

Opportunistic Related Party Transactions Practices: A Comparative Study on Different Ownership Structures in Indonesia's Energy Sector

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Keywords	Abstract
Related Party Transactions, Tunneling, Propping, Corporate Governance, Energy Sector	This study examines opportunistic behavior in Related Party Transactions (RPT) across six Indonesian energy companies with varying ownership structures (state-owned, family-owned, and foreign-owned) during 2019–2023. The research employs an evaluative case study approach combined with thematic content analysis supported by NVivo. The results reveal substantial variation in tunneling and propping patterns across ownership types. Highly concentrated family-owned firms exhibit aggressive tunneling through extreme dividend extraction of 49–76% during the windfall profit period (2022–2023), while state-owned enterprises demonstrate minimal tunneling (1–2.3 on a 0–21 scale) and strong propping during financial distress (2020–2021). These patterns are elastic to external shocks, as reflected in tunneling–propping ratio shifts from 70:30 (pre-pandemic 2019), 46:54 (pandemic 2020–2021), to 84:16 (commodity boom 2022–2023). Internal factor analysis identifies ownership concentration as the primary driver of opportunistic behavior; however, its impact varies depending on ownership type and external enforcement strength. Formal governance mechanisms including Big-4 audits, 86% board independence, and compliance with POJK 42/2020 are insufficient to curb tunneling when controlling shareholders are dominant, whereas government oversight in state-owned enterprises proves more effective than internal governance mechanisms. The findings suggest that regulatory remedies must address the underlying control–ownership divergence, with recommendations including strengthened fairness opinion standards, enhanced monitoring during windfall periods, and codified dividend policy constraints for state-owned energy companies.

INTRODUCTION

Indonesia's energy sector showed significant dynamics throughout the 2019-2023 period, characterized by a large contribution to the national economy and increasing investment activities. In 2023, the mining and quarrying sector contributed IDR 2,198 trillion or 10.5% to the Gross Domestic Product (GDP), while Non-Tax State Revenue (PNBP) for the Energy and Mineral Resources (*ESDM*) sector exceeded the target to reach IDR 300.3 trillion (Ministry of Energy and Mineral Resources, 2024). Investment in the *ESDM* sector also increased from USD 26.8 billion in 2022 to USD 30 billion in 2023. This positive performance was mainly influenced by the recovery of post-pandemic energy demand, the acceleration of the transition to new and renewable energy (*NRE*) as mandated in Presidential Regulation No. 112 of 2022, and the surge in global energy prices triggered by the Russia-Ukraine geopolitical conflict (International Energy Agency, 2023). This combination of factors drives the growth of the energy sector while creating more complex governance pressures (Haleem et al., 2022; Moradi et al., 2024; Yu et al., 2023).

Some research suggests that growing economic conditions can open up more space for opportunistic practices of related parties (SDGs), especially in the context of developing countries with concentrated ownership structures. Economic expansion generally increases investment, funding, and inter-entity transactions within business groups, which in turn increases opportunities for controlling shareholders to extract private benefits through CSPs when oversight mechanisms are inadequate. A recent study on Indonesian companies found that controllers utilize inter-entity lending as a means of tunneling, where value is diverted through lending to affiliated entities that do not have adequate repayment capacity (Nugroho et al., 2021). Other findings show that block holders' ownership is positively associated with the use of related party debt which serves as a propping to prop up entities in the group that are experiencing financial distress (Supatmi & Widawati, 2021). These results reinforce the view that economic growth does not necessarily reduce the risk of expropriation; conversely, when governance is not ideal, growth can expand opportunities for opportunistic SDGs.

In the modern literature, tunneling is defined as the attempt by the controlling shareholder to extract the value of the company through TPB that is not done at a fair price, either by setting a price higher than fair value (e.g. purchase of assets/inputs from an affiliated entity with a markup), or lower than fair value (e.g. sale of assets or provision of cheap loans to affiliates) (Supatmi et al., 2022; Dyck & Zingales, 2020). In contrast, propping occurs when the controller provides financial support often through related party debt or collateral to maintain the performance or solvency of an entity in a business group that is experiencing difficulties (Putri et al., 2020; Claessens & Yafeh, 2019). Recent empirical research in Indonesia also shows that the intensity of the SDGs tends to lower the profitability of companies, especially when governance oversight is weak, thus reinforcing the suspicion that the SDGs are used more for opportunistic purposes than efficiency purposes (Wibowo & Sunardi, 2022; La Porta et al., 2020). Thus, the existence of SDGs in concentrated ownership structures still needs to be viewed as a significant risk area, and macroeconomic dynamics including growth can be a catalyst for the emergence of tunneling and propping mechanisms (Faccio et al., 2019; Johnson et al., 2021).

Regulations regarding affiliate transactions in Indonesia are regulated through POJK No. 42/POJK.04/2020, which requires disclosure of material transactions and conflicts of interest. However, the effectiveness of these regulations still faces implementation challenges, such as the heterogeneity of interpretation standards, limited supervisory capacity, and high discretionary space in setting transaction prices (Sukmadilaga & Pratama, 2022). This challenge is more complex in the energy sector, which has an integrated value chain, high capitalization rate, and a distinctive market structure and is heavily reliant on long-term assets and long-term contracts.

In addition to regulatory factors, the structural characteristics of Indonesia's energy sector have also created conditions conducive to opportunistic practices of Related Party Transactions (TPB). This sector is characterized by a very high level of ownership concentration, both through family dominance in private energy companies and through state ownership in energy SOEs. Concentrated ownership structures increase the potential for agency conflicts and the risk of expropriation of minority shareholders, as evidenced in various studies in the Indonesian context (Claessens et al., 2000; Siregar & Utama, 2008). Recent empirical evidence focusing on the energy sector also shows a similar pattern. Research on energy companies on the IDX

for the 2019–2021 period found that TPB is often used in the form of inter-entity loan relationships and intra-group commercial transactions, thereby strengthening the potential for tunneling when corporate governance is weak (Rizki, 2021). Another study on energy and basic materials companies during 2021–2023 showed that the intensity of SDGs was associated with a decline in the quality of profits, indicating an opportunistic motive in the use of SDGs in this sector (Saputro & Mulyani, 2024). In the context of energy SOEs, governance issues become more complex due to the existence of dual agency problems, where companies must simultaneously meet commercial targets and public service mandates (Public Service Obligation), which in turn can affect managerial incentives and inter-entity transaction decisions in business groups (Boubakri et al., 2013). Thus, the empirical findings strengthen the argument that the structural characteristics of Indonesia's energy sector create an environment that is more vulnerable to opportunistic SDG practices (Hutahayan et al., 2025; Lestari et al., 2025; Mukti et al., 2025; Putri et al., 2025).

Second, strong vertical integration from upstream to downstream results in complex internal transaction relationships. The use of shared assets, reliance on long-term financing that often involves affiliated entities, as well as long-term contracts such as take-or-pay agreements or tolling arrangements create significant challenges in assessing the fairness of transactions (Kohlbeck & Mayhew, 2010). Third, pyramid ownership and cross-ownership structures in family conglomerates increase the chances of tunneling, especially when control rights are greater than cash flow rights (La Porta et al., 1999; Utama et al., 2010). On the other hand, foreign-owned companies face cross-jurisdictional GDP risks through transfer pricing mechanisms and cost shifting, which adds to the complexity of governance (Chen et al., 2020).

The 2019–2023 period was marked by three external shocks that significantly affected the dynamics and intensity of opportunistic related party transactions (TPB). First, the COVID-19 pandemic has created substantial financial pressure for the company, thereby increasing the incentive for controlling shareholders to propping through financial support or affiliate transactions to maintain the continuity of the operations of the subsidiary at a time when cash flow contracts. Empirical evidence suggests that companies facing liquidity pressures or distress conditions tend to increase propping activities to avoid operational failures (Chen et al., 2020; Liu et al., 2021). This condition is in line with the Indonesia Stock Exchange report (2021) which noted that around 40% of energy companies experienced a decrease in operating cash flow of more than 30% in 2020, thereby increasing discretion space for controlling shareholders and increasing governance challenges in distinguishing legitimate propping from opportunistic resource transfer practices.

Second, the surge in energy commodity prices throughout 2022–2023 opens up new opportunities for controlling shareholders to extract windfall profits through various forms of CSRP, including asset sale mechanisms, intra-group financing, and affiliate price arrangements. The findings of Salim and Marjawi (2023) show that companies with a high concentration of ownership tend to increase the intensity of GDP during periods of commodity price increases. Third, the acceleration of renewable energy investment expands the complexity of joint venture structures, technology transfer processes, and asset valuation mechanisms, which in turn widens the discretionary space in the determination of transaction pricing and increases vulnerability to opportunistic SDGs.

Previous research on SDGs in Indonesia has generally been quantitative across sectors with a focus on the statistical relationship between SDGs and company performance or value (Utama et al., 2010; Kohlbeck & Mayhew, 2017; Arifin & Kiswanto, 2021). However, these studies have not captured the operational complexity of the energy sector, which is capital-intensive, tightly regulated, and has unique technical characteristics. Existing cross-sectoral quantitative research tends to eliminate the contextual nuances and heterogeneity of SDG behavior in specific sectors with different economic and regulatory dynamics (Sukmadilaga & Pratama, 2022).

Based on these research gaps, this study aims to analyze in depth how opportunistic TPB patterns are formed in different ownership structures in Indonesian energy sector companies, as well as evaluate how governance mechanisms work in preventing tunneling and propping in the 2019–2023 period. The research uses evaluative case study approaches and comparative qualitative analysis to provide a richer contextual understanding than cross-sectoral quantitative approaches.

This research formulates two main problems. First, how are the patterns and practices of opportunistic TPBs that indicate tunneling and propping in Indonesian energy sector companies with various ownership structures (Family, State-Owned Enterprises, Foreign) during the 2019-2023 period. Second, any internal factors, especially related to ownership structures and governance mechanisms, that affect the tendency of energy sector companies to conduct opportunistic SDGs. The purpose of the study is to identify and analyze opportunistic TPB patterns (tunneling and propping) in Indonesian energy sector companies throughout 2019-2023 based on differences in ownership structure and periods, as well as evaluate the company's internal factors that contribute to opportunistic TPP practices. This research is expected to make an empirical contribution to the development of type II agency theory in the Indonesian energy sector through the analysis of the heterogeneity of governance mechanisms, enriching the literature on opportunistic SDGs by examining how the characteristics of the energy sector affect the opportunities and forms of tunneling and propping manifestations, and providing recommendations for energy sector companies related to strengthening governance mechanisms. The scope of the study includes an analysis of GDP in energy sector companies listed on the IDX during 2019-2023 with three types of ownership structures (family, state-owned enterprises, and foreign) in the downstream, midstream, upstream oil & gas, and renewable energy sectors. The limitations of the study are limited analysis of the SDGs disclosed in the financial statements and annual reports, and the identification of opportunistic practices based on the analysis of SDG patterns and indicators rather than a full investigation of the intentions of the controlling shareholders.

METHOD

Types of Research

This study used a qualitative approach with a multi-company evaluation case study design. This approach was chosen because it is suitable for researching the phenomenon of Related Party Transactions (TPB) which is complex, latent, and highly influenced by ownership structures, governance, and external economic conditions. A comparative approach was used to assess the pattern of GDP based on variations in ownership structures (SOEs, family private, and foreign ownership) as well as variations in economic conditions across

periods covering the pre-pandemic period (2019), the COVID-19 pandemic (2020-2021), and the recovery/commodity boom (2022-2023). This five-year period provides a rich empirical context to analyze the dynamics of the SDGs in both the crisis and boom phases.

Population and Sample

The research population is all Energy sector companies based on the IDX Industrial Classification (IDX-IC) classification on the Indonesia Stock Exchange, which includes the oil and gas, coal, renewable energy, power generation, and supporting energy services subsectors. The number of energy sector companies increased from 66 companies in 2019 to 83 companies in 2023. The sample was selected using purposive sampling with eight systematic criteria which include consistency of sector classification, activity on the IDX throughout 2019-2023, recorded on the Main Board, completeness of financial statements, consistency of SDGs, ownership structure that allows tunneling/propping, not experiencing large corporate actions, and variability and operational characteristics. Of the 83 companies, 21 companies met the criteria, and the study selected 6 final companies, namely ADRO, BYAN, ITMG, MEDC, PTBA, and PGAS which represented a variety of ownership structures (SOEs, family private, and foreign).

Data Collection Techniques

The data used is secondary on the grounds that the transparency of Indonesian public companies has increased after POJK 42/2020 and allows for longitudinal analysis 2019-2023. The main data sources include annual reports and audited financial statements that contain information on SDGs, ownership structures, governance, and financial performance; corporate governance reports that include information on the board, audit committee, SDG oversight mechanism, and GCG self-assessment; disclosure to the IDX in the form of LPP, disclosure of material TPB, GMS, and interim report; regulatory and policy documents such as POJK 42/2020, POJK 17/2020, PSAK 224, and OJK GCG guidelines; as well as related publications and research such as industry reports, independent research, and media news. The 2019-2023 data collection period was chosen to include the pre-pandemic phase (2019), the COVID-19 pandemic phase with liquidity pressures (2020-2021), and the commodity price boom phase and the acceleration of the energy transition (2022-2023).

Data Analysis Techniques

Data analysis uses two main techniques, namely thematic content analysis and comparative analysis. Thematic content analysis based on Braun & Clarke (2006) with the help of NVivo 14 was carried out through six stages: data familiarization by reading the 2019-2023 document; initial coding to identify the type of SDG, value, related parties, rationale, approval mechanism, as well as tunneling and propping indicators; search for themes related to tunneling (asset underpricing, transfer pricing, excessive fees, dividend irregularities), propping (supportive loans, capital injection, guarantee, subsidized financing), governance, and structural factors; theme reviews to ensure consistency; definition and naming of themes; and the preparation of reports with narratives supported by quotes and thematic maps. The comparative analysis uses a pattern-matching approach to compare empirical patterns with theoretical patterns at three levels: across ownership structures (SOEs vs. Family Private vs.

Foreign), across time periods (2019, 2020-2021, 2022-2023), and financial conditions (profitable vs. distress). The tunneling and propping indication scoring system uses a scale of 0-3 for each indicator with a maximum score of 21 points per category.

RESULT AND DISCUSSION

Cross-Period Analysis: Dynamic Patterns of Tunneling and Propping

1. Aggregate Trends of Tunneling and Propping Indications

Table 1 Total Trend of Tunneling and Propping Indications Per Period

Period	Total <i>Tunneling</i>	Total <i>Propping</i>	Rasio <i>Tunneling:</i> <i>Propping</i>	Economic Conditions
2019 (Pre-Pandemic)	38 points	16 points	70:30	Commodity prices Normal
2020-2021 (Pandemic)	28 points	33 points	46:54	<i>Depressed prices, distress</i>
2022-2023 (Tree)	38 points	7 points	84:16	Period windfall

- a. The COVID-19 pandemic has prompted a change in the transaction pattern of related parties in energy sector companies, from the dominance of tunneling ($\approx 70\%$) to the dominance of propping ($\approx 54\%$). This is in line with the theory of tunneling or propping, which states that when a company experiences financial stress or difficult conditions, the controlling shareholders tend to propping to maintain cash flow stability and the continuity of the group, rather than taking profits through tunneling. These findings are supported by a study by Friedman et al. (2011), as well as research in Indonesia that shows that ownership structures and the quality of corporate governance affect the tendency of companies to tunnel or propping (Tunnelling Behavior, 2019; Tunneling Related Party Lending Phenomenon, 2021).
- b. The commodity boom in 2022–2023 produced an extreme GDP pattern with tunneling dominance reaching 84%. This reflects a high incentive for controlling shareholders to extract profits through abnormal dividend mechanisms, transfer pricing, and acquisitions at high premiums. This phenomenon is in line with agency theory, which explains that conflicts of interest between controllers and minority shareholders increase when the company has high cash flow and profitability, as well as with tunneling, which states that controlling shareholders tend to transfer assets or profits to affiliated entities for personal gain. Empirical studies on energy and mining companies in Indonesia and China support these findings, suggesting that periods of high commodity prices reinforce extractive practices in companies with centralized control (Johnson et al., 2000; Friedman et al., 2011).
- c. The elasticity of opportunistic practices is highly dependent on economic conditions:
- d. Distress \rightarrow propping increases
- e. Windfall profit \rightarrow tunneling increased

The findings of the study show that TPB in Indonesian energy companies has a pattern consistent with the literature on tunneling and propping in countries with high concentration of ownership. Johnson et al. (2000) explain that tunneling arises when the controlling shareholders extract the company's resources through unreasonable transactions, such as

transfer pricing, asset transfers, or payments for services that are not proportionate in value. The findings in this study are mainly significant increases in management fee payments, frequency of service transactions, and spikes in receivables to related entities in line with the tunneling mechanism identified by Johnson et al.

In developing countries, Claessens et al. (2002) emphasized that the divergence between cash-flow rights and control rights increases the chances of expropriation. This is reflected in energy companies that are concentrated in a family or business group, where transactions are more intensely related during periods of liquidity pressure or certain financial momentum. In companies such as Adaro and Bayan, the increase in service transactions and related purchases during the windfall period indicates the potential transfer of value from minority shareholders to controlling shareholders.

On the other hand, the results of the study also show indications of propping, especially in companies with mixed ownership structures or government support. Cheung et al. (2009) and Peng et al. (2011) show that propping occurs when controlling shareholders inject support through loans, sales of goods, or other transactions to maintain the operations of a strategic subsidiary. This pattern can be seen in PTBA and PGAS, where related sales transactions increased during the 2020–2021 period when companies faced pandemic pressures. Support through these transactions shows the characteristics of value support, not value extraction.

Overall, the findings in the energy sector reflect the duality of SDG practices in the literature, namely tunneling and propping can occur interchangeably depending on ownership structures and external conditions such as pandemics or commodity booms. These cross-period findings show that majority shareholder control is opportunistic and responsive to the economic cycle, in line with the predictions of type II agency theory. Internal factors affect the tendency of opportunistic related parties' transaction practices

2. Patterns Based on Ownership Structure

Table 2 Patterns of SDGs by Ownership Structure

Ownership Structure	Company	Dominant Pattern	Tunneling Indications (2019 / 2021–22 / 2022–23)	Propping Indications (2019 / 2021–22 / 2022–23)	Brief Interpretation
SOEs	PTBA	Tunneling (Minimal)	5/1/1	2 / 0 / 0	Tunneling rendah, dividend payout 40-50%. Propping increased during the pandemic for the stabilization of public services. Regulation & public scrutiny limiting profit extraction.
SOEs	PGAS	Tunneling (Minimal)	4/3/1	3/9/3	Minimal tunneling despite profit increase when Boom. Propping high during crises to maintain operational stability SOEs.
Family Private	ADRO	Tunneling Consistency	8/8/8	1 / 0 / 0	Structure-based tunneling (asset transfer & restructuring). Moderate dividend (~28%). Consistent patterns, not Opportunistics.

Family Private	BYAN	Tunneling Aggressive	10/7/9	2/2/0	High tunneling & fluctuation, high dividend payout when profit windfalls. Premium acquisition strengthens extraction Advantages.
Foreigner	ITMG	Tunneling Aggressive	4/5/7	0 / 1 / 1	Tunneling is increasing with the commodity boom. Extreme dividend payouts (76% 2022), purchase of affiliate services & transfer pricing are high when profit tinggi.
Family Private	MEDC	Dual Pattern Tunneling– Propping	7/4/5	8/8/3	High propping when subsidiaries are under pressure (pandemic), tunneling during premium recovery/acquisition. Cross-subsidization between entitas.

Internal factors affect the tendency of opportunistic related parties' transaction practices

1. Ownership Structure

Table 3 Ownership Structure

Company	Ultimate Concentration (%)	Type (Code)	Lapisan Pyramid	Free Float (%)	Dominant Agency Risks
NURSERY	50,09%	2	3-4 (Complex)	46,72%	Principal- Principal
BYAN	60,99%	3	2 (Moderate)	35,75%	Principal- Principal
ITMG	65,14%	3	3 (Cross Jurisdiction)	34,86%	Principal- Principal
MEDC	72,96%	2	3 (Layered)	24,98%	Principal- Principal
PTBA	65,02%	1	2 (Moderate)	34,69%	Principal- Agent (Government)
PGAS	56,97%	1	2 (Moderate)	43,03%	Principal- Agent (Government)

Analysis of six sample companies showed that all companies have a high to very high concentration of ownership with HHI above 2,500. MEDC recorded the highest concentration (72.96% by the Panigoro Family), while ADRO had the lowest concentration in the sample (50.09% by a consortium of four conglomerate families). However, the comparison of PTBA with BYAN/ITMG shows that the type of ownership determines the pattern of agency conflict more than just the percentage of concentration (Siregar & Utama, 2008; Utama et al., 2020).

PTBA with 65.02% government ownership and BYAN with 60.99% foreign family ownership have relatively equal percentage concentrations. However, PTBA showed a low tunneling score (2–4 points) with high propping during distress (9–12 points), while BYAN actually showed high tunneling (7–9 points) with aggressive dividend extraction reaching 49–76% during windfall. This divergence in pattern confirms that the governance mechanism inherent in the type of ownership is not solely the amount of concentration that shapes the behavior of controlling shareholders.

State-owned companies show a unique pattern of agency conflict, which is a combination of the traditional Principal–Agent problem (between the government as the owner and professional management) and the Principal–Principal element (between the government as the majority shareholder and the minority public shareholder).

Tunneling in SOEs is relatively low due to three main factors: first, intensive scrutiny from relevant ministries and public supervision through the BPK and the House of Representatives; second, dividend policy restrictions that bind SOEs to the rules for dividend payments to the State Budget; and third, the Public Service Obligation (PSO) mandate which reduces management discretion in resource allocation. PTBA, for example, despite transforming from holding Inalum to MIND ID in March 2023, still maintains a stable dividend payout in the range of 40–45% much more moderate than private companies in the range of 28–76%.

On the other hand, propping increased significantly in SOEs during distress conditions (reaching 9–12 points). This pattern reflects regulation-backed governance in which the government as the controller has an incentive to maintain the continuity of operations of entities that have national strategic functions, even if it has to sacrifice short-term capital allocation efficiency.

Indonesian family private companies show a high risk of Principals, especially related to the expropriation of minority shareholders. The three driving factors for high tunneling in this group include: first, the significant divergence between control rights and cash-flow rights due to layered pyramid structures; second, the amount of family discretion over the dividend policy and the determination of transfer prices; and third, the limitations of external monitoring given the low ownership of independent institutions.

ADRO with the most complex ownership structure (3–4 layers through *PT Adaro Strategic Investments*, *PT Adaro Strategic Capital*, and *PT Adaro Strategic Lestari*) maintained a consistent tunneling score of 8 points throughout the observation period. The 2022 corporate restructuring that separated Adaro Energy, Adaro Minerals and Adaro Green did not change the tunneling pattern substantially, indicating that the reorganization of the group structure does not necessarily reduce value transfer practices as long as effective control remains on the same side.

MEDC with the highest concentration (72.96%) through *PT Medco Daya Abadi Lestari* and *Diamond Bridge Pte Ltd* showed a dominant propping pattern, especially in the form of loans to loss-making subsidiaries and manipulation of transfer prices to sustain affiliate performance. This is consistent with the characteristics of family companies that have a long-term orientation and tend to maintain the continuity of all entities in the group even though they are economically inefficient.

Companies with concentrated foreign ownership show high tunneling especially during windfall conditions, triggered by international transfer pricing practices that are difficult to detect. ITMG, which is controlled by Banpu PCL Thailand through Banpu Minerals Singapore (65.14%), has a three-layer cross-jurisdictional pyramid structure that facilitates systematic value shifting to affiliated entities outside Indonesia. During the windfall period (2021–2022), BYAN and ITMG carried out extreme dividend extraction of 49–76%, far exceeding the industry average. In addition, high-premium acquisitions and increased transfer pricing indicate that wealth extraction is increasingly aggressive when there is a large cash surplus. These findings are consistent with the literature showing that strong control foreign ownership increases the risk of wealth tunneling across jurisdictions (Kusumawati & Wardhani, 2023).

The pyramid structure creates three main implications. First, information asymmetry increases as the number of layers increases, making it increasingly difficult for minority

shareholders to evaluate the fair value of intra-group transactions. Second, transfer pricing is easier to hide through cross-entity allocations involving multiple intermediaries. Third, the wedge between control rights and cash flow rights is getting wider, increasing the incentive for tunneling. These findings are consistent with Nugroho et al. (2021) who showed that each addition of one layer of the pyramid increases the abnormal probability of TPB (Transfer Pricing Behavior) by up to 18%. ADRO with 3–4 layers of ownership have a significantly higher probability of tunneling than PTBA or PGAS which only has 2 simple layers.

These comparative findings reinforce the argument that in the context of the Indonesian capital market, which is characterized by concentrated ownership and weak legal enforcement, internal governance mechanisms, especially those attached to ownership types, play a more determinant role in shaping the behavior of controlling shareholders than market mechanisms. SOEs with regulation-backed governance show the lowest tunneling patterns despite having a high concentration of ownership. In contrast, family and foreign private companies with equivalent concentrations showed significantly higher tunneling. This implies that strengthening external regulations and supervision is a more effective mechanism to mitigate agency costs in the context of emerging markets than relying on ownership dispersion or capital market mechanisms.

2. Corporate Governance Mechanism

a. Independence of the Board of Commissioners

Table 4 Independence of the Board of Commissioners

Company	Total Commissioners	Independent Commissioner	% Independent	Meets POJK 33/2014*
NURSERY	5	2 (Mohammad Effendi, Budi Bowoleksono)	40%	✓ Yes
BYAN	4	3 (Hendarman Supandji, Timur Pradopo, Soeratno)	75%	✓ Yes
ITMG	10	3 (Prof. Djisman S. Simandjuntak, Prof. Djoko Wintoro, 1 other)	30%	✓ Ya (marginal)
MEDC	5	2 (Marsillam Simandjuntak, 1 more)	40%	✓ Ya
PTBA	6	2 (including ex-government officials)	33%	✓ Ya
PGAS	5	2 (Christian H. Siboro, 1 other)	40%	✓ Ya

*POJK 33/2014 requires a minimum of 30% independent commissioners

All sample companies meet the minimum requirements of POJK 33/2014, but with significant variations. BYAN has the highest proportion of independent commissioners (75%), which contrasts with its ownership type which is concentrated on single controlling shareholders. This high proportion can be interpreted as a legitimation mechanism to compensate for the extreme concentration of ownership. ITMG with 10 members of the board of commissioners has the lowest independent proportion (30%), right at the minimum regulatory limit. This composition reflects the strong influence of Banpu PCL Thailand as the ultimate owner who places its representative dominantly on the board.

Table 5 Independence of the Board of Commissioners

Company	Number of Members	Chairman (Independent Commissioner)	Accounting/Finance Skills	Professional Certifications
NURSERY	3	✓ Ya	Prof. Lindawati Gani (FEB UI, IFAC, IAI)	CPA, CA, ASEAN CPA
BYAN	3	Timur Pradopo (Independent Commissioner)	Lifransyah Gumay SE Ak. Messrs. CA. (ex-CPA, CA, EY), Soeratno (academic)	CPMA
ITMG	3	✓ Ya (Independent Commissioner)	Dian Utami Tjandra SE. Ak., CA, CPA	CA, CPA
MEDC	3	Marsillam Simanjuntak (Independent Commissioner)	Members with an accounting background	CA
PTBA	3	✓ Ya (Independent Commissioner)	Member of ITB (<i>mining expertise</i>) + accounting	Miscellaneous
PGAS	3	✓ Ya (Independent Commissioner)	Members with a financial background	CA

All companies comply with the provisions of POJK 55/2015 which requires a minimum of 3 members of the audit committee with a chairman from an independent commissioner. ADRO has an audit committee with the strongest qualifications, Prof. Lindawati Gani is a Professor of FEB UI who is active in IAI, IFAC, and AFA, providing high credibility to the oversight function. BYAN has a uniqueness in that one of the audit committee members (Lifransyah Gumay) is a former EY Senior Auditor, providing a deep understanding of audit practices but also potentially creating familiarity with external auditors.

Table 6 Independence of the Board of Commissioners

Company	External Auditor (KAP)	Big 4	Tenure	Opinion 2023
NURSERY	KAP Tanudiredja, Wibisana, Pioneer & Partners	PwC	>5 years	WTP (Unqualified)
BYAN	KAP Osman Bing Satrio & Eny (Deloitte)	Deloitte	>5 years	WTP (Unqualified)
ITMG	KAP Tanudiredja, Wibisana, Pioneer & Partners	PwC	>5 years	WTP (Unqualified)
Company	External Auditor (KAP)	Big 4	Tenure	Opinion 2023
MEDC	KAP EY Indonesia	EY	>5 years	WTP (Unqualified)
PTBA	KAP Tanudiredja, Wibisana, Pioneer & Partners	PwC	>5 years	WTP (Unqualified)
PGAS	KAP Tanudiredja, Wibisana, Pioneer & Partners	PwC	>5 years	WTP (Unqualified)

All sample companies use Big 4 auditors, demonstrating a commitment to high audit quality. PwC Indonesia (KAP Tanudiredja, Wibisana, Rintis & Rekan) dominated by auditing 4 out of 6 companies (ADRO, ITMG, PTBA, PGAS). This concentration raises questions about auditor independence in the industry, given the potential for industry specialization that can improve audit quality but also create dependency.

The auditor's long tenure (>5 years) in the entire company needs to be examined. Although KAP rotation is not mandatory for non-financial services companies under POJK

13/2017, the literature suggests that long tenure can reduce auditors' professional skepticism (Chi et al., 2017).

Table 7 Quality of Disclosure of Related Party Transactions (TPB)

Company	Shoes Disclosure (0-4)*	Complete Items	Special Notes
ADRO	3	The nature of the relationship, Transaction Type, Transaction Value	Details of the pricing formula are not fully disclosed
BYAN	3	Nature of the relationship, type of transaction, transaction value	Transactions with Malaysian affiliates are limited in disclosure
ITMG	3	Nature of the relationship, type of transaction, transaction value	<i>Transfer pricing</i> with Banpu Singapore revealed
MEDC	4	Complete according to PSAK 7	Comprehensive disclosure including key management compensation
PTBA	4	Complete according to PSAK 7	SOE standards with scrutiny CPC
PGAS	4	Complete according to PSAK 7	SOE standards with BPK scrutiny

*Score: 0=no disclosure, 1=minimal, 2=partial, 3=substantial, 4=comprehensive as per PSAK

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SOEs (PTBA, PGAS) show the highest quality of SDG disclosure (score 4), consistent with regulation-backed governance and dual supervision from OJK and BPK. MEDC as a private company also achieved the highest score, reflecting its mature GCG practices as a company that has been listed on the stock exchange for a long time. Private coal companies (ADRO, BYAN, ITMG) have a lower score (3), especially related to the limitations of disclosure of pricing mechanisms in coal sales transactions to trading affiliates. This is consistent with previous findings regarding the potential transfer pricing through the ICI minus formula.

Table 8 SDG Regulatory Compliance

Company	POJK Compliance 42/2020	OJK Sanctions/Reprimands (2020-2023)	Notes
ADRO	Obedient	None	Several material affiliate transactions have been reported to the IDX
BYAN	Obedient	None	Transactions with Low family entities reported
ITMG	Obedient	None	Transfer pricing with Banpu entities reported
MEDC	Obedient	None	Transactions with Panigoro family entities reported
PTBA	Obedient	None	Transactions with MIND ID and SOE affiliates dilaporkan
PGAS	Obedient	None	Transactions with Pertamina group reported

No sample companies received sanctions or reprimands from the OJK related to non-compliance with SDG regulations during the 2020-2023 period. However, formal compliance does not necessarily reflect the substantive fairness of the transaction. Some important notes:

- a. ADRO: Coal sales transactions to Coaltrade Services International (affiliates) with a cost-plus margin of 2-3% are below the arm's length benchmark (5-10%), but are still formally reported in accordance with the regulations.
- b. ITMG: Transfer pricing with Banpu Minerals Singapore is reported to the IDX, but the details of the pricing formula that allows systematic value shifting are not the object of scrutiny of TPB regulations that focus on disclosure requirements.

Table 9 Whistleblowing Policy

Company	WBS Formal	Reporting Channels	Reported Cases
ADRO	Yes	Email, hotline, website	Revealed in GCG report
BYAN	Yes	E-mail	Revealed in GCG report
ITMG	Yes	Email, hotline	Revealed in GCG report
MEDC	Yes	Email, hotline, website	Revealed in GCG report
PTBA	Yes	Email, hotline, website (integrated MIND ID)	Revealed in GCG report
PGAS	Ya	Email, hotline, website (integrated Pertamina)	Revealed in GCG report

All companies have a formal whistleblowing system as required by the KNKG (National Committee for Governance Policy). However, there is significant variation in implementation maturity.

Formal governance mechanisms, such as the existence of independent commissioners, audit committees, and external auditors from the Big 4, are important but insufficient requirements to address agency problems in companies with centralized ownership. Governance success is strongly influenced by:

- a. Type of ownership: SOEs that are subject to regulation-backed governance tend to show the lowest indication of tunneling, despite having a high concentration of ownership.
- b. Control structures: Companies with layered pyramid structures (such as ADRO) or controller–management dual roles (such as BYAN) tend to have high levels of tunneling, even if formal governance mechanisms have been met.
- c. Operating jurisdictions: Companies with cross-jurisdictional affiliations (e.g. ITMG, BYAN) have a greater opportunity for transfer pricing practices that are difficult to oversee by domestic governance mechanisms.

These findings suggest that strengthening external regulations and supervision by institutions such as OJK, BPK, and DGT can be a more effective mechanism to mitigate tunneling practices in the Indonesian capital market, rather than relying solely on internal governance mechanisms.

3. Finance and Operations

Table 10 Financial and Operational Indicators

Size/Indicator	NURSE	BYAN	ITMG	MEDC	PTBA	PGAS
	RY					
ROE = Net Profit/ Equity	25,0%	25-30%	25-30%	15-20%	10-15%	12-18%
ROA = Net Profit / Total Assets	17,7%	15-18%	12-16%	8-12%	5-8%	8-12%
DER (Debt-to-Equity Ratio) = Total Hutang / Ekuitas	0,41	5,44		1,0-1,5	1,5-2,0	

Ratio of revenue from a specific commodity vs total revenue	~85%	95%	~90%	~60%	~80%	
FCF / Total Assets Ratio	5,7%	8-10%	6-8%	3-5%	4-6%	2-4%

ADRO shows excellent financial health, with high ROE and ROA, reflecting solid profitability. The company's liquidity is also strong, as can be seen from the current ratio above 2.0, while the low DER (0.41) indicates a conservative capital structure and controlled financial risks. BYAN also has high profitability with the highest net margin among coal issuers. However, a very high DER (5.44) signifies aggressive leverage, increasing financial risk, although it allows for maximized returns for shareholders.

ITMG displayed solid profitability with healthy margins at all levels. As a subsidiary of Banpu (Thailand), ITMG has good access to capital and technology, supporting efficient operations. MEDC, as an oil & gas company, has a different profile than coal companies. Diversification into renewable energy provides protection against oil price volatility, thereby reducing risks related to commodity fluctuations.

PTBA, as a state-owned enterprise, has lower margins compared to private partners due to DMO (Domestic Market Obligation) obligations and regulated domestic selling prices. However, the company has shown high stability thanks to government support. PGAS has a profile as a utility company with a more stable return, although relatively lower. Gas price regulation affects profitability, but provides long-term income certainty for companies.

4. Principal-Principal Conflict vs Principal-Agent

Private companies with concentrated ownership show high indications of tunneling, with a score of 7–8.7 points, reflecting the principal–Principal conflict. For example, controlling shareholders extract profits through aggressive dividends during windfalls, the implementation of transfer pricing with stable cost-plus margins, and the restructuring of the ownership pyramid. This phenomenon is in line with the research of Claessens et al. (2002), Young et al. (2008), as well as more recent studies in Indonesia (Siregar & Utama, 2022; Nugroho et al., 2021) which shows that the divergence between control rights and cash-flow rights encourages controlling shareholders to extract profits without bearing the risk proportionately.

In contrast, SOEs face a combination of Principal–Agent (state vs management) and Principal–Principal (state vs minority) conflicts. The indication of tunneling in SOEs is very low, while the practice of propping increases significantly in distress conditions. The main focus of SOEs is to maintain the stability of infrastructure and public services, not the extraction of personal profits for controllers. These findings are consistent with the study of Boubakri et al. (2013) as well as recent research (Fitriani et al., 2021; Kusumawati & Wardhani, 2023), which emphasizes that SOEs tend to maximize stability rather than the extraction of personal benefits.

The latest literature also highlights that formal governance mechanisms, such as independent commissioners, audit committees, and external auditors, are necessary but not necessary conditions to prevent the practice of tunneling. The effectiveness of the system relies heavily on ownership structure, pyramid complexity, and the involvement of external oversight. Contemporary studies (2022–2024) show that companies that operate across jurisdictions or have centralized ownership structures still have the potential to conduct transfer pricing that is difficult to supervise, so that strengthening external regulations and monitoring

(OJK, BPK, DGT) is more effective in mitigating tunneling risks than relying on internal governance alone.

CONCLUSION

This study evaluates the opportunistic practices of Related Party Transactions (TPBs) in six Indonesian energy companies during 2019-2023 with a focus on tunneling and propping patterns based on ownership structures. The results of the study show that ownership structure is the main determinant that shapes the pattern and intensity of opportunistic practices. Private companies with concentrated ownership (BYAN, ITMG, ADRO, MEDC) dominated the tunneling pattern, especially in the commodity boom period of 2022-2023 through excessive dividend extraction mechanisms, manipulation of transfer pricing, premium acquisitions, and complex restructuring, which is consistent with type II agency conflicts. On the other hand, SOEs such as PTBA and PGAS showed very low tunneling intensity but showed significant propping during the 2020-2021 pandemic through loan support, guarantees, and capital injections to entities in the group. Tunneling and propping patterns are elastic to external conditions: tunneling dominated in the pre-pandemic period and the commodity boom, while propping increased during the pandemic in response to economic pressures. Research found that ownership concentration was the most influential factor, but the effect depended on a combination of ownership type and external supervision. Formal governance mechanisms such as board independence and audit quality have not been effective in curbing opportunistic practices because they are procedural and incapable of addressing power imbalances in concentrated structures. The study concludes that ownership structures, governance effectiveness, and external pressures are key elements in shaping tunneling and propping patterns, and affirms the need to strengthen substantive governance that is able to balance the power of controlling shareholders and protect minority interests.

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