CSCanada
Canadian Social Science
Vol. 18, No. 1, 2022, pp. 61-74
DOI:10.3968/12409

ISSN 1712-8056[Print]
ISSN 1923-6697[Online]
www.cscanada.net
www.cscanada.org

Study on Enterprise Value Evaluation Based on ESG: Taking Tesla Enterprise as an Example

FENG Bo[a],[b]; CHENG Liting[b]; FENG Junwen[a],[b],*

[a]Nanjing University of Science and Technology, China.
[b]Nanjing Audit University Jinshen College, China.
*Corresponding author.

Supported by the Social Sciences Foundation of China (16BZZ074), and the Nanjing Audit University Jinshen College.

Received 18 August 2021; accepted 5 January 2022
Published online 26 February 2022

Abstract

With the deepening of the concept of green development and high-quality economic development, enterprises have played an important role in practicing the new development concept. In order to better integrate the development of enterprises into the sustainable development of society, more and more excellent Chinese enterprises shoulder the great responsibility mission of fulfilling social responsibility, optimizing social and corporate governance. The concept of ESG provides a comprehensive framework for enterprises to complete this mission and goal. Paying attention to the company's ESG performance is helpful to understand its sustainable development ability, so as to promote the performance of the whole enterprise and even the whole industry in all aspects. Firstly, this paper summarizes the relevant research results. Secondly, combined with the characteristics of enterprise value, this paper analyzes its value influencing factors, selecting ESG indicators as well as other relevant indicators to design and construct an evaluation model based on ESG enterprise value evaluation system. Finally, taking Tesla enterprise as an example, this paper analyzes the rationality of ESG concept on enterprise value evaluation, it also puts forward corresponding deficiencies, summarizes and looks forward to relevant research methods.

Key words: Enterprise value; ESG; Sustainable development

Feng, B., Cheng, L. T., & Feng, J. W. (2022). Study on Enterprise Value Evaluation Based on ESG: Taking Tesla Enterprise as an Example. *Canadian Social Science, 18*(1), 61-74. Available from: http://www.cscanada.net/index.php/css/article/view/12409
DOI: http://dx.doi.org/10.3968/12409

1. INTRODUCTION

With the deepening of economic globalization, the concept of green development has gradually gained popularity. If enterprises want to obtain advantages in the fierce competitive market, they must keep up with the trend of the times, actively respond to the national call as well as shouldering the great responsibility of fulfilling social responsibilities, optimizing social and corporate governance. In November 2012, the 18th CPC National Congress included ecological progress in the overall plan of building socialism with Chinese characteristics. It clearly pointed out that ecological progress is a long-term project which influences the well-being of the people and the future of the nation. In 2020, China officially puts forward the target that the emission of carbon dioxide strive to peak before 2030 years, to become carbon neutral before 2060 years. In the same year, general secretary, Xi Jinping in 14 five-year plan and 2035 vision mentioned the sustainable development strategy of promoting green development and promoting harmonious coexistence between man and nature. In the future, China will pay more attention to green development and ecological environment protection. In order to respond to the national call, enterprises should strengthen sustainable development on the basis of paying attention to economic interests.

Compared with the traditional automobile industry's huge demand for fossil energy, the new energy automobile industry, emerging industries, has less harm to the environment. In 2021, the total number of new energy vehicles in China reached 5.8 million, accounting for

more than half of the total number of new energy vehicles around the world. In addition, Chinese output of new energy vehicles in the first half of 2021 was 967,000, and the sales volume was 950,000. Compared with the same period in 2020, the growth increased approximately 2.2 times, it is not difficult to find that the growth of new energy vehicles is rapid. Its excellent development is an important cornerstone to achieve the goal of carbon peak and carbon neutrality.

The ESG concept involved in this paper can evaluate enterprises in terms of investment behavior, enterprise's achievements in promoting sustainable economic development and practicing social responsibility. Based on ESG theory, this paper selects relevant indicators and constructs an appraisal model. Combined with the evaluation process of Tesla enterprises under the ESG theoretical system, this paper analyzes the problems of enterprise value evaluation in China and further puts forward suggestions to improve ESG enterprise value evaluation from the government, enterprises, regulatory authorities and the public, so as to jointly promote the healthy development of Chinese capital market.

Since the reform and opening-up, Chinese economic development is getting better and better. Although China has made many historic achievements, lots of accumulated ecological and environmental problems have become the obvious weakness of Chinese development. From a national perspective, General Secretary Xi Jinping proposed a new contribution and long-term vision to address climate change at the general debate of the 75th Session of the United Nations General Assembly in 2020: striving to peak carbon dioxide emissions by 2030 and achieving carbon neutrality by 2060; In 2021, the fourth Session of the 13th NPC adopted the 'Outline of the CPC Central Committee on Formulating the 14th Five-Year Plan for National Economic and Social Development' and the Long-term Goals of 2035, making 'promoting green development and promoting harmonious coexistence between man and nature' as an important state policy. In 2021, The Ministry of Ecology and Environment of China announced and implemented the Management Measures for Carbon Emission Trading (Trial). In the same year, China and the United States reached an agreement in Shanghai on the issue of climate change in China, forming a good vision of mutual assistance and cooperation with other countries to solve the climate crisis. The outbreak of COVID-19 at the beginning of 2020 suspended and terminated a large number of production activities around the world. As a result, the latest global carbon budget report shows that the world's carbon emissions will drop in 2020. This crisis not only brought about the outbreak of epidemic, but also brought people's scrutiny on environmental issues. According to the survey, the global average surface temperature in 2020 is already very close to the target set by the Paris Agreement: keeping the temperature within 1.5 degrees Celsius of the pre-industrial average. In terms of many environmental and policy factors, the global policy for sustainable development will be further improved. Facing with this overall environment, the vigorous development of new energy vehicles is to some extent an important tool for environmental deterioration.

In terms of enterprise appraisal, in 2019, The Asset Appraisal Association of China issued the notice of 'Guidance on Market Development of Asset Appraisal Industry (2019)', which included ESG elements into the influence of enterprise valuation. At the same time, in 2021, The International Assessment Standards Council issued the guiding document ESG and Enterprise Valuation, which to some extent confirmed the impact of ESG on enterprise value internationally.

In terms of investors, the attribute of new energy vehicles not only complies with the concept of global sustainable development, but also has strong stability in dealing with climate change and green finance. According to a series of surveys conducted by Price Water House Coopers on private equity fund managers since 2015, 81 percent of the companies surveyed report on ESG matters to their boards at least once a year, and 91 percent said they are developing an ESG investment strategy. The number of the practitioners who are actively responsive to the ESG theory is growing steadily. From this result, indicators related to ESG are gradually need to be considered in investment and gradually affecting the future trend of enterprises.

This paper takes Tesla Corporation, a new energy vehicle industry, as an example to analyze the rationality of enterprise value appraisal under ESG concept, further improve the enterprise value evaluation under ESG concept in order that we can make the evaluation result more accurate, provide guarantee for the sustainable development evaluation of enterprises and become an effective tool to improve the function of capital market.

2. RELATED LITERATURE REVIEW

2.1 Relevant Research Status Abroad

Enterprise valuation is a subsidiary of the appraisal industry. Assessment industry has been around worldwide for about 200 years, its source is an assessment of the informal private real estate assessment. Subsequently, due to the various and frequent transfer of real estate between people, trivial real estate appraisal experience has been slightly backward for people and cannot meet people's needs. It is easy to find that the lack of such needs is the reason for the emergence of the asset appraisal industry.

The idea of enterprise evaluation was first proposed by the British economist Irving Fisher. In his theory of capital value, he expounded the relationship between income and capital related issues, etc. In theory, he concluded

that if the establishment of an enterprise is regarded as investment, the value of the enterprise is the present value of the future income flow that the enterprise itself can bring. Later, Williams (1938) created the precedent of intrinsic value theory and proposed the concept of discounted cash flow for the first time in his doctoral thesis. Meanwhile, he also proposed the discounted dividend model, which regarded dividends as cash flow, laying a foundation for the wide application of discounted cash flow method. Subsequently, in the article *The Pricing Of Options and Corporate Liabilities* published by Fischer Black and Myron Scholes in 1973, the formula of option pricing was given, which avoided people's preference dependence on the probability distribution of future stock price and investor risk, laid the foundation of real option theory, and has been widely used. In the book *Damodaran On Valuation*, Professor Aswath Damodaran systematically introduces the method of asset valuation and discusses the valuation. At this point, the enterprise value evaluation system gradually tends to mature.

2.2 Relevant Research Status in China

The theory of enterprise value was introduced into China earlier, and most Chinese scholars have learned from the theoretical results of western countries. The concept of enterprise value evaluation has aroused many disputes and discussions since it came into being. It is pointed out in the Asset Appraisal Practice Code -- Enterprise Value revised and issued by China Asset Appraisal Association in 2018,'The appraisal of enterprise value refers to the act and process by which a certified asset appraiser, in accordance with the relevant laws, regulations and asset appraisal standards, analyze and estimate the total enterprise value, the total equity value or the value of partial equity for specific purposes on the appraisal benchmark date, and issue professional opinions'.

How to choose the enterprise value appraisal method is the core problem of enterprise value appraisal. The differences in the appraisal approaches directly affect the appraisal result and market transaction value of the evaluated enterprise. Overall, value appraisal methods can be divided into three basic types: market comparison approach, cost approach and income approach. These three methods is not only the internationally recognized, but also generally recognized in China. When carrying out the enterprise value appraisal, the evaluator should appropriately choose the appraisal method according to the appraisal object, appraisal purpose, type of value, etc. From the current situation of research on new energy automobile enterprises, the appraisal of new energy automobile enterprises in our country system is weak. There is no relatively complete appraisal system. At a time when the green energy industry is increasingly important, we should pay more attention and strive to create a complete appraisal system, reduce the error existed in the appraisal process and optimize the appraisal process.

Enterprise valuation has always been a hot topic in the appraisal industry. Many scholars have expressed their different views on it. For the construction of the index system, scholar Wang Yuying (2017) chose to construct the index system from three indicators: business performance index, core competence index and external environment index. Wu Nan (2019) concluded that four indicators, including customer satisfaction and enterprise development strategy, have a great impact on enterprise value. Hu Xinyun (2014) discussed from three dimensions: enterprise credit risk, enterprise current value as well as enterprise value growth potential, and integrated different types of indicators to construct the value system.

Combined with Chinese national conditions, Green Finance Research Group of Industrial and Commercial Bank of China (2017) became the first pioneer of establishing ESG green rating system among domestic commercial banks by learning from various sources and data.Meanwhile,180 enterprises in Shanghai Stock Exchange were taken as samples for trial calculation ,which strengthened the construction of Chinese ESG green rating system. It helps investors to evaluate the new look of new enterprises in the new era.

Based on the perspective of ecological civilization, Yu Junqiu and Wang Ying (2021) put forward hypotheses from three perspectives of ESG, adopted Tobin's Q value as a measurement index, analyzed enterprise value, and verified the conclusion through robustness test: Environmental violations of enterprises have a certain negative impact on corporate value, but the impact is not significant. The performance of social responsibility and corporate governance is directly proportional to corporate value.

In view of the existing problems of ESG in China, Chen Ning and Sun Fei (2019) analyzed and compared ESG systems at home and abroad to explore the similarities and differences between them. Under the framework of ESG, no matter at home or abroad, the evaluation indicators selected in environmental society and governance completely show the performance of enterprises in all aspects, which can be reflected by the market price. However, compared with foreign countries, the integrity of Chinese ESG system is weak. It' necessary for us to consolidate the quality of disclosure and data basis. Li Qin (2021) summarized the main problems of ESG in China through the example of Ping An. First, there is no unified objective standard for the connotation of ESG. Second, the information disclosure lacks accuracy, substance and integrity. Thirdly, the current researches on ESG in China are insufficient. Chen Ning and Sun Fei (2019) put forward corresponding suggestions for Chinese shortcomings. First, government departments should take the lead in improving China's ESG evaluation index system. Second, we should actively promote the construction of ESG database; Third, guide enterprises to voluntarily disclose ESG information, and combine compulsory disclosure with voluntary disclosure.

Cao Qun and Xu Qian (2019) proposed that the meaning of financial ESG can be explained from two aspects: one is the self-construction of financial institutions and the development system of ESG; the other is the great influence of financial institutions as carriers to connect various economic entities. It points out that there are six deficiencies in Chinese financial ESG system, including vagueness of concept, lack of special laws and regulations, difference of evaluation standard and index as well as disunity of disclosure standard. Yi Fei (2019) proposed that there was a positive correlation between corporate financial environmental responsibility and the improvement of financial performance. He adopted the method of factor analysis to reduce dimension from four aspects: profitability, debt paying ability, operating ability and development ability, selected appropriate alternative variables of financial performance, and drew a conclusion through correlation analysis and regression analysis.

Liu Lu and Xu Wentao (2019) compared the traditional credit rating system with ESG evaluation system through bond credit default events. The traditional credit rating system focuses on the operating financial status. While the ESG evaluation system not only analyzes the enterprise from the financial aspect but also focuses on the value orientation of the enterprise, which helps to make up the deficiency of the traditional bond credit default index.

Chinese new energy vehicle industry emerged in the 21st century. In 2001,the research of new energy vehicles has gradually been attached importance to by the state, and its project is included in the '863' major scientific and technological topics during the national 'tenth five-year plan'. In addition, The country has also mapped out a strategy to start shifting from gasoline cars to hydrogen vehicles However, compared with European and American countries, Chinese support for new energy vehicles has been delayed. Since 2009, China has given appropriate subsidies to various new energy vehicles to fully support the development of the new energy vehicle industry. Different types of new energy vehicles have different fuel supply modes. From the perspective of the current energy supply mode of new energy vehicles, unconventional fuel is mainly selected to supplement power, followed by the application of various new vehicle power devices based on the use of common fuel to supplement power.

In the face of the research on the enterprise value evaluation of new energy vehicles, Zeng Hongzhang (2014) studied the value project of new energy vehicles from a new perspective based on the Option Theory, and analyzed it from the uncertainties of technological development, regulations, policies, and battery price. At the same time, the value evaluation method of the new energy vehicle R&D investment project is studied based on the BS model, and the basic model conforming to the R&D investment project is established. Then, the model was used to calculate and analyze the EV R&D investment project to obtain the final value. Chen Xianrui and Xu Shiying (2020) selected the 16-18 annual report data of 179 new energy vehicles as samples and selected 15 financial indicators from five aspects, including profitability, asset scale and debt paying ability. Factor analysis in SPSS23.0 software was used to construct an indicator system to evaluate the whole industry. In terms of considering the utility of common evaluation methods, Yang Jieni (2021) mainly analyzed the characteristics of the new energy automobile enterprises. Taking NIO automobile enterprise as an example, Yang Jieni (2021) revised the cash flow forecast based on the discounted cash flow model, creatively adopted the calculation of accelerated growth rate, and added the part of perpetuities to improve the accuracy of the evaluation results.

Of course, the second-hand car market of new energy vehicles in China is also developing on the rise. Xue Kai (2019) studied the second-hand new energy vehicles in China, believing that the natural phenomenon of vehicles and the low residual value rate restrict the enthusiasm of the market. Facing the pessimistic second-hand car market of new energy, it is necessary for us to promote the healthy development of new energy second-hand car market through tax policy subsidies, establishment of authoritative appraisal as well as evaluation system, and improvement of battery recycling value.

Zhao Meihui (2020) found a new way to study the charging facility industry related to new energy vehicles. For new energy vehicles, the supply of relevant charging facilities is an important part that cannot be ignored. The reason why many consumers who are unwilling to buy new energy vehicles is the related power supply facilities. The study found that charging piles are mainly concentrated in the first-tier cities, second-tier cities and eastern provinces, which are relatively scattered. However, the number of charging piles in cities also needs to be strengthened. In addition, there are still many problems in the equipment of relevant charging facilities at the present, such as great dependence on government policies, serious security risks and the intelligent degree of charging piles to be strengthened.

2.3 Research Review

In general, for the current enterprise value evaluation, we can not unilaterally take into account the enterprise's financial information. Non-financial information and other directions of development are also the top priority for enterprises to improve their own. At the same time, there is still a long way to go for the development of ESG concept in China. Many enterprises have realized the importance of ESG concept, but there is still a lack of awareness in practice, and it is necessary to strengthen the disclosure management of non-financial indicators. In addition, the development of related charging facilities is an important driving force for the development of the new energy vehicle industry. China has a long way to go for the development of related charging facilities industry.

2.4 Research Ideas and Content

Although the traditional methods are generally accepted in China, they are defective in the process of evaluation. These traditional methods are still far from the perfect standard. At present, new energy vehicle enterprises are in the high speed development phase. But the market is not yet mature, and the future cash flow is unstable. There are few cases on the evaluation of new energy vehicle enterprises in China. The traditional income model cannot quantify the ESG key factors one by one. In order to make up for the defects of traditional enterprise value evaluation method and further enrich the value evaluation theory of new energy vehicles, this paper mainly adopt the market approach and combined with ESG related factors based on the ESG theory.

This paper first summarize the information about ESG concept and new energy vehicle enterprises at home and abroad. At the same time, the paper also pay attention to the research and analysis of domestic and foreign scholars on enterprise value appraisal approaches. Then the paper conclude some relevant theoretical results, establish the ESG enterprise value appraisal index system, and finally form the general framework of ESG enterprise value appraisal model to discuss new evaluation methods.

3. RELEVANT CONCEPTS AND THEORETICAL BASIS

3.1 Related Concepts

3.1.1 The Concept of ESG

ESG theory refers to environmental, social and corporate governance, which mainly includes information disclosure, Assess ratings and investment guidance. Since the emergence of ESG, this theory has gradually become the basis of social responsibility investment and one of the significant components of green financial system. The concept of ESG first originated from ethical investment and responsible investment. Based on ESG evaluation, investors can observe ESG performance of enterprises so as to estimate investment behavior and enterprise's achievements in promoting sustainable economic and social development, corporate governance and other aspects. This concept engages companies in interconnected and interdependent social networks, paying more attention to the consistency of corporate and social values brought by the development of companies. The first ESG fund was established in the US in 1971. The first ESG index was established in 1990. In 2006, the United Nations established the Principles for Responsible Investment and formally put forward the concept of ESG, taking environment, social and corporate governance as important indicators to measure sustainable development, which establish the principle of social responsibility investment. After years of exploration, the concept of ESG was finally proposed in 2004, United Nations Global Compact simultaneously encouraged capital markets to consider ESG into business activity decision-making. Thus, the development of the ESG concept has entered a new era. At present, there is great support and improvement in the ESG investment policy in China, but there are many deficiencies in the implementation. Most enterprises still stay in the level of theoretical analysis, and the number of enterprises using ESG evaluation is relatively small. In addition, China's evaluation system is relatively scattered, and there is no general ESG evaluation model to refer to. By 2020, ESG information disclosure of listed companies in China has been on the rise, with about 27% of companies choosing to release ESG reports, including 259 of the 300 listed companies in Shanghai and Shenzhen. It has to be said that the ESG concept has gradually penetrated into the operation and management of enterprises. However, the disclosure rate of ESG indicators in 2020 shows an upward trend compared with that in 2018,but the disclosure rate is still low in social indicators and environmental indicators, at 35.40% and 49.20%, respectively, lacking certain disclosure quality.

3.1.2 The Appraisal of Enterprise Value

The appraisal of enterprise value refers to the act and process by which a certified asset appraiser, in accordance with the relevant laws, regulations and asset appraisal standards, analyze and estimate the total enterprise value, the total equity value or the value of partial equity for specific purposes on the appraisal benchmark date, and issue professional opinions. At present, the European Asset Appraisal Standard divides the value of an enterprise into two types: one is the enterprise value, namely the overall value of the enterprise, which is the sum of the value of shareholders' equity and creditors' equity. The second is equity value, that is, value of shareholder's rights and interests. In China, enterprise value is clearly defined as the overall value of shareholders, the value of all shareholders' equity and the value of part of shareholders' equity. For the enterprise value appraisal, we can mainly analyze from the macro-regional factors, industry status and prospect, enterprise business and enterprise asset finance, etc. At present, the main adopted methods are income approach, cost approach and market comparison approach. Different enterprises need to use different evaluation methods. In the evaluation, the characteristics of enterprises need to be identified and appropriate evaluation methods should be adopted.

3.2 Basis of Theory

3.2.1 ESG Theory

The theoretical basis of ESG theory is more dependent on the responsibility mission and future vision of an enterprise. Corporate governance (G) and social responsibility (S) are important variables from both

internal and external perspectives for enterprises. They are also the basis for sustainable and effective operation of an enterprise. Environmental problem (E) refers to the parallel variable that enterprises should consider for the future when they are located in the whole society. In 2008, The Shanghai Stock Exchange issued the Guidelines on Environmental Information Disclosure for Listed Companies of the Shanghai Stock Exchange, which clearly requires companies to undertake social responsibilities, relevant work and disclose environmental information. In 2016, seven ministries and commissions, including the People's Bank of China, issued 'Guidelines on Building a Green Financial System' based on the goal of building a financial system. In 2018, China Securities Investment Fund Association issued the 'Green Investment Guidelines (Trial)', which clearly defines the connotation of green investment and sets out green policies, principles and basic methods.

3.2.2 Sustainable Development Theory

Sustainable development is an integrated concept involving resources, society, economy and environment, which first appeared in Our Common Future published by the United Nations Commission on Environment and Development. The main theory of sustainable development mainly refers to the idea that development meets the needs of modern people and does not harm the development of future generations. It mainly includes three principles, including fairness, continuity and commonality. Fairness principle is mainly reflected in time and space. Fairness in time mainly means that the capacity of resources and environment on the earth is limited, and we need to share resources and environment with future generations. Fairness in space refers to the equality between people, between people and other species, and between nations. The principle of sustainability means that we should make rational use of non-renewable resources, sustainable use of renewable resources, and strive to coordinate social, economic and ecological benefits. The solution of many current environmental problems requires international cooperation. Only joint efforts can solve the problems. This act embodies the principle of commonality.

4. DESIGN OF ENTERPRISE VALUE EVALUATION INDEX SYSTEM BASED ON ESG

4.1 Necessity of Establishing ESG Enterprise Value Evaluation Index System

First, the sustainable development strategy is in full swing. Compared with other enterprises in the same industry, enterprises that agree with ESG concept have a certain valuation premium, especially in new energy enterprises. According to the survey, enterprises that increase the ESG factors have stronger risk resistance ability and regulation ability. Meanwhile, qualitative factors in ESG, such as reputation, core technology and talent management, more or less improve the image of enterprises in the heats of consumers and play a positive role when the market is negative impact.

Secondly, in the COVID-19 outbreak starting from 2020, environmental issues are one of the reasons for the outbreak. The first environmental problem is global warming, to which global leaders in the fields of economics, finance, sciences as well as technology and energy have taken corresponding measures, the community of shared future for mankind is particularly prominent at this moment. ESG is more inclined to thinking than a concept. It is a more advanced reasonable and comprehensive corporate governance idea. In the face of emergencies like COVID-19, ESG can help companies strike a balance between business values and social responsibilities.

Thirdly, from the perspective of investors, an effective ESG report is crucial to improve the status of enterprises in the capital market. As the concept of ESG becomes more and more well-known, many investment institutions use non-financial information as an auxiliary means of investment. The establishment of ESG enterprise value appraisal system is helpful to the analysis of investment institutions and the financing of enterprises.

4.2 Principles of Setting ESG Enterprise Value Evaluation Index System

Selecting reasonably and reflecting the enterprise value indicators properly are the key to the objective evaluation of the enterprise value. The construction of a scientific and reasonable ESG enterprise value evaluation index system should follow the following three principles:

4.2.1 Comprehensiveness

When setting up the enterprise value evaluation index system, we need to think about the enterprise value as the whole. When setting up evaluation indicators, we should not only consider the financial factors of the enterprise, but also need to integrate some non-financial elements into them. Taking the new energy vehicle industry as an example, on the basis of considering financial factors (efficiency), we should also take ESG factors, such as supply chain, financial control and other response capacity, social impact and reputation into consideration. The combination of qualitative and quantitative indicators is used to fully consider the impact on enterprise valuation and ensure that the enterprise can be comprehensively and effectively evaluated.

4.2.2 Flexibility

We should learn to identify the potential future development capacity of enterprises. When carrying out the value evaluation of the enterprise, appropriately select individual ESG key factors, convert ESG key factors into value measurement, reflect the characteristics of potential growth capacity of enterprises, and consider the rapid growth capacity and potential profitability of enterprises.

4.2.3 Easy to Operate

In view of the establishment of enterprise value appraisal index system, it is also need certain operational flexibility on the principle of paying attention to comprehensiveness and flexible screening of various development indicators, so that on the basis of including enterprise conditions, the indicators in the index system can modify different indicators according to different enterprise conditions.

4.3 Selection and Analysis of Specific Evaluation Indicators

4.3.1 Analysis of ESG's Influence Factors on Enterprise Value Evaluation

In the wide range of enterprise value impact factors, ESG concept mainly divides them into financial indicators and non-financial indicators, which are as follows:

4.3.1.1 Profitability -- Efficiency

The profitability of an enterprise is a measure of the enterprise's ability to obtain profits, which is usually seen as the amount of enterprise income and its level in a certain period. The profitability of an enterprise, also known as the financial index, accounts for a large proportion in the traditional valuation system. In terms of efficiency in the influence distribution of enterprise value factors mainly include profitability, capital utilization efficiency and integration factors. Compared with resource integration and asset utilization efficiency, profitability has a weaker influence in the evaluation process of enterprise value, and the score of asset utilization efficiency has a higher impact on the evaluation results.

4.3.1.2 Sustainable Development -- Adaptability

Resilience refers to the ability of an enterprise to make strategic plans comprehensively and effectively and have alternative plans. Meanwhile, the enterprise has special personnel to collect new changes in external economic and political environment, industrial policies or standards. Good adaptability is an important quality for an enterprise to be able to adapt to changes. In ESG factor analysis, resilience is mainly reflected in supply chain, customers, financial control and operation capacity. The data comes out that supply chain and financial control have a greater impact. Under the sustainable development ability, supply chain mainly refers to supply chain management and supply chain dependence. Improper supply chain management or excessive reliance on supply chain are fatal weaknesses for enterprises. Financial control mainly refers to the credit rating and financing capacity of an enterprise. Problems in either the supply chain or financial control will greatly affect the results of an enterprise in value appraisal.

4.3.1.3 Environment and Compliance -- Social Responsibility

Corporate social responsibility refers to the fact that enterprises should take responsibility for consumers, communities and the environment while fulfilling their responsibilities. Different from traditional corporate social responsibility requirements, corporate social responsibility emphasizes the value of people in the production process and the extent to which enterprises contribute to the environment, consumers and society. Today, with more emphasis on green development, social responsibility has become an important part of corporate value evaluation. Corporate reputation, social impact and compliance with tax payments are not only considered by consumers, but also investors, as well as factors in the evaluation.

4.3.2 Selection of Evaluation Indicators

In accordance with the principles of ESG index design system and in combination with relevant key driving factors of new energy vehicle enterprises, several representative indicators are mainly selected from ESG influencing factors based on importance and risk issues:

- In terms of profitability, return on net assets, return on total assets, net profit rate on sales and earnings per share were selected respectively.
- In terms of solvency, quick ratio, asset-liability ratio and cash-flow liability ratio are selected respectively.
- In terms of asset utilization efficiency, total asset turnover rate, asset turnover rate, asset turnover days and inventory turnover rate are selected respectively.
- In terms of resource integration, the main choice is based on enterprise resource integration methods, such as business outsourcing, joint venture and joint product development.
- In terms of rules and regulations, they chose the standard system certification, franchise and so on.
- In terms of social responsibility, compliance tax payment and emissions were selected respectively.
- In terms of market position, market share and industry type were selected respectively.
- In terms of the supply chain, the production and sales rate, inventory turnover and cost profit were selected.
- In terms of core talents, team stability, average working years and the proportion of senior executives with bachelor degree or above are selected.
- In the aspect of science and technology research and development, the ratio of science and technology talents, the level of intelligent information technology and effective invention patents were selected respectively.
- In terms of products and services, customer satisfaction and customer complaints were selected respectively.
- In terms of brand reputation, brand awareness, proportion of advertising and marketing investment and negative corporate information were selected respectively.
- In terms of consumer loyalty, repeat purchase rate and customer recommendation rate were selected respectively.
- In terms of technological innovation ability, the ratio of intangible assets to sales revenue, R&D expenses to sales revenue, high-tech products and technical personnel are selected respectively.

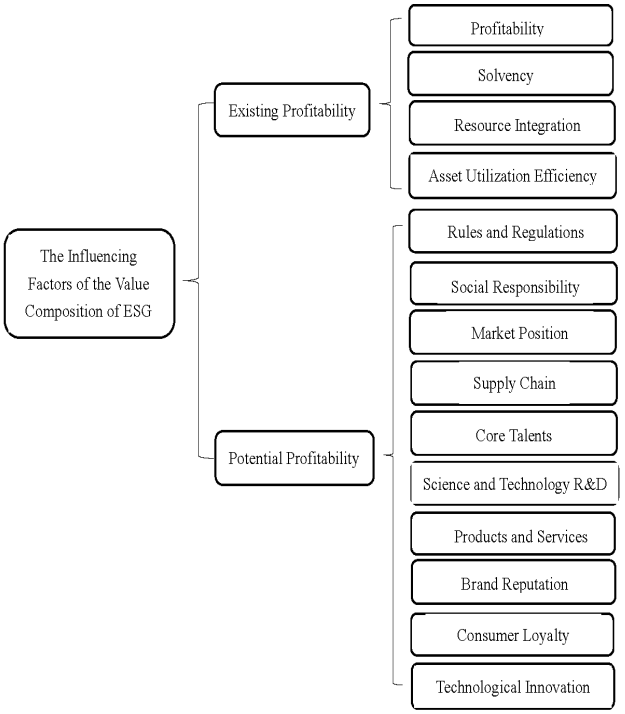

Figure 1
Selection of enterprise value evaluation indicators

5. ESTABLISHMENT OF ENTERPRISE VALUE EVALUATION MODEL BASED ON ESG

5.1 Traditional Value Assessment Methods and ESG Applicability Analysis

5.1.1 Market Comparison Method

Market comparison approach is a method of determining the assets' value by comparing the similarities and differences between similar assets, and then adjusting the market price of reference assets. In traditional valuation, the preconditions of market method must be met: a). There is a public market and an active transaction for the comparable object of evaluation, and there is a suitable number of reference instances; b). Necessary information about the transaction is available.

Under the ESG appraisal system, when selecting comparable companies, the ESG selection factors of comparable and target companies should be analyzed in order to choose comparable companies that are as similar as possible.

5.1.2 Cost Approach

Cost Approach refers to the method of obtaining the re-purchase and construction price of the appraised asset at the time of appraisal, and then deducting depreciation to obtain the objective and reasonable price or the value of the appraised object. The basic formula is:

The valuation of evaluated assets = Replacement cost - Physical depreciation - Functional depreciation - Economic depreciation

Under the ESG appraisal system, enterprise value evaluation should reflect both quantitative and qualitative data. Under the cost method, it is cumbersome to take environment, supply chain and social impact ability into consideration, and these are uncertain factors, so the cost has great limitations.

5.1.3 Income Approach

Income Approach refers to the evaluation method of capitalization or discount of the expected income in order to obtain the value of the evaluated object. The basic formula is:

$$P = \sum_{i=1}^{n} \frac{R_i}{(1+r)^i}$$

P —Value of assessment of assets; R_i —Expected revenue in year i ; r —Conversion rate; n —The discount rate; i —Serial number

When using ESG concept to evaluate enterprise value, attention should be paid to the future performance of the evaluated company. For the company with poor going concern ability, we should provide a higher discount rate for the sustainable value, or not provide the sustainable value. However, higher inflation rate should be given to companies with better going concern ability.

In conclusion, compared with income method and cost method, market approach can more accurately determine the value of an enterprise. Cost method is difficult to judge qualitative indicators. In the evaluation of income method, the future rate of return and discount rate of an enterprise are highly subjective. Therefore, the market comparison method is the most suitable method for ESG enterprise value evaluation.

5.2 Determination of the Weight of Evaluation Indicators

The enterprise value evaluation based on ESG includes both quantitative and qualitative indicators. How to determine the application of these evaluation indicators in the evaluation process is a key point in the design of index system. The determination of index weight is helpful to solve this problem. Many scholars at home and abroad have summed up many methods, such as Delphi method, historical data method, analytic hierarchy process and so on. This paper mainly uses the analytic hierarchy Process to construct the weight of enterprise value evaluation index system.

5.2.1 The Establishment of a Hierarchy Structure

According to the different nature of indicators, this paper mainly establishes hierarchical structure from two aspects: financial indicators and non-financial indicators, and carries on weight analysis.

Table 1
Hierarchy Analysis Table (Financial Indicators)

Target layer	Level 1 indicators	Level 2 indicators	Level 3 indicators
Enterprise Value Appraisal Based on ESG (A)	Financial Indicators (B1)	Profitability (C1)	Return on Net Assets(D1)
			Rate of Return on Total Assets (D2)
			Net Interest Rates for Sales(D3)
			Earnings Per Share(D4)
		Solvency (C2)	Quick Ratio (D5)
			Asset-liability Ratio(D6)
			Cash Coverage Ratio(D7)
		Asset Utilization Efficiency (C3)	Turnover of Total Capital(D8)
			Asset Turnover(D9)
			Number of Days of Asset Turnover(D10)
			Inventory Turnover Ratio(D11)
		Resources Integration (C4)	Business Outsourcing(D12)
			Joint Capital(D13)
			Joint Research and Development of Products(D14)

Table 2
Hierarchy Analysis Table (Non-financial Indicators)

Target layer	Level 1 indicators	Level 2 indicators	Level 3 indicators
Enterprise Value Appraisal Based on ESG (A)	Non-financial Indicators (B2)	Rules and Regulations (C5)	Standard System Certification(D15)
			Franchise Right(D16)
		Social Responsibility (C6)	Compliance Tax Payment(D17)
			Discharge(D18)
		Market Position (C7)	Market Share(D19)
			Type of Industry(D20)
		Supply Chain (C8)	Production and Sales Rate(D21)
			Inventory Turnover(D22)
			Cost Profit(D23)
		Core Talents (C9)	Team Stability(D24)
			Average Working Years of Employment(D25)
			The Proportion of Senior Executives With A Bachelor's Degree Or Above(D26)
		Science and Technology R&D (C10)	The Ratio of Scientific and Technological Talents(D27)
			Intelligent Information Level(D28)
			Number of Effective Invention Patents(D29)
		Products and Services (C11)	Customer Satisfaction(D30)
			Number of Customer Complaints(D31)
		Brand Reputation (C12)	Brand Awareness(D32)
			The Proportion of Advertising and Marketing Investment(D33)
			Corporate Negative Information(D34)
		Consumer Loyalty (C13)	Repeat Purchase Rate(D35)
			Customer Recommendation Rate(D36)
		Technological Innovation (C14)	The Ratio of Intangible Assets to Total Assets(D37)
			R&D Expenses Account for Sales Revenue(D38)
			The Proportion of High-tech Products(D39)
			The Proportion of Technical Personnel(D40)

5.2.2 The Construction of the Judgment Matrix

The comparative quantitative values between indicators are specified and the importance grade is evaluated on a 1-9 scale:

Table 3
The AHP comparison scale

Definition	Weight
Equal important	1
Weak importance of one over another	3
Essential or strong importance	5
Very strong importance	7
Absolute importance	9
Intermediate values between the two adjacent judgements	2, 4, 6, 8
Reciprocals of above	$a_{ij} = \frac{1}{a_j}$

i—indicators of the line; j—the index in the vertical column; a_{ij}—the numerical expression of the relative importance of the third-level index pairs relative to the second-level index C.

5.2.3 The Establishment of Target Layer and Indicator Layer Judgment Matrix

By comparing two indicators of the same level, the expert scoring method is used to determine the relative importance of each indicator to construct the judgment matrix of each level. The following judgment matrix Z is obtained:

$$Z = (a_{ij})_{m\times n} = \begin{pmatrix} a_{11} & a_{12} & a_{13} & \cdots & a_{1n} \\ a_{21} & a_{22} & a_{23} & \cdots & a_{2n} \\ a_{31} & a_{32} & a_{33} & \cdots & a_{3n} \\ \cdots & \cdots & \cdots & \cdots & \cdots \\ a_{m1} & a_{m2} & a_{m3} & \cdots & a_{mn} \end{pmatrix}$$

5.2.4 Calculation of Eigenvectors ω

Step 1: Find the sum of each column…

Step 2: Divide the sum of each column by the corresponding value of each column , that is , obtain the following table by column normalization:

Table 4
Normalized by column

Z	D1	D2	D3	…	D_n
D1	$\frac{a_{11}}{S_1}$	$\frac{a_{12}}{S_2}$	$\frac{a_{13}}{S_3}$	…	$\frac{a_{1n}}{S_n}$
D2	$\frac{a_{21}}{S_1}$	$\frac{a_{22}}{S_2}$	$\frac{a_{23}}{S_3}$	…	$\frac{a_{2n}}{S_n}$
D3	$\frac{a_{31}}{S_1}$	$\frac{a_{32}}{S_2}$	$\frac{a_{33}}{S_3}$	…	$\frac{a_{3n}}{S_n}$
…	…	…	…	…	…
D_n	$\frac{a_{m1}}{S_1}$	$\frac{a_{m2}}{S_2}$	$\frac{a_{m3}}{S_3}$	…	$\frac{a_{mn}}{S_n}$

Step 3: Average the matrix values of each row resulting from column normalization to get the weight value of each indicator ω .

5.2.5 The Consistency Test on the Obtained Judgment Matrix

In order to test the reliability of judgment and avoid contradictions in the process of expert scoring, consistency check is needed. Let the maximum eigenvalue of the matrix be $\lambda_{\max}$. The formula for the maximum eigenvalue of the matrix is:

$$\lambda_{\max} = \sum_{i=1}^{n} \frac{(z\omega)_i}{n\omega_i}$$

For consistency test, CI and CR values need to be calculated, and the specific formula is as follows:

$$\text{Consistency Index} = \frac{\lambda_{\max} - \text{n}}{n-1} \quad \text{（n-the matrix order）},$$

$$\text{Consistency Ratio} = \frac{C}{R}$$

After calculating the consistency ratio CR, the value of RI can be calculated in the way of checking the tables.

Table 5
RI Numerical query

Order	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
The value of the RI	0	0	0.52	0.89	1.12	1.26	1.36	1.41	1.46	0.49	0.52	1.54	1.56	1.58	1.59

If the consistency ratio is lower than 0.1, the judgment matrix obtained meets the consistency requirements. The feature vector ω corresponding to the maximum eigenvalue of the matrix is the weight vector.

5.3 Establishment of ESG Evaluation Model

Under the market comparison method, we can evaluate the enterprise value under the traditional theory by comparing with similar examples. Then I quantify the non-financial index ESG factor, adjust the enterprise value under the traditional theory, and finally obtain the final enterprise value.

During the evaluation process, in accordance with the institutional standards and expert ratings, the evaluation

grades of evaluation index can be divided into 5 levels, respectively, with excellent, good, average, poor, very poor. At the same time, the 5 levels are quantified, 'excellent' is 95, 'good' is 85, 'general' is 75, 'poor' is 65, and 'very poor' is 55. Finally, the calculation formula of enterprise value score can be obtained by combining the score of evaluation index β with weight vector ω:

$$\text{The Score of enterprise value} = \sum_{i=1}^{n} \beta_i \omega_i$$

The evaluated enterprise value can be obtained according to the following formula:

$$\text{The evaluated enterprise value} = \frac{\text{The score of the enterprise being evaluated}}{\text{The score of comparable business}} * \text{Net assets market value of the comparable enterprise}$$

6. CASE STUDY OF TESLA ENTERPRISE VALUE EVALUATION

6.1 Introduction to Tesla

Tesla is an American electric vehicle and energy company. Its purpose is to accelerate the global transformation to sustainable energy. Its main business is the production and sales of electric vehicles, solar panels, and energy storage equipment. But selling cars is still the majority, accounting for nearly 90% of revenue. What cannot be ignored is Tesla's investors, including Larry Page and Sergey Brin, the founders of Google, and this talent advantage creates a great advantage for Tesla in technology. In June 2013, Tesla reached a strategic cooperation with China Merchants Bank Credit Card on automobile installment business, which provided customers with the choice of monthly payment and installment purchase, greatly reducing the threshold of car purchase and providing many Tesla users with convenient services.

6.2 Related Information on ESG Concept

As we all know, the exhaust gas emitted by the traditional automobile industry is the most serious pollution, and it is also the largest part that affects the climate in the development of the automobile industry. In the 21st century, when the green industry is fully advocated, it is particularly important for enterprises to do a good job in green transformation. However, the new energy vehicle industry is the best fit for this concept. Increasing in the number of new energy vehicles has significantly reduced environmental noise and slowed down the formation of urban heat island. According to the survey, from January to May 2021, Chinese production of new energy vehicles reached 970,000, sales reached 950,000, an increase of 2.2 times over the same period last year. It can be seen that new energy vehicles have a good prospect in Chinese auto market. At the same time, the worrisome supporting facilities for new energy vehicles are also improving. By April 2021, China had built 65,000 charging stations and 644 switching stations, covering 176 cities and more than 50,000 kilometers of highway charging network. Now, there are charging piles and mobile charging devices in many cities, which can change the battery in three minutes.

Tesla development mainly include three stages, respectively for the niche market, high-end market, and the mass market (Figure 2).Customers can choose the required model according to their own needs. Compared with other new energy vehicle enterprises, Tesla is also famous for its second-hand business. It mainly recycles customers' existing Tesla or non-Tesla cars to support new car sales. To some extent, recycling or exchange is conducive to deepening the popularity. According to the survey, Tesla and BYD are well known to the public now, and Tesla enjoys the highest popularity (Figure 3).

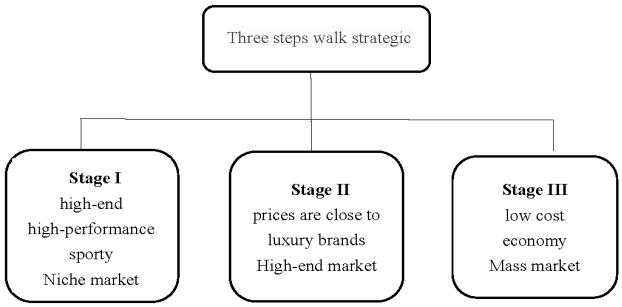

Figure 2
Tesla Development Strategy

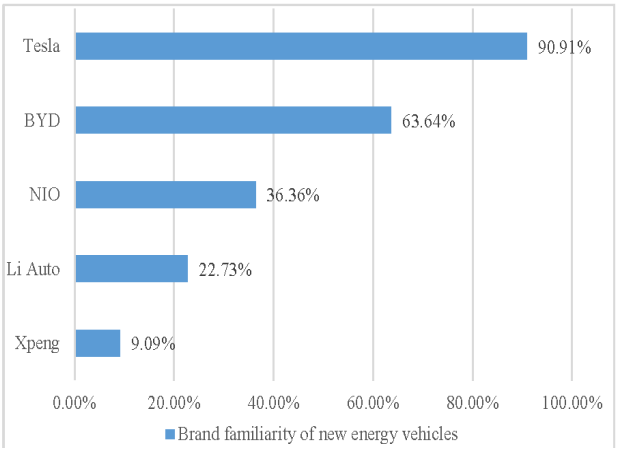

Figure 3
Brand familiarity of new energy vehicles

But in terms of popularity, we need to discuss Tesla dialectically. In April 2021, a driver wearing a T-shirt emblazoned with the words "Brake failure" stood on the roof of a Tesla at the Shanghai auto show, which hits the auto industry. Later, there were many incidents of Tesla losing control both at home and abroad, and 'Tesla' became a trending topic. On June 23, 2021, Tesla announced that it had filed a brake failure with Chinese regulatory authorities and would recall some imported

Model 3 models in China. In response to the brake failure, Tesla said 'There has never been any brake failure, nor have we received any crashes or injuries caused by this situation.' Whether or not there is the problem of brake failure, the popularity of Tesla has suffered a negative impact. A good enterprise is not only technically good, but also should always keep social responsibility in mind. After the accident occurs, it is the responsibility of an enterprise to find out the cause in a timely and improve relevant product functions to prevent similar problems from happening again. Apparently, Tesla didn't realize that. Many consumers get to know Tesla through this negative news, which greatly reduces the image of Tesla among consumers. In July of the same year, the car owner of NIO EC6 caught fire in a collision and died, which once again brought the potential safety risks of new energy vehicles to the public.

In terms of supply chain, Tesla battery mainly provided by the Japanese manufacturers. The supply of core hardware is mainly famous European and American manufacturers. The core control technologies such as BMS and motor control are still independently developed by Tesla. It has to be said that Tesla can greatly reduce costs by mastering the core technology in its own hands. In addition, the Tesla's new energy vehicles have a cool shape and texture design. It also own a powerful battery system and a unique battery management system, which takes only five minutes to charge and has a range of 400 kilometers.

In terms of government policies, in 2021, the Ministry of Finance issued the Notice on Policies on Vehicle Purchase Tax Exemption for New energy Vehicles, which stipulates that from 2021 to 2022, vehicle purchase tax can be exempted for newly purchased new energy vehicles. At the same time, the concept of 'promoting green development and promoting harmonious coexistence between man and nature' is deeply rooted in people's hearts, which not only promotes the development of green new energy industry, but also rings the alarm bell for many small and medium-sized enterprises. In June 2021, I conducted a questionnaire survey on some aspects of new energy vehicles. Among them, 47.37% of people believe that the government's tax policy has a significant impact on the purchase of new energy vehicles, and 0% disagree (as shown in Figure 4). It can be seen that government policies have a huge impact on car sales.

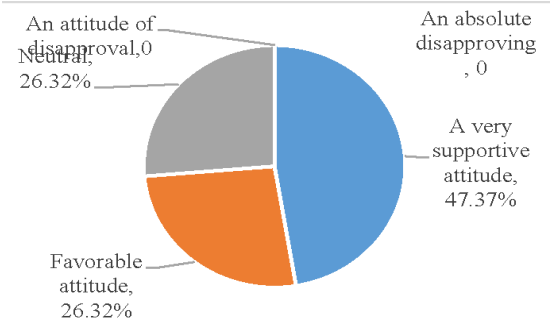

Figure 4
Investigation on the impact of government tax policy on the purchase of new energy

6.3 Enterprise Evaluation Process

The data showed that Tesla's overall operating revenue was on the rise in 2020.In terms of vehicle delivery, the total Tesla delivery was 180,667 in 2020. In the fourth quarter of 2020, the total Tesla delivery was 490,647 .At the same time, in 2020, the sales volume of new energy vehicles in China will be 1.367 million, of which Tesla accounts for about 36.6%, with a large market shares (Figure 5).

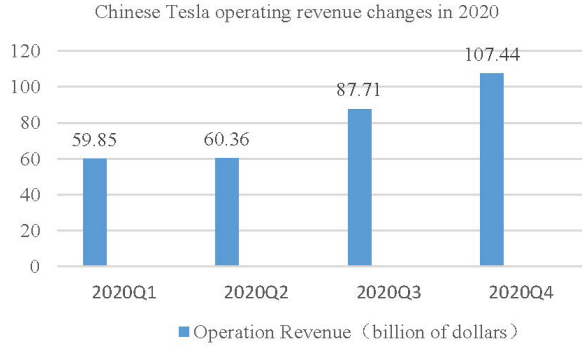

Figure 5
China Tesla operating revenue changes in 2020

In 2020, Tesla generated operating revenue of $31.54 billion, beating market expectations of $31.105 billion.

Table 6
Performance of Tesla in 2020 Unit: $100 million \ 10,000 cars

Period	Subject	Actual Performance	Expected Performance	The Corresponding Period	Growth Rate
The Fourth Quarter	Operation Revenue	108	103	73.8	46%
	Net Profit Attributable to Shareholders	2.7	7.63	1.05	157%
	Gross Profit	20.7	\	13.9	49%
	Total Automobile Production	18.0	\	10.5	71%
	Total Vehicle Delivery	18.1	\	11.2	61%
2020	Operation Revenue	315.4	311	245.8	29%
	Net profit Attributable to Shareholders	7.21	\	-8.62	\
	Gross Profit	66.3	\	40.7	63%

Without considering other factors, Tesla has the weakest short-term solvency and LI Auto is the strongest. However, a high quick ratio may indicate that the enterprise occupies too much cash and accounts receivable, which greatly increases the opportunity cost (Table 7). Asset-liability ratio reflects the proportion of funds provided by creditors in all funds, which is one of the indicators to measure the long-term solvency of an enterprise. The lower the ratio is, the stronger the solvency of the enterprise is. In the first quarter of 2021, Tesla's debt-to-asset ratio stood at 53.82%.

Table 7
Data comparison of four types of new energy vehicles in 2021 Q1

2021 Q1	TSLA	NIO	XPEV	LI
Current Ratio	1.66	3.06	4.48	5.83
Quick Ratio	1.38	2.96	4.27	5.58
Asset-liability Ratio	53.82%	50.20%	28.27%	21.23%

As can be seen from Table 8, the R&D expense of Tesla is 2.45 times that of the other three combined. According to the survey, Tesla invests the money in things like batteries, artificial intelligence software and chips. Operating expenses accounted for 15.6 percent of total revenue, and marketing expenses accounted for 10.16 percent of total revenue, respectively.

Table 8
Comparison of the expenses of the four types of new energy vehicles in 2021 Q1

2021 Q1	TSLA	NIO	XPEV	LI
Sales Revenue	663.97	79.82	29.51	36.64
R&D Expenditure	42.56	6.865	5.351	5.145
Marketing Expenses	67.48	11.97	7.208	5.099
Business Expenses	103.59	18.51	12.56	10.24
The Proportion of R & D Expense	6.40%	8.61%	18.13%	14.41%
The Proportion of Marketing Expenses	10.16%	15.00%	24.43%	14.26%
The Proportion of Business Expenses	15.60%	23.19%	42.56%	28.64%

Based on the above materials, we selected the appropriate ESG evaluation factors according to the evaluation index system. Based on the expert rating of the evaluation factors, we reasonably determine the weight vector of the evaluation factors. Later, the main data of Tesla Company was brought into the evaluation model, which first calculated the value of Tesla enterprises under the traditional appraisal method. Then we should combine the ESG valuation model to calculate the value of the enterprise.

7. THE CONCLUSIONS

Since the development of green enterprises is vigorously advocated by the state, many Chinese enterprises have begun to transform. The rise of the new energy vehicle industry is an important process of national green development. At present, Chinese new energy industry still mainly relies on government policy support. Our concept of new energy vehicles is also gradually updating, from buying new energy vehicles to embracing the existence of new energy vehicles.

Although the enterprise value appraisal system has developed rapidly in foreign countries, and China has actively absorbed the research results and experience, the traditional enterprise value evaluation method has been unable to evaluate the enterprise value comprehensively. Many appraisal institutions at home and abroad have proposed to put ESG factor into the evaluation, which provides a new idea for the contemporary enterprise value appraisal. In the appraisal of enterprise value, it is difficult to analyze qualitative indicators and quantify ESG factors. At present, we should overcome this difficulty, explore the establishment of indicator system and construct the appraisal model rationally.

Based on the comparison, this paper chooses the market comparison method, combining with analytic hierarchy process, quantifying the qualitative indicators, forming an appraisal model.

Different enterprises have different environmental, social and corporate governance impact. We should pick specific indicators for different enterprises, and then adjust the index system to find the most suitable factors for the evaluated enterprises. In this paper, there are few appraisal indicators for the new energy vehicle industry, and further research is needed to pick other influencing indicators in the process of evaluation. Efforts should be made to explore new appraisal methods and innovative quantitative models so as to help enterprises improve their sustainable development ability and ultimately achieve a win-win situation.

REFERENCES

– (2020). The research group on the business environment and strategy of financial investment institutions. *China Economic Review*, (1), 68-76.

Cao, C. (2018). *Research on application of EVA evaluation method in real estate enterprise value evaluation* (Doctoral dissertation). Chongqing University of Technology.

Cao, Q., & Xu, Q. (2019). Research on "environmental, Social and governance " (ESG) system construction in finance. *Financial Regulation Research,* (4), 95-111.

Chen, N., & Sun, F. (2019). Comparison of ESG system development at home and abroad and Suggestions on the construction of ESG system in China. *Development Studies,* (3).

Chen, X. R., & Xu, S. Y. (2020). Research on enterprise development capacity of new energy vehicle Industry based on financial indicators. *Commercial Accounting*, (4), 57-59.

Cui, Q., & Wang, J. Z. (2008). Construction of theoretical structure model of asset Appraisal. Finance and Accounting Newsletter (Financial Management Edition), (4), 27-28.

Hu, X. Y. (2014). Research on enterprise value evaluation system. *Shopping Mall Modernization*, (30), 59-59.

ICBC and Commercial Bank of China Green Finance Research Group, Zhang, H. L., Zhou, Y. Q., Yin, H., Ma, S. H., Yang, Q. H., Qiu, M. Y., & Zhang, J. W. (2017). ESG green ratings and green index study. *Financial Forum, 22*(09), 3-14.

Ji, Y. C. (2018). Research on the relationship between enterprise valuation and company valuation. *Friends of Accounting,* (9), 2-8.

Li, H. Y., & Mao, L. (2021). Value evaluation of NeeQ internet enterprises based on economic value added method -- A case study of Shenzhou Uber. *Time Finance* (Early), (1), 36-39.

Li, Q. (2021). The development of ESG concept in China -- Taking Ping'An China as an example. *Modern Marketing,* (19), 6-7.

Liang, G. Y. (2020). Comparative analysis of modern enterprise valuation Methods. *China Market,* (14), 86-87, 89.

Liang, S. Y., & Lu, Y. Y. (2021). Analysis on the development status and trend of new energy vehicles. *Times Automobile,* (10), 76-77.

Liu, L., & Xu, W. T. (2021). Comparative study on ESG evaluation and traditional credit rating system of enterprises. *New Finance,* (4), 59-64.

Liu, X. Y. (2015). *Research on the construction of new third board enterprise value evaluation index system -- Based on the perspective of venture capital* (Doctoral dissertation). Sichuan: Southwestern University of Finance and Economics.

Lu, Z. Q. (2018). *Case study on the value evaluation of asset-light enterprises -- A case study of an enterprise* (Doctoral dissertation). Tianjin: Tianjin University of Commerce.

Meng, Y. J. (2017). *Corporate value evaluation of listed securities companies based on synergistic effect -- A case study of Shenwan Hongyuan Group* (Doctoral dissertation). Sichuan: Southwestern University of Finance and Economics.

Price Waterhouse Coopers ESG Valuation White paper [R]. 2021.

Shao, S. C., & Wang, S. B. (2014). Discussion on the application of ESG model in urban waste management performance evaluation. *Commercial Accounting*, (5), 39-41.

Si, H. T., & Sun, L. X. (2017). On the selection and matching of value type and income caliber in enterprise valuation. *Accounting Learning*, (19), 184-185.

Su, Y. L., & Li, J. M. (2001). Research on the construction of value evaluation service system of science and technology start-ups. *Journal of Science and Technology Entrepreneurship, 34*(2), 91-98.

Tong, Y. L. (2018). *Research on China's sustainable development level from the perspective of new development concept* (Doctoral dissertation). Liaoning: Liaoning Normal University.

Wang, W. F. (2017). Construction of enterprise value evaluation index system. *Financial Management* (Financial Edition), (11), 32-33.

Wang, X. W. (2011). Research on the development trend of enterprise valuation methods. *Academic Exchange,* (2), 78-81.

Wang, Y. Y. (2017). Research on the construction of enterprise value evaluation index system in China. *Finance and Economics,* (27), 54-55.

Wu, N. (2019). Construction of enterprise value evaluation system of non-financial indicators based on ANALYTIC hierarchy process. *Business News, 20*(174), 59-60.

Xu, Y. (2020). Development status and trend of new energy vehicles. *Automobile Practical Technology, 45*(24), 13-15.

Xue, K. (2019). Current Situation and Development Suggestions of New Energy Second-hand Car Market in China. *Time Automobile*, (13), 145-147.

Yang, J. N. (2021). *Market Modernization,* (5), 20-22. (in Chinese)

Yi, F. (2019). *Research on the impact of corporate environmental responsibility on financial performance* (Doctoral dissertation). Jiangxi Science and Technology Normal University.

Yu, D. F. (2021). *Enterprise Reform and Management,* (12), 186-187. (in Chinese)

Yu, J. Q., & Wang, Y. (2021). Research on the impact of ESG performance on enterprise value from the perspective of ecological civilization -- A case study of Beijing-Tianjin-Hebei listed manufacturing companies. *Research of Financial theory,* (2), 81-91.

Zeng, H. Z. (2014). *Research on New Energy Vehicle R&D Project Value Evaluation Method Based on Real Option* ((Doctoral dissertation). Beijing Institute of Technology.

Zhang, J. K. (2019). Enlightenment of ESG investment evaluation system. China Finance, (4), 74-75.

Zhao, M. H. (2020). Current Situation and Development Trend analysis of new energy Vehicle Charging Facilities Industry. *Time Automobile*, (23), 98-99.

Zhao, X., Qi, J. M., & Hao, J. (2012). Financial Performance Evaluation of mergers and acquisitions of listed companies based on factor Analysis: Empirical evidence from the main board market. *Journal of Xidian University* (Social Science Edition), (3), 66-71.