การพัฒนาอย่างยั่งยืนและผลการดำเนินงานของกิจการ: หลักฐานเชิงประจักษ์จากประเทศไทย

Sustainable Development and Firm Performance: Evidence from Thailand

พลวัฒน์ เลิศกุลวัฒน์ และสุธาวัลย์ พฤกษ์อำไพ
Polwat Lerskullawat, Suthawan Prukumpai

คณะบริหารธุรกิจ มหาวิทยาลัยเกษตรศาสตร์ ประเทศไทย
Faculty of Business Administration, Kasetsart University, Thailand
Email: fbuspwl@ku.ac.th, fbusswp@ku.ac.th

บทคัดย่อ

กรอบแนวคิดการพัฒนาอย่างยั่งยืนได้ขยายมุมมองของกิจการจากการสร้างความมั่งคั่งสูงสุดให้แก่ผู้ถือหุ้นเพียงกลุ่มเดียวมาครอบคลุมผู้มีส่วนได้ส่วนเสียของกิจการ รวมถึงการให้ความสำคัญกับการพัฒนาสิ่งแวดล้อมและสังคม งานวิจัยชิ้นนี้มีวัตถุประสงค์เพื่อศึกษาว่าการพัฒนาอย่างยั่งยืนมีความสัมพันธ์กับผลการดำเนินงานของกิจการหรือไม่ เนื่องจากตลาดหลักทรัพย์แห่งประเทศไทยได้เริ่มประกาศรายชื่อหุ้นยั่งยืนในปี พ.ศ. 2558 เพื่อเป็นทางเลือกให้แก่นักลงทุนที่สนใจลงทุนในกิจการที่มีความโดดเด่นด้านความรับผิดชอบต่อสังคม ดังนั้นงานวิจัยชิ้นนี้จึงใช้รายชื่อหุ้นยั่งยืนเป็นตัวแทนของกิจการที่ให้ความสำคัญกับการพัฒนาอย่างยั่งยืน นอกจากนี้ ได้มีการจับคู่กิจการที่มีขนาดหรือมูลค่ากิจการที่ใกล้เคียงกันแต่ไม่ได้อยู่ในรายชื่อหุ้นยั่งยืนเป็นกลุ่มเปรียบเทียบ ซึ่งการจับคู่กิจการด้วยวิธีดังกล่าวจะช่วยลดโอกาสเกิดปัญหาความแปรปรวนไม่คงที่ โดยกลุ่มตัวอย่างที่ใช้ในการศึกษาในปีพ.ศ. 2558 – 2559 ประกอบด้วยกิจการที่อยู่ในรายชื่อหุ้นยั่งยืน 66 กิจการ และกิจการที่ไม่อยู่ในรายชื่อหุ้นยั่งยืน 56 กิจการ รวมทั้งหมด 122 กิจการ งานวิจัยนี้มีการวัดผลการดำเนินงานของกิจการทั้งมุมมองทางบัญชีซึ่งวัดจากผลตอบแทนต่อสินทรัพย์และผลตอบแทนต่อส่วนของเจ้าของ และมุมมองทางเศรษฐศาสตร์ซึ่งวัดจากมูลค่าเพิ่มทางเศรษฐศาสตร์ ผลการศึกษาไม่พบความแตกต่างของผลการดำเนินงานระหว่างกิจการที่อยู่รายชื่อหุ้นยั่งยืนและไม่อยู่ในรายชื่อหุ้นยั่งยืน อย่างไรก็ตาม ผลการศึกษานี้ไม่ได้ลดทอนความสำคัญของความรับผิดชอบต่อสังคมของกิจการ หากแต่ต้นทุนในการสร้างความรับผิดชอบต่อสังคมนั้นมีผลกระทบต่อผลการดำเนินงานทางการเงินทันที ในขณะที่ประโยชน์ที่จะได้รับจากการสร้างความรับผิดชอบต่อสังคมเช่น ภาพลักษณ์และชื่อเสียงของกิจการ อาจไม่ได้แสดงอยู่ในผลการดำเนินงานทางการเงินในระยะสั้น นอกจากนี้ การไม่พบความสัมพันธ์ดังกล่าวอาจเนื่องมาจากการหักล้างกันระหว่างต้นทุนและประโยชน์จากการสร้างความรับผิดชอบต่อสังคม

คำสำคัญ: การพัฒนาอย่างยั่งยืน ผลการดำเนินงานของกิจการ ตลาดหลักทรัพย์แห่งประเทศไทย JEL: M14

Abstract

The sustainability framework shifts the firm's management paradigm from simply maximising shareholders' wealth to also considering the wider interests of stakeholders as well as environmental and social developments. This study aims to examine whether sustainable development has a significant link with firm performance. Since the Stock Exchange of Thailand has just launched the list of firms that were announced as part of the "Thai Sustainability Investment (THSI)" scheme in 2015, we use the firms has passed the sustainability criteria as the representative of firms with superior sustainable developme

The size-matched firms have not passed these criteria are used as a comparative group. The matched pair design is employed to reduce the heteroscedasticity between the groups. The total sample was finalised as 122 firms: 66 from the Thai Sustainability Investment list, and 56 with a similar size, based on market capitalisation. To measure firm performance, we use both accounting base (return on asset – ROA and return on equity – ROE) and economic base (the economic value added – EVA). The results show no differences in performance between the Thai Sustainability Investment firms and the matched ones. However, our result does not discourage the firms or investors to ignore the importance of corporate social responsible (CSR). Rather, the costs of CSR are immediate but the benefits – image and reputation are not often realised in a few years. In addition, the cost incurred from the explicit claims may offset by the gain from CSR.

Keywords: Sustainable Development; Firm Performance; Stock Exchange of Thailand JEL: M14, M4

Paper type: Research

1. Introduction

The objective of firms is to maximise their value, as well as their shareholders' wealth. In order to reach this goal, both corporate governance (hereafter CG) and the long-term corporate sustainability strategy (also known as corporate social responsibility, hereafter CSR) have recently attracted the attention of management in the areas of environmental and social issues (Goyal et al., 2013; Ruangviset et al., 2014). According to the agency theory, there is a conflict of interest between principle and agent: the conflict between shareholders and managers, the conflict between major shareholders and minority ones, and the conflict between shareholders and creditors (Jensen and Meckling, 1976). Specifically, agency problems could occur when each group has different interest and asymmetric information. Therefore, the group with superior information may try to exploit the benefit by posting the cost to the others. As a result, firm should have proper mechanism to align the interests of the agent with those of the principle. Ruangviset et al. (2014) claim that CG is both an internal and external mechanism, the latter leading to CSR.

Even the firm's management paradigm has been shifting from simply maximising shareholders' wealth to also considering the wider interests of stakeholders as well as environmental and social developments, there remains some doubt as to whether there is any relationship between CSR and firm performance. The positive link is explained by the improvement in reputation for being socially responsible and hence reduce the costly explicit claims. However, the firms may have higher cost associated with CSR and then have disadvantage performance compare to the others – less responsible firms. Lastly, the cost incurred from the explicit claims may offset by the gain from CSR, therefore no significant relationship is found.

In Thailand particularly, CSR, as a consequence of CG, seems to have become more important during the last decade. This was first seen in 2002, when the Stock Exchange of Thailand (hereafter SET)

established the Corporate Governance Centre to help listed companies develop their corporate governance system by complying with international assessment regarding the improvement of CG[1]. As a consequence, the voluntary CG rating was subsequently introduced in 2008. In 2007, the SET also set up the Social Responsibility centre (SR centre) to continue the long-term sustainable growth of the capital market and recently launched the "Thailand Sustainability Investment (THSI, hereafter)" scheme in 2015 by applying Economic, Social and Governance (ESG) criteria[2]. Moreover, the companies listed on the SET have been required to disclose the CSR activities either in annual report (Form 56-1) or in sustainability report since 2014.

Even the SET just has launched THSI in 2015, there is an increasing number of firms participating in this assessment. This is reflecting that listed companies have not only focus on good economic returns, but also have been focusing more on engaging in activities contribute to sustainable growth. Therefore, this paper aims to extend the research in Thailand on whether there is an association between sustainable development and firm performance. The contribution intends to shed more light on CSR and whether such activities are useful for firms. Investors and managers can be alerted when their target firms spend more on CSR activities in order to improve their social image.

2. Literature Review

Many factors, both internal and external, drive firm performance. Hansen and Wernerfelt (1989) point out that internal determinations are developed on behavioural and sociological paradigms in order to suit the environment appropriately. CG would be an interesting determinant to control the agency problem in the organisational environment. Several previous studies have shown that CG relates positively to firm performance, and also that a rise in CG is caused by the agency problem. When CG becomes more important, Ruangviset et al. (2014) indicate that it focuses subsequently on an external mechanism, which is CSR. Existing studies (e.g. Bauer et al., 2008; Bhagat and Bolton, 2008) find a positive relationship between CG and firm performance. With regard to the positive relationship, it could be claimed that good CG should lead to more CSR and have a positive effect on firm performance. Alexander and Bucholtz (1978) explain that firms with good social responsibility credentials have gained reputation and hence could reduce the costly explicit claims. They have less risk of negative rare events, in particular. Several studies report a positive relationship between CSR and firm performance: for instance, Lopez et al. (2007), Barnett (2007), Cortez and Cudia (2011), Goyal et al. (2013), Eccles et al. (2014) and Dimitropoulos and Vrondou (2015). Interestingly, Lopez et al. (2007) apply their sample based on the DJSI[3] which is different from other studies. This is because the DJSI could link up with the financial markets. Moreover, it is found that CSR helps to reduce some corporate conflicts and can raise firm value to some extent. This is supported by the studies of Ngwakwe (2008) and Servaes and Tamayo (2013). Analysing data from Nigeria, Ngwakwe (2008) discovers that CSR activities not only affect corporate performance and corporate image, but that such activities also reduce the amount paid in fines and penalties. Moreover, Servaes and Tamayo (2013) reveal that firm value is increased by CSR via the customer channel.

However, the socially responsible firms will be at a competitive disadvantage once they invested largely in CSR and then there is a negative association. Singal (2014) suggests that although CSR relates positively with financial performance[4], firms should continue to invest in it

[1] For further details see the SET website: http://www.set.or.th/sustainable_dev/en/cg/history_p1.html [accessed on 12.08.2017].

[2] According to the SET, Thailand Sustainability Investment is the record of listed companies with corporate sustainable development by selecting companies which have passed the criteria specified by economic, social and environment indicators. For further details see the SET website: http://www.set.or.th/sustainable_dev/en/sr/sd/evaluation_p1.html [accessed on 12.08.2017].

[3] DJSI stands for Dow Jones Sustainability Index; see more information at: http://www.sustainability-indices.com/ [accessed on 20.11.2016].

[4] According to Goyal et al. (2013), firm performance consists of two categories: namely, financial and non-

(and other environmental activities), even if their financial performance underperforms. Even though the previous literature reveals that CSR does affect corporate performance positively, some studies find either mixed results or no relationship (e.g. Sarumpaet, 2005; Nor et al., 2016). Kang and Shivdasani (1995) find negative relationship between CSR and firm performance in Japanese firms.

Previous research has employed several CSR measures. Firstly, the expert evaluations of corporate policies using content analysis. The validity of this method depends on the skill and the consistency of those who making the assessments.Secondly, the CSR index constructed by reliable agency. Lastly, the amount of CSR activities both in term of finance and non-finance. Even the third method is the direct measure of CSR, it subjects to the data limitation. Therefore, most recent studies rely their research on the second method. The examples of CSR index are DJSI which initial covering the S&P stocks and now expanding to global markets, FTSE4Good[5], and MSCI World SRI[6] which covering developed markets. Even these indices are provided by different organisations, they share the same criterion on weighting the score to Environmental, Social and Governance (ESG) as guided by Global Reporting Initiative (GRI). In Thailand, the SET also employ the similar framework to construct the THSI list Specifically, the sustainability assessment questionnaires cover social, economic, and environmental dimensions, as well as corporate governance. Companies selected for THSI list must get at least 50 percent on each dimension. In addition, companies can be automatically added to THSI list if they have been selected as a member of DJSI.

Furthermore, there are currently two approaches to conduct the firm performance: (1) with accounting based and (2) with economic based. The traditional accounting based; returns on asset (ROA) and returns on equity (ROE), is widely used in literature (e.g. Hertzel et al., 2002; Fu, 2010; and Akbar, 2014). This study provides an extension to the economic based as the robustness proxy for firm performance. The traditional accounting-based measures are always criticised for their inability to measure economic profitability. Stewart (1991) proposes that the economic based measures attempt to include a firm's cost of capital and to adjust accounting information in order to remove some of the accounting distortions contained in traditional ones. Therefore, performance exceeds the cost of capital enhances the firm value while the failure to be above the cost of capital results in the destruction of the firm value. The most popular economic-based measures are economic value added (EVA) which is calculated by comparing a firm's net operating profit after tax (NOPAT) to the total cost of capital.

Since CSR in Thailand has become more of a concern after the establishment of the SR centre in 2007, this paper intends to forward the hypothesis that sustainability development (referred to as CSR) relates to firm performance. The outcomes will confirm whether our results match those from the previous literature. As a result, the hypothesis of the paper is that there is:

H_0: Firms with superior sustainable development *(*THSI group*)* do not have better firm performances than those not in THSI group.

3. Data and Methodology

Since 2015, the firms listed on both SET and mai are announced by the SR centre as initial candidates. This is categorised by the questionnaires issued by the SR centre, regarding the CG and CSR. The questionnaires contain in three parts: namely economy, environment and sociality, and additionally divided into 19 sections, with 42 in total. For the interview, it remains focusing in depth on these 19 sections. Some examples topics are code of conduct, risk management, materiality, customer service

financial performance. The latter includes: (1) marketing performance, (2) human resource performance and (3) operational performance.

[5] The FTSE4Good Index Series is designed to measure the performance of companies demonstrating strong Environmental, Social and Governance (ESG) practices: see more information at: http://www.ftse.com/products /indices/FTSE4Good [accessed on 01.04.2018].

[6] The MSCI World SRI Index includes large and mid-cap stocks across 23 Developed Markets countries: see more information at www.msci.com [accessed on 01.04.2018]

management, supply chain management, the use of natural resource effectiveness, etc. Subsequently, the SR centre will interview and consider the firms which pass their regulations and come up with the lists of firms in THSI[7]. Consequently, the firms listed on THSI each year would be the best representative CSR firms. This paper will, therefore, use sample selections and develop its estimation similar to those of Lopez et al. (2007).

3.1 Data collection

The THSI lists reported by the SET in 2015 and 2016 are used in this study. Interestingly, 80 percent of firms listed on THSI 2015 would remain in the THSI in subsequent years. Furthermore, the matched firms are collected based on the condition that they cannot be assigned to THSI. In order to reduce the heteroscedasticity between groups, these matched firms are similar in size to the THSI firms, measured by their market capitalisation. Consequently, the total sample consists of 122 firms – 66 THSI firms and 56 matched firms. The descriptive statistics of the final sample are shown in Table 1, whereas the univariate test between the THSI firms and the matched firms are presented in Table 2.

As can be seen in Table 1, more socially responsible firms are typically from resource industry. In average, firms from finance industry are the biggest in size whereas firms from consumer product industry are the smallest ones. According to the accounting performance, both ROA are ROE are positive number for all industries where technology group shows the highest accounting performance. However, none has reported the positive EVA. Agricultural and technology groups have the highest asset utilisation. Property and construction group has the highest DE ratio which is about three times of consumer product group. Lastly, the average annual stock returns are highest for agricultural group followed by industrial group. The technology group ranks the lowest one.

The univariate test of the difference between THSI and matched group are summarised in Table 2. The natural logarithm is applied to the market capitalisation due to very high standard deviation. As can be seen in Table 2, there is no difference in firm performance both accounting based and economic based. In addition, they are similar in their characteristics: size, asset turnover, DE ratio, and stock performance as indicated by insignificant t-statistics.

[1] For full regulations and criteria of firms to be listed on the THSI, see https://www.set.or.th/sustainable_dev/th/sr/sd/files/awards2017_criteria.pdf [accessed on 03.04.2018].

Table 1: Descriptive statistics

The table shows the descriptive statistics of the final sample of 122 firms categorised by industry. The average market capitalisations are shown as the average values for each industry (combined THSI and matched firms) in millions of Thai baht (THB). The matched firms are selected based on the most similar market capitalisation and industry. ROA is the return on asset. ROE is the return on equity. EVA is economic value added scaled by total asset. The EVA calculates via the idea of Stewart (1991) as: NOPAT – (WACC × Capital). Asset turnover refers to the revenue-to-total asset ratio. DE is debt-to-equity ratio. Return represents the stock return average for one year. S.D. stands for the standard deviation.

Industries	Local code	Number of firms (Total of 122 firms)		Market Capitalisation (millions THB)		ROA		ROE		EVA		Asset Turnover		DE		Return	
		THSI	Matched	Average	S.D.	Average	S.D.	Average	S.D.	Average	S.D.	Average	S.D.	Average	S.D.	Average	S.D.
1. Agro and Food Industry	AGRO	9	5	45,693.13	58,651.36	8.70	6.85	12.58	10.76	-1.84	5.81	1.06	0.61	79.00	73.90	0.41	0.94
2. Consumer Products	CONSUMP	5	2	3,674.35	2,960.90	5.31	7.73	6.98	13.71	-1.22	1.83	0.76	0.19	33.83	37.58	-0.06	0.19
3. Financials	FINCIAL	6	9	129,533.31	157,979.05	6.91	9.93	16.81	9.35	-0.01	0.02	0.19	0.18	86.49	75.21	-0.00	0.15
4. Industrials	INDUS	8	4	35,830.68	78,114.90	6.03	3.41	8.71	6.07	-0.17	0.18	0.99	0.36	55.68	62.75	0.20	0.52
5. Property and Construction	PROPCON	8	12	69,049.08	131,347.07	5.47	6.25	8.69	20.11	-0.05	0.09	0.53	0.30	90.52	71.92	-0.05	0.17
6. Resources	RESOURC	15	5	103,212.26	195,499.01	6.64	4.33	11.62	9.16	-0.07	0.27	0.73	0.68	85.04	54.49	0.15	0.33
7. Services	SERVICE	9	18	101,496.91	141620.34	8.49	8.96	15.02	18.90	-0.75	2.30	0.83	0.78	85.08	129.47	0.16	0.24
8. Technology	TECH	6	1	117,056.10	155,549.54	9.04	15.52	22.63	38.04	-0.09	0.25	1.04	1.12	81.44	72.83	-0.08	0.33
Total		**66**	**56**	**82,323.18**	**138,885.12**	**7.13**	**7.78**	**12.72**	**16.60**	**-0.49**	**2.23**	**0.74**	**0.64**	**79.40**	**83.83**	**0.11**	**0.43**

Table 2: Univariate test

The table presents the univariate test of the mean different between THSI group (66 firms) and match-firm group (56 firms). ROA is the return on asset. ROE is the return on equity. EVA is economic value added scaled by total asset. The EVA calculates via the idea of Stewart (1991) as: NOPAT – (WACC × Capital). MCAP is defined as the natural logarithm of market capitalisation. Asset turnover (ASSTURN) refers to the revenue-to-total asset ratio. DE is debt-to-equity ratio. Return (RET) represents the stock return average for one year.

variable	THSI	Matched	t-stat	p-value
ROA	7.369	6.842	0.371	0.711
ROE	13.132	12.234	0.297	0.767
EVA	-0.171	-0.886	1.537	0.128
MCAP	11.555	10.942	1.914	0.058
ASSTURN	82.491	75.757	0.306	0.760
DE	0.081	0.144	-0.809	0.420
RET	0.780	0.683	0.839	0.403

* significant at 10%, ** significant at 5%, *** significant at 1%

3.2 Methodology

To test the hypothesis, the multiple regression is built by pursuing the suggestions of Lopez et al. (2007), as follow:

$$\mathrm{FIRM\_PER_i} = \alpha_i + \beta_1 \mathrm{THSI_i} + \beta_2 \mathrm{ASSTURN_i} + \beta_3 \mathrm{MCAP_i} + \beta_4 \mathrm{DE_i} + \beta_5 \mathrm{RET_i} + \sum_{j=6}^{12} \mathrm{D_{j,i}} + \varepsilon_i$$

Where

$\mathrm{FIRM\_PER_i}$ = The performance for firm i: ROA, ROE or EVA.

$\mathrm{THSI_i}$ = Dummy variable equal to 1 when firm i is assigned to THSI and zero otherwise.

$\mathrm{ASSTURN_i}$ = Asset turnover for firm i, calculated as revenue to total assets

$\mathrm{MCAP_i}$ = Natural logarithm of market capitalisation for firm i

$\mathrm{DE_i}$ = The debt-to-equity ratio for firm i

$\mathrm{RET_i}$ = The annual stock returns for firm i

$\mathrm{D_{j,i}}$ = Dummy variable on the industries in the SET, equal to 1 when it is on the target industry and zero, otherwise.

All the variables are obtained from Thomson Reuters DataStream. The THSI is a dummy variable which equals 1 if the firms are assigned to THSI and zero otherwise. The asset turnover (ASSTURN) is employed as the proxy for revenue growth and treated as a control variable. It measures whether firms use their assets to generate revenue from their CSR activities and is captured by the

revenue-to-total asset ratio. This is because firms appear to be attracted more attention from the stakeholders when their businesses are growing (Burke et al., 1986; cited by Tsoutsoura, 2004).

There are another three control variables mentioned in Lopez et al. (2007), namely size, leverage and industry. This paper adjusts these control variables in order to fit with the characteristics of the SET. It is believed that larger firms and higher scale of operations tend to have more CSR than the smaller firms due to their social visibilities (Udayasankar, 2008). Thus, firm size should influence to CSR activities. Market capitalisation (MCAP) is then taken into the estimation as the proxy for the size of firms (e.g. De Groot and Verchoor, 2002; Limpaphayom and Ngamwuttikul, 2004), whereas the debt-to-equity (hereafter DE) ratio is a proxy for leverage. The use of the DE ratio is supported by McGuire et al. (1988), who claim that there is a negative relationship between total debt and CSR activities. Also, Wang and Hsu (2011) point out that CSR would contribute to creditors in order to repay back to their funding sources. These control variables are included to ensure homogeneity among the sample firms. Also, the seven industries in Thailand are taken into the regression with industry "Resource" as a reference group. In addition, Singal (2014, p.22) points out that stock performance would be another variable impact to the operating performance. Therefore, stock return (as a proxy for stock performance) is included in the regression. Since the sample is collected and estimated with the cross-sectional data, heteroscedasticity is controlled by applying the multiple regression via HAC standard errors and covariance. Furthermore, multicollinearity is free among the explanatory variables.

4. Results

The results show that the main explanatory variable, THSI, is insignificant at any level of confidence with regard to firm performance measured by ROA (see Table 3 – panel A). This implies that for all firms assigned on the THSI, there is no superior performance than non-THSI. In other words, there are no differences in firm performance between the THSI firms and non-THSI firms. In addition, the utilisation of assets has no impact on firm performance since asset turnover is insignificant. This provides the different evidence as Lopez et al. (2007), even though it is estimated as a control variable. These findings are inconsistent with most of the existing literature (e.g. Barnett, 2007; Cortez and Cudia, 2011; Servaes and Tamayo, 2013 and Singal, 2014). The main difference is that this study applies a two-year period, while previous ones examine at least a three-year study period. A study which appears to be consistent with our results is that of Sarumpaet (2005), who finds no relationship between CSR (via environmental performance) and financial performance in 87 Indonesian firms[8].

However, although THSI in this work is highly insignificant, there is some degree of correlation with some early studies. It reports with a positive sign to firm performance, identical to Servaes and Tamayo (2013), Eccles et al. (2014) and Dimitropoulos and Vrondou (2015), whereas insignificance in THSI is consistent with the findings of Lopez et al. (2007) with a time period of 1999 – 2001. The remaining control variables provide variety in the results with mostly insignificant. Market capitalisation is one of the factor significant when the three different proxies of firm performance (see Table 3). Another significant factor is DE ratio, which indicate significant at one percent when ROA is applied in the measurement of firm performance (see Table 3 – panel A). Furthermore, no significant results change when applying the measurement of firm performance to ROE and EVA as a robustness test (see Table 3 – panel B and C). Nonetheless, applying ROE as the measurement of firm performance would provide a better fit to the regression due to the highest adjusted R^2 (shown as 13.37 percent) than in the other two models (see Table 3 – panel A and C).

[8] The research of Sarumpaet (2005) was conducted with a very similar sample size to this study, although the study period covered three years.

Table 3: Results of the regression

The table shows the regression results when controlled for heteroscedasticity via HAC standard errors and covariance. The total sample is 96 firms. Panel A provides the results when estimating with return on assets (ROA) as the dependent variable. Panel B gives the results when estimating with return on equity (ROE) as the dependent variable. Panel C reveals the results when estimating with economic value added (EVA) scaled by total asset. The EVA calculates via the idea of Stewart (1991) as: NOPAT – (WACC × Capital)[9]. THSI is a dummy variable, equal to 1 if the firm is assigned to THSI, and zero otherwise. ASSTURN refers to the revenue-to-total asset ratio or asset turnover. MCAP is defined as the natural logarithm of market capitalisation average during the study period of 2015 to 2016. DE is the debt-to-equity ratio. RETURN is the stock return average for one year. D1 – D7 represent dummy variables for industries, equal to one when the firm falls into the target industry, and zero otherwise.

Variables	**Panel A: ROA**		**Panel B: ROE**		**Panel C: EVA**	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
C	-3.2036	3.5280	-27.8077 **	11.6680	-2.6737 *	1.3945
THSI	0.9213	1.0555	0.8295	2.6413	0.6655	0.5431
ASSTURN	1.0318	0.9600	2.9966	2.0193	0.5242	0.4417
MCAP	0.9706 ***	0.2980	3.7406 ***	1.1388	0.1237 *	0.0634
DE	-0.0217 ***	0.0047	-0.0318	0.0224	0.0042	0.0027
RETURN	-0.8377	0.6550	-2.3481	1.9457	0.0487	0.3605
D1	1.8218	1.8758	1.9921	3.5880	-1.6672	1.5862
D2	-1.2971	2.0114	-0.0949	4.6674	-0.5535	0.6703
D3	2.0470	2.5681	7.2158	5.3776	0.4195	0.3975
D4	0.2808	1.5547	2.2432	3.2989	0.2007	0.2513
D5	0.2044	1.4775	0.6868	4.2780	0.5218	0.4430
D6	2.0285	1.5285	4.5498	3.5745	-0.3763	0.4524
D7	1.8350	4.4431	9.5328	9.8660	-0.1830	0.3029
Adjusted R^2	**0.0281**		**0.1337**		**0.0222**	

* significant at 10%, ** significant at 5%, *** significant at 1%

[9] NOPAT stands for net operating profit after tax and WACC is weighted average cost of capital. The cost of debt in the WACC is calculated via the ratio of interest expense to long-term debt, whereas the cost of equity captures via the CAPM.

5. Conclusion

Sustainable development strategy (usually known as CSR) is becoming an issue of more concern for firms' management in the areas of the environment, society and stakeholders, in addition to maximising the value of firms and shareholders' wealth. This paper claims to be among the first in Thailand to provide a close focus on sustainable development and firm performance by applying information on THSI. Collecting data from 2015 and 2016, the total sample of 122 firms is divided into two groups: 66 firms assigned to THSI and 56 size-matched firms. ROA is used as the main proxy of firm performance, while ROE and EVA are brought into our robustness test. The regression also controls for size, revenue growth and leverage to ensure homogeneity among the firms. Our results show that firms with superior sustainable development (THSI group) do not have different firm performance from those not in THSI group, even if the measurement of this performance is changed to both ROE and EVA. This is mostly inconsistent with previous works, which find that more socially responsible firms generally outperform less socially responsible ones. However, our result does not discourage the firms or investors to ignore the importance of CSR. The no existing relationship may possibly be explained by three reasons. First, the costs of CSR investment are offsetting by the benefits from reputation gain or lower in explicit cost. Second, the costs of CSR are immediate but the benefits – image and reputation are not often realised in a few years. Third, the causality between CSR and firm performance (Nelling and Webb, 2009). Due to the establishment of the THSI[10] in 2015, the further study with extended data is worth for consideration. In addition, the instrumental variable is another alternative to mitigate the endogeneity problem once there is causality relationship between CSR and firm performance.

[10] When the THSI 2017 and the financial statements of year 2017 are fully published, there are less than 20 percent of new firms listed on THSI 2017 and all large firms (captured by market capitalisation greater than THB 30,000 million) are on the THSI 2017. This is affected to the collections of matched firms. Also, the results (not showed) remain the same due to the same groups of THSI firms in the sample.

6. References

Akbar, A. (2014). Corporate governance and firm performance: Evidence from textile sector of Pakistan. **Journal of Asian Business Strategy,** 4(12). 200-207.

Alexander, G.J. and Buchholz, R. A. (1978). Corporate social responsibility and stock market performance. **Academy of Management Journal**, 21(3). 479-486.

Barnett, M.L. (2007). Stakeholder influence capacity and the variability of financial returns to corporate social responsibility. **Academy of Management Review,** 32(3). 794-816.

Bauer, R., Frijns, B., Otten, R. and Tourani-Rad, A. (2008). The impact of corporate governance on corporate performance: Evidence from Japan. **Pacific-Basin Finance Journal**, 16(3). 236-251.

Bhagat, S. and Bolton, B. (2008). Corporate governance and firm performance. **Journal of Corporate Finance,** 14(3). 257-273.

Cortez, M.A. and Cudia, C.P. (2011). Sustainability and firm performance: A case study of Japanese electronics companies. **Ritsumeikan International Affairs,** 10(2). 321-340.

De Groot, C. G. M. and Verschoor, W. F. C. (2002). Further evidence on Asian stock return behavior. **Emerging Markets Review,** 3(2). 179-193.

Dimitropoulos, P.E. and Vrondou, O. (2015). Corporate social responsibility and firm value in the sport recreation sector: A review. **Business Management and Strategy,** 6(2). 28-43.

Eccles, R.G., Ioannou, I. and Serafeim, G. (2014). The Impact of corporate sustainability on organizational processes and performance. **Management Science**, 60(11). 2835-2857

Fu, F. (2010). Overinvestment and the operating performance of SEO firms. **Financial Management,** 39(1). 249-272.

Goyal, P., Rahman, Z. and Kazmi, A.A. (2013). Corporate sustainability performance and firm performance research: Literature review and future research agenda. **Management Decision,** 51(2). 361-379.

Hansen, G.S. and Wernerfelt, B. (1989). Determinants of firm performance: the relative importance of economic and organizational factors. **Strategic Management Journal,** 10(5). 399-411.

Hertzel, M., Lemmon, M., Linck, J. S. and Rees, L. (2002). Long-run performance following private placements of equity. **Journal of Finance**, 57(6). 2595-2617.

Jensen, M.C. and Meckling, W.H. (1976). Theory of the firm: managerial behavior, agency costs and ownership structure. **Journal of Financial Economics,** 3(4). 305-360.

Kang, J.K. and Shivdasani, A. (1995). Firm performance, corporate governance, and top executive turnover in Japan. **Journal of Financial Economics,** 38(1). 29-58.

Limpaphayom, P. and Ngamwutikul, A. (2004). Ownership structure and post-issue operating performance of firms conducting seasoned equity offerings in Thailand. **Journal of Economics and Finance,** 28(3). 307-332.

Lopez, M.V., Garcia, A. and Rodriguez, L. (2007). Sustainable development and corporate performance: A study based on the Dow Jones Sustainability Index. **Journal of Business Ethics,** 75(3). 285–300.

McGuire, J.B., Sundgren, A. and Schneeweis, T. (1988). Corporate social responsibility and firm financial performance. **The Academy of Management Journal,** 31(4). 854-872.

Nelling, E. and Webb, E. (2009). Corporate social responsibility and financial performance: the ‘‘virtuous circle’’ revisited. **Review of Quantitative Finance and Accounting,** 32(2). 197-209.

Ngwakwe, C.C. (2008). Environmental responsibility and firm performance: Evidence from Nigeria. **International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering,** 2(10). 1055-1062.

Nor, N.M., Bahari, N.A.S., Adnan, N.A., Qamarul, S.M., Kamal, A.S. and Ali, I.M. (2016). The effects of environmental disclosure on financial performance in Malaysia. **Procedia Economics and Finance,** 35. 117-126.

Ruangviset, J., Jiraporn, P. and Kim, J.C. (2014). How does corporate governance influence corporate social responsibility? **Procedia - Social and Behavioral Sciences,** 143. 1055-1057.

Sarumpaet, S. (2005). The relationship between environmental performance and financial performance of Indonesian companies. **Jurnal Akuntansi dan Keuangan,** 7(2). 89-96.

Servaes, H. and Tamayo, A. (2013). The impact of corporate social responsibility on firm value: The role of customer awareness. **Management Science,** 59(5). 1045–1061.

Singal, M. (2014). The link between firm financial performance and investment in sustainability initiatives. **Cornell Hospitality Quarterly**, 55(1). 19–30.

Stewart, G.B. (1991). **The Quest for value: A guide for senior managers.** First Ed., New York: Harper Business.

Tsoutsoura, M. (2004). **Corporate social responsibility and financial performance.** Working Paper Series, available online via: http://escholarship.org/uc/item/111799p2, retrieved on 18 May 2016.

Udayasankar, K. (2008). Corporate social responsibility and firm size. **Journal of Business Ethics,** 83(2). 167-175.

Wang, G.Y. and Hsu, W-H.L. (2011). **Corporate social responsibility and firm performance.** Retrieved 18 May 2016. From https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=6121164