Path Analysis of Macao's Transformation from a Gaming Economy to a Diversified Economy

Haihong Wang *

Faculty of Hospitality and Tourism Management, Macau University of Science and Technology, Macau, China

* Corresponding Author Email: 1220023841@student.must.edu.mo

Abstract. The dominance of the gaming industry in Macao is the main reason for the fragility of the Macao economy and the difficulties in the development of an appropriate diversification of the local economy. During the period of epidemic prevention and control, the number of tourists of all kinds plummeted, and the gaming economy was seriously affected, resulting in the economic depression of Macao. The Macao SAR government and academics have put forward a series of theoretical frameworks and policy recommendations at an early stage, aiming to enhance the risk-resistant capability of the Macao economy. However, Macao has faced many bottlenecks in the process of promoting economic diversification and has yet to realize the sustainable development goal of “one industry as the mainstay and industrial diversification as coexistence”. The purpose of this paper is to analyze the development bottlenecks encountered by Macao and combine the successful transformation experiences of other cities, as well as the linkage between Hengqin New Area and Macao. This paper aims to analyze the bottlenecks in Macau's development and to draw specific recommendations to promote Macau's economic diversification and sustainable development based on maintaining the development of the gaming industry.

Keywords: Macau diversification; gaming industry; Guangdong-Macao; In-Deep Cooperation.

1. Introduction

Macau's gaming industry has developed rapidly since the 1990s, and Macau has become a globally renowned gaming center. Based on the data on value-added and industrial structure of various industries provided by the Statistics and Census Bureau of the Macao regional government, the gaming and gaming intermediary industries accounted for 51.18% of the annual value added of all industries in 2019. In 2020-2022, the gaming industry will remain dominant in the share of industrial structure. The single industry structure in Macau's economic development also makes its economic development closely linked to the gaming industry. The rapid rise of the gaming industry in the past decade has not only contributed to the remarkable growth of Macau's economy but also made its GDP per capita jump to the second position in the world.

However, the current status quo of the gaming industry, which is “dominated by one industry”, makes Macau's economy particularly vulnerable in the face of external economic fluctuations, policy adjustments, market saturation, and other challenges. During the epidemic control period, the number of tourists to Macau plummeted, and the gaming industry was seriously affected, resulting in the overall sluggishness of Macau's economy. After the end of the control, as the gaming industry was severely hit, the overall economic recovery was sluggish, fully exposing the challenge of Macao's economic over-reliance on the gaming industry. Therefore, it is particularly important to promote economic transformation and develop a diversified economic model. The Macao SAR Government and the academia have put forward a series of theoretical frameworks and policy proposals at an earlier stage, aiming to enhance the risk-resistant capability of the Macao economy. However, Macau faces many bottlenecks in the process of promoting economic diversification and has yet to realize the sustainable development goal of “one industry as the mainstay and industrial diversification as coexistence” [1]. The purpose of this paper is to analyze how Macao can effectively transform from gaming to a diversified economy and to explore how to realize the sustainable development of Macao's economy under the new situation through the reform of the gaming industry, the innovation of the tourism industry and the opening up of new points of economic development.

2. Development Status and Challenges

2.1. Comparison of Macau's Economy Before and After the Epidemic

The economy of Macau mainly relies on the gaming industry. Before the epidemic, Macau attracted many international tourists by its unique geographical location and open gaming policy, a structure that drove Macau's rapid economic growth. However, the outbreak of the epidemic posed a severe test to this single-industry structure. The following section compares the economic development of Macau before and after the epidemic, based on the data and information from the Statistics and Census Bureau of the Macau SAR Government.

2.1.1. Macau before the epidemic（2019）

First, according to the data in Figure 1, it can be seen that although there were fluctuations in the GDP of Macau before the epidemic, the overall GDP showed a clear upward trend, which was about 440 billion Macao dollars as of 2019. It can find that in pre-epidemic Macao under the various consumption driven by gaming tourism and gaming, the Macao economy showed great economic vitality and bright prospects for development.

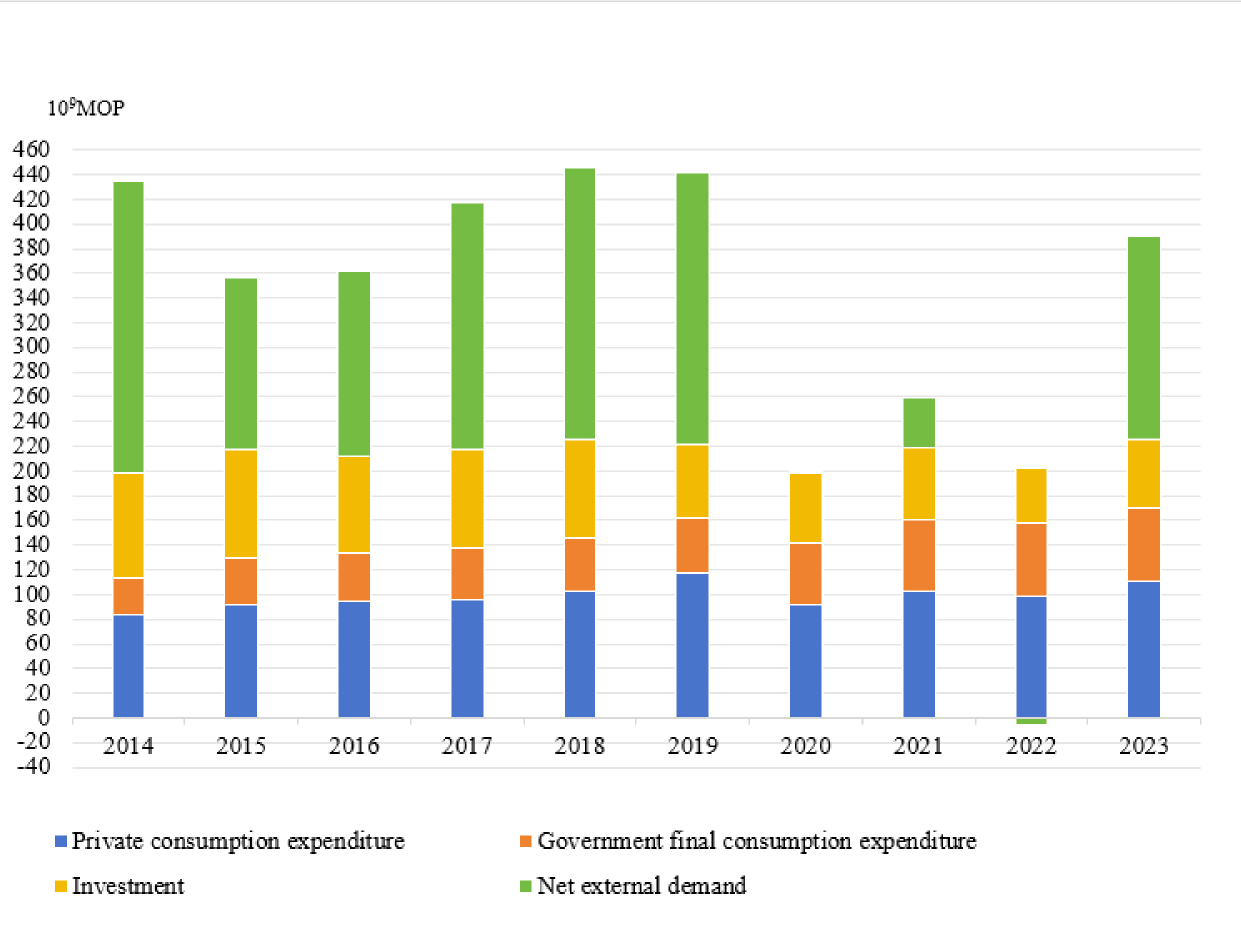

Fig 1. Macao's GDP by year [2].

Second, in terms of the proportion of industries. Although Macau has a comprehensive range of industries including gaming and gaming intermediaries, wholesale and retail trade, hotels, real estate business, etc. Figure 2 shows the gaming industry accounts for as much as 51% of the total, whereas the wholesale and retail trade, food and beverage, public administration, education, and urban construction, which are important sectors of the real economy, only account for 24% of the total. Commercial activities such as real estate, banking and insurance, and leasing, on the other hand, accounted for 20%. This also reflects the important economic flaw of the current irrational industrial structure of Macau.

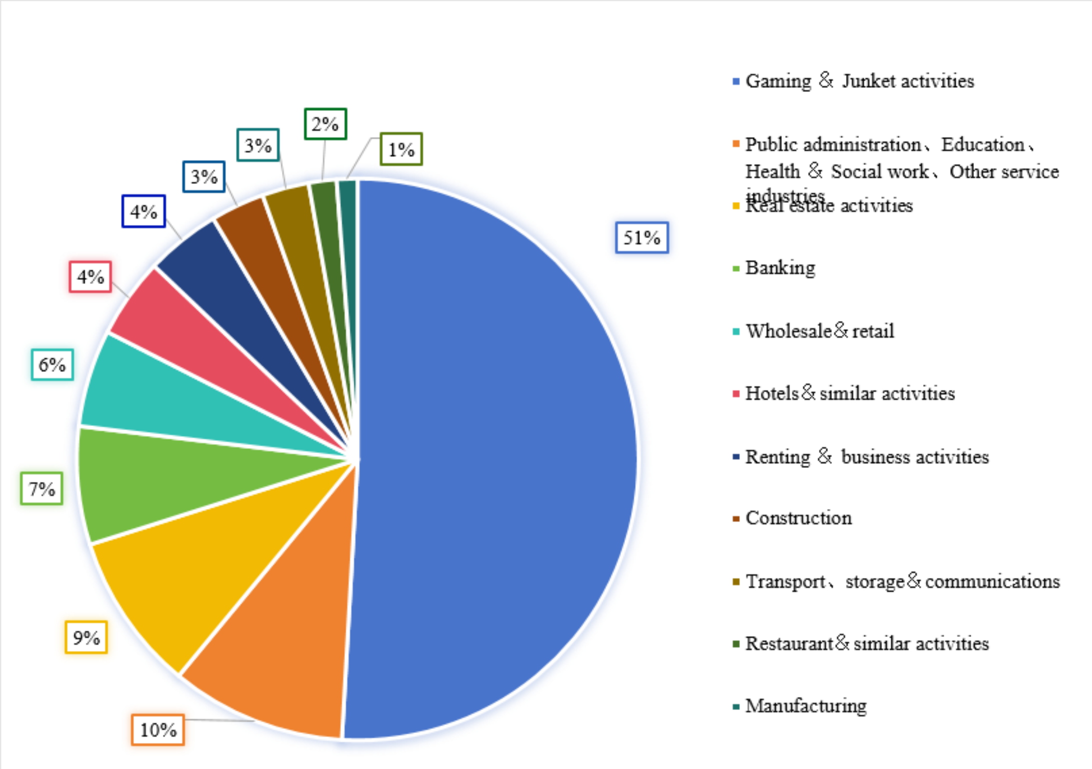

Fig 2. Industrial Structure (2019) [3].

Thirdly, in terms of fiscal revenue, Macao's fiscal revenue also heavily relies on income from the gaming industry. In 2019 and 2020, Macao's tax revenues amounted to USD 140.7 billion and USD 101.6 billion respectively, with casino gaming contributing USD 12.7 billion and USD 29.8 billion during the same periods. In 2019, the gaming industry contributed over 80% to Macao's government fiscal revenue. Despite a decline in GDP and gaming revenue due to the impact of the pandemic in 2020, after excluding the influence of central government financial support, the contribution rate of the gaming industry still exceeded 60%, as shown in table 1. These figures demonstrate the significance of the gaming industry in Macao's fiscal revenue.

Table 1. Principal Components of Revenue of General Integrated Account of Macao SA [4].

Item	2019	2020
Total	**140 730 200 000**	**101 670 380 000**
Gaming revenue	112 710 362 000	29 808 160 000
Other revenue	10 956 044 000	56 681 873 000

Finally, in terms of the employed population. The number of people engaged in gaming and gaming-related industries such as hotels and restaurants before the epidemic was 85,200 and 56,100 respectively, accounting for more than 36% of the total employed population in Macao, as shown in Table 2. Although the gaming and related service industries provided a very large number of jobs for Macao residents, this high concentration of the employed population made the overall employment rate of Macao greatly dependent on the development of the gaming industry and also laid a hidden danger for the soaring unemployment rate in Macao during the epidemic.

Table 2. Employed population by age group and industry [5].

Industry	2019
Total	387 800
Gaming & Junket Activities	85 200
Hotel, Restaurants & Similar Activities	56 100

2.1.2. Macau after the epidemic

Under the impact of the 2020 novel coronavirus epidemic, the very fragile economic structure of Macao built around the gaming industry over the past 20 years and overly dependent on the gaming industry was severely challenged, which ultimately led to Macao falling into a serious recessionary predicament.

In terms of industry ratios, the size of the gaming industry and related services in 2020 plummeted to one-half of what it was in 2019 due to the plummeting number of tourists. Gaming revenues also fell sharply, by more than 80% from the previous year, which also greatly affected Macau's financial revenue. At the same time, the epidemic caused a large number of employees to lose their jobs or be forced to take a vacation, and the unemployment rate in Macau soared to 16% at one point in 2020. As a result of the devastating impact on the gaming industry, Macau's overall GDP plummeted by 60% compared to the previous year, with its GDP equivalent to the 2010 level. Despite the gradual liberalization of the closure policy, gaming revenues rebounded in the three years following the epidemic but have not yet recovered to 2019 levels. The impact of the epidemic has effectively demonstrated the vulnerability of Macau's economic structure, which is overly dependent on gaming and related industries, and has renewed widespread attention to the call for the promotion of an appropriate diversification of Macau's economy.

Coupled with the intensified international competition in the post-epidemic era, in October 2024, Thailand announced the legalization of gaming throughout its territory. The expansion of the neighboring gaming market has further exacerbated the loss of Macau's gamblers and compressed the development space for Macau's gaming industry to continue to expand. Secondly, Thai casinos have brought new competitive pricing pressures to Macau by offering more attractive stakes and promotions, which is a new and huge challenge for Macau, which relies on a single gaming industry.

2.2. Challenges of Macau's Reliance on a Single Industry

The gaming industry has brought enormous economic benefits to Macau, but the above reflects that the overly monolithic industrial structure formed by Macau's high reliance on gaming and related industries is extremely vulnerable in the face of external shocks. Therefore, the following section will summarize the main challenges facing Macau's development at present.

First, vulnerability to economic fluctuations. Since the center of gravity of Macau's economy is mainly concentrated in the gaming industry, its economic growth is extremely vulnerable to external factors. For example, emergencies such as the outbreak of epidemics may lead to a sudden drop in the number of tourists, thus causing a huge impact on the gaming revenue, and ultimately affecting the overall GDP and social welfare of Macao. This high degree of dependence makes Macao unusually vulnerable in the face of external economic fluctuations.

Second, the pressure of market competition. With the continuous expansion of the global gaming market, Macau has begun to face fierce competition from other gaming destinations. At present, the greatest impact on Macao is the announcement by Thailand of the legalization of gambling and the gradual opening of casinos, which will affect the choice of gambling destinations by many gamblers and divert gamblers who originally went to Macao for gambling. Such competitive pressure will greatly affect Macao's gambling market share, which will ultimately be reflected in a decrease in gambling revenue, threatening its long-term economic stability.

Thirdly, there are numerous obstacles to economic diversification. The current development tone of over-reliance on the gaming industry has made Macao face many obstacles in realizing economic diversification. The government tends to favor the gaming industry in terms of resource allocation, policy support, and investment attraction, resulting in certain restrictions on the development of other industries (such as tourism, culture, science and technology, etc.). At the same time, this single-industry structure also reduces Macao's adaptability in the face of market changes.

Therefore, if Macau wants to realize sustainable development, the Macau government also needs to get rid of the excessive reliance on the gaming industry and actively expand the development of other industries to promote the progress of economic diversification. It is also necessary to strengthen social governance and policy regulation, to enhance the economy's risk resistance and overall resilience, and to ensure that Macao's economy moves forward stably.

3. Exploring the Path of Industrial Diversification and Transformation

In October 2023, the Macao SAR Government promulgated the first comprehensive and systematic industrial development plan, the “Plan for the Adequate Development of the Macao SAR's Economy through Diversification and Diversification (2024-2028)”, which puts forward the specific objectives, major tasks, and key projects for the development of the economy through diversification and diversification from 2024 to 2028. It is in line with the National “14th Five-Year Plan” and the “Outline of the Plan for the Development of the Guangdong-Hong Kong-Macao Greater Bay Area”, and is based on the MSAR's “2nd Five-Year Plan” and the “1+4” Strategy for Adequate and Diversified Development of the Economy. The Macao SAR's “Second Five-Year Plan” and “1+4” economic diversification strategy is used as the basis for the detailed planning and deployment of the integrated tourism and leisure industry, the Chinese medicine and health industry, the modern financial industry, the hi-tech industry, the transformation and upgrading of traditional industries, and the convention, exhibition, trade, culture and sports industry [6]. The following section discusses several aspects in detail.

3.1. Transformation and Upgrading of the Traditional Cultural and Tourism Industry

In the face of the economic crisis, Macao urgently needs to explore diversified development paths. Drawing on the successful transformation experiences of Shanxi and Las Vegas can help Macau find practical strategies for economic diversification.

The transformation of Shanxi demonstrates how resource-oriented cities can realize economic diversification through policy and industrial upgrading. Shanxi, which has long relied on coal, is facing resource depletion and declining market demand. In 2013, the government put forward a strategy of “transformation and comprehensive reform” that includes upgrading traditional industries and creating new economic growth points, as well as the implementation of the Action Plan for Industrial Transformation and Upgrading, which reduces the expansion of coal enterprises and encourages technological upgrading. Datong has completed the transformation of 3.24 million kilowatts of coal power units, accounting for 52.56% of the city's total installed capacity [7]. In addition, Shanxi also seeks new opportunities in traditional industries through the “game + tourism” model, actively utilizing the combination of cultural heritage and popular games to promote economic growth. For example, Shanxi Culture and Tourism Group, with the help of the domestic game “Black Myth: Wukong” craze, cooperated with Dianping to launch the “must play the good scenery of Shanxi” activities. Through the completion of the task to obtain the cultural and creative products of Shanxi, attracted 1,885,400 tourists during the National Day, the ticket revenue of 56,167,000 yuan [8]. These measures have effectively reduced reliance on coal, promoted the integration of culture and tourism, and enhanced overall economic resilience.

Shanxi's experience shows that promoting the upgrading of traditional industries under policy guidance is crucial to the diversification of the city's economy. Macau can learn from this approach by launching special tourism itineraries based on current events, highlighting the fusion of Chinese and Portuguese cultures, utilizing the new model of “culture + finance”, setting up investment funds to support local cultural and creative brands and projects, and leveraging the development of the arts and digital media to enhance the city's cultural soft power and attract investors from all over the world.

The transformation experience of Las Vegas, on the other hand, shows how to diversify the economy while maintaining the growth of the gaming industry. Las Vegas developed into a gaming center in the 1950s and 1960s. However, to maintain its competitiveness after the expansion of the legalized scope of gambling, it began to implement industrial diversification reforms in the 1990s. The centerpiece of this reform was the integration of gaming, tourism, conventions, and high-end entertainment to create a diversified economic model. First, Las Vegas invested heavily in modern convention facilities. For example, the Las Vegas Convention Center, which was completed in 1999, has attracted many enterprises to hold exhibitions and promoted the rapid development of the convention and exhibition industry. Secondly, Las Vegas also emphasizes the introduction of cultural activities and increasing the diversity of service users. Las Vegas hotels have begun to carry out multi-functional transformation and construction, and through the development of large-scale amusement parks, theme hotels roadside shows, etc., more family-friendly and universal entertainment activities have become the new selling point of Vegas. In addition, it has begun to explore alliances with neighboring Hoover Dam, Red Rock Canyon, and other natural tourism resources to develop new selling points for tourism. These measures have transformed Las Vegas into an integrated tourism economy, and the revenue no longer relies solely on gambling receipts.

Therefore, Macao can continue to build a complex integrating gaming, MICE, and high-end entertainment. By running themed conventions and exhibitions and organizing cultural and commercial events such as concerts, it can attract a wider group of tourists. However, unlike Las Vegas, redevelopment of other local tourism resources is more difficult due to Macau's limited local space. Therefore, the integration of scenic spots in the Pearl River Delta (PRD) can be created by joining hands with other neighboring cities, which will complement Macau's tourism resources and at the same time bring new opportunities for the overall development of the PRD.

3.2. “Guangdong-Macao Linkage” Brings New Opportunities for Diversified Industrial Development

First, Macao and Hengqin are only separated by a bridge and a piece of water, so it has an inherent geographical advantage. Secondly, on September 5, 2021, the CPC Central Committee and the State Council issued the “Overall Plan for the Construction of Hengqin Guangdong-Macao Deep Cooperation Zone”, which also mentions that “the original intention of building the Hengqin New Area is to create conditions for the diversified development of Macao's industries.” This has laid the policy foundation for Macao-Guangdong linkage and cooperation. Furthermore, the gradual improvement of supporting facilities for cross-border living and working, such as the Hengqin Border Crossing, Macao New Neighborhood, Macao School, and Hengqin-Guangdong-Macao Deep Co-operation Zone Administrative Service Center, has also provided Macao people with great convenience in coming to the Zone to work and start their business.

3.2.1. Chinese medicine health industry

Entering the 21st century, people are more and more concerned about their own health, and the demand for products and services such as health care products and TCM health care is also getting stronger. Therefore, the construction of Chinese medicine and health industry to make full use of Macau's long history of Chinese medicine and its high recognition has become a point of development that cannot be ignored in the diversification of Macau's industries. However, due to the limited land in Macao, there is not enough space for the development of industrial parks. Therefore, it is urgent to establish an innovative Guangdong-Macao Chinese Medicine Technology Industrial Park in Hengqin.

On the one hand, the joint establishment of an industrial park in Hengqin can circumvent the problem of insufficient land in Macao, and at the same time, it can also enable the Chinese medicine-related research forces of the two places to form a synergy and create a new situation of Chinese medicine science and innovation. Secondly, the innovation of the Chinese medicine industry can add new highlights to Macao's tourism industry, promote the development of gaming tourism into more comprehensive tourism, and help Macao's tourism to transform in the direction of characterization. Secondly, the impact of healthy food on Macau's wholesale and retail industry should not be overlooked. While Macau's wholesale and retail industry mainly relies on duty-free luxury goods and cosmetics, the health products produced by the TCM Industrial Park, such as snacks and snacks containing Chinese medicine ingredients, can become new selling points in Macau by their efficacy and concepts, and promote the upgrading and transformation of the wholesale and retail industry [9]. Therefore, the TCM Science and Technology Industrial Park not only promotes the development of the TCM industry in Macau but also creates new opportunities for Macau's economic diversification.

3.2.2. Financial industry

The Guangdong-Hong Kong-Macao Greater Bay Area is the front window of China's reform and opening up and is the only Bay Area city cluster in the world with two systems, three currencies, three legal systems, three tariff zones, and four core cities [10]. This unique condition brings Macau a unique new opportunity to develop cross-border finance. The establishment of the Guangdong-Macao-Shenzhen Cooperation Area links up the financial markets of Macao and the Mainland, fully combining the huge economic volume and the more mature financial markets of the Mainland and solving the shackle of Macao's small size of Macao's overall descending economy. At the same time, it also accelerates the exchange of talents in the financial industries of Guangdong and Macao, which can not only circumvent the shortcomings of the lack of professional financial talents in Macao but also enhance the development efficiency of Macao's financial market.

4. Conclusion

To summarize, Macao's economic development has long been overly reliant on the gaming industry, resulting in a single economic structure, which makes it particularly vulnerable in the face of external economic fluctuations and the growth of competitive pressure in the market. Especially under the impact of the epidemic, Macau's gaming industry has suffered a great blow, exposing the risks brought by single-industry dependence. Therefore, promoting moderate economic diversification has become the key to Macau's future development.

To realize economic diversification, Macau needs to actively develop other industries on the basis of the existing gaming industry, especially to find breakthroughs in the upgrading of traditional culture and tourism, the Chinese medicine and health industry, the financial industry and the modern service industry. As an extension of Macao's characteristic resources, the Chinese medicine and major health industry has enormous development potential. Through the cooperation with Hengqin to jointly build a Chinese medicine technology industrial park, it will not only expand Macao's industrial space, but also promote the industrialization of health food and health care products, enhance the diversified characteristics of Macao's tourism industry, and further promote the transformation and upgrading of the economy. In addition, the rapid development of the financial industry, especially cross-border finance, will bring more investment and innovation opportunities to Macao, and push the Macao economy towards a more high-end and sustainable development.

However, blindly carrying out economic diversification and transformation is not beneficial without any harm. Gaming tourism has long been the most influential cultural card of Macau, attracting many domestic and international tourists. In the process of diversification, if the unique position of gaming in Macau is neglected, this unique city characteristic will be lost. At the same time, if the city cannot quickly find new economic growth points with global appeal, the reduction of urban infrastructure projects and the drastic reduction of public welfare brought about by the sharp drop in economic revenue will greatly increase social instability, which will ultimately not only affect the daily life of Macao's residents, but also become a new shackle on the development of Macao's economy.

Therefore in order to cope with the specific challenges in Macao's economic development. In the fields of tourism, culture, finance, etc., Macao can draw on successful domestic and international experiences, combine with its own strengths, promote industrial integration, and ultimately form a diversified and sustainable economic pattern. Meanwhile, it will continue to optimize its policies to encourage the development of innovation and technology industries. It will also continue to strengthen synergies and cooperation with other cities in the Greater Bay Area to enhance Macau's overall competitiveness through industrial linkages and resource sharing. Ultimately, it will break through the bottleneck of the single-industry model, realize economic transformation, and lay a solid foundation for sustainable development in the future.

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