



The Relationship Between Gambling and Finance in Macao: Dynamical Analysis of Liberalization of Gambling

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Abstract

Known as one of the three most famous gambling cities, gambling in Macao is considered to be the primary industry of its economy. In addition, the study of the gambling industry is significant to Macao's fiscal revenue and even the financial status of the whole city. This article will analyze the influence of gambling on the fiscal revenue and expenditures of Macao and make a dynamic analysis of their relationships.

Key words: Gambling industry; Betting duty; Fiscal revenue and expenditure; Social responsibility; Social cost

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1. LITERATURE REVIEW

Nowadays, the study of the gambling industry of Macao focuses on three areas: firstly, the developing history and tendencies of the gambling industry of Macao; secondly, the study of the influence of the gambling industry on financial development and diversification of the gambling industry; thirdly, the study of social problems and gambling psychology caused by the gambling industry¹. Hence it can be seen that research on the financial impact of the gambling industry in Macao is scarce, and the previous research focuses attention on the fiscal

system; moreover, the data is too old to reflect the present situation. To gain the most complete and up-to-date data, the author goes through the files in Macao's Statistics and Census Bureau and collects scattered and non-systematic data from the literature.

Zheng Peiyu summarized the financial problems of Macao before returning in "Basic Characteristics of Macao's Finance", which was published in 1999, but there was little material about betting duty in this book. Xiaodong Guo and Dongming Zhang published "Analysis of Financial Development in Macao" in 2000. Later on, Jianqing Guo and Qinjian Guo published "Macao's Finance and Betting Duty in Transitional Period". The above two articles introduced the fiscal system of Macao before 2000. This paper will refer to the data listed mainly in later articles. "Analysis and Suggestions of Fiscal Expenditure in Macao", written by Kaiyan Lv and Daokuang Yang in 2008, analyses the relationship between Macao's finance and the betting duty. Also, Yanghui Ou discussed the above issue in "Relationship between Economic Development and Betting Duty in Macao". In addition, in this paper we assume that the social responsibility and cost will impact fiscal expenditures, and thus we collect some history about the gambling industry in Macao. (See "Analysis of Social Cost of Gambling Industry in Macao" published by Jiachao Feng, director of betting research institute at University of Macao and "Analysis of Social Problems of Gambling Industry in Macao" written by Shuangfeng Lin.) Also, we refer to "The Diversified Developing Requirements for Macao's economy", written by Yongzhong Guo, researcher of Hong Kong and Macao Research Center at Peking University, "Gambling Encountering the Welfare: Consideration of the Responsibility of Gambling Industry to Public Welfare in Macao", written by Zhigang Lin, postdoctoral researcher at the Public Administration Institute of Tsinghua University.

¹ Lin, S. F. (2012). Analysis of the Social Problems of Gambling Industry of Macao. *Guangdong Social Science*, (2).

2. RESEARCH OBJECTIVES AND SIGNIFICANCE

This paper will explore the history of the gambling industry in Macao, so as to assess correctly the influence of the gambling industry on Macao's governmental finance, and moreover to employ the existing statistics and literature to analyze dynamically the effects of the gambling industry on Macao's fiscal expenditures. Because Macao is the only local government that is allowed to run gambling businesses legally in China, to study the gambling industry is very helpful in understanding the economics and society in Macao. Secondly, Macao's development is closely related to the government's revenue and expenditures; moreover, the betting duty is key to understanding the fiscal system of Macao. Macao is classified as the center of tourism and leisure all over the world in "Ten-Fifteen planning", and thus it is necessary for Macao to adjust its industrial structure and develop its diversified economy, so as to reduce the financial reliance on the gambling industry. Therefore, studying the gambling industry is an effective way of understanding the reasons for developing a diversified economy.

3. RESEARCH METHOD

This paper will analyze the history of gambling and fiscal systems in Macao in different periods. The following methods are followed:

(1) Dynamic analysis method (time series method): to analyze the prime period of finance and gambling industry in Macao, and compare the trends of critical factors, indexes, and values in different periods.

(2) Empirical study: a basic analytic method in the economics of industry. Studying the historical and empirical phenomena and analyzing the data, thus making reasonable arguments and reaching reasonable conclusions.

(3) Literature review: gathering data and materials from journals, the Macao Yearbook, Macao's Statistics and Census Bureau, websites, news outlets, etc. .

4. STUDY BACKGROUND

The betting duty appeared in 1961 in Macao. It refers to a tax that is taken from the winnings. It is classified under the windfall tax, under the jurisdiction of the tax unit. The tax unit has to pay taxes to the revenue department.

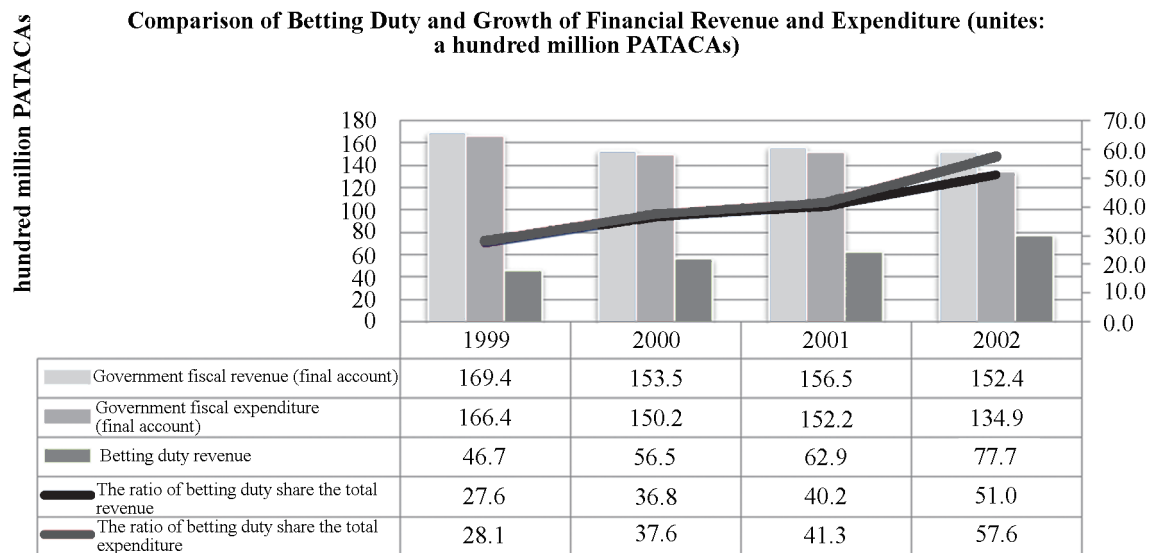


Figure 1
The Betting Duty and Financial Revenue and Expenditures After Return to China²

In the four years after its return to China, Macao's fiscal revenue grew from 4.66 billion to 7.77 billion, with the annual growth reaching about one billion. Meanwhile, the revenue of the government declined, and thus the proportion of gambling revenue in the total revenue has increased. This proportion has doubled from 1992 to 2002. In addition, fiscal expenditures are mainly the same with income, reflecting the fact that the government operates

under the principle of "keep the expenditures within the income, balance the income and expenditures". With the development of the economy, the betting tax plays a more and more important role, and the betting tax has accounted for more than 50% of total revenue as of 2002. This data indicates that the government of Macao is failing to find new sources of revenue, and this phenomenon has become more and more severe in recent years.

² Lin, S. F. (2012). Analysis of the Social Problems of Gambling Industry of Macao. *Guangdong Social Science*, (2).

5. ECONOMIC GROWTH IN MACAO AND GROSS INCOME FROM GAMBLING

GDP, Gross Gaming Revenue and its Growth Ratio (units:hundred million, ratio:%)

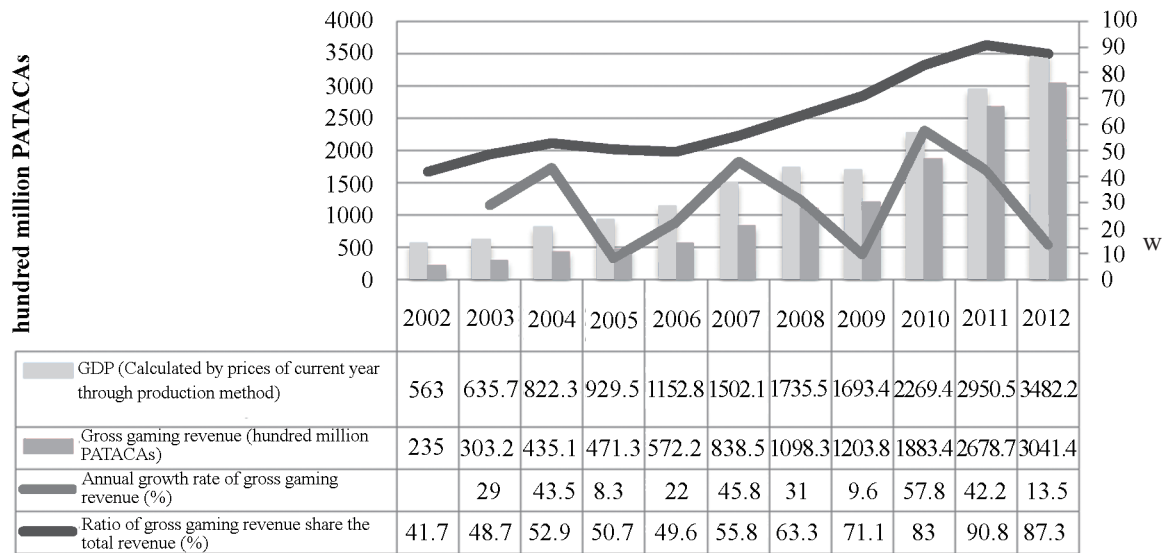


Figure 2
Comparison of Growth of Macao's GDP and Betting Duty³

The golden age of the gambling industry is reflected by the above chart. After the liberalization of the gambling industry, Macao's gambling industry experienced new boom years, along with the rest of Macao's economy. After ten years of development, the GDP of Macao has miraculously increased seven-fold, from 56.3 billion to 348.22 billion as of 2012. In addition, the GDP of Macao broke through 100 billion marks in 2006, broke through 200 billion marks in 2010, and broke through 300 billion marks in 2012. The GDP of Macao increased to three times within six years, and it is obvious that this rapid growth is owed to the development of the gambling industry. From the above chart, it can be observed that the gross income from gambling has steady increased to 304.14 billion, which is a thirteen-fold increase as of 2002, during the past ten years. In addition, gross income accounts for about 50% of the GDP of Macao. However this ratio has increased to 90% since 2008. It can be concluded that the GDP of Macao is promoted by the gambling industry. Specifically, since the Chinese government tightened the individual travel restrictions in 2002, the global financial crisis erupted in 2009, and Singapore encouraged its own gambling industry, the growth rate of the gambling industry in Macao has fluctuated drastically. It should be emphasized that every time the gambling industry experienced a low, it would be robust in the following year; for example, the growth rate of the gross income of gambling in 2010 was 57.5% higher than in 2009, and the gross income of gambling accounted for 83% of the GDP in Macao. Even though

it is not a periodical phenomenon, it is obvious that the gambling industry has strong restorability and supports the development of the economy in Macao. We may reach the conclusion that the gambling industry is a consuming activity, and is deeply influenced by policy. The fluctuation of the growth rate of gambling depends on the number of tourists and tourism policy.

6. THE INFLUENCE OF BETTING DUTY ON FISCAL REVENUE AFTER THE LIBERALIZATION OF THE GAMBLING INDUSTRY

It is undoubtedly true that the liberalization of gambling and individual travel restrictions have influenced the gambling industry and financial revenue. The fiscal revenue of Macao has increased from 15.24 billion to 129.5 billion from 2002 to 2012, and the annual increase rate is 24.5% on average, which is ten degrees higher than the rate before returning. This period is considered to be the "Golden Age" of Macao. It should be pointed out that, affected by the global financial crisis, fiscal revenue experienced negative growth in 2009. In addition, the betting duty increased from 7.77 billion to 106.99 billion, and the annual increase rate was 30.9% on average. The proportion that betting duty accounts for the fiscal revenue has increased from 60% to 80%; thus becoming the mainstay of government revenue. In other words, the status of the betting duty will reflect the status of the fiscal revenue of Macao. In 2003 and 2006, the betting duty accounted for merely 50% of the

³ Macao's Statistics and Census Bureau.

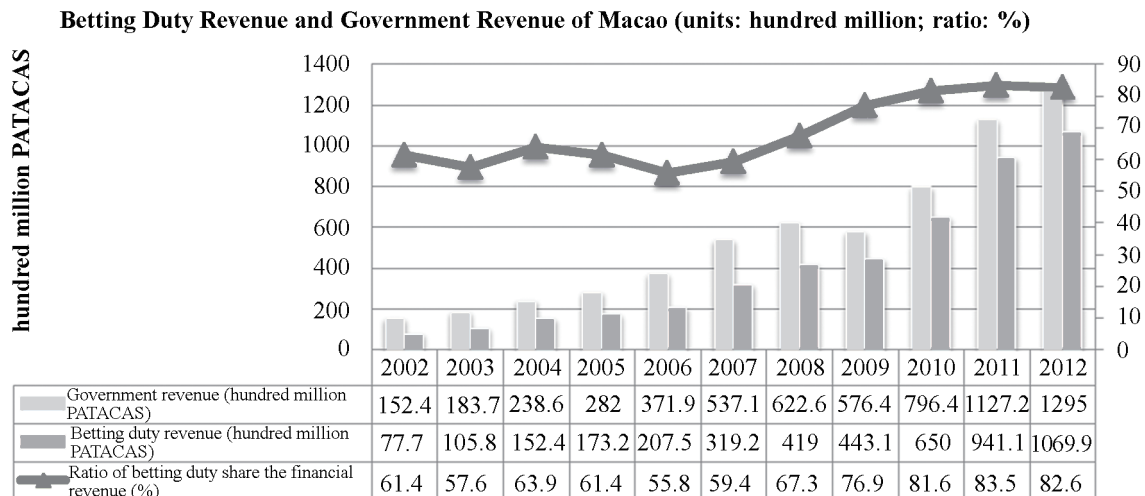


Figure 3
The Betting Duty and Financial Income⁴

fiscal revenue of Macao. Fearing the SARS outbreak in Hong Kong in 2003, the number of travelers to Macao shrank, and therefore the gambling industry was affected. Fortunately, there were only three cases of SARS in Macao, and tourism recovered in the following year. The second low point of the gambling industry occurred in 2006, firstly because Singapore legalized gambling in 2005 and secondly because the Chinese government modified the individual travel restrictions on Macao, which stipulated that the endorsement of individual travel plans to Macao should be limited to once every two months, while meanwhile strengthened the limitation of departures by officials. Comparing the above two reasons, the former is a competitive factor, and the latter is a constraint factor. Since the casinos in Singapore were in the start-up phase—they only began running in 2009—their influence was limited; however, the decrease in the number of tourists certainly made the growth rate of gross income slow down, and thus the proportion that betting duty accounts for of fiscal revenue dropped. By 2007, since the number of tourists rapidly increased and the government underestimated their passion for gambling, the Chinese government had to tighten the individual travel restrictions, which impeded the growth of the gross income of gambling. Thus, the growth rate of the betting duty in 2007 was merely 3.6 degrees higher than in 2006. It is obvious that tourism policy and tourists are critical for the gambling industry. In 2008, the gambling industry experienced a peak period; owing to the rapid development of the economy of mainland China. The gross income of Macao broke the record and reached 100 billion; this number is close to 5.5 times the gross income before the liberalization of gambling. Meanwhile, the betting duty was 41.9 billion, which accounts for 70% of the fiscal revenue of Macao. In 2009, the global financial

crisis struck Macao, severely impacting the profit of Macao’s institutions and stamp duty. Moreover, the casinos in Singapore started to operate. These two factors slowed the growth rate of the betting duty to 9.6 percent. Consequently, the total fiscal revenue of Macao dropped. Nevertheless, the betting duty increased significantly by 20 billion in the following year, so it can be concluded that the gambling industry is good at self-recovery. In addition, it can be seen that the consumption ability of tourists from mainland China was not affected by the global financial crisis.

7. THE ROLE OF THE BETTING DUTY IN TAXATION AND REVENUE

According to the above chart, the proportion that betting duty accounts for of the total revenue is never lower than 50%, and this figure rose to 80% after 2010. This paper has discussed some causes for this increase previously. The proportion that the betting duty accounts for of ordinary revenue was more than 70% except in 2007, and this figure even rose to 90% in 2010. The proportion that the betting duty accounts for of the direct tax is over 90%, except in 2002, and this figure even rose to 98.1% in 2009. Reviewing the tax system of Macao, the betting duty makes up 90% of the direct tax and 70% of total revenue, and thus it is reasonable for the government of Macao to implement low taxation to benefit the public. For instance, the government of Macao launched the “cash share plan” to benefit Macao’s residents; every local resident can obtain 6,000 PATAKA each year. This number increased to 8,000 in 2012 for permanent residents and 4,000 PATAKA for non-permanent residents. The following chart analyzes the expenditure of fiscal income. The following is an analysis of Macao’s revenue and expenditures:

⁴ Macao’s Gaming Inspection and Coordination Bureau.

Ratio of Betting Duty Share the Total Revenue, Ordinary Revenue and Direct Tax

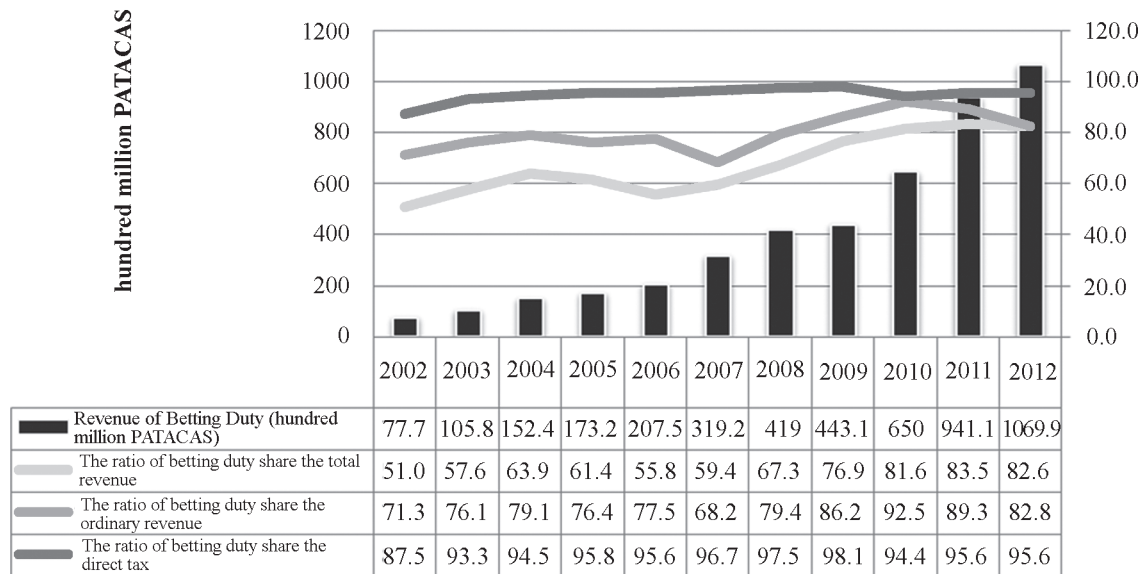


Figure 4
Ratio of Betting Duty Share to Total Revenue, Ordinary Revenue and Direct Tax⁵

Table 1
Details of Macao's Expenditures⁶

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Expenditure of Regional Autonomy Organizations (in hundred million PATACAS)	41.4	42.5	45.1	54.3	100.3	0.0	0.0	0.0	0.0	0.0	0.0
Financial Expenditure (in hundred million PATACAS)	15.6	27.2	39.2	45.4	47.5	49.3	51.6	51.1	60.1	113.0	163.0
Ordinary Expenditure (in hundred million PATACAS)	77.9	87.4	92.7	112.1	125.7	184.2	252.8	303.5	323.8	342.9	404.4
Ratio of Ordinary Expenditure to the Total Expenditure (%)	57.7	55.6	52.4	52.9	46.0	78.9	83.0	85.6	84.3	75.2	71.3
Government Financial Expenditure (final account)	134.9	157.1	177.0	211.8	273.5	233.5	304.4	354.6	383.9	455.9	567.4

From the above chart, it can be concluded that the current financial structure is basically the same as the structure before the handover. The data on the expenditures of regional autonomous institutions is missing, so it may not be included in the ordinary expenditures (the assumption need to prove). The author considered that it could be ranked as ordinary expenditures. From 2007, the ordinary expenditure made up 70% of total expenditures, and, generally speaking, the rapid increase of the betting duty does not result in an increase in fiscal expenditures. For example, the total fiscal income of Macao was 129.5 billion PATACA in 2012, but the expenditures totaled merely 56.7 billion PATACA. There is an obvious gap between the expenditure and revenue. It is easy to understand that how to make effective use of the huge fiscal income has become a difficulty for government of Macao.

CONCLUSION

In general, the gambling industry is closely associated with

the fiscal revenue and expenditures of Macao. Moreover, the gambling industry during 1990 to 1999 guaranteed the smooth transition of regimes in Macao. In the 1990's, the betting duty made up 30% of the total revenue; it not only supported the routine operation of the government, but it also enhanced the public's confidence in the new government in a recession (1995-1999). In addition, the gambling industry has made great contributions to the infrastructure and development of Macao, even though the proportion that betting duty accounted for of total fiscal revenue in 1999 was the lowest of the past twenty-two years. Since then, the gambling industry has experienced a boom period, and in the four years following Macao's return, this proportion rose from 30% to 50% percent with an average growth rate about 20% faster than before the return. The gambling industry experienced a turning point in 2002, and the liberalization of gambling resulted in the licensing of Macao's lottery company for forty years, as well as the introduction of its competition, three gambling licenses. Consequently, Macao's gambling industry started its "Golden Age" (2002-2012), which brought great changes to Macao. The following chart describes this flourishing period in detail:

⁵ Macao's Statistics and Census Bureau.

⁶ Macao's Statistics and Census Bureau.

Comparison of betting duty and financial expenditure and revenue of Macao government

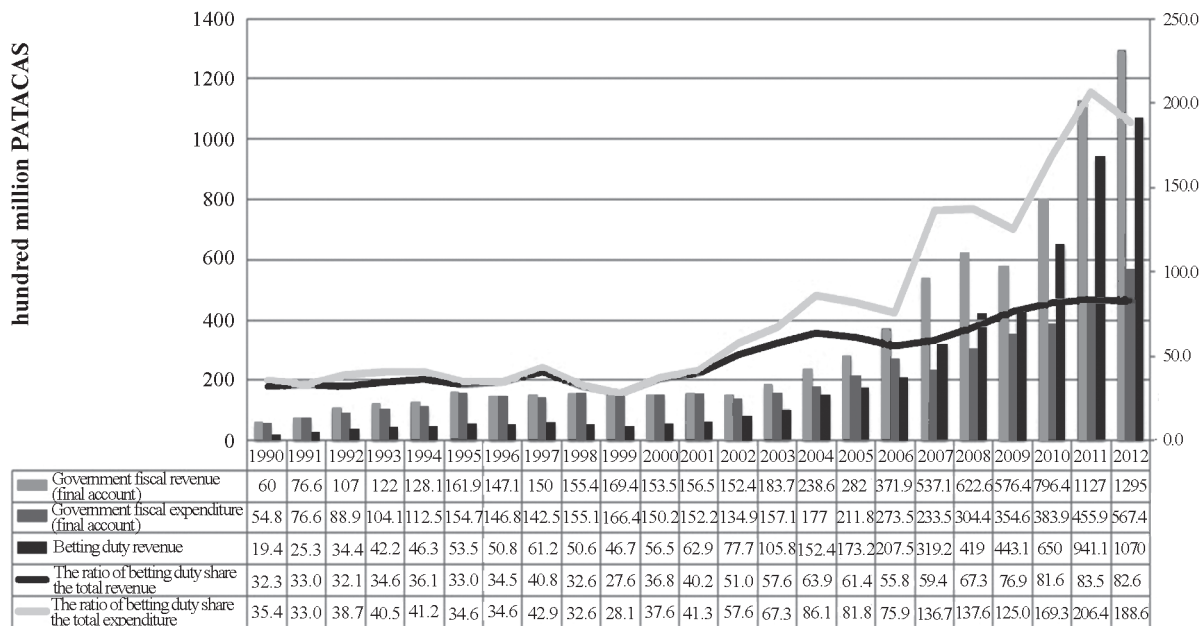


Figure 5
 Ratio of Betting Duty to the Financial Revenue and Expenditures⁷

Comparison of Betting Duty with Financial Expenditures and Revenue of Macao's Government
 (Units:hundred million PATACAS)

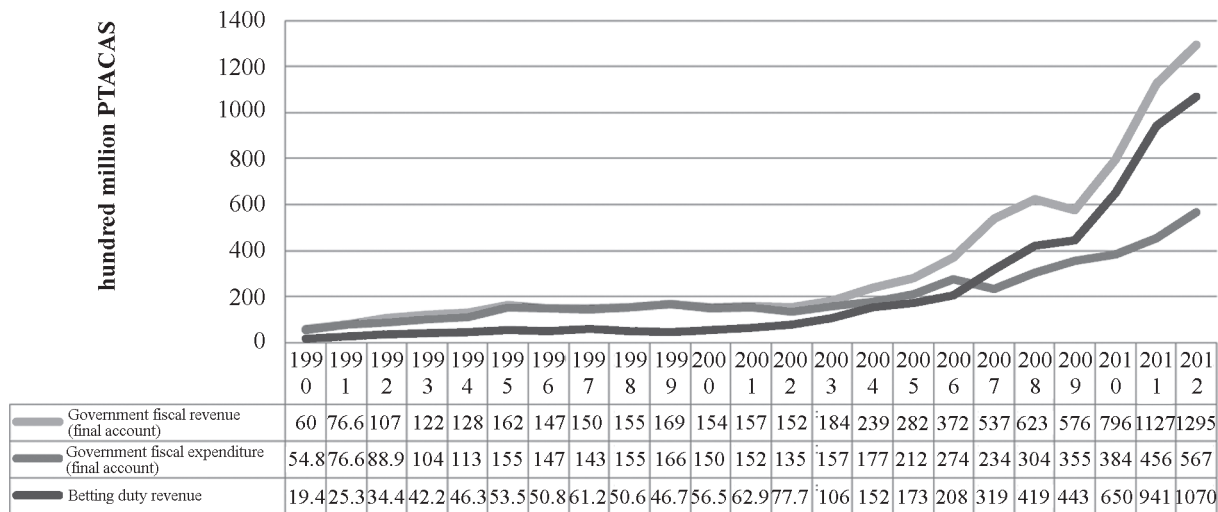


Figure 6
 Comparison of Growth Rate of Betting Duty and Financial Expenditure and Revenue in Macao⁸

The government of Macao always keeps its expenditures within its income, and makes ends meet to reduce the deficit. During 1992 to 2002, expenditures basically equaled income. However, the liberalization of gambling changed this situation. Because of the gambling industry, the fiscal income of Macao has increased rapidly since 2003. The gap between fiscal

expenditures and fiscal income has continued to widen. The betting duty in Macao caught up with and surpassed that of Las Vegas in 2006. The betting duty overtook fiscal expenditures in 2007, and even made up 90% of the total income of Macao in 2010 and twice the fiscal expenditure in 2011. Frankly speaking, the betting duty has been capable of equaling the expenditure of Macao's government since 2007. The statistical data reflects the trend of fiscal expenditures increasing steadily during the past twenty two years, but not the sharp rise with

⁷ Macao's Statistics and Census Bureau.

⁸ Macao's statistics and Census Bureau.

the rapid increase of the betting duty. Consequently the principle of “keeping expenditures within income, and making ends meet to reduce the deficit” was not followed. This phenomenon results from the prudent fiscal policy of Macao, since a financial surplus is rare situation for Macao’s government during the past twenty two years. How to use the budget effectively has become a difficulty for Macao’s government. In order to manage the financial surplus better, Macao’s government decided to establish a financial reserve system. As of September 2012, the scale of the base stock is 98.8 billion PATAACA, while the excess reserve fund is 0.89 billion PATAACA. Once the settlement procedure of the financial budget is finished,

the excess reserve fund will reach 64.6 billion PATAACA and the foreign exchange reserve will reach 132.7 billion PATAACA.

On the other hand, the proportion that the betting duty accounts for of the GDP of Macao has increased year by year. Before the liberalization of gambling, the annual growth rate was about 10% during the past twelve years. After the liberalization of gambling, this proportion rose up to 30%. Moreover, gross income (gross income of gambling × 0.35 = gambling tax) made up more than 80% of Macao’s GDP between 2010 and 2012. This phenomenon has never occurred before in Macao, and it is worthy of the name “gambling economics”.

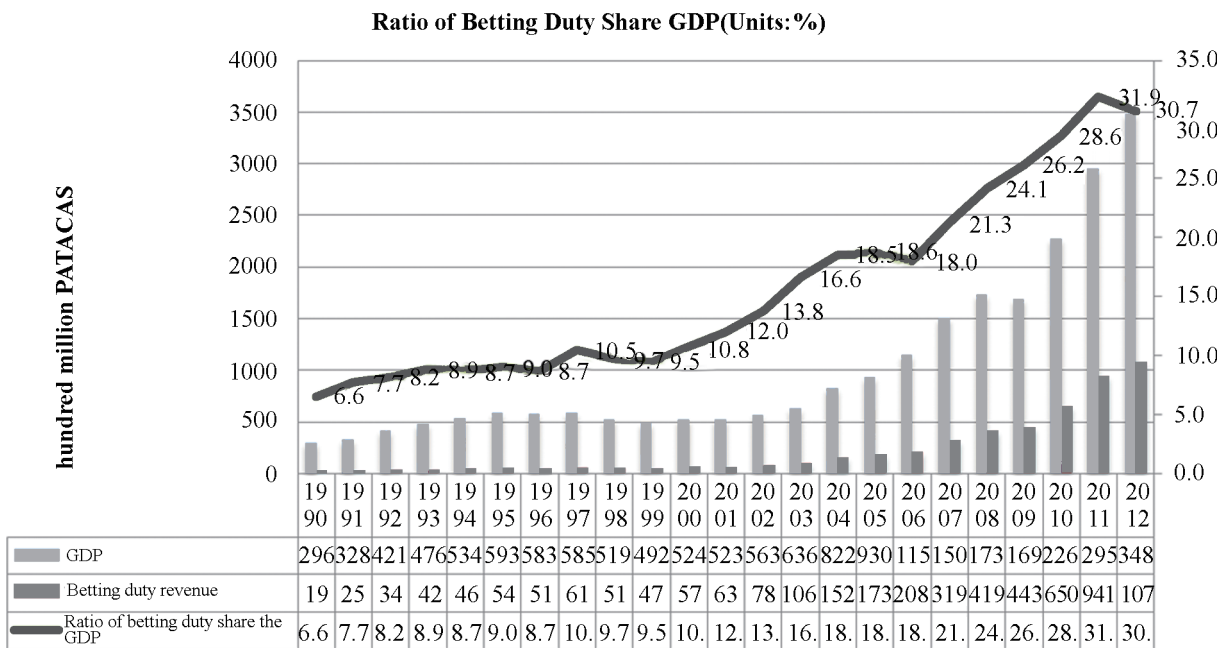


Figure 7
Ratio of Betting Duty Share GDP⁹

In particular, this paper analyzes the characteristics of Macao’s finances in different periods by researching betting duty and financial status. In recent decades, financial revenue has depended highly on the betting duty, thus making it possible for Macao’s government to implement a low tax rate policy. Consequently, the main characteristics of the financial system of Macao include a simple and low tax regime, few categories of taxes, low tax rates, and light burdens. Nowadays, the betting duty is crucial for Macao’s finances, and it plays a more significant role in Macao’s economy than it did before Macao returned to China.

Based on the financial situation of Macao, this paper proposes some suggestions: firstly, the risk of a gambling economy is considerable. Industrial concentration can reflect the importance and degree of specialization of one industry within a country or district, but it is also a standard for evaluating whether the industrial structure is

reasonable. The computational formula can be expressed as: $ICD = (IGDP/GDP) * 100\%$. ICD stands for industrial concentration, IGDP stands for the total output value of an industry, and GDP stands for gross domestic production within a country or district during a specific period. From the computational result, we can observe that the industrial concentration of gambling rose to about 39% percent as of 2007, which is 3% higher than three years ago. Specifically speaking, the industrial concentration of gambling in 2004 was about 50%. Generally speaking, once the industrial concentration within a country or district is bigger than 30%, it is ranked as high level¹⁰. Affected by the gambling industry, traditional industries, such as clothing and toy-making, have become less robust, and therefore industry diversification has gained more and more attention. In other words, depending heavily on a gambling economy

⁹ Macao’s statistics and Census Bureau.

¹⁰ Xiongdong Guo, Changsheng Liu, “The Economic Drive Capacity and Tendency of Industrial Policy of Gambling in Macao”, 2009, Economics Department of Sun Yat-Sen University.

is a gamble of that economy. Secondly, the risk of tourist dependence is increasing. The individual travel regulations have dramatically changed the composition of tourists. Mainland passengers quickly replaced Hong Kong tourists and became the main groups of Macao's gambling. Even though there are no official figures to indicate the proportion that Mainland passengers account for of all gamblers in Macao, it should be clear that passengers from the Mainland are the main customers in Macao. Though the liberalization of individual travel regulations promoted the development of the gambling industry in Macao, there is no denying that this industry is deeply affected by the policy of mainland China. For instance, the Chinese government restricted individual travel to Macao, which struck the gambling industry immediately. In a word, to rely so heavily on the gambling industry and passengers from mainland China is to risk Macao's economy. Thirdly, the gambling industry relies heavily on tourism policy. The scale and scope of operation and location all depend on government's policy, but not requirements of customers. The government's policy includes both Macao's government and the Chinese government. Once the Chinese government issues a law prohibiting gambling, the gambling industry will suffer a fatal blow. Therefore it is difficult to forecast the development of the gambling industry purely economically.

POSTSCRIPT

Through this study, the author not only explains the social situation before the handover, but also poses a question: the gambling industry has become the backbone of Macao's economy, so how would Macao's people face the loss of the gambling industry? "The GDP per person in Macao has increased from 13,000 dollars in 1999 to 64,000 dollars in 2011; however, the monthly income of residents only increased from 4,900 PATAKA in 1999 to 9,600 PATAKA in 2011. "The distribution of income is considerably unfair, even though the economy is flourishing" according to Guochang Wu, the directed-elected member of the legislative council. The gambling industry has resulted in an increasing number of social and economic problems, and what we could do going forward and how to decide on a course of action remain to be studied.

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