

# Research on the Effects of Fiscal and Tax Incentives Policies for Promoting the Development of New Energy Auto Industry

Nan Lin<sup>1</sup>, Xiaofang Guo<sup>1,\*</sup> and Jianxue Liu<sup>2</sup>

<sup>1</sup>School of Finance and Accounting, Fuzhou University of International Studies and Trade, Fuzhou, Fujian 350202, China

<sup>2</sup>Department of Foundational Education, Fuzhou University of International Studies and Trade, Fuzhou, Fujian 350202, China

\*Corresponding author. Email: 285889359@qq.com

## ABSTRACT

The new energy automobile industry plays a great role in promoting the transformation and development of Chinese automobile industry for enhancing its international competitiveness. However, the new energy automobile industry of China has been developing with many obstacles. The policy for promoting the development of new energy automobile industry could not reach the expected effect. This paper focuses on the analysis of the development status of new energy automobile industry in China based on the current preferential income tax policies. The problems of the new energy auto have also been shown in this paper for pointing the obvious obstacles of the industry development. Lastly, the tax policy suggestions are listed which could be helpful for the development of new energy automobile industry in China.

**Keywords:** *New energy automobile industry; tax incentives policy learning algorithm; preferential tax*

## 1. INTRODUCTION

The new energy auto manufacturing has already become a significant part of the development of the auto industry. The Chinese government has paid attention to this new industry for getting the advantages relative to the developed countries with the powerful auto industry. The completed chain of production in this industry has already developed in China which concludes the material offers, battery manufacturing and the production of key parts in the last decade. The completed vehicles which are designed by the Chinese organizations independently such as pure electric vehicles and hybrid vehicles have shown significant progress in key technologies.

The shortage of energy supply has been becoming a severe problem for most countries of the world due to the rapid development of the economy. China, which is the largest energy consumer in the world, has already been in a more troublesome situation because of automobile production and consumption [1]. According to the statistics of China Association of Automobile Manufacturers (CAAM), auto production and sales reached 27.809 million and 28.081 million respectively in 2018. The automobile industry has become an important pillar industry in China. In the meantime, the oil consumption in the Chinese automobile industry has kept increasing rapidly in recent years. The National Development and Reform Commission demonstrated that China's gasoline consumption got to 325.14 million tons in 2018 with the huge shortage [2]. Hence, China must develop new energy vehicles for

reducing gasoline consumption and controlling energy external dependency. It is not only an important strategy for maintaining national energy security, but also the inevitable choice for promoting the development of Chinese automobile industry. The fiscal policy should be the most effective way for promoting the industry of new energy auto. Hence, the paper focuses on the analysis for the influence of preferential tax policies relative to the process of production in the development of the new energy auto industry.

## 2. CURRENT SITUATION

The new energy vehicles have begun to enter a critical stage of transition from the process of R&D to industrialization in the last decade. Furthermore, the government policies have accelerated the industrialization pace. In addition, the market demand for new energy vehicles in China has kept decreasing in the latest 10 years due to the encouragement of many positive policies. The sales volume of new energy vehicles has increased from 12,800 in 2012 to 1,256,000 in 2018. The sales of all-new energy vehicles have also been at about 1,200,000. The little decreasing relative to 2018 has been happening because of the supporting policies changed. It can be described that China has built a wonderful market of new energy autos with the expanding demands and emerging capacity. However, it should be known that China's new energy auto industry is just at the stage of beginning [3].

The expenditure of car design and equipment purchase are the most significant cost in the section of research and development of energy auto which could affect the preferential tax. The income tax would be chosen as the research subject in the research and development stage because the design income tax would be the main part of preferential income tax in the new energy auto industry.

Firstly, China has always encouraged enterprises to develop core technologies and improve independent innovation ability since the reform and opening up in the 21st century [4]. Therefore, the 15% income tax would be canceled for qualified high-tech enterprises which could show the support for hi-tech research from government. In addition, China has enacted a policy to support the growth of small and micro enterprises, namely, to reduce the income tax rate by 20%. Tax relief can reduce the pressure on cash flow of enterprises and support the survival of related enterprises. The development of new-energy vehicles industry, which is an important strategy in China's 13th "five-year plan", needs high intensity in technology and resources. The implementation of preferential income tax policy can save a lot of cash resources for eligible enterprises and encourage them to invest in new energy and technologies.

Secondly, the official agencies sets preferential policies for enterprises' expenditure on R&D, which is about design and development of new technologies and new products. There are two kinds of costs that could be reduced with the help of this policy. The first one is expenditure on research and development that occurs without forming an asset to be recorded into current profits and losses. The other one is the research and development expenditure of intangible assets.

The enterprise can make current allocation based on the 1.5 times expenditure of such assets and include it into current profits and losses. Although this provision does not directly reduce or exempt the tax amount, it would reduce the taxable income of enterprises in the current period through additional deductions [5].

Thirdly, there are also support policies for small and medium-sized technology enterprises. The tax law stipulates that the 70% investment amount for such equity investment of small and medium-sized technology enterprises can be used to deduct the taxable income tax of the investment enterprise in the current year after the expiration of two years in order to encourage market investment. If the amount is insufficient, it can be transferred to the next year. This income tax reduction policy aims to encourage investment companies, financial institution and other venture capital companies to invest the high-and-new technology enterprises which are still in the growth stage with core technologies that play a role in promoting the development of new-energy automobile industry. Those enterprises will get enough fund when they face the problem of capital shortage if the policy works [6].

Lastly, the environmental protection and energy conservation enterprises which related to new energy vehicles can enjoy three exemptions and three halves. It means that this kind of enterprises can be exempted from

corporate income tax in the first three years. Furthermore, the enterprise income tax can be halved from the fourth year to the sixth year. In addition, enterprises can enjoy a certain amount of tax credit if they purchase special equipment for energy conservation and environmental protection. The new energy automobile industry has undertaken the important mission of environmental protection.

### **3. EXISTING PROBLEMS**

#### ***3.1. Heavy tax burden***

The design of automobile tax systems is not completely same throughout the world. However, the general direction would be similar to encourage the producing. Hence, the tax rate of the car price is relatively low for promoting this industry, and the tax in the process of using would be more expensive for the purpose of environment protection. However, the policies in China are so different that the enterprises need to pay a lot of taxes in China's production and sales stage with the strict automobile exhaust gas emission standards. The production and sales of enterprise tax burden have been higher in China.

The new energy vehicle companies in China which still do not have the completed new energy automobile key technologies can only rely on importing equipment and spare parts from other countries. This will cause high production costs, which will eventually lead to a series problems for further promotion. These enterprises should pay more attention to technical innovation with a lot of investment. The heavy tax burden would affect the R&D investment which will be to slow down the development of this industry.

#### ***3.2. No special policies for this industry***

There is no substantially independent preferential treatment and few joint, systematic and hierarchical tax incentives in China for the new energy auto industry even though the new energy vehicles can enjoy a certain degree of tax incentives. It could only be found that the clear preferential policies for the vehicle purchase tax or vehicle and vessel tax in the current tax law for new energy auto. And there is no preferential policies available for other taxes in the process of R&D, producing and sales. Furthermore, the preferential range is quiet widespread which could include high-tech enterprises in different industries. It means that the organizations of new energy vehicles do not have independent preferential. For example, the VAT exemption policies could be used in the wide range of energy conservation and environmental protection industries. Therefore, the formulation and implementation of special preferential measures would be necessary for achieving the ideal effect.

### **3.3. Unreasonable fuel tax**

Some new energy vehicles, which are called hybrid vehicles, have still partially used fuels such as gasoline or diesel. These vehicles also need to pay fuel tax even though the hybrid model could help to come true energy conservation. It seems that the policies of tax preference could not be entirely supporting the developing of the new energy auto industry. The fuel tax has been collected in the process of fuel consumption which could not be avoided for hybrid vehicles. Therefore, the official agencies in China need to consider extending the preferential scope of new energy vehicles, and implement tax exemption for new energy vehicles with fuel consumption to reduce the tax burden of vehicle users.

## **4. WAYS AND MEASURES**

### **4.1. Increasing tax incentives for research and development**

Generally, the process of R&D in the auto organizations could be identified into three stages which include theory research, trial production test and mature production making stage. Good preferential tax policies should usually be involved in the three stages of automobile manufacturing. However, they have played different roles in different stages. China's tax incentives in the research and development stage are limited in the enterprise income tax. In addition, the preferential income tax incentives for design and development enterprises are relatively large relative to the turnover tax. Hence, the preferential treatment on the turnover tax needs to be improved for the design and development of new energy vehicles for the current situation of China.

The value added tax could be proposed to decrease until 11% for the organizations of new energy automotive parts production and sales. It can even be learned from the case about vegetable circulation that the VAT could be exempted in the process of circulation for organizations of new energy auto parts. The policy could help the parts producers to decrease the real cost so that they will improve the profitability and reduce the fund pressure.

The business tax in China has been completely changed to value-added tax since 2016. However, the intangible assets acquired before the business tax did not involve value-added tax. According to the characters of the development of new energy vehicles, intangible assets are an important asset for the car companies for developing new energy vehicles. However, there are no special invoices for previously obtaining patent to offset the input tax. For the taxable services of new energy vehicles purchasing from a third party, the input tax deduction ratio of new energy vehicle enterprises can be appropriately increased. The cost of R&D should also be used to exempt some VAT for the auto companies which could motivate the new independent technology.

### **4.2. Make existing tax policies more targeted**

At present, China has implemented some tax incentives in the new energy auto industry. However, many preferential policies are difficult to implement in the automobile industry because of complicated. Many automobile enterprises could not take advantage of tax incentives smoothly and at low cost. The pertinence of the tax policies for the new energy auto industry is more important for accelerating the development of this industry. The designing of simplified tax application procedures which focusing on the special industry would encourage the relevant enterprises to apply for the welfare and support the development of new industries. For example, the new VAT reduction process could be designed only for automobiles industry. The VAT could directly be cut in half or completely exempt as the enterprises eligible. Under the given market conditions, the design and simplification of the process can greatly promote the development of the industry and motivate the enthusiasm of enterprises.

### **4.3. The mixing strategies for multiple tax incentives could be used**

The taxes of the auto organizations have concluded value-added tax, corporate income tax, consumption tax, urban construction tax and vehicle purchase tax. Furthermore, the imported autos should pay the tariffs which are very significant. In addition, there are various costs which include insurance premium, license making fees, using tolls, parking fee and so on. To promote the industry, the corresponding tax policies should be combined with various kinds of taxes and interact with each other.

Firstly, for some automobile manufacturers, especially those enterprises whose R&D activities occupy a large amount of capital, tax incentives should be increased. After the "13th five-year plan" formulated by the state and following the national road of new energy vehicles, the major automobile manufacturer has improved their R&D costs relative to the past. However, there is still a big gap between the Chinese enterprises and foreign enterprises in the new energy auto industry. There should be found two reasons why China's investment in new energy auto industry is not enough. The first one is related to the market situation and competitors. The productions made by the foreign producers of advanced new energy vehicles should set an uncompetitive price because of the tariffs for being access into the Chinese market. On the other hand, there is a lack of effective government guidance. Secondly, the tax structure has been re-adjusted and designed to reflect the guiding role of tax. Nowadays, many subsidy policies have been formulated and issued by relevant departments in China. But tax policies for new energy are still relatively scarce. Therefore, we can learn from the practices of foreign governments and introduce relevant special tax preference system for the parts of new-energy vehicles. Furthermore, we warn traditional auto enterprises

to reform the producing system and give appropriate tax preference to the transformed automobile enterprises. For income tax, we should provide tax relief such as taxing by half to enterprises that are able to meet certain conditions that are criticized according to the characteristics of the new energy vehicles. At the same time, preferential income tax should also be able to distinguish the new energy vehicles from other high-tech energy-saving enterprises and avoid late related businesses which is the endpoint of the tax burden on consumers. Lastly, it eventually would be affecting sales and the development of new energy vehicles.

## 5. CONCLUSION

In conclusion, the new energy auto industry would be the future trend of transportation development. However, the new auto producers would face tough competition with the traditional auto organizations. The policy of preferential tax is very necessary for the new industry to make their market share. In addition, the new energy could help promote the quality of the environment which is a benefit for social welfare. Hence, the focusing of fiscal policy for the new energy is meaningful. The organizations of the new energy auto have deserved to be encouraged for a sustainable future. The tax incentives for research and development are needed because of the high cost in the promoting of new industry. The targets of the fiscal policies should be narrow for making sure the effects of the policies. And the mixing policies are encouraged for the best results.

## ACKNOWLEDGMENT

The work was supported by the educational research projects for young and middle-aged teachers in Fujian in 2017 (JAS170706).

## REFERENCES

- [1] B. G. Nichols, and K. M. Kockelman, Air quality impacts of electric vehicle adoption in Texas [J]. *Transportation Research*. 2015(34):208-218.
- [2] S. L. Mabit, and M. Fosgerau, Demand for Alternative-fuel Vehicles When Registration Taxes are High. *Transportation Research Part D: Transport and Environment*, 2011,16(3):225-231.
- [3]V. Gass, J. Schmidt, and E. Schmid, Analysis of alternative policy instruments to promote electric vehicles in Austria[J]. *Renewable Energy*, 2014, 61(1):96-101.
- [4]H. Pohl, and M. Yarime, Integrating innovation system and management concepts: The development of electric and hybrid electric vehicles in Japan[J]. *Technological Forecasting & Social Change*, 2012, 79(8):1431-1446.
- [5] A.R. Admati, 2017. A skeptical view of financialized corporate governance [J]. *Journal of Economic Perspectives*. 2017, 31(3): 131-150.
- [6] L.A. Bebchuk, M.S. Weisbach, The state of corporate governance research [J]. *Review of Financial Studies* 2010, 23(3): 939-961.