

Effectiveness of Policies and Measures Under the Epidemic-Taking Macau as an Example

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Abstract— Since the opening of Macau in December 1999, the gaming, tourism, and hotel industries have played an important role in supporting Macau's economy. Macau's economy has largely relied on the tourism and gaming industry. The COVID-19 in early 2020 swept the world, and Macau was not spared. According to statistics, as of mid-December 2020, Macau had 46 cases, 44 of which were imported cases. From the perspective of economic growth and other conditions, there has been a significant decline. Because the epidemic is still severely intensified and spread, Macau will continue to be affected. The article studies Macao's control measures and economic assistance measures during the epidemic, and summarizes the changes in Macao's key industries, and points out how

to deal with the threat of the epidemic and other public health security incidents in the future, and enhance the stability of Macao's economic development.

Keywords— Epidemic; Gaming Industry; Control; Assistance.

I. INTRODUCTION

Affected by the global economic downturn, the development of Macau's economy has also fluctuated in recent years. Macau's GDP fell by 14.4% in 2015. Macau's GDP did not achieve positive growth until 2017 and 2018. However, due to the global economic downturn in 2019, As a result, Macau's economy continued to decline.

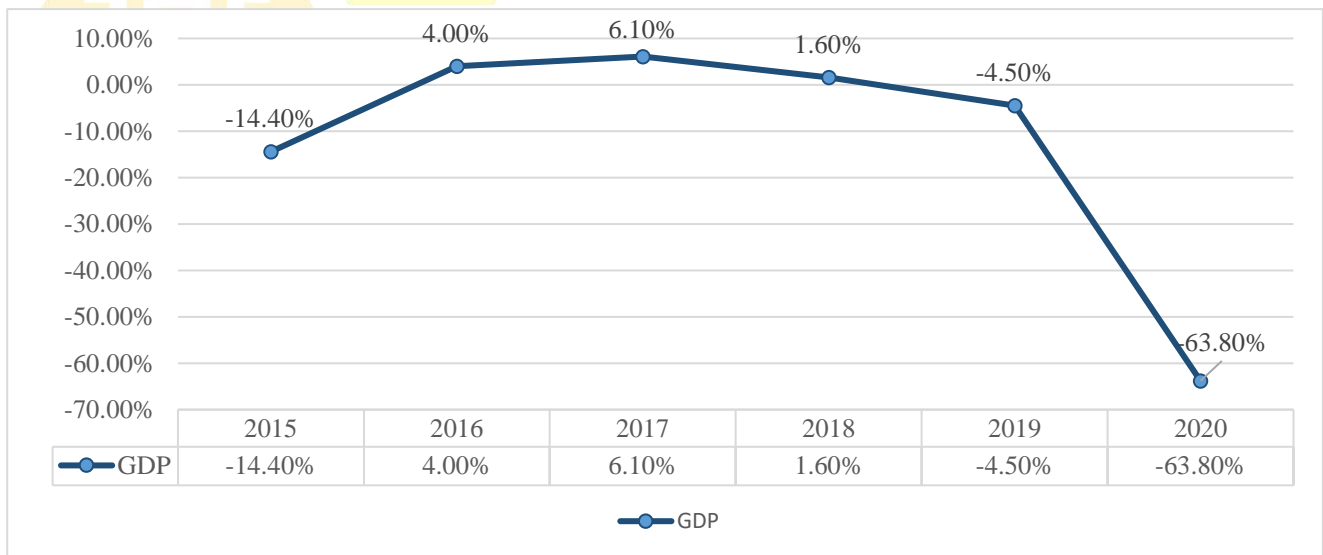


Fig. 1: Macau GDP

(Source: Macau Statistics and Census Bureau)

During the 2019 Spring Festival, the number of tourists from Macau exceeded 3.54 million. According to estimates, during the 2020 Spring Festival, nearly 4 million mainland tourists will enter Macau for tourism. However, with the spread of the epidemic, during the 2020 Spring Festival, the number of tourists received by Macau has dropped by more than 90% compared to the 2019 Spring Festival, causing further losses to Macau's economy, affecting Macau's gaming industry, hotel industry, and finance. The industry has experienced huge shocks, and the overall economic downturn has been irretrievable. The Macau government hoped to take strict control measures in 2020 to reduce the harm of the

epidemic, while maintaining the continuous development of its own industry, and hoped that there would be new breakthroughs in 2021. Therefore, 2020 would be very difficult for all industries in Macau. In response to the further development of the COVID-19 epidemic in Macau, the Macau government announced the establishment of the agency " the COVID-19 Infection Response Coordination Center" to require early detection and early treatment on January 21, 2020, and also determined that when the epidemic was severe Suspension of work and classes, simultaneous strict screening of persons entering the country.

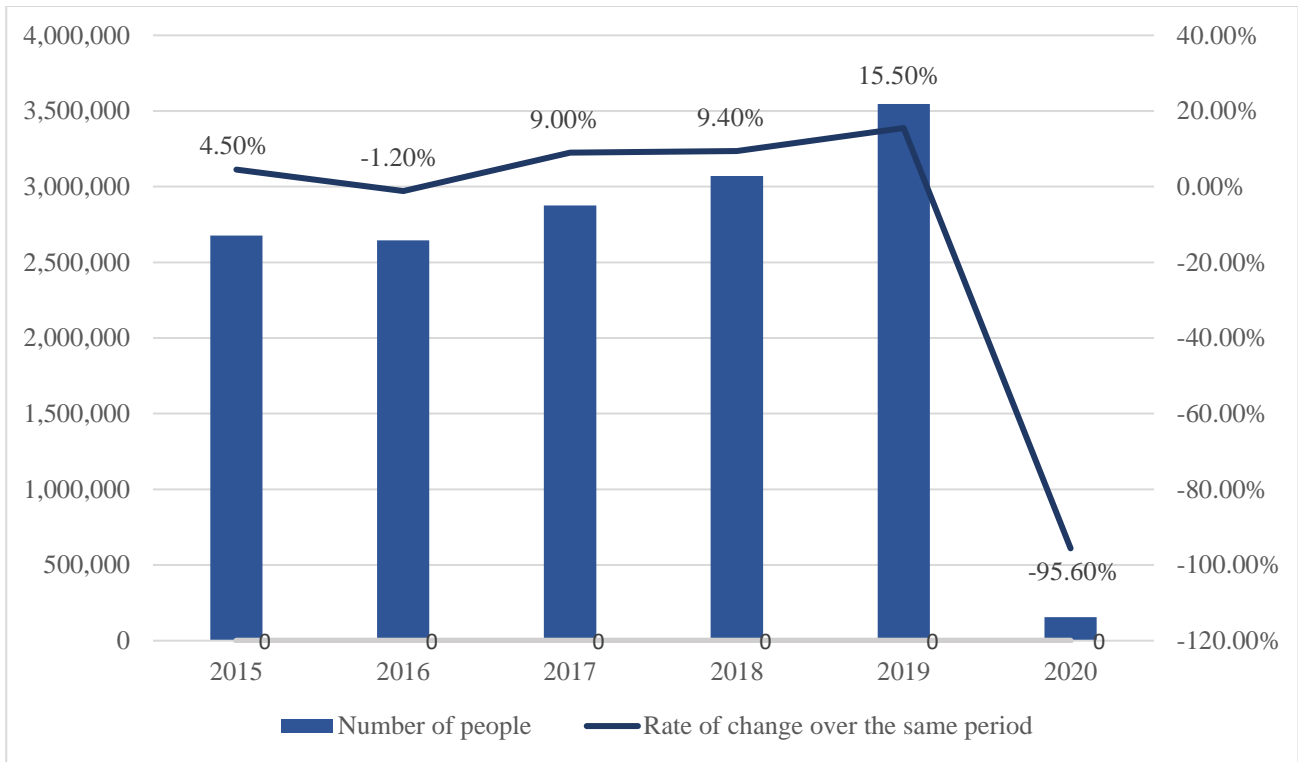


Fig. 2: Number of Macau tourists during the Spring Festival from 2015 to 2020
(Source: Macau Statistics and Census Bureau)

Under the strict measures and coordination of various departments of the Macau government, the epidemic in Macau has been well controlled, but at the same time local industries have also suffered heavy losses. How could we combine epidemic prevention and economic development in the future when the epidemic would continue? This was a topic that the Macau government needed to study and discuss. Macau needed to formulate a more detailed development strategy to deal with future economic challenges and threats.

Under the conditions of effective prevention and control of the epidemic, Macau needed to think about the next control measures. Only in this way Macau could achieve economic recovery as soon as possible, and there will be new developments in the future.

From the perspective of the research purpose, the research of the article hopes that Macau will be able to maintain its own economic development while facing major public health incidents, accumulating experience for dealing with such incidents in the future, and ensuring Macau's economy stable.

Under the influence of the globalization process, the mutual influence between countries is also deepening. Macau needs to deal with more and more external crises. How to ensure its stable development in the face of major global events is of extraordinary significance to Macau.

II. MACAU'S RESTRICTIVE MEASURES

2.1 Waterway entry control

From the perspective of waterway transportation in Macau, there were several terminals to enter Macau, including the Outer Port Ferry Terminal, Taipa Ferry Terminal, and Inner Port Ferry Terminal. Among them, the Outer Port Ferry Terminal had the largest inbound passenger flow. Mainly passenger liners to and from Shenzhen and Zhuhai. Macau's "the COVID-19 Infection Response Coordination Center" first suspended the entry permits for the outer port terminals, and then successively stopped the entry permits for the Taipa Ferry Terminal and the Inner Port Ferry Terminal, and finally passenger flow control achieved completeness in the second quarter of 2020. It was not until June 2020 that the relaxation began. Macau has relatively relaxed its control measures. The year-on-year data showed that in January 2020, the number of people entering Macau through three terminals was 360,000. In April, it was completely cleared to ensure the controllability of immigrants. In January and February, due to the early spread of the epidemic, Macau adopted the practice of extending the flight schedule, but this practice did not achieve decisive results. Although the number of personnel reduced, there were still more than 9,000 people coming and going. Therefore, starting from the end of March, Macau has increased its control and stopped receiving tourists from inland China, including the number of tourists from Shenzhen and

Zhuhai. Since the end of March, Macau has completely closed the inbound waterway to Hong Kong and

mainland Chinese people. So far, the waterway has formed all-round control.

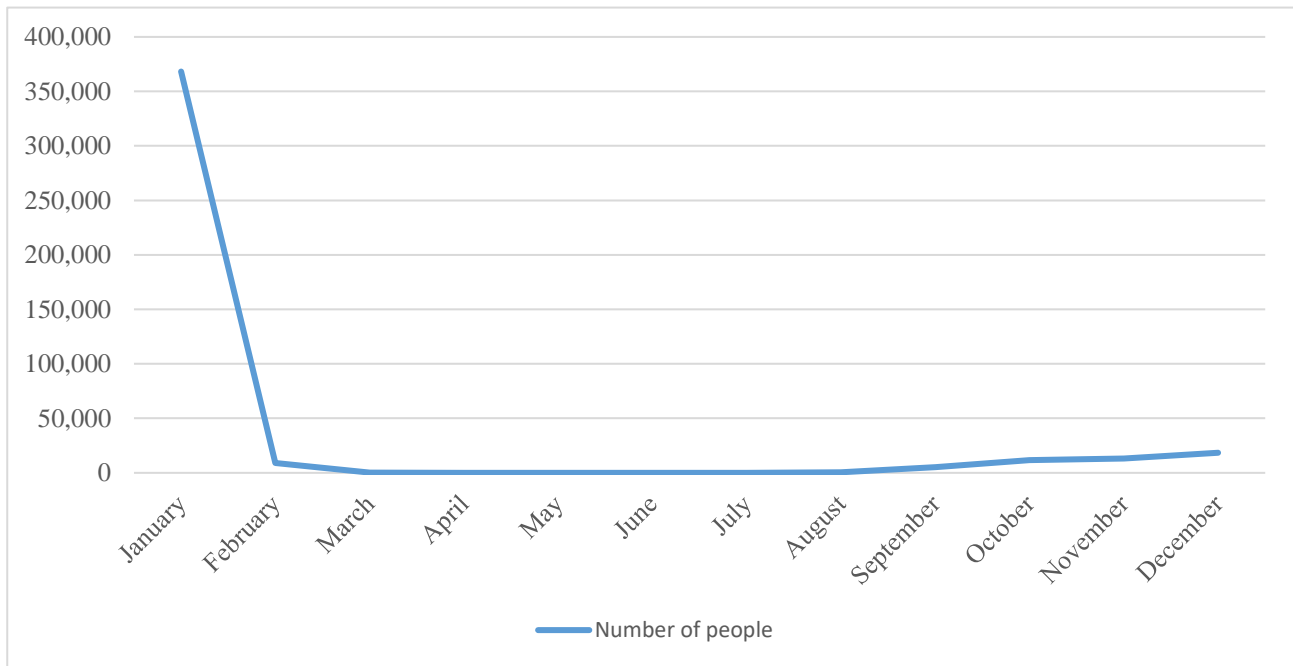


Fig. 3: Number of people entering Macau by water from January to December 2020

(Source: Macau Statistics and Census Bureau)

2.2 Land Entry Control

In terms of land control, Macau has reduced land connections with the inland and Hong Kong areas since the outbreak was discovered in January. Macau's "the COVID-19 Infection Response Coordination Center" shortened the customs clearance time of the most important customs clearance port-the border gate port on January 27, 2020. It is not until the epidemic has completely improved after May 2020 that Macau has restarted the passage time of the gates. At the same time, the control of several other gates, such as the Hong Kong-Zhuhai-Macao Bridge, has been lowered the frequency of fixed shuttle buses between Macau and Zhuhai, finally closed the Hong Kong-Zhuhai-Macao Bridge completely in April. Only a small number of private cars could pass between the two places, and people from Hong Kong must had a nucleic acid test within 7 days. Only the nucleic acid test report from the country can enter Macau and undergo medical observation and isolation for 14 days. During the epidemic, although the number of land arrivals from Macau had declined, the overall number of arrivals was still very large. For example, in May when the number of arrivals was low, the number of land arrivals in the month was still at 16,000. By June, the number of people entering Macau through the land barrier rose to more than 22,000. Compared with the relatively passive measures of waterways, land routes are more forward-looking while conducting management and control. Coupled with the convenience of land routes, relevant

personnel could be isolated and observed in a timely manner to reduce contact between personnel and control the epidemic. The effect was remarkable.

2.3 Air immigration control

Macau's "the COVID-19 Infection Response Coordination Center" about air entry control was mainly implemented through various airlines. From January 27th to February 8th, Air Macau cancelled major routes in Southeast Asia and China's inland regions, and the reduction rate of flights during the peak period reached about 97%. At the same time, in order to ensure orderly flights during the epidemic, strict controls were imposed on each flight, requiring passenger seats to be separated by more than 5 meters.

The number of passengers on each flight was only less than 10% of the original number. As a result, air traffic control has achieved positive results, and the overall operation of the flight has been well controlled. From the data situation, in May 2020, the number of inbound air passengers in Macau was only 71 in that month, compared with 1 in the previous month. There were 370,000 air passengers on flights entering the country this month, and Macau's air traffic control has achieved positive results.

After certain results have been achieved in the prevention and control of the epidemic, Macau gradually resumed flights at the end of August 2020. Various airlines had also expressed their full support and

actively cooperate with the requirements of air traffic control, requiring that the number of people on each flight can only be within the rated number of people. Less than 70% of the aircraft, not higher than the red line of 70%. At the same time, thoroughly disinfect and clean

the flight, requiring all personnel to wear masks. There were special epidemic prevention and control personnel at Macau International Airport to respond to emergencies. These measures provided a great guarantee for Macau's air traffic control.

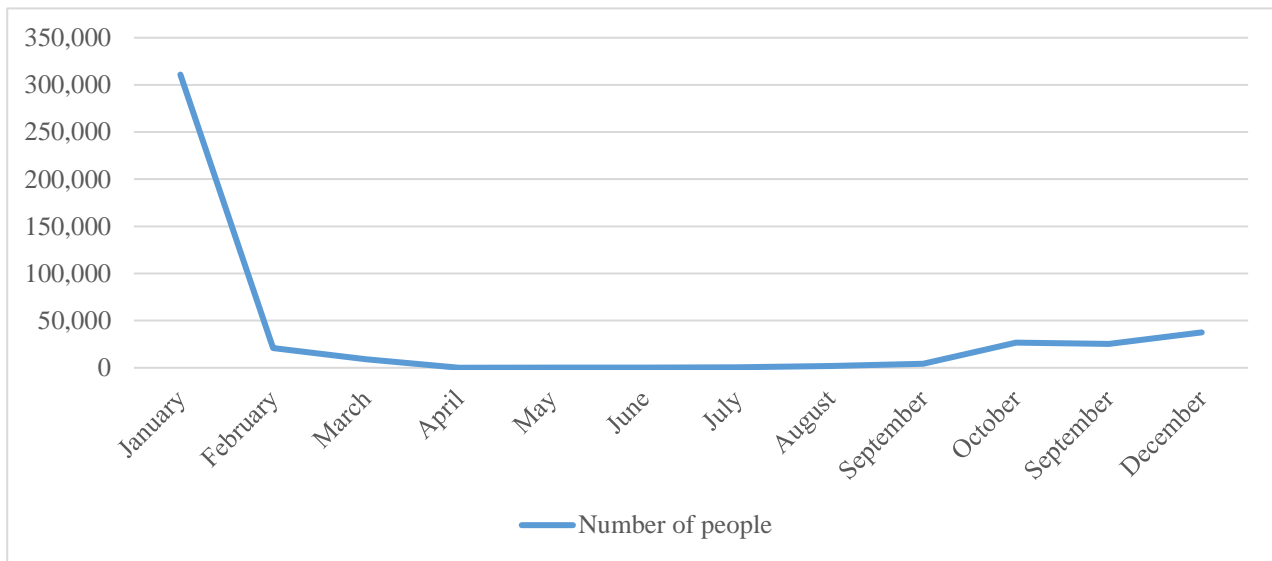


Fig. 4: Number of people entering Macau by air from January to December 2020
(Source: Macau Statistics and Census Bureau)

III. TEMPORARY ECONOMIC ASSISTANCE MEASURES IN RESPONSE TO THE EPIDEMIC

3.1 Resident financial assistance measures

Macau's economic assistance to civilians was firstly reflected in the medical aspect. After the outbreak of the epidemic, the Macau government provided 600 MOP of medical voucher to each local Macau resident to fight the epidemic and conduct related inspections. At the same time, the water and electricity bills of Macao residents during the three-month period of residence were exempted and subsidized. The financial expenditure of the Macao government for water bills alone had reached 55 million MOP. The subsidy amount had even reached 240 million MOP, benefiting the entire local residents of Macau.

At the same time, after the epidemic was slowed down, the Macau SAR government issued to eligible Macau residents the first and second phases of consumption coupons of 3000 MOP and 5000 MOP respectively, and the daily use limit was 300 MOP to encourage personal consumption. The use period of the first phase of consumer subsidies from May 1st to July 31st, the second phase of consumption subsidy be used from August 1st to December 31st. The areas of consumption include Macau's local hotel industry, catering industry, department store retail industry, etc., in order to stimulate Macau's local domestic demand economy. In addition, a total of two foreign aid payments were issued

to families who regularly received financial assistance from the Social Welfare Bureau, exempting housing tax, electricity and water charges.

According to the Statistics and Census Bureau of Macau, at the end of 2019, the local unemployed population in Macau was about 7,000, and the unemployment rate was about 1.7%. During the epidemic, the government had implemented measures for the employment of residents in order to ensure basic employment conditions. Macau provided training opportunities for nearly 2,000 local unemployed people to promote their employment. At the same time, it provided a training subsidy of MOP 6,600 for each qualified job worker to ensure basic living during the training period. These measures had greatly enhanced the people's confidence in the government, and let the people see the government's determination and strength. The local people of Macau had also resolutely combated the epidemic together with the government, which ultimately had a positive effect on the local economy of Macau.

3.2 Business financial assistance measures

During the epidemic, Macau had implemented tax reductions and incentives for local companies. For example, in terms of income tax, the income tax reduction limit for companies in 2019 would be increased, and the tax reduction and exemption would

be 300,000 MOP. This reduction policy included all enterprises. At the same time, Macau rebated the occupational tax, and the government promised to return 70% of the occupational tax levied in 2018 to enterprises for development funds and reserve funds. The above policies had benefited employees of Macao companies and had obtained the payment from the tax. At the same time, reductions and exemptions would be made for the full-year corporate tax income in 2020, and the amount of reduction and exemption had been increased from the original 25% to about 30%.

At the same time, the housing tax used for commercial leases was levied at 75% of the original tax amount, which reduced a large part of the housing lease expenditure. Judging from the above measures, the Macau government had fully taken into account the difficulty of operating local companies. Macau's economy was characterized by its export-oriented economy and was highly dependent on the global economy. Under the influence of the epidemic, the entire Southeast Asia and even the global economy had fallen into a trough. In order to help companies tide over the difficulties, the Macau government had adopted large-scale economic assistance measures to help companies transition smoothly during this period of time. At the same time, they had also created opportunities for companies. After the epidemic, companies would usher in new development opportunities.

3.3 SME financial assistance measures

The local government of Macau had taken strong measures to support small and medium-sized enterprises during the epidemic. The biggest crisis for SMEs was the financial crisis, and Macau SMEs usually used loan financing to make up for the lack of corporate funds. During the epidemic, SMEs were generally under pressure to repay their debts due to the decline in their operations. Therefore, the Macau government provided interest rate subsidies on loans to SMEs to ensure that enterprises can maintain their basic survival within a certain period of time. To prevent enterprises from collapsing due to the shortage of funds during the epidemic, enterprises could also provide small and medium-sized enterprises with a three-year low-interest financing plan with a maximum amount of 2 million MOP and an annual interest rate of 4%. At the same time, it also provided 600,000 MOP of interest-free subsidies for some small enterprises with operating difficulties, and extended the return period to 8 years, which was enough for enterprises to repay corresponding debts during this period. This part of the subsidy was mainly aimed at small, medium and micro enterprises that had just been established in the past two

years. At the same time, corporate taxation policies were also applicable to small and medium-sized enterprises.

3.4 Other assistance measure

In addition to the above subsidies for enterprises and residents, the Macao SAR government had also proposed tax measures to encourage the consumption of the society as a whole. At the same time, the license tax of all vehicles was also exempted. The most important one was the exemption of stamp duty. In 2020, the stamp duty of all administrative departments would be completely exempted.

IV. THE IMPACT OF THE EPIDEMIC ON THE DEVELOPMENT OF MACAU'S INDUSTRY

4.1 Tourism and Gaming

The impact of the epidemic on Macau's gaming industry can be seen through data. According to data released by the Macau Gaming Supervision Department, the gross revenue of Macau's gaming industry in 2020 was only 60.4 billion MOP, compared with 2019, only 20% in 2019. From the perspective of time, the revenue of Macau's gaming industry in 2020 was basically compared with the income of Macau's gaming industry in 2010 10 years ago, taking into account other factors such as prices, it was still far lower than the income of the same period in 2010. The most serious one occurred in April 2020. In that month, the revenue of Macau's gaming industry was only 754 million MOP, a decrease of 96.8% compared to the same period in 2019. It almost cut off all revenue contacts. The strict entry restrictions adopted in April of the current period had a huge relationship.

According to Macau's immigration statistics, in 2020, the number of tourists coming to Macau for the whole year was only 5.89 million, a decrease of 85% from the same period in 2019. Among them, the number of overnight tourists was only 2.82 million, a decrease of 85% from the same period last year. From the perspective of consumption, in the first quarter of 2020, the total consumption of inbound tourists was only 5.01 billion MOP, a decrease of about 70% compared with the current period of 2019, and the per capita consumption quota had not yet been specifically shown in the first quarter. But from the second quarter, there had been a cliff-like decline. Macau's tourism industry's losses in 2020 amounted to US\$23.2 billion. At the same time, the hotel occupancy rate remained at only 26.7% in the first half of 2020, a 64.9% decline compared with the first half of 2019, and the number of guests staying was approximately 1.779 million, which also dropped by 73.9% compared with 2019.

Among them, the occupancy rate of five-star hotels and high-end hotels was only 22.7%. On the whole, the tourism industry had suffered heavy losses.

4.2 Employment and small, medium and micro enterprises

From the perspective of the unemployment rate, the Macau government announced the local unemployment rate in 2019, which was 1.7%. In February, the most severe epidemic in 2020, the local unemployment rate in Macau had risen to 2.3%, even in December of the same year. The unemployment rate of the people was even more than 4%. Although the government had taken emergency measures to control the unemployment rate in the later period, the actual effective employment level was still insufficient. Among them, the gaming and tourism industries were the most affected. The industry had been hit hard, and many people were forced to choose other industries. Although they have jobs, their income had fallen sharply compared with the original, and the effective employment rate was not high.

As for small, medium and micro enterprises, although the government had adopted tax and other subsidy measures, it was still difficult for small and medium enterprises to maintain. The order loss rate of many enterprises was basically above 70%, and enterprises could only maintain basic income and expenditure. The minimum wage guarantee was given to personnel, the most obvious of which was the catering and retail industries.

V. THE EFFECTIVENESS AND REFLECTION OF MACAO MEASURES

5.1 Effects of Macao's economic assistance measures

Judging from the situation of Macao's economic assistance measures, it had indeed played a role in improving the economy of Macao. With the help of economic assistance measures, Macao's local consumption had begun to pick up. In August, Macau first opened tourist visas to the inland areas of Guangdong, and Macau's gaming industry began to recover further. Statistics showed that in the fourth quarter of 2020, Macau's gaming industry revenue reached 21.836 billion MOP, compared with In the third quarter, it more than tripled. At the same time, according to the final statistics, in the last 18 days of December 2020, the revenue of Macau's gaming industry exceeded 250 million MOP, which was only slightly lower than the revenue of the gaming industry during the Golden Week of 2019. From the perspective of tourism, the overall recovery of Macau's tourism industry was also good. In terms of the number of tourists who entered Macau at the end of December, it had been able to recover. To 21,000 passengers, the highest peak appeared on the eve of New Year's Day. The overall

hotel occupancy rate had also exceeded 65%, which was also the highest peak since the outbreak. From the perspective of unemployment rate, as of the end of 2020, the local unemployment rate in Macau was 4.0%, the local unemployment rate in Hong Kong during the same period was 6.6%, and the local unemployment rate in Taiwan was 3.68%.

From the perspective of Macao's overall economic recovery, Macao's economic assistance measures had greatly helped Macao's local economic growth and recovery. Compared with similar economies in other parts of the world, Macao's economic recovery speed was relatively benign. Due to strict previous control measures, Macau had been able to achieve a recovery in August. Combined with the two rounds of local economic assistance stimulus plans, it had played a role in promoting the local economic development of Macau.

5.2 Advantages and disadvantages of Macao's economic assistance measures

From the effect point of view, Macao's economic assistance measures had indeed played a role in promoting the recovery of Macao's economy, allowing small and medium-sized enterprises to get rid of the troubles of the economic crisis and the constraints of funds, and could ensure their basic survival within a period of time. After the epidemic, these companies began to burst out new vitality, which promoted the growth of social employment and taxation.

From the point of view of disadvantages, Macao's economic assistance measures were first of all a huge financial deficit. Calculated according to the total amount of the two aid plans, the Macao government had invested a total of 434.67 billion MOP for emergency assistance, which has increased the government's fiscal deficit, reducing the government's administrative efficiency. Compared with the achievements of the fiscal stimulus in the normal period, this part of the investment had not reached the ideal expectations. Macau's current economy had not returned to its original state. According to the government's estimation, it was expected that Macau overall level of economic development can be restored to the state of 2019. In addition, Macao's economic assistance measures were more like a universal financial program, mainly for low-level income earners and employees to provide financial compensation, but it did not provide much help to social investment and industrial innovation, just maintain the basic living conditions of small and medium-sized enterprises had stimulated consumption and promoted a short-term economic revitalization and prosperity in a low cycle.

In addition, under the epidemic crisis, some small and medium-sized enterprises without core competitiveness could use this to exit the market and increase the overall capital utilization rate of the financial market. However, under the intervention of the government, these enterprises could also survive the crisis. In the later stage, they would share market capital, which was a waste of resources for competitive and advantageous companies.

5.3 Macau's future fiscal policies and plans

Judging from the impact of the epidemic, Macau will make a series of adjustments in the coming economic fiscal year of 2021. Firstly, implement a tightening monetary policy to reduce the fiscal deficit and make up for the fiscal losses caused by excessive investment in economic aid. During the period of the epidemic, Macau's medical resources are facing a shortage. In the future, the Macau government will make greater investment in medical investment to improve its ability to respond to public health incidents. Finally, the government will strengthen financial supervision to avoid the outflow of funds from interfering with normal financial operations. The government will formulate a relatively complete legal system to supervise the overall operation of the financial market.

In addition, from the perspective of major development strategies, the Macau government will more quickly integrate into the construction of the Guangdong-Hong Kong-Macao Greater Bay Area. In this epidemic, the mainland's support for Macau and Macau's dependence on the mainland's economy have been highlighted. Macau's single industry problem has also become more and more obvious. In the future planning, it will be integrated into the Greater Bay Area and achieve synchronization with the Guangdong-Hong Kong-Macao Greater Bay Area. The development of Macao uses Macao's special historical position, rich historical culture and unique institutional advantages to achieve complementary development, increase the speed of the circulation of talent and technology in the region, and form complementary advantages with each other.

During the epidemic, Macau's traditional tourism and gaming industries have been greatly impacted, and Macau's convention and exhibition industry has also been greatly affected. On this basis, new consumption models should be developed. Online consumption is already a trend all over the world. This new type of economy can become one of Macau's main growth models in the future. Under the epidemic, people's living habits and consumption methods will change.

Traditional offline consumption can no longer meet local needs. Internet consumption can be used to increase the market economy cycle rate, stimulate consumption, and bring brand new prosperity.

VI. CONCLUSION

Combining the destructive power and persistence of this epidemic, Macau recommends that citizens reduce unnecessary outings during the epidemic to avoid cross-infection of the epidemic among people. At the same time, some industries in Macau have achieved excellent development during the epidemic. Under the global mobile payment trend, the amount of mobile payment in Macau has also grown rapidly. In the first 10 months of 2020, the amount of mobile payment in Macau has reached 4.7 billion MOP, which is 3.8 times the total transaction amount in 2019 and 2018. 52.5 times the annual transaction amount. During the epidemic, Macau's mobile payment and other Internet financial industries have developed rapidly. The epidemic has changed people's travel and lifestyles, and mobile payment has brought great convenience to people. The new development of this part of the industry has brought new growth opportunities to the tourism and gaming industries. According to the statistics of the Macau Tourism Department, as of the end of September 2020, the visa situation for mainland tourists to Macau has returned to normal, starting from October 2020. From the month to the end of the year, the number of tourists entering each month has exceeded 300,000. Tourists can make use of the relatively convenient mobile payment methods in Macau to make purchases and travel during their travels in Macau.

According to the announcement by the Ministry of Finance of Taiwan in 2020, the import and export trade volume of Taiwan to the mainland reached US\$151.45 billion, accounting for 43.9% of Taiwan's total export value, a year-on-year increase of 14.6%, and the mainland's export to Taiwan has formed. The huge stimulus has given Taiwan's economic growth during the epidemic period. This also has new enlightenment for Macau. Macau should take advantage of its geographical location to integrate into the Guangdong-Hong Kong-Macao Greater Bay Area in the future, and strengthen its financial, tourism and export sectors. Further adjustments have been made in the industry. Macau has moved the focus of industrial development to the Mainland China in the Guangdong-Hong Kong-Macao Greater Bay Area, and leveraged the advantages of local factors to achieve further growth and ensure Macau's industrial diversification and economic growth. In general, Macau's management

during the epidemic is remarkable, but it lacks economic diversification measures, only by integrating into a larger economic circle can Macau make great progress in the future.

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