

IMPACT OF ILLEGAL GAMBLING IN HONG KONG

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EXECUTIVE SUMMARY

ILLEGAL BETTING

Gambling is a regulated market in Hong Kong. The Hong Kong Jockey Club (HKJC) is the only authorised operator licensed by the Hong Kong Government, offering horse race betting, football betting and a lottery. In this way, the government can control the market to minimise social harms from gambling. A substantial illegal market for gambling exists, however, estimated at HK\$ 12 billion per annum accruing to unlicensed operators in Hong Kong, offshore operators outside of Hong Kong (excluding Macau casinos) and online operators both inside and outside Hong Kong.¹ The purpose of this report is to understand the economic harms of illegal gambling to Hong Kong society and to project how the illegal market might be shrunk under various scenarios.

Demographics of illegal gamblers

International evidence suggests that illegal gamblers are typically middle aged males and that excessive gambling (i.e. problem and pathological gambling) peaks in middle age. Our Ipsos survey findings tend to support these studies, indicating that a typical Hong Kong illegal gambler is a middle aged male in a blue collar job. Illegal gambling in Hong Kong appears to peak in middle age and decline thereafter, with excessive gambling following a similar, if less pronounced, profile. The bulk of the illegal and excessive gambling social costs in Hong Kong may therefore lie with middle aged males and their families. However, there is some tentative evidence from past academic work that a relatively larger proportion of gamblers under 18 may be excessive gamblers than is the case for the population as a whole.

Illegal gamblers and gambling products

In terms of products used, the Ipsos survey work found that illegal gamblers were more likely to gamble on horse races, other sports products and in casinos than legal gamblers. Within sports betting, football was the most prominent category for both legal and illegal gamblers; though a significant portion of illegal gamblers also bet on basketball. Illegal gamblers bet more than legal gamblers on average across all products. While in absolute terms, illegal gamblers bet the most in casinos (spending about twice what legal gamblers spend), the greatest difference between illegal and legal gamblers was in sports betting, where illegal gamblers spent nearly four times what legal gamblers spent.

Illegal gambling and excessive gambling

Our survey of gamblers found that illegal gamblers were more likely to be excessive gamblers than was the case for legal gamblers. 56 percent of illegal gamblers surveyed were categorised as excessive gamblers while only 15 percent of legal

¹ While betting in Macau casinos is not illegal, this is an offshore betting activity that creates social costs in Hong Kong without any of the economic benefits of that betting revenue flowing to Hong Kong.

gamblers were excessive gamblers. This is the first study to link illegal gambling and excessive gambling in Hong Kong. International evidence also suggests that excessive gamblers are more likely to be overrepresented in the ranks of illegal gamblers. Accordingly, our survey evidence also suggests that Hong Kong illegal gamblers share many of the characteristics of excessive gambling identified in the international literature – an avid interest in gambling, high frequency gambling and a thrill-seeking nature.

It cannot be definitely proven that illegal gambling causes excessive gambling. Indeed, since many excessive gamblers don't engage in illegal gambling, it is more likely that a subset of excessive gamblers find their way into illegal gambling due to their avid interest in gambling. However, at the very least, the lack of constraints in illegal gambling environments could spur on excessive gamblers and amplify their problems. This is in contrast to the direct and indirect ways in which legal gambling establishments such as the HKJC attempt to address the issue of excessive gambling. The high proportion of excessive gamblers within the ranks of illegal gamblers also means that illegal gamblers are disproportionately susceptible to the issues which plague excessive gamblers such as social, financial, and criminal problems.

Illegal gambling and social/financial problems

While most studies do not focus on illegal gamblers, international research and studies of gamblers in Hong Kong indicate that excessive gamblers are disproportionately afflicted by a variety of social ills. These include depression, suicide or suicidal thoughts, personality issues, substance abuse, relationship problems and employment and financial problems. While the causal relationship between excessive gambling and such problems is difficult to establish, international studies and work undertaken in Hong Kong indicates that excessive gambling may be a cause of such conditions in many cases.

A comprehensive study by Australia's Productivity Commission noted that the costs of family problems related to gambling made up nearly two-thirds of the total societal costs of gambling (including financial costs). This suggests that illegal gamblers may make a disproportionate contribution to the total costs of gambling in Hong Kong. In particular, a variety of studies of Hong Kong suicides points to the fact that excessive gamblers are more susceptible to suicide than others. In addition, evidence from the population of excessive gamblers undergoing treatment in Hong Kong, indicates illegal gamblers are more susceptible to suicidal thoughts than their legal counterparts. More specialised studies of gambling related suicides have also suggested that excessive gamblers in Hong Kong made more extensive use of loan sharks than non-excessive ones and there is tentative evidence that pressure from loan sharks may have contributed to suicides among sub-groups such as pathological gamblers.

Some 19 percent of illegal gamblers indicated they would increase their monthly gambling spend in response to a hypothetical initiative to allow the use of credit in gambling, compared to two percent of legal gamblers. These results, along with evidence from the international literature may provide an implicit indication that

illegal gamblers are indeed more susceptible to the problems of debt, bankruptcy and loansharking.

Illegal gambling and crime

International literature provides some clues on the habits of gamblers who turn to crime and criminal syndicates who use illegal gambling to earn revenues and launder other ill-gotten gains. Crime committed by gamblers usually consists of non-violent property crime such as theft, shoplifting, embezzlement and misappropriation of money. One study links higher gambling losses with a higher probability of committing a crime later in life, finding that gamblers with losses of US\$ 501 to US\$ 1,000 were 15 percent more likely to later commit a serious crime. This increased to 27.5 percent with losses of US\$ 1,001 to US\$ 5,000. Since illegal gamblers typically bet more, they are more at risk than legal gamblers.

Gambling is also an important revenue source for organised crime with one study indicating that 35 percent of criminal groups regard gambling as a key source of revenue. Moreover, these groups use violence or the threat of violence to collect gambling debts and to keep other criminal groups from encroaching on their illegal enterprises. Criminal syndicates find that bribing law enforcement agents and politicians can help protect their businesses from raids, but in so doing, they are corrupting public servants and contributing to greater risk and uncertainty in the business environment. Such risk and uncertainty harms long-term growth prospects for countries.

Displacing the illegal gambling market

Using the results of the Ipsos survey we also tested a variety of policy scenarios with legal and illegal gamblers, to see which might be most effective at reducing the illegal gambling market. Analysis showed that the most effective policy would be to increase bet options on football leagues currently offered by the HKJC. This would increase total legal gambling revenues by HK\$ 6.1 billion by 2025/26, and HK\$ 5.3 billion of that increase would be displaced from the illegal betting market. The second most effective policy would be to offer betting products on HK football league matches, adding HK\$ 4.8 billion in official gambling revenues by 2025/26, of which HK\$ 4.1 would come from the illegal betting market. While the policy of building a legal casino in Hong Kong would generate HK\$ 4.0 billion in revenue, only HK\$ 0.1 billion of that revenue would be displaced from the illegal market.

Apart from providing more revenue to the HKJC and a greater tax take, extending the range of legal gambling options may have some beneficial social effects by helping to address the issue of excessive gambling within a legal environment, rather than an illegal one. In addition, given that crime is economically inefficient in the long run, extending the range of legal gambling options may result in a net contribution to Hong Kong GDP.

1. INTRODUCTION

The Hong Kong Jockey Club (HKJC) provides consumers with legal, regulated betting opportunities in Hong Kong on horseraces, football matches other than HK football leagues, and a lottery. In so doing it channels substantial value into public finances. The HKJC's revenues in 2014/15 were some HK\$ 31.2 billion, of which HK\$ 24.8 billion was returned to the government through taxes and charitable initiatives – an amount equivalent to just under one third of Hong Kong's current health budget.²

As well as this regulated channel, a sizable illegal market for betting operates in Hong Kong, estimated at some HK\$ 12 billion by the HKJC, accumulated by unlicensed operators in Hong Kong, offshore operators outside of Hong Kong (excluding Macau casinos) and online operators both inside and outside Hong Kong.³ Illegal betting happens across a whole range of activities—including local and international horse racing, football and other sports as well as through internet gambling, underground casinos and unlicensed mah-jong establishments.⁴ The existence of an illegal market of such scale has a number of potential implications in terms of both public finances and societal impact.

Firstly, since revenues fall into the hands of illegal operators, they are not returned to the government or community in the form of taxes or donations. This deprives Hong Kong society of a notional HK\$ 9.4 billion in public financing per annum.⁵ For the vast majority of those who bet it is no more than a leisure pursuit, but as well as the general revenues that legal gambling channels provide to public finances, the HKJC also contributes directly to a number of initiatives that seek to understand and ameliorate some of the potentially damaging effects of excessive gambling. For example, donations to the Integrated Centre on Addiction Prevention and Treatment (ICAPT) and the Ping Wo fund both directly help to treat people with multiple addictions. Channelling more funds to these kinds of initiatives by reducing the illegal market would potentially bring societal benefits, and would also mean that more gambling would fall within the regulated sphere in which responsible gambling is promoted, underage gambling prohibited, damaging behaviours such

² Hong Kong Jockey Club *Annual Report 2014/15*, 2015.; The 2016-17 Budget <http://www.budget.gov.hk/2016/eng/pf.html> Accessed 28/2/2016

³ Hong Kong Jockey Club website "Illegal Gambling in Hong Kong" accessed at Hong Kong Jockey Club website <http://www.hkjc.com/responsible-gambling/en/anti-illegal/index.aspx> 1 April 2016

⁴ According to the Hong Kong Polytechnic University's most recent gambling survey (*The Study on Hong Kong People's Participation in Gambling Activities*, 2012) 0.3 percent of the population engaged in illegal gambling in 2011. Previous surveys by the Polytechnic University found rates of 4.2 percent and 2.1 percent in 2011 and 2005 respectively. Although rates appear to be in decline, the Hong Kong police and HKJC suggest that if anything participation is increasing. One issue may be the wording of the most recent survey question which directly asks people if they have participated in illegal gambling rather than eliciting responses through more indirect questioning methods.

⁵ As indicated in Appendix 2, estimates based on the last three HKJC annual reports indicate that on average 78 percent of HKJC revenues are applied to tax and charitable uses. The presence of illegal gambling operators therefore implies that Hong Kong society is therefore deprived of a notional \$9.4 billion (\$12 billion * 0.78) in annual tax and charitable donations.

as credit availability are limited, and through which gamblers are provided with ready access to information, advice and tools to manage any potential issues.

In this context, Oxford Economics explored the nature and impact of the illegal market in Hong Kong, and its implications for the region's economy and society. In particular, we examine who gambles and in what ways, and what are the products and channels used in the illegal market. We also explore the link between illegal gambling and excessive gambling, the social implications of this, and seek to ascertain the impact for Hong Kong, socially and economically, that could arise if more of the market operated within a legal, effective and responsible regulatory regime.

In order to study these harms and construct alternative scenarios, two surveys were undertaken by Ipsos in the period September to December 2015 to compare the behaviours and characteristics of legal and illegal gamblers. In addition, Oxford Economics collaborated with Assistant Professor Irene Wong of Hong Kong Polytechnic University.

Methodology

A “main survey” of 512 gamblers (both legal and illegal) was conducted in Hong Kong between September and December 2015, using street intercept interviews in major commercial areas of the SAR, and following a quota sampling strategy.

As only a small number (15) of illegal gamblers participated in this survey, the main survey was supplemented by a booster survey of illegal gamblers using a convenience sampling approach in the vicinity of venues which illegal gamblers frequent. This added a further 88 illegal gamblers, allowing for the results of 497 legal and 103 illegal gamblers (600 in all) to be compared.

The purpose of the survey was to understand the nature and characteristics of legal and illegal gambling. Further details of the survey approach are provided in Appendix 1.

These surveys (collectively referred to in this report as “the Ipsos survey”) were supplemented by an extensive international literature review which examined the social, financial and economic issues associated with illegal and excessive gambling. The literature search provided insights and context to the results of the Ipsos survey.

When considering comparisons between legal and illegal gambling, what is relevant is the comparison of these two sub-groups with each other. Accordingly, the results of the unweighted main plus booster surveys, with a total of 600 respondents in all have been used for such comparisons in this section.

The term “excessive gamblers” refers to a combination of the problem and pathological gambling definitions under the Problem Gambling Severity Index (PGSI). “Moderate risk” gamblers under PGSI equate to problem gamblers using other gambling screens while “problem gamblers” under PGSI equate to pathological gamblers using other gambling screens. Low risk gamblers under the PGSI have been termed “low level excessive gamblers” for this study.

More formally, the PGSI scoring system used for this study is:

- “Non-problem gamblers” – those with a score of 0.
- “Low risk gamblers” – those with a score of 1-2 with few or no negative gambling consequences.
- “Moderate-risk gamblers” – those that score 3-7 with some negative consequences.
- “Problem gamblers” – Those that score 8 or more with negative consequences and a possible loss of control.

2. CHARACTERISTICS OF ILLEGAL GAMBLERS

In considering the social impacts of illegal gambling it is first worth analysing some of the basic demographic findings from the Ipsos survey. Doing so will help determine which groups in society appear to be most affected by illegal gambling and/or excessive gambling. It will also allow for comparisons between these groups, legal gamblers and international studies – which are further discussed throughout the report.

2.1 ILLEGAL AND EXCESSIVE GAMBLERS

While a large number of studies have examined the issue of excessive gambling (i.e. problem and pathological gambling) in the past, the specific link between illegal gambling and excessive gambling is a poorly researched area.⁶ In order to understand the relationship in the Hong Kong context, our Ipsos survey examined the characteristics of both legal and illegal gamblers, as well as excessive gamblers as defined under the Problem Gambling Severity Index (PGSI).⁷ The nature of the convenience sample approach adopted in the illegal booster survey means that we must be cautious in inferring that our survey results for illegal gamblers are representative of all illegal gamblers in Hong Kong.⁸ Nonetheless, this approach is consistent with another large study of illegal gamblers in the Netherlands to get at a sub-population of interest that would not yield enough recruits via random sampling methods; allowing us to compare and contrast the characteristics of the illegal gamblers surveyed with those of legal gamblers.⁹

The results are stark. Our survey of gamblers found that illegal gamblers were much more likely to be excessive gamblers than legal gamblers. Some 56 percent of illegal gamblers surveyed were categorised as excessive gamblers (PGSI moderate or high risk) while only 15 percent of legal gamblers were excessive gamblers, a statistically significant difference. This is the first study to link illegal gamblers and excessive gambling in Hong Kong and our findings are in line with the few international studies that exist of this phenomenon (explored in detail later

⁶ The term “excessive gambling” is used in this study for consistency as a way of referring to the issues facing problem and pathological gamblers. An exception is made when past literature refers only to pathological gamblers as this group forms a sub-set within the broader category of excessive gamblers or when past work makes an explicit differentiation between the two groups.

⁷ 95 of the 103 illegal gamblers were in fact “dual gamblers”. This is consistent with the international literature that finds illegal gamblers in fact straddle both the legal and illegal modes of gambling. Nonetheless they will be referred to as “illegal” gamblers throughout the rest of this for purposes of clarity and to distinguish them from purely legal gamblers.

⁸ Moreover, the unweighted survey results are used in comparisons of legal and illegal gamblers, though Ipsos have indicated that weighting does not make a major difference to overall results.

⁹ In addition, studies of excessive gamblers often make use of non-random samples to draw enough subjects in what is a small part of the general population.

in this report). This means that many of the characteristics of excessive gamblers are also those of illegal gamblers.

Fig. 1. Excessive gambling: Legal vs illegal gamblers

Category	Legal gamblers: % (n=497)	Illegal gamblers: % (n=103)
Non-excessive gamblers	62	28
Low level excessive gamblers	24	17
Excessive gamblers	15	56

Source: Ipsos/Oxford Economics

While the survey evidence suggests that illegal gamblers are more likely to be excessive gamblers, it is not possible to say definitively that illegal gambling itself *causes* excessive gambling. Indeed, a more likely pathway might be that excessive gamblers are excessive to begin with before entering the world of illegal gambling. This is because there are many excessive gamblers who do not engage in illegal gambling. It might, however, be the case, for example, that there is an interactive effect between excessive gambling and illegal gambling due to the lack of constraints within illegal gambling establishments. These are issues that we return to in later chapters.

2.2 GENDER

The survey results indicated that some 81 percent of illegal gamblers were male. The predominance of males among illegal gamblers is in line with the results of international studies. A separate issue relates to whether gender is a factor for excessive gamblers. Survey results showed that 90 percent of excessive gamblers were male against 54 percent of non-excessive and low level excessive gamblers. This is consistent with the international literature on excessive gamblers.

2.3 AGE

Four issues are of relevance when considering questions relating to age and gambling:

1. Whether the age of gambling initiation had an effect on a person's participation in illegal/excessive gambling.
2. Whether illegal and/or excessive gambling occurs more frequently among younger age groups.
3. Whether illegal and/or excessive gambling accounts for a disproportionate amount of gambling *within* younger age groups, particularly those under 18.
4. What the effects of raising the gambling age from 18 to 21 would be.

2.3.1 Age at which people start gambling

In terms of the first question, some 21 percent of illegal gamblers began gambling before the age of 18, compared to 11 percent of legal gamblers.¹⁰ This difference is statistically significant. Importantly, 26 percent of excessive gamblers reported gambling before the age of 18 compared to just eight percent of non-excessive and low level excessive gamblers and this difference is also statistically significant. The larger proportion of excessive gamblers who reported gambling before the age of 18 is consistent with major international gambling surveys, including Volberg's results for Swedish excessive gamblers, and with Bruin et al.'s Dutch results, discussed in more detail later in this report.¹¹

In the case of Volberg's Swedish work, while the mean age at which non-excessive gamblers started gambling was 19.9 years old, that for excessive gamblers was 15.6 years old—a statistically significant difference. Indeed the Swedish starting age for excessive gambling is substantially lower than that recorded by the Ipsos survey—19.3.¹² Bruin et al. also find a relationship between earlier gambling age and excessive gambling across various gambling types.

Evidence from Hong Kong on 17 treatment-seeking excessive gamblers noted the “striking similarity in the early experience of excessive gamblers in Hong Kong” — namely that all had grown up in families that participated in gambling regularly and encouraged their children to do so.¹³ These gamblers began gambling at an early age and only sought help when they had heavy gambling losses.

2.3.2 Frequency of gambling by age

In terms of the second question, it should be noted that only very limited information was available on underage gambling with four legal and seven illegal gamblers aged 15-17 recorded in the case of the main plus booster survey sample. Accordingly they have been excluded from the survey discussions here but the next section considers the literature on gamblers under 18. Given this, it is striking that 77 percent of illegal gamblers were aged 30-49, a further 18 percent over 50 and none over 60. The imbalance is less pronounced in the case of excessive gamblers but in essence, approximately 90 percent of both illegal and excessive gamblers

¹⁰ Regardless of their current legal status, almost all of those who did start gambling when underage did so when aged 15-17.

¹¹D de Bruin et al., "Verslingerd aan meer dan een spel" (Report, Universiteit Tilburg, WODC and Ministerie van Justitie, Drug Research, 2005), 9-146. R A Volberg, "Prevalence and risks of pathological gambling in Sweden", *Acta Psychiatrica Scandinavica*, 104 (2001): 250-6.

¹² Some caution should be exercised in such comparisons, however, given that definitions of excessive gambling vary somewhat. For example Volberg uses a SOGS 3+ benchmark to determine excessive gambling whereas the Ipsos survey uses PGSI. The apparent difference in starting ages may in fact reflect some differences in the benchmark instrument used.

¹³ Chi Chuen Chan and Keis Ohtsuka, "Pathways to development of problem gambling among Chinese gamblers in Hong Kong: validation of the Blaszczyński and Nower (2002) model", *Asian Journal of Gambling Issues and Public Health*, 2(1) (2011): 17-28.

appear to be aged over 30. This is a pattern generally seen for legal and non-excessive gamblers as well.

Fig. 2. Age distributions for legal, illegal, non-excessive and excessive gamblers¹⁴

Age	Legal (n = 493) %	Illegal (n = 98) %	Non-excessive/low excessive (n = 434) %	Excessive (n= 77) %
18-29	20	5	14	14
<i>of which 18-20</i>	10	-	4	3
30-49	33	77	29	37
50 or above	46	18	60	48
<i>of which over 60</i>	24	-	21	27

Source: Ipsos/Oxford Economics

It is worth comparing these findings with some of the international literature. Consistent with the Ipsos survey results, Bruin et al. pointed out that Dutch illegal gambling was typically a middle aged phenomenon.¹⁵

In terms of excessive gambling and age, the evidence is mixed. Volberg's Swedish work finds that its most important predictor to be age, with young people (15-24) having a 151 percent higher risk of exhibiting lifetime excessive gambling problems than those aged 25 or over. This work found a substantial number of excessive gamblers in young age groups, with 35 percent being aged 30 or below¹⁶, while the Australian Productivity Commission (PC's) 1999 work found age to be one of the defining characteristics of gambling.¹⁷ The PC work found 26.4 percent of Australian excessive gamblers were aged under 25 but that gamblers over 70 are rarely excessive gamblers.

These results are somewhat in contrast to the Ipsos survey results for Hong Kong, where relatively few excessive (or illegal) gamblers are aged below 30, though the Australian results are consistent with the fall off in excessive gambling amongst older age groups.

Weite et al's 2011 study of gambling across the lifespan cited a large scale national US survey of adults and of youth, finding that excessive gambling peaked at age 31-40.¹⁸ Kunzi's et al.'s Swiss work is also suggestive of an older pattern for

¹⁴ Figures exclude gamblers aged 15-17 and have been recalibrated to reflect this. Figures may not sum to 100 percent due to rounding.

¹⁵ They record also the average age for first illegal gambling experience as 29.6. However for excessive illegal gamblers it was 24.1, a statistically significant difference. This is also consistent with the other evidence indicating that excessive gambling tends to be associated with earlier age of gambling initiation.

¹⁶ Volberg 2001, op. cit.

¹⁷ Australia's Productivity Commission, "Australia's gambling industries" (Inquiry Report, Australia Productivity Commission, 1999).

¹⁸ John W Weite et al., "Gambling and problem gambling across the lifespan", *J Gamb Stud*, 27 (2011): 49-61.

excessive gambling, indicating that excessive gambling issues typically manifested themselves at 27.5 years.¹⁹

Both these sets of results may be more consistent with our findings in Hong Kong, where most excessive gambling appears to take place within older age groups — or at least peaks within them. In the case of Hong Kong both illegal and excessive gambling appear to peak in middle age.

2.3.3 Gambling by those aged under 18

In terms of the nature of gambling *within* the under 18's, such gambling is by definition illegal. That said there remain questions about its prevalence and the extent to which excessive gambling impacts on such age groups. Past Hong Kong studies illustrate the nature of the issues.

For example, Lui's Hong Kong street survey of 218 underage gamblers aged 15-17, conducted in January 2015, indicated that 80 percent had engaged in some form of virtual gambling and nine percent in some form of sports betting. Some 19 percent of this age group used real money to fund their virtual gaming, with an average annual spend of HK\$ 3,817.²⁰ Previous research conducted by Hsu, Lam and Wong found that the majority (91 percent) of the 431 adolescent (15-20 years) gamblers they surveyed, were 'social gamblers' while seven percent (31) were 'excessive gamblers' — according to the DSM-IV-MR-Juvenile criteria.²¹

Further work by Wong investigated the specific phenomenon of internet gambling among 1,004 Hong Kong high school students in 2010.²² While 63.5 percent of the subjects gambled offline, only 3.5 percent reported gambling online with money in the past year.²³ In general, 71.4 percent of internet gamblers began wagering on free sites before moving to paid ones, indicative of their role as a gateway. Some 60 percent of internet gamblers began internet gambling at 11 years of age or below.²⁴

¹⁹ Kilian Kunzi, Tobias Fritschi and Theres Egger, "Gambling and gambling addiction in Switzerland" (Summary Report, BASS, BASS, 2004), 1-13.

²⁰ Francis T. Lui, "Report on Hong Kong Underage Betting Activity: How Virtual Gaming is Consuming Underage in Hong Kong" (Report, Hong Kong University of Science and Technology, Center for Economic Development, 2015).

²¹ Siu Man Hsu, Lok Man Charlene Lam and Irene Lai Kuen Wong, "A Hong Kong school-based survey: impacts of parental gambling on adolescent gambling behavior and mental health status", *Asian Journal of Gambling Issues and Public Health*, 4 (2014): 1-12.

²² Irene L K Wong, "Internet gambling among high school students in Hong Kong", *Journal of Gambling Studies*, 30(3) (2014): 565-76.

²³ Of these, some 10 (or 28.6 percent of online gamblers) exhibited signs of being excessive gamblers, as compared to 11 percent for offline underage gamblers. Wong cites supporting evidence from Western studies suggesting that internet gamblers have a higher prevalence rate of excessive gambling than offline gamblers. Underage internet gamblers were found to be 1.5 times to 3.2 times more likely to develop pathological and at risk gambling than offline gamblers.

²⁴ These figures suggest that internet gambling was less prevalent in Hong Kong than in comparable Western countries at the time. For example Wong cited contemporary studies indicating that 23.3 percent of Icelandic students (aged 13-18) gambled online during the previous 12 months, while 8 percent of Canadian college studies (18-20) did so.

However, given the fact the work was carried out several years ago, the situation may have changed since the time of the study. In particular, Lui's results suggest that the prevalence and use of money within online gambling may have grown since the time of Wong's work.

In earlier work examining the broader phenomenon of underage gambling, and using the same DSM-IV screen, Wong surveyed 1,001 students aged 12-17 in 2008, finding that some 60 percent of survey participants were found to have gambled in the past year (a rate comparable to Western studies of 60-80 percent underage prevalence), but 69 percent were infrequent players who bet less than four times a month.²⁵ Just 5.2 percent of participants were excessive gamblers and out of all gambling participants, 8.7 percent were excessive gamblers.²⁶ This range was similar to the range reported in a number of Western studies (2-9 percent).²⁷

A further issue worth considering is that while the rates of underage excessive gambling in Hong Kong remain within the range of results for Western countries, they nonetheless appear to be high relative to the general population. The most recent Hong Kong Polytechnic University survey of the Hong Kong gamblers found 3.3 percent of gamblers to be excessive gamblers.²⁸ The underage excessive gambling rates of 5.2 percent and seven percent, cited above, are higher than this. So, while most excessive gambling appears to occur in older age groups, the literature hints that excessive gambling may be a relatively greater problem for those who do engage in underage gambling.

2.3.4 Raising the gambling age

A final question relates to the impacts of raising the gambling age from 18 to 21. The legal age of gambling is an area of debate in Hong Kong. However, Lui's work surveying 102 HKJC sports bettors aged 18-20 indicates that some 49 percent of them would probably turn to illegal bookmakers in the event of an increase in the legal gambling age from 18 to 21. Conversely, assuming no change in the current regime, Lui's work also suggests that 95 percent of underage sports bettors would turn to HKJC betting when they reach the age of 18. The effects of raising the gambling age are examined in more detail in Chapter 6.

2.4 MARITAL STATUS

Marital status was also analysed within the survey findings and showed that, of the illegal gamblers in our sample, 67 percent were currently married compared with 71

²⁵ Irene Lai Kuen Wong, "Gambling behavior among underage adolescents in Hong Kong", *Asian Journal of Gambling Issues and Public Health*, 1 (2010): 47-60. 75.5 percent of the sample made their first bet between the ages of 6-14, with the mean age of initiation being 10.5 years. However 90.4 percent of excessive gamblers began gambling before they were 15 with the mean age of first bet being 9.25 years old.

²⁶ The study found that 5.2 percent of overall participants were excessive gamblers, but taking into account that only 60 percent of participants were gamblers, this adjusts to 8.7 percent excessive gamblers among the students who gambled.

²⁷ Among other things, excessive gambling was correlated to the age of gambling initiation, mental health problems and parents and peers having gambling problems.

²⁸ The Hong Kong Polytechnic University, "The study on Hong Kong People's participation in Gambling Activities" (Study , The Hong Kong Polytechnic University, Department of Applied Social Sciences, 2011), 156.

percent of legal gamblers. Some 79 percent of excessive gamblers were married – compared to 77 percent of non-excessive and low level excessive gamblers. Given the potential for family stresses due to excessive gambling, which will be discussed in detail in Chapter 5, the absence of any difference in marital status in our sample is interesting.

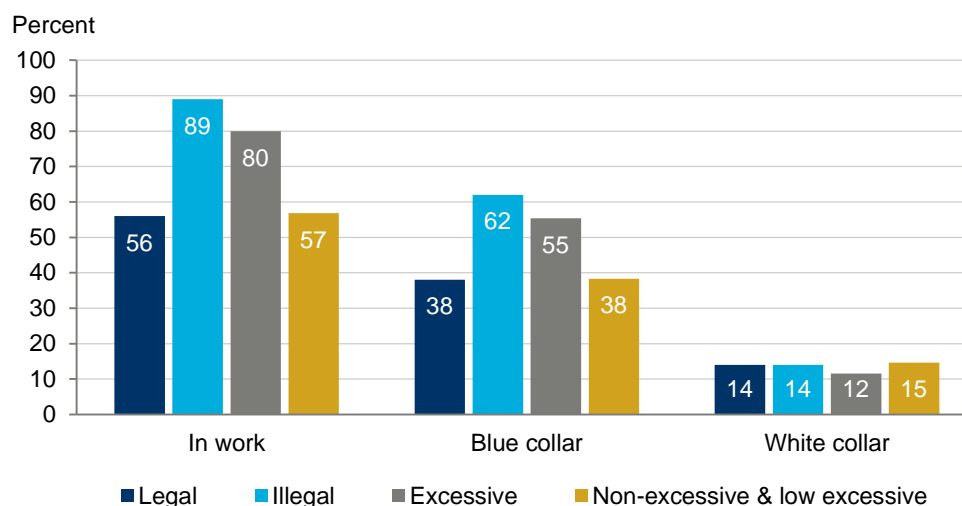
The international literature itself appears to provide mixed results on the impact of marital/single and relationship status, on issues such as excessive gambling and comorbidities, with some studies suggesting its importance and others pointing to different demographic issues.

In the case of Hong Kong, it is possible to speculate that, given a large proportion of illegal and excessive gamblers are middle aged, one might expect relatively high rates of marriage in such groups. Moreover marital status alone does not indicate anything about the nature of the relationship, so many of the costs associated with excessive gambling may occur *within* a marriage. We return to these questions in Chapter 5.

2.5 OCCUPATION AND INCOME

The figure below shows the proportion of illegal, legal, excessive and non-excessive and low excessive gamblers in work, in blue collar and in white collar jobs.

Fig. 3. Occupation-type and work status



Source: Ipsos/Oxford Economics

While a similar proportion of illegal, legal, excessive and non/low-excessive gamblers were white collar workers, a larger proportion of illegal and excessive gamblers were blue collar workers, as compared to legal and non/low-excessive gamblers. These differences were statistically significant.

Surprisingly, the proportion of illegal gamblers engaged in some form of work (89 percent) was far higher than the case for legal gamblers (56 percent). This difference was also statistically significant and it could be due to the disproportionate number of males engaged in illegal gambling, since they are also

more likely to be in work. It may also reflect the age-related issues discussed above — specifically the apparent decline of illegal gambling participation with age, with no illegal gamblers over the age of 60 recorded in the Ipsos survey work. In other words, little or no illegal gambling appears to take place beyond working age. Indeed while 18 percent of legal gamblers were retired, no illegal gambler was recorded as being so.

The high rates of employment for excessive gamblers in particular may be seen as contrasting with other studies, discussed later, suggesting employment problems among such groups in Hong Kong and elsewhere. However, the situation may be more nuanced since such “employment problems” may relate to high job turnover and/or low productivity and promotional prospects rather than necessarily involving unemployment.

The Ipsos survey also recorded the incomes of legal, illegal, non-excessive and excessive gamblers across a variety of income bands but the number of respondents across bands does not allow us to test whether differences between legal and illegal gamblers are statistically significant. The fact that more illegal gamblers are employed, however, would imply they have higher income. In contrast, the excessive gambling results recorded in New York by Volberg showed excessive gamblers to be lower income earners.²⁹ Likewise, 2007 work by Weite et al. of US adults found that low socio-economic status persons, and those living in disadvantaged neighbourhoods tended to have higher rates of excessive gambling.

The factors at work here may be similar to those for occupation. That is, given that excessive and illegal gambling is skewed towards middle aged men, albeit with a strong blue collar representation, their incomes and/or that of their household may be relatively high, when compared to legal/non-excessive gamblers, a substantial proportion of whom are retired.

2.5.1 Characteristics of illegal gamblers

Taken together, the demographic characteristics presented here help build up a picture of a “typical” illegal gambler. Such a person may be characterised as a middle aged male, married and in a blue collar job. The characteristics of excessive gamblers would appear to be much the same.

One interesting point from the international evidence is that while the age of gambling initiation might appear to be a predictor for excessive gambling, excessive gambling itself does not appear to peak until middle age, while illegal gambling also appears to be a middle aged phenomenon.

These findings are also consistent with such international evidence. They suggest that middle aged males are typically involved in illegal gambling, that excessive gambling profiles likewise appear to be dominated by middle aged men and that excessive gambling, in particular, declines with age.

²⁹ Rachel A Volberg, "Gambling and problem gambling in New York: A 10-year replication survey, 1986 to 1996" (New York Replication Report, Gemini Research, 1996)

To the extent that societal harm is being visited upon sections of Hong Kong society it may therefore be middle aged men and their families which account for the largest single amount of such social costs.

The evidence to date does not suggest that gambling prevalence or excessive gambling among Hong Kong youth is high by international standards. However, comparing previous research by Wong with more recent evidence from Lui suggests that the incidence of online gambling may be growing among Hong Kong's youth.

Moreover, while comparable to other societies, underage gambling rates of some 60 percent may be of concern to policymakers. Further, the academic research cited above also suggests that the proportion of excessive gamblers within the underage gambling population may be relatively higher than is the case for the general population. Therefore excessive gambling may also be a particular problem within underage gamblers.

3. NATURE OF THE ILLEGAL MARKET

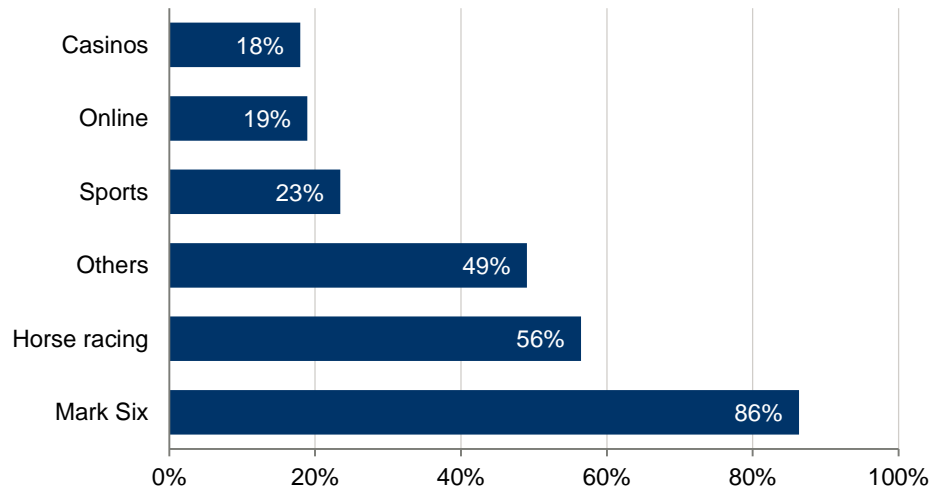
This chapter explores the nature of the legal and illegal betting markets that operate in Hong Kong. Drawing primarily on the survey data, it examines how gamblers regard and use the various product offerings in Hong Kong and neighbouring jurisdictions, drawing comparisons between the legal and illegal markets. In addition, it assesses the channels used by illegal gamblers and the reasons that certain channels might appeal to illegal gamblers and how the risk involved in illegal channels might be interacting with excessive gambling behaviours.

3.1 GAMBLING PARTICIPATION

The Ipsos survey, specially commissioned for this study, showed that amongst gamblers as a whole by far, the most widely used gambling product in Hong Kong is the Mark Six lottery and the least popular gambling activity is gambling in casinos. Our survey revealed that 86 percent of survey participants had taken part in the lottery. The second-most-popular gambling product was horse racing, with 56 percent of survey respondents participating. Only 18 percent indicated that they had gambled in casinos in the past 12 months – and the vast majority gambling in Macau casinos.³⁰ These results use the weighted main survey sample to be representative of the Hong Kong population. They include the illegal gamblers captured in this survey but exclude the booster convenience survey of illegal gamblers.

³⁰ Our study did not specifically measure the prevalence of virtual games with gambling elements (VGGE); a product that the literature suggests is popular with Hong Kong youth. In this context, more detailed investigations into the way that such behaviours are changing among younger consumers, and how these interact with the existing gambling market will be an important area of future research.

Fig. 4. Gambling participation in the past 12 months³¹



Source: IPSOS/Oxford Economics

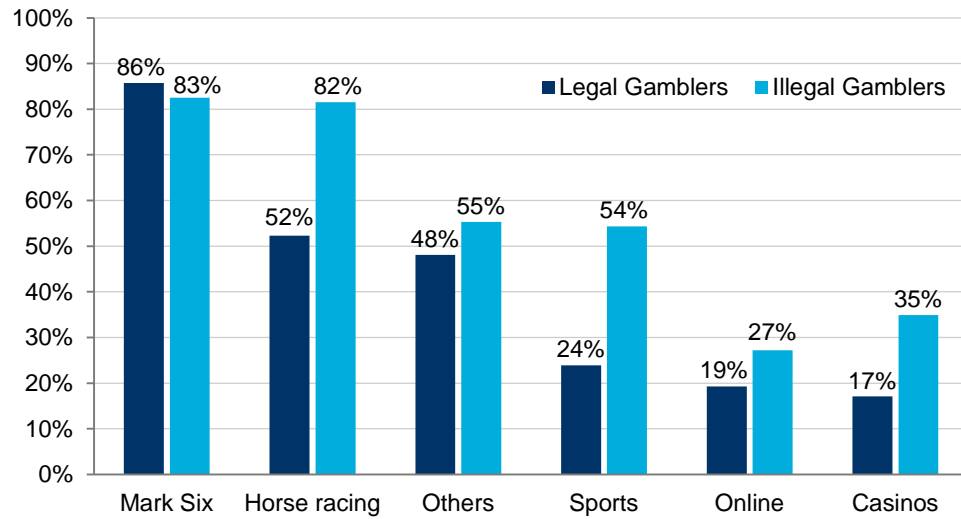
3.2 USE OF LEGAL AND ILLEGAL PRODUCTS

Our survey allowed us to investigate the differences between products and behaviours in the legal and illegal market. In terms of the kinds of gambling undertaken, we found that, in our sample, illegal gamblers were more likely to gamble on horse races, other sports products and in casinos than the cohort using exclusively legal channels.

The figure below indicates the extent to which both legal and illegal gamblers participated in gambling activities over the last 12 months. Note that for illegal gamblers this relates to their participation in *all* forms of gambling, legal or illegal. So for example, while 52 percent of legal gamblers participated in horse racing 82 percent of illegal gamblers did so as well. However, for illegal gamblers this 82 percent would include a mix of legal and illegal horse race betting. Note that as this involves a comparison between legal and illegal gamblers, these results relate to the unweighted main plus booster survey.

³¹ Online betting products include betting via the HKJC website and all other online websites. 2011 work by the Hong Kong Polytechnic University (HKPU) finds lower rates of horse racing prevalence (20.7 percent when rebased to include only gamblers) and sports betting (10.6 percent when rebased). The reasons for this are unclear at present but could relate to differences in sample design and timing. See The Hong Kong Polytechnic University, "The study on Hong Kong People's participation in Gambling Activities" (Study , The Hong Kong Polytechnic University, Department of Applied Social Sciences, 2011), 156.

Fig. 5. Participation of legal and illegal gamblers in all forms of betting in the past 12 months



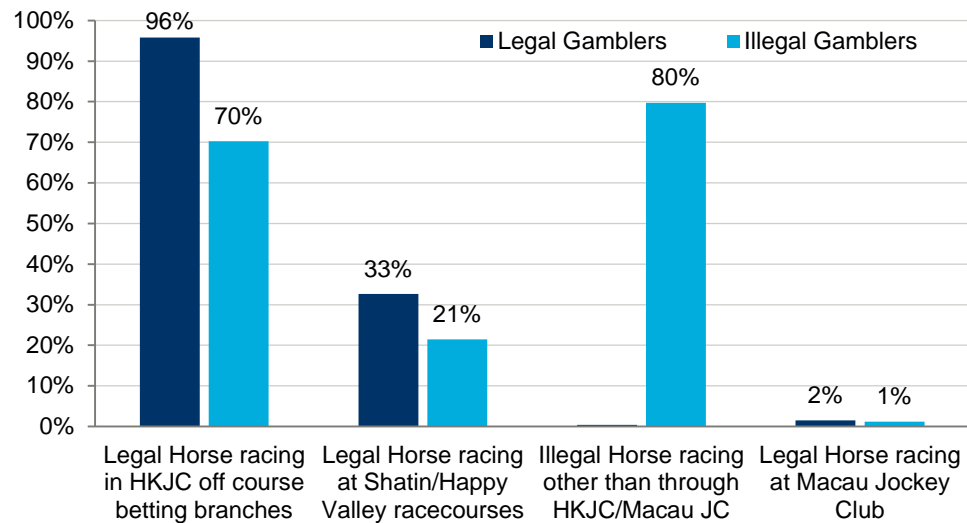
Source: Oxford Economics

Details of categories of gambling where there appears to be a substantial difference in illegal and legal patterns of behaviour are provided below for gamblers who bet in three different product categories where the differences between legal and illegal gambling participation are statistically significant. These include horse racing, sports gambling and casinos. For all these products, illegal gamblers tend to participate in legal variants of the same betting products but with lower participation rates on the legal products, as discussed below. In addition, however, illegal gamblers also bet illegally in these areas.

3.2.1 Participation in horse racing

Though they engage in both forms of gambling, illegal gamblers tend to participate more in illegal horse racing than they do in legal horse racing through the HKJC, with 80 percent of illegal horse racing gamblers placing bets through illegal means, 70 percent betting through legal off-course betting branches and 21 percent betting at Shatin or Happy Valley. These differences are statistically significant. Conversely, legal gamblers who bet on horse racing did not bet on illegal off-course gambling but had somewhat higher levels of betting participation through off-course betting branches and on-course betting at Shatin or Happy Valley than illegal gamblers.

Fig. 6. Legal and illegal gambling participation in horse racing in the past 12 months for horse racing bettors



Source: Ipsos/Oxford Economics

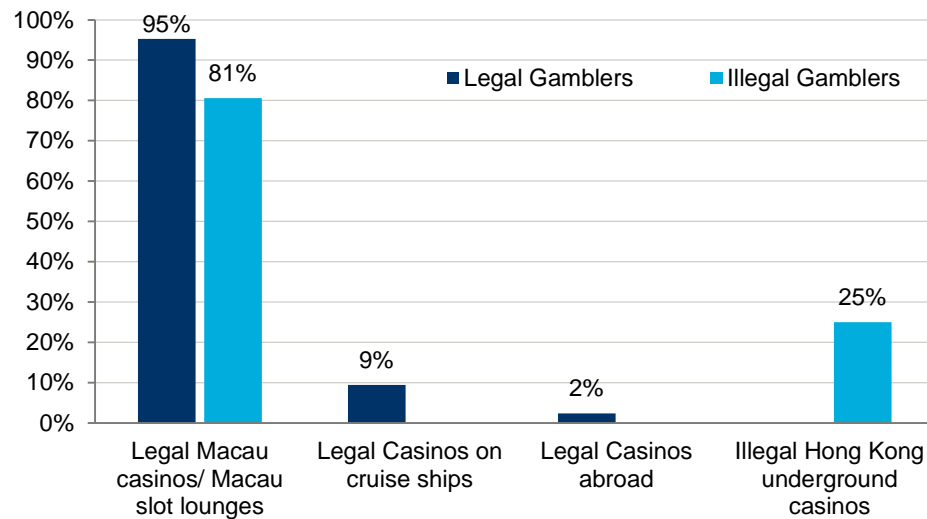
A recent report that examined illegal horse race betting has suggested that its popularity is due to the fact that illegal bookmakers offer many more overseas races and race days than the HKJC.³²

3.2.2 Participation in casino gambling

While 81 percent of illegal gamblers betting in casinos gambled in Macau, only a quarter of them bet in Hong Kong underground casinos. The relatively low participation rate of Hong Kong illegal casino gamblers in underground casinos may be explained by the presence of a legal alternative, albeit an “offshore” one – i.e. Macau.

³² Francis T. Lui, "Report on illegal betting on overseas horseraces in Hong Kong" (Presentation, Hong Kong University of Science and Technology, Center for Economic Development, 2015).

Fig. 7. Legal and illegal gambling participation in casino betting in the past 12 months for casino bettors³³



Source: Ipsos/Oxford Economics

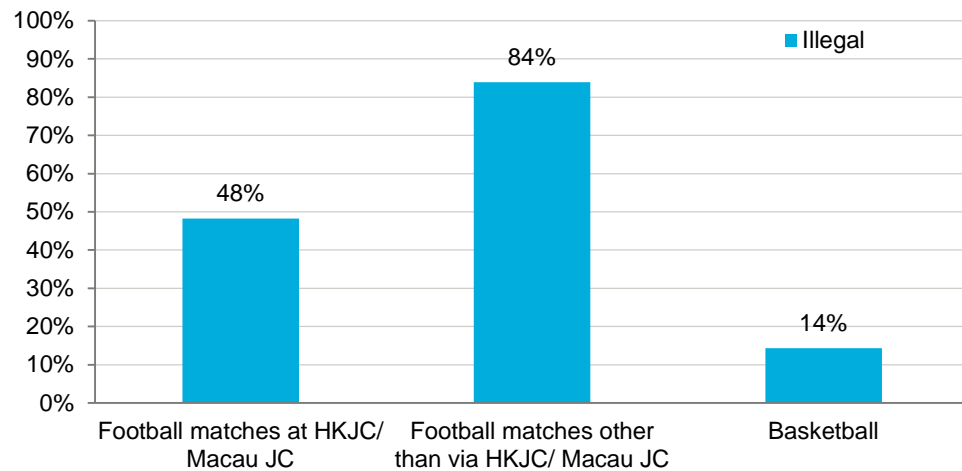
3.2.3 Participation in sports betting

As with horse racing, for other forms of sports betting, the participation of illegal gamblers in illegal products is higher than their engagement with legal products. Within sports betting, football betting is by far the most popular activity among illegal gamblers, with 84 percent of illegal sports bettors participating in illegal football match betting and 48 percent betting on HKJC football matches.³⁴ Football is the only sport people in Hong Kong can bet on legally and only 16 percent of illegal sport bettors gambled on sports other than football. Of those, the vast majority (14 percent out of 16 percent of other sports bettors) bet on basketball.

³³ Casinos on cruise ships and casinos abroad are both legal forms of gambling. No illegal version of these activities exists.

³⁴ The percentages add up to more than 100 because gamblers bet in more than one product subcategory.

Fig. 8. Illegal gambling participation in sports in the past 12 months for sports bettors

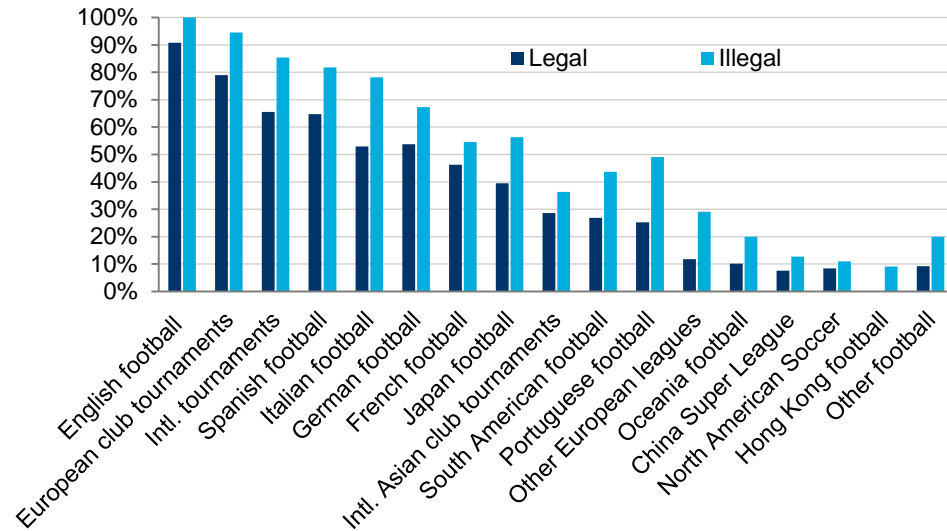


Source: Ipsos/Oxford Economics

Within football betting, legal and illegal gamblers have similar orderings of participation rates on different leagues, with the difference being that illegal gamblers in our sample have higher participation rates than legal gamblers. Out of the 55 illegal gamblers in our sample who bet on these football leagues, about one-third placed bets via illegal channels, covering almost all the same leagues.

A greater range of football betting options and/or attractive odds may be factors in attracting illegal gamblers to use illegal channels. The Ipsos survey work suggests that illegal football bettors in particular value the illegal market as providing more attractive odds than the HKJC alternative, with 55 percent agreeing that illegal football betting establishments offered attractive odds, compared to 36 percent agreeing that HKJC football betting did (a statistically significant difference). This issue is also taken up in the following chapter.

Fig. 9. Legal and illegal gambling participation across football leagues

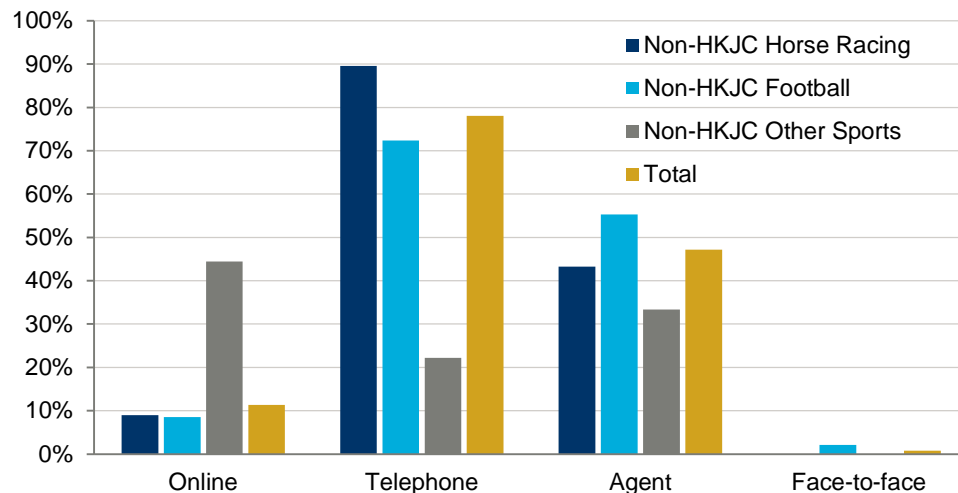


Source: Oxford Economics

3.3 USE OF DIFFERENT BETTING CHANNELS

Unlike the previous sections, which analysed legal and illegal gambler differences across products, this section looks at betting channels used by illegal gamblers only for non-HKJC products—horse racing, football betting, and gambling on sports other than football. Across all three categories of products, face-to-face betting was the least used channel, followed by online betting. The most popular channel was telephone betting, with betting via an agent second.

Fig. 10. Channels used by illegal gamblers for non-HKJC products



Source: Ipsos/Oxford Economics

The overall pattern for all products (total bars) generally holds for individual products, save for gambling on sports other than football where online betting seems to be the most popular channel, but the small number of such illegal bettors (four) makes it difficult to draw definitive conclusions.

In summary, the evidence has demonstrated that there are important differences in the choices and preferences of illegal gamblers in comparison to those who only bet in the legal market. In particular:

- Illegal bettors are clearly more avid gamblers than legal ones, betting across the legal and illegal markets with higher participation rates than legal gamblers across all forms of gambling, except Mark Six (where the difference is minor).
- For horse racing, and football betting, illegal gamblers participate more in illegal betting products than legal ones. For casino betting, however, the trend is the reverse. Illegal casino gamblers appear to gamble more in Macau than in illegal underground casinos. This could imply that Macau is more or less meeting the expectations of illegal casino gamblers whereas the same is not true of legal horse racing and football betting opportunities.
- Telephone betting seems to be the most popular channel for illegal gamblers to place bets on non-HKJC products except for sports other than football, where online betting is the most popular channel for the small number of bettors who do bet on other sports.

These facts have implications for the way in which illegal gambling might best be addressed in Hong Kong. They suggest that illegal gamblers are unlikely to be deterred in their habits given their avid interest in gambling. An alternative approach might therefore be a form of gambling liberalisation. This could be done through offering some of the features that the illegal market currently offers to such gamblers – such as attractive football betting odds. While such a policy would have its costs, it would also allow illegal gamblers to be “brought into the (legal) fold” which may help address some of the excessive gambling issues found amongst illegal gamblers.

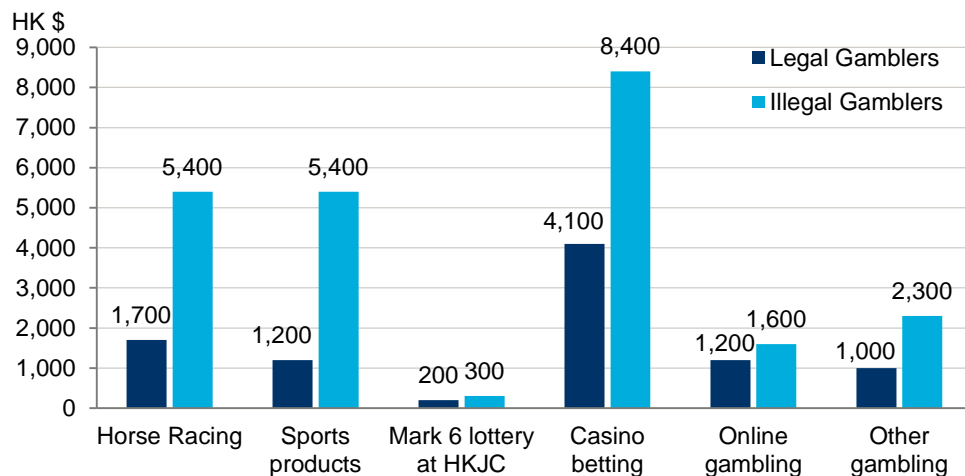
4. MOTIVATIONS FOR ILLEGAL AND EXCESSIVE GAMBLING

Both our survey data and the wider literature provide a number of important insights into the motivations and incentives for illegal gambling behaviour in Hong Kong; and these, in turn, relate (as we will discuss in Chapter 5) to the kinds of social implications that arise from the existence of an illegal, unregulated market. There are important distinctions in behaviours that are discernible from the data.

4.1 AMOUNTS BET ACROSS GAMBLING PRODUCTS

The Ipsos survey data and the wider literature indicate that illegal gamblers bet considerably more than those who only gamble legally. The Ipsos survey of legal and illegal gamblers asked participants how much they bet in the past month on various product subcategories, which were amalgamated into the broader product categories shown below. A comparison of the amounts bet by legal and illegal gamblers shows that, on average across all such products, illegal gamblers in our sample bet larger sums of money than legal gamblers.

Fig. 11. Average spend for legal and illegal gamblers who bet in the last month



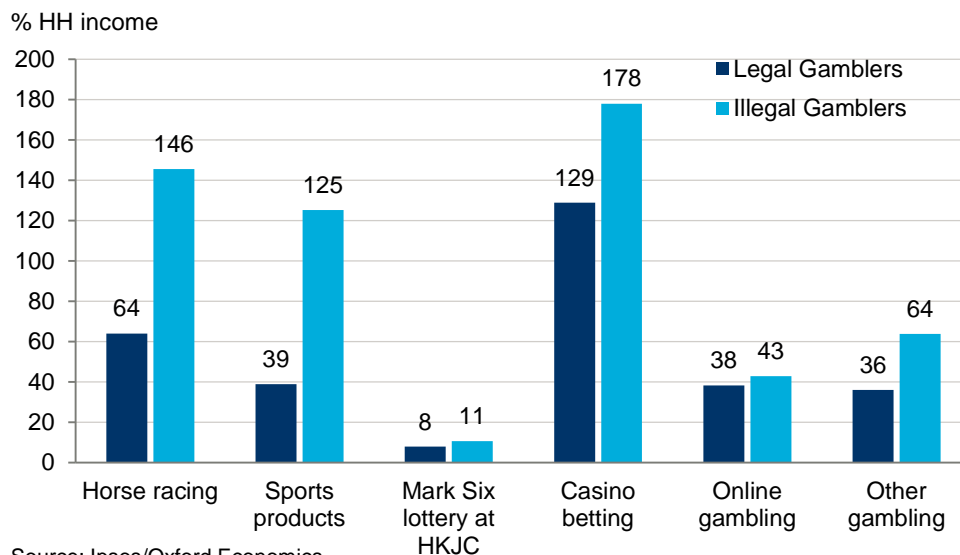
Source: Ipsos/Oxford Economics

In terms of the categories of gambling that elicited the highest spend, the pattern did not differ much between legal and illegal gamblers. For legal gamblers, the average gambler bet the most in casinos, followed by horse racing, online gambling, sports products, other gambling, and Mark 6. Illegal gamblers spent more than legal gamblers in each of the above categories. Like legal gamblers, the highest single spending category for illegal gamblers was casinos. However illegal gamblers spent more than twice as much at such facilities than legal gamblers. Illegal gamblers also spent large amounts on horse racing and sports products. The

differences in average spend between legal and illegal gamblers is statistically significant for these categories.

In general, not only did illegal gamblers bet more in absolute terms than legal gamblers on average, but they also bet more as a percent of their monthly household income. The overall pattern shown in figure 11 still holds in figure 12 below, but now we can see some unsustainable patterns of betting for illegal gamblers in casino, horse race, and sports betting. Also notable is the unsustainable pattern of spend in casinos and the large betting outlay horse racing by legal gamblers.

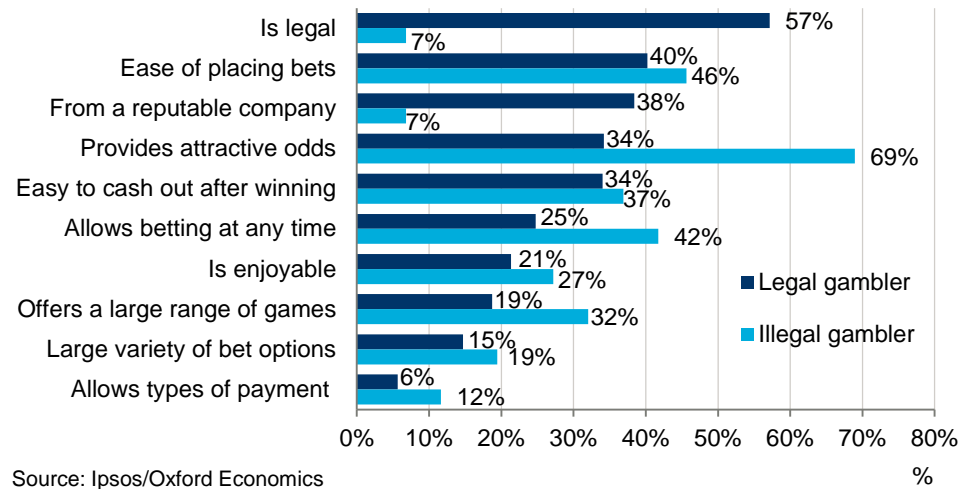
Fig. 12. Average spend for legal and illegal gamblers as a percent of monthly household income for bettors in the last month



4.2 PERCEPTIONS OF DIFFERENT GAMBLING PRODUCTS

In addition to questions on gambling participation and expenditure, our survey also asked respondents to match attributes with different gambling products and to select the three most important attributes they took into account when placing bets. The purpose was to measure perceptions of these products among different types of gamblers and explore what it was about illegal gambling that offered a different experience to the legal one. We found that illegal gamblers seem to place much more value on attractive odds, the ability to bet at any time of day or night, and having a large range of games to bet on. This is consistent with the profile of illegal gamblers as very avid gamblers.

Fig. 13. Top three attributes for legal and illegal gamblers when betting

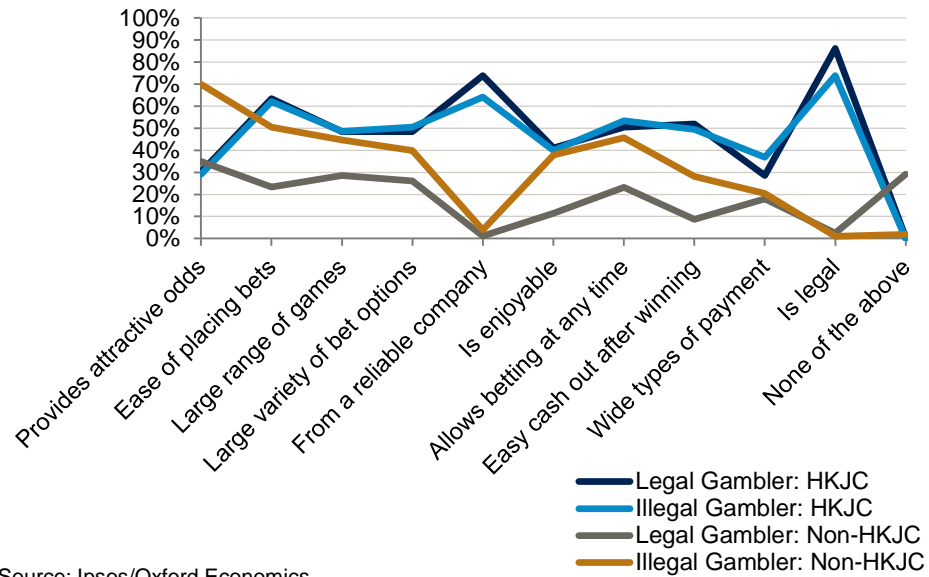


A comparison can be made between HKJC and non-HKJC options for horse racing and football. While attributes accorded to HKJC horse racing by both legal and illegal gamblers are similar in most cases, more legal gamblers value that the product offered is from a reliable or reputable company and that HKJC horse racing is a legal product. More illegal gamblers, however, place value on having many payment methods than legal gamblers do. These are consistent with general patterns seen across all products.

When it comes to non-HKJC horse racing, about twice as many illegal gamblers in our sample valued the attractive odds offered and the ease of placing bets. More than three times as many illegal gamblers valued how enjoyable non-HKJC horse racing was compared to legal gamblers. Similarly, more illegal gamblers placed value on having a large variety of games to bet on, a large variety of bet options, being allowed to bet at any time and the ease of cashing out after winning.

This gives us some insight into the incentives that are most relevant in considering why gamblers participate in the illegal rather than the legal horse racing market. It indicates the avid interest illegal gamblers have in gambling, the importance which attractive odds play for them, their wide ranging gambling interests and the sheer level of enjoyment illegal gamblers get from gambling.

Fig. 14. Legal and illegal gambler perceptions of HKJC and non-HKJC horse racing products



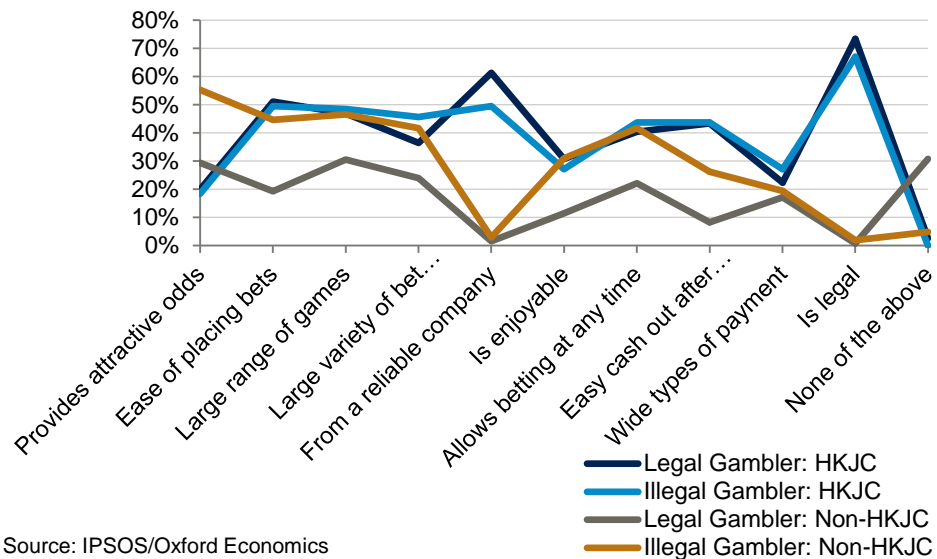
Source: Ipsos/Oxford Economics

For HKJC football matches, more illegal than legal gamblers valued a large variety of bet options. Not surprisingly, more legal gamblers than illegal ones valued the HKJC as a reliable or reputable company. For non-HKJC football matches, approximately three times as many illegal gamblers as legal gamblers valued the enjoyment factor and the ease of cashing out after winning. About twice as many illegal gamblers over legal gamblers placed value on attractive odds and the ease of placing bets. More illegal gamblers than legal ones valued a large range of games to bet on, a large variety of bet options, and betting at any time.

The gambling literature reveals similar results. Authors of a Dutch study sought out advice from industry stakeholders on the nature of the illegal market and why gamblers were drawn to illegal betting.³⁵ For example, illegal bookmaking offered no limit to the amount bet and prizes could be much higher than with legal operators. This again illustrates how, similar to horse racing, illegal gamblers betting on football are motivated by attractive odds, gambling variety and the sheer enjoyment of gambling. It also fits the profile of illegal gamblers as avid gamblers who bet far more than their legal counterparts.

³⁵ D de Bruin et al., "Verslingerd aan meer dan een spel" (Report, Universiteit Tilburg, WODC and Ministerie van Justitie, Drug Research, 2005), 9-146.

Fig. 15. Legal and illegal gambler perceptions of HKJC and non-HKJC football betting



Source: IPSOS/Oxford Economics

4.3 THRILL-SEEKING AND ILLEGAL GAMBLING

What the results indicate most broadly is that motivations and incentives are somewhat different for those who gamble illegally than for those who only gamble within legal markets. In particular, and as our survey results reinforce, illegal gamblers appear to seek thrills more than legal gamblers. That is, it is not just a question of ease of access or timing, but rather there are more fundamental aspects of the illegal gambling experience that add to its appeal.

Our survey found that illegal gamblers were more likely than legal gamblers to engage in thrill-seeking behaviour over the last 12 months. In the table below, the differences between legal and illegal gamblers for smoking, inebriation outside work and clubbing activities were statistically significant.

Fig. 16. Proportion of gamblers engaging in thrill-seeking behaviour over the last 12 months

Category	Legal gamblers: (n=497) (%)	Illegal gamblers: (n=103) (%)
Travelling on public transport without a fare	66	91
Smoking	56	92
Inebriation outside work	19	37
Queue jumping	11	16
Clubbing	10	28

Source: Ipsos/Oxford Economics

The 2011 study of gambling conducted by Hong Kong Polytechnic discussed the behavioural profile of excessive gamblers, finding that they “often exhibited a

personality that sought sensation, engaging them in stimulating activities and having a low toleration in boredom.”³⁶ Again, this demonstrates how similar illegal and excessive gamblers are in character.

Illegal gamblers were also more frequent gamblers than legal ones, as illustrated in the table below. Differences in gambling frequency between the two groups are statistically significant. The gambling frequency of illegal gamblers further reinforces the profile of illegal gamblers as avid gamblers.

Fig. 17. Frequency of gambling activity: Legal vs illegal gamblers

Category	Legal gamblers: % (n=497)	Illegal gamblers: % (n=103)
Every day	2	9
5-6 times a week	5	19
3-4 times a week	13	27
Less than 3-4 times a week	80	45

Source: Ipsos/Oxford Economics

In summary, the survey results suggest that illegal gamblers bet more frequently, commit larger amounts of money than legal gamblers, undertake a wider spread of gambling activities than legal gamblers and have different preferences in terms of the factors they felt were most important in their choices. And as we have established from our survey work, and not surprisingly given what we now know about their gambling incentives, there is a high degree of crossover between illegal gamblers and excessive gamblers. Excessive or otherwise, illegal gamblers appear to be particularly avid gamblers who may be less risk averse than other gamblers and who enjoy gambling across a wide range of gambling types.

4.4 LINKS BETWEEN ILLEGAL AND EXCESSIVE GAMBLING

A key question when considering the link between illegal and excessive gambling is the issue of causality. Does illegal gambling cause gamblers to become excessive gamblers? Or do excessive gamblers become illegal gamblers? Or is there some more complex interaction between the two?

While it is difficult to isolate causality with respect to excessive gambling, a common sense approach can be employed. The evidence suggests that illegal gamblers often comprise of those people for whom legal forms of gambling are not sufficient.³⁷ Instead these individuals seek out more variety and more adventurous forms of gambling. So they turn to the illegal market. Accordingly, it is not surprising to find a substantial overlap between illegal gamblers and excessive gamblers; or to

³⁶ The Hong Kong Polytechnic University, "The study on Hong Kong People's participation in Gambling Activities" (Study , The Hong Kong Polytechnic University, Department of Applied Social Sciences, 2011), xviii.

³⁷ Australia's Productivity Commission, "Australia's gambling industries" (Inquiry Report, Australia Productivity Commission, 1999). And: Australian Government, "Gambling" (Inquiry Report, Australian Government: Productivity Commission, Productivity Commission, 2010), 632. The PC's 1999 work suggested that 15-20 percent of the adverse effects associated with problem gambling (e.g. family tensions, debt, depression) would have occurred anyway – i.e. implying 80-85 percent of such effects were due to gambling.

find that excessive gamblers are overrepresented amongst illegal gamblers. Taken together the evidence suggests that illegal gamblers are a particularly avid group of gamblers for whom legal avenues do not appear to be sufficient to fully satisfy their interest in gambling. They tend to gamble over a wider variety of games, more frequently and bet larger amounts.

That said, there are a number of factors that exacerbate excessive gambling among illegal gamblers. These include the lack of “brakes” which are typically found in regulated legal gambling establishments and act to restrain the habits of excessive gamblers. This is discussed in more detail in Chapter 6.

Evidence of the overlap and relationship between excessive gambling and illegal gambling can be found in a number of international studies as well as the Ipsos survey work undertaken for this study. No single study appears to be focussed on the excessive gambling/illegal gambling ‘pathway’ – rather these studies discuss illegal gambling in the context of broader discussions of gambling. Nonetheless they allow for insights into the relationship between excessive and illegal gambling.

Work by Volberg in Sweden found that:

*Swedish [excessive] gamblers are [statistically] significantly more likely than non-[excessive] gamblers to have ever wagered on illegal gambling activities including private card games...and games of skill.*³⁸

Moreover, a New York study by the same author noted that the forms of gambling with the highest rate of excessive gambling were illegal.³⁹

Consistent with our Ipsos survey findings for Hong Kong, a study in the Netherlands noted that a larger proportion of gamblers in the illegal gambling circuit have gambling problems.⁴⁰ It found that 5.9 percent of current illegal gamblers and 7.8 percent of ex-illegal gamblers were considered to be excessive gamblers.⁴¹ In contrast, only 0.8 percent of those who never gambled illegally scored such a result and the difference between legal and illegal gamblers was found to be statistically significant. Further econometric modelling by the authors found that combined lifetime illegal and casino gambling was the most important predictor for lifetime excessive gambling.⁴² Supplementary face-to-face interviews with 420 gamblers found that nearly half of all excessive gamblers (45.2 percent) had bet illegally at some point in their lives compared to 17.8 percent of recreational gamblers.

³⁸ R A Volberg, "Prevalence and risks of pathological gambling in Sweden", *Acta Psychiatrica Scandinavica*, 104 (2001): 250-6.

³⁹ Rachel A Volberg, "Gambling and problem gambling in New York: A 10-year replication survey, 1986 to 1996" (New York Replication Report, Gemini Research, 1996), 67.

⁴⁰ D de Bruin et al., "Verslingerd aan meer dan een spel" (Report, Universiteit Tilburg, WODC and Ministerie van Justitie, Drug Research, 2005), 9-146.

⁴¹ Recorded a SOGS screening score of 5 or higher.

⁴² Furthermore, participation in a wide range of gambling types – including illegal gambling – was also found to be an important predictor of excessive gambling – with excessive gamblers typically participating in four or more different types of gambling.

Fig. 18. Participation of excessive gamblers in illegal gambling – Netherlands, 2004

Category	Never gambled illegally (%)	Gambled illegally prior to the last 12 months: (%)	Gambled illegally in the past 12 months: (%)
Recreational gambler (n=118)	82.2	13.6	4.2
Former excessive gambler (n=39)	53.8	28.2	17.9
Excessive gambler (n=42)	54.8	21.4	23.8

Source: Bruin et al.

Two studies conducted in the United States also found that excessive gamblers were more likely to gamble illegally—in New York and Mississippi. In New York, across their lifetime, 62.8 percent of non-excessive gamblers (n=1,522) had gambled illegally, while 86.3 percent of problem gamblers (n=132) had done so.⁴³ Over the past year of data collection, the respective figures were 37.3 percent and 62.6 and in the case of the past week they were 6.9 percent and 19.7 percent. Differences between the two groups were similar for Mississippi. Across their lifetime, 54.3 percent of non-excessive gamblers (n =580) had gambled illegally compared with 73.5 percent of excessive gamblers (n=69).⁴⁴ In the case of the last year the respective figures were 25.9 percent and 56.9 percent while in the case of the past week they were 3.4 percent and 23.5 percent. Differences between the two groups on illegal gambling participation were statistically significant in all three cases for both studies.

Finally a meta-analysis of 18 studies from 13 European countries, Australia, New Zealand, Canada and the US also found that unregulated (illegal) gambling had a strong relationship with excessive gambling.⁴⁵ Binde noted that:

when unregulated gambling is closely associated with [excessive gambling] it seems often to refer to activities of people with a great interest in gambling who are not content with the selection on the ordinary gambling market and attracted by specialised, complex and sometimes semi-professional high states gambling, even if it is illegal.

In summary then, while there are relatively few studies of illegal gambling, the international literature consistently finds that excessive gamblers are over-represented within the ranks of illegal gamblers. Or, put another way, excessive gamblers appear to be much more likely to gamble illegally than non-excessive gamblers.

⁴³ Rachel A Volberg, "Gambling and problem gambling in New York: A 10-year replication survey, 1986 to 1996" (New York Replication Report, Gemini Research, 1996), 67.

⁴⁴ Rachel A Volberg, "Gambling and problem gambling in Mississippi" (Social Research, Mississippi Council on Compulsive Gambling, Gemini Research, 1997), 48.

⁴⁵ Per Binde, "What are the most harmful forms of gambling? Analysing problem gambling prevalence surveys" (Working Paper, CEFOS, Center for Public Sector Research, 2011), 27.

The Ipsos survey results are also consistent with the findings of this international literature, adding strength to the survey findings. It suggests that the overrepresentation of excessive gamblers among illegal gamblers, as reported by the Ipsos survey is, in fact, part of a broader global phenomenon.

5. SOCIAL IMPACT OF ILLEGAL GAMBLING IN HONG KONG

5.1 ILLEGAL GAMBLING AND SOCIAL PROBLEMS

Social issues typically loom large in formal assessments of the total economic welfare cost of excessive gambling but few studies formally identify social problems with illegal gambling. Rather, many studies focus on excessive gambling and consequential social issues and few mention illegal gambling behaviour. However, to the extent that excessive gamblers are overrepresented within illegal gamblers, as discussed in the previous chapter, the issues tend to converge. That is, many of the problems faced by excessive gamblers would affect a large proportion of illegal gamblers.

The Australia Productivity Commission's 1999 study attributed approximately 80-85 percent of a whole range of social issues to excessive gambling.⁴⁶ These included depression, anxiety, poor health, reduced job productivity, high job turnover, substance abuse, suicide or suicidal thoughts, family and relationship problems, and financial problems. In this chapter we explore the evidence, both in the international literature and from our survey of how such social problems might be related to the illegal gambling market in Hong Kong.

Our Ipsos survey sought to explore the broader social, financial and related problems that gamblers might face in Hong Kong and to explore causality by asking respondents to identify which were *due to* gambling. The results are summarised in Fig. 19. While the great majority of all types of gamblers (legal and illegal) reported that they *did not* experience any of the problems they were asked about, nonetheless, the overall proportion of legal gamblers reporting that they *did* experience any of these problems due to their gambling (4 percent) is lower than that for illegal gamblers (14 percent). This difference is statistically significant.

⁴⁶ Productivity Commission 1999, op. cit. This included a major national survey of gambling habits in the Australian general population involving 1,225 regular gamblers, 1,290 non-regular gamblers and 983 non-gamblers. In addition a separate survey involved 404 clients in counselling centres. Both surveys included various questions asking respondents if a variety of social, financial and relationship issues were caused by their gambling.

Fig. 19. Events experienced due to gambling in past 12 months

Category	Legal gamblers: (n=497) %	Illegal gamblers: (n=103) %
Depression	2	1
Loss of time from work or study	1	4
Breakdown of relationship or divorce	1	5
Going into debt	1	4
Emotional distress of partners or children	1	6
Borrowing from unofficial money lenders	0	1
Loss of employment	0	1
Obtaining money illegally in order to gamble	0	2
One or more of the above	4	14

Source: Ipsos/Oxford Economics

As the number of respondents indicating that they suffered from any one difficulty is relatively small, it is not possible to test whether the individual differences shown in the table between legal and illegal gamblers are statistically significant. We must therefore rely on evidence from the academic and international literature, explored in the following sections. Much of the literature discusses the range of social problems as a whole and it is not straightforward to distinguish between some types of problem. For example, excessive gambling may be associated with debt, which may play a role in depression and affect family relationships, or vice versa. The interactions are complex and sometimes ambiguous. Nonetheless, in the proceeding section, we explore the association of excessive and illegal gambling in four areas of social impact, namely: family and relationships; mental health; financial problems and crime.

5.2 ILLEGAL GAMBLING AND RELATIONSHIPS

The Australian Productivity Commission found that a variety of family relationship problems accounted for 65 percent of the total costs of gambling—by far the largest economic welfare cost of excessive gambling.⁴⁷ International research, including work in Hong Kong, has likewise found that family problems related to excessive gambling can be far reaching, and that a single excessive gambler can affect a large number of people around them. For example, a study of excessive gamblers who attended counselling and therapy services in Switzerland found that family and personal relations were “seriously impaired” as a result of gambling addiction.⁴⁸ For those affected, rates of separation and divorce were above average—with some 25 percent of the gamblers in counselling either separated or

⁴⁷ Australia's Productivity Commission, "Australia's gambling industries" (Inquiry Report, Australia Productivity Commission, 1999). Specifically, the costs of emotional distress to family members, emotional costs of divorce and emotional costs of relationship breakdown. The PCs estimates indicate that costs of these issues dwarf financial, legal and productivity costs associated with excessive gambling. They amount to \$A1.17 billion out of \$A1.80 billion in 1999 terms using the PCs “low end” estimate.

⁴⁸ Kilian Kunzi, Tobias Fritschi and Theres Egger, "Gambling and gambling addiction in Switzerland" (Summary Report, BASS, BASS, 2004), 1-13.

divorced (compared to 7 percent of the national population) and with gambling being the cause or one of the main causes in more than half of these cases.

While the international literature suggests that gambling would appear to be the important precipitator of family and relationship problems in perhaps 50-80 percent of cases, as with other social problems, the link may be complicated by bi-directional influences. For example Keen et al. cite Hong Kong Home Affairs Bureau work suggesting that family arguments could be a *trigger* for gambling rather than just a consequence of such behaviour—though the cited sample contained only 10 excessive gamblers.⁴⁹

The wider literature also reveals complex interactions between excessive gambling and intimate partner violence. A recent meta-analysis of this issue supports the idea that excessive gambling may precipitate intimate partner violence due to stress and financial problems. The work found that on average, across international studies, 37 percent of excessive gamblers perpetrated interpersonal violence, while 11 percent of intimate partner perpetrations were by excessive gamblers. However 38 percent of excessive gamblers were victims of intimate partner violence themselves, suggesting this could also precipitate excessive gambling.⁵⁰ Similarly, a study of Taiwanese women suggested that a refusal to hand over money for gambling or alcohol could lead to domestic violence.⁵¹

Given that relationship issues appear to be the largest single component of social cost associated with gambling, it may be that a disproportionate amount of such costs in Hong Kong may stem from illegal gamblers, though clearly more research is required on this point.

5.3 ILLEGAL GAMBLING AND MENTAL HEALTH

A wide range of literature explores the interactions between gambling behaviours and a variety of mental health implications, including suicide, depression, and stress. The literature is also fairly extensive on comorbidity and excessive gambling (where more than one illness or disorder affects a person simultaneously, implying interactions that affect the prognosis and course of both). Finally, the literature explores the interactions between gambling and mental health with a view to identifying causality—that is whether it is possible to say if excessive gambling causes mental health problems, or vice versa.

A series of studies have been conducted in Hong Kong on the relationship between excessive gambling and suicide or suicidal thoughts. In particular, recent work by Wong et al. found that about 20 percent of excessive gamblers reported suicidal thoughts.⁵² Those who had suicidal thoughts were more likely to be illegal

⁴⁹ Brittany Keen, "Problem gambling and family violence in the Asian context: a review", *Asian Journal of Gambling Issues and Public Health*, 5 (2015): 1-16.

⁵⁰ Nicki A Dowling et al., "Problem gambling and intimate partner violence: a systematic review and meta-analysis", *Trauma violence and abuse*, 17 (2014): 1-19.

⁵¹ Keen, B., op. cit.

⁵² PW Wong et al., "Suicidal ideation and familicidal-suicidal ideation among individuals presenting to problem gambling services: a retrospective data analysis", *Crisis*, 35(4) (2014): 219-32.

gamblers (12.9 percent) than those who did not (8.9 percent). Likewise those with suicidal thoughts were also more likely to bet illegally on soccer (8.8 versus 6.0 percent) and on illegal horse races (5.1 versus 2.9 percent).⁵³ All of the differences were found to be statistically significant, suggesting an association between illegal gambling and suicidal thoughts.

Away from Hong Kong specifically, a retrospective analysis in the US (Connecticut) found high rates of psychiatric and related problems amongst excessive gamblers in treatment.⁵⁴ Some 51.6 percent had been in treatment at some point for psychological problems, and 19.9 percent were currently in treatment for such problems, while 60.2 percent had experienced depression in the past month. Over the course of their lifetime 17.3 percent had experienced problems in controlling their violent behaviour, 36.6 percent had suicidal thoughts and 16.7 percent attempted suicide. It should be noted, however, that the subjects were recruited from those who had previously attended excessive gambling treatment centres and so may not be representative of all excessive gamblers. A study in Switzerland found that in 78 percent of cases, gambling was found to exist as a comorbidity alongside problems such as depression, personality disorder, drug addiction, etc.⁵⁵ Three quarters of those in counselling had a substance abuse problem (tobacco-60 percent, alcohol-40 percent, illegal drugs-4 percent). In only 8 percent of cases was gambling the sole 'disorder' identified.

In Hong Kong again, work by Shek et al. examined the more specific association between pathological gambling and psychiatric comorbidity amongst 201 pathological gamblers recruited from Hong Kong treatment centres in 2009-10. Some 63.7 percent of the subjects had comorbid psychiatric disorders over their lifetime and 44.8 percent had at least one comorbidity at the time of the study.⁵⁶ The work is notable for its detail in tracing the direction of causality. While noting that pathological gambling and psychiatric disorders could be mutually reinforcing, the study finds that most participants with mood disorders and lifetime adjustment disorder (three quarters and two-fifths, respectively) experienced these disorders *after* the onset of pathological gambling. However the direction seems to differ for anxiety disorders and substance abuse, where 57.9 percent and three-quarters, respectively, of respondents reported having the disorder *before* pathological gambling. Overall some 55.8 percent of lifetime comorbid psychiatric respondents

⁵³ Conversely, relatively *fewer* suicidal excessive gamblers bet on legal horse races at the HKJC than was the case for non-suicidal excessive gamblers (59.4 vs 63.9 percent). Likewise fewer suicidal excessive gamblers bet legally on soccer than their non-suicidal counterparts (50.2 vs 55.6 percent). Once again the differences between the two groups were statistically significant.

⁵⁴ Nancy M Petry, "A comparison treatment-seeking pathological gamblers based on preferred gambling activity", *Addiction*, 98(5) (2003): 645-55.

⁵⁵ Kilian Kunzi, Tobias Fritschi and Theres Egger, "Gambling and gambling addiction in Switzerland" (Summary Report, BASS, BASS, 2004), 1-13. It should also be noted that the authors found little evidence of illegal gambling in their work, with the main forms being slot machines, games of chance, dice and sports betting.

⁵⁶ Daniel T L Shek, Elda M L Chan and Ryan H Y Wong, "Associations between pathological gambling and psychiatric comorbidity among help-seeking populations in Hong Kong", *The Scientific World Journal*, 2012 (2012): 15.

reported having some form of psychiatric disorder prior to the onset of their pathological gambling problems.

These findings differ somewhat from the conclusions of the PC that 80-85 percent or so of comorbid conditions could be attributed to gambling (though this figure seems similar to some of the Hong Kong results for specific conditions). However, it should be noted that the group in question consisted only of pathological gamblers recruited from treatment centres (rather than excessive gamblers who did not seek help). Results which included these broader groups – which the Productivity Commission’s estimation of 80-85 percent causality was intended to do – could differ somewhat. While using a small sample, an in-depth study carried out in Hong Kong also suggests, as per the PC work and Hong Kong suicide studies, that depression and emotional problems are likely to be a consequence rather than a cause of excessive gambling in many cases.⁵⁷

Taken together these studies indicate that co-morbidities such as suicidal intent (or actions) depression and substance abuse are often associated with excessive gambling. Moreover there is evidence that excessive gambling in Hong Kong is a cause of such conditions in many cases. Since many illegal gamblers are also likely to be excessive gamblers, this suggests illegal gamblers are particularly susceptible to this range of social ills. Further, amongst the population of excessive gamblers undergoing treatment in Hong Kong, illegal gamblers appear to be more susceptible to suicidal thoughts than their legal counterparts.

5.4 ILLEGAL GAMBLING AND FINANCIAL ISSUES

Related to some of the social and health problems that have been discussed already, costs associated with gambling debt and associated bankruptcy, loansharking and/or employment issues are often cited as important consequences of all forms of gambling. It is clear that many excessive gamblers face financial and employment problems linked to their gambling habits. And while many of these issues are risks associated with all forms of excessive gambling, susceptibility to such risks may be greater with illegal forms of gambling.

The costs of such issues are economic and social. For example, as well as the impact on family life, employment (or reduced work performance) due to gambling *would* involve economic costs since a productive worker has now been taken out of the workforce (at least temporarily) and/or suffers from reduced output. On the other hand, costs associated with issues such as debt, bankruptcy and loansharking do not involve direct, economic welfare costs *per se*, since these are transfers rather than losses of wealth.

5.4.1 Illegal gambling and employment

In terms of unemployment, studies suggest that excessive gambling leads to reduced worker productivity. Work by So and Kwok on excessive gamblers in Hong

⁵⁷ Chi Chuen Chan and Keis Ohtsuka, "Pathways to development of problem gambling among Chinese gamblers in Hong Kong: validation of the Blaszczyński and Nower (2002) model", *Asian Journal of Gambling Issues and Public Health*, 2(1) (2011): 17-28.

Kong counselling centres indicates that roughly 80-90 percent of respondents stated that gambling affected their work performance, with 70 percent indicating it had affected promotional prospects. More specifically 62 percent of respondents indicated lost productivity due to gambling — a HK\$ 5,500 loss per gambler over the past year. 22 percent of respondents had to change jobs one to five times due to gambling (at a cost of HK\$ 60,000 per gambler over the past year) while 24 percent indicated they had experienced unemployment due to gambling (at a cost of HK\$ 90,000 per gambler over the past year).⁵⁸

In the UK, qualitative work by Downs and Woolrych focused on excessive gamblers indicated that those in employment found it difficult to concentrate on their jobs and were at higher risk of losing their jobs due to absenteeism, misuse of computer facilities and/or theft. In addition, excessive gambling was seen as a barrier to obtaining employment among unemployed gamblers, as they feared obtaining a job would allow them access to funds and credit and so encourage them to gamble on a larger scale.⁵⁹

5.4.2 Illegal gambling and debt

There is also a clear interaction between financial, debt and money worries and the kinds of serious mental health consequences already explored—especially suicide—and to issues around family, relationships and marital breakdown. For example, financial problems might be a source of family tensions or a source of shame that, in turn, contributes to such problems and/or to more serious events such as suicide. Some researchers have suggested this is particularly true in societies such as Hong Kong where, the shame of uncontrollable debt (rather than of legal or illegal gambling addiction *per se*) would appear to be a significant contributor to suicide. There might also be an important impact given the salience of work and financial success within the local culture.

Elsewhere, Downs and Woolrych's study on the impact of gambling on family life, for example, highlighted the effects of debt, noting links between debt, divorce rates and family breakdown and also between excessive gambling, family dysfunction and marital breakdown.⁶⁰ Australian work cited by these authors also noted that a breakdown in trust as key to the breakdown in family relationships and the authors cite an Australian study in which between 74 percent and 77 percent of excessive gamblers reported being deceitful to family members, partners, therapists or others.

5.4.3 Financial aspects and suicide

In terms of suicide, as we have explored earlier, a series of studies have been conducted on the relationship between excessive gambling and suicide or suicidal

⁵⁸ So, Hang-tai and Kwok Ngai-kuen, *No Longer an Entertainment, Social Cost of Problem Gambling in Hong Kong* (n.d.)

⁵⁹ Carolyn Downs and Ryan Woolrych, "Gambling and debt: the hidden impacts on family and work life", *Community, Work and Family*, 13 (2010): 311-28.

⁶⁰ Carolyn Downs and Ryan Woolrych, "Gambling and debt: the hidden impacts on family and work life", *Community, Work and Family*, 13 (2010): 311-28.

thoughts in Hong Kong. Wong et al's 2014 work in particular, found that, along with other family and emotional problems, statistically significant differences could be identified between suicidal and non-suicidal excessive gamblers on a range of financial-related factors—including their amount of debt, bankruptcy status, general financial problems, work problems and a lack of motivation at work.⁶¹

Earlier work by Wong et al. examined the broader phenomenon of middle aged suicide in Hong Kong, using next of kin interviews and a case-control group procedure.⁶² Of these 14.1 percent of the suicide cases were pathological gamblers and the presence of unmanageable debt and unemployment stood out as the most significant predictors of suicide risk. The authors note that the impacts of unemployment and debt on suicide among middle aged Hong Kong Chinese are likely because work and wealth are closely associated with self-worth in Chinese society. Although the paper did not examine gambling in detail, given the link between gambling and debt (and possibly unemployment) this provides an indication of the potential consequences of unmanageable gambling debt in Hong Kong. This again raises particular concerns in an illegal context where there are little or no checks on gambling behaviour.

Other work by Wong et al reinforces the link between gambling-related debt and suicide. For example, a study of court files on Hong Kong suicide cases found that 19.4 percent showed evidence of gambling behaviour prior to death, while 47 percent of these gambling suicides in turn (i.e. 10 percent of all suicides) involved individuals who were indebted due to gambling.⁶³

While this work does not appear to have distinguished illegal gambling, earlier work by Yip et al. on Hong Kong on a much larger sample of suicide cases does isolate these elements.⁶⁴ The study reported that 24.5 percent of completed suicides had debt problems. Among those with debt problems, in turn, gambling related debt was responsible for debt accumulation in just over one third of suicide cases (33.8 percent). Multiple sources of gambling related debt accumulation were recorded.⁶⁵ Legal gambling forms were common causes of gambling-related debt accumulation – with gambling at Macau casinos recorded in 31 percent of debt-related suicide cases and horse racing in 28 percent of such cases. However, illegal gambling (namely in the categories of soccer, horse racing and casinos) was also reported as a cause of debt accumulation in nine percent of debt-related suicide cases. This would appear to be relatively high, given reported levels of illegal gambling

⁶¹ Wong et al., 2014 *op. cit.*

⁶² Paul W C Wong et al., "Suicide among adults aged 30-49: a psychological autopsy study in Hong Kong", *BMC Public Health*, 8(1) (2008): 147.

⁶³ Eric YH Chan et al., "Suicide in Hong Kong: a case-control psychological autopsy study", *Psychological Medicine*, 36(6) (2006): 815-25.

⁶⁴ Paul Yip et al., "Financial debt and suicide in Hong Kong SAR", *Journal of Applied Social Psychology*, 37(12) (2007): 2788-99.

⁶⁵ Note gambling related debt sources were not additive. So gambling debt accumulation could be due to both legal gambling on, say, legal horse racing and illegal football gambling.

penetration among the population of 0.3 percent.⁶⁶ Only four percent of debt-related suicide cases in this study involved loan sharks as the main source of debt (irrespective of whether or not gambling was involved). Major sources included credit cards (the main source in 22 percent of such cases) and family (18.8 percent of cases).

However, other evidence suggests loan sharks may play more of a role. More specialised work by Wong et al. examined the issue of pathological gambling suicides in Hong Kong.⁶⁷ Of the 150 suicide cases examined, 17 could be classed as pathological gamblers. While this small sample does not lend itself to statistical tests, the authors noted the high propensity for pathological gambling suicides to borrow from family members (10 out of 17 or 58.8 percent) and from loan sharks (8 out of 17 or 47.1 percent). In five of the eight cases where loan sharks were used, threats of harm had been made by the lender a few days before the suicide. The authors also note that while depression may be a gambling comorbidity, the majority of the pathological gambling suicides examined appeared to have had a long history of pathological or gambling behaviour, became depressed and took their own lives when their financial problems became unmanageable.

These results should be put in context. Suicides are, fortunately, relatively rare amongst gamblers and the general population. Nonetheless examining this specialised sub-population does point to the ways in which excessive and illegal gambling and the associated issue of debt accumulation can potentially lead to tragic social consequences. The fact that excessive gamblers are overrepresented within the illegal gambling sub-population again means that illegal gamblers are particularly susceptible to the issues identified for excessive gamblers.

The link between excessive gambling, financial problems and other social and health issues (beyond suicide itself) has been identified in a number of other studies. For example, in the previously discussed study by Shek et al. the authors suggested that, at the very least, a substantial proportion of the subjects' social and financial issues were due to their gambling behaviour.⁶⁸ It is worth noting that more participants with current psychiatric comorbidities had debt (86.7 percent) than those without such comorbidities (74.8 percent) – the difference being statistically significant.

⁶⁶ The Hong Kong Polytechnic University, "The study on Hong Kong People's participation in Gambling Activities" (Study , The Hong Kong Polytechnic University, Department of Applied Social Sciences, 2011), xv.

⁶⁷ Paul WC Wong et al., "A psychological autopsy study of pathological gamblers who died by suicide", *Journal of affective disorders*, 120 (2009): 213-6.

⁶⁸ Daniel T L Shek, Elda M L Chan and Ryan H Y Wong, "Associations between pathological gambling and psychiatric comorbidity among help-seeking populations in Hong Kong", *The Scientific World Journal*, 2012 (2012): 15. Those with comorbid psychiatric disorders were also much more likely to be unemployed than those without (20.3 percent versus 6.8 percent). In addition those with such disorders were much more likely to have no income (17.2 percent versus 8.2 percent). The differences were statistically significant in both cases.

5.4.4 Illegal gambling and financial credit

A further area of interest in the context of financial issues is sources of credit. So and Kwok noted that excessive gamblers used a variety of means to obtain funds.⁶⁹ Financial institutions were the most popular source of funds (79.1 percent of respondents) with a median amount raised on HK\$ 216,000 but credit cards were also popular (68.6 percent of respondents, median amount raised of HK\$ 300,000). Friends, relatives and family members were also used by roughly 50-60 percent of respondents; however there was no specific record of the use of loan sharks.

In common with many other jurisdictions, Hong Kong bans the offer of credit in its legal gambling institutions. Evidence from the international literature suggests that the availability of credit is a feature of illegal gambling venues but does not indicate how important this is to such gamblers. The Ipsos survey found that there was considerably higher interest amongst illegal gamblers than legal ones in the hypothetical scenario posed of offering credit in gambling. As shown below, some 19 percent of illegal gamblers indicated they would increase their monthly gambling spend in response to such a policy, compared to two percent of legal gamblers. This difference is statistically significant. In addition, illegal gamblers cited approximately three times the amounts legal gamblers cited.

Fig. 20. Credit in gambling responses: Legal and illegal gamblers

Category	Legal gamblers: (n=497)	Illegal gamblers: (n=103)
Would increase monthly spend on gambling if allowed credit in gambling were allowed (%)	2	19
Amount by which total monthly gambling spend would increase	HK\$ 1,150	HK\$ 3,005

Source: IPSOS/Oxford Economics

The fact that illegal gamblers are much more likely to increase their monthly gambling spend if rules on credit were to be relaxed – and that they would increase spend by more than legal gamblers – may be seen as pointing to their greater reliance on or interest in the use of credit for gambling. Indeed, 15 percent of excessive gamblers also indicated they would increase their spend — which is not surprising given the high level of crossover between the two groups. While it is difficult to draw definitive conclusions, illegal gamblers’ greater interest in credit may provide an implicit indication that illegal gamblers are relatively more susceptible to the problems of debt, bankruptcy and loansharking.

Some international evidence may also provide context to these survey results. The PC’s 2010 work found that while 2-7 percent of Australian gamblers access credit to finance gambling perhaps around 25 percent of excessive gamblers access facilities such as cash advances on credit cards. The same report indicates that excessive gamblers were 16 times more likely to ask for a loan or credit from a

⁶⁹ So and Kwok, *op. cit.*

gambling facility than other gamblers and records that nine percent of excessive gamblers using gaming machines occasionally, frequently or always asked for loans at gambling venues.⁷⁰

Likewise, and recalling earlier findings on the high proportion of excessive gamblers who gambled illegally, Volberg found excessive gamblers in New York were more likely to incur debt in order to finance their gambling habits across a range of measures, including borrowing from loan sharks (6 percent of excessive gamblers versus 0 percent for non-excessive gamblers), bouncing cheques (3.5 vs 0.1 percent) charging one or more credit cards to the limit (3.5 vs 0.4 percent) cash withdrawals on credit cards (32 vs 3 percent) and borrowing from spouses or partners (25.9 vs 3 percent). The differences were statistically significant in each case.⁷¹

5.4.5 Loan sharks as a source of credit

The Ipsos survey results seem to be broadly in line with other international evidence suggesting that illegal and excessive gamblers access credit to finance their habit and/or would clearly like facilities to offer this service. This may make them more susceptible to loansharking issues, which is of particular interest in considering the cross-over between social and criminal implications of gambling.

A 2010 study Wong et al. found suicides with gambling related debt were distinguished by having borrowed from loan sharks – 18.9 percent versus 0.8 percent of gambling related suicides with no debt, the difference between the two groups being statistically significant. Indeed this was one of the clearest differences between the two groups. However, they were also more likely to have borrowed from legal financial institutions (21.6 percent versus 4.2 percent of gambling related suicides with no debt).⁷²

Some issues relating to the use of loan sharks were noted in the discussion of Hong Kong suicide cases. While Yip et al.'s work found that loan sharks were not a major form of debt accumulation in such cases, Wong et al.'s 2010 work found that loan sharks were an important source of finance for pathological gamblers and that threats from them may have been associated with suicides. This suggests that pressure from loan sharks could have practically adverse consequences in extreme cases.

Volberg's New York work also pointed to the greater use of loan sharks by excessive gamblers. Further, international evidence from Israel and China/Macau, discussed in the following chapter, also indicates that illegal operators offer credit facilities and provide few constraints on illegal gambling behaviour.

⁷⁰ Australia's Productivity Commission, "Australia's gambling industries" (Inquiry Report, Australia Productivity Commission, 1999).

⁷¹ Rachel A Volberg, "Gambling and problem gambling in New York: A 10-year replication survey, 1986 to 1996" (New York Replication Report, Gemini Research, 1996), 67.

⁷² Wong, P.W.C., et. al., "Gambling and Completed Suicide in Hong Kong: A Review of Coroner Court Files", *The Primary Care Companion to the Journal of Clinical Psychology*, 12(6) (2010). Gambling at Macau casinos was also found to be a statistically significant differentiator between the two groups.

5.5 ILLEGAL GAMBLING AND CRIME

The literature and survey evidence in relation to illegal credit and loan sharking demonstrates a third area of social concern with illegal gambling, namely its association with crime and criminality.

The Ipsos survey asked respondents about some consequences of gambling related to crime, such as taking loans from unofficial money lenders or obtaining money illegally in order to gamble. As with social and financial problems, only a small number of respondents indicated that they had to resort to such actions as a consequence of gambling. The small number of respondents combined with the low likelihood of such acts occurring, means we are unable to draw conclusions on these types of crimes on the basis of our survey. Moreover, we have not surveyed criminal providers of illegal gambling products. As a result, we rely on the national and international literature on the links between illegal gambling and crime assess the impact of illegal gambling on Hong Kong criminal activity. In doing so, we distinguish between two main types of criminal offenders linked to gambling: those who turn to crime as a result of their gambling habits; and the criminal syndicates who manage illegal gambling activities in order to raise revenue.

5.5.1 Gambling as a motivator to crime

As with other problems faced by excessive gamblers such as substance abuse, the financial losses (relative to income levels) incurred by these gamblers may lead them to commit crimes once they have exhausted legal sources of funds.⁷³ The Australian Institute of Criminology reports that crime related to gambling typically consists of non-violent property crime like theft, shoplifting, embezzlement and misappropriation of money.⁷⁴ Some increases in violent crime, personal crime and drink-driving offences were also found.⁷⁵ In addition, the Australian Productivity Commission reported that up to 70 percent of problem gamblers may commit crimes.⁷⁶ As our sample of illegal gamblers indicates that they are more likely to be excessive gamblers than legal gamblers, they would be expected to contribute to more crime than legal gamblers. In a national gambling survey conducted in Australia, around one in four pathological gamblers (those scoring 10 or higher on the SOGS diagnostics test) reported committing a gambling related illegal activity at some stage in their gambling career.⁷⁷ For problem gamblers (those scoring

⁷³ Australia's Productivity Commission, "Australia's gambling industries" (Inquiry Report, Australia Productivity Commission, 1999).

⁷⁴ Yuka Sakurai and Russell Smith, "Gambling as a motivation for the commission of financial crime" (Research Paper, Australian Institute of Criminology, Crime and Criminal Justice, 2003), 6.

⁷⁵ Sarah Wheeler, David K Round and John K Wilson, "The relationship between crime and gaming expenditure in Victoria" (Report, University of South Australia, Centre for Regulation and Market Analysis, School of Commerce, 2010).

⁷⁶ Australia's Productivity Commission, "Australia's gambling industries" (Inquiry Report, Australia Productivity Commission, 1999).

⁷⁷ Julie Lahn and Peter Grabosky, "Gambling and clients of act corrections" (Research Paper, Australian National University, Centre for Gambling Research, 2003), 80.

between five and 10 on the SOGS test), 1 in 10 gamblers had partaken in an illegal activity related to gambling.⁷⁸

There is a general consensus in the literature that higher gambling losses lead to more crime. The Australian study shows an association between excessive gambling and crime, but due to the research design, it doesn't exclude the possibility that people prone to committing crime are also prone to gambling excessively. In contrast, a longitudinal study of young adults in the United States on all gamblers and crime isolates the probabilities of committing crimes later in life after exhibiting signs of problem gambling. The study found that young gamblers with losses of between US\$ 501 and US\$ 1,000 were 15 percent more likely to later commit a serious crime.⁷⁹ When gamblers had losses between US\$ 1,001 and US\$ 5,000, the probability of committing a serious crime later increased to 27.5 percent.⁸⁰ Overall, for likely excessive gamblers, the authors find a 17 percent higher likelihood of committing a serious crime.⁸¹

In considering the broader issue of gambling and its links to white collar crime in the US, Albanese makes the point that the social stigma associated with illegal gambling makes resulting financial problems more "non-sharable" than those occurring through legal gambling.⁸² He suggests this could mean that excessive gamblers who run up debts with illegal operators may be more likely to engage in crimes (such as embezzlement) than those who have legal debts.

5.5.2 Criminal syndicates who manage illegal gambling activities

Criminal syndicates are attracted to illegal gambling activities both for raising revenue and also as a way to launder money from other illegal activities. Wang and Antonopolous' 2015 study cites international survey work estimating that 35 percent of criminal groups regard gambling as a key source of revenue.⁸³ The illegal bookmaking industry is highly profitable, also because illegal bookmakers do not pay taxes and fees charged for legal gambling activities.⁸⁴ These 'excess' profits can be used to fund other illegal activity, and indeed the study cites earlier work that finds a connection between illegal bookmaking and major drug crime.

Aside from being a source of revenue, illegal gambling activities can be used to launder funds earned by these groups from other illegitimate activity. The Australian

⁷⁸ *Ibid.*

⁷⁹ Christopher Clark and Douglas M Walker, "Are gamblers more likely to commit crimes? An empirical analysis of a nationally representative survey of US young adults", *International Gambling Studies*, 9:2 (2009): 119-34.

⁸⁰ *Ibid.*

⁸¹ *Ibid.*

⁸² Jay S Albanese, "White collar crimes and casino gambling: looking for empirical links to forgery, embezzlement, and fraud", *Crime Law Soc Change*, 49 (2008): 333-47.

⁸³ Peng Wang and Georgios A Antonopoulos, "Organised crime and illegal gambling: how do illegal gambling enterprises respond to the challenges posed by their illegality in China", *Journal of Criminology*, 0 (2015): 1-23.

⁸⁴ Sarah Wheeler, David K Round and John K Wilson, "The relationship between crime and gaming expenditure in Victoria" (Report, University of South Australia, Centre for Regulation and Market Analysis, School of Commerce, 2010).

Transaction Reports and Analysis Centre (AUSTRAC) reports that criminal groups launder cash proceeds from drug trafficking and fraud committed in gaming venues, especially casinos, which have a high cash turnover.⁸⁵ In casinos, this can be done by exchanging cash proceeds from crime for casino chips and gaming tokens and then cashing them in as winnings. In places like Macau where casino junkets operate profitable businesses that bring gamblers to casinos, they are able to conceal illegitimate sources of cash and prevent casinos from doing due diligence on gamblers. Electronic gaming machines and online gambling are also documented activities vulnerable to money laundering.

Criminal syndicates who use illegal gambling to raise revenue are not only triads, but can also consist of a number of persons acting together in an illegal enterprise.⁸⁶ The comparative advantage of crime syndicates is violence and the use of violence gives these organisations a monopoly power in both legal and illegal markets that they can then use to earn illicit gains from other agents in the economy.⁸⁷ Such groups are useful for enforcing debt collection from illegal gamblers, since illegal venues cannot use the Hong Kong justice system to enforce debt collection. This phenomenon is detailed for Macau in the study by Wang and Antonopolous.⁸⁸ As the collection of any gambling debt is illegal within China, junket operators may resort to coercive action to collect debt. Tony Tong, a financier who backs Macau junkets confirms that debt collection is an issue and sometimes they have to resort to criminal organisations like triads to collect debt that can't be enforced in the legal system.⁸⁹

In a similar way, these groups are also able to engage in loan sharking activities, which is complementary to their line of business. Indeed, Duhaime notes that loan sharks in Macau and Hong Kong account for 21.4 percent of the debt collection criminal complaints to police – the largest type of complaint filed.⁹⁰ Many of these cases are accompanied by violence or the threat of violence.

Illegal venues or online betting sites are also subject to law enforcement activities, and a criminal businessman “can increase the profitability of his enterprise by corrupting those whose job it is to combat it.”⁹¹ One author writes that this is

⁸⁵ Australian Transaction Reports and Analysis Centre (AUSTRAC), "Money Laundering in Australia" (Report, AUSTRAC, 2011).

⁸⁶ Ian McWalters, "The link between organised crime and corruption- A Hong Kong Perspective" (Durban, South Africa: Conference, The Papers, 1999).

⁸⁷ Paolo Pinotti, "The economic costs of organised crime: evidence from Southern Italy", *The Economic Journal*, 125 (August) (2015): F203-232.

⁸⁸ Peng Wang and Georgios A Antonopoulos, "Organised crime and illegal gambling: how do illegal gambling enterprises respond to the challenges posed by their illegality in China", *Journal of Criminology*, 0 (2015): 1-23.

⁸⁹ Ball et al, "How China's Macau crackdown threatens big US casino moguls", *The Guardian*, 23 April 2015.

⁹⁰ Christine Duhaime, "The violent methods gambling debts from Macau are collected in Hong Kong", in *Duhaime's anti-money laundering law in Canada* <<http://www.antimoneylaunderinglaw.com/2014/03/the-violent-ways-gambling-debts-from-macau-are-collected-in-hong-kong.html>> [accessed 18 Feb 2016]

⁹¹ Ian McWalters, "The link between organised crime and corruption- A Hong Kong Perspective" (Durban, South Africa: Conference, The Papers, 1999).

especially the case for illegal casino operators, who operate physical premises.⁹² Not surprisingly, Pinotti finds that politicians are on average more corrupt and liable to the risk of violence in countries with more crime syndicates.⁹³ Such corruption can manifest itself in the award of public contracts to criminal groups in a non-competitive way, thus directly leading to inflated public expenditure and the inefficient use of government funds. Cross-country results for organised crime suggest that in the short-run, the presence of criminal syndicates leads to a reduction in the human and physical capital contributions to GDP: a one standard deviation increase in organised crime is associated with a 35 percent lower GDP per capita.⁹⁴ In the long-run, the activities of criminal syndicates increase the risk and uncertainty in the business environment, which decreases the growth potential of an economy.

⁹² Yiu Kong Chu, *The Triads as a Business* (London: Routledge, 2000), 97.

⁹³ Paolo Pinotti, "The causes and consequences of organised crime: preliminary evidence across countries", *The Economic Journal*, 125 (August) (2015): F158-174.

⁹⁴ Paolo Pinotti, "The causes and consequences of organised crime: preliminary evidence across countries", *The Economic Journal*, 125 (August) (2015): F158-174.

6. THE IMPACT OF REDUCING ILLEGAL GAMBLING IN HONG KONG

As discussed, excessive gambling is associated with a range of social ills. The evidence suggests that many of these ills are caused by gambling itself, though the interactions are clearly complex. As we have also seen, although there is little direct evidence about the social problems faced by illegal gamblers *per se* excessive gamblers are overrepresented in the ranks of illegal gamblers. Thus a large proportion of illegal gamblers would face the kinds of social, financial and crime-related issues explored in Chapter 5.

Taken together, the literature on the extent to which Hong Kong illegal gamblers face social and health problems, such as suicidal thoughts and our own survey results, which examined the interaction of gambling and relationship problems, suggest that these issues are more pronounced among illegal gamblers than their counterparts who engage only in legal gambling activities.⁹⁵ There are two related issues. Firstly, the over-representation of excessive gamblers in the ranks of illegal gamblers is associated with thrill-seeking behaviours and, secondly, that the lack of any formal restraints on behaviour within an illegal gambling context may be, therefore, especially damaging.

The dangers on an unregulated environment in this context are highlighted in an insightful but rare study undertaken in Israel which involved interviews with not only excessive gamblers who used illegal casinos, but also with the people who owned and operated such illegal establishments.⁹⁶ While the sample size was, by necessity given the nature of the topic, small (10 gamblers, one operator, one dealer, one guard and one waitress), the qualitative results are particularly interesting.

The study revealed, as would be anticipated, that gambling in an illegal casino was governed by fear of arrest among patrons and that interactions with the criminal underworld were common (for example, patrons witnessed threats of violence associated with debt collection). More interestingly however, the study also identified that this fear was, for patrons, often mingled with the excitement of gambling, having the effect of creating a potent mix which actually heightened the experience for excessive gamblers. The very nature and danger of the fact of illegality was part of the thrill and this 'fostered the growing urge to gamble.' For excessive gamblers, '...gaming together with the thrill of an illegal casino with its known risks intensified the sense of seeming to be a hero. The fear was consequently replaced by a feeling of growing personal capability.' That is, the excitement of the illegal experience had an appeal of its own, in addition to the need to gamble *per se*.

⁹⁵ (based on the work of Wong et al.)

⁹⁶ Moshe Bensimon, Alon Baruch and Natti Ronel, "The experience of gambling in an illegal casino: the gambling spin process", *European journal of criminology*, 10(1) (2013): 3-21.

In an unregulated context, casino operators were able to deliberately play on this fact. The study reported that illegal casino staff deliberately played up to the desire of patrons to be ‘powerful’, presenting winners with the best food, drinks and cigarettes. The authors noted that: ‘interviews with casino staff members revealed that the casino management was aware of the customers desire to achieve a sense of omnipotence and superiority. They developed a strategy for fostering those feelings in order to cause the gamblers to gamble more and more’. Gamblers who reported losing large amounts of money were also able, nonetheless, to get credit approval from casino management, which would not be the case in legal casinos.

Likewise, in Hong Kong, Chan and Ohtsuka’s study cited previous work pointing out that Chinese male gamblers typically enjoy being “the big boss”, bringing followers on gambling trips to locations such as Macau and distributing large winnings among them as an example of bravado.⁹⁷ The fact that illegal gambling venues appear to play on such vulnerabilities rather than seek to ameliorate them may raise the risk of gambling addiction among illegal gamblers.

Conversely, legal gambling venues offer a variety of constraints that are explicitly intended to guard against the cultivation of such damaging behaviours. In the case of Hong Kong, for example, those gambling through the HKJC are exposed to the Club’s initiatives such as:⁹⁸

- the HKJC’s physical, online and TV programmes aimed at promoting responsible gambling;
- a ban on credit in gambling;
- exclusion and/or self-exclusion programmes to target excessive gamblers;
- online self-assessment tools, gambling calculators and financial plans to help manage gambling and/or identify potential issues;
- information on excessive gambling counselling and treatment centres; and
- controls on underage gambling.

In addition, both legal and illegal gamblers benefit from the fact that HKJC money is used for the following purposes:

⁹⁷ Chi Chuen Chan and Keis Ohtsuka, "Pathways to development of problem gambling among Chinese gamblers in Hong Kong: validation of the Blaszczynski and Nower (2002) model", *Asian Journal of Gambling Issues and Public Health*, 2(1) (2011): 17-28.

⁹⁸ Hong Kong Jockey Club, "Responsible Gambling", in *Hong Kong Jockey Club website* <<http://www.hkjc.com/responsible-gambling/en/index.aspx>> [accessed 16 Feb 2016] Of course since most of those who gamble illegally also gamble legally they would also be exposed to these messages and indeed can access the broader addiction treatment programs funded by the HKJC. However, their exposure is naturally less than those who stick to legal gambling alone. Moreover they are also exposed to countervailing influences – e.g. encouragement rather than discouragement of excessive gambling, use of credit etc., Further in an environment without regulated, legal gambling – i.e. with only illegal gambling – none of the gambling addiction services would be funded from gambling proceeds, meaning there would be even fewer resources to treat excessive gambling.

- donations to set up the Integrated Centre on Addiction Prevention and Treatment (ICAPT) to treat people with multiple addictions including excessive gambling;
- contributions to the Ping Wo fund, set up to deal with the issue of excessive gambling (with contributions doubling to HK\$ 45 million in 2015/16);⁹⁹ and
- general contributions to charity and via taxation, a portion of which would be dedicated to dealing with social issues affecting excessive gamblers and others with similar addictions.

In contrast, the illegal sector operates no such initiatives aimed at restraining illegal gamblers. The key difference between gambling in legal and illegal contexts is therefore that illegal gamblers lack a “safety brake” on their habits supported directly or indirectly by the gambling institution itself. This means that excessive gamblers who bet illegally, in particular, would not appear to be subject to any formal or informal restraints.¹⁰⁰

6.1 ALTERNATIVE SCENARIOS

The preceding discussions point to the issues associated with illegal gambling including the lack of brakes applied within illegal establishments, the social and financial effects associated with illegal gambling and the siphoning off of illegal revenues away from tax and charity uses. The reverse question of course is to consider what would happen if Hong Kong’s gambling regime were to be liberalised with some illegal gambling forms and options brought into the legal sphere.

One obvious issue is the financial effect of such liberalisation. Accordingly, as a part of this study, Oxford Economics and Ipsos also explored what would occur if regulatory changes were made to gambling in Hong Kong. The following scenarios were investigated as a part of the Ipsos survey work:

⁹⁹ Hong Kong Jockey Club, "Responsible Gambling", in *Hong Kong Jockey Club website* <<http://www.hkjc.com/responsible-gambling/en/index.aspx>> [accessed 16 Feb 2016]

¹⁰⁰ Indeed, as indicated by the study in Israel, illegal gamblers might rather be ‘egged on’ by illegal establishments. It is not hard to posit a self-reinforcing link—e.g. avid gamblers, perhaps with some gambling issues attend illegal gambling venues and, encouraged on with no constraints, enter a downward spiral of excessive gambling.

- Loosen the criteria on losing bet¹⁰¹
- Allow betting at HKJC betting outlets on various sports events
- Introduce alternative methods to add value to HKJC betting accounts
- Offer betting products on HK football league matches
- Allow more bet options on currently offered football leagues
- Regulate internet gambling on international sites
- Build a legal casino in Hong Kong
- More effectively regulate gambling at private mah-jong parlours/shops
- Allow credit in gambling
- Increase the minimum legal age for gambling from 18 to 21 years

In responding to the above scenarios, both legal and illegal gamblers indicated whether their total gambling budget would increase, decrease or remain unchanged in the event of the initiative described. They were then asked by how much the total spends would increase or decrease per month.¹⁰² Responses to the above scenarios allowed for the development of the financial impacts of such changes in terms of HKJC revenue and tax and charitable contribution estimates over the decade to 2025-26.

6.2 MODELLING APPROACHES

Two types of models were developed to assess financial impacts. The first of these was a model which took account of these scenarios and allowed for the fact that both legal and illegal gamblers would increase their spending, but which assumed that there would be no diversion of spend from the illegal gambling markets (“the base model”).¹⁰³ The second approach involved a model which incorporated the results of the base model but which assumed that the illegal market could be affected by some of the proposed regulatory changes by allowing for shift of some former illegal gamblers to the legal market (“the displacement model”). Details of the approach taken to developing both models are provided in Appendix 2.

The results of the base model are displayed in Figure 21 below. All values reflect scenarios in 2025/26 expressed in real (HK\$ 2014/15, billion) terms.

¹⁰¹ One of the attractions of illegal bookmakers in Hong Kong is more generous rebate concessions

¹⁰² The questions were phrased so that they referred to changes in the respondent’s **total** monthly gambling budget in order to minimise the “cannibalisation effect” in terms of substitution from other gambling activities.

¹⁰³ In the case of an increase in gambling age there would of course be a reduction in total spend.

Fig. 21. Impact of base model scenario by 2025/26:

	Total HJJC revenue (HK\$ 2014/15, b)	Total tax and charity contribution (HK\$ 2014/15, b)	Change in revenue relative to base case (HK\$ 2014/15, b)	Change in tax relative to base case (HK\$ 2014/15, b)
Base Case	33.5	26.3	-	-
Loosen criteria for rebate on losing bet	35	27.5	1.5	1.2
Allow betting at HKJC betting outlets on various sports events (e.g. basketball, boxing etc.)	34.2	26.8	0.6	0.5
Introduce alternative methods to add value to HKJC betting accounts (e.g. at 7-11/ Circle K)	34.4	27	0.8	0.7
Offer betting products on HK football league matches	34.3	26.9	0.7	0.6
Allow more bet options on currently offered football leagues	34.3	27	0.8	0.6
Regulate internet gambling on international sites	34.3	26.9	0.8	0.6
Build a legal casino in Hong Kong	37.5	29.4	3.9	3.1
More effectively regulate gambling at private mah-jong parlours/shops	33.8	26.5	0.3	0.2
Allow credit in gambling	34	26.7	0.4	0.3
Increase the minimum legal age for gambling from 18 to 21 years	32.1	25.2	-1.4	-1.1

Source: Oxford Economics

The base model does not allow for any displacement of illegal gambling to the legal market. The displacement model estimates such effects. As can be seen from an examination of the base model, while many options yield broadly similar revenue and tax impacts, some of the largest impacts relate to building a legal casino in Hong Kong, loosening the criteria on a winning bet, and the increase in the gambling age from 18 to 21. The casino impact reflects the obvious appeal of a local casino to legal and illegal gamblers alike. The impact of the rebate option reflects the popularity of more rebates particularly among illegal gamblers, given the

more favourable rebate regime offered by illegal operators, while raising the legal age has obvious impacts on HKJC revenue.¹⁰⁴

The results of the base model were added to the estimates of displaced illegal activity to determine the total impact of the initiatives. Results for 2025/26 are displayed in Fig. 22 below, reported in real terms (HK\$ 2014/15).¹⁰⁵

¹⁰⁴ As discussed in the Appendix, the legal age figures are likely to be upper end ones, as they assume people of this age account for a share of HKJC revenue proportionate to their numbers. It is more likely that their relative revenue share would be lower than this but no detailed figures on expenditure by 18-20 year olds were available.

¹⁰⁵ As the focus of this section was on the shift of illegal gambling revenues to the legal market, no allowances have been made in this analysis for the shift of illegal or legal gamblers from the (legal) casino gambling market in Macau or from any tourism impacts associated with the opening of a Hong Kong casino.

Fig. 22. Impact of displacement model scenario by 2025/26

	Total HJJC revenue (HK\$ b, real)	Total tax and charity contribution (HK\$ b, real)	Change in revenue relative to base case (HK\$ b, real)	of which displaced from illegal sector (HK\$ b, real)	Change in tax relative to base case (HK\$ b, real)
Base Case	33.5	26.3	-	-	-
Loosen criteria for rebate on losing bet	36.2	28.4	2.6	1.1	2.1
Allow betting at HKJC betting outlets on various sports events (e.g. basketball, boxing etc.)	34.6	27.2	1.1	0.5	0.8
Introduce alternative methods to add value to HKJC betting accounts (e.g. at 7-11/ Circle K)	35.1	27.5	1.5	0.7	1.2
Offer betting products on HK football league matches	38.3	30.1	4.8	4.1	3.8
Allow more bet options on currently offered football leagues	39.7	31.1	6.1	5.3	4.8
Regulate internet gambling on international sites	34.4	27.0	0.8	-	0.6
Build a legal casino in Hong Kong	37.5	29.5	4.0	0.1	3.1
More effectively regulate gambling at private mah-jong parlours/shops	33.8	26.5	0.3	-	0.2
Allow credit in gambling	36.4	28.6	2.9	2.5	2.3
Increase the minimum legal age for gambling from 18 to 21 years	32.1	25.2	-1.4	-	-1.1

Source: Oxford Economics

The displacement model also reflects the above influences with the rebate option estimated to attract a sizable number of current illegal gamblers.

However in the case of this model, the size of the impacts of more football betting options is the largest single revenue generator, providing HK\$ 6.1 billion in revenues in 2025/26, of which HK\$ 5.3 billion are displaced from the illegal market. Likewise, offering betting products on Hong Kong football league matches would generate HK\$ 4.8 billion in revenue in 2025/26, of which HK\$ 4.1 billion would be

displaced from the illegal market. These results reflect the importance of football betting within the illegal market as well as the relative attractiveness of the options being offered to illegal gamblers.

While building a Hong Kong casino would generate HK\$ 4.0 billion in 2025/26, only HK\$ 0.1 billion of this would come from displacing the illegal market. This reflects the small size of the illegal casino market in Hong Kong, possibly due to the fact that Macau already acts as a legal alternative for casino gamblers.

6.3 SOCIAL AND ECONOMIC IMPACTS OF REGULATORY CHANGE

The above scenarios describe some financial effects - i.e. projected HJKC revenue and tax impacts of various forms of gambling liberalisation. However these financial issues are distinct from longer term social and economic ones. Without launching into a full cost-benefit analysis of liberalisation, a broader question is therefore what social and economic benefits such liberalisation may have on Hong Kong as a whole.

In considering social impacts, it is worth noting that there has been extensive international debate about its pros and cons. Some studies suggest for example that liberalisation in Macau has brought increased crime, legal costs and social problems.¹⁰⁶ However such studies likewise note that some of this is may be due to the fact these issues were simply not accounted for in the public sphere prior to legalisation but formed implicit illegal costs.¹⁰⁷ Other studies – such as the PC’s work – have pointed to the reduction in criminal activity (if only by definition) from the virtual elimination of illegal casinos and illegal bookmakers.¹⁰⁸

In addition, the international literature and survey evidence, cited above, points to the deleterious effects of illegal gambling on gamblers themselves, particularly in terms of the lack of any gambling “brakes” or support mechanisms offered by illegal gambling establishments. Given the high proportion of excessive gamblers within the ranks of illegal gamblers and the documented effects of excessive gambling this is a significant social issue. Liberalisation would offer the opportunity for such gamblers to be brought “into the fold” within a regulated gambling environment. In doing so it may also help break the cycle whereby existing excessive gamblers are effectively encouraged in their habits by illegal gambling establishments.

In addition, the fact that illegal operators do not contribute to excessive gambling research and/or prevention schemes means that there is that much less money to be contributed to such work. For example, considering the Ping Wo fund alone, if the HK\$ 12 billion or so estimated to flow to illegal operators in annual revenues were distributed to the fund on a *pro rata* basis, another HK\$ 17 million per annum

¹⁰⁶ Shou-Tsung Wu and Yeong-Shyang Chen, "The social, economic, and environmental impacts of casino gambling on the residents of Macau and Singapore", *Tourism Management*, 48 (2015): 285-98. ; Fong, D. et al., "The social cost of gambling in Macao before and after the liberalisation of the gaming industry", *International Gambling Studies*, 11:1, (2011) 43-56

¹⁰⁷ Fong D. et al., *Ibid.*

¹⁰⁸ Australia's Productivity Commission, "Australia's gambling industries" (Inquiry Report, Australia Productivity Commission, 1999)..

could be dedicated to dealing with excessive gambling issues.¹⁰⁹ To the extent that such programs are effective, the application of this money could help reduce or ameliorate the effects of excessive gambling— instead such funds fall into the hands of illegal operators.

Another major argument revolves around the relative contributions of the HKJC to Hong Kong government revenues in comparison to the illegal market. As noted, the HKJC contributes over three quarters of its revenues to tax and charity. The illegal market makes no such contributions (that are known of). Given this the amount of revenue which would be channelled back to the Hong Kong government and charitable purposes in the event of liberalisation is sizable. For example excluding the increase in gambling spend, HK\$ 4.2 billion per annum would be diverted from illegal revenues to tax and charity in the case of the option with the largest impact on revenues (more betting options for currently offered football leagues). As previously pointed out tax *per se* is not a benefit in strict economic terms but a transfer between members of society. Nonetheless, few would disagree – if only on ethical grounds - that in gambling revenues are better distributed back to Hong Kong society via taxes than ending up in the hands of illegal gambling operators.¹¹⁰

Consideration of such issues also leads on to the question of long term economic effects of liberalisation. There are a number of conceptual approaches to dealing with the costs of crime. These are outlined in Appendix 3. The approach taken in this study is that the presence of crime results in sub-optimal economic impacts for Hong Kong. This is because, rather than simply ignoring the economic effects of criminal activity, over the long term our interest is in measuring how the reduction of illegal gambling and/or associated laundering might affect *net* productivity and growth in Hong Kong.

More specifically, a reduction of funds available to criminal enterprises has long term economic benefits due to the fact that the presence of crime typically results in sub-optimal investment. While it is difficult to be certain in the case of Hong Kong, evidence from past analysts suggests that criminal behaviour reflects sub-optimal investment patterns with a particularly large over- emphasis on the real estate market.¹¹¹ Though some funds may be invested in areas such as the local housing

¹⁰⁹ Some HK\$ 45 million is set to be donated to the Ping Wo fund in 2015/16. This equates to some 0.15% of the HKJC's annual revenue (roughly \$HK 31 billion). Therefore if HK\$ 12 billion in illegal gambling revenues were brought into the legal fold the additional Ping Wo funding could equate to a notional HK\$ 17 million (ie $0.0015 \times \text{HK\$ } 12 \text{ billion} \sim \text{HK\$ } 17 \text{ million}$).

¹¹⁰ Assuming current proportions of tax and charitable contributions, the sum could amount to a notional HK\$ 9.4 billion in taxes and charitable contributions if illegal gambling were to be stamped out completely and its revenues transferred to the HKJC (i.e. $78\% \times \text{HK\$ } 12 \text{ billion}$). While it is unlikely all forms of illegal gambling could ever be eliminated, this serves as a guide to the magnitude of the tax and charitable losses incurred at present.

¹¹¹ Edwin W Kruisbergen, Edward R Kleemans and Ruud F Kouwenberg, "Profitability, power or proximity? Organised crime offenders investing their money in legal economy", *European Journal of Crime Policy Resolution*, 21 (2015): 237-56.256; Brigitte Unger et al., "The amounts and the effects of money laundering" (Report for the Ministry of Finance, Urecht School of Economics and Australia National University, 2006), 187. ; Walker, J., *The extent of money laundering in and through Australia in 2004*, Criminology Research Council, AUSTRAC, RMIT University (2004). Accessed 16 February 2016, <http://www.criminologyresearchcouncil.gov.au/reports/200304-33.pdf> Another distortion, pointed to by Kruisbergen et al., is an emphasis on investing in retail or wholesale operations which simply serve to

market, given the prime need to avoiding detection and/or asset confiscation (as opposed to optimal investment) as well as their strong mainland links, it is possible that Hong Kong criminals send substantial amounts of their money to areas such as offshore real estate.¹¹² The sub-optimal transfer of wealth would act to slow Hong Kong growth.

While there are few definitive estimates of the impacts of such laundering, empirical work by Unger and Rawlings on 17 OECD countries in Western Europe and North America suggests that laundering – or more precisely the crime that it is associated with – may reduce local GDP by 0.03-0.06 percent per billion \$US laundered. Unger and Rawlings point out that this result has only been measured for these 17 countries. However if a similar result were to hold for Hong Kong (and assuming all funds are laundered) the central point (0.045 percent) of this estimate can be applied to some of the liberalisation options discussed above.¹¹³ What would be relevant in this case is the pure displacement effect of the transfer of revenues from the illegal to the legal sector.

For example, taking the option with the largest impact on HKJC revenues in the displacement model (“Allow more bet options in currently offered football leagues”) we estimate that HK\$ 5.3 billion of the HK\$ 6.1 billion in additional HKJC revenues results from the displacement of illegal revenues.¹¹⁴ This implies that some HK\$ 850 million could be added to Hong Kong GDP under this scenario alone. While this figure is not intended to be definitive, it provides an order of magnitude illustration of the potential net economic effects liberalisation measures could bring to the Hong Kong economy.

aid the criminal enterprise through import/export of both legal and illegal goods, money transfers and/or as a part of the laundering process. Since many of these enterprises are unlikely to exist under normal competitive conditions, this constitutes a further market inefficiency.

¹¹² Kruisbergen et al. find the majority of Dutch criminal enterprises invest their money “at home” in Holland. However, in the case of Hong Kong, a different set of contextual factors may apply given the small size of the SAR, the importance of mainland enterprises and the fact “home” may just as well be considered to be the mainland as Hong Kong.

¹¹³ In practice not all may be laundered. However, analysts such as Unger note Dutch work suggesting laundering rates of 80 percent. In addition, Dutch work cited by Unger suggests the rest is typically either hoarded as cash or spent on luxury goods, neither of which is likely to be an optimal use of funds. Indeed, if the diversion of funds into such “sterile uses” were to be factored into calculations, the costs of criminal activity could be even larger.

¹¹⁴ This can be seen by subtracting the base model revenue results for this scenario from those of the displacement model.

7. CONCLUSION

This report has examined a range of issues connected with illegal betting markets in Hong Kong and the associated issue of excessive gambling and the harms that such gambling may bring to Hong Kong society and its economy. Its findings are based on a combination of a specialised Hong Kong survey undertaken by Ipsos and thorough analysis of relevant international literature.

The Ipsos survey work found that illegal gamblers were more likely to gamble on horse races, other sports products and in casinos than legal gamblers. Within sports betting, football was the most prominent category for both legal and illegal gamblers; though a significant portion of illegal gamblers also bet on basketball. Across all products, illegal gamblers bet more than legal gamblers on average. The greatest difference between illegal and legal gamblers was in sports betting, where illegal gamblers spent nearly four times what legal gamblers spend.

The Ipsos survey also indicates that most illegal gambling in Hong Kong takes place within older age groups. The typical profile of a Hong Kong illegal gambler is that of a middle aged male blue collar worker. Illegal gambling seems to reach a peak in middle age, with very little illegal gambling in older age groups. Excessive gambling follows a similar, if less pronounced profile. The preponderance of middle aged men within illegal gambling is consistent with evidence from the Netherlands, while the peaking of the excessive gambling in middle aged is consistent with some national evidence from the United States.

Consistent with international literature, our work found that excessive gamblers were overrepresented within the ranks of illegal gamblers, with 56 percent of illegal gamblers being classified as excessive gamblers. International literature also suggests that excessive gamblers are more likely to gamble illegally, show a greater interest in different types of gambling and are more avid gamblers in general. Many of these tendencies were also in evidence in the survey work done for this study, with illegal gamblers appearing to be more frequent gamblers with a greater proclivity for thrill-seeking behaviours. In other words, the high representation of excessive gamblers within the ranks of illegal gamblers means that illegal gamblers share many of the characteristics of excessive gamblers.

It cannot be definitively proven that illegal gambling causes excessive gambling, and indeed there is some evidence that excessive gambling behaviour in Hong Kong could be the product of early childhood and cultural experiences in many cases. However, at the very least the lack of any constraints on gambling behaviour within illegal environments could spur on excessive gamblers and exacerbate their problems. In contrast, legal gambling offered through the HKJC offers both direct and indirect means to address the issue of excessive gambling including public information campaigns and donations to funds dedicated to dealing with excessive gambling.

The overrepresentation of excessive gamblers within the ranks of illegal gamblers means that illegal gamblers are also exposed to the manifold social problems associated with excessive gambling. These include depression, family problems

and suicide. Past research both within Hong Kong and internationally suggests that many excessive gamblers suffer from such problems.

Our review of the available literature on financial issues due to gambling suggests that they may indeed be an issue for illegal and excessive gamblers within Hong Kong. In particular, cultural values which prize financial success can exacerbate the shame of unmanageable debt and lead to suicide or suicidal thoughts. Past literature suggests that illegal gamblers may be more susceptible to suicidal thoughts (at least) and that illegal gambling plays a role in the build-up in unmanageable debts among suicide cases. Illegal gamblers' interest in obtaining credit in order to gamble in the Ipsos survey may be an indicator that they are particularly susceptible to debt-related issues.

The international literature review also sheds light on gamblers who turn to crime and criminal syndicates who use illegal gambling to earn revenues and launder monies. Crime committed by gamblers usually consists of non-violent property crime such as theft, shoplifting, embezzlement and misappropriation of money. Criminal syndicates find that bribing law enforcement agents and politicians can help protect their businesses from raids, but in so doing, they are corrupting these public servants and contributing to greater risk and uncertainty in the business environment. Such risk and uncertainty harms long-term growth prospects for countries.

The presence of an illegal gambling market worth an estimated HK\$12 billion in annual revenue means that economic activity and taxes are diverted away from legal channels. In particular, given that 78 percent of HKJC revenue goes to tax or charitable purposes it represents a major diversion of money which could be used to improve the social well-being of Hong Kong.

This raises the question of what might happen if current gambling regimes were liberalised. Using the results of the Ipsos survey we were able to examine a variety of policy scenarios with legal and illegal gamblers, to see which might be most effective at reducing the illegal gambling market. The most effective policy in terms of reducing the size of the illegal market would be to allow more bet options on football leagues currently offered by the HKJC. This would increase total legal gambling revenues by HK\$ 6.1 billion by 2025/26 and allow for HK\$ 4.8 billion to be dedicated to taxes and charitable contributions.

Apart from providing more revenue to the HKJC and a greater tax take, extending the range of legal gambling options may have some beneficial social effects by helping to address the issue of excessive gambling within a legal environment, rather than an illegal one (where such behaviour is, if anything, encouraged). In addition, given that crime is economically inefficient in the long run, it may result in a net contribution to Hong Kong GDP.

8. APPENDIX 1: SURVEY METHODOLOGY

MAIN SURVEY AND A BOOSTER SURVEY

In order to gather evidence on three of the focal areas of the study, a main survey (n=512 gamblers) and a booster survey (n=103 illegal gamblers) were conducted during September and December 2015. Figure 23 summarizes the research methods adopted at the planning stage. The three focal areas of the whole study were the social implications of illegal gambling, the product offerings and channels, and the scenarios.

Fig. 23. Research methods endorsed at the planning stage

	Sample size	Sampling strategy	Data collection
Main survey	500 gamblers	Quota sampling strategy	A standardised survey questionnaire with both self-administered and interviewer-administered question items
Booster survey	100 illegal gamblers	Convenience sampling strategy	A standardised survey questionnaire with both self-administered and interviewer-administered question items

QUOTA SAMPLES IN THE MAIN SURVEY

There are no empirical studies focusing solely on illegal gambling in Hong Kong. The latest government-commissioned gambling prevalence study¹¹⁵ indicates that 0.3% of the general population participated in illegal gambling in the past year. The evidence-based data generated from the study shed light on the sampling method to be used in this main survey.

With reference to the age distribution of gamblers noted in the 2012 survey report, we worked out the age quotas of the 500 gamblers for this study. Figure 24 presents the information on age distribution of the 512 gamblers surveyed in the main study.

In addition to the age criterion, the 512 respondents were also recruited by using the “living district” as a selection criterion. Using the latest Hong Kong population census data on district population¹¹⁶ 512 gamblers were recruited on the street from three main districts (i.e. Hong Kong island, Kowloon and the New Territories).

¹¹⁵ The Hong Kong Polytechnic University, "The study on Hong Kong People's participation in Gambling Activities" (Study , The Hong Kong Polytechnic University, Department of Applied Social Sciences, 2011), 156.

¹¹⁶ Hong Kong Census and Statistics Department, "Hong Kong Monthly Digest of Statistics" (Report, June 2013).

Fig. 24. Pre-determined quotas of gamblers developed by using age as a selection criterion in the main survey (n=500)

Age of gamblers (in years)	Percentage derived from the 2012 report	No. of gamblers	Estimated distribution	Weighting factor
15-17	1%	5	0.24%	0.239
18-20	10%	50	3.78%	0.378
21-29	10%	50	9.89%	0.989
30-39	12.72%	64	13.87%	1.083
40-49	20.38%	102	22.21%	1.089
50-59	22.11%	110	24.09%	1.095
60 or above	23.79%	119	25.93%	1.089
Total	100%	500	100%	

Fig. 25. Age distribution of gamblers recruited in the main survey (n=512)

Age of gamblers (in years)	Percentage	No. of legal gamblers	No. of illegal gamblers	Total
15-17	1.17%	4	2	6
18-20	9.96%	51	0	51
21-29	10.16%	49	3	52
30-39	12.89%	63	3	66
40-49	20.31%	99	5	104
50-59	21.88%	110	2	112
60 or above	23.63%	121	0	121
Total	100%	497	15	512

Fig. 26. District distribution of gamblers recruited in the main study (n=512)

Living District	No. of gamblers	Percent
Hong Kong Island	102	19.92%
Kowloon	156	30.47%
New Territories	254	49.61%
Total	512	100%

CONVENIENCE SAMPLES IN THE BOOSTER SURVEY

The booster study targeted at least 100 illegal gamblers. In the main survey 15 illegal gamblers had been recruited. In the second stage of data collection, 88 illegal gamblers were interviewed using convenience sampling strategy. Combining illegal gamblers recruited in the main and the booster study, there were altogether 103 illegal gamblers. Figure 27 summarizes the age distribution of these 103 illegal gamblers.

Fig. 27. Age distribution of illegal gamblers recruited in the booster survey (n=103)

Age of illegal gamblers (in years)	Percentage	No. of illegal gamblers
15-17	4.85%	5
18-20	0%	0
21-29	4.85%	5
30-39	25.24%	26
40-49	47.57%	49
50-59	17.48%	18
60 or above	0%	0
Total	99.99%	103

The booster survey included many excessive gamblers who were also illegal gamblers. Their characteristics may not be those of excessive gamblers as a whole and this group may be overrepresented if all 600 respondents are considered in the examination of excessive gamblers, given that 53 of the 88 respondents to the booster survey were identified as excessive gamblers. Accordingly, in discussions of excessive vs non-excessive/low level excessive gamblers numbers relate to the weighted main sample results. These included 435 non-excessive or low level excessive gamblers and 77 excessive gamblers for a total sample size of 512 gamblers.

Differences in proportions or distributions between groups were tested using a Chi-Squared test at a 5 percent significance level. Differences in means were tested using a nonparametric Mann-Whitney U test at a 5 percent significance level.

9. APPENDIX 2: ALTERNATIVE MODELLING APPROACHES

BASE MODEL

As indicated in the main report, a base model and displacement model were estimated in order to determine the revenue and tax impacts of a liberalisation of the Hong Kong gambling regime. The base model reflects the increases in the gambling budget which both legal and illegal gamblers indicate they would spend under liberalisation options.

The approach to estimation of the base model results was as follows:

- The various “what if” scenarios were compared to a “do nothing” case in which there were no regulatory changes to Hong Kong gambling.
- The regulatory changes were assessed independently (i.e. they were not assessed as part of a broader package of gambling reforms and no interactive effects have been modelled).
- It was assumed (for modelling purposes only) that implementation of the above measures would take place in the 2015/16 financial year, with the first forecast year being 2016/17.
- Gambling spend is typically tied to Household Disposable Expenditure (HDI) and this measure is often used to in estimations of the relative salience of gambling spend.¹¹⁷ Oxford Economics forecasts of the growth in Hong Kong total HDI in real terms were used to develop a HDI index for the 10 years to 2025/26. This index incorporates changes in household real incomes and population over this timeframe.
- HKJC revenues from the latest HKJC annual report (2014/15 financial year) were assessed as HK\$ 31.2 billion. Forecast HKJC revenues in the “do nothing” case were grown over the years to 2025/2026 using the HDI index.
- HKJC tax and charitable donations over the last three financial years were examined and estimated to equate to 78 percent of HKJC revenues on average. This figure was assumed to hold constant into the future and was used to estimate future HKJC tax and charitable contributions in the do nothing case and in the scenario cases.
- In developing the revenue impacts of the scenarios, legal gamblers were separated from illegal gamblers.
- For legal gamblers, the results of the weighted Ipsos survey were used for the estimates. The proportion of respondents who indicated that they would increase their gambling spend in the event of a given option was derived from the survey findings. This was then multiplied by the most recent estimate of Hong Kong population’s participation in legal gambling (i.e. 62 percent using the 2011 survey work by the Hong Kong Polytechnic University¹¹⁸) to produce an estimate of the relevant gambling population.
- The relevant gambling population was then multiplied by the amount of increased monthly spend

¹¹⁷ Of course, at the extreme end of the spectrum, as noted above, excessive gamblers may run up debts and/or engage in crimes in order to finance their gambling habits. However, their ability to do so is still constrained in the long run by HDI as unsustainable debt cannot be maintained indefinitely. Likewise criminal activities are unlikely to be a long run solution to financing gambling activities for any given individual.

¹¹⁸ The Hong Kong Polytechnic University, "The study on Hong Kong People's participation in Gambling Activities" (Study , The Hong Kong Polytechnic University, Department of Applied Social Sciences, 2011), 156..

to produce a total increase in monthly gambling budget for a given initiative. This in turn was multiplied by 12 to estimate an annual spend figure. This was then indexed using the HDI index described above to produce estimates for 2025/26.

- The resulting revenue estimates were then added to HKJC revenue to produce total HKJC revenue for the given scenario. Tax and charitable donations from this increased HKJC revenue were derived by assuming that these would equate to 78 percent of HKJC revenues, as described above.
- While some respondents indicated that they would decrease total gambling spend in the event of the legislative changes these results were not taken into account. This is because in the relevant proportions were 1 percent or 0. In cases where the estimate was 1 percent of gamblers, the sample size was too small to produce a valid spend decrease estimate.
- A separate approach was taken to the treatment of an increase in the gambling age from 18 to 21. In this case, the revenue from such gamblers would be lost to the HKJC. The proportion of legal gamblers aged 18-20 (i.e. 4 percent) was estimated using the Ipsos (main weighted) survey results. This was then applied to total HKJC revenue to determine the revenue loss.¹¹⁹
- For illegal gamblers the same broad procedure was used as that for legal gamblers. However the unweighted survey results were used as these provided a much larger sample of illegals. The gambling populations were based on HKJC estimates of the number of illegal football gamblers, combined with the fact that 46 percent of the illegal gambling sample indicated they had gambled through illegal football forums over the past month. This allowed for an estimate of the total illegal gambling population within Hong Kong.^{120 121}
- The legal and illegal figures were then combined to estimate total change in HKJC revenue and tax take in 2025/26.

Displacement model

The displacement model takes into account the effects of the shift of illegal gamblers to the legal market. The displacement model adds these to the effects measured in the base model.

In considering such effects, we note that participating in the illegal market can be seen as imposing a kind of “cost” on gamblers. Because of these costs legal gamblers don’t participate in the market (by definition) and illegal gamblers don’t gamble as much as they would do if these forms of gambling were legal.¹²² When such gambling is legalised, these costs are reduced or disappear. The effect is akin to the classic

¹¹⁹ This may overestimate the loss as gamblers in this age group are likely to spend less than older gamblers. Note work by Lui, op. cit., indicates that 49 percent of current HKJC gamblers aged 18-20 would switch to the illegal market in the event of such a change, but in any case all revenue from this age group would be lost to legal gambling.

¹²⁰ This approach suggested that roughly 3 percent of the Hong Kong population gamble illegally. This compares to a 0.3 percent illegal gambling prevalence recorded in 2011 by the Hong Kong Polytechnic University study of *Hong Kong People’s Participation in Gambling Activities*. However, the latest Polytechnic illegal gambling figure seems low. The current Ipsos survey work suggested some 2.9 percent of gamblers (i.e. 15/297) or 1.8 percent of the population, given 62.3 percent overall gambling prevalence, were illegal gamblers. Illegal gambling prevalence rates of 4.2 percent and 2.1 percent were estimated in the 2001 and 2005 Polytechnic studies of *Hong Kong People’s Participation in Gambling Activities* respectively. The estimate of 3 percent prevalence sits in the middle of these past two prevalence estimates.

¹²¹ Caution should be exercised in interpreting certain results for illegal gamblers as sample sizes for some scenarios such as the 7/11 Circle-K scenario (18 respondents) and mah-jong scenario (7 respondents) were particularly small.

¹²² Though of course as noted above some illegal excessive gamblers in particular may enjoy the thrill of illegality as a part of the experience.

economic treatment of a reduction in the cost of a commodity and involves a “downward” movement along the demand curve for that commodity. So this can have two basic effects:

- Existing illegal gamblers increase the amount they gamble (induced demand)
- Existing illegal gamblers now have their activities classed as legal.

Effect a) is essentially accounted for above through the estimates of increased gambling budget in the base model. However this does not allow for the market shift where illegal gamblers now participate in the legal market – i.e. effect b). The displacement model estimates effects a) and b) for some of the specific scenarios described above.

Estimating displacement necessarily involves some degree of judgement and there are few reliable estimates of such effects in the long term. The PC’s work indicated that major displacement of illegal gambling took place within the Australian horse racing and casino markets with the introduction of TAB (off-course) race betting and legal casinos. In the case of the TAB, estimation, analysis of the PCs figures suggests residual illegal activity in NSW was equal to some 20 percent of its original value – or 11 percent of its former per capita value - after some 40 years. In the case of casino legalisation in jurisdictions such as NSW, illegal casino activity appears to have been virtually eliminated.¹²³

However, the arrival of online betting forums has also complicated the picture, with recent confidential work noting that illegal online betting still accounts for a portion of the Australian racing betting market. Likewise, contexts and jurisdictions may differ in their reaction to legalisation- illegal gambling is thought to account for a very sizable portion of total gambling revenue in Macao for example. It should also be recalled that illegal gambling organisations may attempt to respond to new forms of legal gambling by attempting to be more competitive themselves.

In view of these uncertainties, a conservative approach to the impacts of legalisation therefore seems appropriate. In the case of the displacement model, the approach was as per the base model for legal and illegal gamblers, with the following additional aspects:

¹²³ See Australia's Productivity Commission, "Australia's gambling industries" (Inquiry Report, Australia Productivity Commission, 1999). TAB betting was introduced in NSW in the mid 1960's. Estimated player losses from illegal off-course “SP” bookmakers (expressed in \$A1997-98) were \$537 million in NSW in 1950-51 but only \$106 million in 1994-95 – i.e. the residual illegal market was 20 percent. Adjusted for population growth the figure falls to 11 percent. Note if these figures were to be further adjusted to reflect per capita HDI growth the residual illegal market would be smaller.

- The proportion of illegal gamblers who indicated they would increase monthly spend in response to a given initiative was treated as a proxy for the proportion of the illegal market that would shift over to legal gambling in the long run. In effect, it was assumed that this was the portion of the illegal gambling market that enjoyed reduced implicit costs because they were now gambling legally and that they responded to the fact that the implicit cost of gambling had fallen by changing their behaviour -i.e. increasing their consumption of gambling.¹²⁴
- This proportion was then divided by the percentage of participants in illegal gambling sub-markets to determine the proportion of a given gambling market that would shift over to legal gambling in the event of a given scenario. For example 30 percent of illegal gambling participants were estimated to increase their spend in the event of more options being allowed on football leagues. The same proportion of the total market was assumed to shift to the legal market. Given 46 percent of illegal gamblers said they had illegally bet on football in the last month, the proportion of football betters who would then shift to the legal market was estimated as 66 percent - i.e. $.30/.46$.
- Finally the estimated proportions were matched to the values of the illegal markets for horse racing, football, basketball and other gambling previously estimated by the HKJC. For example HKJC estimates of the value of the illegal Hong Kong horse racing market were relevant to the rebate option. This value was then multiplied by the estimated proportion of illegal gamblers in that particular sub-market who would now gamble legally.¹²⁵

¹²⁴ Of course (purely) legal gamblers also indicated they would increase spend in response to many of these initiatives. However with legal gamblers the response is likely to be focussed on new product offerings. In the case of illegals they already enjoy this expanded range of product offerings – so the issue is likely to be focussed more on the reduced implicit cost of gambling activity. On another point, naturally, it is, quite possible that players might simply spend the same amount but shift their activities into the legal sphere. In this case the estimates presented above might understate effects. However by the same token this could imply that they were indifferent to the cost imposed by the fact that such activities were illegal. This could be true for some players but is unlikely to be true for the majority. More complex modelling could be undertaken to differentiate those who valued and didn't value legality and then assess the responsiveness to legality of each group. However, initial exploration of this approach indicates these approaches could yield a range of potential displacement values, with the estimates presented above being near the centre of this range.

¹²⁵ In the case of credit in gambling option this could cover several gambling sub-markets. Accordingly, the overall market proportion of gamblers was matched to the total value of all illegal gambling markets. In the case of the minor markets for internet, mah-jong parlours and illegal casinos, it was assumed that these would effectively be eliminated by the introduction of the relevant initiative in each case.

10. APPENDIX 3: APPROACHES TO UNDERSANDING THE ECONOMIC COSTS OF CRIME

In considering how to approach the economic effects of illegal gambling, it is worth considering how analysts have approached the assessment of the economic effects of crime in general.

A number of arguments have been advanced about the effects of illegal activity – including gambling – as a part of the wider “costs of crime” literature. In assessing the relative merits or legalisation it is worth considering such arguments. It is also worth distinguishing between *economic activity, impacts or contributions* (as measured by studies utilising multipliers and with a GDP focus) and *economic benefits* (which relate to long run issues about productivity and growth and which are sometimes combined with social issues as part of an overall *economic welfare* analysis). Five main approaches to this issue can be distinguished.

- (1) *Illegal activity makes no economic contribution* – This argument is often made within the context of economic impact or contribution studies focussing on metrics such as GDP. However, in purely technical terms this is unlikely to be correct. Illegal gambling operators in Hong Kong would employ staff, pay for expenses etc. and therefore would make some contribution to local growth in the short run. Nonetheless, most would not wish to encourage this type of growth – few politicians, after all, call for more criminal activity to boost GDP. Criminal activity such as illegal gambling generates no direct tax payments and as noted below, crime in general is likely to be economically sub-optimal. Accordingly one response is to not give such growth “standing” as noted under Approach 4 below.
- (2) *Illegal activity is simply a transfer of economic activity* – This view is sometimes expressed in the context of both economic contribution and economic welfare studies. For example some have argued this case in the context of film piracy, maintaining that value is merely transferred from producers to consumers and is not lost. In this view, illegal enterprises simply coexist as another form of market enterprise. However, apart from the ethical issues noted above, a difficulty with this argument is that crime leads to long run economic inefficiencies. In addition, the fact that the “transfer” is forced in many cases or takes place without agreement from legal producers (e.g. property rights holders, legal gambling institutions) distinguishes it from transactions within a normal market environment where property rights encourage investment and activity.
- (3) *Illegal activity makes an economic contribution but this is suboptimal* – An alternative point of view is that illegal activity does make an economic contribution but that this is sub-optimal. Several major statistical agencies have recently begun to assess the economic contribution of some illegal activities in national accounts including Britain’s ONS, Australia’s ABS and the Belgian, Italian and Spanish statistical agencies, though others have rejected this on ethical or conceptual grounds, including those of free consent noted above.¹²⁶ Analysts such as Walker go further and compare the economic multiplier effects of criminal activity (most of which is assumed to be invested in real estate) with those

¹²⁶ “France Refuses EU Order to Include Drugs, Prostitutes in GDP Figures”, rfi English, accessed 19 February 2016 <http://www.english.rfi.fr/economy/20140618-france-refue-eu-order-include-drugs-prostitution-gdp-figures>

arising from legitimate activity.¹²⁷ Walker's analysis finds that criminal economic contributions are less than those that would have been generated by legal economic activity, suggesting that illegal economic contributions are sub-optimal.

- (4) *Illegal activity may or may not have net economic benefits but these should be excluded from welfare* – This is similar to Approach 1 above with a more refined rationale and is the approach adopted for most economic welfare (or cost-benefit) based assessments of the costs of crime. In essence any benefits to criminals are not given “standing” in such assessments because these are not the type of benefits societies choose to include when making decisions about what kind of economic policies they wish to implement. For example, as noted above, one may argue that profits generated by illegal gambling simply shouldn't count in any social calculus as these don't contribute to taxes and aren't the type of growth Hong Kong wishes to encourage. Likewise, the fact that much criminal activity involves the effective consent of consumers and/or legal producers reinforces the argument that such activity should be excluded from social and economic calculus of the cost and benefits of an initiative.
- (5) *Illegal activity is suboptimal in net economic benefit terms* – This is similar in some ways to Approach 3, but assessed in terms of long run economic productivity and welfare rather than on a short run economic activity basis. In other words, in the long run, criminals are unlikely to make optimal investments partly because unlike legal investors (private or government via taxation) they are guided by distorted incentives (e.g. where best to hide their assets). Likewise, a crime ridden environment is unlikely to be one in which individuals can confidently invest.

Approach 5 is likely to be the best long term basis for assessing the economic effects of liberalising Hong Kong gambling. This is because, rather than simply ignoring the economic effects of criminal activity, over the long term our interest is in measuring how the reduction of illegal gambling and/or associated laundering might affect *net* productivity and growth in Hong Kong.

¹²⁷ Walker, J., *The extent of money laundering in and through Australia in 2004*, Criminology Research Council, AUSTRAC, RMIT University (2004). Accessed 16 February 2016, <http://www.criminologyresearchcouncil.gov.au/reports/200304-33.pdf>

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