

A Comparative Study on Innovation and Entrepreneurship Policy Systems between the Guangdong-Hong Kong-Macao Greater Bay Area and San Francisco Bay Area*

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Abstract: The strategic goal of the Guangdong-Hong Kong-Macao Greater Bay Area is to create a global innovation highland and a world science and technology innovation center. In order to achieve strategic goals and requirements, Guangdong-Hong Kong-Macao Greater Bay Area needs to benchmark the successful construction of the world-class Bay Area and develop a new method of its own. Through comparing and analyzing the innovation and entrepreneurship policy systems of Guangdong-Hong Kong-Macao Greater Bay Area and San Francisco Bay Area, this paper intends to provide suggestions for the formulation of innovation and entrepreneurship policies of Guangdong-Hong Kong-Macao Greater Bay Area.

As an important coastal economy, the bay area economy has the roles of leading innovation, stimulating the economy and gathering radiation. Guangdong-Hong Kong-Macao Greater Bay Area, as an important coastal economic form, is the area with the strongest economic strength, the highest degree of openness and the most innovative and entrepreneurial vitality in China now. It is made up of 9 cities in Hong Kong, Macao and Guangdong Province (Guangzhou, Shenzhen, Foshan, Dongguan, Zhuhai, Huizhou, Zhongshan, Jiangmen and Zhaoqing). By contrast, at present, San Francisco Bay Area is one of the three most successful bay areas in the world. Located in California, USA, it is one of the world's famous high-tech innovation research and development centers, which is known as "City of Science and Technology". It consists of San Francisco City, Peninsula, South Bay, East Bay and North Bay. In 2019, the "Outline Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area" promulgated by the Chinese government uses innovation and entrepreneurship as the most important strategic engine for the development of the bay. This is not only of practical economic and political significance, but also of profound historical significance¹. The strategic goal of the Guangdong-Hong Kong-Macao Greater Bay Area is to build a global innovation highland and a world science and technology innovation center. In order to achieve strategic goals and requirements, Guangdong-Hong Kong-Macao Greater Bay Area needs to benchmark the successful construction of the world-class Bay Area and develop a new method of its own. Through comparing and analyzing the innovation and entrepreneurship policy systems of Guangdong-Hong Kong-Macao Greater Bay Area and San Francisco Bay Area, this paper intends to provide suggestions for the formulation of innovation and entrepreneurship policies of Guangdong-Hong Kong-Macao Greater Bay Area.

1. Comparative Analysis of Innovation and Entrepreneurship Policy Systems between Guangdong-Hong Kong-Macao Greater Bay Area and San Francisco Bay Area

Innovation and entrepreneurship policy is a part of the innovation and entrepreneurship ecosystem, which aims to protect the innovation and entrepreneurship process. Its essence is to support and encourage people's innovation and entrepreneurship activities, and then to stimulate the innovation and entrepreneurship of the economic entities of a country or place. Through the use of relevant policy tools and means, it improves the relevant cultural environment and system etc.,

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¹ http://www.gov.cn/zhengce/2019-02/18/content_5366593.htm#1

improves the level of innovation and entrepreneurship activities, trains entrepreneurs and small and medium-sized enterprises, and ultimately promotes economic and social development. A comparative analysis is carried out from six dimensions: innovation and entrepreneurship cultural atmosphere, innovation and entrepreneurship education, business environment, technological innovation, fiscal and tax support, and financing support.

2. Innovation and Entrepreneurship Cultural Atmosphere

The culture of innovation and entrepreneurship is a kind of concept, mechanism and atmosphere that constantly challenges the present situation, stimulates their potential, and continues to create their own value. As the earliest frontier of China's reform and opening up, Guangdong-Hong Kong-Macao Greater Bay Area takes the Lingnan spirit of daring to be the first in the world, embracing all rivers and being tolerant. This creates a tolerant and multicultural atmosphere for innovation and entrepreneurship. Now, Guangdong-Hong Kong-Macao Greater Bay Area implements the policy of "one country, two system", three customs zones and three currencies. Chinese, English, Portuguese and other languages meet here, and the thinking is diverse and active. They accept, tolerate and understand each other, give full play to the advantages of the wisdom of all, and achieve mutual benefit. The area is building an open and inclusive public service system and modern facilities. In addition, the area is strengthening the refined and intelligent management ability of the cities in this area, improving the quality of the city and creating a friendly cultural atmosphere. Eventually, it will realize its goal of creating a "Beautiful Bay Area", "Humanistic Bay Area" and "Entrepreneurship Bay Area", and increase its attraction to advanced technologies and cutting-edge talents.

The San Francisco Bay Area has a unique cultural atmosphere and immigrant environment. It creates a culture that dares to embrace risks and failures, encourages bold attempt and innovation, and provides a platform for the practice of innovative ideas and information. The immigration policy environment is relatively loose, which attracts a great number of high-tech talents from all over the world, and is known as "Paradise of Innovation and Entrepreneurship". Just as Eric Schmidt, the head of Google, thinks "Almost everyone has the opportunity to innovate. Innovation is not something that only a few people who specialize in innovation outside the university campus can do."² As a technology-led bay area, San Francisco Bay Area has constructed a knowledge-based economic form. With world-class universities, research institutes and technology companies, it is one of the most important high-tech R&D (research and development) centers in the world, which stands for the spirit of science and technology in the 21st century. Among them, as Stanford University, as of October 2018, a total of 83 Stanford professors, researchers and alumni have won the Nobel Prize and ranked 7th in the world; 27 of them have won the Turing Award (the highest award in the computer industry), ranking first in the world. Stanford University is also known as the "Cradle" of Silicon Valley. It has laid a solid foundation for the formation and rise of Silicon Valley, nurtured many high-tech companies and cultivated a group of high-tech enterprise leaders, such as Google, Oracle, HP, Apple and so on.

3. Innovation and Entrepreneurship Education

"Mass entrepreneurship and innovation" is a new engine for China's economic and social development. Innovation and entrepreneurship education is the internal driving force of economic development in the bay area. In 2018, Guangdong-Hong Kong-Macao Greater Bay Area promulgated "The Declaration on Innovation and Entrepreneurship Education in Guangdong-Hong Kong-Macao Greater Bay Area". It proposes to give full play to the institutional, resource and cultural advantages of Guangdong, Hong Kong and Macao, and strive to be the "leading goose" in the inheritance, innovation and dissemination of Chinese fine culture³. At present, universities,

² Eric Schmidt, Jonathan Rosenberg. Innovate like Google[J]. Tsinghua Business Review, 2015(10):14-20.

³ http://www.moe.gov.cn/s78/A08/moe_745/201803/t20180326_331214.html

scientific research institutions and science and technology companies in Guangdong-Hong Kong-Macao Greater Bay Area have gathered together to establish the innovation and entrepreneurship alliance of Guangdong, Hong Kong and Macao universities. Now, Guangdong-Hong Kong-Macao Greater Bay Area is building a government-led top-level planning and design. It is innovating with science and education clusters, promoting the development mode of joint construction and sharing among all kinds of innovation and entrepreneurship entities by market mechanism, and leading the new growth pole of China's high-quality development in an all-round way.

One of the successful experience of San Francisco Bay Area is to attach importance to the radiation and driving role of innovation and entrepreneurship education. The San Francisco bay area has world-class university clusters, top domestic university clusters, world-class university clusters around the bay area, famous domestic university clusters and famous university clusters within the area. Therefore, it has formed a development trend of high-level university clusters led by world-class universities⁴. The US federal government and the California government provide external environment and policy support for the innovation and entrepreneurship education through science and technology to make a powerful country and state. Thereby, the linkage of university clusters and scientific research institutions, enterprises and industries has been constructed, which forms a highly integrated mechanism and atmosphere of "industry, university, research and innovation". This is also unique to Silicon Valley, which injects vitality into the economy of the San Francisco Bay Area.

4. Business Environment

A good business environment is important for attracting foreign investment and promoting the development of enterprises. The business environment of innovation and entrepreneurship activities covers political, economic and legal elements. In order to better guarantee the development of innovation and entrepreneurship activities, the Guangdong-Hong Kong-Macao Greater Bay Area has to benchmark the world-class bay area. It is necessary to improve the relevant laws and regulations to create a fair and just market operation environment and build a world-class business environment. Since August 2017, Guangdong has intensively launched a number of major measures to reshape the new advantages of the business environment, such as "10 Articles of Real Economy" and "10 Articles of Foreign Investment". (1) Establishing an investment management system that is in line with the international prevailing rules. (2) Reducing the operating cost of the whole life cycle of enterprises. Administrative charges for registration, certification and management of innovative and entrepreneurial enterprises shall be exempted temporarily. (3) Implementing a number of convenient policies for Hong Kong and Macao. (4) Simplifying the commercial system and optimizing administrative approval. (5) Protecting the rights and interests of innovation entrepreneurship entities. At present, the World Bank's 2019 Business Environment Report shows that China ranks 46th in the global economy, and Hong Kong ranks 4th in 190 countries or regions. This is also Hong Kong's top five in the world for 12 consecutive years. Guangdong ranks 2nd in the national business environment.

The good business environment in San Francisco Bay Area is worth learning. There are obvious advantages in business vitality, innovation potential, residents' happiness and administrative governance. According to the 2019 Business Environment Report released by the World Bank in 2018, San Jose and San Francisco are among the top 101 global comprehensive competitiveness index, and rank first among the best business environment cities in the world. San Francisco's "Innovation Potential" score is the highest in 100 cities. Last year alone, the number of international patent applications in the region reached 34,324, of which Google accounted for 6.5%.

⁴ Cluster Development of High -level Universities in the World' s First--class Bay Areas--Taking New York Bay, Tokyo Bay and San Francisco Bay as an Example[J]. Journal of Sichuan University of Science and Technology (Social Science Edition), 2018, 33(3):88-105.

5. Financial Policy

One of the main ideas of financial support policies for innovation and entrepreneurship in Guangdong-Hong Kong-Macao Greater Bay Area is the ability to improve modern financial market system and realize more efficient allocation of financial resources. Besides, it can further promote the coordinated development of finance and real economy, and make finance play a more prominent role in supporting innovation-driven development. The specific approaches include the following. One is led by commercial banks. In order to solve the bottleneck problems of financing difficulty and high cost for small and medium-sized scientific and technological innovation enterprises in the initial and growing periods, it can start the "linkage of investment and loan" combining equity investment and bank loan, and construct the mode of "equity and creditor's rights ". This will provide new financing channels for scientific and technological innovation enterprises. The second is to provide credit support for loans to small and medium-sized enterprises. Through debt financing tools, corporate bonds, private debt raised by small and medium-sized enterprises, and asset securitization products, we will establish and improve the risk compensation mechanism for small, and medium-sized enterprises' credit funds. The third is to vigorously expand direct financing channels. We can build a financial support platform for scientific and technological innovation by relying on regional equity trading markets such as Guangzhou Equity Exchange. In 2014, the "Youth Gem" launched by Guangzhou Equity Exchange has developed into the "China Youth Gem". The fourth is to implement a comprehensive financial services program. By integrating resources, we provide comprehensive services such as growth and cultivation, industry guidance, talent introduction, platform creation, and investment value-added for scientific and technological innovation enterprises. The fifth is to support private equity funds in Hong Kong to participate in the financing of innovative technology enterprises in the bay area and allow qualified innovative technology enterprises to enter the Hong Kong's listed fund-raising platform. Hence, Hong Kong will be developed into a financing center for high-tech industries in the bay area. The sixth is to vigorously promote the valuation, pledge and circulation system of intellectual property rights to promote the standardized development of intellectual property pledge financing and the development of intellectual property finance.

San Francisco Bay Area has established a complete investment and financing system. The law promulgated by the U.S. government to promote the financing of start-ups provides legal support for them to improve their financing efficiency. To solve the bottleneck of start-up capital development, and provide convenient financing channels, for example, SBIR and STTR are federally subsidized projects that enterprises are competing for. They are specially designed for profit-making enterprises with a total staff of less than 500. Venture capital is very important in the San Francisco Bay Area. According to incomplete statistics, the San Francisco Bay Area attracts more than 30% of all venture capital in the US. In addition, the San Francisco Bay Area has established an investment and financing risk mechanism. It sets rules to prevent ordinary investors from suffering heavy losses due to financial fraud or investment mistakes, and strikes a balance between supporting innovation and controlling risks. It is worth noting that the San Francisco Bay Area is now gradually changing the traditional method of equity financing. On the contrary, it starts its business by issuing digital currency and financing Bitcoin, and the financing efficiency is very high. A number of venture capital institutions have set up special digital monetary funds.

6. Fiscal and Tax Policies

Guangdong-Hong Kong-Macao Greater Bay Area pays great attention to the use of tax policy to stimulate and release the vitality of enterprises' innovation. It supports the innovation projects of high and new technology and small and medium-sized enterprises through various forms of support measures such as tax preference, special financial subsidy, loan discount and capital injection. However, at present, the tax code of Guangdong-Hong Kong-Macao Greater Bay Area is still messy and varied. Thus, the Ministry of Finance and the State Administration of Taxation are building a sound regional tax cooperation mechanism. They focus on research and analysis based

on the characteristics of "one country, two systems, three customs areas", and promote the linkage of tax systems and rules in Guangdong, Hong Kong and Macao to help the construction of Guangdong-Hong Kong-Macao Greater Bay Area.

San Francisco Bay Area's fiscal and taxation system is very perfect, and from the federal government to the various state governments, they all have formulated incentive policies for innovation and entrepreneurship. The fiscal and taxation policies of San Francisco Bay Area have three main features. The first is the huge financial input to provide guarantee for talent introduction and research conditions. The second is tax incentives. Loose taxes and fees provide favorable soil for the development of small businesses. The third is the establishment of a low-tax area in the central market. In the early 2018, the US passed a tax reform bill. The bill reduces corporate tax from 35% to 21%, changes from global tax system to territorial tax system, allows enterprises to reinvest their overseas profits at home and maintain research and development tax credits. All of these have given a strong driving force to the growth of the U.S. economy.

7. Technological Innovation Policy

There are obvious differences in technological innovation policies between Guangdong-Hong Kong-Macao Greater Bay Area and San Francisco Bay Area. The Guangdong-Hong Kong-Macao Greater Bay Area is positioned as an international center for scientific and technological innovation. It has established a scientific and technological innovation system with enterprises as the main body, the market as the orientation and the combination of industry, university, research and application. The innovation policy has both scientific and technological planning and supporting policies, as well as financial support and platform construction, and is highly systemic. However, the phenomenon of uncoordinated science and technology and industry is still outstanding. Administratively, we need to explore policy measures to promote cross-border flow of innovation elements and regional integration. It is necessary to actively carry out the policy of scientific and technological innovation in Guangdong, Hong Kong and Macao in the first place, promote system docking and rule convergence, and strengthen the construction and open sharing of scientific and technological infrastructure. In addition, we need also to speed up the construction and improvement of cross-border industry-university-research cooperation mechanism, and open up the chain of transformation and industrialization of scientific and technological achievements in Guangdong, Hong Kong and Macao. In 2019, the Guangdong Provincial Government issued "Several Policies and Measures for Further Promoting Scientific and Technological Innovation" and put forward the following policies. (1) Promoting the construction of the international scientific and technological innovation center in Guangdong-Hong Kong-Macao Greater Bay Area; (2) Encouraging universities and scientific research institutions in Hong Kong and Macao to undertake provincial scientific and technological projects; (3) Promoting the construction of innovative talent highland; (4) Speeding up the construction of provincial labs and new research and development institutions; (5) Accelerating the reform, innovation and development of high-tech zones; (6) Increasing the inclusive support for enterprise innovation; (7) Opening the "last kilometer" of the transformation of scientific and technological achievements; (8) Promoting the deep integration of scientific and technological finance; (9) Strengthening the guarantee of land for scientific research; (10) Improving the balance and coordination of regional innovation and development; (11) Strengthening the construction of scientific research integrity and ethics; (12) Continuing to increase the reform of the "decentralization management, and service" in the field of science and technology.

The San Francisco Bay Area has established a policy system for technological innovation, including technology research and development, knowledge transfer and supporting services. It pays particular attention to creating a legal and institutional environment conducive to innovation and entrepreneurship and the transformation of scientific research projects. Among them, the research institutions, incubators and university technology transfer offices, non-profit organizations and enterprises and other entities have clear division of labor, coordinated and orderly, and the combination of industry, university, research is closely combined. The San Francisco Bay Area has

always regarded intellectual property as an important component of the modern property rights system and a fundamental guarantee for innovation-driven development. It strengthens the application and protection of intellectual property rights through laws and regulations, the transformation of scientific and technological achievements, and patent standards. In addition, it has established a policy of transforming innovation achievements covering the bay area, industries, universities, institutions and other levels.

8. Enlightenment

Through the comparative analysis of innovation and entrepreneurship policies in San Francisco Bay Area, several suggestions are put forward for the formulation of innovation and entrepreneurship policies in Guangdong-Hong Kong-Macao Greater Bay Area in the future:

Firstly, the future competition in the bay area is essentially a competition for talents. Talents are the basis and guarantee for the development of the bay area. The Guangdong-Hong Kong-Macao Greater Bay Area must stand at a strategic height, establish a scientific and reasonable policy mechanism for the introduction and encouragement of innovative talents, and create an open, loose, dynamic and energetic environment. The first is to establish and improve the green channel for overseas scientific and technological talents to enter Guangdong, Hong Kong and Macao, as well as the green card system, the technical immigration system and the permanent residence system, so as to open up the flow of international talents. In this way, Guangdong-Hong Kong-Macao Greater Bay Area can become a destination for attracting international high-end talents to settle down. The second is to adopt a variety of ways, such as attracting talents by policies, targeting, teams, projects and so on. In this way, we can attract talents from all over the world, set up international high-end think tanks, let "wild geese of talents" exert gathering effect, and create an innovative governance pattern of multiple governance. The third is to establish and improve the talent assessment and evaluation mechanism, income distribution mechanism and social security mechanism in line with international standards, and explore the establishment of a rewarding mechanism and honor system with the characteristics of the greater bay area. In this way, outstanding scientific and technological talents can "gain both fame and fortune", and constantly improve the social security system for innovative talents and their families' children, so that they can "come, work smoothly and stay".

Secondly, it should give full play to the social service function of universities in Guangdong-Hong Kong-Macao Greater Bay Area. We can learn from Stanford university's experience, which is of not directly participating in business entity operation in any forms, so as to change the multiple roles in the whole chain of "research, development, transformation and even industrialization" undertaken in the integration of industry and university, and position ourselves well. It is necessary to build an integrated innovation network for industry, university and research in greater bay area, and to support universities, enterprises and scientific research institutions in the three regions to jointly build research and development institutions and share the research and development equipment. We can build a number of international trading platforms for the transfer and transformation of scientific and technological achievements, support platforms for scientific and technological finance, service platforms for science and technology and incubation platforms for emerging industries, and promote the establishment of joint labs of "famous schools-famous enterprises".

Thirdly, it should improve the business environment, which in essence should be the act of improving efficiency. In addition to the standards that the World Bank has been using, it is also necessary to adjust its own measures to the development of different industries and societies. One of the key points to improve the business environment is to conduct standardized, simplified and transparent procedures and government supervision, and establish sound and appropriate laws and regulations that keep pace with the times. Efforts to improve the business environment in the Pearl River Delta region, such as "multi-certificate integration", have produced some results. In the future, further reduction of market access thresholds, implementation of negative lists, and strengthening of credit supervision are the directions for further improving the business environment.

Fourthly, Guangdong-Hong Kong-Macao Greater Bay Area should actively promote the reform of the capital market for innovation and entrepreneurship, and constantly improve the all-round and multi-level financial support policy system for innovation. The first is to broaden the financing channels for scientific and technological loans and promote mutual capital sharing, product mutual recognition and service innovation. It needs to maintain the liquidity of investment in innovative economy, and vigorously develop intellectual property pledge financing, equity financing, debt financing and so on. It also needs to introduce scientific and technological insurance to gradually form a situation in which various financial instruments support innovation and entrepreneurship. The second is to promote the standardized development of the regional equity trading market in the greater bay area, and introduce Hong Kong, Macao and international investment institutions to participate in the trade. It is necessary to improve the equity investment chain of "angel investment -- venture capital (VC) -- private equity investment (PE)" and expand the radiation of Shenzhen venture capital to the bay area. In the end, it will guide the social venture capital to support the development of science and technology-based enterprises in the strategic emerging industries and high-tech industries during the seeding period and the initial stage.

Fifthly, the tax departments should fully integrate into the overall situation of development. It is necessary to coordinate the fiscal and taxation policy system that facilitates the free flow and mutually beneficial cooperation of elements of Guangdong, Hong Kong and Macao elements, and to meet the practical needs of the construction of Guangdong-Hong Kong-Macao Greater Bay Area. Starting from tax reform, tax reduction and fee reduction, tax administration convenient for people and etc., we can coordinate the tax policies of the three regions and promote the overall planning and convergence of regional tax systems. The introduction of comprehensive and systematic tax preferential policies includes the following aspects: cancellation of industry restrictions on R&D expenses plus deductions, improvement of the identification standards for high-tech enterprises, enjoyment of reduction of the upper limit of enterprise income tax by half, promotion of tax preferences for venture capital etc. We will give full play to the effect of tax policies in supporting innovation and entrepreneurship and stimulate the vitality of innovation and entrepreneurship in the bay area.

Sixthly, scientific and technological innovation policy is the measure and means to promote the development of innovation system. The content and intensity of the policies should be adapted to the state of the innovation system, keep pace with the times and continuously optimize and adjust. On the development dimension, the greater bay area should break through the obstacles of the old system and mechanism, respect the evolution law of scientific and technological innovation activities, and make the global leading scientific and technological innovation policies. On the structural dimension, it should give full play to the leading role of large scientific and technological enterprises in the greater bay area such as Huawei and Tencent in scientific and technological innovation, especially in key areas. It should improve the organization's technology research and development and product innovation, and the transformation of achievements. It should select a group of small and medium-sized enterprises with strong innovation strength and good development potential to foster and accelerate the formation of innovative industrial clusters. Therefore, it will eventually build a collaborative system of scientific and technological innovation from innovation elements, innovation subjects, innovation mechanism and innovation environment.

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