

The Effect of Global Financial Crisis and COVID-19 Pandemic on Return on Assets: Evidence From Stock Exchange of Thailand

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Abstract

The paper examines the effect of the Global Financial Crisis (GFC) and the COVID-19 pandemic on profitability, measured by Return on Assets (ROA), across eight sectors listed on the Stock Exchange of Thailand (SET) from 2001 to 2024. The study uses regression analysis and extensive descriptive statistics to evaluate the impact of these two major crises on firm performance. The results show that both the GFC and COVID-19 pandemic had a statistically significant negative effect on ROA. However, the COVID-19 pandemic had a much larger impact on corporate profitability than the GFC. The sectoral analysis also demonstrates significant differences in resilience and recovery rates across different industries. The Agriculture and Food Industry (AGRO) sector was the most resilient during both crises, while the Property and Construction (PROPCON) sector experienced the largest decline in profitability and the weakest recovery among the eight sectors. These results suggest financial and public health crises can significantly reduce corporate profitability and highlight the importance of sector-specific policies to improve resilience during periods of systemic risk.

Keywords: Return on Assets (ROA), Global Financial Crisis (GFC), COVID-19, Stock Exchange of Thailand, regression analysis

Introduction

The stability and profitability of firms are often affected by major global events such as the Global Financial Crisis (GFC) and the COVID-19 pandemic. Understanding how these crises influence firm performance is important for investors, policy makers, and business managers, particularly in emerging markets.

The purpose of this paper is to examine how the Global Financial Crisis (GFC) and the COVID-19 pandemic affected corporate profitability, measured by Return on Assets (ROA), across eight different sectors listed on the Stock Exchange of Thailand (SET) between 2001 and 2024.

Profitability patterns changed during the Global Financial Crisis (GFC) of 2008-2009. Prior to the crisis, many firms benefited from rising asset prices and strong external demand which helped support a higher average ROA. During the crisis, falling asset values and weaker trade reduced sales and increased overall risk, thereby causing profitability to decline. In the

post-crisis period, average ROA generally gradually improved but not evenly across all sectors or countries. Studying profitability before, during, and after the GFC is crucial as it demonstrates which sectors are most vulnerable to financial crises and how quickly firms recover after a major disruption.

Profitability was also disrupted significantly by the COVID-19 pandemic. Before the pandemic, many firms in both developed and emerging markets displayed stable or gradually increasing average ROA. During the COVID-19 pandemic, lockdowns, supply chain disruptions, and demand shocks generally lowered revenue and increased costs. In combination, this caused profitability to decrease in various sectors. However, some essential and technology-related sectors were more resilient to the crisis. After the pandemic, average ROA partially recovered at different rates across sectors. Examining profitability before, during, and after the COVID-19 pandemic highlights which sectors are most vulnerable to public health crises and how firms adapt in response.

The main findings of this study indicated that both the Global Financial Crisis (GFC) and the COVID-19 pandemic had a statistically significant negative impact on ROA. The regression analysis indicated that the coefficients of the GFC and COVID-19 pandemic were -0.893 (significant at the 10% level) and -1.295 (significant at the 1% level) respectively. This suggests that the COVID-19 pandemic had a more severe effect on Thai corporate performance than the GFC.

The paper contributes to the existing literature by providing a long-term comparative analysis for two different types of global crises—financial and public-health-related—within the context of an emerging market. Unlike previous studies that often focus on a single event or industry, the present paper focuses on a broader sector perspective covering the agriculture & food, consumer products, financials, industrials, property & construction, resources, services, and technology sectors listed on the Stock Exchange of Thailand.

The remainder of the paper is organized as follows. The next section reviews the literature, followed by the empirical methodology, results, and conclusion.

Literature Review

Firm performance during the period of economic and financial instability has attracted significant attention in the literature. The effect of global shocks including financial crises on profitability, liquidity, investment decisions, and overall corporate finance has been thoroughly investigated. Return on Assets (ROA) is one of the most popular indicators of profitability.

There is a large amount of literature on the effects of global financial crises on firm performance. For example, Lai et al. (2014) found that Malaysian firms' profitability declined during the crisis

period and the revenue growth was sustained through government aid. Similarly, Yap et al. (2014) found that the financial performance of Malaysian firms had substantially declined after the crisis. In Australia, Thangaraj and Chan (2012) indicated that the crisis affected different industries differently. Nazir et al. (2012) found that asset quality was the strongest factor impacting ROA in Pakistan during the financial crisis. Olaniyi and Olabisi (2011) found that despite high liquidity, Nigerian banks were negatively impacted by the crisis. Kočiřová (2014) identified capitalization, liquidity, credit quality, operating efficiency, and market structure as the key determinants affecting bank profitability in V4 countries during the crisis. Dietrich and Wanzenried (2011) found that profitability was mainly affected by operational efficiency, loan growth, funding costs, business model, and tax rate. They also found that, during the crisis, Swiss state-owned banks were relatively more profitable. Overall, these papers show that financial crises affect business profitability and influence financial performance indicators.

Similar findings were observed during the COVID-19 pandemic. According to Shen et al. (2020), the pandemic had a negative effect on firm performance in China. The negative effect was stronger in heavily affected regions and could be lessened with more investment and revenue. Zhang et al. (2024) found that supply chain issues, labor shortages, and financial problems were the main factors that substantially decreased UK construction firm performance during the pandemic. Likewise, Achim et al. (2022) found the Romanian firms' net profits decreased by 37.43% during the pandemic. Alsharef et al. (2021) also found that U.S. construction firms experienced delays, supply problems, lower productivity, and rising material prices during the COVID-19 pandemic period. Overall, these studies suggest that the COVID-19 pandemic has a negative effect on operational and financial performance of various companies for many different regions and sectors.

Several studies have examined business resilience and recovery after major crises. For example, Prasad et al. (2015) found that Korean, Indonesian, and Thai firms had different strengths and speeds at which profitability recovered. Bris et al. (2004) also found that Asian firms became more fragile and less profitable after crises while European and Latin American firms showed clear recovery.

Various other studies further examine firm performance and resilience during crises. For example, Horta et al. (2012) and Peric and Vitezic (2016) show that macroeconomic conditions and firm size or specialization strongly affect construction and industrial performance in Portugal and Croatia during downturns. Lee et al. (2017) and Batool and Sahi (2019) find that ownership concentration, firm age, size, liquidity, leverage, and macro variables such as oil prices and inflation significantly influence crisis-period profitability in China, the United States, and the United Kingdom. Sufian and Habibullah (2010) and Song and Lee (2012) highlight that banks and firms in East Asia adjusted diversification, capitalization, and cash-holding policies after the Asian financial crisis, affecting their post-crisis profitability. Phan and Narayan (2020)

emphasize that global stock markets initially overreacted to early COVID-19 news and later partially corrected as more information became available. Farhat and Hili (2021) found that Islamic-compliant stocks in the United States performed better than stocks that were not Islamic-compliant during the COVID-19 pandemic, showing lower volatility rather than higher risk.

Previous research on the financial crisis or the COVID-19 pandemic provided useful information but most focused on one event, industry, or developed economy. Few studies compare both crises, especially in emerging markets. Few studies have examined sectoral profitability differences over a long period of time. Thus, this paper examines how the Global Financial Crisis and COVID-19 pandemic affected the Return on Assets of eight important sectors from the Stock Exchange of Thailand over the period of 2001-2024.

Table 1. Summary of Literature Review

Author	Year	Key variables	Method	Key findings	Region	Time Period
Lai et al.	2014	Current ratio, P/E ratio, Altman's Z-score	Financial analysis	The crisis cut profits, but revenues grew from government aid. Firms cut costs and debt, recovering to 5% profit by 2010	Malaysia	2005- 2010
Zhang et al.	2024	ROA, turnover growth, working capital	Regression analysis	COVID-19 reduced UK construction performance in 2020 due to supply, labor, and financial issues, followed by partial recovery in 2021.	United Kingdom	2015- 2021
Thangaraj and Chan	2012	Revenue, net assets, quick ratio	Distress analysis	The GFC mildly affected Australian suppliers and contractors but caused large losses in 2009 for developers and REITs.	Australia	2005- 2010
Yap et al.	2014	Cash to Current Liability, inventory turnover, cash flow to total assets	Factor and cluster analysis	Malaysian manufacturing firms saw strong performance declines after the GFC, with many previously strong firms shifting into weaker performance groups.	Malaysia	2006- 2010
Achim et al.	2022	ROE, net profits, sales, indebtedness, liquidity, working capital, sector	Panel data analysis	Net profits fell 37.43% during the pandemic period. Equity financing, better liquidity management, and larger size supported stronger performance.	Romania	2019 - 2020
Farhat and Hili	2021	Compliance status, abnormal returns, firm-specific volatility	Difference-in-difference regressions	Islamic-compliant stocks outperformed non-compliant stocks during COVID-19, with lower volatility rather than higher risk.	United States	2020
Alsharef et al.	2021	Delays, material shortages, productivity, price escalation, safety measures	Qualitative interviews	COVID-19 caused delays, material shortages, reduced productivity, and rising costs in U.S. construction, prompting safety measures and risk management responses.	United States	2020
Horta et al.	2012	Financial autonomy, value added, size, specialization	DEA	Construction performance improved initially but slowed later, with firm size, specialization, and macroeconomic conditions influencing overall performance differences.	Portugal	1996 - 2009

Shen et al.	2020	Investment growth, revenue, leverage, region and industry impact	Forecasting and robustness tests	COVID-19 reduced firm performance in China, especially in severely affected regions, while higher investment and revenue helped reduce negative impacts.	China	2013 - 2020
Peric and Vitezic	2016	Firm size, turnover growth, sector	Dynamic panel data model	During the recession, turnover growth was positively related to firm size. Medium and large firms grew faster than small firms.	Croatia	2008 - 2013
Lee et al.	2017	Firm age, firm size, leverage	Panel data analysis	During the global financial crisis, firms with higher ownership concentration and older firms performed better, while larger firms performed worse.	China	2008
Phan and Narayan	2020	Country responses, lockdowns, travel bans	Commentary	Stock markets appeared to overreact early to COVID-19 news and later correct as more information became available.	Global	Early 2020
Nazir et al.	2012	Solvency, advances, investments,	Stepwise multiple regression	For Pakistani banks, asset quality was the strongest determinant of bank ROA, followed by size and solvency.	Pakistan	2008
Olaniyi and Olabisi	2011	Loans and advances, customer deposits, investment in securities	OLS multiple regression	The global financial crisis negatively affected Nigerian banks despite high liquidity after consolidation.	Nigeria	2004 - 2009
Kočišová	2014	Bank profitability, capitalization, credit quality	Panel data	Profitability differences among V4 banks were mainly explained by capitalization, liquidity, credit quality, operating efficiency, and market structure.	V4 countries	2007 - 2009
Dietrich and Wanzenried	2011	Operational efficiency, loan growth, funding cost	Dynamic panel GMM	Bank profitability depended on operational efficiency, loan growth, and funding costs, with state-owned banks performing better during crisis periods	Switzerland	1999 - 2009; 2007-2009
Batool and Sahi	2019	Ownership concentration, leverage, liquidity	Panel data	Firm performance was influenced by internal financial factors and macroeconomic conditions, with differing effects observed between U.S. and U.K. markets.	United States and United Kingdom	2007 - 2016

Prasad et al.	2015	Gross profit margin, net profit margin, basic earning power	Ratio analysis	Profitability recovery after crisis differed across Indonesia, Korea, and Thailand. Recovery speed and strength were not the same across countries.	Indonesia, Korea, Thailand	1994 - 2004
Bris et al.	2004	Leverage, financial fragility, exchange-rate exposure	Descriptive analysis	Financial crises reduced profitability and increased fragility, especially in Asia, while recovery patterns differed, with clearer improvements in Europe and Latin America.	17 crisis countries across Asia, Europe, and Latin America	1990s
Sufian and Habibullah	2010	Loan-loss provisions, overhead cost	Panel data	Indonesian banks were more profitable before the Asian financial crisis; diversification and capitalization helped profitability, whereas size and high overheads hurt it.	Indonesia	1990 - 2005
Song and Lee	2012	Cash holdings, investment, payouts	Long-term panel analysis	East Asian firms increased cash holdings after the Asian financial crisis mainly by cutting investment, reflecting a stronger precautionary motive.	8 East Asian countries	1990 - 2006; 1997 - 1998

Empirical Evidence

This section introduces the dataset and provides a descriptive overview of ROA across the eight sectors before presenting the empirical analysis.

Data

The dataset was derived from GuruFocus¹ and utilized panel data covering eight different sectors listed on the Stock Exchange of Thailand (SET) for the time period of 2001-2024. The dependent variable is Return on Assets (ROA) which measures the profitability of the sector relative to total assets (Net Profit/Total Assets). The independent variables are two different dummy variables for the Global Financial Crisis and the COVID-19 pandemic. These dummy variables take 1 during the event period and take 0 before and after the event period. The event periods for the Global Financial Crisis and the COVID-19 pandemic are defined as 2008-2009 and 2020-2021, respectively. The dataset consists of 192 observations.

Descriptive Statistics and ROA Trends

Figure 1. ROA Trends by Industry (2001-2024)

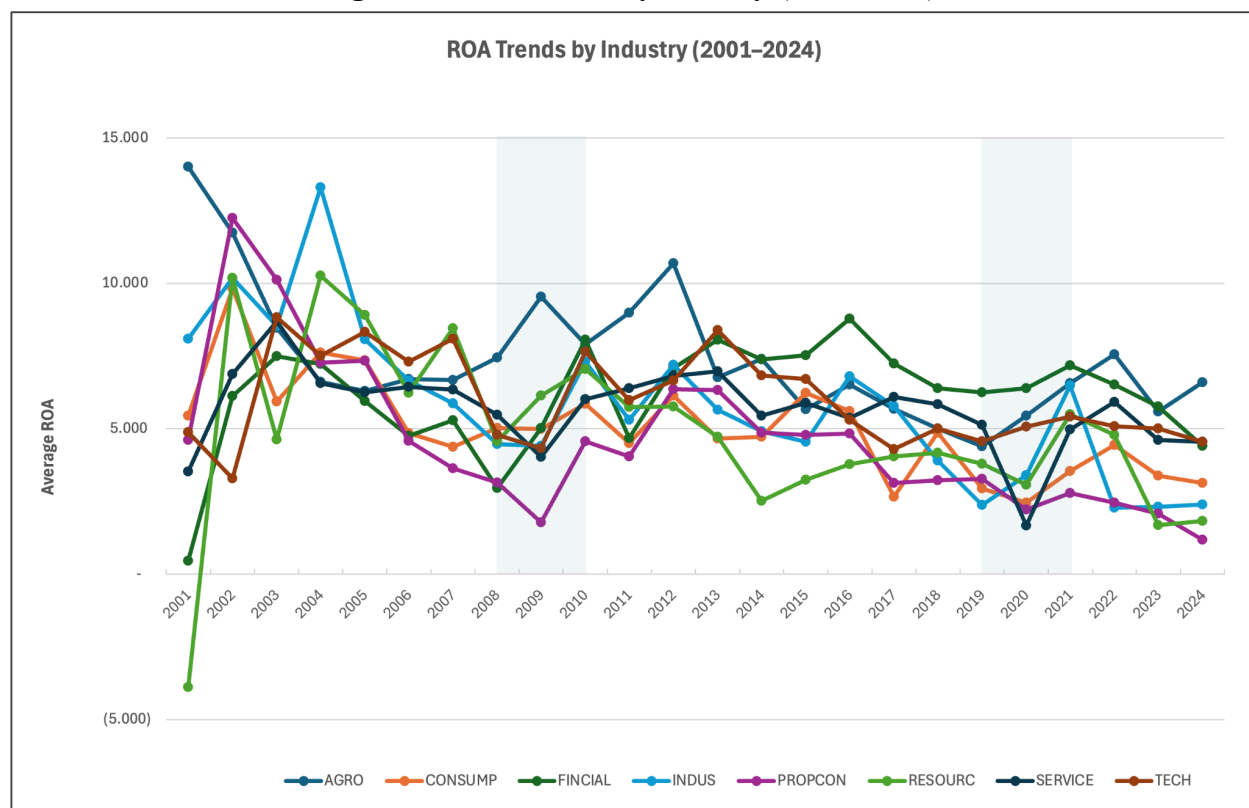
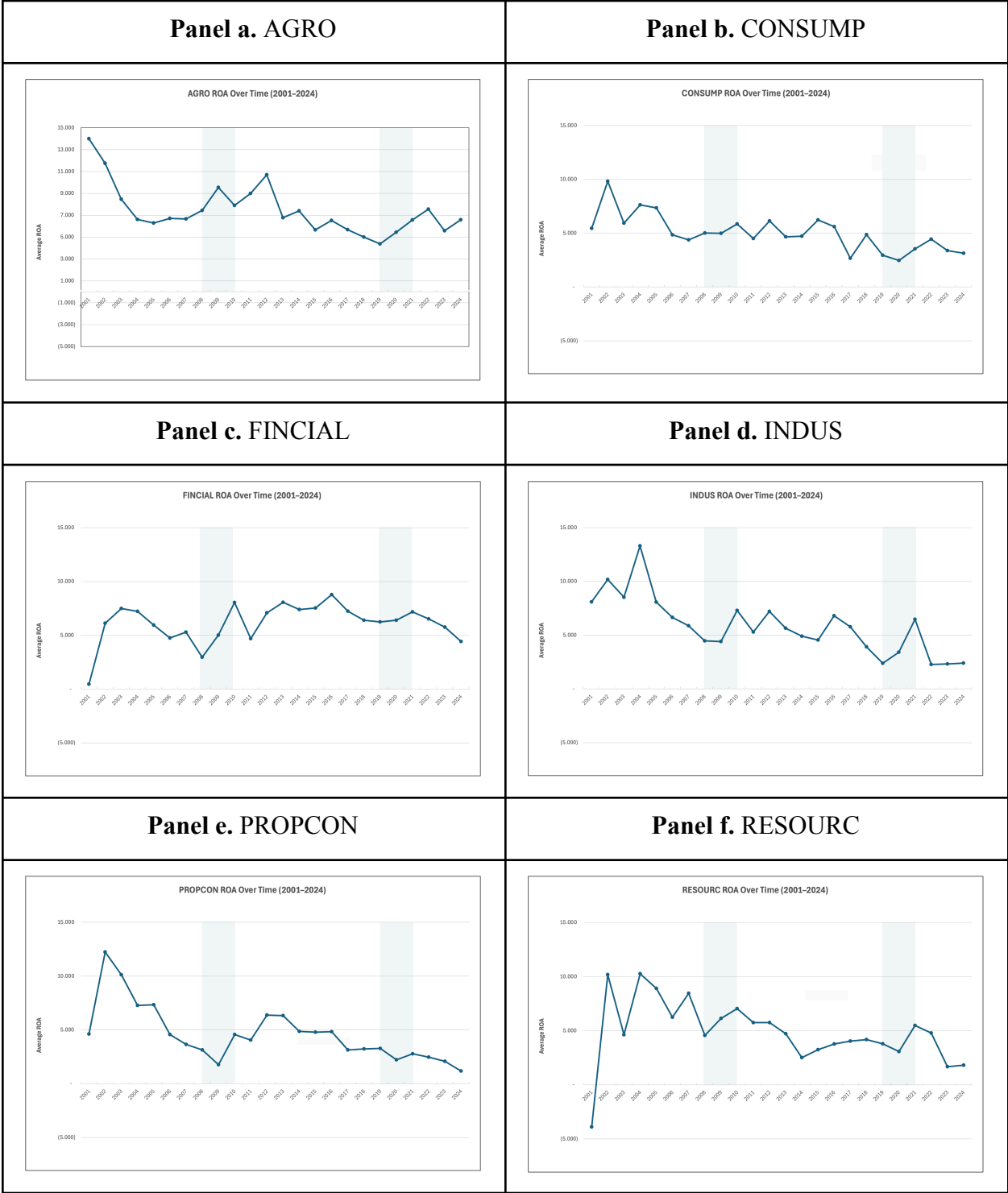


Figure 1 illustrates ROA trends for eight sectors listed on the Stock Exchange of Thailand (SET) over the period 2001-2024. The lines indicate that profitability was relatively high and volatile

¹ <https://www.gurufocus.com/>

during the early 2000s, declined around the Global Financial Crisis, and recovered to moderate levels in the years following. Around the COVID-19 period, most sectors experienced a drop in ROA, followed by a partial recovery during the early 2020s.

Figure 2. Sector-Specific ROA Trends (2001–2024)



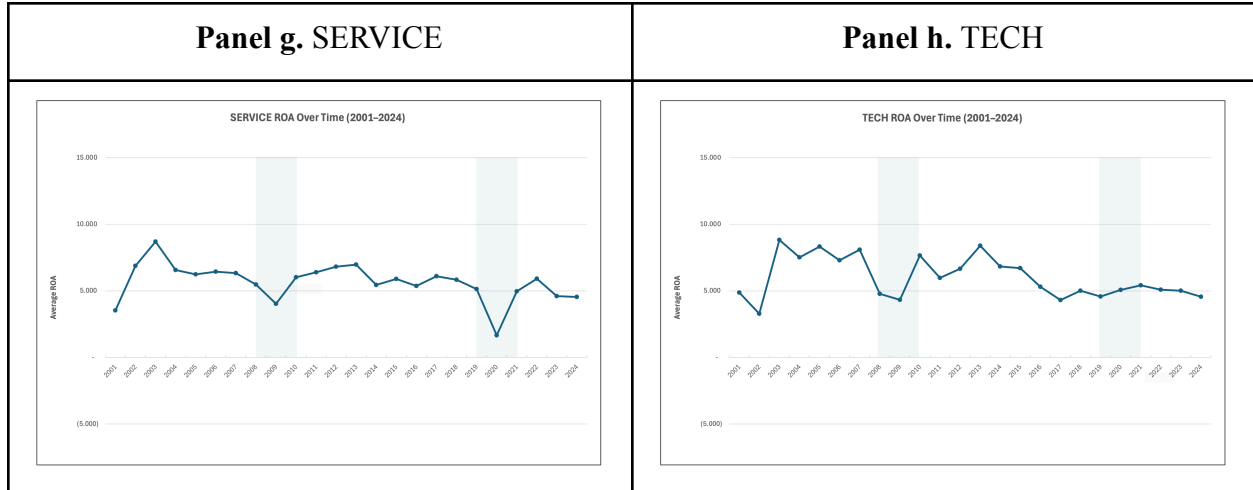


Figure 2 presents ROA trends for each sector individually from 2001 to 2024. Panels a–h show that Agriculture & Food (AGRO) and Resources (RESOURC) maintain relatively higher and more stable ROA over time, while Property & Construction (PROPCON) and Industrials (INDUS) had sharper declines around the GFC and weaker recovery afterwards. Consumer Products (CONSUMP), Financials (FINCIAL), Services (SERVICE), and Technology (TECH) exhibit moderate ROA with visible drops during the GFC or COVID-19 periods and mixed post-crisis recovery.

Empirical Model

$$ROA_t = \beta_0 + \beta_1 \text{Dummy}_{GFC} + \varepsilon_t \text{ (Model 1)}$$

$$ROA_t = \beta_0 + \beta_1 \text{Dummy}_{Covid19} + \varepsilon_t \text{ (Model 2)}$$

Where ROA_t is the dependent variable for observation “t” which covers the period of 2001 to 2024. The dataset covers eight different sectors, namely AGRO, CONSUMP, FINCIAL, INDUS, PROPCON, RESOURC, SERVICE, and TECH. The independent variables are two binary variables for Dummy_{GFC} and $\text{Dummy}_{Covid19}$ which take 1 during the event period and 0 otherwise.

β_0 is the constant term, representing the expected value of the dependent variable when the independent variable is 0. β_1 is the coefficient for the independent variable (Dummy_{GFC} , $\text{Dummy}_{Covid19}$) which shows how much the dependent variable (ROA_t) changes when the independent variable (Dummy_{GFC} , $\text{Dummy}_{Covid19}$) changes by 1 unit. ε_t is the error term, which represents the difference between the actual value and the predicted value of the model.

Regression Results

Table 2. Regression Analysis

	Model 1	Model 2
VARIABLES	ROA	ROA
Dummy _{GFC}	-0.8925*	
	(0.4710)	
Dummy _{Covid19}		-1.2950***
		(0.4642)
Constant	5.7723***	5.8059***
	(0.1770)	(0.1760)
Observations	192	192
R-squared	0.0114	0.0241

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 2 presents the results of two different regression models where the dependent variable is ROA and the independent variables are two different dummy variables, Dummy_{GFC} and Dummy_{Covid19}.

The paper uses t-values to define the significance level of all estimated parameters. The paper indicates the statistical significance of the result at the 1 percent level (***), 5 percent level (**), and 10 percent level (*). The sign in front of the coefficient suggests whether the dummy variables have a statistically positive or negative impact on the ROA. “-” represents negative impact, while “+” represents positive impact.

In Model 1, the dummy variable (Dummy_{GFC}) and ROA are negatively associated with a coefficient of -0.893. The findings suggest that the ROA is 0.893 points lower when Dummy_{GFC} = 1 (during the GFC period) than when Dummy_{GFC} = 0 (during the non-GFC period). This result is statistically significant at the 10 percent level.

In Model 2, the dummy variable (Dummy_{Covid19}) and ROA are negatively associated with a coefficient of -1.295. The findings suggest that the ROA is 1.295 points lower when Dummy_{Covid19} = 1 (during the COVID-19 pandemic period) than when Dummy_{Covid19} = 0 (during the non-COVID-19 pandemic period). This result is statistically significant at the 1 percent level.

The comparative analysis of sector performance before, during, and after the GFC is presented in Figure 3, Table 3, and Table 4 below.

The comparative analysis of sector performance before, during, and after the COVID-19 pandemic is presented in Figure 4, Table 5, and Table 6 below.

While the regression analysis provides evidence of the overall impact of the GFC and the COVID-19 pandemic on profitability, the following analysis examines how these effects differed across sectors before, during, and after each crisis.

Sectoral Comparison During the GFC

Figure 3. Average ROA Before, During, and After the GFC

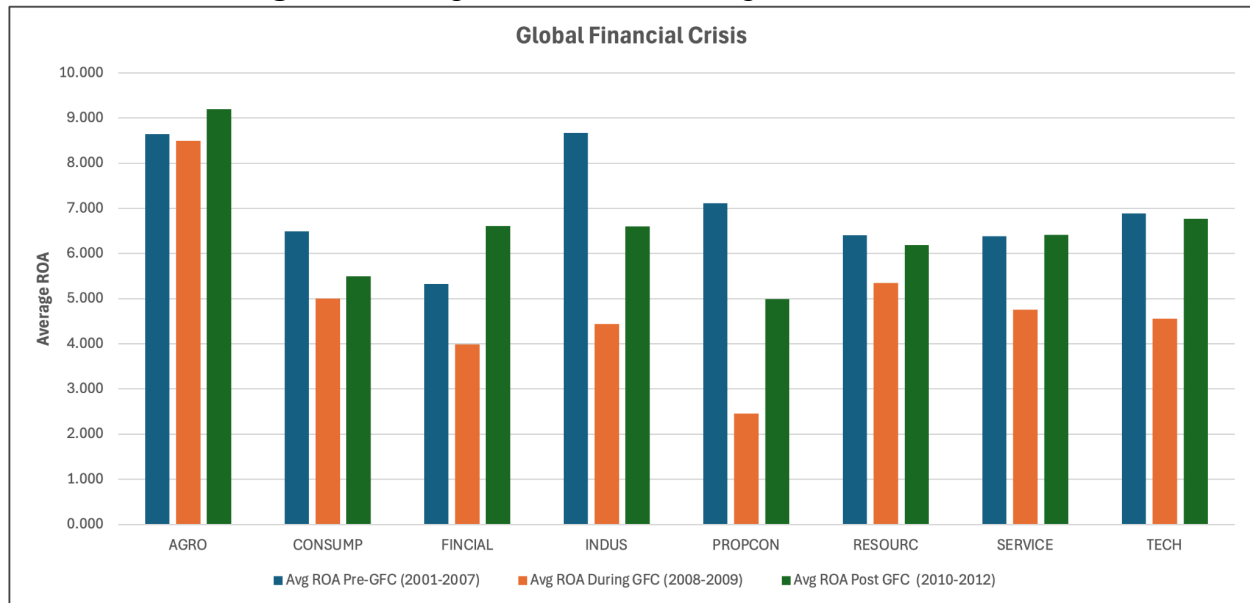


Figure 3 illustrates the comparative performance of eight different sectors before, during, and after the GFC. The evidence aligns with the regression findings, showing a decline in ROA during the GFC. It can be observed that sectors such as Agriculture were less affected by the GFC compared to other sectors, while the Property & Construction sector was the most affected by the GFC.

Table 3. Average ROA Before, During, and After the GFC

	Avg ROA Pre-GFC (2001-2007)	Avg ROA During GFC (2008-2009)	Avg ROA Post-GFC (2010-2012)
AGRO	8.646	8.496	9.198
CONSUMP	6.488	5.003	5.499
FINCIAL	5.325	3.986	6.608
INDUS	8.675	4.438	6.603
PROPCON	7.116	2.457	4.996
RESOURC	6.400	5.351	6.184
SERVICE	6.385	4.754	6.408
TECH	6.889	4.554	6.766

Table 3 highlights that not all sectors were equally vulnerable to the GFC. The largest decrease is

in the Property and Construction sector (7.116 pre-GFC to 2.457 during) and the Industrial sector (from 8.675 pre-GFC to 4.438 during). In contrast, the Agriculture sector remained relatively stable (8.646 pre-GFC to 8.496 during). Post-GFC, most sectors recovered, with the Financial sector showing a strong increase to 6.608, exceeding its pre-GFC level.

Table 4. % Return on Assets Maintenance During and After GFC

	% of Pre-GFC ROA Maintained During GFC	% of Pre-GFC ROA Restored Post-GFC	During GFC Maintenance Rank	Post-GFC Recovery Rank
AGRO	98.27%	106.38%	1	2
CONSUMP	77.12%	84.76%	3	6
FINCIAL	74.85%	124.09%	4	1
INDUS	51.16%	76.12%	7	7
PROPCON	34.53%	70.21%	8	8
RESOURC	83.60%	96.62%	2	5
SERVICE	74.45%	100.35%	5	3
TECH	66.10%	98.21%	6	4

Table 4 further emphasizes the difference in resilience across the eight sectors. The data shows that Agriculture maintained most of its ROA during the crisis (98.27%), indicating strong resilience, while Property & Construction maintained the least (34.53%). In the post-GFC period, the Financial sector demonstrated the strongest recovery (124.09%), exceeding its pre-GFC level, whereas Property & Construction remained the weakest in recovery (70.21%).

Sectoral Comparison During COVID-19

Figure 4. Average ROA Before, During, and After the COVID-19 Pandemic

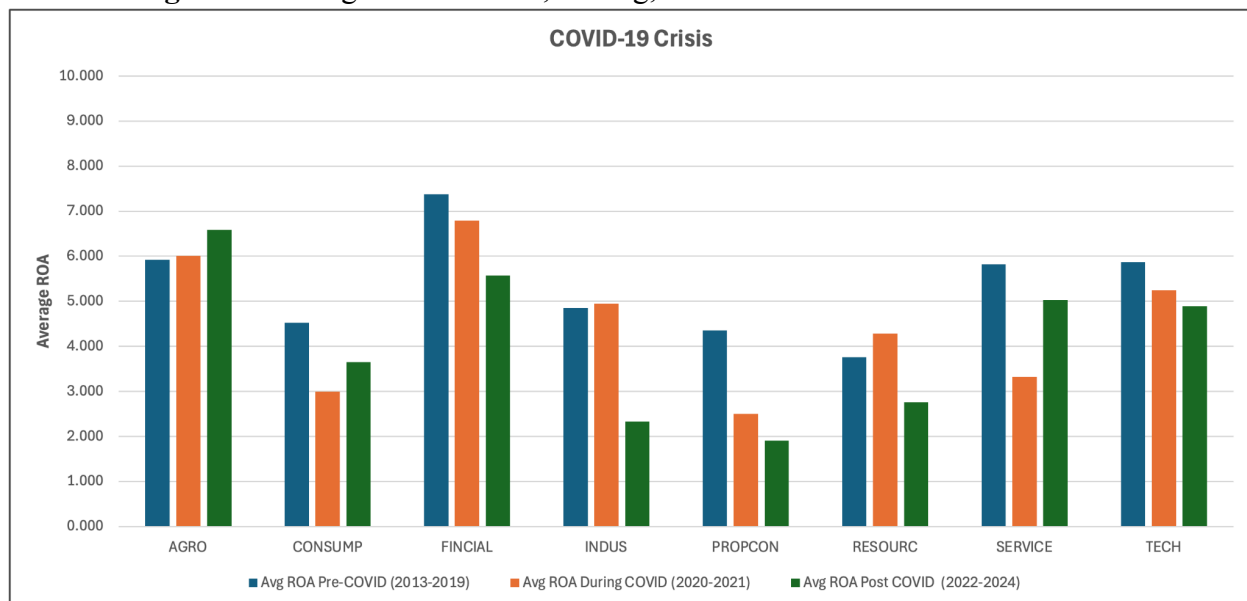


Figure 4 illustrates the comparative performance of eight different sectors before, during, and after the COVID-19 pandemic. The evidence aligns with the regression findings, showing an overall decline in ROA during the COVID-19 pandemic period. Agriculture was observed to be the most resilient among the sectors, as the average ROA post-COVID-19 was actually higher than before.

Table 5. Average ROA Before, During, and After the COVID-19 Pandemic

	Avg ROA Pre-COVID-19 (2013-2019)	Avg ROA During COVID-19 (2020-2021)	Avg ROA Post-COVID-19 (2022-2024)
AGRO	5.920	6.009	6.583
CONSUMP	4.526	2.997	3.649
FINCIAL	7.379	6.789	5.570
INDUS	4.851	4.946	2.334
PROPCON	4.352	2.504	1.905
RESOURC	3.755	4.281	2.762
SERVICE	5.823	3.319	5.024
TECH	5.874	5.242	4.884

Table 5 highlights substantial differences between how the sectors were affected by the COVID-19 pandemic. The largest decreases are in the Services sector (from 5.823 pre-COVID-19 to 3.319 during) and the Property & Construction sector (from 4.352 pre-COVID-19 to 2.504 during). In contrast, the Agriculture sector remained resilient, with ROA increasing slightly from 5.920 pre-COVID-19 to 6.009 during the pandemic, and the Resources sector also recorded a higher ROA during COVID-19 (from 3.755 to 4.281). Post-COVID-19, recovery was uneven: only the Agriculture sector exceeded its pre-COVID-19 level, rising to 6.583, while most other sectors declined further.

Table 6. % Return on Assets Maintenance During and After COVID-19 Pandemic

	% of Pre-COVID-19 ROA Maintained During COVID-19	% of Pre-COVID-19 ROA Restored Post-COVID-19	During COVID-19 Maintenance Rank	Post-COVID-19 Recovery Rank
AGRO	101.50%	111.20%	3	1
CONSUMP	66.21%	80.61%	6	4
FINCIAL	92.01%	75.49%	4	5
INDUS	101.95%	48.11%	2	7
PROPCON	57.52%	43.76%	7	8
RESOURC	113.99%	73.55%	1	6
SERVICE	56.99%	86.27%	8	2
TECH	89.25%	83.16%	5	3

Table 6 further emphasizes the difference in resilience across the eight sectors. The data shows

that the Resources sector maintained the highest share of its pre-COVID-19 ROA during the pandemic (113.99%), indicating strong resilience, while the Services and Property & Construction sectors maintained the least (56.99% and 57.52%, respectively). In the post-COVID-19 period, the Agriculture & Food sector demonstrated the strongest recovery (111.20%), exceeding its pre-COVID-19 level, whereas Property & Construction remained the weakest in recovery (43.76%).

Conclusion

The paper examines the effects of the Global Financial Crisis (GFC) and COVID-19 pandemic on the profitability of eight sectors listed in the Stock Exchange of Thailand (SET) from 2001 to 2024. This study shows that both crises significantly reduced corporate profitability. The results suggest that the COVID-19 pandemic had a larger impact on firms' profitability relative to the impact made by the GFC. Sectoral resilience and recovery varied greatly by sector. The Agriculture sector (AGRO) demonstrated higher resilience to crises, while the Property & Construction sector (PROPCON) experienced a larger amount of damage due to these crises. These findings help investors, managers, and policymakers construct more resilient businesses and practice better risk management in future crises. Future studies might include firm-specific information to help understand the impact of these major crises on individual firms. Overall, the findings suggest that different types of global crises do not affect all industries equally, highlighting the importance of sector-specific resilience strategies. Future studies could also use panel data approaches to take into account variation in both time and cross-section dimensions.

Appendix

Table 7. Data Definition

Indicator Name	Definition	Source
Return on Assets (ROA)	A profitability ratio calculated as (Net Profit/Total Assets) * 100	GuruFocus

Table 8. Sector Definition

Sector Code	Definition	Source
AGRO	Agriculture & Food Industry	Stock Exchange of Thailand (SET)
CONSUMP	Consumer Products	Stock Exchange of Thailand (SET)
FINCIAL	Financials	Stock Exchange of Thailand (SET)
INDUS	Industrials	Stock Exchange of Thailand (SET)

PROPCON	Property & Construction	Stock Exchange of Thailand (SET)
RESOURC	Resources	Stock Exchange of Thailand (SET)
SERVICE	Services	Stock Exchange of Thailand (SET)
TECH	Technology	Stock Exchange of Thailand (SET)

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