

A Study on the Innovation Driven Development of the Integration of Industry & Education in Foreign Trade & Applied Universities in the Guangdong -Hong Kong -Macao Greater Bay Area from the Perspective of Double Circulation in the New Era

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Abstract

The new pattern of "dual circulation" development in the new era is the refinement and theoretical sublimation of China's practice in continuing to deepen the reform and opening up in the new era, and is also a major theoretical innovation. For the innovative drive of foreign trade in the Guangdong Hong Kong Macao Greater Bay Area, the new pattern of "dual circulation" development points out the correct direction and feasible development path for the comprehensive economic cooperation and innovative drive of foreign trade in the Guangdong Hong Kong Macao Greater Bay Area. The foreign trade of the Greater Bay Area cannot be separated from cooperation. Based on the economic theory and social practice of "dual circular development", this article explores the impact mechanism of the dual circular economy development pattern on trade, and further analyzes the innovation driven development path of the integration of industry and education in foreign trade and applied universities in the Guangdong Hong Kong Macao Greater Bay Area. It also analyzes the five dimensional system integration innovation driving model of industry and education integration in the Guangdong Hong Kong Macao Greater Bay Area; Comprehensively propose ideas and path suggestions for the innovation driven development of foreign trade and applied universities in the Guangdong Hong Kong Macao Greater Bay Area from the perspective of dual circulation in the new era.

Keywords

Dual circulation; Guangdong-Hong Kong-Macao Greater Bay Area; Innovation driven; Foreign trade; Integration of industry and education in universities.

1. Introduction

The new pattern of "dual circulation" development is the refinement and theoretical sublimation of China's practice in continuing to deepen the reform and opening up in the new era, and is also a major theoretical innovation. For the innovative drive of foreign trade in the Guangdong Hong Kong Macao Greater Bay Area, the new pattern of "dual circulation" development points out the correct direction and feasible development path for the comprehensive economic cooperation and innovative drive of foreign trade in the Guangdong Hong Kong Macao Greater Bay Area. The foreign trade of the Greater Bay Area cannot be separated from cooperation. From the perspective of the global economic development of the Bay Area, the innovative driving force of win-win cooperation has built the foundation of regional foreign trade. Since its establishment, the sustainable economic cooperation between

urban agglomerations in the Guangdong Hong Kong Macao Greater Bay Area has been continuously developing and deepening at a high level, which is particularly prominent in the field of foreign trade in the Guangdong Hong Kong Macao Greater Bay Area and has achieved remarkable results that have attracted worldwide attention.

With the evolution of the global economic situation, especially in the post pandemic era, excessive reliance on export-oriented regional foreign trade economic development strategies often leads to a weakening of its sustained development momentum.

Based on the comprehensive analysis of regional geographical location and economic development strength, the innovation driven development of foreign trade in the Guangdong Hong Kong Macao Greater Bay Area from the perspective of dual circulation has become a demonstration model for the overall implementation of the "dual circulation" development strategy in foreign trade economy. In the global post pandemic era, the foreign trade economy presents external environmental characteristics of "demand contraction+supply blockage" combined with "expected weakening". This forces the implementation of the "dual circulation" development strategy among the three regions in the Guangdong Hong Kong Macao Greater Bay Area. Trade cooperation among various entities should be vigorously promoted through innovation driven comprehensive cooperation, in order to break through in the foreign trade field and drive the overall economic growth of the Guangdong Hong Kong Macao Greater Bay Area.

Under the dual circulation perspective, top-level design is needed to coordinate the interaction and coupling relationship between domestic and foreign trade in the Guangdong Hong Kong Macao Greater Bay Area. The internal circulation of the Guangdong Hong Kong Macao Greater Bay Area can be enhanced through the vigorous development of trade exchanges within the Bay Area, supplemented by technological innovation driven internalization. Together, efforts can be made to optimize and coordinate the "internal trade" structure of the Guangdong Hong Kong Macao Greater Bay Area, accelerate the process of regional trade and economic integration, and achieve sustainable development driven by innovation in foreign trade in the Guangdong Hong Kong Macao Greater Bay Area from the perspective of dual circulation.

2. Literature References

2.1. Dual circulation

Yin Xiguo and Zhang Teng (2023) conducted an empirical analysis on how the transformation of old and new driving forces promotes the coordinated development of China's economy through dual circulation. This literature is based on panel data from 30 provinces in China from 2003 to 2020, and empirically constructs relevant comprehensive indices. A moderated empirical intermediary model is established to explore how the conversion of old and new kinetic energy promotes the coordinated development of the dual cycle economy in China. The correlation mechanism between industrial agglomeration and the coordinated development of the dual cycle is explored. The empirical study of this literature found that the mutual conversion of new and old driving forces has a significant and positive promoting effect on the coordinated development of China's economy under the dual circulation pattern. There is a correlation between industrial agglomeration and the dual circulation pattern, and industrial agglomeration positively promotes the coordinated development under the dual circulation pattern, but it belongs to a partial intermediary effect, and its indirect path is not significant. The transformation of new and old driving forces jointly promotes the dual circular and coordinated development of China's economy by promoting both regional industrial specialization and diversified agglomeration.

Gan Chunhui and Man Ben (2023) constructed a dual cycle measure to study the endogeneity of large cycles in China. This literature proposes a system dynamics framework for

decomposing added value, based on which the multiplier decomposition is extended to a generalized N country N sector input-output empirical model. The study mainly found that the dependence path and development evolution curve of economic development on internal circulation show a "U" shaped curve as a whole. The decreasing rate of added value on the left side of the inflection point leads to a decrease in internal circulation, while on the right side of the inflection point, the increase in value added rate combined with the complete demand coefficient leads to an increase in internal circulation and becomes its main driving force for development. The study also found that compared to investment, national consumption is a key fundamental factor in domestic demand that affects internal circulation changes.

Yu Ningning et al. (2023) also studied the mechanism of the upgrading of domestic residents' consumption under the background of building a dual cycle new development pattern from a consumption perspective. The main argument of the study is to smooth the domestic circulation in China and achieve a new dual circulation pattern that promotes both domestic and international circulation, with domestic residents' consumption being an important social driving force. This document summarizes the overall characteristics of consumption, and finds the law: the total consumption is proportional to the consumption structure, the increase of the total consumption continues to optimize the consumption structure, and online consumption in the new era, especially green and convenient consumption, and Internet plus consumption of smart goods have gradually become the mainstream of upgrading domestic residents' consumption in the context of the new development pattern of double cycle.

Zu Tianming (2023) explores the current development status of the dual cycle new development pattern from the perspectives of logistics and artificial intelligence, and focuses on the relationship between smart logistics and the dual cycle new development pattern. Research has pointed out that the development of the smart logistics industry requires dynamic and continuous optimization and innovation in technology and management based on the new development pattern of dual circulation, in order to keep up with the development needs of the artificial intelligence era.

Zhang Yongheng and Yang Zhe (2023) analyze from a financial perspective, based on the perspective of digital inclusive finance, the financial mechanism of smooth domestic and international dual circulation and the promotion effect of digital inclusive finance. The literature mainly points out that,

Digital inclusive finance is a new driving force for achieving economic growth through a smooth domestic and international dual circulation at the practical and innovative level. The empirical results indicate that the mechanism of achieving economic growth through the smooth domestic and international dual circulation of digital inclusive finance lies in enhancing the activity of domestic entrepreneurship and innovation, and using it as an intermediary to promote the development of domestic and international dual circulation; At the spatial level, the dual circulation effect of digital inclusive finance shows a certain degree of spatial heterogeneity, which is prominent in the central and western regions but relatively not significant in the eastern regions.

Zou D (2020) pointed out that "dual cycle economic growth" has become a huge driving force for its future domestic demand expansion, and specifically analyzed the "dual cycle economic growth" as an important driving force for the tourism industry economy. The study suggests that the tourism services and products provided by the tourism industry must adapt to the new development pattern requirements of "dual circular economy growth", and concludes that long-term meeting domestic high-level tourism demand is an important development task for the tourism industry to adapt to "dual circular economy growth".

Jing Li (2021) pointed out that the "dual cycle" development pattern proposed by China from 2020 focuses on the domestic major cycle, promoting the mutual promotion of domestic and

international dual cycles. This literature mainly analyzes how to transform and upgrade the operation mode of the supply chain finance ecosystem in the free trade zone to a "dual circulation" mode. By analyzing the impact of "dual circulation" on the supply chain finance model, the financing difficulties of the operating mode of the free trade regional financial ecosystem under the background of "dual circulation" are identified, and suggestions for improving relevant business models are proposed.

2.2. Innovation driven foreign trade.

Li Wenting (2021) analyzed the current situation and path of innovation driven foreign trade from the actual situation of Hunan Province. Based on systematic analysis, the literature studied the overview of the structure of import and export goods in foreign trade in Hunan Province, China. The study found that the overall import and export goods in foreign trade showed an upward trend, and the overall development trend of innovation driven foreign trade in Hunan is good. When analyzing the innovative driving factors that affect the field of foreign trade, the literature points out that the development driven by foreign trade innovation urgently needs to be guided by local industries, and through the development of Hunan's regional characteristic industries, to achieve the creation of an intelligent manufacturing industry cluster in the central region of Hunan and form unique regional advantages. Strengthen the research and development of foreign trade innovation driven products and related technological innovation. We can also explore new foreign trade markets and increase the construction of talent teams driven by innovation in foreign trade.

Qian Qian and Gong Wenlong (2021) took Zhejiang Province as the regional research object, and combined it with the "double innovation" strategy to analyze the path and countermeasures of foreign trade innovation driven development. This literature analyzes the relationship between the "mass entrepreneurship, mass innovation" strategy and foreign trade, and points out the interactive coupling relationship between the intensity of innovation drive and the core competitiveness of the foreign trade industry. Research has pointed out that the "double innovation" strategy promotes technological innovation progress and utilizes technological innovation to promote the upgrading of foreign trade industries, which is a key element of the development path driven by foreign trade innovation. The literature concludes with an interactive framework of "policy+technology+product+finance" for foreign trade innovation driven development.

3. Feasibility and Mechanism of Driving Innovation in Foreign Trade in the Guangdong Hong Kong Macao Greater Bay Area

3.1. Feasibility of Innovative Driving Foreign Trade in the Guangdong Hong Kong Macao Greater Bay Area from the Perspective of Dual Circulation.

From the perspective of international trade, the dual cycle development pattern and foreign trade are a dialectical relationship of interaction, coupling, and mutual promotion. Developing the dual cycle development pattern can strengthen the requirements for high-level development of foreign trade in the medium to long term. Under the dual circulation perspective, the innovation driven development of foreign trade in the Guangdong Hong Kong Macao Greater Bay Area is based on the domestic circulation as a systematic regional entity and the expansion of domestic demand as the strategic basis for innovation driven development of foreign trade. It can further stimulate the huge trade market potential of the metropolitan area within the Guangdong Hong Kong Macao Greater Bay Area, and the essence of sustainable development driven by innovation in foreign trade in the Guangdong Hong Kong Macao Greater Bay Area under the dual circulation perspective, It is required to strengthen trade cooperation between regions and cities within the internal Bay Area metropolitan area, and to drive

innovation to jointly resist external trade risks, in order to achieve the common development of foreign trade in the Guangdong Hong Kong Macao Greater Bay Area.

At present, under the dual circulation perspective, China's domestic market has gradually formed distinctive domestic regional trade and economic cooperation markets since the reform and opening up. These cross provincial and city regional economic developments have had a significant impact on the sustainable strategic development of China's macroeconomic future. Among them, the Beijing Tianjin Hebei Economic Circle surrounding the Bohai Sea, the Guangdong Hong Kong Macao Greater Bay Area Economic Circle, and the Yangtze River Delta Economic Circle have always played a significant leading and exemplary role in the implementation of the dual circulation strategy. Among them, until now, the construction and development of the Guangdong Hong Kong Macao Greater Bay Area belongs to the national strategy and is based on the scale, market demand, and innovative development strength to become the world's second largest economy. Therefore, the trade cooperation between the three regions of the Guangdong Hong Kong Macao Greater Bay Area under the dual circulation perspective is a model of foreign trade innovation driven sustainable development, and the substantive mechanism of this model is that, The innovation driven sustainable development of foreign trade in the Guangdong Hong Kong Macao Greater Bay Area relies on the principle of "strong alliance". Specifically, it combines the world-class economic, financial, technological innovation and other advantages of Hong Kong and Macao with the development momentum of urban clusters and industrial clusters in the Pan Pearl River Delta region of the Greater Bay Area, In order to create a new growth pole for global economic development in the Guangdong Hong Kong Macao Greater Bay Area's foreign trade development under the dual circulation perspective. From this perspective, further in-depth analysis shows that the new development pattern of dual circulation is an inherent requirement for the high-quality development of foreign trade in the Guangdong Hong Kong Macao Greater Bay Area. It is also an adjustment and improvement made by the foreign trade development of the Guangdong Hong Kong Macao Greater Bay Area to the previous export-oriented strategy in the new situation, which is conducive to promoting the innovation driven sustainable development of foreign trade in the Guangdong Hong Kong Macao Greater Bay Area from the perspective of dual circulation.

3.2. Analysis of the Impact of the Development Pattern of Dual Circular Economy on Trade: Mechanism of Action

The Economic Theory and Social Practice of "Dual Circular Development". Both the Smith economic research paradigm of classical economics and the Marshall economic research paradigm of modern economics point out the common characteristics of a major country's economic development: economies of scale, diversification, and endogeneity. Among them, Smith's classical trade economy theory takes specialized division of labor, absolute advantage, and free exchange as its theoretical core, emphasizing that the huge advantage of world market size possessed by major countries can provide necessary conditions for specialized production and world market division of labor. Therefore, based on absolute advantage, his trade theory concludes that a country's economy can indirectly reduce its own production costs by taking measures to expand its domestic market demand capacity, Thus obtaining an absolute competitive advantage in trade.

Compared to the Smith economic research paradigm of classical economics, Marshall economics emphasizes more on the crucial role of labor resources, natural endowments, and market demand in determining whether a country's economy has a significant core trade competitive advantage, and believes that these influencing factors are other resources and markets that can be completely independent or "exogenous" isolated from other economies (including regions), namely diversification and endogeneity. Social practice has also proven this point, that in economic history, during special historical periods of economic crises and

economic lockdowns, economies often relied on their own resources, natural endowments, and market demands to adjust the structure of production factors, obtain new capital circulation models, and provide multi-level and diversified domestic consumer markets, ultimately forming a "diversified" endogenous industrial structure through agglomeration effects. This strongly proves that an economy can gradually upgrade its scale and ultimately accelerate its independent economic cycle by leveraging its own domestic market.

Based on these two economic research paradigms, a clear dual cycle perspective has been formed on the mechanism and feasibility of the innovation driven sustainable development of foreign trade in the Guangdong Hong Kong Macao Greater Bay Area. The domestic and international cycles advocated by the dual cycle actually constitute a "complementary" and "alternative" relationship. Internal circulation can further expand domestic demand and avoid the problem of excessive dependence on export markets, which often suppresses domestic demand to a certain extent. On the other hand, the domestic and international cycles advocated by the dual cycle can actually release the driving force of domestic market demand, further compensating for the shortcomings of external demand fluctuations and their impact on the domestic economy.

It can be seen that the Smith economic research paradigm based on classical economics and the dual cycle economic pattern theory of Marshall economics above have formed a clear dual cycle perspective on the mechanism of the innovation driven sustainable development of foreign trade in the Guangdong Hong Kong Macao Greater Bay Area and the basis for its feasibility. The inspiration is that the starting point and destination of the dual cycle are both in China; The essence of dual circulation advocates for domestic and international circulation, which requires the formation of a unified domestic market and cannot be self divided; The key to dual circulation is the level of trade competitiveness, so it is necessary to improve the substitutability and resilience of key innovative technologies, core strategic industrial chains, and shock resistance.

The innovation driven development of foreign trade in the Guangdong Hong Kong Macao Greater Bay Area from the perspective of dual circulation can be based on these paths.

Firstly, from the perspective of dual circulation, the top-level design coordinates the domestic and foreign trade relations in the Guangdong Hong Kong Macao Greater Bay Area to promote both internal and external circulation. To coordinate and balance the trade structure within and outside the Greater Bay Area of China, Guangdong, Hong Kong, and Macao, and accelerate the formation of a circular mechanism for promoting import and export trade in the Greater Bay Area of Guangdong, Hong Kong, and Macao from the perspective of dual circulation. Therefore, to leverage the mutual promotion of trade within and outside the Greater Bay Area of Guangdong, Hong Kong, and Macao, and achieve a high-level development of sustainable foreign trade in the dual circulation. The dual cycle of foreign trade economy in the Guangdong Hong Kong Macao Greater Bay Area focuses more on cultivating domestic market demand and developing innovative technologies, products, and services, improving the efficiency of production factor allocation driven by innovation in foreign trade in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective. Accelerate the strategic transformation from the "smile curve" model to the innovative driving force of dual circulation and two-way foreign trade around opening up both outward and inward channels.

Secondly, from the perspective of dual cycles, the innovation driven development of foreign trade in the Guangdong Hong Kong Macao Greater Bay Area must be a dual cycle driven by technological innovation. Whether it is internal circulation or external circulation, in the final analysis, it is the competition of foreign trade, domestic trade products, services, and brand quality in the new development pattern of dual circulation. This objectively requires the Guangdong Hong Kong Macao Greater Bay Area to further promote the innovation driven spirit of enterprises in foreign trade, and make efforts in technological innovation, especially the

"craftsmanship spirit", to create more Guangdong Hong Kong Macao Greater Bay Area brand products as a starting point, provide more diversified high-quality services and goods to consumers around the Guangdong Hong Kong Macao Greater Bay Area, and drive smooth internal and external circulation through efficient innovation channels. The innovation drive of foreign trade in the Guangdong Hong Kong Macao Greater Bay Area requires making good use of its own manufacturing advantages and integrating them with technological innovation, in order to ultimately build a world-class technology industry innovation highland. The innovation driven development of foreign trade in the Guangdong Hong Kong Macao Greater Bay Area improves the supply quality and service supply level of the Guangdong Hong Kong Macao Greater Bay Area through the built-in driving force of innovation; In addition, the innovation driven development of foreign trade in the Guangdong Hong Kong Macao Greater Bay Area also drives the overall innovation driven development of the Guangdong Hong Kong Macao Greater Bay Area by creating diversified and higher-level economic output supply of new products, brands, and services. Afterwards, with the final formation of the "Guangzhou Shenzhen" technological innovation corridor and other areas, the innovation driven development of foreign trade in the Guangdong Hong Kong Macao Greater Bay Area under the dual circulation perspective accelerates the flow of innovative elements, achieving radiation to drive the innovative development of other economic regions.

Under the dual cycle perspective of the new era, the innovation driven development of the integration of industry and education in the Guangdong Hong Kong Macao Greater Bay Area's foreign trade and applied universities also requires the integration of industry and education in applied undergraduate universities to be driven by foreign trade innovation. Therefore, this article proposes a five dimensional system integrated innovation driven model for the integration of industry and education in the Guangdong Hong Kong Macao Greater Bay Area from the perspective of dual circulation in the new era.

4. Innovation driven by the integration of industry and education in the Guangdong Hong Kong Macao Greater Bay Area under the perspective of dual circulation in the new era: risk management

From the perspective of the supply side, risk is also a supply of factors, originating from the internal and external aspects of the system and having a "negative transfer" impact on the stability of the system. Therefore, supply side "management" of risk is a "forward-looking" pre-treatment of potential risk factors that may occur inside and outside the system, and relevant control or control is carried out to achieve the goal of preventing or preventing risks in advance or midway. For the innovation and entrepreneurship drive of industry education integration in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective of the new era of industry education integration in universities in this study, as this innovation system is based on multi-party cooperation and dynamic evolution, it inevitably involves the investment of various labor factors, natural resource inputs, capital, fixed equipment, venues and other factors and resources. The integration risks associated with these inputs are objectively inevitable. Therefore, the long-term sustainable and high-quality development of the integration of industry and education in the five dimensional system must rely on the supply side "management" of the special factor of "risk", and this special "risk control" must run through the entire dynamic process of innovation and entrepreneurship driven by industry and education integration in the Guangdong Hong Kong Macao Greater Bay Area under the new era of dual circulation perspective of the integration of industry and education in universities, actively "avoiding" risks, And reduce the negative transfer impact of risks on integrated innovation. Δ

The Risk Sources of the Five Dimensional System Integration of Industry and Education Driven by Innovation and Entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area from the Perspective of Double Circulation in the New Era

From the perspective of dual circulation in the new era, the integration of industry and education in the Guangdong Hong Kong Macao Greater Bay Area is driven by innovation and entrepreneurship. The integration of industry and education is a high-risk and high-return "dual" innovation model. From the perspective of "rational people" in economics, the first choices for participating in the integration must be "risk avoidance" and "pursuit of income". According to the Pareto principle, The optimal solution must correspond to the "risk minimization" and "profit maximization" driven by the integration of industry, education, innovation and entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area from the perspective of dual circulation in the new era. The Five Dimensional System of Industry Education Integration Under the New Era Dual Cycle Perspective, although there is already some integration foundation between industry education integration, innovation and entrepreneurship driving integration in the Guangdong Hong Kong Macao Greater Bay Area, the risks of heterogeneity, information asymmetry, and technological innovation driven by industry education integration, innovation and entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area under the New Era Dual Cycle Perspective There are still risks in the external environment of the industry education integration, innovation and entrepreneurship driving system in the Guangdong Hong Kong Macao Greater Bay Area from the perspective of dual circulation in the new era. Δ

Risks brought by heterogeneous entities driven by the integration of industry, education, innovation, and entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area from the perspective of dual circulation in the new era

The heterogeneity of the subject is first reflected in the "diversity" risk brought about by the heterogeneity of the nature and attributes of various integrated organizations of industry and education. The three basic entities driving the integration of industry, education, innovation, and entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective of the new era: the government, the universities (represented by the education authorities) driving the integration of industry, education, innovation, and entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective of the new era, and the enterprises (represented by the industry authorities) driving the integration of industry, education, innovation, and entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective of the new era have significant heterogeneity in organizational nature. As a public management department, the government guides, guides, and supports the improvement of innovation capabilities in specific regions through macro policy supply, and constructs a regional new era dual cycle perspective driven platform for industry education integration, innovation, and entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area. Under the dual cycle perspective of the new era, universities in the Guangdong Hong Kong Macao Greater Bay Area driven by industry education integration, innovation and entrepreneurship, as representatives of the teaching authorities, are generally an organization with the main functions and responsibilities of talent cultivation, industry education integration, innovation and entrepreneurship driven technology academic research and development, and regional social services in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective of the new era. In a sense, most of these organizations belong to "non-profit" institutions, In the perspective of the organizational goals of "non-profit non profit", universities provide education, scientific research, and other supplies to society through completely non-profit or micro profit behavior. The supply products provided by representatives of these teaching institutions belong to public or private products. However, while pursuing economic benefits,

the integration of industry and education in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective of the new era is expected to provide a good practical education environment for the cultivation of innovative and entrepreneurial drivers of industry and education integration in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective of universities, This is a "driving environment for industry education integration, innovation and entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area from the perspective of the new era dual cycle", or a "simulation of industry education integration, innovation and entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area from the perspective of the new era dual cycle" scenario supply. In this new era dual cycle perspective, the industry education integration, innovation and entrepreneurship driving environment in the Guangdong Hong Kong Macao Greater Bay Area, Under the dual cycle perspective of the new era, teachers in the Guangdong Hong Kong Macao Greater Bay Area, as direct providers of educational services, have effectively improved their professional education capabilities driven by industry education integration, innovation, and entrepreneurship. For the direct beneficiaries of educational services, students are the objects of talent cultivation, The practical training, especially in the new era of dual circulation, has greatly increased the opportunities for industry education integration, innovation and entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area. Under the dual cycle perspective of the new era, the Guangdong Hong Kong Macao Greater Bay Area's industry education integration innovation and entrepreneurship driven enterprises, as representatives of the industry, are generally a typical "for-profit" organization. According to the definition of economics, enterprises are a "rational man" who "pursues profit maximization". In the new era of "Internet plus" and the new era of dual cycle, the Guangdong Hong Kong Macao Greater Bay Area is driven by the integration of industry and education, innovation and entrepreneurship. Sustainable technological innovation capability has become the most core means for enterprises to gain and improve their competitiveness in domestic and foreign markets. It is also because of the "multiplier" effect brought by technological innovation that most enterprises choose the "shortcut" first in the process of pursuing profit maximization, It is the path of "technological innovation". The nature of an enterprise directly determines its expectation of obtaining the latest technological development and cutting-edge dynamics through the integration of industry and education, thereby achieving research and development of its own new products, expanding new market space, and ultimately achieving its profit goals. >

From the perspective of Western economics, achieving self-interest through the integration of industry, education, innovation, and entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective of the new era of industry education integration is the fundamental goal of the driving entities of industry education integration, innovation, and entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective of each integrated new era. This goal can be further subdivided into: the goal of intellectual property benefits (including economic benefits such as patents and achievement ownership rights) for the integration of industry, education, innovation, and entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective of the new era, as well as the goal of driving social benefits (including reputation, reputation, etc.) for the integration of industry, education, innovation, and entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective of the new era. It can be seen that the nature of heterogeneous organizations determines the interests and goals of heterogeneity, which in turn affects the development of integrated innovation. That is, "heterogeneity" brings the risk of "differentiation" to the drive of industry education integration, innovation and entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area under the dual circulation perspective of integrated universities in the new era. In addition

to the risks brought by the nature of 'heterogeneity', organizational management 'heterogeneity' also brings risks. There is also a prominent "heterogeneity" between the entities of the integration of industry and education in the context of "heterogeneity", that is, the "heterogeneity" of innovation and entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area under the new era dual cycle perspective of organizational management culture. This "heterogeneity" is often overlooked in the process of driving innovation and entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area under the new era dual cycle perspective of integration due to its "invisibility". This has led to conflicts in many organizational management processes. The prominent case of this is that enterprises pursue profit maximization as their goal, which leads to a great emphasis on the accounting of management costs in their management process, especially the proportion of "input (cost) - output (income)". As a "non-profit" university, it focuses on achieving the goal of driving innovation and entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective of industry education integration in the new era. Therefore, When the concept of cost is relatively vague, the emphasis placed on the "cost" driven by the integration of industry, education, innovation, and entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area under the new era dual cycle perspective is an example. Similar conflicts will also be highlighted in other processes such as organizational management, integrated coordination, and resource allocation of industry, education, integration, innovation, and entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area under the new era dual cycle perspective. This will affect the effectiveness of innovation and entrepreneurship driven management of industry education integration in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective of the new era of industry education integration, and pose a risk of "differentiation" in the operation of industry education integration innovation and entrepreneurship driven organizations in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective of the new era of industry education integration.

Risks brought by the "Information Asymmetry" as the driving force for innovation and entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective of the new era

In the process of driving the integration of industry, education, innovation, and entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective of the new era of industry education integration, due to the different advantages among the subjects, in the process of driving the innovation and entrepreneurship of industry education integration in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective of integrated universities in the new era, each subject plays a "heterogeneous" role in the innovation and entrepreneurship of industry education integration in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective of the new era. According to the principles of economics, The activity behavior between economies is characterized by asymmetric information, which is a universal and objective phenomenon. This information asymmetry has a negative impact on the driving force of industry education integration, innovation and entrepreneurship, especially collaborative innovation, in the Guangdong Hong Kong Macao Greater Bay Area under the dual circulation perspective of integrated universities in the new era. On the one hand, information asymmetry often leads to moral risks in the integration of industry and education. The moral hazard factor is due to the intentional concealment of unfavorable information by one of the two parties in the Guangdong Hong Kong Macao Greater Bay Area's industry education integration, innovation and entrepreneurship driven integration under the new era's dual cycle perspective, which affects the interests of the other party while maximizing their own interests. This information asymmetry leads to the risk of integration when the party with information advantages seizes

the interests of participants who are at an information disadvantage.. The moral hazard factor mainly stems from the asymmetry (incompleteness) of information, which is directly related to the reputation, risk management, and benefit distribution systems of both parties in the integration, and is also affected by the imperfect integrated market mechanism. Due to the high heterogeneity of the core advantages and essential resources of both parties in the innovation and entrepreneurship driven integration of industry education integration in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective of the new era, there is a lack of smooth information communication in the process of industry education integration, innovation and entrepreneurship driven integration in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective of industry education integration.

The risks brought by the uncertainty of technological innovation driven by the integration of industry, education, innovation, and entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area from the perspective of dual circulation in the new era

The integration of industry and education is based on the integration driven by innovation and entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective of universities in the new era. Therefore, the high risk of technological innovation driven by innovation and entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective determines the high risk of industry and education integration, and a very important reason for the high risk of technological innovation is the uncertainty of technological innovation. This uncertainty in technological innovation is mainly manifested in the following aspects:

One is the uncertainty in the research and development of industry education integration, innovation and entrepreneurship driven technologies in the Guangdong Hong Kong Macao Greater Bay Area from the perspective of dual circulation in the new era. The biggest risk of industry education integration, innovation and entrepreneurship driven integration in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective of the new era is technology research and development risk. This is because there is a risk of failure in technology research and development driven by industry education integration, innovation and entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective of the new era, leading to uncertainty in technological innovation. The generation of this uncertainty risk mainly comes from the influence of internal and external factors within the enterprise, and most of these effects are "negative transfer" utility, such as the immaturity of basic technology, the lack of auxiliary technology, technological mutations, and fierce competition between external enterprises. From the perspective of cognitive disciplines, in the process of driving the innovation and entrepreneurship of industry education integration in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective of integrated universities in the new era, the industry and teaching sides of the industry education integration innovation and entrepreneurship drive in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective of the new era are transforming the processes and equipment for enterprises and industries, Especially when discussing the success rate and risk of investment driven by industry education integration, innovation and entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective of the new era, it is often due to the existence of "heterogeneity" in thinking, which can easily lead to contradictions, disagreements, and even conflicts. This kind of "implicit" thinking between the industry and teaching sides of the industry education integration, innovation and entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective of the new era is inconsistent, Directly influencing the innovation and entrepreneurship driven integration behavior of industry education integration in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective of the "explicit" industry education integration in the new era, ultimately affecting performance; The

uncertainty mechanism of this technology research and development can easily make it difficult to sustain the pilot test, renovation, and investment of technological achievements due to the inability of both parties to reach an agreement. It can be seen that the uncertainty of technological research and development has a negative impact on the stability of the integration of industry and education.

The second is the uncertainty of technology transfer. Technology Transfer refers to the process of technology transferring in some form from its supply department (teaching side) to its demand side (enterprise, industry, and other user departments). According to the concept of technological economics, the essence of technology transfer is a simultaneous transfer of usage rights and ownership. Under the dual cycle perspective of industry education integration in the new era, the integration of industry education integration, innovation and entrepreneurship in the Guangdong Hong Kong Macao Greater Bay Area is conducive to promoting the transfer of innovative technologies. However, since the process of innovative technology transfer is not a simple commodity/service transaction process, its behavior is not just a simple delivery, but behind it is like a "deep-sea iceberg", involving the transfer of various explicit and implicit knowledge, Especially when it comes to a series of legal issues related to intellectual property rights, it also involves the mobility of technical personnel, which often possess core technology. From the perspective of knowledge management, in the process of knowledge transfer, if enterprises and industries do not agree or lack recognition of the innovative knowledge of university teachers; Or if enterprises or industries, as recipients of innovative technology and knowledge, do not have sufficient acceptance of innovative knowledge transfer, especially the transfer of tacit knowledge, and if the recipients of new technology and knowledge lack corresponding and equal technical personnel, then there will be a cognitive "gap" in the industry's recognition of the new knowledge and technology provided by universities, This indirectly leads to barriers in the transfer payment of tacit knowledge during the process of technology transfer at the cognitive level. For example, all explicit knowledge related to patents has been transferred, but due to insufficient acceptance of innovative knowledge transfer by enterprises and industries, implicit knowledge has not been fully understood, ultimately affecting the realization of patent value. The insufficient ability of enterprises to transform and upgrade innovative technology and knowledge is also a contributing factor to the uncertainty of technology transfer. According to the theoretical principles of innovation economy and knowledge management, the value of innovative knowledge and related technologies not only has corresponding time limits, but also most of them have strong timeliness, which is closely related to the "iteration" of innovation. In fact, with the emergence of new N+1 "iterative" knowledge, the original value of N-generation innovative knowledge will rapidly decrease and eventually be completely replaced. In the face of such N+1 "iteration" phenomena, if enterprises and industries can "timely" transform and upgrade the original N-generation innovative knowledge, then the use value of the original N-generation innovative knowledge will be extended. Otherwise, the original value of the original N-generation innovative knowledge will rapidly decrease and ultimately be completely replaced. Wang Shangwu et al. (2011) pointed out that in terms of intellectual property management, there is still a special need to pay attention to the registration of patent application rights or changes in patent ownership: if both parties in the integration of industry and education ignore the ownership change of patent application rights or patent rights, then for enterprises and industries, if they pay economic costs but fail to obtain the legal patent application rights or patent rights that they should have, It will indirectly bring risks and hidden dangers to subsequent rights protection.

The third is the uncertainty of external market changes in technological innovation. The market is the touchstone that ultimately tests the success of the transformation of innovative achievements. If the expected market prospects do not match the actual market conditions, it will lead to market risks "(Xu Changqing, 2007). External market risk factors are also one of the

core factors for the success or failure of scientific research achievements transformation. In the current era of market economy, the market, as an "invisible hand", is undergoing rapid development and rapid changes in science and technology. With the continuous acceleration of updates of various products and services, the external markets in which enterprises and industries operate are also constantly changing, making it more difficult for industries to grasp market dynamics and trends. From the perspective of supply side structure theory, The uncertainty of external market changes often leads to inaccurate supply and demand predictions. The accuracy of market predictions directly affects the judgment accuracy of the three dimensions of market capacity, acceptance time, and marketing strategy of enterprises and industries. These also affect whether innovative products can smoothly enter the market and receive recognition from the demand side, thereby affecting the economic interests of the integrated innovation entities of industry and education. At the same time, as economic globalization enters a new era and the impact of international advanced technology introduction, the emergence of technological imitation has a huge impact on domestic technological innovation. If the cost of imitating and introducing technology in this situation is cheaper than the original domestic technological innovation, then this competitive advantage in cost and price will pose a huge challenge and risk to the original integrated innovative products in terms of market share.

5. Conclusion

Risk control for the integration of innovative knowledge and related technologies into a five dimensional system of industry education integration. Risk control refers to the adoption of various corresponding measures and methods by risk managers to eliminate and reduce the various possibilities of risk accidents, or to reduce the losses caused by risk accidents. For the integration of industry and education, in the process of innovation and entrepreneurship driven by the integration of industry and education in the Guangdong Hong Kong Macao Greater Bay Area under the dual cycle perspective of the new era of integrated universities, all parties involved in the integration are actually participants in risk control. These entities take corresponding "heterogeneity" control measures in response to differentiated risks. The risk control of the integration of industry education and the five dimensional system needs to focus on risk decomposition and responsibility division. Risk and responsibility are equal and interdependent, and for both parties in the dynamic process of integration, risk is divided and recognized differently at different dynamic stages. Therefore, it is necessary to subdivide and resolve risks according to high-level and evolutionary stages, and form a common understanding of the integration of industry and education. The mechanism of its action is that the amount of investment and contribution determine the size of the benefit amount. The decision-maker is the person in charge, who holds the initiative in project progress is responsible, who affects project progress is responsible, and who bears the risk is the one who benefits the most. For example, an innovative knowledge and related technology integrated with industry and education in scientific research can be divided into the research stage of innovative knowledge and related technology integrated with industry and education, the achievement transformation stage, and the sales stage of industry and education integrated products. According to the above mechanism of action, the technical risks in the research stage of industry and education integration are mainly borne by the technology supplier, represented by universities, and the decision-making power and benefit distribution are corresponding to the teaching party; At the stage of achievement transformation, the technical risks at this time are jointly borne by both production and education parties, therefore they are jointly borne by both production and education parties; Entering the final stage of integrating innovative knowledge and related technology products into industry and education, the market risks in

this stage are mainly borne by the production and enterprise parties (technology demand and user side).

Under the dual cycle perspective, the innovation driven development of foreign trade in the Guangdong Hong Kong Macao Greater Bay Area must be a dual cycle driven by technological innovation. Therefore, in the final analysis, it is the supply of labor, so the integration of industry and education in applied universities is crucial for innovation driven development. Whether it is internal circulation or external circulation, ultimately it is the competition of foreign trade, domestic trade products, services, and brand quality in the new dual circulation development pattern. Ultimately, it is the supply of labor, so the integration of industry and education in applied universities is crucial for innovation driven development. This objectively requires the Guangdong Hong Kong Macao Greater Bay Area to further promote the innovation driven spirit of enterprises in foreign trade, and make efforts in technological innovation, especially the "craftsmanship spirit", to create more Guangdong Hong Kong Macao Greater Bay Area brand products as a starting point, provide more diversified high-quality services and goods to consumers around the Guangdong Hong Kong Macao Greater Bay Area, and drive smooth internal and external circulation through efficient innovation channels..

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