MARKET SENTIMENT AND FIRM INVESTMENT DECISION MAKING: EVIDENCE IN THAI MARKET

BY

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AN INDEPENDENT STUDY SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE PROGRAM IN FINANCE (INTERNATIONAL PROGRAM) FACULTY OF COMMERCE AND ACCOUNTANCY THAMMASAT UNIVERSITY ACADEMIC YEAR 2024

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ABSTRACT

This study investigates the influence of market sentiment on firm investment decisions in Thailand from 2003 to 2023. Drawing on behavioral corporate finance and prospect theory, it tests two hypotheses: (1) that positive market sentiment is associated with higher levels of firm investment, and (2) that this relationship weakens during financial crises. Using panel fixed effects regression on an unbalanced panel of Thai listed firms, the results support both hypotheses. Market sentiment positively affects investment levels under normal conditions but has a diminished effect during crisis periods. These findings highlight the behavioral underpinnings of investment behavior and the conditional nature of sentiment's influence amid economic uncertainty.

Keywords: Market sentiment, Firm investment, Behavioral finance

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Sarisa Promngern

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CHAPTER 1
INTRODUCTION

In today's rapidly evolving financial landscape, the forces shaping corporate investment decisions are increasingly complex and multifaceted. Amid shifting market dynamics and economic uncertainty, the traditional reliance on cold, hard financial metrics as the sole drivers of investment strategies is being re-evaluated (Shao et al, 2024). While traditional financial theories often depict investment decisions as purely rational choices based on economic forecasts and financial evaluations, behavioral finance introduces a layer of complexity by suggesting that these decisions are also influenced by the psychological climate of the market (Baker & Wurgler, 2007; Danso et al, 2019). The emergence of behavioral finance has unveiled the significant role that human psychology plays in the markets. This has brought to light the impact of cognitive biases, emotions, and other psychological factors on decision-making processes within firms (Szyszka, 2013). In contemporary corporate finance, understanding the drivers of firm investment decisions extends beyond traditional financial metrics and economic indicators.

The sentiment is the attitude of executives, investors, and consumers towards prospects of economic/market conditions in a country (Carlin et al, 2021). It is basically the current feelings and the expectations toward the economic/market conditions. Market sentiment, as a non-financial factor, reflects the collective attitudes of people, influencing corporate strategies and financial outcomes significantly (Danso et al, 2019). Globally, numerous institutes compute the sentiment in different methods into different indices and publish them for the public used.

Recent advancements in this area have particularly underscored the significant influence that non-financial factors exert on corporate decision-making processes. These insights have opened new avenues for investigating how perceptions of market conditions influence strategic investment actions across different sectors and regions. More recent studies, including those by Danso et al. (2019), have delved deeper into this behavioral perspective, proposing that market sentiment significantly influences firm investment decisions beyond what might be anticipated from traditional

economic predictors. These studies argue that during periods of high market sentiment, even when traditional indicators might suggest caution, firms are more likely to increase investment due to heightened confidence and optimism among managers and investors. This can lead to overinvestment during boom periods and underinvestment during downturns, challenging the conventional wisdom that firms rationally balance risk and reward based on objective economic indicators.

This study aims to examine how market sentiment influences firm investment decisions within Thailand. Thailand is an upper middle-income country and the second-largest economy in Southeast Asia, benefiting significantly from its tourism and manufacturing sectors (Thailand - Market Overview, 2024). Utilizing local economic sentiment data, this research seeks to contribute to the global understanding of behavioral finance by highlighting regional differences and similarities in investment behavior. The rest of the paper is organized as follows: a literature review that situates the study within the existing research landscape, a methodology section that details the empirical framework and data sources.

CHAPTER 2
REVIEW OF LITERATURE

2.1 Theoretical perspective

Behavioral finance challenges traditional views by proposing that investor decisions are often influenced by psychological biases, making them less than fully rational. This perspective contests the classical belief that investors consistently make rational choices and that markets are always efficient (Brooks & Byrne, 2008). Such biases are generally documented in cognitive psychology and subsequently applied to finance. A notable example is the bias of overconfidence and optimism, where investors tend to overestimate both their capabilities and the reliability of their information. In the realm of behavioral corporate finance, Baker et al. (2007) outline two principal ways in which behavioral concepts extend to corporate finance: firstly, rational managers adapting to the mispricing caused by biased investors, and secondly, irrational managers themselves exhibiting biases, influencing corporate financial actions. This research focuses on the latter scenario, examining how managerial overconfidence related to internal investment decisions provides fresh insights in Thai context.

Prospect Theory, developed by Daniel Kahneman and Amos Tversky in 1979, offers a critical perspective in behavioral economics on how people make decisions involving risks. This theory points out that people don't always make decisions based purely on logic or self-interest, as traditional economic theories would suggest. Instead, individuals tend to fear losses more than they value equivalent gains, a key idea known as loss aversion. This concept is very useful for understanding how market sentiment influences business investment decisions. When market sentiment is positive, it can shift a company’s baseline expectations, leading managers to see new investments as favorable opportunities, which might prompt them to take more risks and increase investments. In contrast, negative sentiment can heighten the fear of losses, making companies more cautious and likely to cut back on investments to avoid potential downsides. This study will investigate how these behaviors manifest in

Thailand, exploring how such psychological factors affect business decisions in different parts of the world.

2.2 Empirical literature

The inclusion of sentiment analysis in empirical research has greatly enhanced our understanding of how firms make decisions. Typically measured through various indices and surveys, sentiment adds a crucial layer of information beyond the traditional financial metrics, drawing considerable attention from researchers eager to pinpoint the specific impact of psychological factors on corporate strategy. These studies emphasize the predictive and influential role of sentiment in guiding corporate actions, providing crucial insights into how firms manage uncertainties and seize opportunities in dynamic market conditions. This section explores these empirical findings, highlighting how sentiment affects firm decision-making in varying economic environments.

Extensive studies have investigated how market sentiment influences firm capital structure, with mixed results across different economies. For example, research by Kalantonis et al. (2021) and Cagli et al. (2018) found a negative correlation between leverage ratios and market sentiment, indicating that firms reduce their borrowing during periods of high market optimism. These studies were specifically conducted in Greece and Turkey, respectively. In contrast, Li et al. (2023) identified a positive correlation in the United States, suggesting regional differences in how sentiment impacts corporate financial strategies.

Further research on the link between firm investment and market sentiment generally aligns with existing theories. For instance, in the United States, high sentiment periods see firms increasing investments, particularly for those younger firms and that while financial flexibility motivates firms to overinvest, future profitability, however, leads firms to underinvest (Danso et al., 2019). Alimov & Mikkelson (2012) also found that firms that going public during favorable period tend to spend more on investments, especially acquisitions. During the COVID-19 pandemic, German firms with a pessimistic outlook on the crisis duration were more likely to delay or cancel investments (Buchheim et al., 2022), highlighting how sentiment towards economic

conditions influences firm decisions, a concept supported by prospect theory. In Asia, a study from Taiwan by Hsiao et al. (2014) demonstrated that managerial sentiment leads to overinvestment in high-value projects and underinvestment in less valuable ones, depending on the manager's outlook. Lastly, research focusing on the Chinese market by Huang & Fang (2019) showed that high market sentiment leads to reduced investment in bond-like stocks or projects characterized by low risk and stable returns, meaning that by comparing different investment projects, firms may reduce the low risk investment where the market condition is expected to be positive. In other words, the low (high) risk project is less attractive to managers when the sentiment is positive (negative).

In the Thai context, it is essential to investigate whether the relationship between firm investment and market sentiment is significantly and positively correlated, as suggested by existing literature. Additionally, it is important to examine if this relationship remains consistent during financial crises. This exploration aims to understand conservative financial management practices (such as loss aversion) under conditions of heightened uncertainty and risk, as proposed by prospect theory.

2.3 Research hypotheses

H1: Positive market sentiment is positively associated with higher levels of firm investment.

This hypothesis is based on the assumption that positive sentiment boosts confidence among decision-makers, leading to more aggressive investment strategies.

H2: The impact of market sentiment on firm investment is conditional on the broader economic environment, such as during financial crises.

The second hypothesis could posit that the influence of positive market sentiment on firm investment decisions is less pronounced during economic downturns or financial crises due to increased uncertainty and risk.

CHAPTER 3
RESEARCH METHODOLOGY

3.1 Data and Sample

This research was conducted using data derived from financial statements, including balance sheets and income statements, as well as systematic and idiosyncratic risk measures of Thai listed companies. These data, spanning from 2003 to 2023, were sourced from the Datastream database and Bloomberg. In conjunction with these financial metrics, market sentiment data were extracted from the Business Sentiment Index provided by the Bank of Thailand and the Thailand Industries Sentiment Index provided by the Federation of Thai Industries. The resulting dataset is structured as a panel of firm-year observations. However, due to missing values in key financial variables across some firms and years, the panel is unbalanced, meaning not all firms are observed in every year of the sample period. The details of these data are explained as follows:

3.1.1 Firm investment

Following the extant literature (Danso et al., 2019), the primary dependent variable (Investment 1 – INV1) is measured as the ratio of net capital expenditure (i.e., total capita expenditure minus depreciation) of firm *i* to the book value of its total property, plant, and equipment (PPE) for the current year. This metric captures the firm's actual capital addition after accounting for asset wear and tear, providing a clearer picture of how much the firm is genuinely reinvesting to maintain or expand its productive capacity.

To ensure robustness, two additional investment measures are employed. Investment 2 (INV2) is defined as the ratio of total capital expenditure to the book value of PPE, offering insight into gross investment behavior. Investment 3 (INV3) represents the ratio of net capital expenditure to total assets, allowing for comparability across firms of varying sizes by normalizing investment against overall firm scale.

In addition to the level-based measures, this study also examines the year-over-year percentage change in each investment metric – denoted as ΔINV1, ΔINV2, and ΔINV3 – to capture dynamic adjustments in capital spending. ΔINV1 represents the percentage change in INV1 from the previous year, ΔINV2 reflects the change in gross investment intensity, and ΔINV3 captures changes in net investment scaled by total assets. These dynamic measures help to assess whether market sentiment and firm characteristics influence not only the level of investment, but also how firms adjust their investment behavior over time. However, due to the presence of extreme outliers in these percentage change metrics, winsorization was applied at the 1st and 99th percentiles to minimize the effect of outliers and improve the robustness of the regression analysis.

3.1.2 Market sentiment

In this paper, market sentiment is defined as the perspectives of managers or executives regarding future economic and market conditions. In Thailand, various indices reflect different individuals' attitudes towards market conditions. However, two notable indices specifically capture business perceptions: Business Sentiment Index (BSI) and the Thai Industries Sentiment Index (TISI).

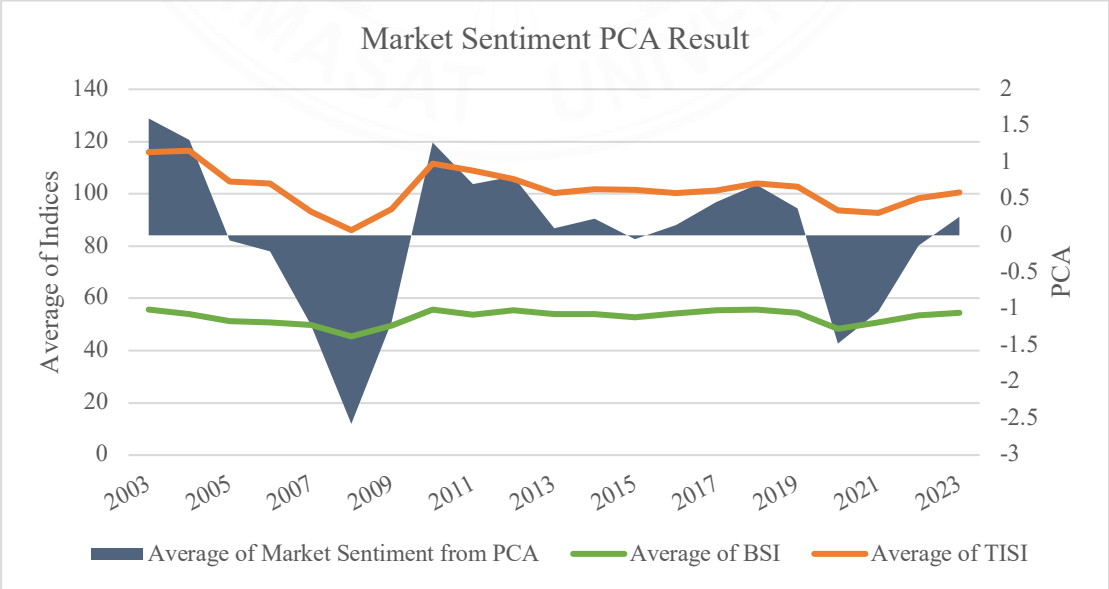
The Business Sentiment Index (BSI), compiled by the Bank of Thailand, is based on a monthly survey consisting of six equally weighted components: performance, production, total order books, investment, production cost, and employment. Each component is scored on a scale from 0 to 100, where a score below 50 indicates deterioration, 50 indicates stability, and above 50 indicates improvement. The index reflects sentiment for both the current month and the upcoming three months. In this study, the forward-looking 3-month expectations are used to capture firms' future outlook, which may influence their investment decisions.

The Thailand Industries Sentiment Index (TISI) is conducted by the Federation of Thai Industries using a similar questionnaire-based method. It includes five components: total purchase orders, total sales, total production, investment, and performance. The index is scored on a scale from 0 to 200, with values below 100 indicating a decline, 100 indicating no change, and above 100 indicating improvement. Like the BSI, it reports both current and 3-month-ahead expectations. TISI data is available from 2003 and is also published monthly.

To construct a composite market sentiment index, Principal Component Analysis (PCA) was applied to two forward-looking indicators: the Business Sentiment Index (BSI) and the Thailand Industries Sentiment Index (TISI). Given the different scoring ranges of the indices (BSI: 0–100; TISI: 0–200), both were standardized prior to analysis to ensure equal contribution. The standardization process followed the formula $X_{standardized} = \frac{X-\mu}{\sigma}$, where μ is the mean and σ is the standard deviation. PCA transforms correlated variables into uncorrelated principal components, with the first component (PC1) capturing the largest share of variance. The covariance matrix reveals a strong positive correlation of 0.6932 between BSI and TISI, indicating a high degree of co-movement. The analysis retained only the first principal component, which has an eigenvalue of 1.6932 and explained 84.66% of the total variance—indicating a strong shared signal between the two indices. The eigenvector shows equal loadings (±0.7071), meaning both indices contribute equally and symmetrically to the composite sentiment score. Monthly PC1 values were then averaged to create an annual market sentiment measure to match the frequency of firm-level capital expenditure (CAPEX) data. This annualized composite index is used as a key explanatory variable in the regression analysis to proxy forward-looking market sentiment.

Figure 3.1

Market Sentiment PCA Result



3.1.3 Control variables

In line with Danso et al. 2019, to account for firm-specific factors that may influence investment decisions beyond market sentiment, a set of control variables was included in the regression models. Firm size (SZ), measured as the natural logarithm of total assets, controls for scale effects, acknowledging that larger firms may have more stable investment behavior. Asset tangibility (TAN), defined as fixed assets divided by total assets, captures the extent of collateralization, which may affect access to external finance. Return on assets (ROA), calculated as EBITDA over total assets, serves as a proxy for profitability and internal financing capacity. Firm growth (GR), measured by the market-to-book equity ratio, reflects the firm's investment opportunities. Dividend payout (DIV) is a binary variable that captures whether the firm distributes profits (1) or retains them (0).

To capture risk exposure, the analysis includes systematic risk (SYSRISK), based on firm-level betas from the CAPM model, and idiosyncratic risk (IDIORISK), representing firm-specific volatility not explained by market movements. Earning volatility (EVOL), calculated as the standard deviation of operating income over the past five years divided by the five-year average, proxies for uncertainty in firm cash flows. Non-debt tax shield (NDTS) is measured by depreciation expenses over total assets and serves as a proxy for tax-related incentives that could influence capital structure. External shock (SHOCK), derived from global market volatility indices (e.g., VIX), accounts for global uncertainty that may impact emerging markets like Thailand. Finally, a dummy variable for economic crisis periods (CRISIS), defined as years with two consecutive quarters of negative GDP growth, controls for macroeconomic downturns.

To ensure the robustness of estimation, only a subset of variables prone to extreme outliers – NDTS, EVOL, SYSRISK, and IDIORISK – were winsorized at the 1st and 99th percentiles. This approach mitigates the influence of extreme values without distorting the distribution of other explanatory variables.

3.2 Estimation method

In this section, we model the empirical relationship between market sentiment and firm investment. Specifically, we employed the following econometric framework:

$$Investment_{i,t} = \alpha + \beta\left(Market\ sentiment_{i,t}\right) + \beta \mathrm{X}_{i,t} + \omega_i + \mu_t + \varepsilon_{i,t}$$

where i denotes the ith firm and t refers to the fiscal year. All variables used in the model are described in Table 1. X is the vector of the control variables employed in our analysis, α and β are parameters, ω_i is a firm fixed effect, and μ_t is a year fixed effect. The model is estimated by using Panel Fixed Effects approach to minimize the biases and inconsistent estimates due to correlation of the firm fixed effects with the explanatory variables.

CHAPTER 4
RESULTS AND DISCUSSION

4.1 Descriptive Statistics and Bivariate Correlation

Table 2 presents descriptive statistics for all variables used in the empirical analysis, covering 5,715 firm-year observations. The average values of the investment level variables are relatively modest: INV1 averages 0.0178, INV2 is 0.1409, and INV3 is 0.0093. These suggest that, on average, Thai listed firms allocate a small proportion of their assets toward capital investment. However, the wide range observed – especially for INV1 (ranging from -0.4350 to 0.6713) – highlights firm-level heterogeneity in investment intensity.

Turning to the change in investment variables, ΔINV1, ΔINV2, and ΔINV3 exhibit large standard deviarions (5.87, 2.79, and 6.55 respectively), and wide ranges (e.g., ΔINV3 ranges from -37.50 to 32.46). These patterns confirm that investment changes fluctuate substantially from year to year, likely driven by firm-specific decisions, market conditions, or macroeconomic shocks.

The market sentiment variable, MS, has a mean near zero (-0.0942) due to standardization, with values ranging from -2.57 to 1.60. Control variables are well-behaved and fall within expected ranges. For example, firm size (SZ) has a log-mean of 15.34, and asset tangibility (TAN) averages 0.3733. Return on assets (ROA) is moderately positive on average at 0.0568, while firm growth (GR) shows a relatively high mean of 2.10, reflecting investor optimism in some firms. Binary indicators such as DIV show that 72% of firm-year observations paid dividends, while CRISIS equals 1 for approximately 52% of obsevations, indicating that more than half the sample falls within periods classified.

Table 3 reports the pairwise correlations among all variables used in the analysis. As expected, the three investment level variables are strongly and positively correlated with one another (correlation between INV1 and INV2 is 0.77; INV1 and INV3 is 0.75), suggesting they capture related but distinct facets of firm capital investment. Their correlations with market sentiment (MS) are positive but moderate,

ranging from 0.10 to 0.12, providing preliminary evidence that sentiment may influence firm investment decisions.

The change-in-investment variables exhibit weak correlations with investment levels, which is expected given that they capture different dnamics. Notably, ΔINV1 and ΔINV3 are highly correlated (0.95), reflecting the similarity in how percenrage changes were computed across related denominators. These change variables show minimal correlation with market sentiment and control variables, indicating they offer additional variation useful for robustness checks.

Among control variables, firm size (SZ) is positively correlated with dividend payment (0.22) and asset tangibility (0.05), while idiosyncratic risk (IDIORISK) is moderately and positively associated with systematic risk (0.24) and firm growth (0.14). SHOCK and CRISIS dummies are both negatively correlated with investment variables and market sentiment, suggesting that downturn periods are generally accompanied by declines in investment and sentiment. Overall, no correlation exceeds 0.80, suggesting that nulticollinearity is not a major concern in the subsequent regression analyses.

4.2 Market sentiment and the level of firm investment

Regression results are reported in Table 4. The coefficient on market sentiment (MS) is positive and statistically significant at the 10% level, suggesting that firms tend to increase investment when market sentiment improves. This finding supports the behavioral finance perspective, which posits that managerial optimism-reflected in positive market outlooks-encourages capital allocation toward future growth. Among the control variables, several exhibit statistically significant effects on firm investment.

Firm size (SZ) has a negative and significant coefficient, indicating that smaller firms, relative to their larger counterparts, tend to invest more intensively in fixed assets. Tangibility (TAN) shows a strong positive association with investment, consistent with the notion that firms with more physical assets are better positioned to undertake capital expansion. Leverage, proxied by non-debt tax shields (NDTS), is negatively related to investment and highly significant, suggesting that firms facing

higher debt-related constraints are more likely to scale back investment. Profitability (ROA) is marginally significant, reinforcing the idea that internally generated funds are an important source of investment financing. Firm growth (GR) is positively and significantly associated with investment, as expected. The dividend dummy variable (DIV) also yields a positive and significant effect, implying that firms with sufficient free cash flow to distribute dividends are more likely to also invest.

Risk variables appear to have limited explanatory power in this setting. Both systematic risk (SYSRISK) and idiosyncratic risk (IDIORISK) are statistically insignificant, indicating that exposure to market volatility does not meaningfully influence investment decisions for Thai firms. However, the SHOCK variable, reflecting macroeconomic uncertainty, is negative and significant, confirming that firms reduce investment when external uncertainty rises.

Overall, the regression explains approximately 14.7% of the variation in firm investment (r2 = 0.1471), and the model is statistically significant. These findings highlight the role of market sentiment as a behavioral driver of firm investment, particularly under normal economic conditions.

4.3 Market sentiment and the change of firm investment

Table 5 presents the regression results examining the relationship between market sentiment and changes in firm investment using three different investment change proxies: ΔINV1, ΔINV2, and ΔINV3. The coefficient of market sentiment is positive but statistically insignificant in both ΔINV1 and ΔINV3 regressions, indicating no conclusive evidence of sentiment-driven investment adjustments in these specifications. However, for ΔINV2, market sentiment shows a positive and statistically significant effect at the 5% level, suggesting that firms may respond to optimistic market signals by increasing gross investment more actively. Across all models, some control variables such as non-debt tax shield (NDTS) and systematic risk (SYSRISK) appear signifiant in certain specifications, while most other variables including firm size, return on assets, and volatility are generally insignificant. The explanatory power of these models is relatively low, with R-squared values ranging

from 0.004 to 0.007, reflecting the high variability of investment changes not captured by the included regressors.

Comparing the results from the level of investment models (INV1, INV2, INV3) with the change in investment models (ΔINV1, ΔINV2, ΔINV3), a clear distinction emerges in the strength and consistencyc of the relationships. In the level-based regressions, market sentiment is significantly and positively associated with investment levels across INV1 and INV2, though not for INV3. This suggests that firms are more likely to increase their investment intensity in periods of positive market sentiment when measured in levels. Additionally, control variables such as firm size (SZ), asset tangibility (TAN), non-debt tax shields (NDTS), return on assets (ROA), and dividend payment (DIV) are consistently significant and aligned with theorectical expectations, contributing to higher explanatory power (R-squared values ranging from 0.067 to 0.21).

In contrast, the change-based investment models yield much weaker and less consistent results. Market sentiment only appears significant in ΔINV2 (gross investment change) and not in ΔINV1 or ΔINV3. Furthermore, the significance of traditional control variables is largely diminished. For example, variables like ROA, DIV, and TAN, which were previously strong predictors, become mostly insignificant in explaining investment changes. The explanatory power of these models is also markedly lower, with R-squared values between 0.004 and 0.007, indicating limited explanatory capacity.

Overall, these comparisons suggest that market sentiment has a more robust influence on the level of firm investment than on short-term fluctuations in investment changes. This supports that behavioral view that sentiment affects strategic, planned capital expenditures rather than reactive or marginal adjustments in investment from one period to the next.

4.4 Financial crisis and the sentiment-investment relationship

To examine whether the relationship between market sentiment an firm investment caries under adverse macroeconomic conditions, a CRISIS dummy variable is included in all regression models. Table 6 presents the regression results for both the

levels and the changes in firm investment. Across the models using the investment level as dependent variable, market sentiment (MS) shows a positive and statistically significant association only in INV1 and INV2 at the 10% and 5% levels respectively, suggesting that sentiment may play a limited role in explaining capital expenditure levels. However, when considering investment changes, market sentiment becomes signifiant only in ΔINV2 ($p < 0.05$), implying that changes in CAPEX might be more responsive to sentiment fluctuations under certain investment definitions.

Firm size (SZ) consistently exhibits a negative and significant relationship with investment levels (INV2 and INV3), and also becomes weakly significant in ΔINV2 ($p < 0.01$), supporting the notion that smaller firms tend to invest more aggressively. Asset tangibility (TAN) behaves diffrently across models: positively and significantly related to INV1 and INV3, yet negatively associated with INV2 and with ΔINV2, indicating structural differences in investment behavior when using gross vs. net CAPEX or total asset bases.

The variable NDTS shows strong significance in all level models ($p < 0.01$) with a negative coefficient, implying reduced investment incentives for firms with high depreciation. In contrast, its sign and significance in change models vary, being positively significant only in ΔINV1. Profitability (ROA) is positively associated with investment in INV2 ($p < 0.05$) and becomes marginally significant in ΔINV2. Firm growth (GR) is consistently positive and highly significant across all models and marginally in ΔINV3, suggesting that expanding firms tend to invest more.

Dividend payout (DIV) is positively and significantly associated with investment in level models, but not in change models, indicating that payout policies might correlate more with long-term investment strategies than with year-to-year adjustments. Systematic risk (SYSRISK) shows weak or no significance in most models, except ΔINV1 and ΔINV3, where it is positively significant. Idiosyncratic risk (IDIORISK) remains insignificant throughout. The macroeconomic shock (SHOCK) variable is negative and highly significant in the level mosels, reinforcing the view that external uncertainty depresses investment. The CRISIS variable is consistently negative and highly significant in level models, indicating that firm investment is substantially

lower during economic crises, though its effect becomes statistically insignificant in the change models.

Overall, the R-squared values are higher in the level models (up to 0.22) compared to the change models (as low as 0.004), indicating that the explanatory power of the regressors is substantially reduced when explaining investment volatility rather than its absolute levels. This suggests that firm-level fundamentals and market sentiment are more relevant for predicting long-tern investment levels than short-term investment fluctuations.

4.5 Robustness checks

The robustness analyses reaffirm the stability of the relationship between market sentiment and firm investment. Using alternative investment measures (INV2 and INV3), the results are largely consistent with the baseline specification (INV1). Although the coefficient of market sentiment remains positive across all three models, it is not statistically significant, suggesting a limited direct effect of sentiment on the level of investment.

When considering percentage changes in investment (ΔINV1, ΔINV2, ΔINV3), the results offer mixed evidence. In the ΔINV2 model, market sentiment shows a positive and statistically significant effect at the 5% level, indicating that sentiment may influence the growth rate of investment under certain specifications. However, this effect is not significant in the ΔINV1 and ΔINV3 models, which further suggests that the sentiment-investment relationship is sensitive to the choice of investment metric.

The CRISIS variable is negative and highly significant in all level-based models (INV1 - INV3), confirming that investment is lower during crisis periods. However, it is insignificant in the change-based models (ΔINV1 - ΔINV3), implying that while the absolute level of investment declines during crises, the year-to-year changes may not differ substantially in crisis years.

Other control variables – such as firm size, asset tangibility, non-debt tax shields, and growth opportunities – generally behave as expected and remain robust across models. Overall, the robustness checks confirm the direction and structure of the

main results, albeit with some variation in statistical significance across different investment measures.

CHAPTER 5
CONCLUSION

This study investgates the role of market sentiment in influencing firm investment decisions in the Thai capital market over the 2003 to 2023 period. Drawing on behavioral corporate finance and prospect theory, the analysis chalenges traditional assumptions of rational investment by incorporating a sentiment-based perspective. The sentiment index, derived from the Business Sentiment Index (BSI) and the Thailand Industries Sentiment Index (TISI) using Principal Component Analysis (PCA), serves as a forward-looking proxy for managerial outlook.

Regression results suggest that market sentiment is positively associated with investment levels, particularly when measured as net or gross capital expenditure relative to firm size (INV1 and INV2). These findings align with behavioral finane theory, which posits that optimistic sentiment can lead firms to invest more aggressively, especially when managers perceive favorable future conditions. However, the impact of sentiment on changes in investment (ΔINV measures) is weaker and only significant in one specification (ΔINV2), indicating that while sentiment influences strategic investment levels, it has less predictive power for short-term adjustments.

Importantly, this study finds that the sentiment-investment relationship diminishes during periods of macroeconomic distress, as captured by a crisis dummy variable. Investment levels fall significantly in crisis periods, while sentiment becomes less influential, highlighting the behavioral concept of loss aversion. Managers appear more cautious in uncertain environments, prioritizing capital preservation over expansion despite positive sentiment signals.

Robustness checks using alternative investment metrics confirm the general direction of results, although statistical significance varies across models. Control variables such as firm size, asset tangibility, profitability, and non-debt tax shields exhibit consistent effects on investment, reinforcing the relevence of firm fundamentals in capital budgeting decisions.

While this study provides meaningful insights into the relationship between market sentiment and firm investment decisions in Thailand, several limitations should be acknowledged. First, missing observations due to imcomplete financial data reduce the effective sample size and may introduce non-random bias. Firms with complete data are often larger and more established, potentially underrepresenting financially constrained firms that may respond differemtly to sentiment. Second, annual aggregation of sentiment from monthly PCA-based indices may smooth out short-term variations, possibly underestimating the sensitivity of firm investment to sudden shifts in sentiment.

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APPENDIX

Table A.1

Variables Description

Variables	Description
Panel 1: Dependent variables	
Investment (1) (INV1)	Net investment, calculated as (Capital Expenditures – Depreciation) divided by beginning-period Property, Plant, and Equipment (PPE).
Investment (2) (INV2)	Gross investment, calculated as Capital Expenditures divided by PPE.
Investment (3) (INV3)	Net investment intensity, calculated as (Capital Expenditures – Depreciation) divided by Total Assets.
ΔINV1 (dINV1)	Percentage change in net investment (INV1). Captures the firm's relative responsiveness in net investment behavior.
ΔINV2 (dINV2)	Percentage change in gross investment (INV2). Reflects changes in capital allocation intensity.
ΔINV3 (dINV3)	Percentage change in net investment intensity (INV3) from the previous year. Indicates the growth in net investment scaled by total firm size.
Panel 2: Independent variables	
Market sentiment (MS)	A composite index constructed using Principal Component Analysis (PCA) from two forward-looking indicators: the Business Sentiment Index (BSI) and the Thailand Industries Sentiment Index (TISI).
Panel 3: Control variables	
Firm size (SZ)	The natural logarithm of total assets.
Asset tangibility (TAN)	Fixed assets / total assets
Non-debt Tax Shield (NDTS)	Depreciation expense / total assets
Return on assets (ROA)	Earning before interest, tax, depreciation, and amortization / total assets
Firm growth (GR)	Market to book of equity ratio

Table A.1

Variables Description (Cont.)

Variables	Description
Earnings Volatility (EVOL)	Standard deviation in annual operating income over last 5 years / average operating income over last 5 years
Dividend (DIV)	Proxy whether firm pays dividend (dividend paying = 1, non-dividend paying = 0)
Systematic Risk (SYSRISK)	The portion of a firm's risk that is correlated with overall market movements, measured by beta from CAPM
Idiosyncratic Risk (IDIORISK)	The firm-specific risk that is not correlated with broader market. It is the residual risk after accounting for Systematic risk
External shock (SHOCK)	Global sentiment as represent as Volatility Index or VIX index, since Thailand is an emerging small country, which global event has significantly impact the country.
Crisis Dummy (CRISIS)	A dummy variable equal to 1 if Thailand experienced two consecutive quarters of negative real GDP growth within a calendar year, and 0 otherwise. Used to capture macroeconomic distress with greater granularity.

Table A.2

Descriptive Statistics

	Mean	Std.	Min	Max	25%	50%	75%	N
INV1	0.0178	0.1542	-0.4350	0.6713	-0.0573	-0.0067	0.0735	5,715
INV2	0.1409	0.1445	0.0004	0.8274	0.0443	0.0976	0.1837	5,715
INV3	0.0093	0.0502	-0.0858	0.2387	-0.0159	-0.0012	0.0203	5,715
ΔINV1	-0.4623	5.8724	-34.1051	28.8992	-1.1066	-0.3646	0.2956	5,715
ΔINV2	0.6508	2.7853	-0.9710	20.6220	-0.4408	-0.0390	0.5834	5,715
ΔINV3	-0.4541	6.5525	-37.5046	32.4599	-1.0958	-0.3679	0.2549	5,715
MS	-0.0942	0.8060	-2.5737	1.6017	-1.0336	0.1482	0.3752	5,715
SZ	15.3397	1.5976	11.1402	21.9523	14.1191	15.0931	16.2972	5,715
TAN	0.3733	0.2403	0.0009	0.9916	0.1760	0.3503	0.5491	5,715
NDTS	0.0351	0.0271	0.0000	0.3658	0.0160	0.0299	0.0480	5,715
ROA	0.0568	0.0875	-0.2616	0.3720	0.0161	0.0533	0.0971	5,715
GR	2.1036	2.1990	0.0000	13.8124	0.8500	1.3900	2.4800	5,715
EVOL	0.3389	3.1259	-15.2889	14.3127	0.1053	0.3759	0.8243	5,715
DIV	0.7249	0.4466	0.0000	1.0000	0.0000	1.0000	1.0000	5,715
SYSRISK	0.9498	1.0387	-1.7576	4.2811	0.2736	0.8378	1.4990	5,715
IDIORISK	0.0882	0.0651	0.0000	0.4067	0.0470	0.0715	0.1094	5,715
SHOCK	0.1926	0.0567	0.1109	0.3269	0.1539	0.1685	0.2420	5,715
CRISIS	0.5204	0.4996	0.0000	1.0000	0.0000	1.0000	1.0000	5,715

Table A.3

Correlation Matrix

	INV1	INV2	INV3	MS	SZ	TAN	NDTS	ROA	GR	EVOL	DIV	SYSRISK	IDIORISK	SHOCK	CRISIS	ΔINV1	ΔINV2	ΔINV3
INV1	1																	
INV2	0.7738	1																
INV3	0.7522	0.6135	1															
MS	0.1206	0.1171	0.1058	1														
SZ	0.1307	0.0045	0.0845	-0.0013	1													
TAN	0.0809	-0.2294	0.1577	-0.0270	0.0479	1												
NDTS	-0.2354	-0.0796	-0.2394	-0.0591	-0.1142	0.4682	1											
ROA	-0.0034	0.0221	-0.0131	0.0351	0.0032	-0.0284	0.0182	1										
GR	0.0561	0.1682	0.0941	0.0236	-0.0175	-0.0086	0.1618	0.0192	1									
EVOL	0.0038	-0.0043	0.0042	-0.0366	0.0408	-0.0041	-0.0058	-0.0162	-0.0070	1								
DIV	0.1112	0.1057	0.1229	0.0247	0.2174	-0.0338	0.0002	-0.0267	0.0464	0.1172	1							
SYSRISK	0.0248	0.0317	0.0154	0.0215	0.0866	-0.0444	-0.0244	-0.0082	0.0102	-0.0043	-0.0457	1						
IDIORISK	-0.0625	-0.0208	-0.0571	-0.1565	-0.1881	-0.0269	0.0298	0.0221	0.1367	-0.0316	-0.2634	0.2419	1					
SHOCK	-0.1368	-0.1358	-0.1282	-0.6364	-0.0063	0.0310	0.0585	-0.0195	-0.0655	0.0315	-0.0257	-0.0910	0.1389	1				
CRISIS	-0.1693	-0.1572	-0.1532	-0.3876	0.0128	-0.0254	-0.0022	-0.0646	-0.0515	0.0249	-0.0509	0.0401	0.0780	0.3886	1			
ΔINV1	-0.0059	-0.0051	0.0027	0.0147	0.0269	0.0280	0.0336	0.0127	0.0179	0.0054	0.0200	0.0229	-0.0003	-0.0247	-0.0097	1		
ΔINV2	0.2473	0.2634	0.1845	0.0284	-0.0583	-0.0498	-0.0750	0.0291	-0.0030	-0.0344	-0.0848	-0.0055	0.0604	-0.0014	0.0000	-0.0531	1	
ΔINV3	0.0083	-0.0005	0.0160	0.0131	0.0240	0.0318	0.0231	0.0156	0.0193	0.0066	0.0198	0.0209	-0.0085	-0.0182	-0.0101	0.9533	-0.0812	1

Table A.4

Level of Investment Regression Results

Variable	INV1		INV2		INV3	
	Coef.	**Std.Err.**	**Coef.**	**Std.Err.**	**Coef.**	**Std.Err.**
MS	0.0053*	(0.0029)	0.0058**	(0.0027)	0.0006	(0.0010)
SZ	-0.0213**	(0.0086)	-0.0280***	(0.0086)	-0.0127***	(0.0024)
TAN	0.2449***	(0.0334)	-0.0334	(0.0316)	0.1167***	(0.0152)
NDTS	-3.2601***	(0.2821)	-1.2075***	(0.2655)	-1.2645***	(0.1225)
ROA	0.0542*	(0.0296)	0.0811***	(0.0287)	0.0153	(0.0106)
GR	0.0092***	(0.0023)	0.0078***	(0.0022)	0.0035***	(0.0008)
EVOL	0.0000	(0.0006)	0.0003	(0.0005)	0.0000	(0.0002)
DIV	0.0308***	(0.0067)	0.0291***	(0.0064)	0.0127***	(0.0023)
SYSRISK	0.0033	(0.0023)	0.0011	(0.0020)	0.0007	(0.0007)
IDIORISK	-0.0297	(0.0365)	-0.0358	(0.0337)	-0.0079	(0.0124)
SHOCK	-0.1897***	(0.0416)	-0.1759***	(0.0381)	-0.0614***	(0.0135)
Constant	0.3587***	(0.1366)	0.6194***	(0.1345)	0.1989***	(0.0380)
N	6,087		6,087		6,099	
r2	0.147		0.067		0.210	
F-test	84.29		34.89		129.80	
Prob > F	0.00		0.00		0.00	
AIC	-8,372.68		-9,031.03		-22,505.74	
BIC	-8,292.11		-8,950.46		-22,425.15	

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

Table A.5

Change of Investment Regression Results

Variable	ΔINV1		ΔINV2		ΔINV3	
	Coef.	**Std.Err.**	**Coef.**	**Std.Err.**	**Coef.**	**Std.Err.**
MS	0.020	(0.128)	0.118**	(0.060)	0.049	(0.142)
SZ	-0.092	(0.215)	-0.159	(0.097)	-0.142	(0.238)
TAN	-1.018	(0.851)	-1.65***	(0.397)	1.065	(0.946)
NDTS	16.556***	(5.886)	-3.01	(2.756)	8.146	(6.540)
ROA	1.272	(1.219)	0.873	(0.565)	1.579	(1.355)
GR	0.074	(0.056)	0.018	(0.026)	0.116*	(0.062)
EVOL	-0.006	(0.027)	-0.013	(0.012)	-0.005	(0.030)
DIV	0.154	(0.263)	-0.063	(0.122)	0.36	(0.292)
SYSRISK	0.191**	(0.088)	-0.045	(0.041)	0.219**	(0.098)
IDIORISK	-0.205	(1.503)	0.099	(0.695)	-0.926	(1.670)
SHOCK	-2.386	(1.833)	1.721**	(0.861)	-1.344	(2.036)
Constant	0.708	(3.383)	3.497**	(1.533)	0.588	(3.752)
N	5,779		6,038		5,781	
r2	0.004		0.007		0.004	
F-test	1.99		3.33		1.69	
Prob > F	0.00		0.00		0.00	
AIC	36,152.49		28,880.66		37,382.85	
BIC	36,232.44		28,961.13		37,462.80	

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

Table A.6

Re-estimation by including the financial crisis

Variable	INV1		INV2		INV3		ΔINV1		ΔINV2		ΔINV3	
	Coef.	Std.Err.	Coef.	Std.Err.	Coef.	Std.Err.	Coef.	Std.Err.	Coef.	Std.Err.	Coef.	Std.Err.
MS	0.001	(0.003)	0.002	(0.003)	0.000	(0.001)	0.036	(0.130)	0.124**	(0.060)	0.064	(0.144)
SZ	-0.002	(0.005)	-0.009**	(0.005)	-0.008***	(0.002)	-0.165	(0.235)	-0.190*	(0.107)	-0.209	(0.260)
TAN	0.239***	(0.018)	-0.039**	(0.017)	0.115***	(0.006)	-1.001	(0.851)	-1.640***	(0.397)	1.08	(0.946)
NDTS	-3.165***	(0.126)	-1.116***	(0.119)	-1.239***	(0.040)	16.236***	(5.901)	-3.161	(2.764)	7.855	(6.556)
ROA	0.023	(0.026)	0.051**	(0.024)	0.007	(0.008)	1.383	(1.228)	0.921	(0.570)	1.679	(1.364)
GR	0.008***	(0.001)	0.007***	(0.001)	0.003***	(0.000)	0.078	(0.056)	0.020	(0.026)	0.120*	(0.063)
EVOL	0.000	(0.001)	0.000	(0.001)	0.000	(0.000)	-0.006	(0.027)	-0.013	(0.012)	-0.005	(0.030)
DIV	0.026***	(0.006)	0.024***	(0.005)	0.011***	(0.002)	0.170	(0.264)	-0.055	(0.123)	0.375	(0.293)
SYSRISK	0.003*	(0.002)	0.001	(0.002)	0.001	(0.001)	0.190**	(0.088)	-0.045	(0.041)	0.218**	(0.098)
IDIORISK	-0.024	(0.031)	-0.030	(0.030)	-0.006	(0.010)	-0.231	(1.503)	0.088	(0.695)	-0.949	(1.670)
SHOCK	-0.095**	(0.040)	-0.085**	(0.038)	-0.036***	(0.013)	-2.719	(1.883)	1.573*	(0.886)	-1.647	(2.092)
CRISIS	-0.047***	(0.005)	-0.045***	(0.004)	-0.012***	(0.001)	0.169	(0.220)	0.073	(0.102)	0.154	(0.244)
Constant	0.070	(0.075)	0.342***	(0.071)	0.123***	(0.023)	1.790	(3.665)	3.953**	(1.661)	1.571	(4.064)
N	6,087		6,087		6,099		5,779		6,038		5,781	
r2	0.163		0.084		0.220		0.004		0.007		0.004	
F-test	87.18		41.31		126.60		1.88		3.10		1.58	
Prob > F	0.00		0.00		0.00		0.00		0.00		0.00	
AIC	-8,484.70		-9,146.30		-22,585.30		36,153.82		28,882.08		37,384.40	
BIC	-8,397.42		-9,059.02		-22,497.99		36,240.43		28,969.26		37,471.01	

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

BIOGRAPHY

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