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Evaluating GOTO Investment Strategies After Major Investor Exit: DiD Approach

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Abstract

Purpose: This study tests whether strategic divestment by prominent investors affects the valuation of firms that keep stakes in a high-growth, volatile company, PT GoTo Gojek Tokopedia Tbk (GOTO).

Methodology/approach: A difference-in-differences design compares market performance before and after SoftBank and Alibaba's exits. Firms retaining GOTO PT Telkom Indonesia Tbk (TLKM) and PT Astra International Tbk (ASII) form the treatment group, while matched non-holders serve as controls. Graphical and statistical checks confirmed parallel trends, validating the model.

Results/findings: Continued GOTO ownership after divestment reduces Tobin's Q by 0.291 ($p = 0.093$). The Average Treatment Effect on the Treated shows a significant 20.459 point drop in firm value post-event ($p < 0.001$). Thus, markets penalized exposure to GOTO, consistent with the signaling hypothesis that major investor exits convey adverse information.

Conclusion: Retaining equity in a volatile firm after high-profile departures poses valuation and reputational risks. Negative market reactions suggest skepticism about GOTO's prospects and heightened the perceived risk for remaining shareholders. Therefore, the timing and extent of post-divestment exposure warrant careful strategic consideration.

Limitations: The treatment sample is small (two firms), macro sectoral factors are excluded, and data end in Q2 2024, limiting long term inference.

Contribution: By linking ownership signals to firm value in an emerging market context, this study enriches the literature on divestment, signaling, and corporate strategy, demonstrating tangible market costs for stakeholders who remain invested after influential exits.

Keywords: *Corporate Venture Capital, Difference-in-Differences, Divestment, Signaling Theory, Tobin's Q.*

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1. Introduction

In the era of rapid digital transformation, Indonesia's technology and communication sector has witnessed significant growth (Aminah & Saksono, 2021; Wagola et al., 2023; Fahmi, 2023). Investment in technology development and digitalization enables companies to create superior products and services, enhance operational efficiency, and accelerate market penetration. Companies that proactively increase their investments have a greater opportunity to dominate the market and establish sustainable competitive advantages (Tang et al., 2023). In response to this trend, major Indonesian corporations have started investing in technology to strengthen their positions in the digital business landscape. A prominent example of this phenomenon is PT GoTo Gojek Tokopedia Tbk (GOTO), which has garnered substantial attention from both domestic and global investors. On April 11, 2022, GOTO conducted an Initial Public Offering (IPO) with an initial market capitalization of IDR 452 trillion,

making it one of the largest listed companies on the Indonesia Stock Exchange (IDX). The high confidence in GOTO's growth prospects has driven strategic investments from major corporations, including PT Telekomunikasi Indonesia (Persero) Tbk (TLKM) and PT Astra International Tbk (ASII). TLKM, a leader in the telecommunications industry, and ASII, with a diversified portfolio spanning automotive to financial services, view their investments in GOTO as an opportunity to strengthen their presence in Indonesia's digital ecosystem. However, after the lock-up period ended on November 30, 2022, significant selling pressure emerged, particularly from large institutional investors such as SoftBank (via SVF GT Subco) and Alibaba (via Taobao China Holding Limited). In 2023, SoftBank gradually divested its holdings, selling more than 10.13 billion shares in March and an additional 200 million shares in April as part of its global restructuring strategy. This selling trend continued into 2024, with SoftBank offloading 69.06 million shares and Alibaba selling 16.2 billion shares. The divestment by these major investors exerted significant pressure on GOTO's stock price, leading to a continuous decline.

The decline in GOTO's share value has significantly impacted the financial conditions of TLKM and ASII. TLKM recorded an unrealized loss of IDR 119 billion due to the depreciation of its investment in GOTO, while ASII also reported losses resulting from fair value adjustments on its GOTO holdings. This substantial decline in GOTO's stock price implies potential reductions in TLKM and ASII's net income, as these unrealized losses affect the valuation of their investment assets. This situation highlights that while investments in technology companies can enhance corporate value in the short term, external factors such as large-scale investor divestments play a crucial role in determining stock price stability and market capitalization.

The decline in GOTO's stock valuation can also be linked to the Corporate Venture Capital (CVC) life cycle theory, as outlined by Ma (2020), which divides CVC into three phases: entry (strategic motives), growth (a combination of strategic and financial motives), and exit (investment withdrawal due to unmet synergies or results). TLKM and ASII's investment currently appears to be in a transitional phase between growth and exit, where market pressures and uncertainty about synergies are beginning to test the resilience of the investment. In line with this, Wan et al. (2022) found that negative performance pressures can also be a key driver for companies engage in CVC investments as a means of overcoming business stagnation, although such investments do not always yield immediate or positive results.

Similar cases have occurred globally, such as Google Ventures reducing its investment activity after several portfolio units failed to deliver strategic synergies, or Intel Capital scaling back its involvement in startups due to internal pressures on its core business lines. In the Asian region, SoftBank Vision Fund also faced internal pressures after its aggressive investments in technology sectors like WeWork and OYO failed to provide the expected financial returns. Additionally, General Electric (GE) Ventures withdrew most of its funding after not seeing adequate strategic outcomes from its startup portfolio. Microsoft Ventures also shifted its strategic direction after failing to achieve the expected technological integration from its investee startups. These cases demonstrate that CVC strategies are highly contextual and depend on the effectiveness of implementation, organizational readiness, and market dynamics.

In a scenario where other investors have opted for divestment to mitigate potential losses, TLKM and ASII have taken a different approach by retaining their investments in GOTO. This decision raises fundamental strategic and financial questions: Is this approach driven by confidence in GOTO's long-term prospects, or are there other strategic factors influencing this decision? Given the high volatility inherent in the technology sector, it is essential to explore how this decision affects the financial performance and business strategies of TLKM and ASII while assessing the broader implications for investment risk in this dynamic industry.

The study by Vidal (2021) highlights that divestment decisions by large corporations can significantly impact firm market valuations. Companies that acquire or retain divested assets are at risk of experiencing a decline in market value, as they may bear the burden of asset integration or face inherent risks associated with the divested entities. In this context, Gleason et al. found that the acquisition of divested assets without strong mitigation strategies can exert negative pressure on financial

performance, as reflected in a decrease in Tobin's Q. This study explores the potential financial and strategic implications of TLKM and ASII's investment in GOTO by applying the Difference-in-Differences (DiD) methodology. Specifically, it examines how the decision of these firms to retain their investments compares with the gradual divestment undertaken by SoftBank and Alibaba. The analysis employs Tobin's Q as a proxy for firm valuation to observe how different investment strategies in a technology company may relate to market performance. Rather than claiming definitive conclusions, this study seeks to contribute to the ongoing discourse on investment behavior in the tech sector and its association with firm value and strategic positioning.

2. Literature Review

Tobin's Q has been widely recognized as a comprehensive indicator of firm value, comparing the market value of a company's assets to their replacement costs. Initially proposed by Rashid (2021) and later simplified for empirical use by Alarussi (2021), this ratio is extensively applied in financial research to evaluate market perceptions of corporate growth potential and investment efficiency. Higher Tobin's Q values generally reflect stronger market confidence and superior expected future performance. Tang et al. (2023) demonstrated that proactive investments in technology and innovation are positively linked to Tobin's Q, as markets reward firms signaling their commitment to future competitiveness. Nevertheless, market valuations are sensitive to changes in strategic relationships. Zhang (2023) found that firms experiencing disruptions in strategic interlocks faced declines in Tobin's Q, reflecting the market's reassessment of their growth prospects.

Moreover, Cheng et al. (2022) emphasized that the proportion of ownership reflects strategic exposure and influence, thereby strengthening involvement in target companies and signaling long-term commitment. However, studies using cross-sectional analyses generally portray investment retention as positively associated with firm value in stable conditions. For instance, Wu and Wang (2020) found that firms maintaining ownership stakes in affiliates were rewarded by investors, as such actions often indicate managerial confidence. Nonetheless, these studies do not fully address dynamic contexts, such as post-IPO environments or periods marked by anchor investor withdrawals. Divestment decisions, on the other hand, play an equally important role in corporate strategy. Vidal (2021) found that divestitures often generate positive wealth effects for the divesting firms, enabling them to enhance operational focus and efficiency. Furthermore, Owen & Yawson (2020) observed that firms facing slow growth frequently pursue divestitures to refocus on core businesses, which markets may interpret positively in terms of improved strategic alignment. While insightful, these studies primarily focus on voluntary divestitures during stable periods, which differ from scenarios involving unexpected withdrawals of globally influential investors in emerging digital markets.

In this regard, investments and divestments reflect dynamic processes through which firms manage resources and adjust strategic directions in response to evolving environments. Signaling Theory Mc. Andrew (2021) offers a valuable framework for understanding how firms communicate private information to external stakeholders through observable actions. Investment retention, particularly during uncertain periods, is often interpreted as a positive signal of managerial confidence and commitment to the investee's future growth. In the context of this study, TLKM and ASII chose to retain their ownership stakes in GOTO during pivotal moments particularly after the strategic divestment by global investors SoftBank and Alibaba. From a signaling theory perspective, such retention decisions are typically interpreted by the market as credible signals of management's confidence in the firm's long-term value and strategic prospects. However, the empirical outcomes suggest a more complex dynamic. Despite the intention to convey positive signals, market reactions were ambivalent. The exit of high-profile global investors appeared to send a stronger counter-signal, heightening perceptions of risk and uncertainty. This reflects a core tenet of signaling theory: that the effectiveness of a signal depends not only on the credibility of the sender but also on the context in which it is interpreted. In this case, the positive signals from TLKM and ASII were arguably eclipsed by negative market-wide signals triggered by the divestment decisions of SoftBank and Alibaba. This was evidenced by a subsequent decline in Tobin's Q for both TLKM and ASII, suggesting that investor sentiment and external cues can significantly moderate or even neutralize firm-level signaling efforts.

While previous literature has established the role of signaling in investment behavior, especially in mature markets, it often overlooks the interaction between local investment retention and the withdrawal of global anchor investors within the volatile context of emerging digital economies. To bridge this gap, this study applies a Difference-in-Differences (DiD) methodology to evaluate the causal effects of investment decisions on firm valuation. By examining post-IPO investment behavior in GOTO, the study contributes to a more contextualized and theoretically grounded understanding of how signaling mechanisms operate and are interpreted amidst fluctuating investor confidence and market uncertainty.

3. Methodology

3.1 Sample and Data Source

The data used in this study consists of financial statements and capital market data from companies with similar business models to TLKM and ASII, specifically telecommunication and conglomerate firms listed on the Indonesia Stock Exchange (IDX) for the period from the first quarter of 2020 to the second quarter of 2024. Financial data such as market capitalization, return on assets (ROA) and sales growth were obtained using the S&P IQ Capital platform. Companies that were delisted from the Indonesia Stock Exchange (IDX) during the study period, from the first quarter of 2020 (2020Q1) to the second quarter of 2024 (2024Q2), were excluded from the sample. Delisting may occur for various reasons, including mergers, acquisitions, bankruptcy, or strategic decisions by the company to go private. This exclusion was made to avoid potential bias in the analysis, as delisted companies no longer provide consistent market data throughout the study period. The total sample consists of 17 companies observed over a period of 18 quarters, resulting in a total of 306 observations. This categorization offers insights into the diversity of the companies included in the analysis, allowing for a comprehensive assessment of the financial and strategic implications of their investment and divestment decisions.

3.2 Empirical Strategy and Variables

This study employs the Difference-in-Differences (DiD) methodology to examine the causal impact of strategic investment and divestment decisions made by TLKM, ASII, SoftBank, and Alibaba regarding their stakes in GOTO. The primary objective is to assess how these decisions influence Tobin's Q, a measure of market valuation and financial stability. The DiD approach is particularly suitable for this analysis because it allows the isolation of the effects of these corporate actions by comparing the pre- and post-event changes in Tobin's Q for firms that made investment or divestment decisions (the treatment group) versus firms that did not (the control group). This comparison accounts for time-invariant factors and broader macroeconomic influences affecting all firms, enabling the study to isolate the specific impact of these investment and divestment decisions.

The Difference-in-Differences (DiD) method is a quantitative approach used to estimate the causal effect of a treatment or intervention. It calculates the difference in outcomes before and after the intervention within the treatment group and then subtracts the corresponding difference observed in the control group. This structure gives rise to the term "Difference-in-Differences," referring to the difference of the differences. The underlying assumption is that, in the absence of treatment, changes in the treatment group would have followed the same trend as those in the control group, known as the parallel trends assumption. When this assumption holds, the net difference can be interpreted as the causal effect of the intervention.

DiD serves as an empirical strategy to capture performance changes resulting from a policy or intervention by comparing outcomes between affected (treatment) and unaffected (control) groups, both before and after the occurrence of the intervention (Liu, Miletkov, Wei, & Yang, 2015). By employing the Difference-in-Differences (DiD) model, this study is able to estimate the causal effect of the treatment, even when using observational data, which often contains selection biases. The model also allows for the control of other factors that may influence Tobin's Q, such as firm size and profitability. Graphically, DiD is represented by two parallel trend lines prior to the intervention, followed by a divergence in the treatment group's trajectory after the intervention. The vertical difference between these lines post-intervention, relative to the pre-intervention difference, constitutes the essence of the DiD estimation. Mathematically, the DiD calculation can be formulated as follows:

$$DiD = (Y_{treatment,after} - Y_{treatment,before}) - (Y_{control,after} - Y_{control,before})$$

Where:

- $Y_{treatment,after} = Average\ outcome\ of\ treatment\ group\ after\ treatment.$
- $Y_{treatment,before} = Average\ result\ of\ the\ treatment\ group\ before\ treatment.$
- $Y_{control,after} = Average\ result\ of\ control\ group\ after\ treatment.$
- $Y_{control,before} = Average\ result\ of\ the\ control\ group\ before\ treatment.$

In Difference-in-Differences (DiD) studies, the treatment variable can be constructed as either binary or continuous, depending on the characteristics of the intervention being analyzed. According to Gomila (2021); Hu et al. (2022) binary treatment is the most commonly used approach, where the treatment variable is represented as a dummy variable, with a value of 1 indicating entities that receive the treatment (treated group) and 0 indicating entities that do not (control group). Binary treatment is used to identify changes in the average outcome attributable to the treatment, under the assumption that the intervention is discrete and exogenous.

In contrast, continuous treatment refers to situations where the intensity of treatment varies across individuals or groups and is measured on a numerical scale. In the context of continuous treatment, the differences in outcome changes are influenced not only by the presence of treatment but also by the degree of exposure to the treatment. Rekkas et al. (2020); Felton & Stewart (2022) caution that the use of continuous treatment requires additional care, as it may introduce vulnerabilities to endogeneity and heterogeneity in treatment effects. Therefore, robust methodological adjustments, such as the use of clustered standard errors or pre-treatment trend analysis, are necessary to ensure the validity of the estimation.

Specifically, this study compares TLKM) and ASII, which invested in GOTO, with SoftBank and Alibaba, which divested their shares, as well as other firms that did not engage in investment or divestment decisions related to GOTO. This comparison helps determine whether strategic investment leads to an increase in Tobin's Q, while divestment results in a decline, and whether firms that took no action experienced different market reactions. To conduct this analysis, the study employs a DiD model in which the dependent variable is Tobin's Q, and the independent variables include an indicator for the post-event period (after divestment), a dummy variable for firms in the treatment group, and the interaction between the two. This interaction term captures the causal effect of the divestment decision on Tobin's Q. Additionally, several control variables are included to ensure that the observed effects on Tobin's Q are attributable to investment or divestment decisions rather than other firm-specific factors. These control variables include firm size (measured as log market capitalization), and Return on Assets (ROA).

Firm size (measured as log market capitalization) serves as a control variable to account for its potential influence on market valuation, as larger firms are generally perceived as less risky and have greater access to capital, which could affect their Tobin's Q. ROA is used to measure a firm's profitability relative to its total assets, as firms with higher profitability are expected to have higher Tobin's Q due to more efficient asset utilization. ROE, which measures profitability relative to equity, is also included to control for differences in financial performance, as firms with higher returns on equity are typically valued more highly by investors, leading to an increase in Tobin's Q. By isolating the effect of these decisions while controlling for firm size, ROA, and sales growth the study provides a clearer understanding of how investment and divestment decisions influence firm valuation and financial performance.

Table 1. Measurement and usage variables

Variables	Indicator	Measurement	Citation
Tobin's Q	$\text{Tobin's Q} = \frac{\text{MVE} + \text{PS} + \text{Debt}}{\text{Total Asset}}$	Ratio	Tang et al. (2023)
Firm size	Log Market Capitalization	Ratio	M. Cheng et al. (2022)

ROA	$\frac{Net\ Income}{Total\ Assets}\ x100\%$	Percentage	Liu et al. (2015)
Sales Growth	$\frac{Revenue_t\ -\ Revenue_{t-1}}{Revenue_{t-1}} x100\%$	Percentage	Liu et al. (2015)

Source: Author

The study tests two primary hypotheses:

Dai et al. (2023) demonstrate that investments made through Corporate Venture Capital (CVC) generally contribute positively to the financial performance of startup firms, both before and after their Initial Public Offering (IPO). However, a key finding of their study indicates that the positive impact of CVC is stronger during the pre-IPO period. After the IPO, startups tend to encounter more complex market dynamics, including stock price volatility, capital market pressures, and shifts in ownership structures, which may diminish the immediate strategic benefits of the investment relationship. Research by Vidal (2021) shows that divestments by large corporations often yield positive wealth effects for the divesting firms, as they enable greater efficiency and focus on core business activities. However, firms acquiring or retaining divested assets tend to experience a decline in market value. Based on these findings, the second hypothesis of this study is stated as follows:

H1: Divestment by SoftBank and Alibaba from GOTO decreases the Tobin's Q of the firms that continued to invest in GOTO (TLKM and ASII).

4. Result and Discussion

4.1 Descriptive Statistics

The descriptive statistics presented in Table 2 reveal notable differences in Tobin's Q across the three groups of firms examined in this study. Firms classified as investors in GOTO, specifically TLKM and ASII, as well as SoftBank and Alibaba, report mean Tobin's Q values of 1.688 and 3.149, respectively. Both figures are considerably higher than the mean Tobin's Q of 0.656 observed among firms that did not invest in GOTO. This suggests that investor firms, particularly those involved with GOTO, tend to enjoy more favorable market valuations. Furthermore, based on control variables such as firm size, return on assets (ROA), and sales growth, GOTO investors appear to possess stronger financial profiles relative to non-investors. This pattern highlights the potential association between strategic investment decisions and enhanced market valuation, although it does not necessarily imply sustained long-term profitability.

A closer examination of the TLKM and ASII subgroup indicates a more nuanced outcome following the divestment of major GOTO shareholders. The continued exposure of TLKM and ASII to GOTO, even after the exit of global investors such as SoftBank and Alibaba, appears to have been interpreted negatively by the market. This is reflected in the downward pressure on their Tobin's Q. In contrast, SoftBank and Alibaba having divested their shares managed to preserve higher levels of Tobin's Q, indicating that the market may have viewed their exit as a prudent strategy to limit risk exposure. These findings suggest that maintaining investment in GOTO post-divestment was perceived unfavorably, possibly due to rising uncertainty and diminishing confidence in GOTO's long-term prospects.

Tabel 2 Statistic Descriptive

Variables	Obs	Mean	Std. Dev.	Min	Max	Skew.	Kurt.
Panel A. Observation TLKM dan ASII							
tobins q	36	1.688	.823	.679	3.747	.837	2.79
interaction preinv~t	36	.222	.422	0	1	1.336	2.786
interaction divest	36	.278	.454	0	1	.992	1.985
ownership goto	36	.006	.004	0	.01	-.893	1.936
firm size	36	9.843	.291	9.185	10.361	-.205	2.298
roa	36	7.92	3.07	1.683	12.654	-.397	2.101
sales growth	36	.009	.094	-.37	.172	-1.581	8.564

Panel B. Observation Softbank dan Alibaba							
tobins q	36	3.149	1.406	1.661	7.819	1.664	5.626
interaction preinv~t	36	.222	.422	0	1	1.336	2.786
interaction divest	36	0	0	0	0	.	.
ownership goto	36	.058	.048	0	.106	-.4	1.23
firm size	36	11.323	.308	10.868	11.896	.404	2.034
roa	36	2.755	2.247	-.146	7.984	.932	2.718
sales growth	36	.016	.175	-.487	.489	.104	4.698
Panel C. Observasi pada perusahaan yang tidak berinvestasi di GOTO							
tobins q	234	.656	.293	.082	1.643	.247	4.03
interaction preinv~t	234	0	0	0	0	.	.
interaction divest	234	0	0	0	0	.	.
ownership goto	234	0	0	0	0	.	.
firm size	234	6.195	1.986	1.344	13.423	.014	3.422
roa	234	3.69	4.103	-18.244	28.654	-.423	13.402
sales growth	234	.013	.179	-.818	1.286	.686	17.548

Source: data processing results (author)

4.2 Parallel Trends Test

The parallel trends assumption was tested to ensure the validity of applying the Difference-in-Differences (DiD) methodology. Figure 1 displays the trajectories of Tobin's Q for the treated group (TLKM and ASII) and the control group during the pre-divestment period (2020Q1 to 2022Q4). While the control group shows higher and more volatile Tobin's Q levels, both groups exhibit similar trend directions and no systematic divergence prior to the divestment event in 2023Q1.

This visual evidence indicates that, in the absence of divestment, the treated and control groups would have followed comparable trends. The consistency in slopes and the absence of structural breaks reinforce the validity of the DiD approach in estimating the causal effect of divestment on firm valuation. Moreover, the statistical test for the parallel trends assumption, presented in Appendix 1, confirms that the assumption is satisfied. Therefore, the analysis proceeds with the DiD regression to estimate the causal impact of the divestment event on Tobin's Q.

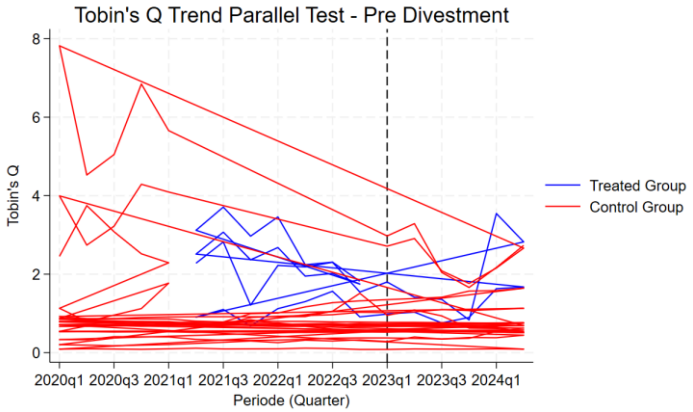

Figure 1. Tobin's Q Tend Parallel Test
Source: data processing results (author)

This figure illustrates the parallel trends test of Tobin's Q for treated and control groups prior to the divestment events. The treated group (blue lines) consists of firms that retained their investments in GOTO, while the control group (red lines) represents firms that divested or did not invest. The dashed vertical lines indicate a critical periods: the divestment event in 2023Q1. Before these events, the

trajectories of Tobin's Q in both groups generally move in parallel, supporting the validity of the parallel trends assumption for the Difference-in-Differences (DiD) analysis. The visual divergence that emerges after these events suggests that subsequent changes in Tobin's Q are likely attributable to the causal impact of the IPO and divestment, rather than pre-existing differences between groups.

4.3 Regression DiD

4.3.1 Regression DiD Post Divest

The regression results presented in Table 3 investigate the impact of GOTO ownership on Tobin's Q following the divestment of major shareholders, such as SoftBank and Alibaba. Two model specifications were employed: the first using continuous ownership (reported in Appendix 2) and the second adopting a binary treatment approach to categorize firms as either retaining or not retaining GOTO shares. The continuous specification, while yielding a negative interaction term, did not produce statistically significant results (coefficient = -1.09, p = 0.571). This is likely due to limited variation in ownership levels across firms in the post-divestment period, making it difficult to capture meaningful differences in market valuation. Consequently, the continuous approach may not adequately reflect the market's treatment of firms' investment status.

To overcome this limitation, the binary treatment specification was applied to better capture the differential market response between investor firms (TLKM, ASII, SoftBank, and Alibaba) and non-investor firms. As shown in Table 3, the interaction term between the treatment group and the post-divestment period is negative and marginally significant, with a coefficient of -0.291 (p = 0.093). This result suggests that, relative to non-investor firms, those retaining ownership in GOTO experienced a decline in Tobin's Q during the post-divestment period. Although the result falls slightly above the conventional 5% significance level, it is statistically meaningful at the 10% level, providing evidence of a market reaction to continued exposure to GOTO after major shareholders exited. These findings provide support for Hypothesis, which posits that Tobin's Q of investor firms decreases after major shareholders divest. The negative and marginally significant interaction effect indicates that the market viewed sustained investment in GOTO as a risk factor that adversely affected firm valuation. By employing the binary specification, the analysis captures more effectively the valuation pressures faced by investor firms directly impacted by the divestment event. In summary, while statistical significance is moderate, the direction and strength of the results offer meaningful evidence that continued exposure to GOTO post-divestment was associated with negative market perceptions.

Table 3. DiD Regression Analysis in the Post Divestment Period

tobins_q	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
treatment	.383	.339	1.13	.276	-.337	1.103	
Post_divestment	-.374	.346	-1.08	.296	-1.109	.36	
Treatment#post_divestment	-.291	.163	-1.79	.093	-.635	.054	*
firm_size	.242	.094	2.58	.02	.043	.44	**
roa	-.025	.021	-1.19	.253	-.07	.02	
sales_growth	-.028	.384	-0.07	.943	-.843	.787	
241	-.311	.27	-1.15	.267	-.884	.262	
242	-.167	.24	-0.70	.496	-.676	.341	
243	-.197	.136	-1.45	.166	-.485	.091	
244	-.175	.215	-0.81	.428	-.631	.281	
245	-.635	.348	-1.82	.087	-1.373	.104	*
246	-.462	.337	-1.37	.19	-1.176	.253	
247	-.596	.384	-1.55	.141	-1.411	.219	
248	-.558	.317	-1.76	.097	-1.23	.114	*
249	-.572	.399	-1.43	.171	-1.417	.273	
250	-.645	.421	-1.53	.145	-1.538	.248	
251	-.753	.449	-1.67	.113	-1.705	.2	
252	-.553	.33	-1.67	.114	-1.253	.147	

253	-.13	.124	-1.05	.309	-.393	.133	
254	-.259	.133	-1.94	.07	-.541	.024	*
255	-.257	.163	-1.58	.133	-.602	.087	
256	.024	.07	0.34	.739	-.125	.172	
Constant	-.163	.44	-0.37	.717	-1.096	.771	

Mean dependent var	1.071	SD dependent var	1.028
R-squared	0.437	Number of obs	306
F-test	.	Prob > F	.
Akaike crit. (AIC)	740.364	Bayesian crit. (BIC)	799.941

*** *p<.01, ** p<.05, * p<.1*

Source: data processing results (author)

This table reports the results of Difference-in-Differences regressions examining the effect of retaining GOTO ownership on Tobin's Q following the divestment of major shareholders, such as SoftBank and Alibaba. The interaction term between the binary treatment variable and the post-divestment period captures the differential effect on firms retaining GOTO shares relative to non-investor firms after the exit of major shareholders. A negative and marginally significant coefficient on this interaction term suggests a decline in Tobin's Q among investor firms during the post-divestment period. The regressions include control variables for firm size, return on assets (ROA), sales growth, and time fixed effects to control for unobserved period-specific shocks. Standard errors are clustered at the firm level to account for intra-firm correlation. Results from an alternative model using continuous ownership are provided in Appendix 3. Statistical significance is denoted by ***, **, and * for the 1%, 5%, and 10% levels, respectively.

4.3.3 Causal Estimation of GOTO Ownership on Firm Valuation

The estimation results presented in Table 4 provide robust evidence of the causal effect of GOTO ownership on the market valuation of investor firms, as reflected in Tobin's Q. These findings directly address Hypothesis, which posits that continued ownership in GOTO leads to a decline in Tobin's Q following major shareholder divestments. During the post-divestment period, the Average Treatment Effect on the Treated (ATET) shows a statistically significant and economically meaningful reduction of -20.459 points ($p < 0.001$). This result indicates that the exit of key shareholders, such as SoftBank and Alibaba, acted as a negative signal to the market, further depressing the valuations of firms that retained ownership in GOTO. The consistently negative and statistically significant ATET estimate confirms a strong causal relationship between GOTO ownership and reduced firm valuation. These results underscore that exposure to GOTO shares during the divestment phase was perceived negatively by the market, thereby validating the hypothesis regarding the adverse effect of such ownership on Tobin's Q.

Table 4. Reports the estimated causal effects of GOTO ownership on Tobin's Q using Difference-in-Differences (DiD) regressions with wild-cluster bootstrap standard errors

tobins_q	Coefficient	t	P>t	[95%	conf. interval]
Post Divestment					
ATET					
ownership_goto	-20.459	-3.580	0.000	-28.568	-11.276

Source: data processing results (author)

This table reports the estimated causal effects of GOTO ownership on Tobin's Q using Difference-in-Differences (DiD) regressions with wild-cluster bootstrap standard errors. The Average Treatment Effect on the Treated (ATET) represents the impact of continuous GOTO ownership on firm valuation during post-divestment periods. The model controls for firm size, return on assets (ROA), sales growth, and interaction terms reflecting period-specific effects. Group (firm) and time fixed effects are included

to account for unobserved heterogeneity and time-varying shocks. Standard errors are clustered at the firm level and wild-cluster bootstrap with 1,000 replications is employed to improve inference accuracy given the limited number of clusters. Statistical significance is denoted by ***, **, and * indicating the 1%, 5%, and 10% levels, respectively.

Robustness check To ensure the validity of the causal inference, placebo tests were conducted by simulating treatment effects in the pre-treatment periods, where no actual treatment occurred. These placebo regressions aim to verify whether the estimated causal effects of GOTO ownership on Tobin's Q are driven by spurious correlations or pre-existing trends. The detailed results of the placebo analyses are reported in Appendix 3 (Placebo Test Pre-Divestment). In placebo tests, the interaction terms between the simulated treatment indicators and the placebo periods were statistically insignificant, indicating no meaningful association with Tobin's Q. This suggests that prior to the actual divestment events, GOTO ownership did not exhibit any systematic effect on firm valuation. The absence of significant placebo effects strengthens the argument that the negative causal impacts identified in the main DiD analyses are indeed attributable to divestment events, rather than to confounding factors or unobserved time trends.

5. Discussion

The descriptive findings show that the average Tobin's Q of investor companies GOTO TLKM, ASII, SoftBank, and Alibaba is much higher than that of the non-investor group. This difference confirms that a particular investment strategy can be a market signal about the growth prospects and efficiency of asset management. These results are consistent with Oranefo & Egbunike (2022) who found that long-term funding structures are positively and significantly associated with Tobin's Q, signaling that the market appreciates funding decisions that are perceived to support the company's long-term value. However, the post-diversion DifferenceinDifferences test showed a negative and significant interaction between treatment and the post-diversion period.

The decline in Tobin's Q TLKM and post-vestivization ASII indicates that the sustainability of exposure to GOTO is perceived as a new source of risk. This pattern is in line with the findings of Oranefo & Egbunike (2023) which show a negative relationship between the accounts payable turnover ratio and Tobin's Q, indicating that the market is sensitive to the dynamics of unresolved liabilities and liquidity risks. The governance perspective also enriches the interpretation. El Idrissi & Alami (2021) show that most of the board mechanisms such as the size of the board and the frequency of meetings have a negative impact on the financial performance of Moroccan banks, with the exception of the audit committee and nominations & remuneration which are actually value-added.

Analogously, the market may view the indecisiveness of the TLKM–ASII divestment strategy as a weakness in portfolio investment risk governance. In addition, the ownership structure affects the durability of the valuation. Hossain, Sultan, & Ahmed (2021) found that institutional and foreign ownership increases ROA and ROE, while managerial ownership has a negative impact. These results provide context that the divestment of SoftBank–Alibaba (foreign holders) could create market concerns when the remaining holdings are dominated by domestic investors with different incentives. The sustainability dimension is also relevant. Yeye & Egbunike (2023) report that ESG disclosures tend to increase a company's value, although the strength of the effect depends on profitability. In line with that, divestment by global investors that increasingly emphasizes ESG can be perceived as a negative signal regarding GOTO's sustainability and governance prospects, thus pressuring Tobin's Q investors. Overall, the empirical evidence of this study confirms that strategic divestment decisions impact market valuation through three main channels: (1) risk and liquidity perception, (2) governance effectiveness and ownership structure, and (3) market expectations for sustainability performance. Synchronization of these three aspects is important for investors to maintain market confidence, especially when there is a major change in the shareholder structure.

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