

# Determinants of Transfer Pricing Risk at the Operating Profit Margin Level: Evidence from Foreign Direct Investment Firms in Indonesia

*Determinants of  
Transfer Pricing Risk  
in FDI Firms*

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## ABSTRACT

*This study investigated the determinants of transfer pricing risk at the operating profit margin level among foreign direct investment companies. The research addresses whether multinational ownership structures and affiliated transaction types contribute differently to profitability deviations relative to comparable independent firms. Using panel data from 131 foreign-owned companies (318 firm-year observations) during 2020–2024, the study applies a random effects model with robust standard errors, complemented by FGLS and System GMM for robustness checks. The findings show that foreign ownership, intangible goods transactions, intercompany loan transactions, and leverage have positive and significant effects on transfer pricing risk, while business turnover has a negative effect. Tangible goods and service transactions, as well as the number of related entities, do not exhibit significant effects. The results indicate that transfer pricing risk is concentrated in transactions characterized by valuation discretion and financial structuring complexity. By employing operating profit margin-based comparability analysis as a measurable risk indicator, this study contributes empirical evidence to support risk-based tax supervision strategies and highlights high-risk transaction categories for more targeted transfer pricing audits.*

**Keywords:** Foreign Ownership, Intangible Goods, Intercompany Loans, Operating Profit Margin, Taxation, Transfer Pricing Risk.

## INTRODUCTION

Tax ratio is a fundamental indicator of a country's fiscal capacity, reflecting the effectiveness of tax collection in supporting public expenditure and economic development. Despite its status as a major emerging economy, Indonesia continues to experience persistent weaknesses in tax revenue performance, with its tax ratio reaching only around 12 percent in 2023, far below the OECD average of 33.9 percent (OECD, 2025). This low tax ratio reflects suboptimal tax revenue collection, as one of the key factors hindering the achievement of national tax revenue targets is tax avoidance through profit shifting practices (Fuest et al., 2010; Ward, 2012; Yulia et al., 2019).

Transfer pricing has been identified as one of the most commonly used schemes in profit shifting strategies, allowing multinational enterprises to reallocate income and profits from high-tax jurisdictions to affiliated entities in lower-tax countries by exploiting tax rate differentials (OECD, 2013; Hidayat, 2021; Aini & Rini, 2023). Empirical evidence further shows that transfer pricing dominates intragroup transactions, with approximately 60 percent of total multinational enterprise transactions worldwide involving related-party arrangements, and that an increase in affiliated transactions is directly associated with a higher potential for corporate tax avoidance (Darussalam & Kristiaji, 2013; Abigail & Dharmastuti, 2022). At the global level, these practices have resulted in severe fiscal losses, with annual tax revenue losses estimated at USD 347.6 billion (Tax Justice Network, 2024).

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Previous empirical studies have examined various determinants of transfer pricing risk, including firm size, leverage, effective tax rates, ownership structure, and intangible goods (Supriyadi et al., 2025). A consistent finding in the literature is that foreign ownership significantly increases the likelihood of transfer pricing practices, as foreign-controlled firms typically operate within complex cross-border structures and possess greater flexibility to exploit international tax differentials (Sung et al., 2016; Surjana, 2020; Santosa et al., 2021). This view is aligned with the OECD's assessment that foreign direct investment companies, as part of multinational enterprise groups, face stronger incentives and opportunities to engage in profit shifting. However, most prior studies in Indonesia rely on pooled samples of listed firms without specifically focusing on foreign direct investment companies, despite their higher risk profile. This limitation suggests the need for more targeted research that concentrates on foreign-owned firms as a strategically important and high-risk group in tax supervision (Tran & Nguyen, 2023).

Despite the growing body of research on transfer pricing determinants, most studies in Indonesia have relied on pooled samples of listed firms or broad multinational enterprise data, without specifically focusing on Foreign Direct Investment (FDI) companies. Moreover, prior research has seldom utilized firm-level financial indicators, such as the operating profit margin, as a quantitative proxy for assessing transfer pricing risk. This limitation leaves a gap in understanding how individual financial performance reflects the likelihood of profit shifting among foreign-owned firms, which typically operate within complex cross-border structures and possess greater flexibility in exploiting tax differentials. By applying OPM as a measurable indicator of transfer pricing risk, this study addresses this gap, offering a novel and targeted approach to identifying high-risk FDI companies in Indonesia.

This study aims to identify foreign direct investment companies that exhibit transfer pricing risk and to examine the financial factors influencing such risk, particularly at the level of operating profit margin. Using a quantitative approach based on secondary financial data, this research seeks to develop criteria for identifying foreign-owned firms with a higher likelihood of engaging in transfer pricing practices. The findings are expected to contribute to the transfer pricing literature while providing practical insights for tax authorities in implementing more effective, targeted, and risk-based supervision strategies to mitigate profit shifting behavior

## **LITERATURE REVIEW & HYPOTHESIS DEVELOPMENT**

### **Business Turnover, Foreign Ownership, and Transfer Pricing Risk**

Business turnover represents firm size and operational scale, which may influence transfer pricing risk (Nurwati et al., 2021). The OECD (2013) emphasizes that large multinational enterprises are subject to intensified risk-based supervision due to their substantial impact on tax revenues. Although large firms possess greater resources for tax planning, they are also exposed to higher regulatory scrutiny, stronger governance mechanisms, and reputational pressures. Rego (2003) and Barus et al. (2024) note that while multinational corporations engage in tax planning activities, increased visibility and monitoring may limit aggressive profit-shifting behavior. Furthermore, Richardson et al. (2013) argue that firm characteristics, including size, affect the degree of tax aggressiveness. In the context of OPM-based comparability analysis, larger firms are more likely to maintain structured transfer pricing documentation and stronger internal controls, thereby reducing deviations from the arm's length principle. Accordingly, higher business turnover is expected to reduce transfer pricing risk.

Ownership structure is an important determinant of corporate strategic decisions, including transfer pricing practices. Prior studies indicate that higher levels of foreign ownership increase the likelihood of transfer pricing, as foreign shareholders often seek to optimize tax burdens and profit allocation within multinational enterprise groups. Tran et al. (2021) find that ownership structure, including foreign ownership, has a positive effect on transfer pricing decisions, reflecting greater incentives and capacity to engage in profit shifting. Similarly, Santosa et al. (2021) show that firms with foreign ownership

tend to exhibit higher transfer pricing risk due to their access to global networks, greater resources, and the ability to utilize multiple tax jurisdictions. These findings suggest that an increase in foreign share ownership enhances opportunities for transfer pricing practices.

H1: Business turnover has a negative effect on transfer pricing risk.

H2: The level of foreign share ownership has a positive effect on transfer pricing risk.

### **Number of Related Entities, Tangible Goods, Transfer Pricing Risk**

The number and global dispersion of affiliated entities represent an important factor influencing transfer pricing strategies. Sung et al. (2016) argue that firms with a larger number of global affiliates have greater opportunities to conduct intra-group transactions, thereby increasing flexibility in structuring transfer pricing arrangements. Greater organizational complexity and cross-border operations enable firms to allocate profits strategically to optimize tax efficiency. Similarly, Dinca and Fitriana (2019) find that a higher degree of multinationality positively affects transfer pricing aggressiveness. These findings suggest that the broader the firm's international network, the greater the potential for exploiting tax rate differentials across jurisdictions.

Transactions involving the transfer or purchase of tangible goods between affiliated parties represent a major channel for transfer pricing practices, as they allow multinational enterprises to allocate revenues and profits within corporate groups. Empirical evidence shows that higher levels of affiliated transactions are associated with greater tax avoidance, as firms gain increased flexibility to manipulate transfer prices (Sari et al., 2022). Although cross-border transactions are often the primary focus of transfer pricing scrutiny, prior studies indicate that multinational firms tend to apply similar transfer pricing methods to both domestic and international affiliated transactions, suggesting that transfer pricing risks are not limited to cross-border contexts (Borkowski, 1992). This view is reinforced by Indonesian tax regulation, as PMK Number 22/PMK.03/2020 explicitly recognizes that transfer pricing applies to various forms of affiliated transactions, including the sale of tangible goods, regardless of whether such transactions occur domestically or internationally. Consistent with the OECD (2022) Transfer Pricing Guidelines, all intra-group transactions must comply with the arm's length principle, as they may affect profit allocation and taxable income. Therefore, an increase in tangible goods transactions between affiliated parties is expected to elevate transfer pricing risk.

H3: The number of related entities has a positive effect on transfer pricing risk.

H4: Tangible goods transactions have a positive effect on transfer pricing risk.

### **Intangible Goods and Intercompany Loans on Transfer Pricing Risk**

Transfer pricing practices are not limited to transactions involving tangible goods but also extend to transactions related to intangible goods, which provide greater flexibility in price determination within multinational enterprise groups. Prior studies indicate that the presence of intangible goods significantly influences transfer pricing decisions, as such assets allow affiliated entities to set prices that are more difficult to benchmark and verify (Apriani et al., 2021). This argument is supported by McFarlane et al. (2023), who find that intangible goods enable firms to structure pricing arrangements at both domestic and international levels in ways that enhance tax efficiency and profitability. The use of transfer pricing in affiliated transactions has also been documented in practical cases, such as the MedTechnica 1 Ltd case, where transfer pricing mechanisms were applied to reallocate profits through intercompany transactions (Olefirenko, 2013). These findings suggest that transactions involving intangible goods between affiliated parties represent a significant source of transfer pricing risk, as they facilitate greater discretion in profit allocation.

In addition to transactions involving tangible and intangible goods, intercompany financing through affiliated loans constitutes a significant source of transfer pricing risk. The OECD (2013) identifies intercompany loans and interest expenses as highly sensitive transactions due to their susceptibility to manipulation in determining taxable income. Interest expenses arising from affiliated loans tend to reduce reported profitability by increasing financial burdens and are frequently used as instruments for tax avoidance through profit shifting (Li & Liang, 2015). Empirical findings suggest that transfer pricing practices through intercompany loans are often more aggressive than those conducted through service transactions, as financing arrangements provide greater discretion in setting interest rates and debt structures (Decker & Gray, 2022). Consequently, several studies employ leverage-related ratios as proxies for transfer pricing risk in the context of affiliated financing. These findings indicate that an increase in intercompany loan transactions enhances opportunities for profit reallocation and tax avoidance.

H5: Intangible goods transactions have a positive effect on transfer pricing risk.

H6: Intercompany loan transactions have a positive effect on transfer pricing risk.

### **Services Transactions, Leverage, and Transfer Pricing Risk**

Transactions involving the provision of services between affiliated parties are prone to transfer pricing risk because the economic benefits of such services are often difficult to measure objectively and lack reliable market comparables. The OECD (2022) requires that affiliated service transactions comply with the arm's length principle and be supported by documentation proving the existence and economic benefit of the services. Prior studies indicate that disproportionate service charges within affiliated groups may facilitate profit shifting, particularly when costs are allocated to entities with higher tax burdens (Darussalam & Kristiaji, 2013). Consistent with this view, Cazacu (2015) emphasizes that affiliated service transactions inherently carry transfer pricing risk due to the discretionary nature of pricing and cost allocation.

Leverage is frequently associated with transfer pricing risk, as highly leveraged firms face stronger incentives to minimize taxable income through profit shifting strategies (Sikka & Willmott, 2010). Firms with higher financial pressure are more likely to engage in aggressive tax planning, including transfer pricing, to reduce corporate tax liabilities (Kananto, 2019; Devi & Suryarini, 2020). Empirical evidence further supports this view, as Waworuntu and Hadisaputra (2016) find that higher leverage levels are positively associated with more aggressive transfer pricing practices. High debt structures allow firms to increase deductible expenses and facilitate income shifting within affiliated groups, thereby amplifying opportunities for tax avoidance. These findings suggest that leverage plays a significant role in shaping transfer pricing behavior.

H7: Services transactions have a positive effect on transfer pricing risk.

H8: Leverage has a positive effect on transfer pricing risk.

Figure 1 illustrates the conceptual framework used to analyze the determinants of transfer pricing risk. The model proposes that several independent variables, namely business turnover ( $X_1$ ), foreign equity ownership ( $X_2$ ), number of affiliated entities ( $X_3$ ), tangible goods transactions ( $X_4$ ), intangible goods transactions ( $X_5$ ), loan transactions ( $X_6$ ), services transactions ( $X_7$ ), and leverage ( $X_8$ ), influence the level of transfer pricing risk ( $Y$ ). The identification of transfer pricing risk is conducted through comparability analysis, which serves as the analytical process to evaluate whether transactions between affiliated parties are conducted at arm's length. The outcome of this assessment is reflected in the operating profit margin level, which represents the measured transfer pricing risk. The framework demonstrates how financial characteristics, ownership structure, and the scale of related-party transactions collectively contribute to the identification and assessment of transfer pricing risk.

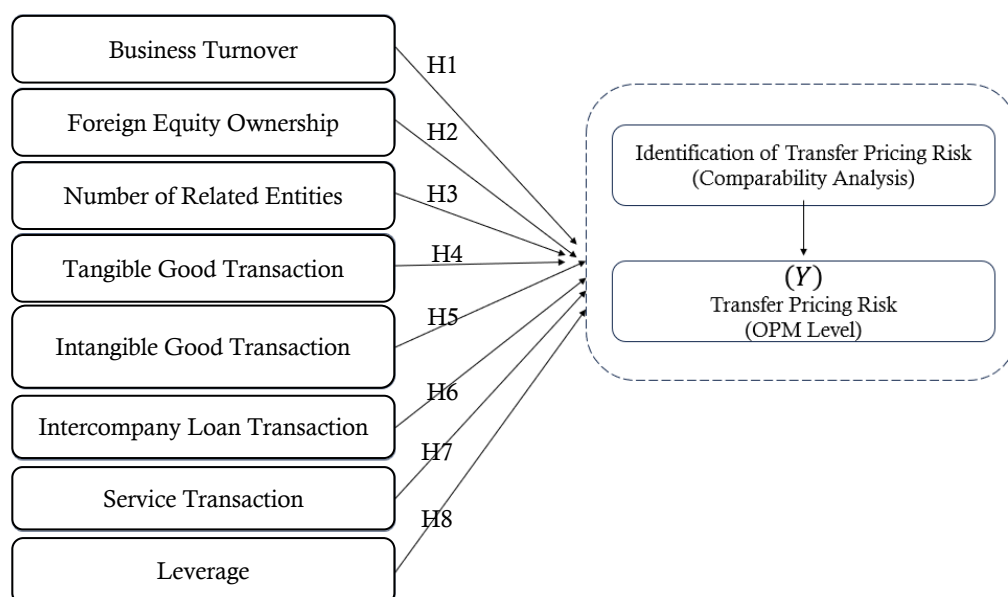


Figure 1. Research Framework

## RESEARCH METHODS

This study adopts a quantitative approach using IDR-denominated numerical data to identify transfer pricing risk through abnormal transaction patterns. It relies on secondary data from annual corporate income tax returns for 2020–2024, obtained from taxpayers registered at the Tax Office (*Kantor Pelayanan Pajak/KPP*) Pratama PMA I–VI. The sample includes companies engaged in affiliated transactions, with annual turnover above IDR 4.8 billion, subject to non-final corporate income tax, and indicating potential transfer pricing risk. The dependent variable is measured using the Operating Profit Margin (OPM), selected for its efficiency and data availability (Rahmiati & Sandi, 2016). Firms are classified as high-risk when their OPM is below the average of comparable companies based on comparability analysis, while those above the benchmark are excluded (OECD, 2017a).

The study sample consists of 1,630 foreign-owned companies with affiliated transactions registered at the foreign direct investment tax office (KPP Pratama PMA) for the period 2020–2024. From this population, 882 companies were excluded due to final tax obligations, incomplete variable data, or business turnover below the required threshold, while an additional 617 firms were removed for having an OPM ratio above the average of comparable companies. After applying these criteria, the final sample used for analysis comprised 131 companies, which served as the tested units for examining transfer pricing risk determinants.

This study examines transfer pricing risk at the OPM level as the dependent variable, measured as the natural logarithm of the difference between a tested company's OPM and the average OPM of comparable companies, where OPM is calculated as operating profit divided by sales. Eight independent variables are included to assess their influence. business turnover is measured as the natural logarithm of total annual sales revenue, foreign equity ownership is measured as the natural logarithm of foreign equity share, number of affiliated entities is measured as the natural logarithm of total affiliated entities, affiliated tangible goods transactions and affiliated intangible goods transactions are measured as the natural logarithm of transactions involving tangible and intangible goods between affiliated parties respectively, affiliated loan transactions is measured as the natural logarithm of intercompany loans, affiliated services transactions is measured as the natural logarithm of service transactions between affiliates, and leverage is measured as the natural logarithm of the debt-to-equity ratio. All variables are expressed in

logarithmic form to normalize distributions and reduce skewness, providing a consistent framework for examining the determinants of transfer pricing risk across foreign-owned firms with affiliated transactions.

This study uses panel data regression to examine transfer pricing risk among foreign-owned companies in Indonesia from 2020 to 2024. The panel approach controls for firm-specific and time effects, ensuring robust estimates. Regression coefficients and significance levels are analyzed to assess the relative contribution of each variable. The regression model employed in this study is specified as follows:

$$\ln Y_{it} = \alpha + \beta_1 \ln X_{1it} + \beta_2 \ln X_{2it} + \beta_3 \ln X_{3it} + \beta_4 \ln X_{4it} + \beta_5 \ln X_{5it} + \beta_6 \ln X_{6it} + \beta_7 \ln X_{7it} + \beta_8 \ln X_{8it} + \varepsilon_{it}$$

Information:

$Y$  = Transfer Pricing Risk at the Operating Profit Margin Level

$\alpha$  = Constant

$\beta_{1-8}$  = Independent Variable Coefficients

$\varepsilon$  = Error

$X_1$  = Business Turnover

$X_2$  = Foreign Equity Ownership

$X_3$  = Number of Related Entities

$X_4$  = Tangible Goods Transactions

$X_5$  = Intangible Goods Transactions

$X_6$  = Intercompany Loans

$X_7$  = Services Transactions

$X_8$  = Leverage

$i$  = Total Testedy Party (foreign-owned companies in Indonesia)

$t$  = Research Period, namely 2020-2024

## RESULTS

Based on STATA output, the descriptive statistics are derived from 318 firm-year observations representing 131 foreign-owned companies during the 2020–2024 period. The dependent variable, transfer pricing risk, is measured at the Operating Profit Margin (OPM) level ( $Y$ ), shows a negative mean value, indicating that tested parties generally report lower operating profitability compared to comparable independent firms, suggesting potential transfer pricing risk. The independent variables consist of business turnover, foreign ownership, the number of related entities, affiliated transactions involving tangible goods, affiliated transactions involving intangible goods, intercompany loans, affiliated service transactions, and leverage. The descriptive statistics indicate varying levels of dispersion across these variables, reflecting differences in firm size, ownership structure, organizational complexity, transaction intensity, and financial structure among the sampled companies. In particular, transaction-related variables demonstrate substantial variation, suggesting heterogeneous intra-group activities across firms. Leverage exhibits considerable variability, indicating diverse capital structure strategies that may influence profit allocation behavior. The observed variation across the independent variables provides sufficient empirical grounds for applying panel data regression analysis to assess their impact on transfer pricing risk.

According to Table 1, model selection was conducted using the Chow test to determine the more appropriate model between the common effect and fixed effect models. The Chow test results show a probability value of  $0.0042 < 0.05$ , leading to the rejection of  $H_0$  and indicating that the fixed effect model is more suitable. Subsequently, the Hausman test was applied to select the best model between the fixed effect and random effect models. The Hausman test results indicate a probability value of  $0.0991 > 0.05$ , leading to the acceptance of  $H_0$  and suggesting that the random effect model is preferable. To confirm this selection, the Lagrange Multiplier (LM) test was conducted to distinguish

between the random effects and common effects models. Based on the LM test results, the Breusch–Pagan probability value of  $0.0007 < 0.05$  confirms that the random effects model is the most appropriate specification for the panel data regression analysis.

**Table 1.** Model Selection

Test	Test Statistic	Probability Value	Decision	Selected Model
Chow Test	Prob > F	0.0042	Reject H0	Fixed Effect
Hausman Test	Prob > Chi <sup>2</sup>	0.0991	Accept H0	Random Effect
Lagrange Multiplier (LM) Test	Prob > Chibar <sup>2</sup>	0.0007	Reject H0	Random Effect

To examine the determinants of transfer pricing risk at the Operating Profit Margin (OPM) level, panel data regression analysis was conducted using the random effects model with robust standard errors, which was selected based on the model specification tests. The regression results are presented in Table 2. The estimation results indicate that the model is statistically significant (Wald  $\chi^2 = 45.85$ ;  $p < 0.01$ ), suggesting that the independent variables jointly influence transfer pricing risk at the OPM level. The regression results indicate that business turnover has a negative and significant effect on transfer pricing risk, while foreign ownership, intangible goods transactions, intercompany loans, and leverage exhibit positive and significant effects. In contrast, tangible goods and service transactions do not show significant relationships. Robustness checks using Feasible Generalized Least Squares (FGLS) and System Generalized Method of Moments (System GMM) confirm that the main findings, particularly the positive effects of intangible goods transactions and intercompany loans, remain consistent across alternative specifications.

**Table 2.** Regression Results

Variable	Coefficient	Std. Error	z	Prob.
Business Turnover ( $X_1$ )	-0.2100261	0.0909468	-2.31	0.021
Foreign Ownership ( $X_2$ )	0.071412	0.030996	2.30	0.021
Number of Related Entities ( $X_3$ )	-0.004274	0.0677569	-0.06	0.950
Tangible Goods Transactions ( $X_4$ )	-0.0328364	0.037594	-0.87	0.382
Intangible Goods Transactions ( $X_5$ )	0.0563208	0.0274568	2.05	0.040
Intercompany Loans ( $X_6$ )	0.069181	0.0298499	2.32	0.020
Service Transactions ( $X_7$ )	-0.0124001	0.0311658	-0.40	0.691
Leverage ( $X_8$ )	0.07984	0.0383752	2.08	0.037
Constant	-0.542533	1.237.636	-0.44	0.661

Based on the estimation results in Table 2, a panel data regression model was developed to examine the determinants of transfer pricing risk at the Operating Profit Margin (OPM) level among Foreign Direct Investment (FDI) companies during the 2020–2024 period. The following is the regression equation used in this study:

$$\ln Y_{it} = -0.543 - 0.210X_{1it} + 0.071X_{2it} - 0.004X_{3it} - 0.033X_{4it} + 0.056X_{5it} + 0.069X_{6it} - 0.012X_{7it} + 0.080X_{8it} + \varepsilon_{it}$$

Because the model is specified in logarithmic form, the estimated coefficients represent elasticities, indicating the percentage change in transfer pricing risk at the OPM level resulting from a one-percent change in each explanatory variable. The regression results show that business turnover has a negative and statistically significant coefficient (−0.210), indicating that a 1% increase in turnover reduces transfer pricing risk by 0.210%. This finding suggests that larger firms tend to exhibit lower profitability deviations relative to comparable companies, possibly due to stronger compliance systems and regulatory scrutiny. In contrast, foreign ownership has a positive and significant coefficient (0.071), implying that a 1% increase in foreign shareholding increases transfer pricing risk by 0.071%. This supports the view that multinational ownership structures provide greater flexibility for cross-border profit allocation. The results show that the number of related

entities has a negative but not statistically significant effect, as indicated by a very small coefficient and a high probability value. This suggests that variations in the number of related entities do not meaningfully influence the dependent variable. Similarly, tangible goods transactions also exhibit a negative and insignificant effect, indicating that these transactions do not have a significant impact within the model.

Among affiliated transactions, intangible goods transactions (0.056) and intercompany loan transactions (0.069) show positive and significant effects, confirming that these transaction types are more vulnerable to manipulation under the arm's length principle due to valuation complexity and financial structuring discretion. Meanwhile, tangible goods transactions (-0.033) and service transactions (-0.012) are not statistically significant, suggesting relatively lower transfer pricing risk exposure in these categories.

Additionally, leverage exhibits a positive and significant coefficient (0.080), indicating that higher debt levels strengthen incentives for tax-motivated income shifting. Consistent with the objective of this study, significant variables are ranked based on the magnitude of their coefficients to identify the most influential transfer pricing risk criteria. Among the positive determinants, leverage (0.080) shows the largest elasticity, followed by intercompany loans (0.069), foreign ownership (0.071), and intangible goods transactions (0.056). These findings indicate that financial structure and intra-group financing mechanisms represent the most dominant sources of transfer pricing risk at the OPM level. The results demonstrate that transfer pricing risk is primarily driven by multinational ownership characteristics and transactions involving valuation discretion and financial engineering, supporting the adoption of a risk-based supervision approach.

## **DISCUSSION**

The findings of this study provide empirical evidence that transfer pricing risk at the Operating Profit Margin (OPM) level is primarily associated with multinational ownership structures and transaction types characterized by valuation discretion and financial engineering. The positive and significant effect of foreign ownership supports the theoretical framework of multinational enterprise behavior, where integrated global value chains facilitate cross-entity profit allocation. OECD (2013) explains that disproportionately high income reported in entities located in low-tax jurisdictions increases transfer pricing risk, reflecting strategic profit shifting within multinational groups. This finding aligns with prior studies indicating that firms with substantial foreign ownership are more likely to engage in transfer pricing practices due to cross-border tax differentials and structural flexibility (Yulia et al., 2018; Tran et al., 2021; Putri et al., 2024).

The significant influence of intangible goods transactions reinforces the OECD's position that affiliated transactions involving the transfer or utilization of intangible goods inherently carry higher transfer pricing risk (OECD, 2017a). Intangible goods lack reliable market comparables and are therefore more vulnerable to valuation discretion under the arm's length principle. This result is consistent with Beer and Loeprick (2015), who conclude that affiliated intangible goods transactions positively affect transfer pricing activities. Likewise, Apriani et al. (2021) and McFarlane et al. (2023) emphasize that intangible ownership structures provide flexibility in intra-group pricing decisions. Bakhram et al. (2021) also find that cross-border intangible transactions significantly increase transfer pricing risk, while business turnover negatively affects such risk. However, this finding contrasts with Sari et al. (2022), who report that intangible goods variables do not significantly influence transfer pricing behavior. The difference may be explained by variations in measurement approaches, sectoral composition, or the use of financial-ratio-based risk indicators in the present study. This divergence highlights the importance of contextual and methodological considerations in assessing transfer pricing risk.

The positive and significant effect of intercompany loan transactions confirms that intra-group financing is a critical channel for profit shifting. Cazacu (2015) identifies affiliated loan transactions as high-risk areas due to discretionary interest rate

determination and capital structure structuring. OECD (2013) further notes that financial transactions may facilitate income shifting through excessive interest deductions. Higher leverage is found to significantly increase transfer pricing risk. Empirical evidence from Waworuntu and Hadisaputra (2016) supports this argument, demonstrating that higher leverage and intra-group debt are associated with more aggressive transfer pricing practices. The present findings strengthen this theoretical and empirical linkage.

The number of affiliated entities, service transactions, and tangible goods transactions does not show a significant effect on transfer pricing risk in this study. This may suggest that simply having multiple affiliates or engaging in these types of transactions does not automatically increase risk; rather, the actual risk is more influenced by factors such as transaction complexity, pricing discretion, and documentation practices. In particular, service transactions may appear less risky due to improved documentation requirements and clearer benefit tests. Nevertheless, OECD (2017a) emphasizes that affiliated service transactions inherently carry transfer pricing risk, especially when the economic benefit and cost allocation are difficult to verify. Tangible goods transactions, on the other hand, are relatively easier to benchmark using comparable uncontrolled prices or cost-based methods, which limits discretionary pricing (OECD, 2022). Although affiliated transactions generally increase the potential for tax avoidance, the degree of transfer pricing risk ultimately depends on valuation complexity and comparability challenges (Sari et al., 2022).

The negative and significant coefficient of business turnover indicates that larger firms tend to exhibit lower transfer pricing risk. This finding is consistent with Bakhram (2021), who reports that business turnover negatively affects transfer pricing risk. Larger firms may operate under stronger regulatory scrutiny, reputational exposure, and compliance systems, which may reduce deviations from the arm's length principle (Fuest et al., 2010). The results demonstrate that transfer pricing risk is concentrated in transactions characterized by valuation ambiguity, multinational ownership structures, and intra-group financial arrangements.

## **CONCLUSION**

This study analyzes the determinants of transfer pricing risk at the Operating Profit Margin (OPM) level among Foreign Direct Investment (FDI) firms using panel data regression. The results show that transfer pricing risk is significantly driven by multinational ownership structures and complex transactions. Foreign ownership, intangible goods transactions, intercompany loans, and leverage have positive and significant effects, indicating that profit shifting is more likely in areas involving high pricing discretion and financial structuring. In contrast, tangible goods transactions, service transactions, and the number of related entities are not significant, suggesting that not all related-party transactions pose equal risk. Business turnover shows a negative relationship, implying that larger firms tend to exhibit lower transfer pricing risk.

These findings align with the OECD Transfer Pricing Guidelines, which identify intangible assets and intra-group financing as high-risk areas under the arm's length principle. This study contributes by using OPM-based comparability as an indicator of transfer pricing risk in the Indonesian FDI context. From a policy perspective, the results highlight the importance of risk-based supervision, particularly focusing on intangible transactions, intercompany loans, high leverage, and foreign ownership. However, this study is limited by its reliance on financial ratios and secondary data. Future research is recommended to incorporate sectoral analysis and additional variables, such as tunneling incentives, exchange rates, and corporate governance factors, to provide a more comprehensive understanding of transfer pricing risk.

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