Risk and Crisis Analyses for the Gaming Industry in Macau

澳門博彩業的風險和危機分析

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[Abstract] : *Gaming is a special and unique industry. Since its liberalization in 2004, Macau's gaming industry has been growing and changing very rapidly. During the period many incidences emerged and crises would be bound to occur. Being able to think of possible crises while living in safe environment has been our traditional wisdom. In addition to the need to enhance the measures relating to crisis management by the respective gaming operators, the Macau Government and relevant NGOs have to collaborate in analyzing and exploring the potential crises for the gaming industry on a periodic basis. Appropriate precautionary measures developed through rigorous study can greatly mitigate the damage brought by crises and in turn will ensure the sustained development of Macau.*

Crisis management aims to avoid and reduce the damage caused by crises through crisis monitoring, crisis prediction, crisis decision, and crisis handling. Risks and crises, if handled properly, can possibly be transformed into opportunities. This research adopts an integrative approach through systematic and comprehensive investigation to establish a mechanism to monitor and to predict risks and crises for the gaming industry in Macau. This would provide a useful reference for the society and government of Macau in handling them. If risks and crises are properly identified and monitored during peaceful times, then any unexpected catastrophe can be dealt with more effectively.

[Keywords] : *risk, crisis, gaming industry, Macau*

[摘要] : *博彩業乃一個特殊行業，澳門的賭權自 2004 開放以來，變化及發展極為迅速，其間亦浮現不少狀況。危機的出現是必然的。居安思危是我們的傳統智慧，除了博彩企業須完善本身的危機處理措施外，政府機關及民間團體亦要合作為澳門博彩行業可能出現的危機定期作出分析及探討。這樣未雨綢繆的安排，可大大減低危機帶來的傷害，使澳門的長遠發展得到保證。*

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危機管理是指透過危機監測、危機預警、危機決策和危機處理，達到避免、減少危機產生的危害，甚至可將危機轉化為機遇。是項有關澳門博彩業風險及危機管理的綜合性調查研究，把危機作有系統及全面的探討，建立澳門博彩業的風險及危機監測及預警機制，為澳門社會和特區政府制定相關的危機處理方案時提供參考，以期在安定中保持危機感，一旦發生突變，也能有效處理。

[關鍵字]： *風險、危機、博彩業、澳門*

The Gaming Industry in Macau

Macau first legalized its gambling business in as early as 1847. The growth of the industry has been steady until its liberalization in 2004 and since then the growth has been spectacularly rapid. The gaming tables have increased from 340 to about 5300 in 2011. The slot machine number has grown from around 1,000 to over 15,000 during the period. The gaming revenues are increasing at about 28% per annum. The gaming revenues of the largest operator SJM alone have already exceeded those of the entire Las Vegas.

Despite gaming industry's enormous contribution to the well-being of Macau economy, there are many social problems emerging. Many young school leavers prefer to work as dealers instead of pursuing further studies because of attractive salaries offered by the casinos. As more casinos started their operations they attracted employees from many other business sectors. As a consequence many small and medium size enterprises could not afford the ever rising staff costs and were reluctantly forced to close down their businesses. The financial tsunami in 2008 triggered the first major employee lay-off in November by Sands. Over 10,000 workers were sacked without any prior warning. The issue of increasing problematic and pathological gamblers has also become a concern in the society. A study by Macau University reveals that the percentage of problematic gamblers increased from 4% before the liberalization of gaming industry to the current 6% of Macau population. On the assumption that every problematic gambler may affect three to 14 persons, Macau would have at least over 90,000 residents being affected by it.

Risk

Risk is the probability that a problem (any event or incident that would be harmful to objectives) occurs (Cebtrowski et al., 2009). Waters (2007) defines the following four levels of uncertainty, viz., ignorance (no knowledge at all); uncertainty (can list the events that might happen but do not know the probability); risk (can list the events that might happen as well as their probability of occurrence); certainty (know exactly what will happen). In the context of a enterprise, risk management is a process, effected by the entity's management, and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within the risk appetite, to provide reasonable assurance regarding the achievement of entity objectives (Fraser, J., & Simkins, B. J., 2010). According to Knight (2009), risk should be an integral part of how things are managed and it should not be a separate activity separated from the mainstream management of the business. Without risk, there is no reward or progress, and unless risk is managed effectively, organizations cannot maximize opportunities and minimize threats. In short, risk is about the effect of uncertainty on the achievement of objectives.

While most studies on risk and risk management focus on enterprises, the World Economic Forum (2010) advocated that Governments could coordinate their agencies with a prioritized national risk overview and liaise with counterparts abroad in a more systematic and proactive manner. The concept of the Country Risk Officer (CRO) was introduced in Global Risks 2007. Given the complexity of risks that a country may encounter, from natural catastrophes or pandemic scares to terrorist attacks, there is a need for the creation of a single point of contact and coordination for the responses to such risks. The role of CRO would be responsible for analyzing and quantifying risks, prioritizing mitigation measures and implementing programmes to adapt to the threats that these risks present. This paper echoes this proposition of managing the risks at the country level instead of at enterprise level.

The Business Continuity Institute (BCI, 2003) defines Business Continuity Management as a holistic management process that identifies potential impacts that threaten an organization and provides a framework for building resilience with the capability for an effective response that safeguards the interests of its key stakeholders, reputation and value creating activities. With suitable modifications, the concept of Business Continuity Management should also apply at a country level under the collaboration of all concerned entities.

Fraser et al. (2010) suggest the following risk assessment process:

1) Risk assessment of plans;
2) Identify critical risk scenarios;
3) Identify countermeasures;
4) Monitor Key Risk Indicators (KRIs) continuously.

The following five-step approach to assess risks was proposed by Cendrowski and Mair (2009):

1) Enumeration of risks;
2) Qualitative analysis;
3) Quantitative analysis;
4) Implementation of risk management strategy;
5) Assessment of risk management strategy

The World Economic Forum (2010) defines a systemic risk as the potential loss or damage to an entire system as contrasted with the loss to a single unit of that system. Systemic risks are exacerbated by interdependencies among the units. These risks can be triggered by sudden events or built up over time with the impact often being large and catastrophic. The World Economic Forum (ibid.) adopts a Global Risk Barometer comprising of economic risks, geopolitical risks, environmental risks, societal risks, and technological risks. In this study, systemic risks are referred to as crises (e.g. sudden economic recession; revision of FIT policy;

terrorism; social disorder; pandemic disease).

Haimes, Lambert, et al. (2002) suggest the use of risk filtering, ranking, and management (RFRM) methodology to ensure a comprehensive risk analysis process. The RFRM method involves eight phases:

Phase I. Scenario Identification by Hierarchical Holographic Modeling (HHM)

Phase II. Scenario Filtering

Phase III. Bi-Criteria Filtering and Ranking

Phase IV. Multi-Criteria Evaluation

Phase V. Quantitative Ranking

Phase VI. Risk Management

Phase VII. Safeguarding Against Missing Critical Items

Phase VIII. Operational Feedback

The HHM is a diagram that categorizes multiple perspectives of a system capturing various sources of risk to the system. An HHM results from a complete specification of the underlying system into a hierarchy of subsystems, which together display a holistic view of the large-scale system. The HHM has the ability to model the intricate relationships among the various subsystems and to account for all relevant and important elements of risk and uncertainty (Haimes, Yacov et al., 2002).

According to Horowitz et al. (2003), one of the most valuable aspects of HHM is its ability to facilitate the evaluation of the subsystem risks and their corresponding contributions to the risks in the total system. HHM is useful in modeling large-scale, complex, and hierarchical systems.

Research approaches

The research adopts both the use of qualitative and quantitative methods. A core working team comprising of academia experts from Macau and Hong Kong and industry veterans was formed in July, 2011 to design, implement and monitor the entire research process. Four rounds of focus group discussions were held in Macau, Guang Zhou, and Hong Kong. The qualitative comments were analyzed by NVivo using grounded theory approach, and the temporal findings were constantly cross-validated and triangulated with quantitative research approaches like Delphi questionnaire and Multi- Dimensional Scaling technique. Initially 20 risk items were preliminarily identified through various focus group meetings. The Delphi questionnaires were sent to both academic experts, gaming practitioners, and representatives from NGOs (a total of 55 experts and 32 veterans participated in this study). Academic experts invariably are doctoral degree holders or professors in universities in Macau, Hong Kong, and China. Industry veterans are at least managers with over five years of working experience in the gaming and/or NGO businesses. Four rounds of Delphi questionnaires were used and after

consolidating a series of their findings, the questionnaire was gradually refined and revised to 18 items (see appendix).

Most risk analyses adopt the use of quantifying the severity and probability of risk. In this study the core research team agreed the inclusion of a third dimension of risk quantification, i.e. detectability as used in Failure Modes and Effect Analysis (FMEA). FMEA is commonly used to identify potential failure modes during product planning and development, to determine their effects on the operation of the product and identify actions to mitigate the failures (Crow, 2002). FMEA is a popular quality management tool to predict and manage risks for products and it can be used to quantify more systematically the true extent of external risks. Under the FMEA method, the extent of perceived external threats (i.e. risks) can be estimated by use of Risk Priority Numbers (RPN) which can take a value from 1 to 1000 (Each of SEV, OCC and DET below can have a value from 1 to 10). The higher is the value of RPN, the more serious the threat is to the organization (Koo, et al., 2011).

Risk Priority Numbers (RPN)

= Severity x Probability of Occurrence x Likelihood of detection

- *Severity (SEV) indicates how significant the impact of the effect is*
- *Probability of Occurrence (OCC) indicates how often the cause of the failure mode is to occur*
- *Likelihood of Detection (DET) indicates how likely the current control is able to detect the failure mode*

Results of Risk Analyses for Macau Gaming Industry

A total of 50 respondents (26 academic and 24 industry experts) responded in the fourth round of Delphi questionnaire survey. In a descending order of these 18 perceived most severe risks to the industry, the most serious risks are revision of Facilitated Individual Traveler (FIT) policy; fierce competition; and shrinking of VIP market, mono source of customers. These risks affect the market demand for the gaming industry.

Online gaming is not perceived to be a risk with major severity to the long term, healthy, and harmonious development of the entire gaming industry in Macau.

Table 1: Descending order of Severity of risks for the gaming industry

	N	Mean
Severity15 Revision of FIT policy	50	6.60
Severity11 Fierce competition	50	6.36
Severity2 Shrinking of VIP market	50	6.30
Severity6 Mono source of customers	50	6.12
Severity17 Social disorder	50	6.06
Severity7 Irregular funding source disappearing	49	6.04
Severity14 Sudden economic recession	50	6.04
Severity18 Pandemic disease	50	5.98
Severity1 Inadequate HR supply	50	5.98
Severity9 Corruption issues	50	5.84
Severity16 Terrorism	50	5.82
Severity3 Deterioration of HR quality	50	5.78
Severity13 Foreign power domineering	49	5.69
Severity1 Neighbor areas liberalize gaming	50	5.68
Severity8 Improper industry supervision	50	5.64
Severity10 Biased gaming policy	50	5.56
Severity5 Less non-local intermediaries	50	5.14
Severity12 Online gaming gaining popularity	50	4.58
Valid N (listwise)	48	

In Table 2 below, the items with the highest perceived probability of occurrence are: mono-source of customers; fierce competition; inadequate supply of HR, and neighbor areas liberalize their gaming industry. Most of these risk items are already known occurrence to the public. On the other hand, the following risk items are perceived to be less likely to happen: terrorism; pandemic disease; social disorder. These are classified by the research team as crises which have the characteristics of low probability of occurrence.

Table 2: Descending order of Probability of risks for the gaming industry

	N	Mean
Probability6 Mono source of customers	50	6.28
Probability11 Fierce competition	50	5.90
Probability4 Inadequate HR supply	50	5.68
Probability1 Neighbor areas liberalize gaming	50	5.62
Probability3 Deterioration of HR quality	50	5.60
Probability12 Online gaming gaining popularity	50	5.50
Probability9 Corruption issues	50	5.42
Probability7 Irregular funding source disappearing	49	5.20
Probability8 Improper industry supervision	50	5.20
Probability5 Less non-local intermediaries	50	5.18
Probability2 Shrinking of VIP market	50	5.16
Probability15 Revision of FIT policy	50	5.10
Probability14 Sudden economic recession	50	5.06
Probability13 Foreign power domineering	49	5.04
Probability10 Biased gaming policy	50	4.92
Probability17 Social disorder	50	4.72
Probability18 Pandemic disease	50	4.02
Probability16 Terrorism	50	3.02
Valid N (listwise)	48	

Table 3 depicts the perceived detectability of risks. The higher the detectability score implies the more difficult it would be to detect (predict and control) the risk element. The items with higher detectability are less non-local intermediaries, sudden economic recession, and irregular funding sources disappearing. Those with lower detectability are inadequate HR supply, biased gaming policy are more or less known public knowledge.

Table 3: Descending order of Detectability of risks for the gaming industry

	N	Mean
Detectability5 Less non-local intermediaries	50	5.20
Detectability14 Sudden economic recession	50	5.18
Detectability7 Irregular funding source disappearing	49	5.16
Detectability2 Shrinking of VIP market	50	5.06
Detectability15 Revision of FIT policy	50	5.02
Detectability13 Foreign power domineering	49	4.92
Detectability16 Terrorism	50	4.90
Detectability3 Deterioration of HR quality	50	4.88
Detectability18 Pandemic disease	50	4.86
Detectability1 Neighbor areas liberalize gaming	50	4.84
Detectability6 Mono source of customers	50	4.82
Detectability9 Corruption issues	50	4.82
Detectability8 Improper industry supervision	50	4.72
Detectability11 Fierce competition	50	4.64
Detectability17 Social disorder	50	4.62
Detectability12 Online gaming gaining popularity	50	4.52
Detectability10 Biased gaming policy	50	4.52
Detectability4 Inadequate HR supply	50	4.22
Valid N (listwise)	48	

Table 4 describes a more traditional approach to quantify risks. The higher the product of severity and probability signifies the more adverse effect of the risk item concerned. The top risks by the measure are: fierce competition; mono source of customers, and inadequate HR supply, and revision of FIT policy by the Chinese Government. These risks are largely commercial risks affecting the revenues of the gaming industry.

Table 4: Descending order of product of severity and Probability of risks for the gaming industry

	N	Mean
SxO11 Fierce competition	50	40.7800
SxO6 Mono source of customers	50	39.4600
SxO4 Inadequate HR supply	50	36.7000
SxO15 Revision of FIT policy	50	35.1000
SxO1 Neighbor areas liberalize gaming	50	34.7200
SxO3 Deterioration of HR quality	50	34.2600
SxO9 Corruption issues	50	34.1400
SxO2 Shrinking of VIP market	50	33.6000
SxO14 Sudden economic recession	50	32.9400
SxO7 Irregular funding source disappearing	49	32.7959
SxO8 Improper industry supervision	50	32.1400
SxO13 Foreign power domineering	49	31.6327
SxO17 Social disorder	50	30.8200
SxO10 Biased gaming policy	50	29.5600
SxO12 Online gaming gaining popularity	50	28.2200
SxO5 Less non-local intermediaries	50	27.9600
SxO18 Pandemic disease	50	26.6800
SxO16 Terrorism	50	19.7200
Valid N (listwise)	48	

Table 5 shows the listing of Risk Priority Number (RPN) of the 18 risks in descending order. RPN is the product of severity, probability, and detectability. The larger the RPN, the more serious is the respective risk for the gaming industry in Macau.

Table 5: Descending order of RPN of risks for the gaming industry

	N	Mean
RPN11 Fierce competition	50	197.8200
RPN15 Revision of FIT policy	50	193.3200
RPN6 Mono source of customers	50	189.8800
RPN14 Sudden economic recession	50	183.3000
RPN3 Deterioration of HR quality	50	177.3400
RPN2 Shrinking of VIP market	50	172.9600
RPN1 Neighbor areas liberalize gaming	50	172.2200
RPN7 Irregular funding source disappearing	49	171.6939
RPN9 Corruption issues	50	170.8600
RPN4 Inadequate HR supply	50	167.0400
RPN13 Foreign power domineering	49	161.5714
RPN8 Improper industry supervision	50	159.2200
RPN5 Less non-local intermediaries	50	157.2400
RPN17 Social disorder	50	155.0200
RPN10 Biased gaming policy	50	146.0000
RPN12 Online gaming gaining popularity	50	135.9800
RPN18 Pandemic disease	50	134.6800
RPN16 Terrorism	50	112.4600
Valid N (listwise)	48	

Tables 5 & 6 represent succinct summaries of the risks identified. The most serious risks revealed in both tables are: fierce competition, mono source of customers, revision of FIT policy, deterioration of HR quality, shrinking of VIP market, and neighbor areas liberalize gaming.

"Inadequate HR supply" ranks third in Table 4 and ranks tenth in Table 5. This can be explained by the fact that the detectability for HR shortage is a known phenomenon and can be detected easily. Likewise, the fact that "sudden economic recession" ranks ninth in Table 4 but ranks fourth in Table 5 can be explained by the low detectability in the suddenness in occurrence of economic crises.

In order to discern whether academic and practitioners have significantly different views towards various risk measures, independent samples T-tests were conducted among the 90 variables (i.e. 18 severity; 18 probability; 18 detectability; 18 on product of severity and probability; and 18 on RPN) between the two respondent groups of 26 academic experts and 24 industry experts. Only five items' means are significantly different at 0.05 level (see table 6 below). The difference of means of all 18 detectability items and 18 RPN between the two respondent groups are not significant at 0.05 level. For those five items depicted in Table 6, it appears that the academic are more pessimistic than those practitioners in the market place. On the whole the views between the academic and practitioners are not too different.

Table 6: Independent Samples T-Test between academic and industry experts at 0.05 significance level

	Industry Working in Gaming Industry?	N	Mean	Std. Deviation	Std. Error Mean
Severity2 Shrinking of VIP market	.00 Academic	26	6.88	2.338	.459
	1.00 Gaming Industry	24	5.67	1.834	.374
Severity18 Pandemic disease	.00 Academic	26	6.77	2.519	.494
	1.00 Gaming Industry	24	5.13	2.953	.603
Probability1 Neighbor areas liberalize gaming	.00 Academic	26	6.35	2.416	.474
	1.00 Gaming Industry	24	4.83	1.880	.384
Probability4 Inadequate HR supply	.00 Academic	26	6.54	2.158	.423
	1.00 Gaming Industry	24	4.75	2.327	.475
SxO1 Neighbor areas liberalize gaming	.00 Academic	26	11.7692	27.89596	5.47085
	1.00 Gaming Industry	24	27.0833	17.25995	3.52317

Recommendations:

Basing on the captioned analyses, the followings are recommended:

1) Establishment Country Risk Officer (CRO) with active participation from government officials, risk experts, and representatives of the gaming industry to analyze and quantify risks, to prioritize mitigation measures and to implement programmes to adapt to these risks. Gaming representatives can come from the elected Members of the Legislative Assembly or from the Chamber of Macau Casino Gaming Concessionaires and Subconcessionaries.
2) Every two years or as and when a major crisis occurs (like the financial tsunami in 2008) a comprehensive risk analysis for the gaming industry should be conducted.
3) "Fierce competition" is invariably caused by price competition. In order to ensure a long term, healthy, and harmonious development of the gaming industry, the Gaming Chamber should orchestrate some concerted efforts among all concessionaires and Subconcessionaries to compete on service and quality. The capping of gaming tables at 5500 is a right move by the Macau government to avoid over expansion which will likely lead to cut-throat competition. The capping of gaming tables helps also the easing of the HR shortage problem. Prior to the gaming liberalization in 2002, the average customers per gaming table per day was 93 persons and due to rapid expansion the figure dropped to only 14 in 2010. This indicates that there is much room for improvement on gaming table utilization.
4) "Mono source of customers" is a reflection of risk concentration. Being too reliant on the China market is not a healthy sign for the gaming industry. The gaming operators should endeavor to diversify their existing customer bases.
5) "The revision (tightening) of FIT policy" would have a major impact on not only the gaming industry but the entire Macau economy. It is important to maintain a good tourism image
6) The issue "Deterioration of HR quality" can be and should be addressed by intensifying training and education. The Macau Government should spend more resources on improving the quality of Macau residents.

7) The risk of “shrinking of VIP market” should be monitored closely. In view of the importance of VIP market to the gaming industry in Macau, the authority should monitor whether any operator having casinos outside Macau is siphoning VIP customers to its casinos in another country.

8) “Neighbor areas liberalize gaming” is perhaps an unavoidable trend. The government together with the gaming operators should work together to develop Macau into a genuine “World Tourism and Recreation Centre 世界旅游休閑中心”. Gaming element should remains as the “peony 牡丹” and non-gaming recreational elements should be the “green leaves 綠葉”.

Appendix

澳門博彩研究學會現進行一項關於『**澳門博彩業危機與風險研究**』，研究經費由澳門基金會贊助，研究結果會向公眾發表，希望能提供有用的參考訊息給澳門政府、博彩業界、學術機構及澳門市民。研究方法包括有德爾菲法(Delphi method)，這方法採用匿名專家發表意見的方式，專家之間不作互相討論，不聯繫，通過多次專家對問卷所提問題的看法，經過反覆徵詢、歸納、修改，最後彙總成專家基本一致的看法，作為預測的結果。

本會誠邀閣下協助，作為澳門博彩業的專家，填寫以下問卷，本會萬分感謝閣下對本研究的支持和合作，研究完成後，本會將會把研究報告交給閣下留念，以表謝意。

所謂行業風險是指影響整個澳門博彩行業長時期、健康及和諧發展的情況。(風險是操作性定義為逐漸發生的事件;而危機指的是發生機率較低但嚴峻程度會較高，如戰爭、種族仇殺、大型基建意外倒塌或自然災害。)

嚴峻程度(代表危機或風險事項真的發生時如何負面地影響整個澳門博彩業的程度,1=絕不嚴峻 ,...10=絕對嚴峻)

發生機率(代表危機或風險事項發生的可能性，1=絕不可能,...10=絕對可能)

被偵察程度(代表危機或風險事項是否容易被**偵察**或**預測**出來及**可被控制**的程度，1=絕對容易被偵察的危機或風險,...10=絕對難被偵察，難預測，難控制的的危機或風險)

The Macau Gaming Research Association (MGRA) is conducting a study on “Risk and Crisis Analyses for the Gaming Industry in Macau”. This research is funded by the Macao Foundation and the results will be released to the public. We expect the findings will provide useful reference information to the Macau Government, the Gaming Industry, Academic Institutions, and the public. The research tools include Delphi method which collects opinions from selected experts on an anonymous basis and the experts do not meet and discuss among themselves. After several iterations of data collection, analyses, and modifications the views can converge closer to a consensus opinion. These findings will be used as a basis for prediction.

The MGRA sincerely invites you as an expert on the gaming industry to complete the questionnaire. We appreciate your support and cooperation and will send you a copy of the findings in due course.

Industry risk is any event that will affect the long term, healthy, and harmonious development of the entire gaming industry. (Risk is operationally defined as a creeping event. Crisis refers to event with lower occurrence probability but more severe consequence, e.g. war, racial killing, collapse of major infrastructure building, or natural catastrophe).

Severity (represents the extent of negative impact on the gaming industry in Macau,

1=absolutely not severe, … , 10= absolutely severe)

Probability (represents the likelihood of the risk or crisis happening, 1=absolutely not likely to happen, … , 10= absolutely likely to happen)

Detectability (represents the extent of ease to **detect**, **predict**, and **control** the risk or crisis, 1=absolutely easy to detect, … , 10= absolutely difficult to detect)

Appendix

事項 Item	可能影響澳門博彩行業的因素： Factor that might affect the Macau gaming industry	嚴峻程度 Severity	發生機率 Probability	被偵察程度 (預測及可控制程度) Detectability
1	鄰近地區發展博彩業 Neighbor areas liberalize gaming			
2	貴賓廳市場萎縮 Shrinking of VIP market			
3	人才質素下降 Deterioration of HR quality			
4	澳門人才不足 Inadequate HR supply			
5	非本地中介人減少 Less non-local intermediaries			
6	賭客來源單一化 Mono source of customers			
7	不規範資金消失 Irregular funding source disappearing			
8	博彩業監管執行不善 Improper industry supervision			
9	廉潔發生問題 Corruption issues			
10	澳門政府博彩業政策存在偏差 Biased gaming policy			
11	博彩行業過分擴張帶來惡性競爭 Fierce competition			
12	網上博彩普及 Online gaming gaining popularity			
13	外國勢力控制澳門發展 Foreign power domineering			
14	突發性經濟衰退 Sudden economic recession			
15	國家調整自由行政策 Revision of FIT policy			
16	恐怖襲擊 Terrorism			
17	澳門治安發生問題 Social disorder			
18	新疫症出現 Pandemic disease			
其它				

如有任何問題，請電郵本會 admin@mgra.org.mo 或電話(+853) 82970924 聯絡。

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