

Sustainable development disclosure towards firm value through financial strength among enlisted firms in Stock Exchange of Thailand during COVID-19 outbreak

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Abstract

This research aims to compare sustainable development disclosure among different industry groups and synthesize Structural Equation Model to declare influence among sustainable development disclosure of economics, social, environment and institute aspects towards financial strength and firm value via excess return and Tobin's Q ratio, respectively. Multi-stage sampling approach was applied to 180 enlisted firms in Stock Exchange of Thailand during 2019 to 2021 (total 540 datasets). Structural Equation Model synthesis passed all criteria of fit indices i.e. χ^2 showed $p < 0.01$, CFI = 0.97, SRMR = 0.05 and RMSEA = 0.059. According to Structural Equation Model, economics and institute aspects of sustainable development disclosure showed positively significant influence towards both of financial strength and firm value at the 0.05 level. Nevertheless, social aspect of sustainable development disclosure showed negatively significant influence towards both of financial strength and firm value at the 0.05 level. While, environment aspect of sustainable development disclosure exhibited negatively significant influence towards financial strength but positively significant influence towards firm value at the 0.05 level. Ultimately, financial strength provided positively significant influence towards firm value at the 0.05 level.

Keywords: Firm Value, Financial Strength, Sustainability, COVID-19, Corporate Governance

1. Introduction

In the classical perspective, maximize the shareholder's wealth is a belief that led to business objective designation.

However, as business grows, society comes up with different perspective on how firm should operate. In such case, companies should alter from the mindset of enriching only shareholders to focusing on all the stakeholders, including environmental sustainability, business transparency, and community welfare.

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Adaptation to cope with Coronavirus Disease 2019 (COVID-19) continues to have a serious impact on business efficiency. COVID-19 became one of major obstacles in the business in terms of employee's work efficacy which led to decrease work performance as an outcome. Consequently, corporate social responsibility which included sustainability activities those the business has been continued for a long time [1,2,3]. It is also becoming more decisive for companies to fulfill the Sustainability Development expectation in order to gain its reputation, which further influences the firm's performance [4].

During COVID-19 outbreak, several firm's financial income had been uncertain that will affect investment decision. Thus, Firm's sustainability disclosure could reflect well-organized financial system management and lead to financial strength. The financial strength is assessed through financial analysis tools i.e. financial excess return which assessed from different between Return on Investment Capital (ROIC) and Weighted Average Cost of Capital (WACC). The financial excess return is important for further investment attraction [5]. Firms, which showed great financial strength, would provide high margin of return over cost of capital from each investment.

Firm value is how investors perceive the success level of a company. Investors usually consider firm value as the benchmark in trading decision-making. The firm value is a form of indicator that various organizations use to measure business development results in order to increase the value of the business via Tobin's Q Ratio is another important variable that supports businesses [6]. The firm value of publicly-traded companies can be noticed through the share prices movements. Therefore, the topic of firm value receives a lot of interest regarding fluctuations in share prices. The firm value also creates credibility among investors in a wide range and can also drive the macro-economic system to grow at the same time [7,8]. Nevertheless, there is some previous research proves that crisis situation could influent to firm value and also affects to post-crisis era [9]. Hence, investigation of firm value during COVID-19 outbreak period is interesting for research and be beneficial for further application in business context.

Therefore, it is interesting to explore that sustainability disclosure will influence the financial strength and how much firm value is generated from the operation under the COVID-19 outbreak in Thailand, which is an important goal to measure the performance of a business in line with the Sustainable Development Goals according to United Nations' expectation [10]. This is an another approach that a firm may adapt to improve its value which in turn be able to attract potential investors is Sustainability Disclosure – a strategy that aims to earn legitimacy in society. It is expected that heightened investor attention to the company may boost the company's value.

2. Theory

2.1. Sustainable Development Disclosure In Thailand

Sustainable Development Is An Idea That Has Been Mentioned For Several Years, Which Was Defined As The Process For Further Implementation To Provide Prolonged Wellness Without Depriving Potential To Achieve The Needs Of The Future Generations [11, 12]. The Sustainable Development Is The Sequel From Millennium Development Goals (Mdgs) Which Was Launched In 2000 By United Nations (Un). The Mdgs Were Defined For 8 Global

Goals And Monitored From 2000 Up To 2015 ^[13]. As The Result, Mdgs Were Dissatisfactory Regarding Goal Achievement Failure In 2015 ^[14].

Sustainable Development Goals (Sdgs) Was Initiated By United Nations In 2015 As The Sequel Of Mdgs. As The Same Direction, Sdgs Were Defined As 17 Global Goals By Covering Economics, Environment, Social And Corporate Governance Aspects. The Sdgs Is Closely Monitoring To Achieve The Global Goals In 2030 In Each Aspect ^[15]. Therefore, All Segments Needed To Encourage The Sdgs Including Private Business Segment.

Thaipat Institute, A Thai Organization That Facilitates Businesses, Governments And Other Organizations Understand And Communicate Corporate Social Responsibility And Sustainability Impacts, Launched Sdg-In-Progress Guidance In 2020 To Provide Compliance For Corporate Social Responsibility And Sustainability Development Disclosure In Business Segment. The Sdg-In-Progress Guidance Covers Four Sustainability Development Aspects I.E. Economics, Environment, Social, And Institute Aspects. Each Aspect Is Evaluated Several Factors (See Table 1).

Table 1 *Concerned Factors In Sustainability Development Aspects*

Sustainability Development Aspects	Concerned Factors
Economics	Firm Income
	Taxation
	New Investment
Social	Local Supplement
	Gender Equality
	Labor Rights
	Personnel Safety
Environment	Employment Transparency
	Water Management
	Waste Management
	Greenhouse Gas Emission
	Ozone Layer Depletion
Institute	Renewable Energy
	Governance
	Anti-Corruption

Source: Thaipat Institute ^[16]

The Sdg-In-Progress Implementation Could Support Sdgs And Provide Value To Business Through Entire Chain. Furthermore, Stock Exchange Of Thailand (Set) Also Cherished Sdgs By Raising Thailand Sustainability Investment (Thsi) To Reward Enlisted Firms Those Could Provide Sustainability Development Disclosure As Per Defined Criteria Based On Sustainability Index. Initiation Of Thailand Sustainability Investment (Thsi) Can Inspired Enlisted Firms To Conduct Sustainability Development Activities In Order To Be Included In Thsi ^[17]. Therefore, Sustainable Development Disclosure Becomes Important Action For Public Companies In Order To Attract Investment Decision.

2.2. Financial Strength

Financial Strength Is Firm's Financial System Status In Order To Define Potential To Be Sustainable And Long-Term Growth Firms. The Financial Strength Could Be Assessed Regarding Cost Management Ability And Also Capacity To Gain Considerable Return According To Investment. The Margin Between Return Over Cost Of Capital Could Be Known As Excess Return. So, A Positive Excess Return Indicates Higher Return Level Than The Level Of Capital Cost ^[18].

Generally, The Excess Return Is An Important Indicator Of Company Performance Which Is Directly Impacted With Shareholders' Wealth Over Time. The Elevated Profitability Is Expected In Order To Attract Investor Attention So That It Will Raise The Firm Financial Strength ^[5]. Thus, Er Will Be More Likely To Increase By The Implementations Of Sustainable Development Activities, Which, In Turn, The Firm Value Will Also Rise.

2.3. Firm Value

Firm Value Is A Measurement That Is Gaining Attention And Several Organizations Designed The Objective Of Business Development In Order To Add More Value To The Business ^[19]. In Fact, There Are Several Assessment Methodologies In Order To Evaluate Firm Value, And One Well-Known Parameter Which Often Used Is Tobin's Q Ratio. Reason Why The Tobin's Q Ratio Is Usually Applied To Reflect Firm Value Because The Tobin's Q Ratio Could Provide A Scheme To Compare How Firm Or Stock Market Evaluation Changes With Added Relevant Products And Markets ^[20]. Hence, Application Of Tobin's Q Ratio Will Be Beneficial For Firm In Order To Acknowledge Current Market Position And Market Share.

3. Material and methods

This Research Is A Quantitative Study Using Secondary Data Taken From Annual Financial Statements And Sustainability Report (If Any) Of Companies Enlisted In The Stock Exchange Of Thailand (Set) Over 2019-2021 In Order To Cover All Covid-19 Period Up To Present Year. Data Were Obtained From The Website <https://www.set.or.th> And <https://www.setsmart.com>. The Sample Consisted Of 180 Enlisted Firms With 540 Observations By Multi-Stage Sampling With Probability-Based Approach. Sample Size Is In 10 – 20 Times Of Total Observed Variables (17 Observed Variables) Regarding Sem Requirement ^[21].

In This Research, Variable Evaluation Could Be Conducted By Sustainability Disclosure Index Is Assessed For Sustainability Development, Financial Strength Is Evaluated According To Excess Return (With Corporate Tax Rate 20%) ^[22] And Tobin's Q Can Reflect Firm Value, Respectively. All Formula Adopted In This Research Are Declared In Table 2;

Table 2 Summary Formula

Variables	Measured Parameters	Formulation	Explanation
Sustainability Development	Sustainability Development Index (Sdi)	$Sdi = \frac{\sum(Ds)}{N}$	$\sum(Ds)$ Means Total Disclosure Score Of Each Factor N Means Total Factors In Each Aspect Roic Means Return On Investment Capital
Financial Strength	Excess Return (Er)	$Er = Roic - Wacc$	Wacc Means Weighted Average Cost Of Capital
Firm Value	Tobin's Q (Tq)	$Tq = \frac{Mve + Td}{Ta}$	Mve Means Market Value Of Equity Td Means Total Debt Ta Means Total Asset

Descriptive Statistics Analysis In Performed To Provide Mean and Standard Deviation (Sd) Of Dataset.

Then, Path Analysis Among Variables Will Be Studied Via Structural Equation Model (Sem) Synthesis By Using Spss Amos Software As Research Model Framework Is As Figure 1;

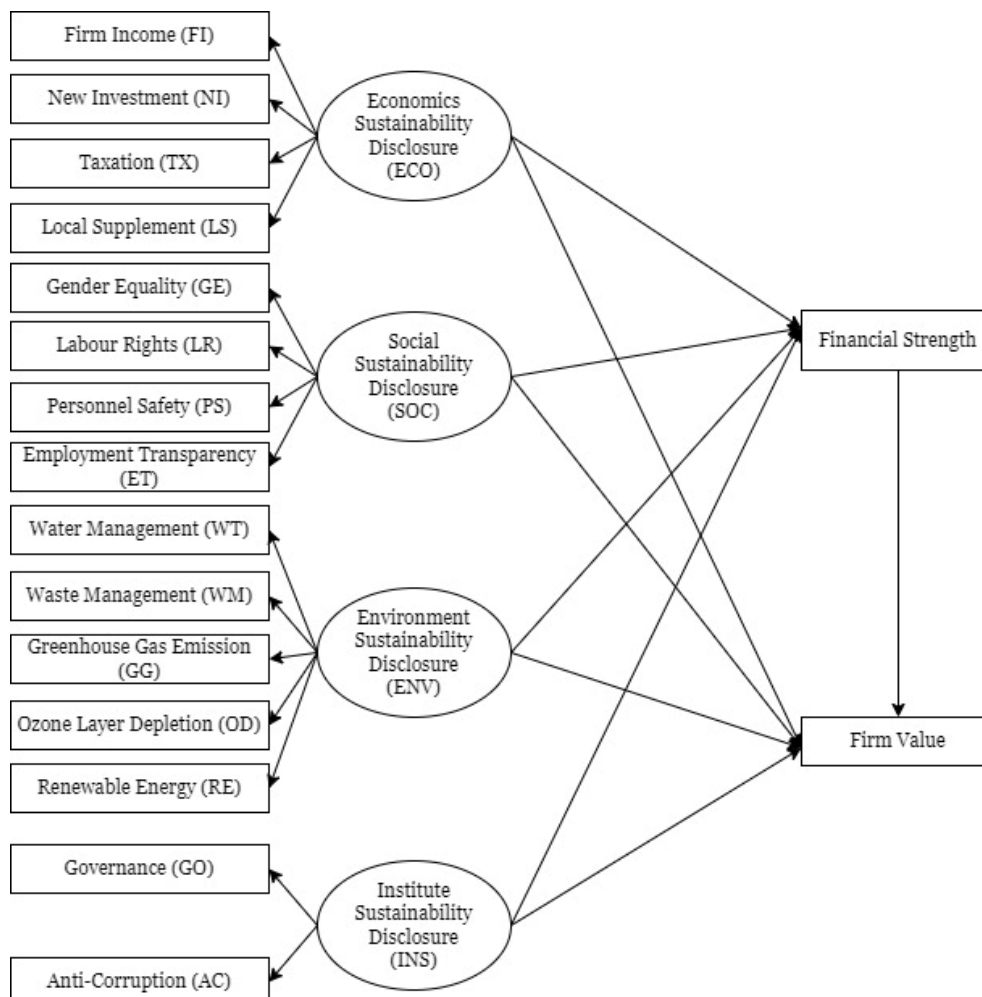


Figure 1 Research Structural Equation Model (Sem) Framework

4. Results and Discussions

4.1. Descriptive Statistics Analysis

Descriptive Statistics Was Analyzed For Mean And Standard Deviation. Result Found That Social Sustainability Development Aspect Shows The Highest Sdi When Compares To Other Aspects During Covid-19 Outbreak. In Addition, Disclosure Of Economics And Environment Sustainability Development Aspects Showed Dissatisfied Result Because Enlisted Firms Have Capacity To Reveal Economics And Environment Sustainability Development Aspects Lower Than A Half From Total Concerned Factors In Each Aspect. Financial Strength Displayed Positive Result Which Means Overall Enlisted Firms Could Maintain Financial Strength Well Even In Covid-19 Outbreak. Furthermore, Firm Value Also Provided Satisfied Result Regarding Tobin's Q Ratio Is Greater Than 1.00 Which Means Enlisted Firms In Set Could Cultivate Business Value Thorough Covid-19 Outbreak. Descriptive Statistics Result Of The Dataset Is Summarized In Table 3.

Table 3 Descriptive Statistics

Variables	Mean	Sd
Sustainability Development		
Economics Sustainability Development	0.40	0.221
Social Sustainability Development	0.65	0.016
Environment Sustainability Development	0.42	0.018
Institute Sustainability Development	0.62	0.009
Financial Strength		
Excess Return	2.12	5.630
Firm Value		
Tobin's Q Ratio	1.39	0.079

4.2. Path Analysis

Path Analysis Is Explored To Ensure Effect Level Among Studied Variables By Consisting Of Total Effect (Te), Direct Effect (De) And Indirect Effect (Ie). Fit Indices I.E. Chi-Square (X^2), Comparative Fit Index (Cfi), Standardized Root Mean Square Residual (Srmr) And Root Mean Square Error Of Approximation (Rmse) Need To Be Evaluated According To Criteria Prior Further Applications As Table 4 ^[21]. Result Of Path Effect Displayed In Table 5.

Table 4 Criteria Of Fit Indices

Fit Indices	Criteria*	Result	Interpretation
Chi-Square (X^2)	Significant P-Values Expected [†]	Significant P-Value (P- Value = 0.00)	Passed
Cfi	Above 0.92	0.97	Passed
Srmr	0.08 Or Less	0.05	Passed
Rmse	0.07 Or Less	0.059	Passed

Criteria Considered From Total Number Of Observed Variables In This Research (17 Variables) With Sample Size 540 Observations.

[†] Significant Level (P-Value < 0.05)

Table 5 Path Analysis Summary

Variables	Effect Type	Independent Variables				Financial Strength
		ECO	SOC	ENV	INS	
Financial Strength	DE	0.55*	-0.09*	-0.10*	0.10*	-
	IE	-	-	-	-	-
	TE	0.55*	-0.09*	-0.10*	0.10*	-
Firm Value	DE	0.64*	-0.38*	0.11*	0.12*	0.53*
	IE	0.29*	-0.05*	-0.05*	0.05*	-
	TE	0.93*	-0.43*	0.06*	0.17*	0.53*

Fit Indices: Chi-square (χ^2) showed significant (p-value = 0.00); CFI = 0.97; SRMR = 0.05; RMSEA = 0.059

* Significant Level (p-value < 0.05)

All Fit Indices Passed Acceptance Criteria As Per Table 4. Thus, The Dataset Could Be Interpreted, Accordingly. Regarding Table 5, Economics Sustainable Development Disclosure Showed 0.55 As Total Effect Towards Financial Strength And 0.93 As Total Effect Towards Firm Value (Which Consists Of 0.64 As Direct Effect And 0.29 As Indirect Effect) Significantly At 0.05 Level. As The Result, The Economics Sustainable Development Disclosure Provides Positive Effect Towards Both Of Financial Strength And Firm Value Because Economics Aspect Could Support Both Macro-Economics (E.G. Taxation Support) And Micro-Economics (E.G. Supplement From Local Product). Therefore, Economics Sustainable Development Disclosure Could Show Firm's Wealth and Investment Potential and Lead to Raise Long-Term Financial Strength and Firm Value Efficiently.

Social Sustainable Development Disclosure Showed Negative Effect As Total Effect Towards Financial Strength (-0.09) And Firm Value (Total Effect Is -0.43 Which Consists Of 0.38 As Direct Effect And -0.05 As Indirect Effect) Significantly At 0.05 Level. During Covid-19 Outbreak, Firms Needed To Increase Employee's Health Insurance And Other Relevant Human Resource Supportive Which Led To Elevate Expenses For Employee Investment According To Thai Ministry Of Public Health's Announcement ^[23]. Even Aforementioned Actions Could Provide Safety And Carefulness To Personnel, Firms Had To Carry Greater Expenses As Well With Limited Incomes According To Trading Obstructions During Covid-19 Outbreak. Consequently, Social Sustainable Development Disclosure Showed Negative Effect Towards Financial Strength And Firm Value. Nevertheless, Firms Need To Give More Attention To Social Sustainable Development, Not Only To Serve Sdgs, But Also Maintain Employee's Loyalty Where Firms Could Maintain Safety Perception And Reduce High Employee Turn-Over Rate As Well Especially During Post-Covid Era.

Environment Sustainable Development Disclosure Showed -0.10 As Total Effect Towards Financial Strength And 0.06 As Total Effect Towards Firm Value (Which Consists Of 0.11 As Direct Effect And -0.05 As Indirect Effect) Significantly At 0.05 Level. Environmental Sustainable Development Disclosure Practices Provided Negative Effect Towards Financial Strength And Firm Value In Terms Of Total Effect, Direct Effect And Indirect Effect Over The Research Period As Depicted In Table 5. This Result Reflects That Resource Depletion And The Effects Of Climate Change Are Some Of The Prominent Environmental Realities That Entrepreneurs Among Enlisted Firm In Set Shall Consider To Ensure Sdg. In Addition, Since Carbon Tax Policy Encouraged All Firms Which Supported Environmental Friendly Investment By Providing Privilege For Exportation Fee Especially In European Union ^[24]. This Policy Led Parts Of Thai Firm Gained Awareness And Invested In Environmental Friendly Technology, Which Impacted Negatively To Financial Strength. However, Environmental Investment Could Provide Prolonged Firm Value And Create Firm Sustainability According To Positive Effect Of Environment Sustainable Development Towards Firm Value.

Institute Sustainable Development Disclosure Showed 0.10 As Total Effect Towards Financial Strength And 0.17 As Total Effect Towards Firm Value (Which Consists Of 0.12 As Direct Effect And 0.05 As Indirect Effect) Significantly At 0.05 Level. Result Could Be Explained As Traditional Corporate Social Responsibility In Thailand Focused On Economics, Social And Environment Aspects. While, The Institute Sustainable Development Disclosure Was Effective According To Sdg-In-Progress By Thaipat Institute In 2020, And This Guidance Applied To Evaluated Annual Thsi Led Elevated Awareness Among Enlisted Firms Currently. Furthermore, The Concerned Factors Related To Institute Sustainable Development Disclosure Did Not Require For Investment Funding, So Firms Could Gain Disclosure Scores Without Massive Budget. Aforementioned Considerations Showed Correlation To The Result That

Institute Sustainable Development Disclosure Positively Affects Towards Financial Strength And Firm Value.

Lastly, Financial Strength Showed Positive Effect Towards Firm Value. Financial Strength Could Explain Firm's Profitability And Cost Management Efficiency Which Led Firm's Spare Funds Especially Bigger Firms ^[25]. These Funds Could Conduct Investment To Support Sdg-Related Activities And Escalate Prolonged Value Chain In Consequence.

5. Conclusions

Sustainability Development Disclosure Will Continue To Threaten The Longevity Of Firms And Society As The Competition For Resources Constantly Intensifies. Ultimately, It Has Now Become More Crucial Than Ever That Firms Acknowledge Corporate Sustainability Challenges And Actively Manage Their Sdg Risks. It Is Essential That Stakeholders, Such As Shareholders, Suppliers And Customers, Should Well-Prepared By Acknowledging That Sustainability Development Aspects Should Be Considered And Accounted For Over The Long Run To Create Value In A Sustainable Practice. Future Researchers Are Hence Encouraged To Consider A Longer Research Period When Exploration Impacts Between Covid-19 And Post Covid-19 Era.

References

- Q. Wang, R. Huang, The impact of COVID-19 pandemic on sustainable development goals-a survey, *Environmental Research* 202 (2021) 111637.
<https://doi.org/10.1016/j.envres.2021.111637>
- R. Fenner, T. Cernev, The implications of the COVID-19 pandemic for delivering the Sustainable Development Goals, *Futures* 128 (2021) 102726.
<https://doi.org/10.1016/j.futures.2021.102726>
- K. Shulla, B. F. Voigt, S. Cibian, G. Scandone, E. Martinez, F. Nelkovski, P. Salehi, Effects Of Covid-19 On The Sustainable Development Goals (Sdgs), *Discover Sustainability* 2 (1) (2021) 1–19. <https://doi.org/10.1007/S43621-021-00026-X>
- L. Vargas, Corporate Social Responsibility And Financial Performance: Gic's Share Price Value Impact, *Corporate Responsibility And Stakeholding* 10 (2016),165-177.
<https://doi.org/10.1108/S2043-052320160000010012>
- H. Brilliant, E. Collins, *Why Moats Matter: The Morningstar Approach To Stock Investing*, First Ed., Wiley, New York, 2014.
- F. Hayashi, Tobin's Marginal Q And Average Q: A Neoclassical Interpretation, *Econometrica* 50 (1) (1982) 213-224.
- D. Malinic, Value-Based Management, Long Term Sustainability And Corporate Social Responsibility. *Facta Universitatis, Series: Economics And Organization*, 18 (4) (2021) 357–367. <https://doi.org/10.22190/Fueo210618025m>
- S. Nagaoka, K. Motohashi, A. Goto, Patent Statistics As An Innovation Indicator, *Handbook Of The Economics Of Innovation*, 2 (2010) 1083-1127.
[https://doi.org/10.1016/S0169-7218\(10\)02009-5](https://doi.org/10.1016/S0169-7218(10)02009-5)
- B. Buchanan, C. X. Cao, C. Chen, Corporate Social Responsibility, Firm Value, And Influential Institutional Ownership, *Journal Of Corporate Finance* 52 (2018) 73-95.
<https://doi.org/10.1016/J.Jcorpfin.2018.07.004>
- Unccc, Report Of The Conference Of The Parties On Its Twenty-Fifth Session, *Fccc/Cp/2019/13* (2020) 1-23.

- United Nations General Assembly, Report Of The World Commission On Environment And Development: Our Common Future., A/42/427 (1987) 1-374.
- S. Acar, E. Yeldan, Handbook Of Green Economics, Academic Press, Massachusetts, 2019.
- United Nations Millennium Summit, United Nations Millennium Declaration, Dept. Of Public Information, New York, 2000.
- United Nations General Assembly, Resolution Adopted By The General Assembly, A/Res/69/314 (2015) 1-5.
- United Nations Sustainable Development Solutions Network, Transforming Our World: The 2030 Agenda For Sustainable Development. <https://Sdgs.Un.Org/2030agenda>, 2015 (Accessed 13 July 2022).
- Thaipat Institute, Corporate Sdg Impact: From Purpose To Performance, Thaipat Institute Press, Bangkok, 2020.
- Stock Exchange Of Thailand, Criteria And Guideline: Corporate Sustainability Assessment 2022 For Thailand Sustainability Investment (Thsi), Sustainable Development Department, Bangkok, 2022.
- Golinski, P. Spencer, The Advantages Of Using Excess Returns To Model The Term Structure, Journal Of Financial Economics, 125 (1) (2017) 163-181. <https://doi.org/10.1016/j.jfineco.2017.05.001>
- J. Schmidt, Valuation: The Process Of Determining The Present Value Of A Company Or An Asset, Corporate Finance Institute. <https://corporatefinanceinstitute.com/resources/valuation/valuation/>, 2022 (Accessed 13 September 2022).
- L. H. Summers, B. P. Bosworth, J. Tobin, P. M. White, Taxation And Corporate Investment: A Q-Theory Approach, Brookings Papers On Economic Activity, 1981 (1) (1981) 67-140. <https://doi.org/10.2307/2534397>
- J. F. Hair, W. C. Black, B. J. Babin, R. E. Anderson, Multivariate Data Analysis, Eighth Ed., Cengage, Massachusetts, 2019.
- Thai Revenue Department, Act Amending The Revenue Code (No. 42), Government Gazette, 2016.
- Ministry Of Public Health, Territories Outside The Kingdom Of Thailand Defined As Disease Infected Zones Of The Coronavirus Disease 2019 (Covid-19) Outbreak, Government Gazette, 2020.
- Bangkok Post, Excise Department Says Carbon Tax In The Pipeline. <https://www.bangkokpost.com/business/2389560/excise-department-says-carbon-tax-in-the-pipeline>, 2022 (Accessed 15 December 2022).
- D. Phoprachak, Influence Of Firm Size On Cost Of Capital Through Corporate Social Responsibility Disclosure Of The Listed Companies In The Stock Exchange Of Thailand, Psaku International Journal Of Interdisciplinary Research, 7 (1) (2018) 171-181. <http://dx.doi.org/10.2139/ssrn.3226544>