Izračunavanje družbenih stroškov igralništva v Sloveniji z uporabo metodologije NORC in APC

Calculating Social Costs of Gambling in Slovenia by Application of NORC and APC methodology

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Povzetek

Razprave o igralništvu in oblikovanje igralniških politik v Sloveniji ne temeljijo na jasnih in zanesljivih podatkih o družbenih učinkih te dejavnosti. V tem članku izračunamo družbene stroške igralništva na ravni Slovenije in Goriške z vidika možne investicije v nov igralniški resort. V prvem delu ocenimo trenutno stopnjo problematičnega in patološkega igranja iger na srečo in razvijemo scenarije možnih trendov v prihodnosti. Ti scenariji so osnova za izračune družbenih stroškov igralništva. Pri tem uporabimo metodologijo dveh temeljnih študij, NORC in APT. Na koncu članka izpostavimo dva sklepa. Prvič, ekspanzija igralništva ni nujno povezana z znatnim dvigom družbenih stroškov igralništva. Ključno vlogo pri tem igra razvoj celovitega sistema družbeno odgovornega igralništva, ki vključuje preventivne in kurativne ukrepe. Drugič, razpolagamo s slabimi podatki o trendih in razvoju problematičnega igranja iger na srečo v Sloveniji.

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Vzpostavitev opazovalnice za longitudinalno raziskovanje teh vprašanj je ključnega pomena, in to bi moralo postati del celovitega sistema družbeno odgovornega igralništva.

Ključne besede: igralništvo, družbeni stroški, problematično in patološko igranje, NORC, APC

Abstract

Debates on gambling and policy-making in Slovenia is not based on conclusive and reliable data about the industry's social effects. In this paper, we are calculating social costs of gambling in Slovenia and in Goriška region in view of plans of possible investment in new resort casino. In the first part we estimate the extent of current problem and pathological gambling on the basis of limited available data and develop scenarios of possible future trends. These scenarios are the basis for calculation of social costs of gambling. We apply methodologies from two landmark studies, the NORC and APT study. At the end of the paper we come to two conclusions. Firstly, expansion of gambling sector does not necessarily imply steep increase in social costs of gambling. Comprehensive system of responsible gambling, which includes preventive measures and treatment of gambling addiction, is the key issue. Secondly, we have poor data on trends and developments regarding problem gambling in Slovenia. It is vital that we establish observatory for longitudinal research on these issues and it should become part of s comprehensive system of socially responsible gambling.

Keywords: gambling sector, social costs, problem and pathological gambling, NORC, APC

Introduction: Conceptualizing Social Costs

Recent unrealised plans of joint investment by HIT and Harrah's Entertainment (HIT-HET) in resort casino in Goriška region, Slovenia, triggered heated debate among experts, politicians, various interest groups and general public. One of the main 'qualities' of this debate was that it failed to produce conclusive and reliable results upon which informed and relevant policy-making decision, which included not only decisions at the local and regional level, but also substantial changes of gambling and taxation regulation on the national level, could rely on. These debates and discussions were plagued by relatively low level of knowledge about gambling sector, levels of problem and pathological gambling and complex interrelationships between numerous factors that determine its specific effects, which are, to make things more complicated, in many cases context-specific and therefore even more difficult to grasp.

Ironically, poor knowledge (i.e. lack of specific calculations) about social costs of planned HIT-HET investment, was in fact one of the main criticisms of individuals, politicians and civil society groups that opposed planned investment. For most of the debate this criticism was justified, as until quite late in this discussions there were no reliable estimates of gambling sector's social costs. It was therefore also not possible to estimate social costs of planned resort casino. The only relevant research relating to this was the analysis of economic and financial effect of this investment, which emphasized its mainly positive effect (Jaklič et al, 2007). This report only included a very small calculation of social costs, which obviously underestimated its negative effects, thereby contributing to speculations on. It was only after few months of discussion that a report calculating social costs was published (Rončević et al, 2007).

It is too often the case that full cost-benefit analysis is not performed before implementing various potentially far-reaching social, environmental, economic and other types of projects and policies. Instead of being calculated, arguments on social costs are developed intuitively and costs are presented descriptively. Consequently, (in)direct consequences of effects – in terms of costs and benefits to the society as a whole – are too often underestimated or overestimated (Verbič 2006: 21).

What are social costs? Kapp (in Franzini 2004: 5) define social costs as harmful consequences of a specific production process, in our case of gambling. These costs are not 'paid' by the main stakeholders responsible for implementation of the project (in our case HIT-HET investors and the state). Social costs assume substantial amount of social losses and can be analyzed as a financial side of unprotected social rights (ibidem), which implies that Kapp's formulation derives from conflicts between social rights and property rights. Coase achieved similar conclusions: lack of clearly defined property rights are causing externalities, including social costs (Lapeyre 2006).

Social costs can also be perceived as a violation of social rights (Franzini 2004: 17). However, it is fair to emphasize that the question of social rights is more substantial, as we can identify numerous examples of conflicting social rights. In fact, each individual or group right is someone's constraint. Hence Kapp's question: which social rights require protection and how broad should this protection be (in Franzini 2004: 14).

Cost-benefit analysis, as a main tool to evaluate economic aspects of projects, in principle requires evaluation of all effects, i.e. financial, economic, social etc. Final results should enable us to present

concluding thoughts, which determine whether the project is worth executing (Pearce *et al.* 2005).

In this paper, we are going to calculate social costs of HIT-HET investment in gambling resort. As there are no conclusive and reliable data no levels of problem and pathological gambling, we are in the first chapter going to estimate the extent of problem gambling in Slovenia and in Goriška region – this is the region with the highest density of casinos and gambling halls and also the location of the planned casino resort. IN our estimate we will have to rely on scarce available data and on experiences form other countries with developed gambling market. After that we will have to develop scenarios of possible future trends in levels of problem and pathological gambling.

On the basis of these scenarios we are going to calculate the social costs of gambling. As there is no commonly accepted definition of social costs of gambling and consequently we do not have a single widely accepted approach to calculation of its social costs, we will apply methodologies from two different landmark studies and attempt to determine which factors are crucial to reduce negative consequences of gambling and to keep them at low level.

Estimating extent of problem gambling in Slovenia and Goriška region

Calculation of social costs of gambling depends mainly on the number of problem and pathological gamblers, i.e. the share of the population with gambling problems.[4]   Unfortunately, so far there

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[4] There are various definitions of problem and pathological gambling. We find the most appropriate definition of problem gambling in economic terms where gamblers

were no attempts to measure extent of problem gambling in Slovenia on a representative sample and we do not have a reliable data at disposal. The best we can do is to try to estimate proportion of population with these problems.

In the past, some authors already attempted to estimate the extent of problem gambling in Slovenia, but these attempts are not conclusive. Jaklič et al (2006), for example, focused their attention exclusively on visitors of two largest casinos in Slovenia, i.e. Park and Perla owned by HIT company and even they acknowledged that this is "exclusively estimate of addiction caused by existing two casinos in Nova Gorica and not an estimate of addiction rate in Slovenia" (Jaklič et al. 2006: 106). Naturally, problem gambling is far greater; according to official data, visits of local population to other casinos and gambling halls only in Nova Gorica by far exceeds visits to the two HIT casinos (see Prašnikar et al. 2005: 17).[5]

The only attempt at a representative survey was conducted by Prašnikar et al. (2005), on a small random sample on the population in Nova Gorica, Slovenia's main gambling centre. According to this survey, 3% of population visits casino at least once per week and another 1% claims to visit a gambling hall once a week. On this basis,

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spends more that he/she can afford. (Reith 2006: 21). Pathological gambling is the one where gambler loses ability for impulse control. According to many definitions this is also a type of addiction, comparable with drug or alcohol addiction (Reith 2006: 20).

[5] We should also mention that HIT is strongly oriented to Italian market and until very recently company policy was to limit visits of local population to their casinos to 4 visits per month. It is therefore hypothesised – but until now not backed by empirical research – that social costs of gambling are being 'exported' to Italy. On the other hand, gambling halls are more likely to cause significant problems, as the density of highly addictive slot machines is greater than in casinos.

Jaklič et al. (2006) assume that these 3 to 4% of population could have gambling problem (Jaklič et al. 2006: 91). However, in their calculations they do not use this information and focus solely to the two largest casinos Park and Perla.

However, simply assuming that these 3 – 4% of population (regular visitors) are problem gamblers would be incorrect. Namely, in the same survey, 40% of regular visitors claims that the main reason for their visit is not gambling itself, but the extra program (concerts, dance shows, entertainment etc.). This is not a typical motivation of a problem or pathological gambler. We can perhaps assume that 60% of regular visitors possibly have gambling problem. Although such an assumption is also highly problematic, we can for the purpose of this study assume that in the local population of Nova Gorica share of regular visitors of casinos with possible problem gambling is some 2%.

Motivation is different for gambling halls visitors. Most of them mentioned gambling as the most important reason for their visits; hence, gambling is their main motivation for frequent visits. This implies that in addition to the aforementioned 2% we can add additional 1% of visitors of gambling halls. Consequently, we can estimate maximum share of problem gamblers to some 3% of local population. No available evidence points to higher addiction rates and any higher estimate would not be based on empirical evidence.

However, it is more difficult to estimate the extent of problem and pathological gambling on the national level, as there were no attempts to measure it. However, if we compare existing aforementioned data on Nova Gorica and also comparative overview of data in countries where SOGS-based gambling prevalence surveys have already been conducted (see Shaffer et al. in Reith 2006: 22),

there are very few examples of nations where joint proportion of problem and pathological gamblers would be less than 1% and more than 4%. According to this data, extent of problem gambling is 1,3% in New Zealand, 2% in Sweden, 3% in Switzerland, 4% in USA and Canada. Only real outliers are Australia with 4,9% (due to great dispersion and availability of highly addictive slot machines) and Norway with only 0,7%.
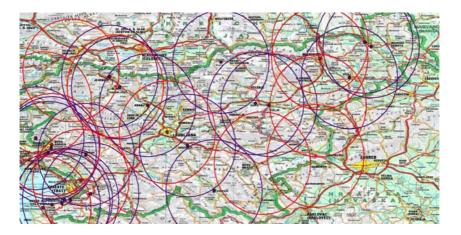
We cannot simply transplant this data to the case of Slovenia. However, it is – due to widespread supply of gambling – quite unlikely that problem and pathological gambling rates in Goriška region would be below 1%. For the purpose of this paper, we can estimate that the realistic rate is between 1% and 3% of the local population.

It is even more difficult to develop estimate for Slovenia as a whole, as we have no conclusive data whatsoever. We develop our argument on two starting points.

- Slovenia is a country with well developed gambling supply. Some studies show that critical distance for increased gambling addiction is 70 kilometers (Gerstein v Reith 2006: 46), meaning that gambling problems increase substantially (by factor of two) if such a supply is within 70 km radius. Given expansion of gambling in Slovenia in the past 15 years and its spatial distribution we can argue that most of Slovenia is well covered with casinos and gambling halls. This distance is, if most cases, in fact much smaller (see map below). Consequently, we can assume that Slovenia as a whole will not have significantly lower gambling problem rates than Nova Gorica.

- Spatial mobility in Slovenia is relatively modest, so casino or gambling hall needs to be much closer to its customers. On the map below we used 40km radius to show that gambling is easily available in Slovenia as a whole. There is almost no large settlement that would be more than one half an hour away with a car from a casino or gambling hall.

Map: Distribution of casinos and gambling halls and their 40 km radius (in 2007)

Legend: blue = gambling hall; red = casino

Countries with well developed gambling market and good availability of casinos and gambling halls typically do not have very low levels of problem and pathological gamblers, i.e. less than 1 % (see Schaffer et al. 2004). We can therefore assume that this is also the lowest realistic rate for Slovenia. However, due to much higher density of casinos and gambling halls in Goriška region we can assume that the rate of problem gambling in Slovenia is nevertheless somewhat lower. For the purpose of this paper we will assume that the rate for

Slovenia is between 1% and 2,5%. We should mention that as we do not have any data on the national level whatsoever, this estimate is not satisfactory from methodological point of view. It is, nevertheless, sufficient in terms that it does not underestimate the extent of this problem.

These two estimates, for Goriška region and for Slovenia, are a starting point for our calculation of social costs, as a hypothetical minimum and maximum. We use this interval to reduce the possibility that our calculation would either underestimate or overestimate the problem.

Finally, we should also estimate ratio between of 'problem' and 'pathological' gamblers, as they typically include different costs, as we shall later calculate. We have no Slovenian data whatsoever. Here we also depend on available data from other countries (Schaffer et al., 2004; Reith, 2006; NORC, 1999), which shows that the share of pathological gamblers among all with gambling problems is relatively constant, between 0,28 and 0,41. The average for available data is 0,35 with 0,07 standard deviation. We will assume that pathological gamblers represent 35% of the population with gambling problems.

Impact of HIT-HET project: two scenarios

Debates on HIT-HET resort casino investment took for granted that it will, in addition to substantial economic benefits (Jaklič et al. 2006; Jaklič et al. 2007) – some also challenged these – social costs will increase substantially as well. The only question seemed to be for how much they will actually increase.

However, empirical studies from a number of localities with more substantial experience both in terms of gambling sector and research

on gambling present a more varied image. Increased accessibility of gambling is indeed increasing risks of problem and pathological gambling. Schaffer's research in Nevada clearly showed that districts with biggest accessibility of casinos have the biggest proportion of problem gamblers and vice versa (Reith 2006: 28; Schaffer et al. 2004). Proximity increases possibility of addictive behavior and distance reduces it; as it requires planning and transportation, it significantly reduces impulsive behavior.

This principle is inherent in Eadington's classification of types of casinos. He distinguishes between three types: 1. *destination or resort casinos*, usually located away from population centres; 2. *rural casinos*, smaller than resorts but still located away from urban centres and 3. *urban or suburban casinos*, located in or near metropolitan areas (Eadington 2003). Reith adds the fourth type, *city casinos*, located in urban centres whose primary sector is casino gambling. Urban and city casinos are most likely to cause substantial social costs to the local population. If we take their location into account, casinos in Nova Gorica could be classified as urban or city casinos, although it is questionable whether we can talk about 'metropolitan' areas in Slovenia. However, structure of its guests is more similar to destination or resort casinos. The planned HIT-HET investment was, on the other hand, planned as a typical destination resort, as it would be too large to be profitable if it focused solely on nearby markets. This would significantly reduce possibility of impulsive gambling and hence the local social costs.

This does not imply that the local population in resort casinos is immune to social costs. The case of typical resort casino at Niagara Falls in Canada showed that local population can become regular visitor. Namely, in the first year after centre was opened in this

relatively small town (75.000 inhabitants), local residents' casino gambling increased fourfold, with consumption increasing by 25% (Room et el 1999). Correlation between casino proximity and gambling problems was also determined in the 1999 study in New Zealand (Abbot and Volberg, 2000).

It is quite likely that publicity itself would in the short-run influence initial locals' visits to HIT-HET resort casino. It is however questionable what the long-run effects of this would be, i.e. at what level would it stabilize after few years. Longitudinal studies are required to answer this question.

Results of such studies on the long-term effects of new or additional casinos give interesting and quite consistent results. Series of three comparable researches in New Zealand (1991, 1996, 1999) showed that although gambling supply increased substantially, the proportion of problem and pathological gamblers was in decline. Pathological gambling declined from 2,7% of population to 1%, although a number of new casinos was opened (Reith 2006: 34-35). Comparable research from Australia and South Africa showed similar trends (see Reith, 2006). Longitudinal studies of fifteen states in USA showed increase of problem gambling in seven states and decrease in eight states. (ibid. 36). More recent research by Volberg showed increase in North Dakota and Montana, and at the same time its decrease in Washington and Oregon.

Why is this the case? Volberg's analysis shows that results are not contradictory. Namely, the intervening variable, defining trends of problem gambling in a specific social setting, was the (non)existence of a comprehensive system of socially responsible gambling. This factor is more important determinant of problem and pathological gambling than expansion and accessibility of gambling.

Our research showed that in Slovenia this system is very poorly developed (Macur et al, 2008). Its future development will to an important extent determine trends in gambling problems. In the case of HIT-HET casino resort we can therefore hypothesize two possible scenarios relating to its social costs:

1. The first scenario is based on the assumption that the system of socially responsible gambling is not going to be developed only partially and implemented inconsistently. Legislation remains insufficient and its implementation in practice is lax, depending mainly on responsibility of individual corporate actors, while a number of smaller gambling businesses, especially those operating gambling halls, do not accept the concept.

2. The second scenario is based on the assumption that a comprehensive system of socially responsible gambling is established in a consensus between all relevant actors: gambling sector, local community, academic community, the state, civil society organizations etc. This system includes legislation, the media, education, health system, social work, applied research and last but not least, socially responsible behavior of casinos and gambling halls.

Each of those scenarios has to be applied on two extreme options, in order to get the maximum possible range of problem and pathological gambling: assuming firstly, that we are currently dealing with minimum realistic levels of these problems and, on the other hand, that we are dealing with maximum realistic levels, i.e. 3% in Goriška region and 2,5% in Slovenia as a whole.

Hence, we are dealing with a wide range of following sub-scenarios:

1.1.1 Goriška region; first scenario (no socially responsible gambling) with initially low share of problem and pathological gamblers (1%). This sub-scenario implies that there are substantial possibilities for expansion of gambling and related increase of gambling problems. New attractive centre would, with extensive marketing campaigns, encourage numerous new visitors from local population which until now were not particularly interested and as a consequence, share of addicted gamblers increases. Increase in employment in gambling sector also increases vulnerability to this addiction. *The projection is that five years after the investment in planned HIT-HET resort share of problem and pathological gamblers doubles and is at 2% of population.*

1.1.2 Goriška region; first scenario (no socially responsible gambling) with initially high share of problem and pathological gamblers (3%). Although this share is relatively high, there are certain possibilities for further increase, via extensive marketing campaigns. However, the possibilities for increase are not unlimited, taking experiences of other countries into account. We see 4% as the highest realistic share of problem and pathological gamblers; this is typical for localities or countries with high density of gambling. Australian data shows higher levels of addiction, but this is mainly due to dispersion of electronic gaming machines, a situation quite different to the planned resort casino in Slovenia. This comparison is therefore unrealistic. *The*

projection is that five years after the investment in planned HIT-HET resort share of problem and pathological gamblers increases to 4% of population.

1.2.1 Goriška region; second scenario (implementation of comprehensive system of responsible gambling) with initially low share of problem and pathological gamblers (1%). Low levels of addiction in local population and implementation of a wide range of preventive measures (but also treatment of addiction) prevent increase in problem gambling in spite of increase in supply of gambling and increased employment in casinos, which typically increases size of vulnerable groups. Goriška region will preserve levels of problem gambling also after the new resort casino is fully in operation. However, it would be unrealistic to expect that addiction rate can be reduced to even lower levels. *The projection is that five years after the investment in planned HIT-HET resort share of problem and pathological gamblers remains at the same level, at 1% of local population.*

1.2.2. Goriška region; second scenario (implementation of comprehensive system of responsible gambling) with initially high share of problem and pathological gamblers (3%). Gambling problems are acute already before HIT-HET. However, system of socially responsible gambling, first, prevents deterioration of the situation in spite of increased supply of gambling and, secondly, prevents initial consumers' enthusiasm and increased employment to cause additional problems with gambling addiction. In the long run, they can even contribute to decrease in problem and pathological gambling. This sub-scenario is consistent with results of

longitudinal studies in New Zealand, Australia and USA. *The projection is that five years after the investment in planned HIT-HET resort share of problem and pathological gamblers is reduced by one third, to 2%.*

Table 1: Overview of both scenarios for Goriška region

Scenario 1 – no responsible gambling

	Current situation				Five years after HIT-HET investment			
Estimate	**Share of problem gamblers**	population SOGS 5-9	population SOGS 10+	**Total**	**Share of problem gamblers**	population SOGS 5-9	population SOGS 10+	**Total**
Minimum	**1,0%**	628	338	**966**	**2,0%**	1.256	676	**1.932**
maximum	**3,0%**	1.884	1.014	**2.898**	**4,0%**	2.512	1.353	**3.864**

Scenario 2 –system of responsible gambling

	Current situation				Five years after HIT-HET investment			
Estimate	**Share of problem gamblers**	population SOGS 5-9	population SOGS 10+	**Total**	**Share of problem gamblers**	population SOGS 5-9	population SOGS 10+	**Total**
Minimum	**1,0%**	628	338	**966**	**1,0%**	628	338	**966**
maximum	**3,0%**	1.884	1.014	**2.898**	**2,0%**	1.256	676	**1.932**

2.1.1 Slovenia; first scenario (no socially responsible gambling) with initially low share of problem and pathological gamblers (1%). This sub-scenario implies that due to initially relatively low share, there are substantial possibilities for expansion of gambling and related increase in gambling problems. New attractive

centre would encourage new visitors from Slovenia to come gambling in Nova Gorica. As a consequence, share of addicted gamblers increases. Nation-wide increase in employment in gambling sector also increases vulnerability to this addiction. Due to size of the project, it will also increase visibility and awareness of gambling as a whole. *The projection is that five years after the investment in planned HIT-HET resort share of problem and pathological gamblers doubles and is at 2% of population.*

2.1.2 Slovenia; first scenario (no socially responsible gambling) with initially high share of problem and pathological gamblers (2,5%). Although this share is relatively high, there are certain possibilities for further increase, via extensive national-level marketing campaigns. However these increases would be rather limited, taking experiences of other countries into account. We assume that addiction rates would be highest in Goriška region, with 4%, and on the national level addiction rates would be somewhat lower, but not substantially. *The projection is that five years after the investment in planned HIT-HET resort share of problem and pathological gamblers increases to 3,5% of population.*

2.2.1 Slovenia; second scenario (implementation of comprehensive system of responsible gambling) with initially low share of problem and pathological gamblers (1%). Low initial levels of addiction in population and implementation of a wide range of preventive measures

(but also treatment of addiction) prevent increase in problem gambling in spite of increase in supply of gambling and increased employment in casinos, which typically increases size of vulnerable groups. Slovenia will maintain one of lowest rates of gambling problems in the world also after new resort casino is fully in operation. However, it would be unrealistic to expect that addiction rate is reduced to even lower levels. *The projection is that five years after the investment in planned HIT-HET resort share of problem and pathological gamblers stays at the same level, at 1% of local population.*

2.2.2. Slovenia; second scenario (implementation of comprehensive system of responsible gambling) with initially high share of problem and pathological gamblers (2,5%). Gambling problems are acute already before the investment in resort casino take place. However, system of socially responsible gambling prevents deterioration of the situation in spite of increased supply of gambling and reduces the detrimental effect of initial consumers' enthusiasm and incresed employment in gambling sector. In the long run, they can even contribute to decrease in problem and pathological gambling. *The projection is that five years after the investment in planned HIT-HET resort share of problem and pathological gamblers is reduced to 2%*.

These sub-scenarios are the basis for calculations of social costs of gambling. They should both be interpreted as minimum and maximum values; it is realistic to expect that actual values are between these extremes.

Table 2: Overview of both scenarios for Slovenia

Scenario 1 – no responsible gambling

| | Current situation | | | | Five years after HIT-HET investment | | | |
	Share of problem gamblers	population SOGS 5-9	population SOGS 10+	Total	Share of problem gamblers	population SOGS 5-9	population SOGS 10+	Total
Estimate								
minimum	**1,0%**	10.463	5.634	**16.097**	**2,0%**	20.927	11.268	**32.195**
maximum	**2,5%**	26.158	14.085	**40.243**	**3,5%**	36.621	19.719	**56.341**

Scenario 2 –system of responsible gambling

| | Current situation | | | | Five years after HIT-HET investment | | | |
	Share of problem gamblers	population SOGS 5-9	population SOGS 10+	Total	Share of problem gamblers	population SOGS 5-9	population SOGS 10+	Total
Estimate								
minimum	**1,0%**	10.463	5.634	**16.097**	**1,0%**	10.463	5.634	**16.097**
maximum	**2,5%**	26.158	14.085	**40.243**	**2,0%**	20.927	11.268	**32.195**

Calculation of social costs of new casino resort according to NORC methodology

Study on social costs of gambling, which was conducted by National Opinion Research Center (NORC) in 1999 on the initiative of National Gambling Impact Study Commission is considered as one of two landmark studies, the other being the study conducted by the Australian Productivity Commission (NORC 1999; Reith 2006: 13, 18-19). NORC methodology seems relevant from our perspective as it was designed to express negative effects of gambling in quantitative, i.e. monetary terms.

Costs caused by problem and pathological gamblers are not the only cost, but are nevertheless by far the most important and making other costs far less relevant. Some other costs, that were stereotypically linked with gambling, i.e. costs of crime, did not prove to be very substantial in a number of studies; we can claim that gambling does not significantly increase crime rates per capita (Reith 2006: 48). This is also verified by official statistics in Slovenia, which demonstrate that increase in crime rates in Goriška region did not increase faster than in other Slovenian regions (Prašnikar et al. 2005). However, we have to take into account crimes committed by gambling addicts and we have to include it in our calculation of social costs.

NORC methodology strictly distinguishes between private and social costs of gambling (Jaklič 2006: 91). Private costs, which are not transferred to local community and the state, are not calculated as social costs. For example, gambling debt that can be paid by gambler is private, not social cost and is not included in calculation. On the other hand, this methodology includes social transfers, which are costs to taxpayers, although standard economic theory does not count them as cost (NORC 1999: 39). Jaklič et al. (2006) included transfers in their calculation of social costs and we are doing the same.

We should emphasize that data on gamblers' behavior, which is included in the model, is mostly based on surveys conducted in the USA. In the case of Slovenia we simply do not have such a data at our disposal. This implies our calculations are to some extent based on assumptions that yet have to be verified. However, we can nevertheless reliably assume that key aspects of behavior of problem and pathological gamblers in Slovenia are similar to those in the USA.

Namely, the concepts of problem and pathological gambling are not locally specific and deviations of problem and pathological gamblers from the rest of population are relatively comparable.

We should also mention one further discrepancy between original NORC calculations and our calculations. The former distinguished between *annual* and *lifetime* costs of problem and pathological gambling. They estimate that due to data collection techniques it is not possible to translate them from one to another. However, public discussion in Slovenia requested calculation of annual costs, so we decided, like other authors (Jaklič et al. 2006) to search for appropriate solutions to calculate costs on annual basis. Apart from that, we followed model developed by NORC as strictly as possible, although we are aware of certain limitations and inconsistencies.

Our calculation thus included following costs:

- loss of employment,

- costs of unemployed,

- costs of prison sentences (excluding costs of arrests due to poor data),

- costs of divorce,

- bad debts and,

- costs of treatment.

Table 3 shows our calculation of average costs per problem and pathological gambler:

Table 3: Total annual costs per problem and pathological gambler according to NORC methodology

Type of cost in EUR	per problem gambler	per pathological gambler
Loss of employment	98,97	149,84
Labor court	2,00	3,00
Unemployment benefits	354,08	536,08
Financial assistance	67,84	102,70
Personal bankruptcy	28,56	58,54
Prison sentence	4,89	9,96
Arrest	7,01	7,32
Divorce	0,41	1,40
Illnesses	33,40	229,78
Mental disease	36,21	36,21
Therapy	0	50,25
Total annual cost per gambler	**633**	**1.185**

Our calculations show that average annual costs are 633 € per problem gambler and 1.185 € per pathological gambler. This differs from calculations by Jaklič et al (2006) but not substantially. The difference is due to more precise quantification of specific costs, especially health-related costs and costs of treatment of pathological gamblers. Our calculation showed somewhat smaller social costs for problem gamblers and somewhat higher costs for pathological gamblers.

In the next step we can calculate total annual social costs of gambling in Goriška region and in Slovenia as a whole.

Table 4: Estimate of total current social costs of gambling in Goriška region - NORC methodology (in EUR)

Scenario 1 – no responsible gambling

	Current situation				5 years after investment			
Estimate	**Share of problem gamblers**	Cost caused by population SOGS 5-9	Cost caused by population SOGS 10+	**Total**	**Share of problem gamblers**	Cost caused by population SOGS 5-9	Cost caused by population SOGS 10+	**Total**
minimum	**1,0%**	397.734	400.718	**798.452**	**2,0%**	795.467	801.436	**1.596.903**
maximum	**3,0%**	1.193.201	1.202.154	**2.395.355**	**4,0%**	1.590.934	1.602.872	**3.193.806**

Scenario 2 – system of responsible gambling

	Current situation				5 years after investment			
Estimate	**Share of problem gamblers**	Cost caused by population SOGS 5-9	Cost caused by population SOGS 10+	**Total**	**Share of problem gamblers**	Cost caused by population SOGS 5-9	Cost caused by population SOGS 10+	**Total**
minimum	**1,0%**	397.734	400.718	**798.452**	**1,0%**	397.734	400.718	**798.452**
maximum	**3,0%**	1.193.201	1.202.154	**2.395.355**	**2,0%**	795.467	801.436	**1.596.903**

As we can see, current social costs of gambling in Goriška region are between of 800.000 EUR and 2,4 million EUR. Five years after the HIT-HET investment in resort casino, these costs would increase by additional 800.000 EUR. However, in the case of introduction of well developed and comprehensive system of socially responsible gambling, increase in these costs can be prevented or even be reduced by up to 800.000 EUR.

On the level of Slovenia as a whole, as we can see from table 5, current social costs of gambling are estimated to be between 13,3 million EUR and 33,3 million EUR. Five years after investment in resort casino, these costs could be increased by additional 13,1 million EUR. However, by introducing a comprehensive system of socially responsible gambling, increase in these costs can be prevented or even be reduced by 6,7 million €.

Table 5: Estimate of total current social costs of gambling in Slovenia - NORC methodology (in EUR)

Scenario 1 – no responsible gambling

		Current situation				5 years after investment		
	Share of problem gamblers	Cost caused by population SOGS 5-9	Cost caused by population SOGS 10+	**Total**	**Share of problem gamblers**	Cost caused by population SOGS 5-9	Cost caused by population SOGS 10+	**Total**
Estimate								
minimum	**1,0%**	6.627.120	6.676.847	**13.303.967**	**2,0%**	13.254.241	13.353.693	**26.607.934**
maximum	**3,0%**	16.567.801	16.692.117	**33.259.917**	**4,0%**	23.194.921	23.368.963	**46.563.884**

Scenario 2 – system of responsible gambling

		Current situation				5 years after investment		
	Share of problem gamblers	Cost caused by population SOGS 5-9	Cost caused by population SOGS 10+	**Total**	**Share of problem gamblers**	Cost caused by population SOGS 5-9	Cost caused by population SOGS 10+	**Total**
Estimate								
minimum	**1,0%**	6.627.120	6.676.847	**13.303.967**	**1,0%**	6.627.120	6.676.847	**13.303.967**
maximum	**3,0%**	16.567.801	16.692.117	**33.259.917**	**2,0%**	13.254.241	13.353.693	**26.607.934**

Calculation of social costs of new casino resort according to NORC methodology

The second "landmark" research was conducted by Australian Productivity Commission (APC) in 1999.[6] APC is a body of the Australian government, whose primary purpose is to conduct independent analyses and opinions on a variety of economic policies, with the goal to maximize their benefits for the society as a whole. This study, as well as the NORC study, can be interpreted as a response to cost-benefit analysis by Walker and Barnett (1999). APC prepared its study with the goal to formulate suggestions for regulation of Australia's gambling sector. The methodology applied is fairly comprehensive and takes a wide range of social costs into account. Hence, the model can also be applied in the Slovenian context. Some of the costs included in the model are the same as in NORC study, but not all of them. Due to these fairly substantial and relevant differences it makes sense to apply it on the case of Slovenia. Its application will, like in the case of NORC methodology, take into account some specifics of the Slovenian environment and its legislative framework,

APC study is a vast research, dealing in-depth with issues relating to methodology and data sources. This is possible as the study was based on *National Gambling Survey.* This type of study was not conducted in Slovenia so far. Hence, knowledge of problem and pathological gamblers' behavior outside of casinos and gambling halls is rather limited. This is not a limiting factor in gambling research only in Slovenia, but also internationally. Gambling studies are relatively

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[6] This study is published online:
http://www.pc.gov.au/inquiry/gambling/finalreport/index.html

recent interdisciplinary research field without very substantial tradition.

Debates on gambling regulation were rather heated in Australia before APC study was conducted. On one side there were advocates of gambling expansion as a source of economic benefits and entertainment in states and regions where gambling was legal. They also strongly emphasized individual right to choose. On the other side were opponents who either denied claims of substantial economic benefits or that social costs and bad influences outweigh all the benefits. This discussion was enhanced by lack of consistent information and in-depth analysis of economic and social effects of gambling (APC, 1999: 5). IN this sense the situation in Slovenia is quite similar.

APC methodology is also coming from the perspective that most social costs are caused by problem and pathological gamblers. Although there are many different definitions (including a range of diagnostic tools and measures of this phenomenon), we can say that most definitions have two dimensions in common:
- loss of control over one's actions and
- negative personal, economic and social effects, which are caused by gamblers' actions.

It is, however, rather difficult, if not impossible, to determine exact boundary between 'recreational' and 'problem gambling'.

National Gambling Survey included all regular gamblers, i.e. those that gamble at least once per week, and determined that problem and pathological gamblers represent 15% of all regular gamblers.

(APC, 1999: 2). With these calculations we apply data on hypothesized population of regular gamblers.

APC methodology includes following types of costs:
- financial costs (bankruptcies and debts),
- productivity and employment (reduction in productivity on the workplace; costs of training new staff),
- crime (police costs, court costs, costs of prison sentences),
- personal and emotional costs (emotional costs of family members, financial and emotional costs of divorce, emotional costs of relationship breakup, violence, depression, suicide and attempted suicide),
- costs of treatment.

Which costs should be included in calculation? APC methodology clearly distinguishes between three types of costs. Firstly, the external costs. These are costs caused to the other people, who do not have influence over this. They are obviously the only type of costs that can justify intervention or regulation from authorities. Nevertheless, APC also included segments of the second group of costs, i.e. internal costs (not the money that was gambled away, but other costs). The question is to what extent are gamblers really aware of the realistic extent of individual costs and benefits of gambling. Third type of costs, transfer costs, is not included in calculation, as this is transfer within society that does not reduce total wealth (Walker in Barnet, 1999). Nevertheless, the APC acknowledges that although such transfers are not cost to a society as a whole, they are important to the individual that pays. (APC, 1999: 9.7)

In table 6 we present data on social cost of gambling in Goriška region and in table 7 in Slovenia, according to APC methodology.

Table 6: Social costs of gambling in Goriška region- APC methodology

	Scenario 1 - no responsible gambling				Scenarij 2 - system of responsible gambling			
	current situation		5 years after investment		current situation		5 years after investment	
	minimum	maximum	minimum	maximum	minimum	maximum	minimum	maximum
Financial costs								
bad debts	37,729.10 EUR	113,187.31 EUR	75,458.21 EUR	150,916.41 EUR	37,729.10 EUR	113,187.31 EUR	37,729.10 EUR	75,458.21 EUR
Productivity and employment								
Lower productivity at workplace	30,860.18 EUR	92,580.54 EUR	61,720.36 EUR	123,440.72 EUR	30,860.18 EUR	92,580.54 EUR	30,860.18 EUR	61,720.36 EUR
Change of workplace - cost of the state	15,287.31 EUR	45,861.93 EUR	30,574.62 EUR	61,149.24 EUR	15,287.31 EUR	45,861.93 EUR	15,287.31 EUR	30,574.62 EUR
Change of workplace - cost of employer	3,906.35 EUR	11,719.06 EUR	7,812.70 EUR	15,625.41 EUR	3,906.35 EUR	11,719.06 EUR	3,906.35 EUR	7,812.70 EUR
Crime								
police intervention	554.54 EUR	1,663.62 EUR	1,109.08 EUR	2,218.17 EUR	554.54 EUR	1,663.62 EUR	554.54 EUR	1,109.08 EUR
courts	2,443.47 EUR	7,330.41 EUR	4,886.94 EUR	9,773.87 EUR	2,443.47 EUR	7,330.41 EUR	2,443.47 EUR	4,886.94 EUR
prison sentences	10,644.31 EUR	26,610.78 EUR	21,288.62 EUR	37,255.09 EUR	10,644.31 EUR	26,610.78 EUR	10,644.31 EUR	21,288.62 EUR
Personal and family costs								
emotional pain of family members	548,937.07 EUR	1,646,811.20 EUR	1,097,874.13 EUR	2,195,748.26 EUR	548,937.07 EUR	1,646,811.20 EUR	548,937.07 EUR	1,097,874.13 EUR
financial cost of divorce	1,340.82 EUR	4,022.45 EUR	2,681.63 EUR	5,363.27 EUR	1,340.82 EUR	4,022.45 EUR	1,340.82 EUR	2,681.63 EUR
emotional cost of divorce	2,952.58 EUR	8,857.73 EUR	5,905.15 EUR	11,810.30 EUR	2,952.58 EUR	8,857.73 EUR	2,952.58 EUR	5,905.15 EUR
emotionalni cost of separation	6,860.40 EUR	20,581.19 EUR	13,720.79 EUR	27,441.58 EUR	6,860.40 EUR	20,581.19 EUR	6,860.40 EUR	13,720.79 EUR
emotional cost ov violence	1,234.76 EUR	3,704.29 EUR	2,469.53 EUR	4,939.05 EUR	1,234.76 EUR	3,704.29 EUR	1,234.76 EUR	2,469.53 EUR
depression	18,033.87 EUR	54,101.60 EUR	36,067.73 EUR	72,135.47 EUR	18,033.87 EUR	54,101.60 EUR	18,033.87 EUR	36,067.73 EUR
contemplating suicide	2,576.27 EUR	7,728.80 EUR	5,152.53 EUR	10,305.07 EUR	2,576.27 EUR	7,728.80 EUR	2,576.27 EUR	5,152.53 EUR
attempting suicide	1,890.34 EUR	5,671.01 EUR	3,780.67 EUR	7,561.34 EUR	1,890.34 EUR	5,671.01 EUR	1,890.34 EUR	3,780.67 EUR
effect of suicide on family members	3,119.05 EUR	9,357.16 EUR	6,238.11 EUR	12,476.22 EUR	3,119.05 EUR	9,357.16 EUR	3,119.05 EUR	6,238.11 EUR
Costs of treatment								
Treatment for pathological gamblers	16,991.28 EUR	50,973.85 EUR	33,982.57 EUR	67,965.14 EUR	16,991.28 EUR	50,973.85 EUR	16,991.28 EUR	33,982.57 EUR
TOTAL	705,361.69 EUR	2,110,762.91 EUR	1,410,723.38 EUR	2,816,124.59 EUR	705,361.69 EUR	2,110,762.91 EUR	705,361.69 EUR	1,410,723.38 EUR

Table 7: Social costs of gambling in Slovenia - APC methodology

	Scenario 1 - no responsible gambling				Scenarij 2 - system of responsible gambling			
	current situation		5 years after investment		current situation		5 years after investment	
	minimum	maximum	minimum	maximum	minimum	maximum	minimum	maximum
Financial costs								
bad debts	628,650.20 EUR	1,571,625.50 EUR	1,257,300.40 EUR	2,200,275.70 EUR	628,650.20 EUR	1,571,625.50 EUR	628,650.20 EUR	1,257,300.40 EUR
Productivity and employment								
Lower productivity at workplace	514,198.77 EUR	1,285,496.92 EUR	1,028,397.54 EUR	1,799,695.69 EUR	514,198.77 EUR	1,285,496.92 EUR	514,198.77 EUR	1,028,397.54 EUR
Change of workplace - cost of the state	254,720.33 EUR	636,800.83 EUR	509,440.66 EUR	891,521.16 EUR	254,720.33 EUR	636,800.83 EUR	254,720.33 EUR	509,440.66 EUR
Change of workplace - cost of employer	65,088.45 EUR	162,721.13 EUR	130,176.90 EUR	227,809.58 EUR	65,088.45 EUR	162,721.13 EUR	65,088.45 EUR	130,176.90 EUR
Crime								
police intervention	9,239.88 EUR	23,099.71 EUR	18,479.77 EUR	32,339.60 EUR	9,239.88 EUR	23,099.71 EUR	9,239.88 EUR	18,479.77 EUR
courts	40,713.58 EUR	101,783.95 EUR	81,427.16 EUR	142,497.54 EUR	40,713.58 EUR	101,783.95 EUR	40,713.58 EUR	81,427.16 EUR
prison sentences	178,896.00 EUR	447,240.00 EUR	357,792.00 EUR	626,136.00 EUR	178,896.00 EUR	447,240.00 EUR	178,896.00 EUR	357,792.00 EUR
Personal and family costs								
emotional pain of family members	9,146,504.04 EUR	22,866,260.10 EUR	18,293,008.08 EUR	32,012,764.14 EUR	9,146,504.04 EUR	22,866,260.10 EUR	9,146,504.04 EUR	18,293,008.08 EUR
financial cost of divorce	22,340.97 EUR	55,852.41 EUR	44,681.93 EUR	78,193.38 EUR	22,340.97 EUR	55,852.41 EUR	22,340.97 EUR	44,681.93 EUR
emotional cost of divorce	49,196.43 EUR	122,991.07 EUR	98,392.85 EUR	172,187.49 EUR	49,196.43 EUR	122,991.07 EUR	49,196.43 EUR	98,392.85 EUR
emotionalni cost of separation	114,309.34 EUR	285,773.36 EUR	228,618.69 EUR	400,082.70 EUR	114,309.34 EUR	285,773.36 EUR	114,309.34 EUR	228,618.69 EUR
emotional cost ov violence	20,573.87 EUR	51,434.68 EUR	41,147.75 EUR	72,008.56 EUR	20,573.87 EUR	51,434.68 EUR	20,573.87 EUR	41,147.75 EUR
depression	300,484.05 EUR	751,210.13 EUR	600,968.11 EUR	1,051,694.19 EUR	300,484.05 EUR	751,210.13 EUR	300,484.05 EUR	600,968.11 EUR
contemplating suicide	42,926.29 EUR	107,315.73 EUR	85,852.59 EUR	150,242.03 EUR	42,926.29 EUR	107,315.73 EUR	42,926.29 EUR	85,852.59 EUR
attempting suicide	31,497.17 EUR	78,742.92 EUR	62,994.34 EUR	110,240.09 EUR	31,497.17 EUR	78,742.92 EUR	31,497.17 EUR	62,994.34 EUR
effect of suicide on family members	51,970.33 EUR	129,925.82 EUR	103,940.65 EUR	146,461.83 EUR	51,970.33 EUR	129,925.82 EUR	51,970.33 EUR	103,940.65 EUR
Costs of treatment								
Treatment for pathological gamblers	283,112.32 EUR	707,780.80 EUR	566,224.64 EUR	990,893.12 EUR	283,112.32 EUR	707,780.80 EUR	283,112.32 EUR	566,224.64 EUR
TOTAL	11,754,422.03 EUR	29,386,055.07 EUR	23,508,844.05 EUR	41,105,042.78 EUR	11,754,422.03 EUR	29,386,055.07 EUR	11,754,422.03 EUR	23,508,844.05 EUR

Tables show that social costs of gambling according to APC methodology are relatively comparable to the one calculated following NORC. Current social costs of problem and pathological gamblers are between 700.000 and 2.1 million EUR in Goriška region. Five years after the investment in gambling casino, these cost would increase by a further 700.000 EUR. In case of introduction of a comprehensive system of socially responsible gambling it is possible to prevent increase of social costs or – in case of high starting point – even reduce them by up to 700.000 EUR.

On the level of Slovenia social costs of gambling are currently between 11,8 in 29,4 million EUR. Five years after investment in resort casino these costs would increase by up to 11,7 million EUR. However, in case of introduction of a comprehensive system of socially responsible gambling it is possible to avoid extra costs or even to reduce them by up to 5,9 million EUR.

Conclusion

At the end of this paper we can come to two conclusions. Firstly, comprehensive system of responsible gambling, which includes preventive measures and also treatment of gambling addiction is the key issue. Expansion of gambling sector does not necessarily imply steep increase in social costs of gambling. On the contrary, as the prevention and treatment in Slovenia is currently relatively poorly developed (see Macur et al, 2008), it is quite likely that simultaneous introduction of this system with investment in resort casino would reduce social costs of gambling, or at least keep them at the same level.

Secondly, we clearly demonstrated that we have rather poor data on trends and developments regarding problem gambling in Slovenia. It

is vital that we establish observatory for longitudinal research on these issues. It should become part of s comprehensive system of socially responsible gambling. If we are to continue expansion of gambling sector by simultaneous reduction in (potential) social costs and increase in economic benefits, stakeholders who are interested in this process should dedicate special attention to development and improvement of data collection and analysis capacities, including data on health situation of addicted population. They should invest in research and development projects in areas where we expect greatest increase in the number of problem and pathological gamblers. These actors are mainly gambling companies (interested in profits) and local and national governments (interested in tax revenue).

If gambling industry and the state want to expand gambling sector without causing excessive conflicts and too heated discussions, it is vital to increase knowledge about problem gambling and its mitigation. As this knowledge is currently relatively poor, we can either underestimate or overestimate harmful effects of gambling. On one hand, some doubt the very existence of problem gamblers. "Do problem gamblers exist? I am yet to be convinced of this, however I fully acknowledge that there are people with problems who gamble." (Windross in Reith 2006: 17). On the other hand there is a common belief that gambling is cause of all psychological, economic and social problems of problem or pathological gambler.

Long-term policies are needed to tackle these issues. For example, Radovanovič (2003: 241) emphasizes that the most important mechanism for prevention of pathological gambling is informing population on possible negative effects of uncontrolled gambling

behavior, from early age on. As Slovenia and especially Goriška region is an important gambling site, this is indeed a long-term policy.

These two conclusions are not superficial. Firstly, reduction of social costs of gambling should get important place on the political agenda, if we are to continue expansion of gambling sector, which evidently offers numerous economic benefits (Jaklič et al 2007). It is quite likely that if this was included in policy-making process on time, the HIT-HET resort casino project would not have met such a strong resistance. At the same time relevant stakeholders should agree on acceptable levels of social costs of gambling, as a guideline to policy makers dealing with reduction of costs of gambling. Secondly, constant evaluation of trends in social costs is necessary as an input to setting criteria for economic policies and rational decision making, even though key guidelines for this should be determined in partnership among key stakeholders, i.e. local community, the state, financial institutions, NGOs and gambling sector. These guidelines should aim to express consensus on a systematic approach to expansion of gambling sector. This approach should aim to develop gambling market, but with a special view on protection from increase in share of problem and pathological gamblers and hence its social costs.

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