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# Forecasting Market-wide Gaming Revenue (Win) for the Macau Special Administrative Region

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The Macau Special Administration Region (SAR) has seen a tremendous explosion in its gaming industry and is being described as “the Las Vegas of Asia.” Forecasting market-wide gaming win for the Macau Special Administration Region (SAR) over the next five to seven years is particularly challenging due to the numerous variables at play in the market, including the following factors:

- The dramatic growth in gaming revenues evidenced over the past three years;
- The unprecedented amount of new gaming supply proposed and currently under construction;
- Implementation of the Individual Visitation Scheme (IVS) program<sup>1</sup>, which will increase the number of potential visitors to the Macau SAR over time at the discretion of the People’s Republic of China (PRC) government;
- The changing profile of the Macau SAR visitor, with reduced reliance on hard-core gamblers and greater dominance by conventioners and tourists;
- The rapidly growing Chinese economy, which is creating a new middle class with discretionary income for traveling, gaming, and shopping; and
- The potential for the “overheated” Chinese economy to experience a slowdown over the foreseeable future.

## Gaming Supply and Demand in the Macau SAR

In February 1961, Macau’s governor designated Macau a “permanent gaming region” and officially positioned Macau as a low-taxation region, focusing on gaming and tourism as its major economic activities. Before Tao

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<sup>1</sup> The IVS program is primarily the result of the outbreak of SARS in 2003 and the resulting drop in travel to Hong Kong. The IVS program, which now allows certain residents from Mainland China to travel to Hong Kong and Macau on an individual basis, was launched in order to counteract the adverse effects of the SARS epidemic on the Hong Kong tourism industry. Prior to the IVS program, travelers from Mainland China were allowed to travel to Hong Kong only for business or with groups.

Heng’s monopoly concession expired on December 31, 1961, Degree Law number 1496 was enacted in July of that year, which opened the operation of games of fortune for public bidding. Two companies joined the bidding: a new company jointly set up by Ip Hon, Terry Ip Tak Lei, Stanley Ho Hon San, and Henry Fok; and Tai Heng. The new company won the bidding and was granted the monopoly concession to operate games of fortune as well as selling “Pou lottery,” “Shan lottery,” and “Pacapio lottery.” The new casino monopoly concessionaire was registered as Sociedade de Turismo e Diversões de Macao (STDM) in 1962. Its first casino, the Casino Estoril, opened that year. The company’s flagship Lisboa Hotel and the Casino Lisboa did not start their full operations until 1970. STDM dominated the gaming market for over 40 years following that time.

Before Macau was returned to China’s sovereignty in 1999, there were numerous discussions and studies on different perspectives on the practicality of liberalizing the gaming industry. In fact, the Portuguese Macao Government had made considerations and preparations on overruling the monopoly system in the gaming industry. For instance, in 1986, the Legislative Assembly enacted Law number 10/86/M, stipulating “the number of concessions granted to be limited to three at a maximum.”

On February 8, 2002, the Macao SAR announced that gaming concessions were granted to Sociedade de Jogos de Macau (SJM), a subsidiary of STDM; Galaxy Casino Company; and Wynn Resorts (Macao) S.A. The concession contracts were signed on March 28, June 24, and June 26, 2002, respectively. In December of the same year, the Macao SAR made an alteration to the Galaxy’s Concession Contract, which allowed Galaxy to have a subconcession relationship with the Venetian Macao S.A. In 2005, MGM Mirage and Pansy Ho Chiu-King, Stanley Ho’s daughter, were granted a subconcession under SJM’s concession.

Besides Sociedade de Jogos de Macau, S.A. (SJM), the established gaming entity in Macau, the remaining concessionaires and sub-concessionaires have all required time to construct their casinos and other related facilities. The Sands Macau and Galaxy Casino’s Waldo Galaxy were opened in 2004. As of December 2004, there were a total of 15 casinos in Macao SAR, with 11 casinos located



on the Macau Peninsula and four casinos on Taipa Island. Two additional casinos were opened by SJM on the Macau Peninsula in 2005. The Emperor Palace Casino opened in January 2006. Additionally, five Mocha Slot Lounges, which are essentially hybrid coffee shop/lounge/casinos that offer slot machines with a variety of linked jackpot games, are operated under SJM's license. According to the Gaming and Inspection and Coordination Bureau for the Macau SAR, as of end of the third quarter 2005, the number of table games in the market totaled 1,296 and the number of slot machines in the market totaled 3,082.

With nearly US\$5.3 billion in gaming revenue in 2004 (US\$4.2 billion through third-quarter 2005), the Macau SAR is earning its reputation as the Las Vegas of Asia. To provide perspective, the gaming win for Atlantic City, New Jersey in 2004 was US\$4.8 billion (US\$3.8 billion through third quarter 2005) and gaming win for all of Clark County, Nevada, home of the Las Vegas Strip, was US\$8.7 billion in 2004 (US\$7.2 billion through third quarter 2005).

“Games of fortune”, which includes table games such as Roulette, Blackjack, VIP Baccarat, Mini Baccarat, Fantan, Cussec, Paiko, Boule, Mahjong, Fish-Prawn-Crab, 3-card Baccarat, 3-card Poker, and slot machines, generate the largest percentage of gaming revenue—95.0% of total gaming revenue in 2004 and 97.5% of total gaming revenue through the third quarter of 2005—for the Macau SAR gaming market.

As indicated in Table 1, the Macau SAR “games of fortune” can be segmented into VIP table games, primarily VIP Baccarat, games other than slots or mass games, and slot machines. A large percentage of gaming revenues is generated by VIP table games, specifically VIP Baccarat—over US\$3.6 billion, or approximately 72.0% of gaming revenue generated by all “games of fortune” in 2004. The

revenue mass games segment represented 26.5% of the total “games of fortune” revenue in 2004, and slot machines revenue constituted the remaining 1.5% of the “games of fortune” market revenue in 2004. The revenue mixture is significantly different than in the United States. For example, in Las Vegas, revenue generated by gaming devices, i.e., slot machines, is approximately twice that of table games.

Table 1 also indicates that the revenue for all segments of the Macau SAR “games of fortune” market increased by 154% from 2000 to 2004, an annual compounded rate of change of 26.2%. Total revenue (win) for Macau SAR “games of fortune” in 2004 was over US\$5.0 billion, an increase of 44.6% over that in 2003. Total revenue for the Macau SAR “games of fortune” market in the year-to-date period through September 2005 was over US\$4.1 billion, an increase of 13.8% over the same period last year.

The significant increase in the Macau SAR “games of fortune” gaming revenue in 2004 was the result of a combination of factors, including the inducement of demand triggered by the opening of the Sands Macao and the Galaxy Casino, as well as the increase in the number of Mainland Chinese residents eligible for the IVS program, and the dramatic rise in the number of visitors to the Macau SAR. This recent rapid growth in gaming revenue bodes well for the Macau SAR gaming market. Demographic trends in China and the capital being invested in the Macau SAR are indicative of the unsurpassed potential of gaming demand. As the only jurisdiction in China with legal casino gaming currently, the potential demand levels are almost open-ended.

**Anticipated Evolution of the Gaming Environment in the Macau SAR**

The Macau SAR gaming market is in the process of moving from a historical “back-room” gaming venue to a multi-faceted

**Table 1 – Segmented Historical Revenue for Macau SAR Games of Fortune (‘000s) – 2000 through Third Quarter 2005)**

Year	VIP Table Games			Mass Games			Slots			TOTAL REVENUE GAMES OF FORTUNE	
	Win	% Change	% of Total	Win	% Change	% of Total	Win	% Change	% of Total	Win	% Change
2000 <sup>a</sup>	\$1,344,381	---	68.0 %	\$606,903	---	30.7 %	\$27,037	---	1.4 %	\$1,978,320	---
2001 <sup>b</sup>	1,587,726	18.1 %	70.4	638,949	5.3 %	28.3	\$27,385	13.9 %	1.2	2,254,061	13.9 %
2002 <sup>c</sup>	1,974,755	24.4	73.6	679,413	6.3	25.3	\$28,008	19.0	1.0	2,682,177	19.0
2003 <sup>d</sup>	2,684,319	35.9	77.3	759,219	11.7	21.9	\$28,673	29.5	0.8	3,472,212	29.5
2004 <sup>e</sup>	3,613,326	34.6	72.0	1,330,568	75.3	26.5	\$77,725	44.6	1.5	5,021,618	44.6
YTD through September 2004 <sup>f</sup> :	\$2,663,134	---	72.7	947,067	---	25.9 %	\$52,358	---	1.4 %	\$3,662,560	---
YTD through September 2005 <sup>g</sup> :	2,677,937	0.6 %	64.3 %	1,381,169	46 %	33.1 %	108,127	107 %	2.6 %	4,167,233	13.8 %

<sup>a</sup>US\$1.00 = MOP\$8.0260  
<sup>b</sup>US\$1.00 = MOP\$8.0335  
<sup>c</sup>US\$1.00 = MOP\$8.0334  
<sup>d</sup>US\$1.00 = MOP\$8.0214  
<sup>e</sup>US\$1.00 = MOP\$8.0026  
<sup>f</sup>US\$1.00 = MOP\$8.0000



gaming and entertainment destination, evolving in much the way Las Vegas has, complete with the development of retail outlets. The concessionaires and subconcessionaires have begun development of several major gaming and lodging facilities and concepts.

Projects currently being developed in conjunction with SJM's gaming concession include the Grand Lisboa, the Park Hyatt/Crown Macau, and City of Dreams. The Grand Lisboa, planned to be 44 stories tall, and is anticipated to open in 2007. The Park Hyatt/Crown Macau complex is being developed on Taipa near the New Century Hotel/Greek Mythology casino. The complex is under construction and is planned to be a six-star, 241-room hotel, expected to open in late 2006. The project is a joint venture between Melco and PBL and is projected to add 120 VIP table games, 80 mass games, and 1,300 slots to the Macau SAR gaming inventory. The City of Dreams project on the Cotai Strip reportedly will have an underwater casino with approximately 50 VIP table games, 400 mass games, 2,000 slot machines, two four-star and one five-star hotels with a total of 2,000 guestrooms, retail space, and a 4,000-seat performance hall/theatre upon completion in 2008. In addition to the development of other casino projects, SJM is involved in the development of the Fisherman's Wharf on the Macau Peninsula near the ferry terminal. The development is planned to feature themed restaurants, retail outlets, a slot-machine hall with 80 mass games and 500 slot machines, and other entertainment features, including an erupting volcano.

Wynn Resorts has been constructing its 600,000-square-foot hotel since June 2004. Phase I of the Wynn Macau reportedly will have a 600-room hotel, 100,000 square feet of gaming, seven restaurants, 28,000 square feet of retail space, a spa, meeting space, and entertainment facilities and is scheduled to open in 2006. Phase II, scheduled to open in 2007, is anticipated to add 92,000 square feet of casino space, a sports book, two restaurants, a theater, and a water attraction. It is anticipated that Phase I and Phase II of the Wynn Macau will add a total of 70 VIP table games, 280 mass games, and 850 slots to the Macau SAR gaming inventory.

Major developments planned by Galaxy Casino include the Galaxy Starworld and Rio projects on the Macau Peninsula and the Galaxy Mega Resort on Coloane. The Galaxy Starworld property, anticipated to open in 2006, will have 560 rooms and is projected to add 60 VIP table games, 140 mass games, and 300 slots to the Macau SAR gaming inventory. The Rio project is anticipated to open in 2006 with 449 rooms and is projected to add 48 VIP tables, 32 mass games, and 150 slots to the Macau SAR gaming inventory under Galaxy Casino's license. The 2,000-

room Galaxy Mega Resort, expected to open in late 2008, is anticipated to add 44 VIP table games and 300 mass games to the Macau SAR gaming inventory.

The Cotai Strip is a master-planned development concept of resort casino properties on Cotai, an area of reclaimed land formed on marsh and coastal environment between the islands of Taipa and Coloane in the Macau SAR. Modeled after the world-famous Las Vegas Strip, the first phase of the Cotai Strip is designed to offer a critical mass of business, leisure, and entertainment attractions, including world-class meeting and convention facilities, and seven resort hotels set in a tropical landscape. The Las Vegas Sands Corp. is developing the Venetian Macao Casino Resort, an anchor property for the Cotai Strip. The Venetian Macao Casino Resort is planned to feature a world-class casino, an all-suite hotel, and a retail and convention center complex with a Venetian-style theme comparable to that of the Venetian Las Vegas. In addition to the proposed Venetian Macao Casino Resort, other projects currently under development on the Cotai Strip include a Four Seasons hotel, a multi-hotel complex – including Intercontinental Hotel, Holiday Inn, and Far East Consortium brands Cosmopolitan and Dorsett, slated to be developed by the Far East Consortium, and a 500-room, five-star Shangri-La Hotel. Each of the transient lodging properties is anticipated to have casinos that will be operated under the Venetian Macau, S.A. gaming license.

Subconcessionaire MGM Mirage is engaged in a 50/50 partnership with Stanley Ho's daughter, Pansy Ho Chiu-King. In June of 2005, ground was broken for the MGM Grand Macau, which will be located next to the Wynn Macau and near the Casino Lisboa on the Macau Peninsula. The total project cost is estimated to be US\$975 million. Reportedly, the 600-room resort will have a 222,000-square-foot, split-level casino, projected to contain 60 VIP tables, 240 mass games, and 1,000 slots; a 1,500-seat theater, a 5,500-square-foot nightclub, and 13,500 square feet of meeting space (including a 11,000-square-foot ballroom) are also planned.

In total, it is estimated that, upon stabilization of the Macau SAR gaming market in 2009, the number of VIP table games will increase approximately four times over the current Macau SAR gaming inventory, from approximately 300 to over 1,200 units. Similarly, the number of mass games is anticipated to increase almost fourfold (from approximately 1,000 to over 3,800 units) and the number of slot machines is anticipated to increase by over six times (from approximately 3,000 to over 18,000 units). Development of over 30,000 additional guestrooms is anticipated over the next four years, essentially quadrupling the current amount of guestroom inventory in the Macau SAR. It is anticipated that approximately 15,000 guestrooms will be



added in 2008 alone, driven by the tremendous gaming, retail, and convention center development currently underway in the Macau SAR and on the Cotai Strip.

Overall, the concentration of new gaming and tourism developments is likely to increase Macau SAR's draw as an international destination, particularly for Southeast Asia. More than 100 million people live within a three-hour drive and more than one billion people live within a three-hour flight of the Macau SAR. Infrastructure, including airport facilities, is currently operating under capacity and developments are in the pipeline to meet expected future increase in usage.

The singular designation of the Macau SAR as the only major gaming destination in the People's Republic of China provides it with a nearly exclusive draw on Chinese gaming spending. The relaxation of travel restrictions through the IVS program has caused an unprecedented opening of the Mainland Chinese market to the Macau SAR. The size of the potential market, as well as the demand from visitors residing in Mainland China, are anticipated to continue growing into the foreseeable future due to the IVS program. The substantial growth in Mainland Chinese traveling to Macau should drive demand for all the new tourism and gaming developments in the Macau SAR.

### **Projecting Gaming Revenue (Win) in the Macau SAR**

Current trends indicate that the Macau SAR gaming market is supply driven at this point. The amount of existing demand is significant and, with an increase in visitation to the Macau SAR that the government has estimated will reach roundly 30 million visitors annually by 2010, potential gaming activity is enormous. Given its critical mass and billions of dollars in invested capital, the Macau SAR is expected to become a destination that will duplicate and challenge the Las Vegas experience. New gaming supply and "must-see" attractions will provide an impetus for new demand. Market conditions and economic trends are generally favorable indicators of the financial success of the Macau SAR gaming industry and unprecedented growth in gaming revenues is anticipated in the Macau SAR. As such, the Macau SAR market is anticipated to emerge as an eminent domestic and international gaming destination. However, expansion of the Macau SAR gaming market inventory at such a rapid pace is unprecedented, thus making projecting gaming revenue (win) for the market, as well as for individual facilities, particularly challenging. Despite the uncertainty, the Macau SAR presents a huge growth opportunity for casino operators.

As development of the Macau SAR market as a mass destination in such a short period of time is unprecedented, forecasts of gaming revenue should

consider the many market factors at play in the Macau SAR, including the anticipated impact of the new supply on the Macau SAR gaming market, capacity issues, latent demand levels, induced demand, shifting demand patterns, and other ancillary factors. Projected visitation, anticipated new supply, and the changing profile of the Macau SAR visitor, in particular, must be considered in forecasting the Macau SAR market-wide "games of fortune".

Gaming revenue (win) is driven by a number of variables. The Macau SAR gaming market is viewed as having the best attributes of both the Las Vegas and Atlantic City gaming markets; Las Vegas is primarily a destination gaming market, where most visitors, arriving by car or plane, and stay overnight. Atlantic City is more of a drive-in day market, with dense population centers nearby. The Macau SAR has the benefit of both characteristics, with a population of over 450 million people in the Pan Pearl River Delta (nine PRC provinces and the Hong Kong and Macau special administrative regions), approximately 100 million people within a three hour drive alone. The Macau SAR gaming market is expected to evolve as a major resort and convention destination, comparable to Las Vegas, and its day-tripper market is already well established. The combination of these two market characteristics, coupled with the Asian proclivity towards gaming, gives the Macau SAR substantial depth.

We anticipate that Mainland China and Hong Kong will continue to remain the primary feeder markets for the Macau SAR gaming market. It is reasonably anticipated that growth in visitors from Mainland China to the Macau SAR will continue as the IVS program is expanded to additional jurisdictions. Mainland China and Hong Kong, are experiencing growing economies. The continued economic growth of the PRC is producing an increasingly wealthy and urbanized middle class. Although the per capita GDP of the Mainland China residents that become eligible for the IVS program in the future is anticipated to be lower than the average for those residents currently covered by the IVS program in general, the expansion of the program will have a significant impact on the size of the potential customer base for the Macau SAR, resulting in a sizable increase in market-wide gaming venue. Any slowdown in economic growth, or reversal of the PRC's current liberalization policies on currency and travel, however, could dramatically cause the increase in the number of visitors and/or gaming expenditures to decline or increase at a slower pace. Completion of infrastructure projects in the area, will also impact the overall success of the market in the



near and long term.

*Similarity to Las Vegas Gaming Market*

In projecting future revenue for the Macau SAR “games of fortune” market, the historical development and gaming revenue of the Clark County, Nevada gaming market, (hereinafter referred to as “Las Vegas”), which includes the Las Vegas Strip and downtown Las Vegas, should be considered due to the similarities between the markets and the intended focus of the projects currently under development in the Macau SAR. Analogies between the Las Vegas gaming market and the Macau SAR gaming market can be drawn and serve as a basis for projecting future market-wide demand and revenue for the Macau SAR gaming market.

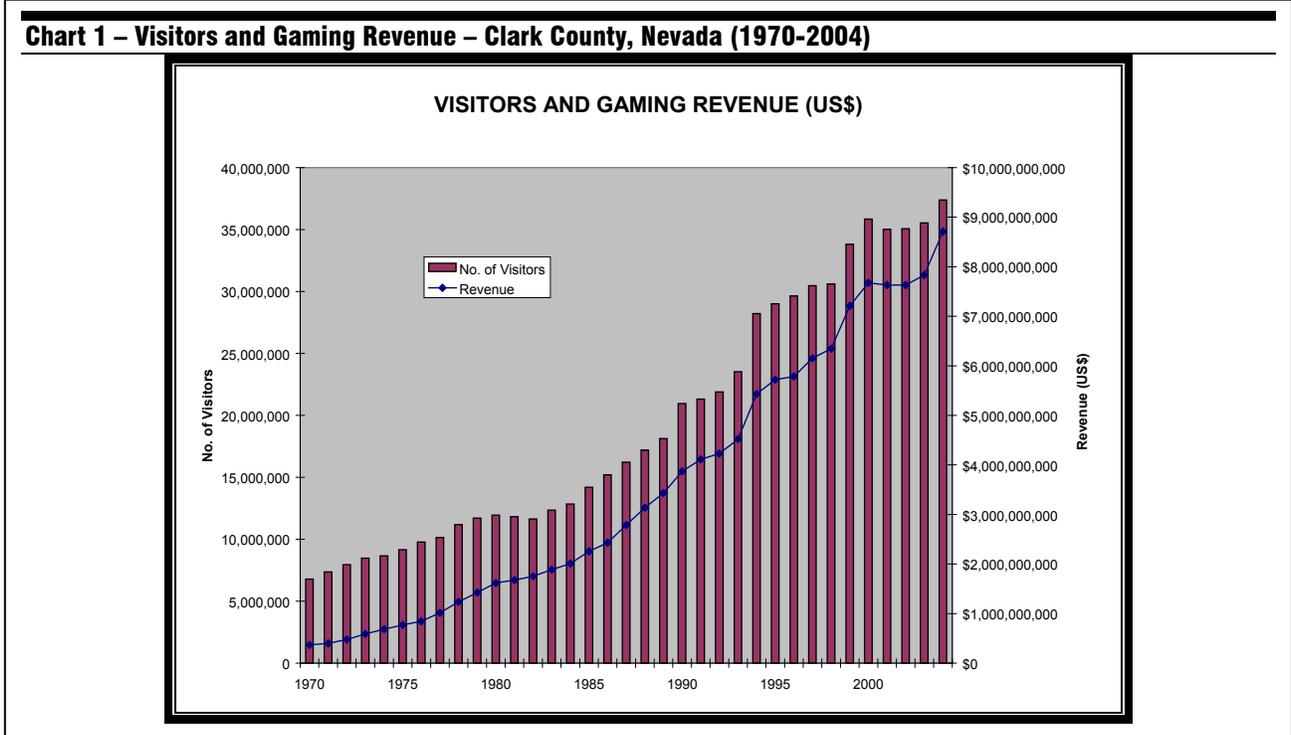
Prior to the late 1980s, Las Vegas was the Mecca for United States gamblers, much the same way that the Macau SAR is positioned currently, and has been transformed into a destination resort offering more amenities and entertainment options than just gaming; similarly, the Macau SAR desires to develop into a destination resort. The older properties located both on the Las Vegas Strip and in Downtown Las Vegas cannot offer the new amenities that today’s Las Vegas visitors crave and must survive by accommodating the older Las Vegas visitor demographic, whose primary purpose is gaming. The additions to the Macau SAR gaming inventory over the next few years will result in a competitive landscape generally similar to that of the

Las Vegas market currently, with older, functionally obsolete properties competing with mega-resorts and with two major centralized gaming venues.

*Forecasting Gaming Revenue*

Our research suggests that for a deep gaming market, gaming revenue is typically supply driven—i.e., build it and they will come. The Las Vegas gaming market is a perfect example of a supply-driven market, where the significant continuous additions to supply over the past three decades have been readily absorbed. Forecasting gaming win based on the WPUPD<sup>2</sup> and the growth in market-wide supply is a valid approach for markets like Las Vegas. The Macau SAR evidences superior characteristics to Las Vegas in terms of market depth, and it is expected that as the market matures all the new supply will be absorbed. However, forecasting gaming revenue growth based on historical WPUPD and increases in supply is not considered appropriate for the Macau SAR market at this time for two reasons: 1) the WPUPD levels are extraordinarily high due to the market’s historical monopoly and recently instituted oligopoly, where new additions to supply are constrained by the government’s limitation on gaming concessions, and 2) the unprecedented supply that is

<sup>2</sup> WPUPD is the unit of analysis in a gaming market, i.e., the yield of a gaming device or table, and is calculated by dividing the total gaming revenues generated by a particular type of gaming unit by the number of gaming units available and the number of days in the period.





being constructed in Macau over a three-year period that is expected to significantly reduce the market WPUPD. It should be noted the Macau SAR gaming revenues will not be driven significantly by a local segment, as opposed to Las Vegas.

Gaming revenue growth typically runs in direct correlation to the growth in the number of visitors or visitor days. Visitor days are the product of the number of people visiting a market times their average length of stay. The longer a person spends in a market the more they will spend on gaming and shopping. In Las Vegas almost all visitors stay overnight, so there is a direct correlation between visitors and gaming win, as evidenced in Chart 1.

Gaming revenues in the Las Vegas market are strongly correlated to the number of visitors. While increases in the number of visitors to the Macau SAR market are anticipated to result in increased gaming revenue, consideration should be given to characteristics specific to the Macau SAR market in projecting revenue for the Macau SAR “games of fortune” market—specifically, the percentage of visitors that remain overnight and the average length of stay.

It is anticipated that demand generated by development of premier gaming facilities; food and beverage outlets; meeting, convention, and tradeshow facilities; and retail options will transform the makeup of the visitors to the Macau SAR from primarily day-trip visitors and will result in increasing the percentage of visitors staying overnight and the average length of stay.

#### Win Per Visitor Day (WPVD)

The major aim of the local and national government

and the developers is to diversify the Macau SAR market into a major tourist and convention destination, thereby increasing the number of visitor days. Overnight visitors have a greater propensity to shop and to generate gaming and other revenue. Having more visitors who stay overnight for longer periods is expected to contribute to increases in market-wide gaming revenue. Overnight guests represented only 23.7% of total visitors to the Macau SAR in 2004. Currently, the average length of stay in the Macau SAR is only 1.2 days, which applies to overnight guests. In comparison, the Las Vegas Visitors and Convention Bureau reported that the average length of stay in the Las Vegas market in 2004 was 3.6 nights for the 99.0% of visitors to the area that stayed overnight.

Once development of additional hotel rooms, gaming facilities, meeting and convention space, non-gaming amenities (including retail outlets, shows, and restaurants), and infrastructure are completed, increases in the percentage of visitors that stay overnight in the Macau SAR and the average length of stay are anticipated. Also, other regional countries will become more significant feeder markets once development of new higher-quality hotels and non-gaming amenities are completed.

Accordingly, we believe that “visitor days” should be considered in forecasting “games of fortune” revenue in the Macau SAR, given the anticipated changes in visitor behavior. In the Macau SAR market, the number of visitor days is calculated by determining the number of day-trippers and the number of visitors that stay overnight. The number of people that stay overnight is multiplied by the average length of stay to derive an

**Table 2 – Calculation of Macau SAR Historical Market-wide Revenue (Win) per Visitor Day – Macau SAR (2001 through September 2005)**

Year	Games of Fortune Revenue	Total Visitor Arrivals	Overnight Guests	% of Visitors That Stay Overnight	Average Length of Stay (Days)	No. of Visitors That Do Not Stay Overnight	No. of Overnight Visitors Increased by Length of Stay	Revenue Per Visitor	Total Visitor Days	Revenue Per Visitor Days	% Change in Revenue Per Visitor Days
2001	\$2,254,061,119 <sup>a</sup>	10,279,000	2,766,900	26.9 %	1.35	7,512,100	3,735,315	\$219	11,247,415	\$200	---
2002	2,682,176,911 <sup>b</sup>	11,530,841	3,154,801	27.4	1.28	8,376,040	4,036,145	233	12,414,185	216	7.8 %
2003	3,472,211,833 <sup>c</sup>	11,887,876	3,043,505	25.6	1.26	8,844,371	3,834,816	292	12,679,187	274	26.7
2004	5,021,617,974 <sup>d</sup>	16,672,556	3,956,154	23.7	1.22	12,716,402	4,826,508	301	17,542,910	286	4.5
Year-to-date through September:											
2004	3,662,559,668 <sup>d</sup>	12,190,113	2,924,614	24.0 %	1.22	9,265,499	3,568,029	300	12,833,528	285	---
2005	4,167,233,497 <sup>e</sup>	13,774,455	2,994,932	21.7	1.20	10,779,523	3,593,918	303	14,373,441	290	1.6 %

\*Estimated

<sup>a</sup>US\$1.00 = MOP\$8.0335

<sup>b</sup>US\$1.00 = MOP\$8.0334

<sup>c</sup>US\$1.00 = MOP\$8.0214

<sup>d</sup>US\$1.00 = MOP\$8.0026

<sup>e</sup>US\$1.00 = MOP\$8.0000



estimate of visitor days generated by overnight visitors; this number is added to the number of day trippers to calculate the total number of visitor days.

The Macau SAR government has forecast that the number of visitors to Macau SAR will increase from an estimated 19.0 million in 2005 to 30.0 million in 2010, an annual compound rate of change of 10.76% per year. Given that the People's Republic of China government controls the IVS program and, along with the Macau SAR government, the development of the local and regional infrastructure, it seems prudent to rely upon the Macau SAR government's own projection of visitation. While the number of visitors may increase to 30.0 million or more by 2010, the number of visitor days will increase at a much faster rate, because it is anticipated that an increasing number of visitors will stay overnight and for a longer period of time, while the number of people per room will also increase.

Applying an average length of stay to each visitor, currently reported to be 1.2 nights, results in the number of visitor days. Table 2 set forth our calculation of historical win per visitor day for the Macau SAR gaming market based on information obtained from the Macau SAR government. As Table 2 indicates, in 2004, the approximately 16.7 million visitors equated to a total number of visitor days of approximately 17.5 million, based on a 23.7% rate of overnight visitors and length of stay of 1.22 days. Revenue per visitor days increased 4.5% in 2004, from \$274 in 2003 to \$286 in 2004.

The total market "games of fortune" win can be forecast based upon the historical revenue per visitor days (WPVD), grown at an assumed rate and multiplied by the number of visitor days forecast per year over the projection period. In order to project the total "games of fortune" revenue, the increase in the number of

visitors to the Macau SAR, the percentage of visitors that stay overnight, and the average length of stay must be estimated, in addition to the WPVD growth rate. Note that a key assumption in this analysis is the annual increase in WPVD. Over the next seven years the number of visitors to the Macau SAR is anticipated to become increasingly less made up of high-end gamblers and increasingly more composed of leisure and convention visitors who come to vacation and do business; expenditures on retail shopping, dining and hotel accommodations are expected to increase significantly. As a result, the amount wagered by visitors per day in gaming facilities does have the potential to actually decline, instead of grow, due to the competition for the consumer's discretionary funds. In order to gauge the impact on WPVD of an increasingly diversified market, we have analyzed the historical win per visitor for Las Vegas over the past 30 years, a period during which Las Vegas went through the same transformation that the Macau SAR is facing today (i.e., Las Vegas has evolved as a major convention location, shopping Mecca, and resort destination, with less and less reliance upon the hard-core gaming element).

Our projection of market-wide gaming win based on the foregoing analysis for the Macau SAR is set forth in Table 3. In projecting the total "games of fortune" revenue from 2005 through 2012, we assume that the WPVD will increase at 2.0% per year. In addition, we assume that the number of visitors to the Macau SAR will increase to 34.8 million by 2012, the percentage of visitors that stay overnight will increase from 23.7% in 2004 before stabilizing at 38.0% in 2011, and the length of stay will increase from approximately 1.22 days in 2004 before stabilizing at 1.95 in 2011, as shown in Table 3. Chart 2 depicts the historical and our projected total Macau SAR "games of fortune" revenue amounts for 2000 to 2012 and reflects the anticipated positive correlation between visitor days and "games of fortune" revenue.

**Table 3 – Forecast of Macau SAR Historical Market-wide Revenue (Win) per Visitor Day – Macau SAR (2005 through 2012)**

Year	% Increase In Revenue per Visitor Days	Revenue per Visitor Days	Total Visitor Arrivals	% of Visitors that Stay Overnight	Overnight Guests	No. of Visitors That Do Not Stay Overnight	Average Length of Stay (Days)	No. of Overnight Visitors Increased by Length of Stay	Total Visitor Days	Projected Games of Fortune Revenue (US\$)
2005	2.0 %	\$292	18,621,366	23.7 %	4,419,205	14,202,161	1.25	5,509,226	19,711,387	\$5,755,186,525
2006	2.0	298	21,039,212	27.8	5,838,505	15,200,706	1.29	7,536,888	22,737,594	6,771,531,225
2007	2.0	304	24,046,070	31.8	7,637,350	16,408,720	1.54	11,744,319	28,153,039	8,552,002,786
2008	2.0	310	27,583,606	35.5	9,800,871	17,782,735	1.69	16,590,695	34,373,430	10,650,392,075
2009	2.0	316	29,873,561	37.9	11,311,141	18,562,421	1.95	22,063,772	40,626,192	12,839,526,768
2010	2.0	322	31,636,546	37.9	11,993,883	19,642,663	1.95	23,406,916	43,049,579	13,877,523,746
2011	2.0	329	33,192,705	38.0	12,599,865	20,592,840	1.95	24,601,454	45,194,294	14,860,274,977
2012	2.0	335	34,831,191	38.0	13,238,530	21,592,661	1.95	25,860,837	47,453,498	15,915,183,365

Source: HVS International



**Deriving Gaming Revenue (Win) for Individual Properties**

Once the market-wide gaming win is forecast, gaming revenue for individual properties can be derived by: 1) calculating WPUPD for each segment, 2) determining penetration rates by segment for the subject property; 3) multiplying the market WPUPD for each segment by the subject property’s penetration rate for that segment to derive the WPUPD for the subject property by segment; 4) multiplying the subject property’s WPUPD for each segment by the number of units in the segment.

An allocation of gaming win by gaming segment—VIP table games, mass games, and slots—can be made based on the anticipated direction of the market, i.e., more mid-market gamblers, fewer high rollers, and changed inventory mixture. Growth rates of total revenues for the VIP table games, mass games, and slots segments are developed based on the trends affecting supply and demand, historical percentages of “games of fortune” revenues, anticipated increases in the supply of each segment, and the overall evolution of the market from high-end gamblers to middle-class consumers, as well as subjective factors such as the anticipated impact of the new supply on the Macau SAR market, latent demand levels, induced demand, shifting demand patterns, and other ancillary factors.

Overall, there is a clear demand for high-end table games in the Macau SAR gaming market. While we anticipate that high-end play and VIP table games will continue to play a major role in the Macau SAR gaming

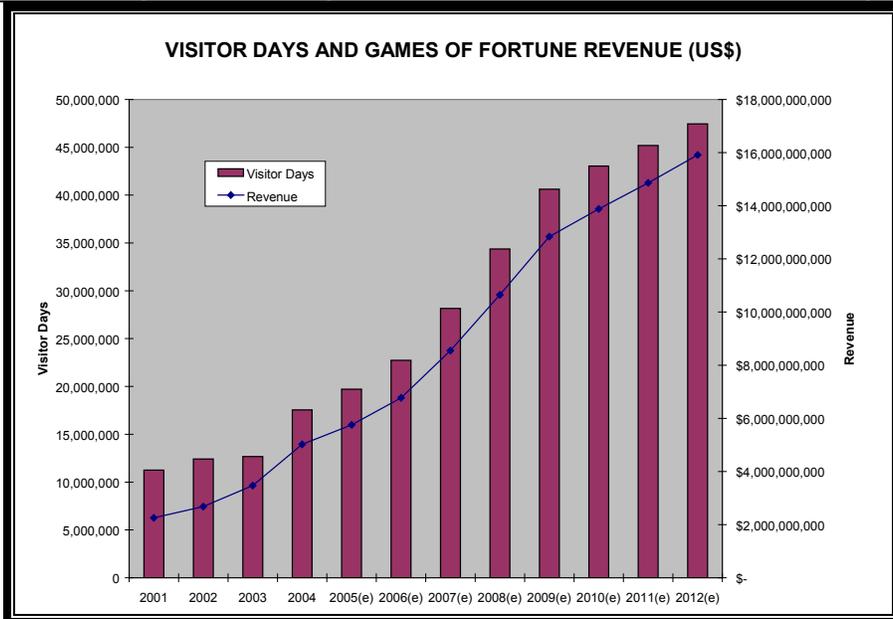
market, the profile of the gaming customer will likely evolve.

Additionally, we believe that that the overall growth of the mass games and slots markets, which are important for the overall future growth of the gaming market, will be induced by the development of non-gaming amenities. The new supply of resort casinos that offer other amenities, including dining and entertainment, will attract more first-time visitors who will be more mass-market gamers and slot players. Accordingly, although revenues from VIP table games will continue to represent the majority of the “games of fortune” revenues, we project that the trend toward mass games and slots achieving an increasing percentage of total “games of fortune” revenues will continue.

Once the projected market-wide win for the Macau SAR VIP table game, mass gaming, and slot segments is derived, the WPUPD for each segment can be calculated by dividing total market-wide revenue for each gaming by the respective market-wide supply in each gaming segment.

Gaming revenue for individual casinos in the Macau SAR can be projected by evaluating the characteristics of the Macau SAR market and the competitive environment and forecasting the particular casino’s market penetration rates for each segment. A penetration rate is the percentage of market-wide gaming revenue that an individual property or group of properties will capture in relation to its fair share. The overall profitability of individual

**Chart 2 – Historic and Projected Visitor Days and Games of Fortune Revenue – Macau SAR (2001-2012)**





properties will depend not only on the increase in popularity of the mass games and slots segments, but the ability of the individual properties to compete against other properties in these segments.

The respective projected market penetration rates are then multiplied by the market WPUPD to derive the WPUPD for each property by segment. The projected WPUPD levels for the property are then multiplied by the property's number of units in each segment for each year of the forecast to derive a forecast of total annual gaming win for each property by segment.

## Conclusion

Over the next five to seven years, the Macau SAR gaming market will include established operators with extended history, numerous other new developments under SJM and Galaxy's concessions, and Las Vegas-style casinos being developed, including projects by the Las Vegas Sands Corp., Wynn Resorts, and MGM Mirage. Projecting market-wide "games of fortune" revenue for the Macau SAR market is particularly challenging in light of the increases in the quantity and nature of the gaming inventory. It is essential that the anticipated increases in visitation, overnight visitors, and length of stay be considered in projecting market-wide win. ●

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## About HVS International:

Since 1980, HVS International has provided hospitality services to more than 10,000 hotels throughout the world. Principals and associates of the firm have written textbooks and thousands of articles regarding all aspects of the hospitality industry, and literally "wrote the book" on how hotels should be valued.