

Exploring the Relationship Between Fiscal Policy and the Technological Innovation Ability of New Energy Enterprises

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Abstract: Faced with unprecedented changes, the emergent energy sector has evolved the new high ground of international competition, among which the development of the new energy vehicle industry is particularly crucial and of great significance to the global energy transformation. To strengthen the role of fiscal policy in promoting innovation in new energy technologies, this article has introduced a sequence of fiscal policies to promote the development of high-tech, while using tax incentives and subsidies to guide new energy enterprises to increase their research and development efforts and achieve technological innovation. This article takes the strategic emerging industry represented by the new energy vehicle industry as an example, analyzes the role and constraint mechanism of fiscal policy on enterprise innovation, explores how fiscal policy affects the technological innovation capability of new energy enterprises, and analyzes the differentiated impact of fiscal policy on different new energy enterprises. Finally, this article proposes strategic recommendations for coordinating fiscal policies to promote innovation in strategic emerging industry enterprises, which has practical significance for the development of China's strategic emerging industries.

Keywords: Fiscal policy, new energy vehicles, innovation ability, tax subsidies.

1. Introduction

New energy automobile is the main direction of the transformation and upgrading of the global automobile industry and the strategic choice of the high-quality development of China's automotive industry. At a press conference held by the State Council, General Secretary Xi Jinping emphasized that the development of new energy vehicles is the only way for China to move from a major automobile country to a strong automobile country. People need to deepen exchanges and cooperation within the emerging energy vehicle sector so that the achievements of innovative scientific and technological development can better benefit people around the world.

According to the BP World Energy Outlook, the global energy market is facing significant transformation, which is a global trend and challenge [1]. At the same time, energy conservation and environmental protection, adjusting the energy supply system, and forming a diversified clean energy supply system are the trends. The white paper "China's Energy Transition" released by the Chinese government shows that China is accelerating the construction of a clean, low-carbon, safe, and efficient new energy system. The progress of low-carbon transformation is progressing smoothly. The development of China's new energy industry has not only provided the world with abundant

supplies and alleviated global inflation pressure, but also contributed greatly to the global response to climate change and green transition. China ranks first in the world in exports of new energy vehicles, lithium batteries, photovoltaic products.

The emergence of the novel energy vehicle sector cannot be separated from the support of national fiscal policies. Fiscal policies affect the technological innovation capabilities of new energy enterprises through various means, including providing financial support, reducing enterprise burden, and incentivizing research and development investment, thereby promoting the sustainable development of technological innovation in new energy enterprises [2]. Meanwhile, one of the key focuses of government fiscal policy is to support technological innovation and the development of the manufacturing industry. This means that new energy enterprises, as important carriers of technological innovation, will benefit from these policies and thus enhance their technological innovation capabilities. The government ensures that financial support can be more effectively transformed into a driving force for enterprise technological innovation by improving the precision and effectiveness of policies. This article aims to analyze the differential impact of fiscal policy on different types of new energy enterprises, explore the differences in the effectiveness of different fiscal policy tools (such as direct subsidies and tax incentives) in different types of new energy enterprises, and propose suggestions for optimizing fiscal policy to better promote the healthy development of new energy enterprises.

2. The Direct Impact of Fiscal Policy on the Technological Innovation Capability of New Energy Enterprises

2.1. Fiscal Subsidy Policy

The specific forms of fiscal subsidy policies include many types, such as direct subsidies, tax incentives, loan and interest subsidies, and so on. The policy has continued the reduction and exemption from purchase tax on new energy vehicles. The fiscal subsidy policy for 2023 will increase the Ratio of deduction before taxes for research and development expenses of related industry enterprises, and this policy will be implemented as a long-term institutional arrangement for the establishment of a conducive tax setting that encourages enterprises to invest in innovation. These measures help enhance the technological innovation capability of enterprises and promote the upgrading and development of the advanced manufacturing industry. At the same time, by reducing the rates of unemployment insurance and work-related injury insurance, optimizing and adjusting the one-time employment subsidy policy, etc., the overall improvement of the employment situation can be promoted.

The financial subsidy policy mainly provides direct financial support to help new energy enterprises reduce the cost of research and development. This subsidy is usually targeted at specific research and development projects or technological innovation activities, aiming to promote enterprise technological innovation and industrial upgrading. Research has found that for every 1% increase in government subsidies, the patent applications of new energy enterprises increase by 0.82%. This indicates that subsidy policies effectively incentivize new energy businesses to invest in technology research and development [3].

2.2. Tax Preferential Policies

Tax incentives are also an important means of motivating enterprises to invest in research and development. For example, tax-based exemptions, tax rate-based exemptions, tax amount-based exemptions, and so on. These policies mainly focus on supporting the real economy, technological innovation, expanding consumption, and stabilizing foreign trade and investment. For example, tax incentives have been implemented for R&D investment, venture capital, and so on. At the same time,

the individual income tax special additional deduction standards have been raised to reduce the tax burden on residents and enhance their consumption ability. In terms of supporting the development of small and micro enterprises, in 2022, over 80 million business entities benefited from tax incentives for small and micro enterprises, with over 99% of small and micro enterprises benefiting from them.

Tax preferential policies can increase the innovation income of new energy enterprises and enhance their enthusiasm for research and development activities [4]. For example, providing more favorable tax treatment for projects that have been successfully developed. Tax incentives can increase the return on investment of R&D projects for new energy enterprises, making their investment in R&D more attractive and attracting more funds to invest in the research and innovation of new energy technologies. Simultaneously optimizing resource allocation can guide resources to tilt towards the new energy industry, help optimize the overall economic structure, promote the development of the new energy industries.

2.3. Government Procurement

Open tendering, invitations to bid, competitive negotiations, single-source procurement, inquiry procurement, and so on are the main forms of government procurement. Government procurement has played an important role in supporting green development, small and medium-sized enterprise development, and rural revitalization [5]. For example, the mandatory and priority procurement of energy-saving and water-saving products nationwide reached 35.72-billion-yuan, accounting for 83.9% of the procurement scale of similar products; Prioritize the procurement of environmentally friendly products worth 57.51-billion-yuan, accounting for 84.9% of the procurement scale of similar products. Furthermore, small and medium enterprises receive a contract value of 2523.98-billion-yuan from government acquisitions, constituting 74.4% of the national government's procurement scale. More than 9.9 billion yuan of agricultural and sideline products from poverty-stricken areas were purchased through the "832 platform", effectively driving the income increase of poor farmers and the development of rural industries.

The high-quality development of the new energy vehicle industry has received strong policy support, including improving product supply quality, increasing promotion in key areas, and strengthening support and guarantee conditions [6]. These measures not only enhance the market influence of new energy vehicles but also provide supports for the technological innovation of enterprises. After the entry of new energy vehicles into the market, the government implemented differentiated policies, including precise measures for different vehicle models and application scenarios, to promote comprehensive electrification. In summary, the industrial policies for new energy vehicles are generally effective, and these policies have a significant relative contribution to the development of the industry, which helps to promote the development of the new energy vehicle industry and the R&D investment of enterprises.

3. Indirect Impact of Fiscal Policy on the Technological Innovation Capability of New Energy Enterprises

3.1. Financial Markets and Financing Environment

Fiscal policy plays an important role in stabilizing the financial market. During financial crises, fiscal policy can affect the money supply by regulating fiscal expenditures and taxes, thereby impacting the liquidity of financial markets. However expansionary fiscal policies will lead to an increase in fiscal deficits. Currently, the government raises funds through issuing bonds and other means, thereby increasing the supply of bonds in the financial market, improving liquidity, and lowering market interest rates. In terms of the stock market, expansionary fiscal policies may promote economic growth, improve corporate profitability, and thus have a positive impact on the stock market. In the

bond market, government issuance of bonds for financing will directly affect the supply of the bond market, thereby affecting bond prices and yields. Fiscal policy and monetary policy are closely related, and their coordination has a significant impact on the financial market [7]. For example, expansionary fiscal policy may increase fiscal deficits, and affect the money supply, and the central bank may therefore adopt a tight monetary policy, raise interest rates, and thus affect the financial market. During financial crises, fiscal policy can also alleviate pressure on the financial system and stabilize financial markets by implementing stimulus measures. This reflects those policies also play an important role in financial risk management.

Fiscal policy, while promoting financial market stability, will also have an impact on the financing channels and costs of new energy enterprises. The innovative model of new energy green finance provides long-term, low-cost funding for new energy enterprises using various financial instruments by financial institutions, such as equity, debt, asset securitization, etc. This model helps to reduce the financing costs of enterprises, improve financing structure, and supplement capital. At the same time, government subsidies can help increase the R&D investment intensity of new energy enterprises, which is beneficial for their growth. For new energy enterprises with severe financing constraints, the promoting effect of government subsidies is weakened. Therefore, the government can alleviate the financing difficulties of new energy enterprises by vigorously supporting their development [8].

In summary, fiscal policy has an impact on the financing channels and costs of new energy enterprises through various means such as innovation in green finance for new energy, government subsidies, and support for the development of new energy through fiscal and financial policies. This helps to solve the financing difficulties of new energy enterprises and promote their high-quality development.

3.2. Industrial Chain Collaboration and Technological Innovation Ecosystem

Fiscal policy plays an important role in promoting the coordinated development of the new energy industry chain. Emerging energy sectors, notably wind energy and solar photovoltaics, predominantly depend on early-stage financial aid and policy backing, owing to their elevated development expenses. With technological progress and cost savings, these sectors are slowly transitioning from being influenced by policies to being driven by market forces. The Plan for Enhancing New Energy's Superior Development in the New Era focuses on policy initiatives like pioneering development and usage models, and the creation of a novel power system, supporting and guiding the healthy development of industries, fully leveraging the benefits of ecological environment protection, and improving fiscal and financial policies to promote the high-quality development of new energy. Concurrently, financial and taxation strategies are pivotal in advancing eco-friendly and low-emission changes and progress. The government needs to incentivize the development of low-carbon energy, industries, technologies, and products while imposing constraints on high-carbon industries and enterprises to promote their transformation and upgrading [9]. Furthermore, there's a need to distribute the expenses associated with eco-friendly and low-emission changes via financial and taxation strategies, bolster associated technological R&D, and foster industrial evolution and enhancement. Vigorously developing the new energy industry is not only an important means to achieve carbon reduction targets but also a key factor in enhancing national competitiveness. The new energy industry has become the high ground of international energy industry competition. Therefore, it is crucial to strengthen policy coordination and international cooperation to enhance the global competitiveness of the new energy industry [10].

From the perspectives of innovation subjects and technology, constructing a random actor-oriented model can explore the evolution mechanism of the collaborative innovation network in the new energy vehicle industry and the differences in the importance of influencing factors. Research has shown that both subject collaboration networks and technology collaboration networks are relatively

fragile, mainly due to the instability of innovative subjects and technology types. External factors have a significant impact on network evolution, and network closure and cognitive proximity are the most important factors that promote network evolution. Taking BYD as an example, the collaborative innovation of the industry chain mainly relied on the layout of the entire industry chain from 2013 to 2015, and the impact on innovation performance fluctuated greatly. From 2016 to 2019, BYD accelerated its comprehensive layout, and the collaborative innovation of the industrial chain showed a positive promoting effect in the short term. However, in terms of financial performance, various financial indicators showed a certain degree of stagnation. Since 2020, the effect of collaborative innovation in BYD's industrial chain has gradually emerged, and innovation performance and financial performance indicators are also developing in a positive direction.

4. Conclusion

To sum up, the interplay between financial strategies and the technological innovation potential of emerging energy companies is reciprocally strengthening. Studies indicate that strategies like financial support and tax breaks can successfully motivate emerging energy vehicle firms to participate in technological advancements. These policies promote technological innovation in enterprises by providing funding and market support for the development of the new energy vehicle industry. Not only does it incentivize enterprise innovation through direct financial subsidies and tax incentives, but it also provides a favorable market and competitive environment for enterprise innovation through the development of corresponding technical and environmental standards. The implementation of these policies will help enhance the technological innovation capabilities of new energy enterprises, thereby promoting the sustainable and healthy development of the entire new energy industry.

New energy enterprises can use fiscal policies and related incentive measures to promote their own technological innovation and overall development. For example, closely monitor the policy updates on the new energy industry issued by national and local governments, including fiscal subsidies, tax incentives, research and development funding, etc.; Regularly participate in government training courses or seminars to gain a deeper understanding of the specific content and application process of policies. New energy enterprises optimize their R&D investment, increase R&D investment through financial subsidies, and enhance their technological innovation capabilities. Cooperate with universities and research institutions to jointly apply for government-supported research projects, strictly follow the technical and environmental standards set by the government for production and ensure the quality of products and services. At the same time, carry out international cooperation and exchange: utilize the government's international exchange platform to carry out international cooperation, and introduce advanced foreign technology and management experience. Participate in international new energy projects to broaden the company's international perspective and market. Through the above strategies, new energy enterprises can not only effectively utilize fiscal policies to promote their development, but also make significant progress in technological innovation and market competitiveness.

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