



How a Low-Carbon Economy Affects Decision-Making and Profit Development in Large Corporations: Case Studies for Unilever and Maersk

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Abstract. In the context of global warming, the “low-carbon economy” based on low energy usage and low pollution has become a global debating issue. Developed countries from Europe and the United States boost the “low-carbon revolution” in a vigorous manner with high energy efficiency and low emission as the core, focus on the development of “low-carbon technology”, and make major adjustments to industry, energy and other policies, technology and trade. As the country vigorously promotes a low-carbon economy, it will inevitably affect the financial market where large companies and even multinational companies are located. The existing academic literature is still lacking in research in this area. We aim to show how a low-carbon economy will affect the development of financial markets and large companies, whether it is a good idea to develop a low-carbon economy from the perspective of large companies, and to provide concrete low-carbon solutions for large companies. Here we select two representative companies: Unilever and Maersk for descriptive analysis and case analysis. We found that a low-carbon economy is positively correlated with the profits of large companies, that is, a low-carbon economy can indeed bring sustainable growth in profits for large companies. Our research can inform other businesses seeking to implement a low-carbon economy, while also helping governments formulate effective energy policy.

Keywords: Low carbon economy · Unilever · Green innovation · Corporate return

1 Introduction

As the concept of sustainable development is constantly introduced to financial market and accepted by large number of firms, facing to such a change is an unavoidable problem. A low carbon economy is “the green ecological economy based on low energy

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consumption and low pollution” [1]. Since both financial markets and a low-carbon economy play an important role on both sides, their relationship is mutual and interactive. Developing a low-carbon economy is necessary since natural resources are constantly being consumed and can run out one day. On the other hand, developing such an economy may create new job positions, which can reduce unemployment rate, and help large firms gain business competitiveness. It can also contribute to resilience of ecosystem, which our health can be benefited from.

Prior studies have found that financial market plays a significant role in contributing to the transition to low-carbon economy, and there exist some challenges of low carbon practices. In addition, recent studies have shown that low-carbon economy can help large companies save costs in energy [2]. It is also known that low-carbon economic development can relieve shortage of resources [3]. However, the specific influences of low-carbon economy on financial market and large companies have not been stated clearly yet.

In this paper, we aim to show how will low-carbon economy influence development of financial market and the large companies, whether it is a good idea to develop low-carbon economy from large firms’ perspectives. Furthermore, this paper will provide large firms some concrete proposals to face to the development of low-carbon economy. To solve these problems, descriptive analysis and a case study will be used as research methods.

For the rest of this paper, we will go through the existed research and the research gap in Sect. 2. Then we will discuss the descriptive data and analysis in Sect. 3, using data from Maersk company and Unilever company. In Sect. 4, a case study about Unilever company will be provided, and we finally get conclusion and specific solutions to the problems in Sect. 5.

2 Literature Review

Low-carbon economy is the inevitable trend of world economic development, which is determined by the inherent requirements of coping with resource depletion. Due to the scarcity of resources and the non-renewable nature of fossil energy, human’s over-exploitation has almost exhausted the resources. It is estimated that the world will run out of resources by 2050. According to the comprehensive estimate of oil reserves, the world’s disposable fossil energy, coal, uranium and other reserves are low, probably only last for a few decades. Therefore, in order to achieve sustainable development, human beings must change the concept of economic development, develop renewable energy, and develop new technologies to improve the utilization rate of resources, reduce the emission rate of pollutants, improve the recovery rate of resources, and put the concept of low-carbon economy throughout the economic development, so as to cope with the arrival of resource crisis well.

Low-carbon economy is also an important factor to enhance international competitiveness, and more and more national governments are implementing relevant policies to support enterprises. From the Kyoto Protocol to the Bali Roadmap to the Copenhagen Climate Conference and then to the release of the United Nations framework convention on climate change, a series of international conferences have been held,

raising the low carbon economy to an international height. Countries are scrambling to buy up carbon emission rights, carry out clean production, develop clean and efficient energy, register low-carbon product trademarks, formulate green product standards, create green barriers and carbon barriers, and improve international trade standards. These behaviors inevitably urge enterprises to develop low-carbon products, shape their green image, eliminate economic and trade barriers, and win more international partners in order to have more say on the international economic and political stage in order to be internationally competitive.

Under the current social environment, the market competition faced by enterprises is increasingly white-hot, and the homogenization of enterprises is relatively serious. However, the number of customers has not increased, and the seller's market has brought more pressure to the enterprise, and also made the enterprise's "open source" face more difficulties. Under the requirements of low-carbon economic development, enterprises will accelerate their own transformation and achieve innovation from ideas to technologies and products through various innovative means, so as to further reduce costs, tilt more resources for technology development, and make them come out on top in the industry.

However, in order to promote the development of a low-carbon economy, technological innovation is an indispensable factor. Existing literature shows that: in general, scientific and technological innovation will significantly promote the development of low-carbon economy; Reducing energy consumption is an important mechanism of scientific and technological innovation affecting low-carbon economy. With the development of low-carbon economy, the promotion effect of scientific and technological invention on low-carbon economy generally presents a downward trend; In addition, technological innovation in other regions will have a positive spillover effect on the local low-carbon economy [3].

At present, some scholars have conducted empirical tests on the relationship between green innovation and corporate performance, and examined the moderating effects of government subsidies and environmental regulations on the relationship. The main conclusions are as described below: on the one hand, green innovation has a meaningful constructive impact on enterprise operation; government subsidies are also positively leading the mutual connection between green invention and enterprise performance, that is, the higher the government subsidy intensity, the greater the furtherance effect of green innovation on enterprise performance will be powerful. On the other hand, environmental regulation negatively regulates the relationship between green innovation and corporate performance, that is, the higher the intensity of environmental regulation, the weaker the promotion effect of green innovation on corporate performance [4].

According to the literature on environmental regulation in traditional economic theories, environmental regulation will bring additional private costs to enterprises, thus negatively affecting the profitability of enterprises [5]. "Porter hypothesis" holds that such negative impact may be improved by technological innovation [6], and the profitability of enterprises can be improved through innovation of "compensation mechanism". Corporate behavior is the key factor to judge whether "Porter hypothesis" is established, that is, the response of enterprises to environmental regulation and environmental pressure [7]. In fact, about the document of enterprises to cope with environmental regulation focuses on corporate governance at the end, give priority to in order to research the

pollutants effectively handle production process, and green low carbon transformation need to enterprise will be green and low carbon throughout the production mode, its purpose is to realize the production product whole life cycle of the negative externality of the natural environment influence is minimal. Therefore, after the government issued the green and low-carbon transformation policy, some enterprises began to shift from the traditional “end treatment” of pollution first and treatment later to the whole green process covering the production source, transmission process and terminal control, from which they can gain certain competitive advantages.

The public also plays an important position in the impact of low-carbon economy on corporate behavior. Green low carbon transformation is the enterprise to adapt to the government and the social public needs and a kind of environmental responsibility, but the performance of the environmental responsibility of enterprises exist in two aspects: the influence of the negative effects from view, enterprise environmental information disclosure increases too much stock price crash risk, existence collapse effect of “social responsibility” [8]. From the perspective of positive impact, good social responsibility is significantly correlated with corporate performance [9]. Fulfilling environmental responsibility is conducive to establishing a good reputation and social image of enterprises [10], effectively alleviating financing constraints of enterprises [11] and reducing legal litigation risks [12]. Faced with the pressure of “low-carbon”, the increasing public awareness of environmental protection and green consumption concept will inevitably force enterprises to accelerate the green and low-carbon transformation.

Under the background of low-carbon economy, green incentive policies can improve the financing constraints of enterprises and improve their profitability. Passed the government on the one hand, green low carbon transformation policy support the signal of enterprise green low carbon transformation, the government will set up a guided by funds, to attract financial institutions and social capital to put more money into the enterprise green low carbon transition, both effectively widen the enterprise financing channels, also guide and support the enterprises to form better low carbon transmutation. Of course, the commercial Banks and other financial institutions to better fulfill its own environmental responsibility and social responsibility, will also take the initiative to increase support for green low carbon transformation of enterprise funds, such as through green financial means, such as green credit, green bonds [13], support enterprise low carbon transformation, thereby significantly alleviate the financing constraint problem, Ensure the improvement of enterprise profitability. On the other hand, according to the “reputation” effect, good social responsibility can effectively improve enterprise reputation [14]. Under the influence of the national green and low-carbon transformation policy, green and low-carbon transformation enterprises take the initiative to undertake environmental responsibilities such as green production processes and low emissions, and thus have accumulated good moral capital. The government has also moderately relaxed the potential constraints of regulators, thereby reducing the risk of future cash flow of companies. If enterprises establish a green and low-carbon transition, they are willing to disclose more environmental information, thereby maintaining and promoting a better social image. Good information disclosure can also improve the information asymmetry between companies and external investors, thereby increasing investors’ confidence in the capital market and easing the financing pressure of companies [15].

3 Descriptive Analysis

In this part, we will figure out the relationship between development of low-carbon economy and profits of big companies by analyzing two graphs of Unilever and Maersk.

First, the existed data of the revenue of Unilever Group worldwide from 2007 to 2020 shows that the profit of Unilever group worldwide is growing through 2007 to 2020. Although fluctuation exists, the revenue increases generally. Also, there is a halving of carbon emissions per ton of production since 2008, as known from secondary data.

Then, it can be obviously seen from the statistics of the revenue of Maersk worldwide from 2018 to 2021 that there is a large increase of profits from 2018 to 2021, though there is a little bit fluctuation. And what can be informed from existing research is that Maersk set a strategy for carbon neutrality in 2050, back in 2018.

Therefore, from the graphs and what is informed, it can be discovered that as the low-carbon economy develops in a large company, the revenue of this company grows. Hence, there is a positive correlation between realization of low-carbon economy and revenue of large firms.

4 Case Study

In this section, the progress of transiting to low-carbon economy for Unilever will be studied. In 2010, Unilever took a significant step to develop the Unilever Sustainable Living Plan (USLP). As a part of this plan, it committed to reducing greenhouse gas (GHG) emissions from products 50% per consumer use by 2030, the 2010 baseline year by 2030. To achieve this goal, they made many efforts. For example, they used renewable electricity and shoes electric vehicles instead of regular ones. In additions, the firm made many innovations, such as dry shampoo, EasyDose bottles, and clean cold engines. Taking advantages of policy and some related organizations is also a wise choice. For instance, the World Business Council for Sustainable Development, United Nations Global Compact's Caring for Climate Campaign, and World Economic Forum (WEF).

The company's sustainable living brands grew 69% faster than the rest of the business in 2018, compared with 46% in 2017. Also this year, Unilever improved its transport CO₂ efficiency by 38%, measured in kilograms per ton of product sold, compared to their 2010 baseline. By the end of 2018, Unilever had reduced energy consumption per ton of product at its factories by 28 percent since 2008. Their actions have helped them save more than £600 million in energy costs since 2008 and lead the industry. What's more, Unilever's transition to a low-carbon economy has had an impact on other industries as well. They help increase the sustainability of agricultural raw materials, collaborate with smallholder farms, and provide jobs for women [18].

What we can learn from this case is that low-carbon economy helps large companies save costs in energy and gain leadership in related industries. Since developing a low-carbon economy in a large company is a step-by-step progress, goal setting, and innovation are vital. Using new energy sources and taking advantages of policy are also very significant.

5 Conclusion

Through second-hand data analysis, it can be concluded that there is a positive correlation between the expansion of a low-carbon economy and the income of large companies. All in all, as this realization of a low-carbon economy increases, so do the profits of large companies. Achieving a low-carbon economy also helps companies stay ahead of the curve. In addition, large companies can help drive the development of emerging industries, thereby driving the development of financial markets. In such case, the advancement of a low-carbon economy by large companies is a good option, as it helps to make profits and save costs in terms of energy. For large enterprises, it is necessary to comply with the development of a low-carbon economy and respond to market changes with a positive attitude. To adapt to changes in the low-carbon economy, they can set their own goals, take action to develop new energy sources, and make unique innovations.

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