TMS CONSULTANCY

27TH ASEAN VALUERS ASSOCIATION (AVA)

The impact of Artificial Intelligence (AI) on Firm Performance in the Vietnam market from 2016 - 2024

TMS CONSULTANCY

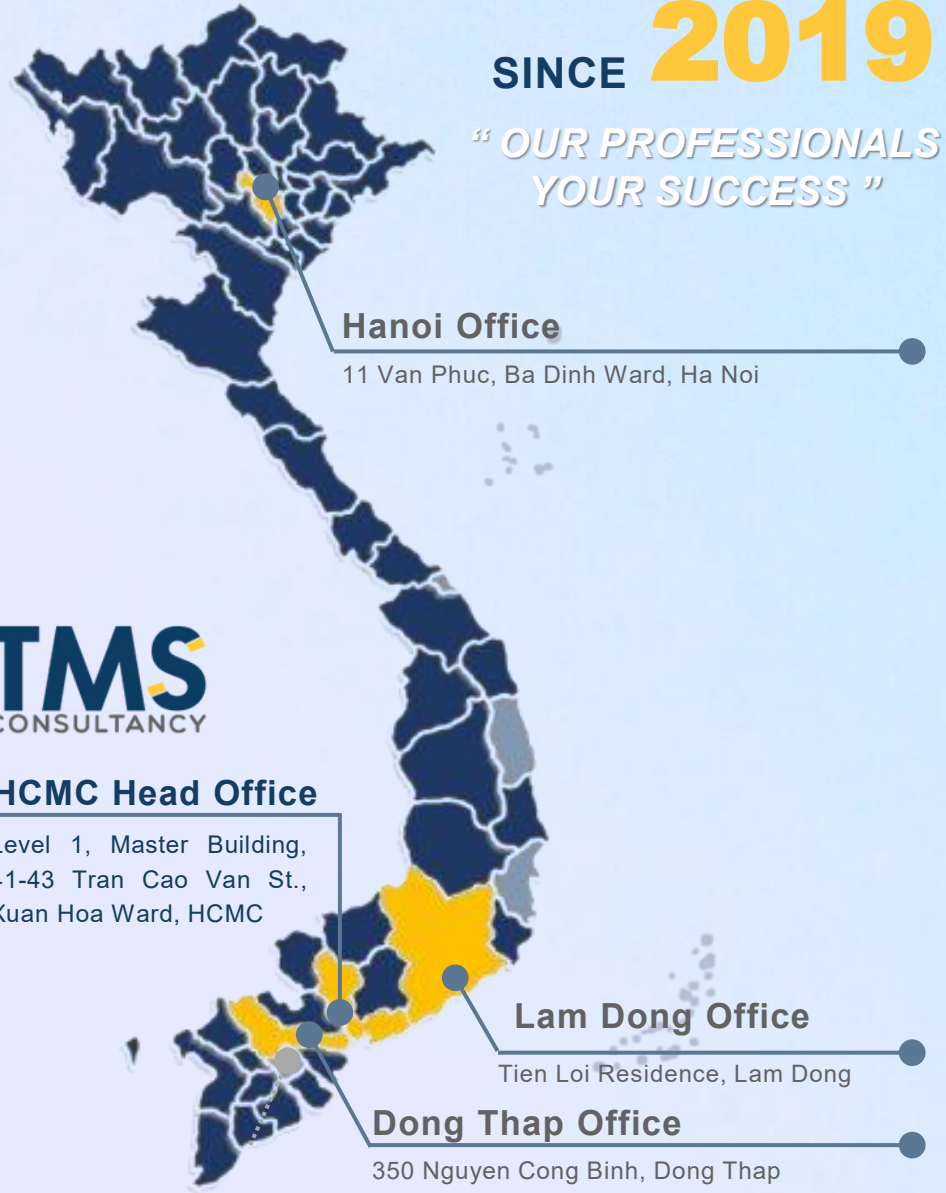
CONTENTS

01 COMPANY INTRODUCTION

ABOUT US

SINCE **2019**

" OUR PROFESSIONALS YOUR SUCCESS "



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Legal Advisory

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SANYU APPRAISAL
THE COMING STANDARD

Leading Appraisal company in Japan

TMS Consultancy Co., Ltd. *provides professional consulting services, meeting the diverse needs of customers based on* ***Eco-platform Services.***

With extensive experience and a professional team, we commit to providing valuable services with the highest satisfaction and the most suitable budget to customers.

CORE VALUE

INTRODUCTION – AUTHOURS

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THE IMPACT OF ARTIFICIAL INTELLIGENCE (AI) ON FIRM PERFORMANCE IN THE VIETNAM MARKET FROM 2016 - 2024

02 RESEARCH INTRODUCTION

RESEARCH INTRODUCTION

PROBLEM STATEMENT & OBJECTIVES

REASON FOR WRITING & PROBLEM STATEMENT

01 The rapid development of AI worldwide

02 Lack of studies in emerging markets

03 Practical significance for Vietnamese firms

04 Contribution to academic literature

05 Policy and managerial relevance

RESEARCH INTRODUCTION

PROBLEM STATEMENT & OBJECTIVES

RESEARCH OBJECTIVES

- To examine the impact of AI adoption of firm valuation
- To evaluate the effect of AI on firm profitability
- To analyze the influence of AI adoption on cost efficiency
- To provide empirical evidence for Vietnam
- To offer managerial and policy implications

03 LITERATURE REVIEW

LITERATURE REVIEW

SUMMARY INFORMATION

Authors (Year)	Focus	Key Findings/contribution
AI Definitions		
McCarthy et al. (2006)	Early definition of AI as the science and engineering of creating intelligent systems.	Laid the foundation for modern AI concepts.
Russell & Norvig (2010)	Proposed four approaches: thinking/acting like humans and thinking/acting rationally.	Provided a comprehensive research framework for AI.
Nilsson (2009)	Defined AI as the activity of making machines intelligent, enabling appropriate and foresighted actions.	Emphasized intelligence as the quality of acting appropriately within an environment.
Kaplan & Haenlein (2019)	Defined AI as the ability to interpret data, learn, and adapt to achieve specific goals.	Highlighted adaptability and goal orientation.
Oxford Dictionary (2023)	AI = theory and development of computer systems capable of tasks requiring human intelligence (e.g., vision, speech, decisions).	Simple and widely accepted definition.
OECD (2019)	AI as machine-based systems guided by human-defined objectives that make predictions, recommendations, or decisions.	Policy-level definition reflecting practical applications.

LITERATURE REVIEW

SUMMARY INFORMATION

Authors (Year)	Region/Country focus	Period	Key Findings	Relevance to current study
AI Adoption & Firm performance				
Brynjolfsson & McAfee (2017)	United States & Global	2010 – 2016	AI automates repetitive tasks, improving productivity and strategic focus	Highlights operational benefits relevant to firm performance
Cockburn, Henderson & Stern (2022)	United States	2000 – 2020	AI reduces experimentation costs and enhances innovation outcomes	Supports hypothesis of AI improving efficiency & R&D productivity
Ransbotham et al. (2017)	Global	2016 – 2017	AI adoption linked with improved innovation and competitiveness	AI adoption linked with improved innovation and competitiveness
Kim, Park & Kim (2022)	United States	2010 – 2019	AI adoption positively affects firm performance, especially in tech sectors	Serves as empirical reference model for Vietnam study
Babina et al. (2024)	United States	2010 – 2023	AI fosters long-term competitiveness through innovation and growth	Provides evidence of AI's contribution to market value (Tobin's Q)

LITERATURE REVIEW

SUMMARY INFORMATION

Authors (Year)	Region/Country focus	Period	Key Findings	Relevance to current study
AI Adoption & Firm performance				
Lui et al. (2022)	Hong Kong / Asia	2010 – 2019	AI investment announcements yield abnormal stock returns; effect varies by firm capability	Illustrates investor perception dimension
Eisfeldt, Schubert & Zhang (2023)	United States	2022 – 2023	Generative AI increases firm value; markets optimistic about AI potential	Supports expected valuation impact of AI adoption
Soto (2025)	United States	2018 – 2024	R&D intensity in AI correlates with higher market valuation	Highlights importance of signaling AI activity
Basnet et al. (2025)	Global	2015 – 2024	AI-related discourse in reports affects investor sentiment and stability	Suggests narrative effects relevant to emerging markets
Trajtenberg (2018)	Global	2018	AI drives structural economic transformation and long-term growth	Theoretical base for studying macroeconomic implications
Lieberman & Montgomery (1998)	Global	Conceptual	Early adopters gain long-term competitive advantage but face risks	Provides theoretical lens for interpreting AI early adoption

04 RESEARCH METHODOLOGY

RESEARCH METHODOLOGY

SAMPLE & TIMING

Treatment

Non-Financial Firms that adopted AI in 2020 – 2021
→ **23 treated firms**

Control

Non-adopters over the full period, chosen within the same GICS industries as treated firms.

Propensity Score Matching (PSM)

Pair on Total Assets (log assets) and Cash/Assets
→ **23 matched pairs** (46 firms).

RESEARCH METHODOLOGY

DATA AND VARIABLES

Variable	Definition & measurement	Data sources
Dependent variables		
Tobin's Q	TOBINQ (Firm value): (Market value of equity + liabilities) / total asset	Thompson Reuters
Profitability ratios	ROI (Return on investment): Net profit / (total equity + total debt)	Thompson Reuters
	ROE (Return on equity): Net profit / total equity	
	OIS (Operating income to sales): EBIT / total sales	
Cost ratios	COGSS (Cost of goods sold to sales): COGS / total sales	Thompson Reuters
Independent variables		
Firm size	SIZE: The logarithm of total asset	Thompson Reuters
Return on asset	ROA: Net profit / total asset	Thompson Reuters
Leverage	LEV: The total debt / total equity	Thompson Reuters
Market to book ratios	MARKET: Market value of equity / book value of equity	Thompson Reuters
Cash flow	CF: Net operating cash flow / total asset	Thompson Reuters
AI adoption	AI: Frequency of keywords "AI" and "Artificial Intelligence" appearing on annual report and official disclosure.	Author's calculation

RESEARCH METHODOLOGY

MODEL SPECIFICATION

SIZE, ROA, LEV, MARKET, CF;
firm and **year fixed effects**.

X_{it}

$$Y_{it} = \alpha + \beta AI_{it} + \gamma X_{it} + \mu_i + \tau_t + \varepsilon_{it},$$

Ai_{it} = $Treat_i$ x $Post_{it}$

Y_{it} Tobin's Q / ROE / ROI;

- $Treat_i$ = 1 if firm belongs to the treatment group;
- $Post_{it}$ = 1 for years $t \geq$ the year that firm started applying;
- β captures AI impact.

RESEARCH METHODOLOGY

METHOD

Item	Matching characteristic	Mean	p-value (t-test)
Logarithm of Total Assets	*Control*	12.419	0.461
	Treatment	12.501	
Cash / Assets	*Control*	0.106	0.295
	Treatment	0.125	
Market Capitalization	*Control*	4.28e+12	0.215
	Treatment	6.34e+12	
Logarithm of Total Debt	*Control*	27.992	0.259
	Treatment	27.653	

05 RESEARCH RESULTS

RESEARCH RESULTS

AI ON FIRM VALUE

Dependent variable		TOBINQ		
		(1)	*(2)*	*(3)*
	AI	0.396**	0.069	0.210***
		(5.47)	*(1.40)*	*(3.45)*
	Control variables	No	Yes	Yes
	Year fixed effects	No	No	Yes
	Firm fixed effects	No	No	Yes
	R-squared	0.268	0.864	0.955
	Observations	132	132	128

Standard errors are clustered by firm. Robust t-statistics are reported in parentheses.
****, **, and * denotes statistical significance at 1%, 5%, and 10%, respectively.*

RESEARCH RESULTS

AI ON PROFITABILITY

Dependent variable		ROE			ROI		
		(4)	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*
	AI	0.037*	-0.015	0.008	0.036**	-0.009	0.006
		(1.86)	*(-1.31)*	*(0.61)*	*(2.34)*	*(-1.26)*	*(1.12)*
	Control variables	No	Yes	Yes	No	Yes	Yes
	Year fixed effects	No	No	Yes	No	No	Yes
	Firm fixed effects	No	No	Yes	No	No	Yes
	R-squared	0.053	0.711	0.946	0.085	0.893	0.985
	Observations	132	132	128	132	132	128

Standard errors are clustered by firm. Robust t-statistics are reported in parentheses.
****, **, and * denotes statistical significance at 1%, 5%, and 10%, respectively.*

RESEARCH RESULTS

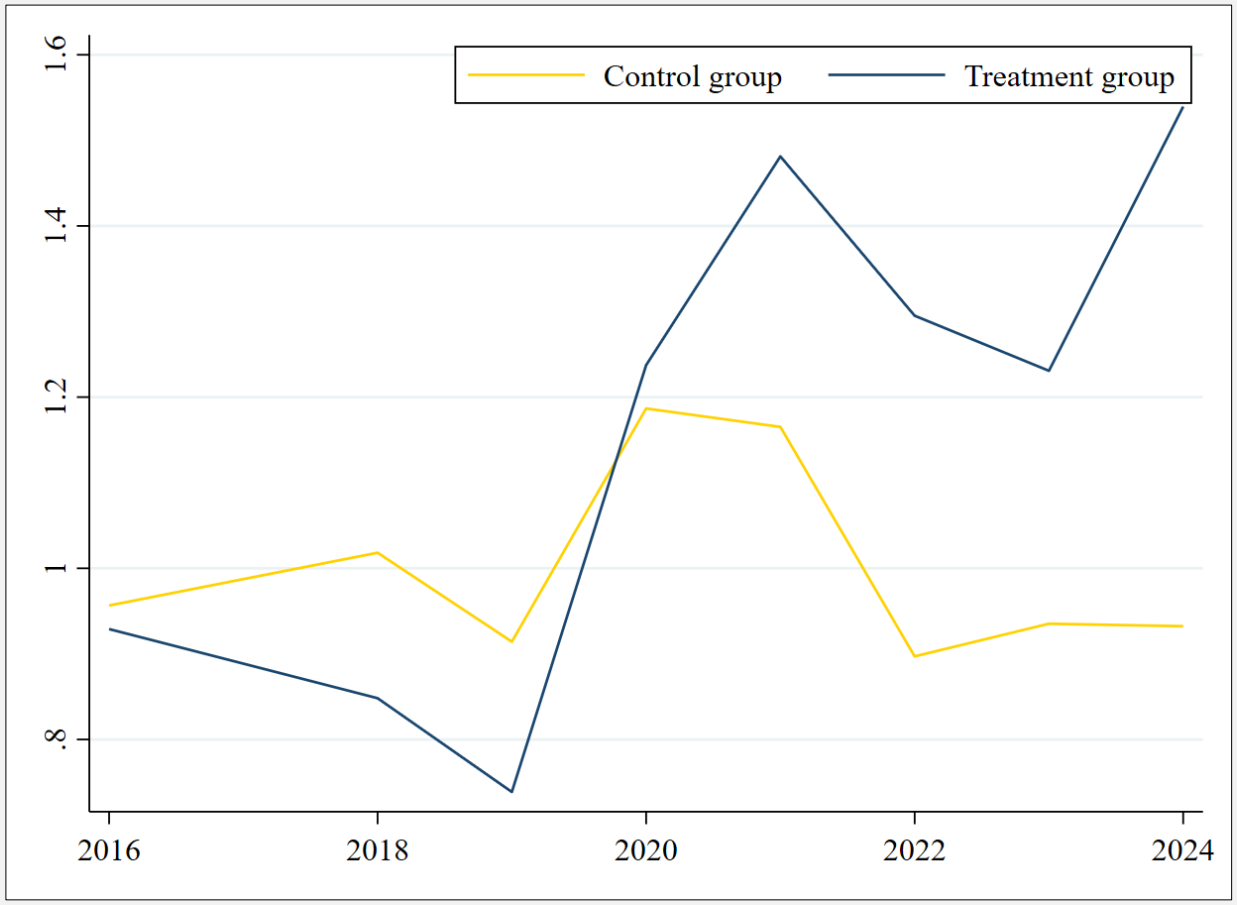
AI ON COST STRUCTURE

Dependent variable		OIS			COGSS		
		(10)	*(11)*	*(12)*	*(13)*	*(14)*	*(15)*
	AI	0.091	0.009	-0.002	-0.093*	-0.005	0.010
		(1.55)	*(0.18)*	*(-0.11)*	*(-1.84)*	*(-0.10)*	*(0.54)*
	Control variables	No	Yes	Yes	No	Yes	Yes
	Year fixed effects	No	No	Yes	No	No	Yes
	Firm fixed effects	No	No	Yes	No	No	Yes
	R-squared	0.053	0.290	0.946	0.069	0.308	0.948
	Observations	132	132	128	132	132	128

Standard errors are clustered by firm. Robust t-statistics are reported in parentheses.
****, **, and * denotes statistical significance at 1%, 5%, and 10%, respectively.*

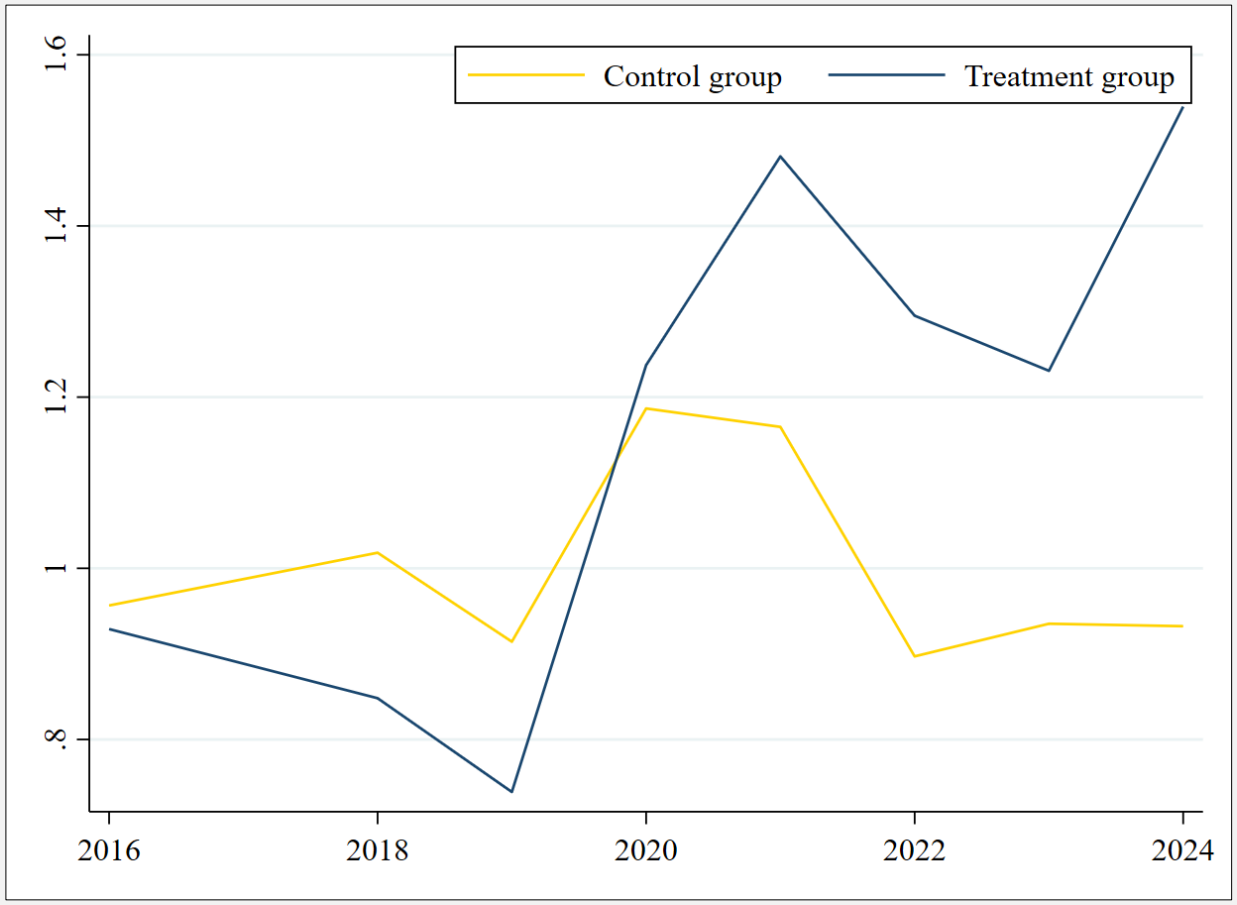
06 DISCUSSION & CONCLUSION

DISCUSSION & CONCLUSION



- In Vietnam, an emerging market, rapid advances in science and technology - especially artificial intelligence (AI) - have become increasingly relevant in both academia and daily business.
- This raises the central question of whether AI affects firms's performance, particularly in cost structures and profitability
- Our study of 46 listed firms from 2016 – 2024 provides evidence that AI adoption influences key firm-level indicators

DISCUSSION & CONCLUSION



- The findings align with prior literature, which suggests that early adopters of new technologies can gain resources and capabilities, though they may face risks of inefficiency
- Research also shows AI's role in reshaping cost structures, with U.S. evidence indicating advanced robotics saved firms USD 40.4 billion, equivalent to a 5.3% reduction in COGS
- Building on this, our study extends these insights to Vietnam and offers new perspectives on AI's role in emerging economies

LIMITATIONS AND FUTURE RESEARCH

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Small Dataset

The dataset of **132 observations** from **46 firms** is relatively small, limiting generalizability

Tracking

Identifying AI adopters and their specific applications is difficult due to the absence of official reporting mechanisms.

AI Investment Cost

AI investment costs were not included, though they could substantially affect cost-benefit outcomes

Measurement errors

The reliance on textual analysis using AI keyword frequency may introduce measurement errors

07 CASE STUDY

CASE STUDY

INTRODUCTION – FPT CORPORATION

- **Company name:** FPT Corporation
- **Established year:** 1988
- **Headquarter**: Hanoi, Vietnam
- **Core business:** Technology, Education & Investment, Telecommunications.
- **Scale:** over **70,000 employees**, operating in **27 countries and territories** worldwide.

STRATEGIC PARTNERS

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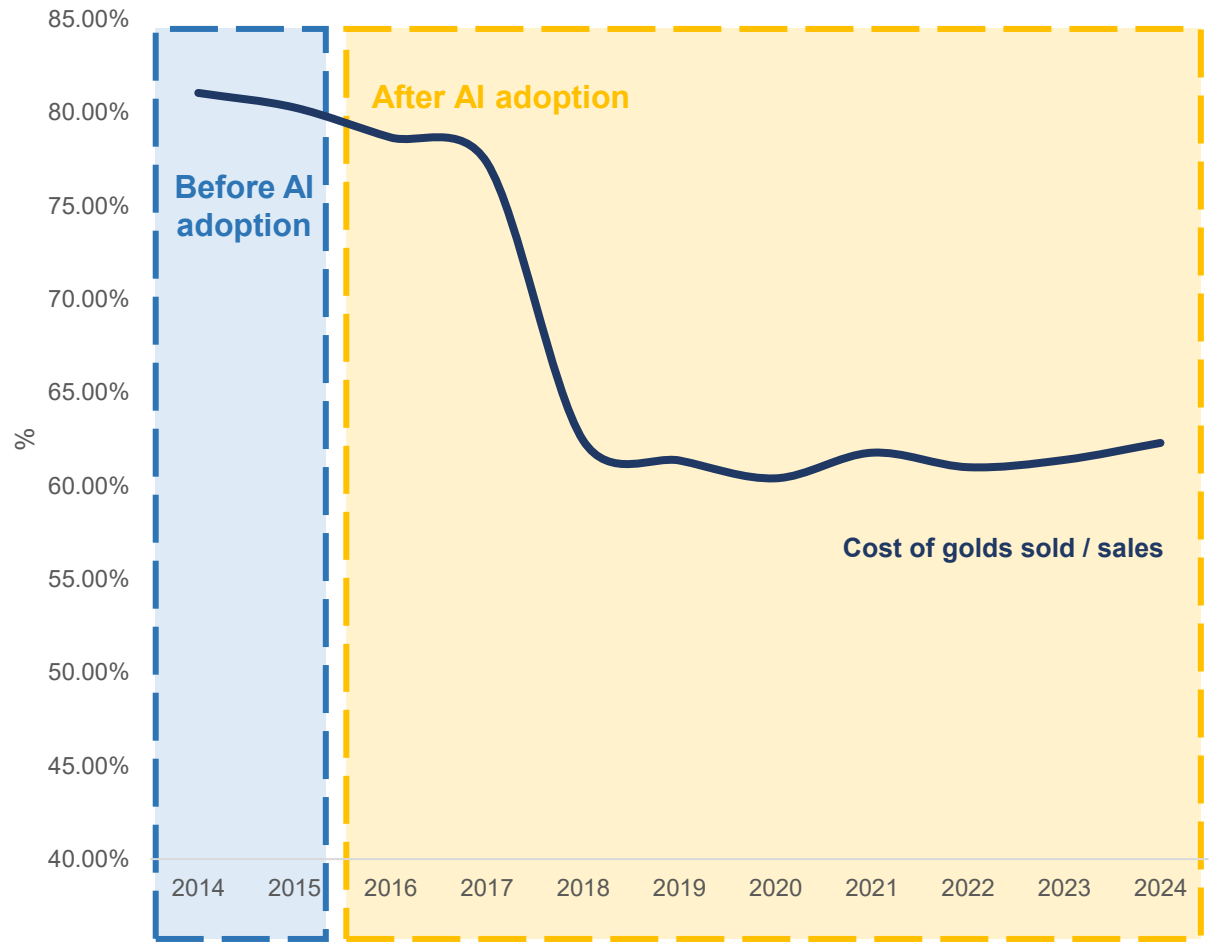
THE IMPACT OF AI ADOPTION ON FPT'S COST STRUCTURES | 2014 – 2024



Source: FPT's Financial Statements, TMS Consultancy

CASE STUDY

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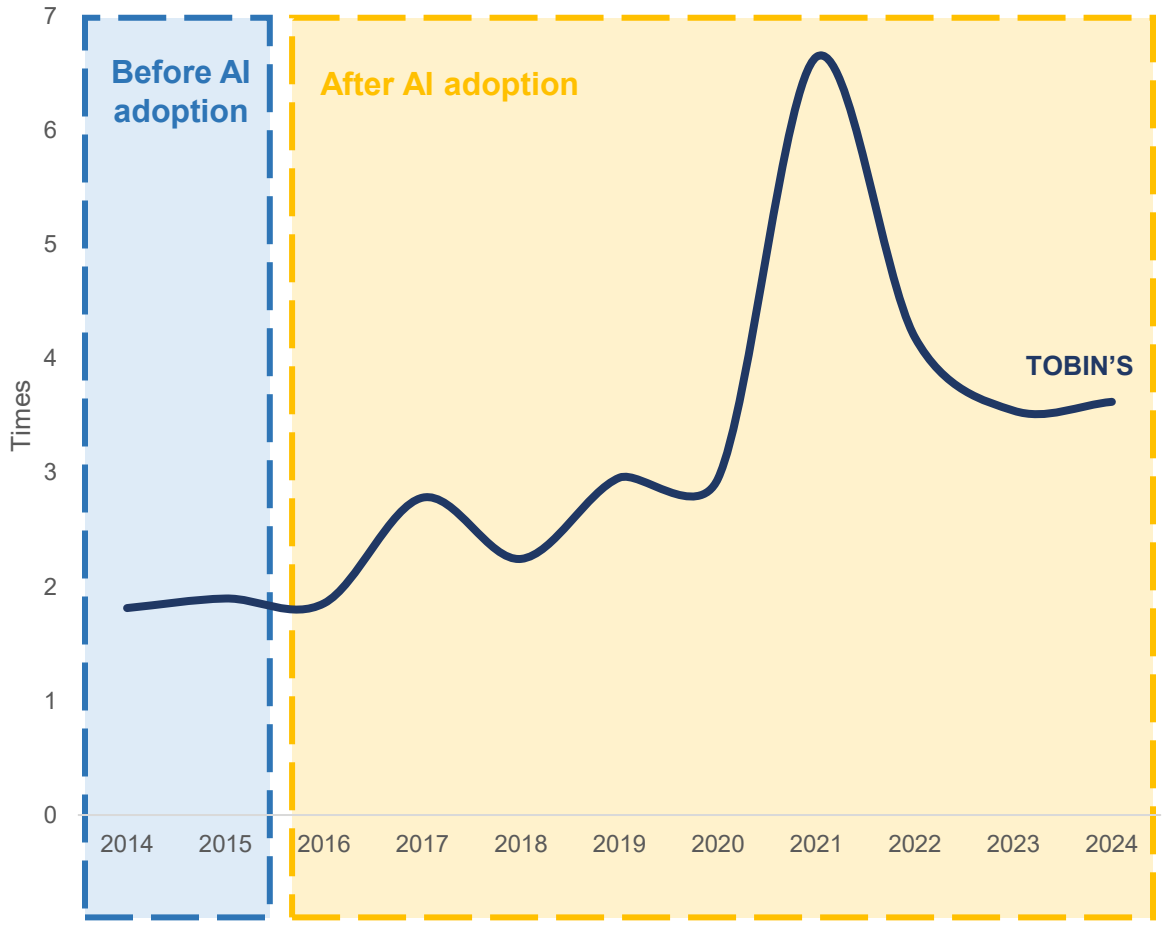
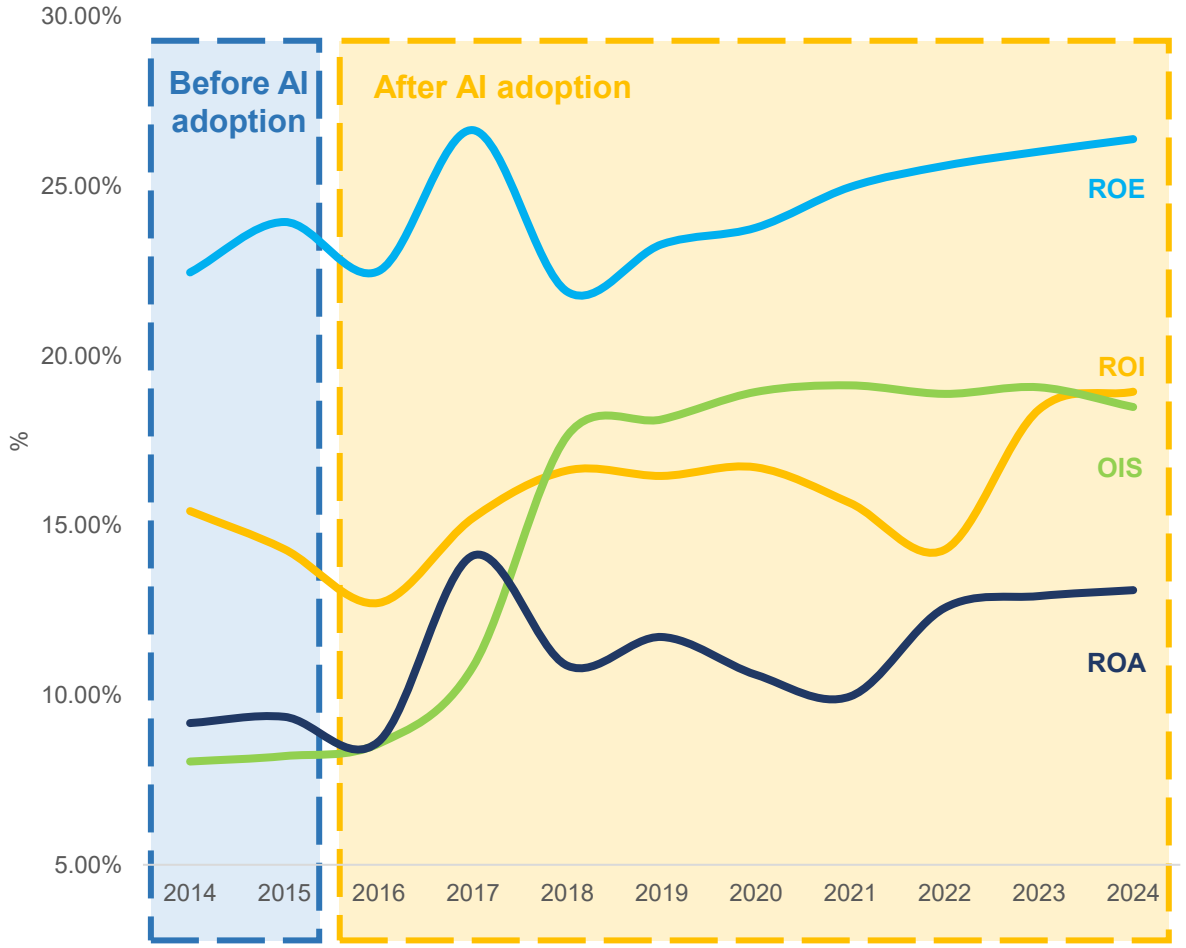
THE IMPACT OF AI ADOPTION ON FPT'S FIRM VALUE (Tobin's Q) | 2014 - 2024



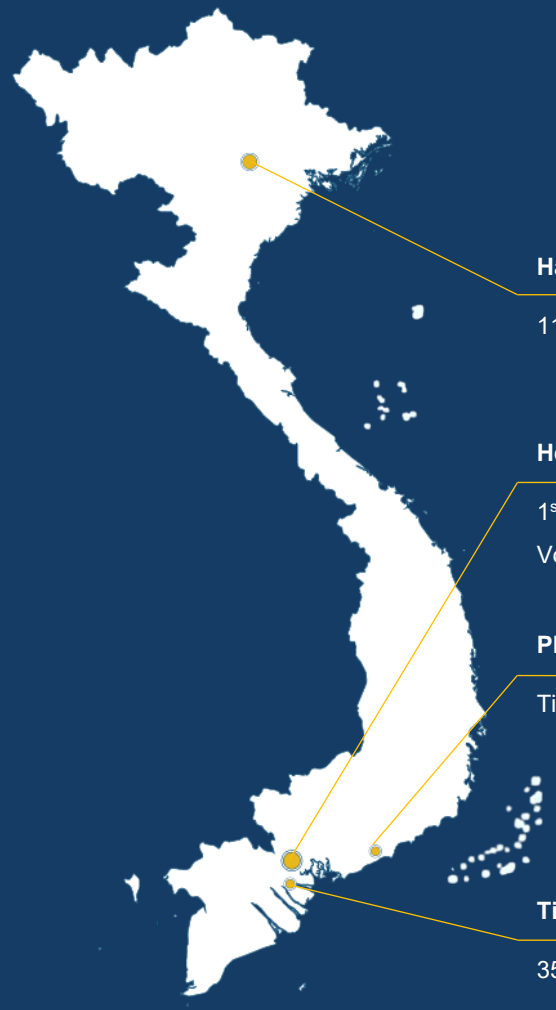
Source: FPT's Financial Statements, TMS Consultancy

THE IMPACT OF AI ADOPTION ON FPT'S PROFITABILITY | 2014 - 2024



Source: FPT's Financial Statements, TMS Consultancy

08 CONTACT



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