check for updates

Market competition and firm investment decisions: An empirical study of Asian economies

Joshua Abraham
Alexander[1+]

Kelly Gavriell[2]

Rita Juliana[3]

[1,2,3]*School of Accounting, BINUS University, Indonesia.*
[1]*Email: joshuaabrahama314@gmail.com*
[2]*Email: Kelly1gavriell@gmail.com*
[3]*Email: rita.juliana@binus.edu*

(+ Corresponding author)

ABSTRACT

This study examines how market competition can influence corporate investment decisions in Asian countries. Using firm-level data collected from Refinitiv from 2004 to 2023, this study analyzes the Herfindahl-Hirschman Index (HHI) as a proxy to measure market concentration and how it affects corporate investment. The results show that market concentration positively impacts corporate investments, suggesting that higher market concentration encourages investment. Monopolies or less competitive markets have greater pricing power and financial viability to sustain investments. Furthermore, the results establish that developed countries are more responsive to market concentration. Developed countries appear more responsive to market concentration due to stronger institutions, regulatory stability, and political certainty, enabling investments in infrastructure and innovation. In contrast, developing countries invest in immediate development through capital expenditure, often constrained by weaker regulatory environments and limited access to capital. This discourages innovation and long-term growth. Instead, these economies rely more on state-owned enterprises and family conglomerates that can hinder competition. This study discusses the importance of competition in stimulating corporate investments. Such insights may be useful to policymakers in determining what is required for economic growth, while also serving as valuable guidance for corporate leaders in making investment decisions across various economic and institutional environments.

Contribution/Originality: This study contributes to the literature by comparing how market competition affects corporate investments and R&D across developed and developing Asian economies. It reveals that developed countries leverage competition to enhance innovation, while developing nations face institutional and financial barriers.

1. INTRODUCTION

The literature has extensively discussed the impact of competition on corporate investments. Existing studies have examined various aspects of this relationship, including how market competition influences firms' capital expenditures, research and development spending, and overall investment strategies (Abdoh & Varela, 2017; Shima Amini, Buchner, Cai, & Mohamed, 2020; Castro Silva, Ferreira, Cançado, & De Muylder, 2025; Thi Thoan, Thuy, & Long, 2024; Yung & Nguyen, 2020). Competition is often perceived as a negative factor that can reduce a firm's profit margins, which drives managers to minimize expenses and raise operational efficiencies to maintain competitiveness (Hart, 1983; Schmidt, 1997). The mentioned pressure will lead to capital allocation, focusing on investments that would increase productivity, improve competitive positioning, and reduce discretionary expenditures (Ammann,

Hoechle, & Schmid, 2012; Giroud & Mueller, 2010, 2011). Competition has also been found to suppress profit margins; therefore, it increases uncertainty about the availability of funding and makes funds from external sources harder to acquire for firms (Xu, 2012). Under severe competition, firms may be driven to underinvest (Frésard & Valta, 2016) and follow noted conservative financing policies, reducing leverage (Bigelli, Martín-Ugedo, & Sánchez-Vidal, 2014). Furthermore, higher competition raises financing costs, such as bank loans (Valta, 2012), which will further limit investment options. Because of this, some firms prefer to maintain higher cash reserves or adjust their capital structure to preserve financial stability (Frésard & Valta, 2016; Lyandres & Palazzo, 2016). Thus, a competitive environment is important for influencing corporate investment strategies and financial decision-making.

The existing literature reveals different perspectives on the impact of competition on corporate investment. While some studies Giroud and Mueller (2010); Giroud and Mueller (2011) and Hart (1983) found that competition drives innovation and operational efficiency, Bertrand and Mullainathan (2003) and Hoberg, Phillips, and Prabhala (2014) show results that competition encourages cost reductions and financial conservatism, which potentially limits investment. Moreover, existing studies also indicate that competition can cause firms to adopt proactive strategies, such as early innovation disclosures (Glaeser & Landsman, 2021) and timely loss recognition in income statements (Dhaliwal, Huang, Khurana, & Pereira, 2014).

Although research on the relationship between competition and investments has been explored extensively, previous research mostly discusses Western countries. Thus, the dynamics within Asian countries remain underexplored. Asia has diverse economic landscapes, which offer a unique context for studying the relationship between competition and corporate investment. This continent includes both developed and developing economies. Shahram Amini, Kumar, and Shome (2024) points that market competition shapes corporate strategies differently in developed and developing economies. Developed countries may face higher competition due to market saturation and technological advancement, while developing countries face structural issues such as limited infrastructure, financial inclusion, and political instability (Tabash, Elsantil, Hamadi, & Drachal, 2024). These differences lead to varied dynamics of competition and investment behavior across countries. Firms in developed countries may have more external financing and focus on innovation-driven investments, while developing countries are more reliant on internal cash holdings and leverage to fund investments.

Our study reveals that firms operating in monopolistic environments in Asia demonstrate a higher tendency for investment, meaning that firms in less competitive environments are more likely to carry out capital investments and expansion initiatives. Firms with less competition may be able to focus on utilizing their resources and exploring other markets (Esquivias & Harianto, 2020). The findings also show that competition has a more significant impact on the investment decisions made by firms in developed countries. It demonstrates that the competitive landscape in mature markets plays an important role in influencing corporate investment strategies due to market overload, advanced technology, and market overcrowding (Chen, Erzurumlu, Gozgor, Lau, & Turkkan, 2024; Lee, Byun, & Park, 2018). These results provide insights into the market structure, economic development, and corporate investment behavior across Asia, thus presenting more relevant information for policymakers and business leaders to understand and navigate through the various economic landscapes throughout the region more effectively.

This research expands the literature by analyzing the relationship between market competition and corporate investment decisions in Asia, highlighting the differences between developed and developing economies. This study provides an understanding of how investment behavior varies in different economic environments across the Asian region. It will also include a comparison between developed and developing countries, enhancing the understanding of how market maturity, regulations, and economic structures interact to influence competition and investment decisions.

This research demonstrates to policymakers and business executives the impact of market competition on corporate investment decisions. This paper further shows how firms in various markets and countries, whether developed or developing in Asia, tend to prioritize capital expenditures and research and development. This

information will help companies formulate their strategies depending on the level of competition prevailing in their market. Policymakers are advised to impose regulations that ensure fair competition, stimulate innovation, and improve access to capital, especially in developing economies. This would enable companies to gain more from their resource allocation toward innovation and economic growth. Primarily, this research recommends policies that improve resource allocation and encourage investments in innovation and infrastructure for sustaining economic growth and stability.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Market competition is one of the main determinants of a country's economic development (Orlova, Rao, & Kang, 2017). Competition poses a challenge for companies striving for economic stability; it also determines the strategic response of organizations to investment opportunities. Thi Thoan et al. (2024) add that market competition is an important aspect of the corporate environment. Zaur (2024) found that competition drives economic health by encouraging firms to improve product quality, adopt new technologies, offer competitive prices, and innovate, which benefits consumers with better products at lower costs while attracting investment that strengthens individual businesses and the overall economy. In assessing the level of competition within a market, the Herfindahl-Hirschman Index (HHI) is a well-known measure of market concentration and an important component of the study, as it also allows for the evaluation of competitive intensity within industries. They argue that competition improves operational efficiency, cost savings, and innovation, ultimately boosting a company's market position and solvency. Firms with higher HHI values typically operate in concentrated marketplaces that exhibit monopolistic behavior, and the absence of competitive pressure decreases the possibility of innovation. By contrast, in less concentrated markets with lower HHI, companies are strained to differentiate themselves to maintain their competitive advantage, as failing to stay competitive could lead to a loss of market share.

In theoretical literature, there are two contrasting views regarding product market competition and its effect on investment decisions. The Darwinian perspective states that competition promotes investment to establish future monopoly rents and innovation to escape competition, while the Schumpeterian view holds that firms with monopolies invest and innovate primarily to defend and enhance their current monopoly revenues (Aghion, Harris, & Vickers, 1997). Building on this, previous studies González (2016), Han, Zhuangxiong, and Jie (2018), and Salehi, Daemi, and Akbari (2020), show the importance of competition in the market on corporate investment strategies, which differ across regions and economies. Companies undertake innovations to maintain and improve their positions in competitive markets. However, in less competitive environments, firms invest less due to less pressure to innovate and differentiate. Hence, market concentration becomes a very fundamental aspect of shaping investment behavior. It is, therefore, expected that a strong and negative association would be apparent between market concentration and investment in both CAPEX and R&D. Given the dynamics, we consider that firms in highly competitive environments are more inclined to invest than those in monopolistic or oligopolistic markets.

Previous studies, Almeida and Campello (2007) and Lee and Wong (2011), found that competition sharpens firms' technical skills and drives them to prioritize the effectiveness of R&D spending and innovation quality. Furthermore, according to Olalere and Mukuddem-Petersen (2023), competition brings larger investment opportunities and strengthens the financial viability of corporate firms. Along these lines, Shahram Amini et al. (2024) emphasize that there exists a relationship with firms under higher competitive pressures that tend to invest more in terms of both physical and innovative investment. Contrastingly, Jiang, Kim, Nofsinger, and Zhu (2015) assert that the relationship between product market competition and corporate investment is complex, stating that competition drives firms toward aggressive investments to outmaneuver their competitors and makes firms adopt a more conservative investment strategy due to higher uncertainty and reduced profit opportunities.

H_1: Firms in competitive markets invest more than firms in monopoly or oligopoly markets.

When considering regional contexts, Rizvi and Arshad (2014) developed countries respond quickly to new information, making their markets relatively efficient. They also stated that, compared to those in other market types, developed countries show more efficiency. They perform very well during crises, as noted by Rizvi and Arshad (2014). Furthermore, Hull and McGroarty (2013) indicated that the more developed a country, the lesser its long-term persistence because of the high-efficiency levels that characterize such nations. This means that industrialized nations are better equipped to incorporate existing knowledge and market situations during economic recessions.

In opposition to developed countries, Booth, Aivazian, Demirguc-Kunt, and Maksimovic (2001) and Tabash et al. (2024) state that a few characteristics of developing countries include rapid economic growth, development, and urbanization. Developing countries face many problems, such as political weakness, underdeveloped infrastructure, and restricted access to funding. Some developed countries have inadequate regulatory frameworks; however, they have great potential for developing higher-middle classes, increasing foreign investment, and adopting technology. However, such emerging countries continue to face social inequality and environmental challenges and pursue the diversification of their economies, thus improving their governance for a more stable and prosperous future.

Several structural constraints hinder CAPEX and R&D investment, particularly in developing countries. For example, problems with market fluctuations, unwieldy regulations, ineffective infrastructure, and limited access to capital prevent investment. External shocks such as health epidemics, political instability, and weak economies are deterrents to the flow of investment, especially in developing countries. These factors restrict investment, sustainable economic growth, and competitiveness in the long run (Kasyanenko et al., 2023) by creating economic uncertainty, increasing costs, and limiting growth, which makes it more difficult for businesses to obtain funding. Such bottlenecks should be addressed if competitiveness is to be maintained within the industrial sector and economic development promoted over the long term.

Based on all these arguments, the second hypothesis reads.

H_2: *The relationship between market concentration and investment behavior is more significant in developing countries than in developed countries.*

3. RESEARCH METHODOLOGY

3.1. Data

The sample for this study consists of publicly listed firms from both developed and developing countries in the Asia-Pacific region, including Arab countries, Australia, China, Hong Kong, India, Indonesia, Israel, Singapore, Japan, Vietnam, New Zealand, Malaysia, Taiwan, Korea, the Philippines, and Thailand. This study utilizes financial report data from firms classified under three-digit Standard Industrial Classification (SIC) codes, obtained from Refinitiv. The research examines periods from 2004 to 2023, incorporating long-term data from periods of boom, recession, and recovery within the economies, which are likely to influence both competition and companies' investment decisions. Banks and other financial institutions have been excluded from the analysis, as they have different structures of financial reporting and supervisory environments, which could introduce bias into the results. The final sample consists of 21,397 firms with 427,940 firm-year observations. To verify the reliability of the results, firms with missing data were removed from the dataset. Panel data methodology is used, as it allows the study to control for unobserved interfirm differences, track changes within firms over time, and produce more accurate and reliable results. This approach enables an analysis of how market competition affects corporate investment behavior across different countries and industries in the Asia-Pacific region.

$$Investment_{i,j,t} = \alpha_0 + \beta_1 MktConc_{i,j,t} + \beta_2 Tobin's\ Q_{i,j,t} + \beta_3 ROE_{i,j,t} + \beta_4 SZ_{i,j,t} + \beta_5 LEV_{i,j,t} + \beta_6 CF_{i,j,t} + \varepsilon$$

3.2. Empirical Model

The empirical model above outlines the relationship between a firm's investment and its independent variables. Our dependent variable is corporate investment, which represents the firm's investment carried out by a firm in the

country at a specific time and will be measured using Capital expenditure and R&D. The critical variable to test how competition influences an institution's distribution of profits is investment. Our main independent variable is *MktConc* (market concentration), which measures the competitive environment of the market. Additionally, we include firm-specific control variables: *Tobin's Q* (measuring firm growth opportunities), *ROE* (measuring firm profitability), *CF* (measuring firm cash flow), *Size* (measuring firm size), and *Lev* (measuring firm leverage). These control variables are standard in investment studies as they capture growth opportunities, profit capacity, financing constraints, and the effects related to firm size. Table 1 describes all the dependent and independent variables used in the empirical model.

Table 1. Description of the variables.

Variables	Definition	Formula
Investment	Corporate investment (Tangible)	$\dfrac{CAPEX_{i,t}}{\text{Total Assets}_{i,t}}$
	Research and development (R&D)	$\dfrac{R\&D\ expenditure_{i,t}}{\text{Total Assets}_{i,t}}$
Competition	Market concentration The higher HHI values, the more concentrated market with less competition, and the lower HHI values, the more competitive market in dominant firms	$HHI = \sum_{i=1}^{n}(MS_i)^2$
Tobin's Q	Firm value	$Tobin's\ Q = \dfrac{\text{Market Value}_{i,t}}{\text{Total Assets}_{i,t}}$
ROE	Firms' profitability	$ROE = \dfrac{\text{Net income}_{i,t}}{\text{Book value of Equity}_{i,t}}$
LEV	Firm's capital structure	$LEV = \dfrac{\text{Total Debt}_{i,t}}{\text{Total Assets}_{i,t}}$
CF	Firm's cash flow	$\dfrac{\text{Operating Cash Flow}_{i,t}}{\text{Total Assets}_{i,t}}$

To measure market concentration (*MktConc*), this paper uses the Herfindahl-Hirschman Index (HHI). Market concentration is a key factor measured by the Herfindahl-Hirschman Index (HHI) that influences corporate investment decisions, defined as.

$$HHI = \sum_{i=1}^{n}(MS_i)^2$$

MS_i represents the market share of a firm, expressed in percentage. i is the total number of firms in the market. This index is calculated by the sum of squared market shares of all firms in an industry, providing a comprehensive measure of market structure and competitiveness. Higher HHI values mean greater concentration in the market, leading to less competition and increased market power for dominant firms. The significance of HHI in this study is to enable a nuanced analysis of how varying levels of market concentration impact corporate investment strategies and decision-making processes, as HHI is widely recognized as a robust measure of market structure and is particularly suitable for cross-industry and cross-country comparisons.

4. RESULTS AND DISCUSSION

4.1. Descriptive Statistics

Table 2 presents the number of observations, means, standard deviations, minimums, and maximums for the variables in our study. All variables are winsorized at the 1% level to minimize the effects of outliers.

Table 2. Descriptive statistics.

Variable	Obs.	Mean	Std. dev.	Min.	Max.
InvCAPEX	230,566	0.043	0.064	0.000	0.372
InvRD	230,566	0.011	0.027	0.000	0.171
HHI	255,077	3,676.71	2,876.51	159.99	10,000
logHHI	255,077	7.861	0.903	5.075	9.21
Tobin's Q	255,311	1.641	2.502	0.000	18.578
CF	230,566	0.014	0.136	-0.758	0.313
Lev	230,566	0.221	0.208	0.000	0.966
size	255,311	22.61	3.016	15.091	29.898
ROE	230,566	-0.05	1.257	-9.223	0.839

The market concentration of our sample is quite high, indicated by the mean HHI of 3,676. Investment Capex and Investment R&D are allocated 0.043 and 0.011 of their assets, respectively. Our sample has an average Tobin's Q of 1.641, meaning that the average firm in our sample is more valuable than the replacement costs of its assets (Lindenberg & Ross, 1981). The average capital structure is financed by debt, as indicated by a leverage ratio of 0.221. Our sample also has an average size of 22.61. Lastly, the return on equity for the firms in our sample is negative, with a mean ROE of -0.05.

Table 3 presents more detailed descriptive statistics of our sample. Countries are classified as developed or developing according to IMF standards. Our sample includes nine developed countries and seven developing countries, with varying numbers of observations. Since market structures across the Asia-Pacific region differ, there are significant divergences between developed and developing economies, especially as indicated by the Herfindahl-Hirschman Index (HHI). Countries such as New Zealand, Arab, India, and the Philippines report high concentration levels and consequently high HHI values, confirming limited competition in these markets (Wang, Selamat, Hari, & Yahya, 2024). In contrast, low HHI values in Japan and China indicate more competition in market structures. This bifurcation can be explained by the history of market structures, varying government interventions, and industry-specific entry barriers, whereby developing countries have frequently tended to rely on state-owned enterprises and family conglomerates, greatly inhibiting competition in their markets (Saeed & Sameer, 2015; Wang et al., 2024). Overall, higher HHI values are relatively characteristic of developed countries, or in other words, developed countries on average have more concentrated markets than their developing counterparts.

Table 3. Descriptive statistics by country.

Countries	Obs.	Developing/Developed Countries	Log HHI	HHI	InvCapex	InvRD	Tobin's Q	CF	Lev	Size	ROE
Arab	737	Developed	8.80	7,439.97	0.034	0.00	1.40	0.042	0.211	21.73	0.225
Australia	17515	Developed	8.41	5,500.81	0.083	0.011	2.53	-0.179	0.149	17.51	-2.25
China	56133	Developing	7.23	2,071.24	0.058	0.014	2.35	0.036	0.217	22.10	0.125
Hong Kong	16793	Developed	8.14	4,381.97	0.032	0.002	1.48	-0.004	0.231	21.44	-0.172
India	3678	Developing	8.83	7,531.31	0.025	0.001	2.20	0.048	0.223	20.81	0.074
Indonesia	7832	Developing	8.42	5,582.50	0.051	0.00	3.97	0.032	0.289	26.71	-0.052
Israel	5074	Developed	8.45	5,930.09	0.033	0.019	1.96	-0.019	0.353	19.82	-0.564
Japan	52241	Developed	7.75	2,992.29	0.016	0.008	1.03	0.029	0.203	1.03	0.283
Korea	25314	Developed	7.81	3,504.65	0.05	0.014	0.907	0.013	0.246	26.23	0.203
Malaysia	14622	Developing	8.11	4,245.72	0.037	0.00	1.05	0.029	0.2	19.69	0.111
New Zealand	1337	Developed	8.86	7,903.24	0.041	0.006	1.64	0.014	0.267	19.64	-0.466
Philippines	3466	Developing	8.53	6,090.50	0.038	0.00	2.49	0.025	0.244	22.57	-0.198
Singapore	6345	Developed	8.48	5,978.72	0.033	0.001	0.938	0.012	0.24	0.79	-0.211
Taiwan	29023	Developing	7.82	3,225.52	0.043	0.029	1.37	0.038	0.217	22.13	0.093
Thailand	9897	Developing	8.25	4,921.39	0.048	0.00	1.46	0.044	0.256	22.07	0.137
Vietnam	5304	Developing	8.34	5,099.88	0.054	0.00	0.887	0.076	0.245	1.16	0.178

On the other hand, an increased value for market concentration is usually dictated by the industry features present in these countries. The resulting absence of competition is usually a significant impediment to market efficiency, pricing efficiency, and overall corporate profitability (Mukherji, 2015; Saeed & Sameer, 2015; Wang et al., 2024). Firms occupying concentrated market structures typically wield higher pricing power, which negatively affects consumer welfare and the general dynamism of the economy, thus accentuating the influence of market structure on firm behavior and profitability (Mukherji, 2015; Saeed & Sameer, 2015).

Investment patterns show a broader-based contrast between these economies. Whereas developed states like Japan, South Korea, and Singapore seek extensive R&D, connecting their investment urgencies with innovation and high technological prowess (Akbar, Bhutto, & Rajput, 2021; Da Fonseca & Gottschalk, 2020) developing nations like China, India, and Thailand are marked by comparatively small R&D expenditures but high infrastructure-related capital expenditures, suggesting capacity expansion being emphasized over innovation-driven strategies (Mansur, 2016). Thus, the case is clear for different growth perspectives for the capital allocated by developed and developing economies.

Moreover, developing countries exhibit higher Tobin's Q on average, which implies that developing countries provide higher investment opportunities for firms. Higher Tobin's Q in Indonesia, Malaysia, and Japan suggests that investors see strong growth opportunities in these markets. At the same time, low Q in Hong Kong, Taiwan, and Vietnam may indicate investor doubt about profit generation or market stability, further underlining the differences in investor confidence across the national contexts. The differences in firms' valuation also serve as an example of governance and economic structure (Mansur, 2016; Park & Shin, 2025).

Additionally, the descriptive statistics of financial characteristic variables show further insights into the stability and health of corporations in these markets. In developed economies like Japan and Australia, firms often show negative or low cash flow values due to high dividend payouts or aggressive reinvestment strategies (Vo, Trinh, Le, & Nguyen, 2021; Wang et al., 2024). Developing nations such as India and Malaysia show a positive cash flow, indicating that firms located in these countries are adopting a high cash holding strategy. Moreover, higher leverage levels in developing countries like China and India indicate a greater reliance on debt financing, introducing potential financial risks that could impact long-term sustainability (Mansur, 2016; Park & Shin, 2025).

Profitability trends measured by return on equity (ROE) suggest that some developing countries like Thailand and India show a positive ROE during their respective accounting periods. This indicates good efficient capital utilization and good returns to shareholders (Park & Shin, 2025; Thamrin, 2023). Developed economies such as Japan and Israel more often show negative ROE, which might signal some structural flaws despite existing economic progress. In essence, these differences in profitability indicate a greater prospect of earning high returns in emerging markets while exposing investors to the inherent risks and market volatility associated with less mature markets (Abiad, Bluedorn, Guajardo, & Topalova, 2015; Thamrin, 2023).

Firm size, too, symbolizes another central variable within these economies, wherein larger firms usually operate in stable and developed environments such as South Korea and Japan, for example. Such large firms enjoy an established market presence that is conducive to growth in a stable pattern (Park & Shin, 2025; Thamrin, 2023). On the contrary, smaller firms tend to dominate business in developing countries such as Vietnam and Thailand, both of which exhibit emerging market characteristics and the evolving nature of the business landscape (Akbar et al., 2021; Wang et al., 2024).

Firms with a low HHI (operating in competitive markets) have the highest research and development expenditures compared to medium and high HHI firms. This is due to the need for innovation to survive in such competitive markets. Furthermore, low HHI firms have higher average Tobin's q than those with high HHI, indicating that firms in competitive markets tend to have more growth opportunities. Monopolistic markets (high HHI) exhibit the highest Capex investment at 0.046 but have the lowest R&D investment at 0.007; the limited competition explains the lack of innovation. Based on the descriptive statistics by HHI levels, the distinct patterns

for investment behavior and financial indicators show some correspondence with market concentration. Firms in low-concentration (competitive) markets have greater investment in innovation, while firms in concentrated (monopoly) markets have higher investments in capital. In other words, higher HHI values may imply more capital investments into physical assets. Interestingly, Table 4 shows that low HHI (competitive) firms in the Asia-Pacific region tend to have higher ROE compared to high HHI (monopoly) firms. This suggests that monopolistic firms may face inefficiencies in managing their investment funding, leading to lower profitability despite their market dominance.

Table 4. Descriptive statistics: low-medium-High HHI.

Variable	Low HHI	Medium HHI	High HHI
InvCapex	0.041	0.041	0.046
InvRD	0.014	0.011	0.007
HHIsic	906.523	2803.964	7085.613
logHHIsic	6.7	7.909	8.819
Tobinsq	1.771	1.447	1.739
CF	0.025	0.019	0.001
Lev	0.213	0.216	0.229
size	22.735	22.806	22.242
ROE	0.084	0.013	−0.23
Observations	62,532	84,259	86,736

Table 5. Regression result.

Variables	Capex/TA				R&D/TA			
	1	2	3	4	5	6	7	8
loghhi	0.007***		0.006***		−0.002***		−0.001**	
	(0.001)		(0.001)		0.0000		0.0000	
HHIM		0.002**		0.002**		0.0000		0.0000
		(0.001)		(0.001)		(0.000)		(0.000)
HHIH		0.005**		0.004**		0.0000		0.0000
		(0.002)		(0.001)		(0.000)		(0.000)
Tobinsq			0.001***	0.001***			0.0000	0.0000
			(0.000)	(0.000)			(0.000)	(0.000)
CF			0.053***	0.052***			−0.007***	−0.007***
			(0.005)	(0.005)			(0.001)	(0.001)
Lev			0.076***	0.076***			−0.002***	−0.002***
			(0.005)	(0.005)			(0.001)	(0.001)
Size			−0.005***	−0.005***			0.002***	0.002***
			(0.001)	(0.001)			(0.000)	(0.000)
RE			0.003***	0.003***			−0.001***	−0.001***
			(0.001)	(0.001)			(0.000)	(0.000)
cons	−0.016	0.04***	0.098***	0.145***	0.024***	0.011***	−0.022*	−0.032***
	(0.009)	(0.002)	(0.026)	(0.028)	(0.004)	(0.001)	(0.011)	(0.01)
Obs	230,369	230,566	230,369	230,566	230,369	230,566	230,369	230,566
Prob > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Within R-Squared	0.0011	0.0002	0.3409	0.3354	0.0010	0.0010	0.0854	0.0826

Note: Standard errors are in parentheses.
*** $p<0.01$, ** $p<0.05$, * $p<0.1$.

4.2. Regression Result

4.2.1. Based Regression Results

Table 5 presents the regression analysis of the relationship between market concentration, firm characteristics, and corporate investment. We apply the Driscoll-Kraay standard errors method to address violations of classical assumptions that could lead to inefficient and biased results. Columns (1-4) show the results for Capital Expenditure as a measure of physical asset investment. Columns (5-8) display the results for Research and Development as a measure of corporate investment in innovation.

Regression analysis results regarding market concentration provide valuable insights into the allocation of resources for capital expenditure and investment in research and development. The inference has been drawn that, in concentrated markets characterized by higher values of loghhi, HHI, or other concentration measures, the tendency towards capital asset investments would be higher because of reduced R&D investments. This occurs due to the less competitive pressure that such monopolistic or oligopolistic firms prefer to reduce their propensity to innovate. The most concentrated markets feature firms that become monopolistic or oligopolistic in nature, which tend to make them less incentivized to invest in R&D activities. This concludes that wealthy firms invest more in physical assets than in developing innovative capabilities (Jiang et al., 2015). A study to this effect is product market competition in China, which found that firms having more market power lean toward more fixed investments and, at the same time, cut back on innovation expenditures (Jiang et al., 2015). Less competitive environments would then see firms tend to give priority to securing immediate capital advantages over the long-term pursuit of innovation. Empirical evidence also suggests that company behavior regarding investment decisions is influenced substantially by the competitive landscape, hence the argument that monopolistically operating firms allocate their resources more on capital spending than on R&D initiatives, as stability of operations takes precedence over market-driven innovation pressures (Ravšelj & Aristovnik, 2020).

4.3. Country Level Analysis

Table 6 and Table 7 presents the results of a regression analysis where the dependent variable is capital expenditures scaled by total assets (Capex/TA) across multiple countries. While Table 7 describes regression results for capital expenditure relative to total assets (Capex/TA), comparing with developed and developing countries.

Market concentration affects capital investment differently across economic environments. In this regard, loghhi is strongly positively correlated with capital expenditure in developed countries, implying that firms in such economies leverage their dominant position to invest in physical assets with little threat from competition (Shin & Lee, 2022). In developing countries, Loghhi was still positive on capital expenditure, yet the effect is weaker. This may have occurred because economic uncertainties and regulatory impediments were meant to deter firms from taking aggressive investment stances. Such differences have now shown how the external economy influences the response of firms toward market concentration and thus reinforces the consideration of such broader economic contexts in analyzing investment behavior (Abdoh & Varela, 2017; Olalere & Mukuddem-Petersen, 2023).

The findings reported above further indicate that market concentration reallocates resources from R&D directly to capital investment, contradicting Hypothesis 1, which states that a firm will invest more in corporate growth if its external market is competitive. This offers new evidence supporting prior work that less competitive firms will focus more on immediate capital advantages over long-term innovation (Anderson & Sunny Yang, 2015; Obembe & Soetan, 2015). As a result, monopolistic markets often lower investment in technological advancement, challenging traditional views on competition and innovation.

Table 6. Regression result by countries.

| Variables | InvCapex | | | | | | | | | | | | | | | |
	Arab	Australia	China	Hong Kong	India	Indonesia	Israel	Japan	Korea	Malaysia	New Zealand	Philippines	Singapore	Taiwan	Thailand	Vietnam
loghhi	0.008	0.038***	0.002	0.001	-0.007**	0.019***	0.008*	0.003	0.004*	-0.001	-0.002	0.018	0.008***	0.0000	0.01***	0.004
	(0.005)	(0.009)	(0.001)	(0.001)	(0.002)	(0.004)	(0.004)	(0.004)	(0.002)	(0.002)	(0.008)	(0.011)	(0.002)	(0.005)	(0.003)	(0.004)
Tobinsq	0.001	0.002***	0.001	0.001*	0.001**	0.0000	0.0000	0.003***	0.0000	0.002***	0.003***	-0.001	0.002***	0.001	0.003***	0.002*	-0.005
	(0.001)	(0.001)	(0.001)	0.0000	0.0000	0.0000	(0.001)	(0.001)	0.0000	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.003)
CF	0.074***	-0.025***	0.16***	0.041***	0.053**	0.108***	-0.016	0.02***	0.074***	0.089***	0.044*	0.085***	0.064***	0.108***	0.082***	0.177***
	(0.015)	(0.009)	(0.023)	(0.004)	(0.02)	(0.015)	(0.01)	(0.007)	(0.007)	(0.012)	(0.022)	(0.009)	(0.011)	(0.009)	(0.017)	(0.031)
Lev	0.041*	0.027***	0.106***	0.043***	0.031**	0.095***	0.05***	0.045***	0.124***	0.079***	0.01	0.088***	0.052***	0.09***	0.084***	0.166***
	(0.02)	(0.009)	(0.007)	(0.006)	(0.012)	(0.011)	(0.01)	(0.009)	(0.005)	(0.01)	(0.012)	(0.014)	(0.008)	(0.007)	(0.012)	(0.01)
Size	-0.019**	0.016***	-0.013***	-0.007***	-0.013*	0.003***	0.001	-0.009**	-0.006***	-0.007***	-0.011***	-0.005	-0.005***	-0.01***	-0.017***	-0.016***
	(0.007)	(0.005)	(0.003)	(0.001)	(0.006)	(0.001)	(0.003)	(0.004)	(0.001)	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)	(0.004)	(0.003)
RE	0.015***	-0.002	0.014***	0.003***	0.004*	0.0000	0.002	0.002	0.008***	0.007*	0.0000	0.0000	0.002	0.005***	0.005*	0.048***
	(0.003)	(0.002)	(0.001)	(0.001)	(0.002)	(0.003)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.004)	(0.001)	(0.001)	(0.003)	(0.011)
cons	0.363*	-0.542***	0.294***	0.154***	0.337**	-0.233***	-0.086	0.206*	0.14***	0.164***	0.276***	-0.035	0.048	0.232***	0.311***	0.399***
	(0.175)	(0.109)	(0.062)	(0.024)	(0.146)	(0.049)	(0.082)	(0.104)	(0.048)	(0.037)	(0.086)	(0.138)	(0.041)	(0.066)	(0.086)	(0.08)
Obs.	652	15228	50359	15255	2707	7043	4566	47623	22757	13300	1196	3146	5761	27065	9077	4634
Prob > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000
Within R-squared	0.0550	0.0299	0.1344	0.0443	0.0532	0.0921	0.0607	0.0310	0.1007	0.0680	0.0375	0.0929	0.0427	0.0737	0.0683	0.1625

Note: Standard errors are in parentheses.
*** $p<0.01$, ** $p<0.05$, * $p<0.1$.

The findings have significant implications for capital structure and innovation strategies. The complex relationship between market concentration and investment behavior necessitates more profound research into how firms allocate resources under different competitive environments. Such understanding will equip firms and policymakers with the knowledge to balance investment in reliable physical assets with the need for innovation and sustainability.

Table 7. Regression result developed vs developing country.

Variables	Capex/TA	Developing
	Developed	
logHHI	0.009***	0.003**
	(0.002)	(0.001)
Tobinsq	0.002***	0.001*
	0.0000	0.0000
CF	0.013***	0.126***
	(0.004)	(0.013)
Lev	0.055***	0.097***
	(0.006)	(0.005)
Size	–0.002	–0.008***
	(0.003)	(0.001)
RE	0.002	0.007***
	(0.001)	(0.001)
cons	–0.015	0.171***
	(0.061)	(0.026)
Observations	113038	117331
Prob > F	0.0000	0.0000
Within R-squared	0.0258	0.0918

Note: Standard errors are in parentheses.
*** p<0.01, ** p<0.05, * p<0.1.

5. CONCLUSIONS

This study explores the effect of market competition on corporate investment utilizing data from public firms listed on stock exchanges in developing and developed Asian countries. It appears that firms in monopolistic markets invest more in capital expenditure but less in research and development due to reduced competitive pressure. Moreover, competition in developed countries shows a greater impact on investment decisions because of the competitive landscape.

It also indicates that developing countries focus more on capital expenditures rather than research and development due to structural challenges such as weak regulations and limited access to capital. This suggests that competitors are often unreachable within barriers to competition, such as reliance on state-owned enterprises and family conglomerates. The results show that firms in competitive (low HHI) markets invest more in research and development, while monopolistic firms invest more in capital expenditure. Both strategies play significant roles in focusing on specific areas and emphasizing economic growth.

Future research can investigate the influence of market competition on the investment decisions of sectors across industries and among firms of different sizes.

Moreover, longitudinal research can also elucidate how competition influences business strategy and innovation over specific periods. Regulatory frameworks fostering healthy competition among firms must be crafted by policymakers, especially for countries in developing economies. Providing financial incentives and maintaining stability in their economies would further enhance incentives for innovation, efficient resource allocation, and sustainable growth.

REFERENCES

Abdoh, H., & Varela, O. (2017). Product market competition, idiosyncratic and systematic volatility. *Journal of Corporate Finance*, *43*, 500-513. https://doi.org/10.1016/j.jcorpfin.2017.02.009

Abiad, A., Bluedorn, J., Guajardo, J., & Topalova, P. (2015). The rising resilience of emerging market and developing economies. *World Development*, *72*, 1-26. https://doi.org/https://doi.org/10.1016/j.worlddev.2015.02.005

Aghion, P., Harris, C., & Vickers, J. (1997). Competition and growth with step-by-step innovation: An example. *European Economic Review*, *41*(3-5), 771-782. https://doi.org/https://doi.org/10.1016/S0014-2921(97)00036-6

Akbar, U. S., Bhutto, N. A., & Rajput, S. K. O. (2021). Does five-factor model perform better than three factor model? Evidence from developed countries of the Asia pacific region. *iRASD Journal of Economics*, *3*(2), 119-132. https://doi.org/10.52131/joe.2021.0302.0030

Almeida, H., & Campello, M. (2007). Financial constraints, asset tangibility, and corporate investment. *The Review of Financial Studies*, *20*(5), 1429-1460. https://doi.org/10.1093/rfs/hhm019

Amini, S., Buchner, A., Cai, C. X., & Mohamed, A. (2020). Why do firms manage their stock price levels? *Journal of International Financial Markets, Institutions and Money*, *67*, 101220. https://doi.org/10.1016/j.intfin.2020.101220

Amini, S., Kumar, R., & Shome, D. (2024). Product market competition and corporate investment: An empirical analysis. *International Review of Economics & Finance*, *94*, 103405. https://doi.org/https://doi.org/10.1016/j.iref.2024.103405

Ammann, M., Hoechle, D., & Schmid, M. (2012). Is there really no conglomerate discount? *Journal of Business Finance & Accounting*, *39*(1-2), 264-288. https://doi.org/10.1111/j.1468-5957.2011.02261.x

Anderson, E. J., & Sunny Yang, S. J. (2015). The timing of capacity investment with lead times: When do firms act in unison? *Production and Operations Management*, *24*(1), 21-41. https://doi.org/https://doi.org/10.1111/poms.12204

Bertrand, M., & Mullainathan, S. (2003). Enjoying the quiet life? Corporate governance and managerial preferences. *Journal of Political Economy*, *111*(5), 1043-1075. https://doi.org/10.1086/376950

Bigelli, M., Martín-Ugedo, J. F., & Sánchez-Vidal, F. J. (2014). Financial conservatism of private firms. *Journal of Business Reseach*, *67*(11), 2419-2427. https://doi.org/https://doi.org/10.1016/j.jbusres.2014.02.009

Booth, L., Aivazian, V., Demirguc-Kunt, A., & Maksimovic, V. (2001). Capital structures in developing countries. *The Journal of Finance*, *56*(1), 87-130. https://doi.org/10.1111/0022-1082.00320

Castro Silva, W. A., Ferreira, L. J., Cançado, V. L., & De Muylder, C. F. (2025). The relationship between market structure, investment in innovation and competitive position: An empirical analysis in the US supermarket industry. *The Bottom Line*. https://doi.org/10.1108/BL-01-2023-0036

Chen, K.-X., Erzurumlu, Y. O., Gozgor, G., Lau, C. K. M., & Turkkan, M. (2024). The impact of economic uncertainty on corporate ESG performance: Global evidence. *Research in International Business and Finance*, *72*, 102533. https://doi.org/https://doi.org/10.1016/j.ribaf.2024.102533

Da Fonseca, J., & Gottschalk, K. (2020). The co-movement of credit default swap spreads, equity returns and volatility: Evidence from Asia-pacific markets. *International Review of Finance*, *20*(3), 551-579. https://doi.org/https://doi.org/10.1111/irfi.12237

Dhaliwal, D., Huang, S., Khurana, I. K., & Pereira, R. (2014). Product market competition and conditional conservatism. *Review of Accounting Studies*, *19*, 1309-1345. https://doi.org/10.1007/s11142-013-9267-2

Esquivias, M. A., & Harianto, S. K. (2020). Does competition and foreign investment spur industrial efficiency?: Firm-level evidence from Indonesia. *Heliyon, 6*(8), e04494. https://doi.org/https://doi.org/10.1016/j.heliyon.2020.e04494

Frésard, L., & Valta, P. (2016). How does corporate investment respond to increased entry threat? *The Review of Corporate Finance Studies, 5*(1), 1-35. https://doi.org/10.1093/rcfs/cfv015

Giroud, X., & Mueller, H. M. (2010). Does corporate governance matter in competitive industries? *Journal of Financial Economics, 95*(3), 312-331. https://doi.org/https://doi.org/10.1016/j.jfineco.2009.10.008

Giroud, X., & Mueller, H. M. (2011). Corporate governance, product market competition, and equity prices. *The Journal of Finance, 66*(2), 563-600. https://doi.org/10.1111/j.1540-6261.2010.01642.x

Glaeser, S. A., & Landsman, W. R. (2021). Deterrent disclosure. *The Accounting Review, 96*(5), 291-315. https://doi.org/10.2308/TAR-2019-1050

González, F. (2016). Creditor rights, bank competition, and corporate investment during the global financial crisis. *Journal of Corporate Finance, 37*, 249-270. https://doi.org/https://doi.org/10.1016/j.jcorpfin.2016.01.001

Han, W., Zhuangxiong, Y., & Jie, L. (2018). Corporate social responsibility, product market competition, and product market performance. *International Review of Economics & Finance, 56*, 75-91. https://doi.org/https://doi.org/10.1016/j.iref.2018.03.019

Hart, O. D. (1983). The market mechanism as an incentive scheme. *The Bell Journal of Economics, 14*(2), 366-382. https://doi.org/10.2307/3003639

Hoberg, G., Phillips, G., & Prabhala, N. (2014). Product market threats, payouts, and financial flexibility. *The Journal of Finance, 69*(1), 293-324.

Hull, J., & McGroarty, F. (2013). Do emerging markets become more efficient as they develop? Long memory persistence in equity indices. *Emerging Markets Review, 16*, 22–39.

Jiang, F., Kim, K. A., Nofsinger, J. R., & Zhu, B. (2015). Product market competition and corporate investment: Evidence from China. *Journal of Corporate Finance, 35*, 196-210. https://doi.org/10.1016/j.jcorpfin.2015.09.004

Kasyanenko, S., Kenworthy, P. G., Ruch, F. U., Vashakmadze, E. T., Vorisek, D. L., & Wheeler, C. M. (2023). *Investment in emerging market and developing economy regions trends, prospects, and policy options*. Retrieved from http://www.worldbank.org/prwp

Lee, J. H., Byun, H. S., & Park, K. S. (2018). Product market competition and corporate social responsibility activities: Perspectives from an emerging economy. *Pacific-Basin Finance Journal, 49*, 60-80. https://doi.org/https://doi.org/10.1016/j.pacfin.2018.04.001

Lee, K. B., & Wong, V. (2011). Identifying the moderating influences of external environments on new product development process. *Technovation, 31*(10-11), 598-612. https://doi.org/https://doi.org/10.1016/j.technovation.2011.06.007

Lindenberg, E. B., & Ross, S. A. (1981). Tobin's q ratio and industrial organization. *Journal of Business, 54*(1), 1-32. http://www.jstor.org/stable/2352631

Lyandres, E., & Palazzo, B. (2016). Cash holdings, competition, and innovation. *Journal of Financial and Quantitative Analysis, 51*(6), 1823-1861. https://doi.org/10.1017/S0022109016000697

Mansur, A. (2016). The Impact of a Loss of Confidence in Emerging Market Economies to the World Economy: A Simulation with the G-Cubed Model.

Mukherji, R. (2015). Stock market efficiency in developing economies. *Margin: The Journal of Applied Economic Research, 9*(4), 402-429. https://doi.org/10.1177/0973801015598058

Obembe, O. B., & Soetan, R. O. (2015). Competition, corporate governance and corporate performance: Substitutes or complements? Empirical evidence from Nigeria. *African Journal of Economic and Management Studies, 6*(3), 251-271. https://doi.org/10.1108/AJEMS-02-2012-0007

Olalere, O. E., & Mukuddem-Petersen, J. (2023). Product market competition, corporate investment, and firm value: Scrutinizing the role of economic policy uncertainty. *Economies, 11*(6), 167. https://doi.org/10.3390/economies11060167

Orlova, S., Rao, R., & Kang, T. (2017). National culture and the valuation of cash holdings. *Journal of Business Finance & Accounting, 44*(1-2), 236-270. https://doi.org/https://doi.org/10.1111/jbfa.12233

Park, C.-Y., & Shin, K. (2025). The development of local currency bond markets and uncovered interest rate parity. *Journal of International Money and Finance, 154*, 103310. https://doi.org/https://doi.org/10.1016/j.jimonfin.2025.103310

Ravšelj, D., & Aristovnik, A. (2020). The Impact of R&D expenditures on corporate performance: evidence from slovenian and world R&D companies. *Sustainability, 12*(5), 1943. https://doi.org/10.3390/su12051943

Rizvi, S. A. R., & Arshad, S. (2014). Investigating the efficiency of East Asian stock markets through booms and busts. *Pacific Science Review, 16*(4), 275-279. https://doi.org/https://doi.org/10.1016/j.pscr.2015.03.003

Saeed, A., & Sameer, M. (2015). Financial constraints, bank concentration and SMEs: evidence from Pakistan. *Studies in Economics and Finance, 32*(4), 503-524. https://doi.org/10.1108/SEF-02-2014-0046

Salehi, M., Daemi, A., & Akbari, F. (2020). The effect of managerial ability on product market competition and corporate investment decisions: Evidence from Iran. *Journal of Islamic Accounting and Business Research, 11*(1), 49-69. https://doi.org/10.1108/JIABR-10-2016-0113

Schmidt, K. M. (1997). Managerial incentives and product market competition. *The Review of Economic Studies, 64*(2), 191-213. https://doi.org/10.2307/2971709

Shin, I., & Lee, H. (2022). Product market competition and a firm's R&D investment: New evidence from Korea. *Investment Management & Financial Innovations, 19*(1), 287. https://doi.org/10.21511/imfi.19(1).2022.22

Tabash, M. I., Elsantil, Y., Hamadi, A., & Drachal, K. (2024). Globalization and income inequality in developing economies: A comprehensive analysis. *Economies, 12*(1), 23. https://doi.org/10.3390/economies12010023

Thamrin, H. (2023). The function of law in economic development and community empowerment in Indonesia. *Russian Law Journal, 11*(11S), 499-507.

Thi Thoan, L., Thuy, V. T. N., & Long, T. T. (2024). Does market competition make a difference in business strategy for listed companies? *Cogent Business & Management, 11*(1), 2312591. https://doi.org/10.1080/23311975.2024.2312591

Valta, P. (2012). Competition and the cost of debt. *Journal of Financial Economics, 105*(3), 661-682. https://doi.org/10.1016/j.jfineco.2012.04.004

Vo, H., Trinh, Q.-D., Le, M., & Nguyen, T.-N. (2021). Does economic policy uncertainty affect investment sensitivity to peer stock prices? *Economic Analysis and Policy, 72*, 685-699. https://doi.org/10.1016/j.eap.2021.10.012

Wang, J., Selamat, A. I., Hari, Z. M. A., & Yahya, M. H. D. H. (2024). Study on the liability structure and profitability of the banking industry in the Asia-Pacific region. *Theoretical and Practical Research in Economic Fields, 15*(1), 75-90. https://doi.org/10.14505/tpref.v15.1(29).08

Xu, J. (2012). Profitability and capital structure: Evidence from import penetration. *Journal of Financial Economics, 106*(2), 427-446. https://doi.org/https://doi.org/10.1016/j.jfineco.2012.05.015

Yung, K., & Nguyen, T. (2020). Managerial ability, product market competition, and firm behavior. *International Review of Economics & Finance, 70*, 102-116. https://doi.org/10.1016/j.iref.2020.06.027

Zaur, A. (2024). The importance of competition in the formation of a favorable business environment. *International Journal of Innovative Technologies in Economy, 2*(46). https://doi.org/10.31435/rsglobal_ijite/30062024/8146