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Research Article

towards Stock Return in Malaysia

Dr Noriza Mohd Saad

Abstract

The study's focus is to analyze the reaction of stock return among the Industrial Products and Services sector after the announcement of an extension of green technology tax incentive in Malaysia. Therefore the main objective is to investigate the abnormal return existence of stock price of companies in industrial product and services after the announcement of an extension of green technology tax incentives until 2023 (Green Investment Tax Allowance (GITA) and Green Investment Tax Exemption (GITE)). 30% of the businesses listed in Bursa Malaysia in the Industrial Products and Services sector have been sampled. Stock return for 121 trading days from 24 April 2019 until 24 October 2019 retrieved from Thompson Reuters. The announcement made on 10 October 2019 by the ministry of finance, Malaysia. The estimation period for this research is 100 days, and the event window of 21 days. This research found a significant increase in the stock price in the ten days following the announcement, but the stock prices are at or below expectations. This suggests that the stock price is declining after the announcement. The Malaysian government implemented these tax incentives to achieve 20% of the planned renewable energy mix until 2025.

Keywords: Green technology tax incentives, Event study, stock return, Industrial Products and Services sector.

Introduction

The pollution level in Malaysia is very concerning. According to Mokthsim and Salleh (2014), the pollution issues in Malaysia are from the use of pesticides, fertilizers, and gaseous emission of industrial processes. Open burning from wood-based and rubber-based factories and motor vehicles' emission are the major contributors to air pollution. Besides that, water pollution is caused by domestic waste, mining and deforestation activities. Every year, Malaysia will face a severe haze from forest burning to open up land for palm plantation in Indonesia. According to the World Health Organization (WHO), air quality in Malaysia is moderately unsafe. Cities that have a high level of air pollution are Kuching, Bayan Lepas and Kuala Lumpur. It could affect the health of the citizen, especially children and elders. Selangor often faces disturbance of water supply. This is closely connected to water pollution. In September this year, a factory was compounded and seized by the state government for being the reason for water pollution in Sungai Gong[1].

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[1]Article titled "MB: Kilangpuncagangguan air Selangor, KL disitadandikenakankompaun". Published on 4 September 2020 by Malaysiakini.

One of the methods to deal with these problems is by adopting green technology. Green technology is a sustainable approach to balance economic growth and environmental preservation. Green technology is an application of science and technology to create a product that environmentally friendly. The product usually will produce clean energy, have higher efficiency, reduce cost, and reduce the hazard. Green technology's objective is to preserve the earth, conserve a better environment, and repair the environmental damage done by human since previous decades. In 2018, the United Nations reported that $2.9 trillion had been spent on renewable energy since 2004. China becomes the largest biggest investor with $130 billion in 2017, and renewable energy met 24% of global energy demand (IEA, 2018).

In order to encourage investment in green technology, green tax incentives have been implemented by governments. According to Bonazzi and Lotti in 2016, the tax incentive is a powerful mechanism to attract more investment in an emerging market. The way green tax incentives work is by giving tax allowance or tax exemption when an entity or business invests in green technology. Some of the green tax incentives available in the world are exemption on the payment of excise duties for renewable energy electricity, tax incentives in personal income, deduction in taxable profit (Cansino et al, 2009), value-added tax (VAT) (Sun et al, 2019) and effective tax incentives in property tax (Onuoha et al, 2017).

In Malaysia, the first tax incentive for green activities was introduced in 1967 through Green Technology Incentive in Income Tax Act, 1967. The Investment Tax Allowance could cut 70% of statutory income for investment in green assets, and the Income Tax Exemption is to promote green service with an incentive of 100% tax exemption of statutory income. The scopes targeted by this Act are renewable energy, energy efficiency, green building, green data centre, integrated waste management activity, green-certified bodies, green township and electric vehicles[2].

Fast forward to 2018, and the green tax incentives were rebranded and upgraded. The new green technology tax incentives, which consist of Green Investment Tax Allowance (GITA) and Green Investment Tax Exemption (GITE), were introduced in Budget 2019 in Parliament by the Finance Minister at that time, Lim Guan Eng. Quoted from the sentence announced for the Budget 2019, "Additionally, to promote the use of green technology, the Government will expend the list of green assets which qualifies for the GITA from 9 assets to 40 assets which are listed in the MyHIJAU Directory. GITA is the tax allowance for green asset investor and green project contractor, while GITE is the tax exemption for the green service provider. In 2018, GITA had approved 175 renewable energy projects valued at RM3 billion and energy efficiency projects valued at RM139.1 million. In the same year, GITE had approved 14 green services projects with a total investment of RM150.8 million[3].

In 2019, Finance Minister Lim Guan Eng again delivered good news for green investors and green businesses. He announced in Budget 2020 the green technology tax incentives GITA and GITE continued until 2023. This extension aims to achieve 20% of total energy production by renewable energy[4]. However, is the announcement of an extension of Green Investment Tax Allowance and Green Investment Tax Exemption would affect the stock return of the companies

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[2]Information extracted from a module presented by Green Technology Division, MIDA titled Investment opportunities in green technology.
[3]Information extracted from GreenTech Malaysia website. (Green Investment Tax Incentives GITA/GITE)
[4]The news acquired from an article by Mei Mei Chu published on 11 october 2019 by The Star Online.

listed in the industrial products and services sector?. Due to this curiosity, this study is to investigate the industrial products and services companies' stock return changes to the extension announcement of GITA and GITE.

Literature Review

A researcher needs to identify the market efficiency of the targeted market when conducting an event study. Market efficiency is an indicator of the level of responsiveness of a market towards an announcement or changes. By identifying the market efficiency, researchers could predict the study's result and understand the response of a market towards an announcement or changes.

Kumar and Kumar (2018) found that the Kuala Lumpur Stock Exchange Market was weak. The study was conducted with data from 28 April 1998 to 30 December 2014. The current stock price in KLSE is reflected in the historical price and not moving in random trends (random walk). It means the investors could exploit the historical prices to gain a return if they can predict it correctly. However, since the research was conducted 6 years ago, the market efficiency of Bursa Malaysia might upgrade due to the IT technology we have nowadays; information can travel faster. However, with the furthest knowledge, the author did not find the recent study for Bursa Malaysia market efficiency.

Companies that invest in environment-friendly management will have higher firm value. Dowell (2000) stated that investors would have confidence in companies' management capability that practice higher environmental standards. Companies that have been recognised to have good environment performance proven to boost firm value. On top of that, high environment standard companies are more likely to incur less pollution clean-up costs. Feldman et al. (1996) found that investment in green management will lead to risk reduction and materialised with an increase in stock price.

Promoting green technology has become a political goal as tax incentives are a crucial tool to bring in green technology effectively. This section will discuss an article by Cansino et al (2010) titled 'Tax incentives to promote green electricity: An overview of EU-27 countries. This article gives complete data about the main tax incentives used in the EU-27 members' states to promote green electricity. European Commission annual meeting 2007 set goals to reduce energy consumption by 20% through energy efficiency and achieve 15% renewable energy contribution by 2020.

Price volatility and high marginal cost become the barrier to invest in renewable energy. Taxation and policy are essential to reduce the cost of the renewable energy sector. To make the tax more effective, specific sectors should be the target to aim for competitive energy price. Taxation measures implemented in European countries are the primary tool for renewable energy adoption in the continental. Czech Republic, Luxembourg, French and Belgium reward the renewable energy user by offsetting the income tax expenses. Countries like Belgium, Greece and Spain permits deductions of corporate tax. The companies invested in renewable energy required to record the expenses in their balance sheet. Since renewable energy is incorporated into the property, Italy and Spain have adopted lower property taxes to RE-powered property. To avoid the disproportionate effect of tax measures on the RE, reduction of value-added tax (VAT) is implemented in France, Italy and Portugal.

A study was held among China's listed companies to determine the profitability of VAT incentives of RE. Sun et al (2019) found that VAT refunds of China's RE industry could decrease the ROE of the firms. This is because VAT has disrupted the RE industrial chain (Zhang et al., 2013), causing overproduction and demotivated innovation (Wiser et al., 2007). The numbers of

companies that directly affect the VAT refund in China is small, and because the price of the RE asset decline over the years, supplier's profitability also declined. Since the VAT refund is introduced in the RE industry, the technology's innovation pace slows down. The critiques thrown at tax incentives are often driven by political goal (Jarvis, 2012; Abimayu, 2016), which exposed the industry to corruption (Zolt, 2015). Moreover, as China's market is not perfect, the time-lag occurred as the investors carefull to react to the newly implemented VAT. This factor supports the findings by Devereux et al.,2017.

It was moving to the reaction of the capital market to the green announcement. A group of researchers from Australia (Ramiah et al., 2013) have studied the effect of 19 announcements about environmental regulation on the stock price of listed companies on the Australian Stock Exchange. The findings show that the green policies announcement has a significant impact on 60% of the stock capital market. On the affected stock, 29% of the sectors displayed a negative abnormal return, and 20% displayed a positive abnormal return. After the announcement, the authors noted that 10 sectors displayed negative abnormal return (beverages, construction and materials, financial services, health care, leisure, mining, non-life insurance, oil and gas, personal goods and real estate).

In contrast, aerospace, automobile, water, gas and utilities, industrial mining, media and general retaining are experiencing positive abnormal returns. However, the results were changing in the long run. The authors noted that the positive and negative reaction after the announcement neutralises in the long run. The authors conclude that Australia's green policies are ineffective because the shareholders' wealth of big polluter companies like the electricity sector did not change. Besides, the policies only affected the shareholders' wealth from small polluter companies like the beverages sector.

This research intended to fill the gap between the industrial and services sectors as the sector is the factor of carbon dioxide. The sector consumes a massive amount of electricity, produce heat, manufacturing and directly running construction activities. Also, the sector emits 28% of industrial water waste and dump 18% of solid waste. That is ranked second and third behind oil and gas waste in the percentage of waste by sector. As far as the author's knowledge, there is no published journal about the effect of stock return after the green technology tax incentives. Thus, this study will fill the gap with the research to measure the stock return after the announcement of an extension of the green technology tax incentive.

Data and Methodology

The source used for this research is secondary data. The method for this event study is to analyse the changes in the stock return of 40 industrial products and services companies after the announcement of an extension of GITA and GITE. The data is collected from Thomson Reuters 110 trading days before the event, 10 October 2019, until 10 trading days after the event (24 April 2019 – 24 October 2019). This study uses 21 days event window that this period highlights investors' reaction towards the announcement. If a longer period in the event store extended reach, it would mix up with other events or market noise (Ye et al., 2013). The companies from the industrial products and services sector were used in the study because they are classified as big polluters companies with many carbon holes to be covered with green technology. The majority of the companies in this sector are heavy manufacturers and potentially producing non-environmental waste. Companies related to auto parts, building materials, chemical, diversified industrials, industrial engineering, industrial services, metals, packaging materials, woods

products, industrial materials, components and equipment are categorised under this sector. Besides, The Bursa Index returns for the respective period are compared with the companies' return.

To meet the objective of this research, the stock return is recognised as the dependant variable. Stock return can be reflected in the company's profitability (Murniati, 2016) and investors' response to a specific company's announcement. A higher stock return indicates that the demand of investors who trust that the company would give a return in the future is high. Investors believe the tax incentives in green technology will increase a company's profitability in the long run as it could adopt green technology to reduce the cost (Peng, 2018). Furthermore, this research's independent variable is the announcement of an extension of green technology tax incentives (GITA and GITE). The announcement was broadcasted on 10 October 2019 during the hearing of Budged 2020 by the Finance Minister at that time, Lim Guan Eng. To extend, to investigate if there is an abnormal return after the announcement of an extension of Green Investment Tax Allowance and Green Investment Tax Exemption.

An event study aims to define the interested product and identify the period when the event took place. An event study is a handy tool in finance and economics. James Dolley conducted the first official event study in 1933 (Mackinlay, 1997). In 1969, Fama, Fisher, Jansen and Roll published an event study using a widely used methodology in nowadays event studies. They developed the methodology to study the monthly return for the New York Stock Exchange. The methodology has gone through some revolution to suit different settings in the event study. Virtually, the methodology can test the market efficiency when information spread and measure some event's impact on the shareholders' wealth. Therefore, this research uses a similar methodology used by Fama et al. (1969) as it is acceptable for most event studies.

Figure 1 Theoretical Framework (Event study)
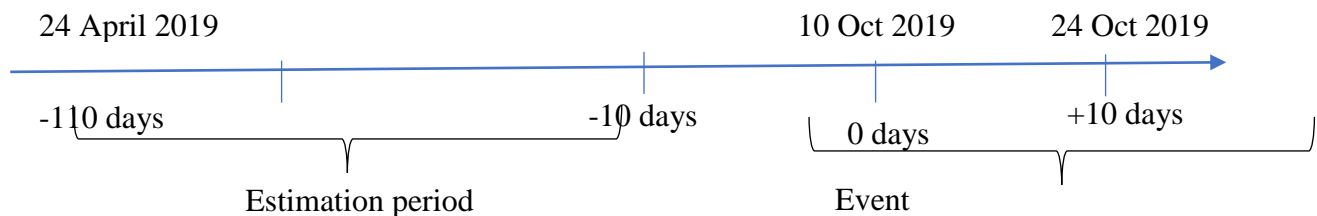
From figure 1, the cumulative average abnormal return in 10 days after the announcement would probably show a declining trend. This is because the investors will probably shift their strategy to buy stocks that will adopt more green technology assets like technology, utilities, media and telecommunication sectors. The impact of industrial products and services sectors is the investors will draw out their investment to invest in sectors stated above. In theory, the stock return will react when new information is released. In the real world, political sentiment and speculation may join the factor that could change stock return. This is because the green tax incentive was supposed to end in 2020, which could be the investors' speculation point to affect the changes of return. This research observes how the investors reacted to affect the stock return after the announcement to extend the green tax incentives. The stock returns are compared with the Bursa Market Index as the proxy for the whole market's performance. Due to the long period of careful planning of GITA and GITE's extension, there are holes for the information to leak when

someone related with the planning (e.g., politician, board members, and analyst) leaks the information to the investor. In another situation, the investors may react to the new information because they depend on which companies could benefit from the tax incentive policy.

Thus, hypothesis of the study developed as follows:

H1: There is significant changes in return after the announcement.

H1: The return is higher after the announcement.

Results and Discussion

Before the research found the result for 10 days before and after the announcement, the average abnormal return of the Industrial Products and Services sector in the total of estimation day 121 days is random. This is the result where one day, most investors were risk-taker, and another day the majority of the investors were risk-averse, as shown in figure 2.

Figure 2: Average Abnormal Return for 121 days
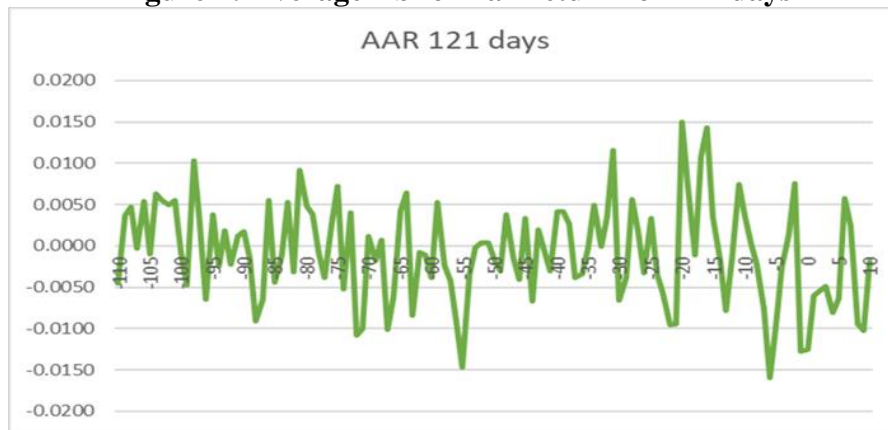
Then, after developing the cumulative average abnormal return graph of 121 days, it is clear that the sector's abnormal return is leveraged to a negative abnormal return. The cumulative average abnormal return will decrease when the average abnormal return stays on the negative level even though the average abnormal return pattern is increasing. The pattern of cumulative average abnormal return will increase once the average abnormal return reaches a positive value.

Figure 3: Cumulative Average Abnormal Return for 121 days

Table 1: Abnormal Return 10 Days Before and After the Announcement.

Date	Period	AAR	CAAR		T-statistics CAAR
26/9/2019	-10		0.0036	-0.0381	-2.1206
27/9/2019	-9		0.0004	-0.0417	-2.4455
30/9/2019	-8		-0.0023	-0.0420	-2.6174
1/10/2019	-7		-0.0076	-0.0397	-2.6452
2/10/2019	-6		-0.0160	-0.0321	-2.3116
3/10/2019	-5		-0.0098	-0.0162	-1.2732
4/10/2019	-4		-0.0026	-0.0064	-0.5625
7/10/2019	-3		0.0014	-0.0038	-0.3817
8/10/2019	-2		0.0076	-0.0052	-0.6478
9/10/2019	-1		-0.0128	-0.0128	-2.2494
10/10/2019	0		-0.0125		
11/10/2019	1		-0.0060	-0.0060	-1.0623
14/10/2019	2		-0.0055	-0.0115	-1.4300
15/10/2019	3		-0.0049	-0.0164	-1.6664
16/10/2019	4		-0.0081	-0.0244	-2.1525
17/10/2019	5		-0.0063	-0.0308	-2.4248
18/10/2019	6		0.0058	-0.0250	-1.7996
21/10/2019	7		0.0024	-0.0226	-1.5067
22/10/2019	8		-0.0094	-0.0320	-1.9950
23/10/2019	9		-0.0102	-0.0423	-2.4823
24/10/2019	10		-0.0019	-0.0441	-2.4589

Next, the second column shows the day close event window (-10 until 10) based on the cumulative estimation of 121 days around the period. 'Period 0' is the day of the announcement. The fourth column is the cumulative average abnormal return, and the fifth column is the t-statistics value to measure the significance of the cumulative average abnormal return. When the value of the t-statistics is higher than 1.645 or lower than -1.645 (which are highlighted with yellow), the cumulative average abnormal return is significant.

Furthermore, these figures consist of 10 days before and ten days after the event date, period 0 (10 October 2019). These 21 days are the close days with the event date and should detect changes within the days. The graph of average abnormal return and cumulative average abnormal return almost imitating each other. The lowest average abnormal return is on 6 days before the announcement, and the highest average abnormal return is on 2 days before the announcement. After the announcement, the average abnormal returns are increasing until the peak on the sixth day. The cumulative average abnormal return graph allows us to observe that the average abnormal return under a negative level.

The results in table 1 and figure 4 are connected. Table 1, the t-statistics shows that the significant cumulative average abnormal return is on period -10 until -6, period -1, period 3 until 6 and period 8 until 10. In figure 2, those periods stated are showing significant shifting of cumulative average abnormal return trends. As the graph of AAR and CAAR are imitating each other, those periods stated show the AAR graph is either increasing or decreasing with a higher degree.

Figure 4: Abnormal Return 10 Days Before and After the Announcement.
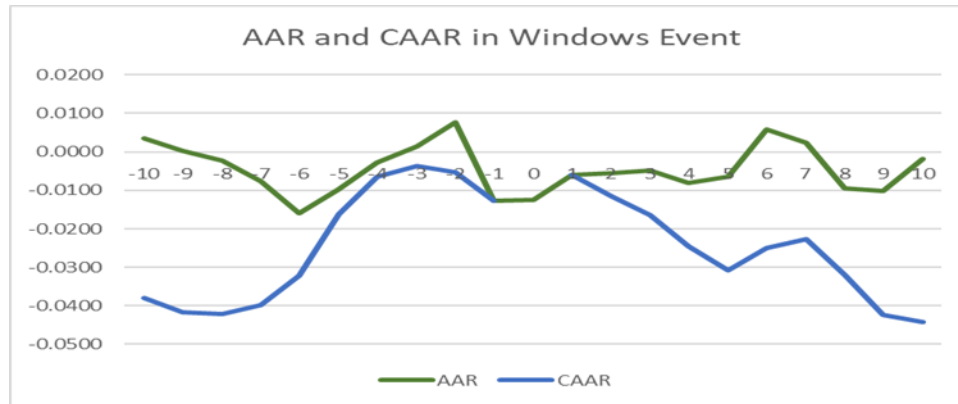
It can be concluded that before the announcement of an extension of green technology tax incentives was made, and the results are showing that the cumulative average abnormal return was significant on period -10 until -6 (26 September 2019 until 2 October 2019) and period -1 (9 October 2019). The average abnormal return on both periods is decreasing significantly. According to Gao and Oler (2012), the closer the day from the announcement date, the investors will be risk-averse. The majority of the investors were cautious and choose to draw out their investment and wait for the announcement. When the investors have liquidated their investment, the investors will reinvest in stocks that will benefit from the announcement.

Another point to be highlighted about insignificant cumulative average abnormal return recorded on period -5 until -2. However, the average abnormal return recorded a significant increasing trend. Weber et al, (2012) noted that the investors would take the chance if the stocks' price drop as the date is near to the announcement. These risk-taking investors are aware of the price drop and use this opportunity to buy the stocks when the price is low and predict that the price will increase because of the speculation or demand shock to sell the stocks at that short moment.

Besides, the cumulative average abnormal return on day 1 and 2 after the announcement are insignificant. The average abnormal return on this period is showing an insignificant increasing trend. The delay after the announcement also experienced by China's market. This is recorded by Sun et al, (2019), China's investors delayed the reaction after the VAT incentive of the new energy industry in the first week. This is because investors have different judgemental when reacting to the announcement. In this research, the delay reaction could be because the announcement was made together with other announcements under Budget 2020. The investors took the time to evaluate various new information to choose the best probability sectors to gain profit.

On the third day until the sixth day and the eighth day until the tenth day after the announcement, the cumulative average abnormal return recorded a significant negative trend. The average abnormal return on the third day until the sixth day and eighth until the tenth day recorded a significant upward trend. The trend contrasts with the cumulative average abnormal return trend because the value of the abnormal return is still negative except on the sixth day. After the announcement, the stocks are still making a loss, but the loss decreases except on the sixth and seventh days when the average abnormal return was positive. Thus, the abnormal return after the

announcement is higher than the day of the announcement. Therefore, the study accepts both hypotheses.

Conclusion and Recommendation

This research identifies the reaction of the stock return towards the announcement. This is proved by the significant cumulative average abnormal return value of t-statistics. The stock return was decreasing before the announcement (period -10 to -1) and increasing after the announcement (period 1 to 10). The stock return decreased 10 days before the announcement because investors became risk-averse and decided to wait for the announcement before reinvesting in stocks that benefit from the announcement. The increasing trend for 10 days after the announcement may be because the companies in the Industrial Products and Services are adopting the green technology and the investors predict the investment will produce a return.

The majority of the previous studies (for instance, Sadovnikova and Pujari, 2017; Kumar and Firoz 2019; Sun et al, 2019), which were referred to conduct this research, found that the tax incentives in green technology resulted from the decreasing in profitability and therefore would produce negative impact to the share price that lead to investors react negatively to certified emission reduction announcements. However, this research found that the stock return is increasing, but it is an arguable point that the increasing trend of stock return is still under the negative abnormal return level.

Earlier part in this paper has stated that this research's significance is for the investors to understand the pattern of stock return after the announcement of green technology policies. Due to the imperfection and not strong form of Bursa Malaysia, the investors should use the information available in this paper to gain profits. Other signs of this research are to roll down the information for the government as the policymaker. The Malaysian government has the power to mend the current tax measure to effectively achieve the target of 20% of renewable energy mix quicker. Based on the result shown in this research, a few recommendations for the investors could gain profit. If the recommendation is made only based on this research, the investors should wait for the right moment to buy and sell the stocks from the Industrial Products and Services sector around the green technology tax incentives announcement. There are specific ideal periods to trade the stocks as most of the time, and the average abnormal return is under a negative level.

Before the announcement, the right time to buy the stocks is after few days when other investors start to sell the stocks, and the stock price is dropping. Within 10 days before the announcement, there will be only one spike in stock price, and it is in a brief period, so the investors should liquidate the stock once the stock price is higher than the entry price. After the price spike, investors should expect the price to drop until after the announcement as the investor naturally become risk-averse. After the announcement, the price will continue to drop for a more extended period as there will be a delay reaction from the investors. The investors should expect to receive a positive abnormal return in a short period, almost the same period as during the price spike before the announcement. The right time to buy the stocks is after few days from the announcement when the price is continuing to drop and sell right after the price is higher than the entry price as the increasing trend of the stock price will be the only brief.

The government has more options to consider to plan for an improvised policy. First, the question either to continue or stop the green technology tax incentives after 2023? This question should be considered after the journal by Sun et al (2019) found that the new energy industry's

VAT refund could decrease the ROE. Besides the profitability negative, the journal also found that the VAT has demotivated the technology's innovation and interrupt the economics chain of the new energy industry. Due to the VAT, the new energy supplier received less profit and will oversupply the products. Thus, if the green technology tax incentives (GITA and GITE) are not significantly impacting the companies' profitability, the tax incentives should be revised.

Data Availability

The data purchased from Thompson Reuters.

Conflicts of Interest

No conflict of interest.

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