis revealed relatively solid data. This study does not use extreme data to provide full data.
3.2. Correlation analysis

Table 3 presents the correlation analysis of the criterion and predictor variables. The dependent variables are PPM (pretax profit margin), and the independent variables are RPT, RP sales (INC), RP expenses (EXP), RP loans (LON), and RP receivables (REC). The moderating variables are audit quality (QA) and firm size (Size), and PPM positively correlates with RP loans, QA, and Size. The highest one is the correlation to the size of 0.67622. Meanwhile, RPT correlated with all variables positively.

The correlation between INC, QA, and Size is negative. However, the relationship between EXP and REC is negative. Furthermore, the correlation of EXP with REC is negative, but EXP with LON, QA, and Size is positive.

3.3. Stationary and Endogeneity test

The potential concern regarding our test specifications is stationary and endogeneity. The results of the stationary test in Table 4 show that the RP expenses (EXP) variable shows the first difference and audit quality (QA) is an error. Furthermore, the results of the endogeneity test show that the RPT and RP sales variables are symptomatic of endogeneity. From the results of the stationary and endogeneity tests, the choice of the money regression model used in this study is GMM (Generalized Method of Moments).

3.4. Main results

The study results are grouped into three models, which show that the independent variables presented in Model 1 include elements of the type of related party transactions (RPTs), such as RPT total, RP sales, RP expenses, RP loans, and RP receivables. For the dependent variable, we use pretax profit margin or earnings before tax (EBT), which represents taxable income. Audit quality and firm size as moderating variables represent the proxies of the principle of transparency. This study classifies the findings into three GMM models: Model 1 is unmoderated, Model 2 is moderated by audit quality, and Model 3 is moderated by firm size. The three models produce different GMM results, especially the moderating audit quality and firm size, but the parameters are identical.

Hansen is the test for over-identifying limitations under the null hypothesis that all instruments are uncorrelated with the disturbance process, whereas m2 is the test for the lack of second-order serial correlation in the first-difference residual. The Wald test for the significance of the provided coefficients is denoted by z1. Z2 denotes the Wald test for the joint importance of the time dummies. Z3 denotes the Wald test for the joint importance of the industry dummies.

Table 5 presents the results of Model 1, which examines the relationship between pretax profit margin (PPM) and related party transactions (RPTs). The results of the effect of RPTs on PPM, which was moderated by audit quality and firm size, were reported by Model 2 and Model 3 at Table 5. We analyze random effect regressions for each of the PPM measures. Model 1 reports that the coefficients on PPM (t-1) are negative and statistically significant with PPM but positive and significant with RPTs. It indicates that PPM (t-1) decreases PPM, and RPTs strongly influence PPM significantly. This finding does not support hypothesis 1 because the positive influence of RPT loans and receivables is stronger than the negative effect of RPT Income and RPT Expenses. This result is an interesting finding because not all types of RPT are negatively related to PPM. Some of our results are consistent with recent studies (Tambunan et al., 2017; Santosa et al., 2021;
Angelica et al., 2021). An increase in RPT Income and RPT Expenses may significantly reduce PPM in all models and therefore add their role in constraining earnings before tax. These findings are in line with hypotheses 2 and 3. The pricing of intercompany transactions has the ability to distort incentives, privilege one group of investors or stakeholders over another, and tarnish the firm’s reputation (Lo et al., 2010).

However, RPT Loan and RPT Expenses results do not support hypotheses 4 and 5; RPT Loan and RPT Expenses show a positive and significant effect on PPM at 5% and 10% levels of confidence, respectively. This result is because the large size of RPT Loans and RPT Receivables makes the business more profitable (propping). RPT Income and RPT Expenses make the complex relationship with RPT Loans and RPT Receivables propping, creating results that support PPM.

### 3.5. Moderating audit quality and firm size

The primary purpose of the second and third models is to evaluate the association between RPTs and components of RPTs with PPM. Another goal is to examine whether audit quality weakness plays a moderating role in the relationship between them. The results of each above association are shown in Table 5 as Model 2. The results witness the same relationship between RPT Loans and RPT Receivables with PPM are positively significant at $\alpha = 10$ percent. We proved that audit quality strengthens the positive influence of RPT Loans and RPT Receivables on PPM; however, audit quality could not moderate RPTs total, RPT Income, and RPT Expenses. These results suggest that purchase-related party transactions and PPM ratio, while sale-related party transactions affect profitability negatively. Indonesian managers seem to engage in purchases and sales of goods or contract services acquired from the related party to mask the extraction of the firm’s resources. The ability of managers (or controlling shareholders) to manipulate transfer pricing is based on the corporate governance of a company. In this research, we argue that robust corporate governance systems, in terms of features of the board of directors and company ownership, should increase fairness among the business’s various stakeholders (Fooladi & Farhadi, 2019; Lo et al., 2010; Sari et al., 2017).

<table>
<thead>
<tr>
<th>Model</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
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<tbody>
<tr>
<td></td>
<td>GMM 1st Diff</td>
<td>GMM 1st Diff</td>
<td>GMM 1st Diff</td>
</tr>
<tr>
<td>Tax(-1)</td>
<td>$-0.1953$</td>
<td>0.0002</td>
<td>$-0.2192$</td>
</tr>
<tr>
<td>RPT</td>
<td>0.6263</td>
<td>0.0005</td>
<td>1.0045</td>
</tr>
<tr>
<td>INC</td>
<td>$-3.6638$</td>
<td>0.0000</td>
<td>$-3.6303$</td>
</tr>
<tr>
<td>EXP</td>
<td>$-2.5987$</td>
<td>0.0797*</td>
<td>$-5.1239$</td>
</tr>
<tr>
<td>LON</td>
<td>5.4655</td>
<td>0.0021</td>
<td>5.4014</td>
</tr>
<tr>
<td>REC</td>
<td>0.7650</td>
<td>0.0701*</td>
<td>2.3614</td>
</tr>
<tr>
<td>RPT × QA</td>
<td>1.5529</td>
<td>0.0761*</td>
<td></td>
</tr>
<tr>
<td>INC × QA</td>
<td>$-0.8355$</td>
<td>0.2556</td>
<td></td>
</tr>
<tr>
<td>EXP × QA</td>
<td>$-6.2805$</td>
<td>0.1605</td>
<td></td>
</tr>
<tr>
<td>LON × QA</td>
<td>8.6474</td>
<td>0.0587*</td>
<td></td>
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<tr>
<td>REC × QA</td>
<td>2.5129</td>
<td>0.0656*</td>
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<tr>
<td>RPT × Size</td>
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</tr>
<tr>
<td>INC × Size</td>
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<tr>
<td>EXP × Size</td>
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<tr>
<td>LON × Size</td>
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<td></td>
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<tr>
<td>REC × Size</td>
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<td></td>
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</tr>
<tr>
<td>Industry effect</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Year effect</td>
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<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Hansen</td>
<td>41.77</td>
<td>21.33</td>
<td>32.56</td>
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<tr>
<td>m2 test</td>
<td>$-0.82$</td>
<td>$-1.09$</td>
<td>$-0.98$</td>
</tr>
<tr>
<td>$z1$</td>
<td>233.05*</td>
<td>187.88*</td>
<td>320.39*</td>
</tr>
<tr>
<td>$z2$</td>
<td>12.77*</td>
<td>9.41*</td>
<td>20.28*</td>
</tr>
<tr>
<td>$z3$</td>
<td>25.32*</td>
<td>82.55*</td>
<td>56.37*</td>
</tr>
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</table>

Note: * Significant statistically at $p = .01$. 

Table 5. Results of GMM models
Regarding moderating variables, the results suggest that firm size positively strengthens business group performance, even though there is a negative linkage between financial leverage and profitability. The analysis finds that material weakness in RPTs, RPT Income, and RPT Expenses significantly influences the connection with profitability, especially PPM. In fact, despite the larger firm size, opportunistic managers have taken action with the help of related parties to extract the firm’s assets and resources. However, the most important point is that in fraudulent financial reporting, executives often violate controls that have operational effectiveness (Santosa et al., 2021; Utama & Utama, 2014).

3.6. Robustness test

In the System GMM method, we test the instrument validity using Hansen’s J statistic of over-identifying restrictions. The test results reported in Table 5 show that the models do not reject the null hypothesis of valid instruments (because all p-values are higher than 0.1). As a robustness test, we applied the System GMM method to estimate Model 1, Model 2, and Model 3, and the results are presented in Table 5. The results show that our instruments applied in the models are appropriate.

Conclusions and recommendation

Thus, this paper aimed to examine whether various types of RPTs activities in the Indonesian capital market were aimed at maximizing pretax profit margin or earning before tax to create tax potency of the business group that uses RPTs intensively. This study also determined whether directors consider RPTs as sound business exchanges to meet corporate economic needs or, owing to conflicting interests, consider them a tool to exploit enterprise resources. Additionally, considering the important role of the proper audit quality system in preventing the occurrence of tax opportunistic managerial behaviors. Moreover, this study sought to investigate whether the firm size moderates the relationship between RPTs and their components and pretax profit margin (PPM).

In conclusion, when pretax profit margin performance is evaluated based on a GMM analysis, the results confirm a negative association between PPM (t-1), RPT Income, and RPT Expenses and PPM. However, the relationship between PPM and RPTs, RPT Loans, and RPT Receivables is positive and significant. These findings indicate that RPT Loans and RPT Receivables can cover the negative effects of RPT Income and RPT Expenses. Total RPTs are positively associated with PPM because the value added from RPT Loans and RPT Receivables is greater than the negative effect from other RPT transactions, so the propping process is more dominant than tunneling. The moderating role of audit quality in this study showed a strengthened relationship between the RPTs and its components and PPM, in which audit quality attenuated the negative impact of RPT Income and RPT Expenses.

Furthermore, audit quality strengthens the positive impact of RPT Loans and RPT Receivables on PPM. Thus, the moderation of audit quality significantly impacts minimizing tax avoidance from RPTs activities in the business group but has not been effective in reversing the negative role of RPT Income and RPT Expenses completely. Recent studies have shown that audit quality incorporates control of the RPTs, business groups using the big four auditor services in their RPTs activities, and reporting at more adequate prices.

Furthermore, the findings of the moderating role of firm size on the relationship between RPTs and their components show different results from those of the role of audit quality. The larger firm size weakens the positive effect of RPT Loans and RPT Receivables on PPM, where both types of RPT become insignificant after being moderated by firm size. In addition, the moderating role of firm size also weakens the negative effect of RPT Income and RPT Expenses on tax potential. These findings are very interesting because of the attenuation of the positive and negative effects of the RPTs components on PPM.

Stakeholders, especially the government, should supervise and control RPTs activities comprehensively, especially on the types of RPT Income/Sales and RPT Expenses transactions that opportunistic managers use to do tax avoidance through PPM reduction because it is an interaction transaction between business units within a business group. Increasing corporate governance through the quality of auditors positively prevents tax avoidance efforts, especially tunneling. In contrast, the moderating effect of firm size positively affects increasing tax potential in RPTs activities insofar as there is an increase in audit quality.

Limitations and avenue for future research

This study has two limitations, firstly the future model could use re-specification analysis that can capture all data RPTs “in-out” to/from the business group along with period study; and secondly, this study could be adding variable control (business risk and political connection) and investment. Besides, it should also consider the use of more extended periods and the comparative study between conventional business group and MNCc in order to obtain more representative international findings.

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