atlas research

Red-black untangled

Exploration of the social costs and benefits of gambling

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Summary

Rationale and knowledge needs

On April 1st 2021, the Remote Gambling Act (hereinafter: Koa Act) came into force and from October 1st 2021, online licence holders became active in the Netherlands. Against the background of these and other developments in the Dutch gambling landscape, the Ministry of Justice and Security (Directorate-General for Punishment and Protection, Department of Integrity and Gambling; hereafter: Ministry of JenV) has the following knowledge needs:

1. A broad exploration of both the financial and non-financial costs and benefits of all types of gambling (including remote gambling) for Dutch society. These are costs and benefits related to the three public interests: protecting consumers, preventing gambling addiction and combating illegality and criminality. Therefore, attention is also requested for illegal supply.
2. Knowledge of any changes in the above costs and benefits due to the opening of the online gambling market.
3. Knowledge of whether the findings of the above two items are in any way useful for the future evaluation of the Koa Act.

To meet this knowledge need, this study provides an exploration of the social costs and benefits of gambling. In addition, this report presents an indicative cost-benefit analysis of the social impact of the introduction of the Koa Act on the online gambling market.

Problem definition and research questions

The problem definition is that it is currently not clear what the most relevant, financial and non-financial, costs and benefits of gambling are for Dutch society. Nor is it clear what the scale of these costs and benefits is. To this end, the WODC has formulated the ten research questions below.

1. What (lighter) form of an SCBA methodology is appropriate to reflect the costs and benefits of gambling for Dutch society?
2. What costs and benefits are there and can be explored within the scope of this research project?
3. What existing data sources are available for this purpose? What is the quality of this data? What data is missing? What are the possibilities to still collect it?

4. How can non-financial costs and benefits be monetised or otherwise included in the analysis?
5. What are the most relevant costs and benefits of gambling for Dutch society and what is an indication of their magnitude?
6. What uncertainties surround the estimates of costs and benefits? Can these uncertainties be reduced?
7. What can be said about the relationship between costs and benefits? How can value diversity be dealt with?
8. What opportunities are there for follow-up research to provide a more accurate picture of the costs and benefits of gambling?
9. To what extent is it possible to assess (in the future) the impact of the Koa Act on the costs and benefits of gambling for Dutch society?
10. What role could an SCBA play in such a review of the Koa Act?

Research methodology

An exploration of the social costs and benefits of gambling has not been conducted in the Netherlands before. The present study is therefore in a sense pioneering. On this voyage of discovery, we have sailed on the 2013 *General Guide to Social Cost-Benefit Analysis* by the Netherlands Bureau for Economic Policy Analysis and the Netherlands Environmental Assessment Agency (hereafter CPB & PBL, 2013) and its supplements. These documents form the methodological compass of this study. The guide prescribes several research steps.

Problem analysis

The first step involves a solid problem analysis to get a sharp focus on what exactly the SCBA is about, what the bottlenecks and policy objectives are, and what solutions are possible. This has been dealt with extensively in the Koa legislative process. The policy objectives in the gambling policy domain can be concisely summarised in the following three public interests:

1. Protecting consumers;
2. Preventing gambling addiction;
3. Combating illegality and crime.

The Gambling Act (Wok) and its associated lower regulations aim to safeguard these public interests. Specifically for safeguarding interests in the online market, the Koa Act and its associated lower regulations were introduced. This act aims to channel as many players as

possible to a regulated legal online offering with a relatively high level of protection and also to increase the level of protection in high-risk *land-based* games of chance.

Baseline alternative and policy alternative

For a social cost-benefit analysis of the introduction of the Koa Act, the obvious starting point for the analysis is the situation just before the introduction of the law and all associated measures as of April 1st 2021, known as the baseline alternative. The situation on April 1st 2023, two years after the introduction of the law, is then an obvious policy alternative. The welfare effect is a measure expressed in euros of how much better or worse off society is because of the introduction of the Koa Act.

However, some complications arise with this choice of baseline and policy alternative: due to the COVID-19 pandemic, figures on (in particular) the land-based gambling market for 2020 and 2021 do not give a representative picture, while figures for 2022 are still insufficiently available. Moreover, enforcement towards illegal online offers in the run-up to the opening of the market has been stricter than in previous years, which means that the online market does not give a good picture of the situation post-Koa until 2022.

As a **baseline alternative**, we therefore use the situation in 2019, the last year representative of the situation without the Koa Act. As a **policy alternative,** we look at the year 2022. By necessity, we restrict ourselves to the online market because comprehensive and representative data for the land-based market for the year 2022 are not yet available.

The present study then firstly provides an exploration of all financial and non-financial social costs and benefits of all types of gambling in 2019. This exploration identifies all costs and benefits relative to a fictional scenario in which the gambling sector (including illegal games of chance) is 'eliminated' altogether.

However, the results of this exploration cannot be interpreted as a welfare gain (in the case of a positive balance) or welfare loss (in the case of a negative balance). 'Thinking away' a sector or phenomenon in the economy is different from the consequences of a concrete policy measure such as, for example, a total ban, which may, after all, be accompanied by an increase in illegality and high enforcement costs. However, the situation in 2019 can serve as a starting point for future social cost-benefit analyses of concrete policy proposals. With this exploration of costs and benefits, we follow RIVM's approach for its 2016 SCBA of alcohol consumption (supplemented in 2018).

Second, this report presents an indicative cost-benefit analysis of the impact of the introduction of the Koa Act on the online gambling market. We use the predicate 'indicative' because the substitution between land-based games of chance and online games of chance in 2022 cannot yet be properly portrayed with the currently available data.

We believe that this limitation of the present study can be adequately remedied in the near future. A full social cost-benefit analysis of the introduction of the Koa Act from 2024 is expected to be feasible by comparing the development of land-based and online gambling markets in 2019 and 2023.

Identify and quantify effects and monetise them as costs and benefits

The research steps involve identifying, quantifying and, where possible, monetising all effects as costs and benefits. In addition to the international scientific literature, relevant Dutch sources such as the *Market Vision on Gambling* published by the Kansspelautoriteit ('Ksa') in 2021 and the insights from the *knowledge synthesis* and *research agenda* recently published by the Trimbos Institute were used. Furthermore, several interviews were conducted with focus groups of experts. These interviews served both to test and supplement the identified effects and to gather sources and to quantify and value the effects.

An important source of quantitative data on the various segments of the gambling market are the *Market Scans* published periodically by the Kansspelautoriteit. These market scans contain data on the financial flows of licensed providers. In addition, the Ksa has periodically published a *Monitoring Report on Online Gambling* since the opening of the online market. In the Netherlands, the most recent detailed available data source on player numbers and (problematic) playing behaviour is the survey conducted in 2021 by bureau Breuer&Intraval with 5,876 respondents. We were able to use the raw data from this study in this research. The National Alcohol and Drugs Information System (LADIS) is the main source for information on addiction in the Netherlands, including the prevalence of gambling addiction.

Presentation overview and sensitivity analysis

Sensitivity analyses should then be conducted for the key assumptions and uncertainties surrounding the effects, an overall cost-benefit breakdown is made, and the results are presented in an accessible way.

Qualitative inventory

Benefits

We distinguish four categories of gambling benefits in this study. First, the so-called **consumer surplus**: Consumers who participate in gambling generally derive pleasure from it that exceeds their deposit and other costs of participation. They experience healthy excitement around a result or draw; experience a night out to the casino or an online poker match as a pleasant use of their free time and enjoy dreaming of a big prize. They can also derive a good feeling from the contributions to charities and sports made possible partly thanks to their participation in charity lotteries or the Lotto. All this contributes to consumer welfare and is classified by economists as 'consumer surplus'. This is by far the largest item on the benefit side and can be quantified readily by submarket. Note that participation in illegal gambling also generates consumer surplus, which is offset by costs in the form of lost tax revenue and the costs of addiction and enforcement, which are discussed later.

Second, wealth can be created in the form of **producer surplus**. This is when producers receive benefits in excess of their economic costs and are allowed to keep it for their own gain. However, in competitive sectors, according to the SCBA guidance, producer surplus is generally not created because the profit made is no more than a market remuneration for the owners' capital and labour. In the competitive submarkets of the Dutch gambling landscape (online gambling, gambling machines), producer surplus is therefore set to zero.

In the lottery market, the surplus created on the provider side does not benefit (private) owners as producer surplus, but is distributed to charities, sports and the state in the form of compulsory **contributions**. Charity lotteries have been legally obliged to contribute at least 40 per cent of their deposits to charities since 2020. The Lotto remits at least 18% of its deposits to sports and the State Lottery at least 15% to the state. The state is also (sole) shareholder of the Dutch Lottery and Holland Casino. These cash flows can be entered as social benefits.

The fourth category of possible benefits is **tax effects**. Gambling providers pay gambling tax, gambling levy for the Ksa and a levy for the Addiction Prevention Fund. On the other hand, VAT is not levied on games of chance, which in turn has the effect that VAT paid on the purchase value of business turnover cannot be reclaimed. The sum of these taxes and levies, set against the average VAT rate of 18.8 per cent on consumers' overall consumption, gives an in-gain (benefit) or out-gain (cost) effect, which varies by sub-market.

Costs

The main cost of gambling is related to **gambling addiction**. Not surprisingly, this is one of three public interests in the gambling market. We distinguish here:

- Material costs, namely costs of addiction treatment, other care and debt relief;
- Opportunity costs, such as lower labour productivity due to gambling problems;
- Intangible costs, namely loss of quality of life due to financial, emotional and relationship problems and, in extreme cases, suicide. People in the immediate environment or household of the problem gambler may also face significant intangible costs.

The costs associated with gambling addiction are significant. They have been estimated by combining data sources for the Netherlands, key figures from the literature relating to other countries and some assumptions. A range is used to express the underlying uncertainties. These costs are then allocated to the submarkets based on the spending of moderate- and high-risk players in the various submarkets compared to the spending of recreational players. They thus mainly end up in casino games, slot machines and online gambling.

A second category of costs relates to **illegality and criminality**, also in line with the public interests in the gambling market. Illegal gambling supply is thereby analysed in the first place as a 'black sector' in the Dutch economy, losing tax revenue. In addition, legal providers incur costs to combat money laundering and match-fixing. However, these costs are part of the total costs of licence holders and, as such, are already included when determining the producer surplus or contributions. If these costs were not there, these benefits would have been higher. The government's costs in this context are identified below.

Match-fixing also affects gambling participants, but the bulk of these costs are either incurred abroad or involve transfers between Dutch actors, so we set this effect at zero. In addition, there is no evidence that match-fixing in Dutch sport is so widespread that it significantly impairs the enjoyment of sports fans or athletes.

A remaining cost of gambling-related illegality and crime concerns the consequences of undermining, money laundering, getting mixed up with the criminal world, and crime that may result from gambling debts. These costs were only discussed in this study but could not be budgeted for. Together with any negative impact of match-fixing on the attractiveness of sport, these costs constitute a significant negative PM item in the analyses.

A third source of costs is **government** spending on policy making and its implementation by the government through supervision, detection and enforcement. Various government organisations are involved, such as the Ksa, the Ministry of JenV, municipalities and enforcement organisations.

No additional social costs have been identified around the third public interest in the gambling market, namely **consumer protection**. After all, the costs associated with the efforts of policymakers and enforcement are already counted under the aforementioned public costs. Consumer protection focuses, among other things, on providing information to consumers and preventing deception. This cannot in all cases prevent consumers from stepping into behavioural pitfalls, such as overestimating their chances of winning. However, the consequences of such behavioural pitfalls are factored into the calculated consumer surplus. They are so-called internalities: after all, consumers can also derive value from their not entirely rational perception of the odds of winning. Partly because of this, they may dream of a big prize or experience excitement at *narrowly* missing out on winning a sports bet.

Quantitative elaboration

Table 1 shows the inventory of benefits and costs for all games of chance in 2019. As mentioned above, these are the costs and benefits relative to the thought experiment where the legal and illegal gambling sectors are 'eliminated'. The table allocates the government's costs for each submarket in proportion to gross gambling revenue. The table shows that the benefits of all legal submarkets exceed the costs. For the entire gambling market, the balance of benefits minus costs is over €2 billion. This is the difference of €3.2 billion in total benefits and €1.2 billion in costs. On the benefits side, consumer surplus dominates, followed by charitable, sports and state contributions. The known costs are largely related to gambling addiction, with another unknown PM item for the unquantified effects of illegality and crime.

Table 1 Inventory of benefits and costs for all games of chance in 2019, in million euros, 2019 price level

Effect	Total	Lotteries	Betting	Casinos and slot machines	Illegal (L)	Illegal (O)
Consumer surplus	2.232	557	74	1.273	86	242
Contributions	815	725	17	73	0	0
Tax effect	157	-72	-4	322	-13	-77
Benefits	3.204	1.211	87	1.668	74	165
Gambling addiction	-1.137	-61	-39	-800	-87	-150
Illegality & crime	-PM	-PM	-PM	-PM	-PM	-PM
Government	-18	-7	-0	-8	-1	-2
Costs	-1.156	-68	-39	-808	-88	-152
Benefits minus costs	2.049	1.143	48	860	-14	12

Source: Atlas Research. (L) = land-based, (O) = online.

The overall outcome that benefits exceed costs holds up in all sensitivity analyses, namely sensitivity analyses for the shape of the demand curve, price elasticity, confidence intervals for the population of moderate- and high-risk players and key assumptions and key ratios when valuing the effects of addiction. We do not consider it plausible that any further underpinning and valuation of quantified and unquantified costs would overturn that picture and change the overall balance of benefits and costs of sign.

For illegal gambling - both land-based (L) and online (O) - the difference between benefits and costs is a lot smaller than for legal gambling. This is related to the lost tax revenue, combined with the relatively high costs of addiction problems. The standing policy of channelling towards legal supply and enforcement against illegal supply, seems to be supported by these results.

Table 2 provides the same overview for the online market in 2022. An underlying assumption here is that addiction-related costs per euro of gross gambling revenue for the legal market in 2022 are reduced by 25 per cent compared to the illegal market in 2019 as a result of the Koa Act and lower regulations around addiction prevention. However, the online market itself has grown considerably, making the cost of addiction considerably higher on balance than for the illegal online market in 2019.

Table 2 Inventory of benefits and costs of online gambling 2022, in m euro, price level 2022

Effect	Total	Legal	Illegal
Consumer surplus	739	576	163
Contributions	0	0	0
Tax effect	201	253	-52
Benefits	941	830	111
Gambling addiction	-403	-302	-101
Illegality & crime	-PM	-PM	-PM
Government	-22	-17	-4
Costs	-425	-319	-106
Benefits minus costs	516	511	6

Source: Atlas Research.

The table shows that the online market has a positive balance in 2022 thanks to consumer surplus. This positive balance would have been achieved even without the additional tax revenue.

Finally, the costs and benefits of the Koa Act can be depicted by comparing the figures from Table 1 and Table 2. Because to do so, the 2019 figures from Table 1 have been inflated to the 2022 price level with the CBS price index. Methodologically, this is an indicative cost-benefit analysis of the impact of the Koa Act on the online gambling market, where not all items - in particular not all costs and interactions with the land-based sector - could be estimated.

Table 3 Indicative cost-benefit analysis Koa Act, in m euro, price level 2022. Substitution between land-based and online gambling is not included here due to lack of data.

Effect	Policy alternative	Baseline alternative	Welfare effect
Consumer surplus	739	277	463
Contributions	0	0	0
Tax effect	201	-88	290
Benefits	941	188	752
Gambling addiction	-403	-171	-231
Illegality & crime	-PM	-PM	+/-PM
Government	-22	-3	-19
Costs	-425	-174	-250
Benefits minus costs	516	14	502

Source: Atlas Research. Baseline alternative based on 2019 figures expressed in 2022 price level, policy alternative based on 2022 figures.

The table shows that, assuming all known data and the choices made in the calculations, the total welfare effect of the Koa Act is, on balance, €502 million. This is the combination of a €752 million increase in benefits and a €250 million increase in costs. On the benefit side,

consumer surplus increased by €463 million, followed by tax revenues of €290 million. On the cost side, the main item is the €231 million increase in costs around gambling addiction.

The PM item for the remaining unknown effects of illegality and crime could theoretically still influence the conclusions. However, we consider it reasonable to assume that this PM item has not increased between 2019 and 2022 such that the balance would change sign. In the table, this is represented by a +/-PM in the last column: the change in this item can be either positive (less cost of illegality/crime, i.e., a benefit) or negative (more cost of illegality/crime). An indication of the former, i.e., an additional benefit, is that the online illicit market shrunk by over 40 per cent in 2022 compared to 2019. In fact, the decline in the online illicit market between 2019 and 2022 is larger than the size of the land-based illicit market in 2019.

On average, and also for those players with no to low or medium risk on the PGSI screening tool for problematic gambling, the benefits of gambling related to them exceed the costs. However, this is not the case for high-risk players. For this small group of players, the related benefits do not outweigh the costs of gambling addiction in particular.

Table 4 Distribution of benefits and costs of gambling in 2019 by risk class of players, in euros per player per year, price level 2019

Baseline alternative	Average	None to low	Middle	High
Benefits	346	213	1.509	3.752
Cost	-125	-1	-177	-5.020
Benefits minus costs	221	212	1.332	-1.268

Source: Atlas Research calculations based on tables from chapter 6.

An average moderate-risk player generates a surplus of benefits minus costs of over €1,300 per year. In contrast, a high-risk player generates on average almost €1,300 *less* benefits than costs due to the substantial costs of gambling addiction of over five thousand euros per year. So, while on average benefits exceed costs, there is also a small but not negligible group of high-risk players for whom the reverse is true. In addition to high-risk players needing policy attention because of these outcomes, this also applies to moderate-risk players because it is likely that this group is also at risk of slipping into a higher risk class.

Conclusions and recommendations

Answering the research questions

We conclude with the answers to the research questions.

1. **What (lighter) form of a SCBA methodology is appropriate to reflect the costs and benefits of gambling for Dutch society?**

This study provides an initial exploration of the social costs and benefits of gambling in the Netherlands. In addition, this report contains an indicative cost-benefit analysis of the social impact of the introduction of the Koa Act on the online gambling market.

The lion's share of the costs and benefits can be properly quantified and valued. A few (in terms of expected size limited) items around illegality and criminality could not be quantified and have been included as negative PM items. Furthermore, when estimating costs around gambling addiction, it was necessary to make assumptions and/or use key figures from abroad. Moreover, there is no insight into the nature and extent of substitution between land-based and online games of chance in 2022: the effects of the Koa Act on the land-based market cannot be properly mapped with the available market data.

With the above caveats and limitations considered, an SCBA for gambling is not only useful as a framework for thinking, but also provides a sufficiently representative and reliable picture as a calculation tool.

2. **What costs and benefits are there and can be explored within the scope of this research project?**

We classify the benefits of gambling into the following four main categories:

- **Consumer surplus**: what consumers would have wanted to pay more for their consumption. This appears to be by far the largest item on the benefit side.
- **Producer surplus**: what producers received in excess of their economic costs and were allowed to keep for their own gain. In gambling, excess profits do not occur because of competition or mandatory contributions.
- **Contributions:** lotteries and land-based sports betting contribute to charities and sports, and the state is (sole) shareholder of the Dutch Lottery and Holland Casino.

- **Tax effects:** this is the difference between the actual pressure of gambling taxes and levies compared to the average VAT rate of 18.8 per cent.

We classify the costs of gambling according to the three public interests plus the government:

- **Consumer protection:** the effects of *recreational* gambling behaviour due to imperfect information and behavioural problems. These are discussed qualitatively but are discounted in the consumer surplus to the extent that they are not related to gambling addiction (they are internalities).
- **Gambling addiction:** the effects of *problematic* playing behaviour. We distinguish costs of addiction care, other care, debt relief, lower labour productivity, loss of quality of life due to financial, emotional and relationship problems, and finally suicides.
- **Illegality and crime:** we look at this as a 'black sector' in the Dutch economy without making moral judgements.
    - Consumer surplus includes the benefits of participating in illegal gambling. Legal providers' compliance costs for match-fixing and money laundering are factored into the producer surplus. Tax effects include evaded taxes and fees. The costs of detection and enforcement are included in the government item.
    - The costs of match-fixing largely fall abroad or involve transfers between Dutch actors, so on balance we set this effect at zero.
    - This leaves the costs of undermining, getting mixed up in the criminal world, crime that may result from gambling debts, costs of money laundering and match-fixing on the attractiveness of sport. These cost items have only been discussed qualitatively and we include them as a negative PM item.
- **Government:** the government's expenditure on making policy and monitoring it through licensing, detection and enforcement. Organisations involved are the Ksa, the Ministry of JenV, municipalities and enforcement organisations.

3. **What existing data sources are available for this purpose? What is the quality of this data? What data is missing? What are the possibilities to still collect it?**

The main quantitative data sources for this study are:

- The Ksa's **market scans**, **monitoring reports** and **annual reports**;

- **Annual reports** of licence holders;
- The player survey conducted by agency ***Breuer&Intraval*** in 2021;
- The ***National Alcohol and Drug Information System (LADIS)***.

The quality of these data sources is good in itself. However, data on the costs of gambling addiction for the gambler and their environment are only very sporadically available for the Netherlands, often must be calculated based on foreign figures and are (partly because of this) surrounded by a lot of uncertainty. Figures on costs associated with debt relief in relation to gambling problems, money laundering and undermining also proved very limited or unavailable.

4. **How can non-financial costs and benefits be monetised or otherwise included in the analysis?**

On the benefit side, consumer surplus is a non-financial benefit, which can be calculated directly from gross game outcomes and price elasticity.

On the cost side, most of the costs associated with gambling addiction are non-financial. These are the costs resulting from lower labour productivity due to presenteeism (monetised through average labour costs in the Netherlands and key figures from abroad) and intangible costs of loss of quality of life due to financial, emotional and relationship problems.

The intangible costs are high for both the gambler and the environment. Furthermore, there are high costs due to suicide. Intangible costs are estimated using the loss of quality-of-life years (QALYs) for this issue from the literature, combined with the values of 50 thousand and 100 thousand euros per QALY, respectively, used in the SCBA guidance for the social domain.

5. **What are the most relevant costs and benefits of gambling for Dutch society and what is an indication of their magnitude?**

Table 1 (shown previously) shows the most relevant costs and benefits by game type for the year 2019, and their estimated size. Across all submarkets combined, consumer surplus is the most significant benefit (over €2.2 billion), followed by charitable, sports and state contributions (over €0.8 billion). On the cost side, the costs of gambling addiction are significant (over €1.1 billion). For the illegal market, these are estimated to exceed the benefits.

The costs of illegality and criminality could not be fully quantified. The unquantified costs constitute a negative PM item, which is not expected to be so large as to tilt the picture as a whole or in a submarket.

6. **What uncertainties surround the estimates of costs and benefits? Can these uncertainties be reduced?**

For benefits, consumer surplus is sensitive to the specification of the demand curve. We have calculated with the most conservative assumption: a linear demand curve. Other assumptions lead to 55 per cent more consumer surplus than in the baseline alternative.

There is also a strong sensitivity to the degree of price elasticity. Changes of plus 25 to minus 25 per cent on the price elasticities used from the baseline variant result in changes of minus 20 to plus 33 per cent in consumer surplus.

For costs, the sampling uncertainty gives a range of almost €80 million around the base variant. The choice of the amount per QALY implies a bandwidth of almost €50 million around the baseline variant. More concrete *gambling harms-related* questions and a larger sample could reduce these uncertainties.

Finally, there is an uncertainty about the allocation of benefits and costs to submarkets. For this purpose, we have combined the spending patterns by risk class with the gross game outcomes by submarket. In doing so, we made the simple but mathematically consistent assumption that the *extra* expenditure per risk class relative to low-risk players is a good indication of the costs surrounding gambling addiction and that the *total* expenditure per risk class is a good estimate for the benefits and costs of government supervision. Further research could improve this attribution.

7. **What can be said about the relationship between costs and benefits? How can value diversity be dealt with?**

The relationship between costs and benefits by submarket for the status quo in 2019 is shown in Table 1 of this summary. This table reflects the costs and benefits of the sector as a whole in 2019 and shows that the benefits of all legal submarkets exceed the costs. The budgeted costs and benefits and associated welfare effects of the introduction of the Koa Act are shown in Table 3 of this summary. On balance, the total welfare effect of the Koa Act amounts to €502 million, with the (positive or negative) effect of the PM item for the

effects of the law on the remaining components around illegality and criminality still to be accounted for. There is also no insight into substitution between land-based and online gambling because of the introduction of the Koa Act due to lack of data.

On average, benefits far exceed costs. However, costs and benefits are skewed across actors. As an example, we worked out the distribution across the various PGSI risk classes. Table 4 of this summary shows the benefits and costs in euros per player per year for the different risk classes. High-risk players generate almost 1,300 euros more in costs than benefits per year. For medium-risk players, benefits actually exceed costs by over EUR 1,300 per year. This indicates not only that high-risk players are rightly a focus of gambling policy, but also that medium-risk players are a category that should not drift towards more serious forms of gambling behaviour.

Research limitations and recommendations for follow-up study

The eighth research question includes recommendations for follow-up research.

8. **What opportunities are there for follow-up research to provide a more accurate picture of the costs and benefits of gambling?**

The present exploratory inventory of social costs and benefits of all games of chance, and the indicative cost-benefit analysis of the introduction of the Koa Act has several limitations. First, we have delineated (indirect) effects. There are effects that we know exist (such as the negative PM costs around illegality and criminality and substitution between land-based and online gambling) but which we could not include due to lack of usable data.

Second, the exploratory nature of this study implies that there may be distributional effects other than the distribution by PGSI risk class mentioned in the report. A third limitation is that knowledge about the magnitude of certain effects is lacking and where it does exist, it is generally surrounded by uncertainty. A fourth limitation is that not all stakeholders were spoken to in the focus interviews, but a selection of stakeholders.

As far as we are concerned, the above limitations lead to the following research recommendations. First, empirical research on consumption in Dutch gambling markets would lead to an accurate specification of the demand curve and price elasticity. This could significantly reduce the range of uncertainty around the baseline alternative.

Second, the periodic population survey as conducted in 2016 and 2021 could be enriched with questions specifically targeting *gambling harms*. More attention could also be paid to the experiences of people in the immediate environment of the problem gambler. Furthermore, municipal debt relief registration could be improved so that the link with problematic gambling behaviour could be better established. It would be good to bring gambling-related suicide (attempts) into sharper focus.

Third, the in-depth but now considerably dated studies by Regioplan (2009) and Spapens & Bruinsma (2015) on illegal land-based gambling markets and betting kiosks could be updated.

Further policymaking and policy evaluation

Research questions 9 and 10 relate to the usefulness of the study for further policymaking and policy evaluation.

9. To what extent is it possible to assess in the future the impact of the Koa Act on the costs and benefits of gambling for Dutch society?

For a few items, it is already possible to estimate the impact. The open questions here remain the effect of the Koa Act on the gambling problem and what the interaction is with other submarkets. For the former, a new population survey will start to provide more insight, especially if the above recommendations for deepening that survey are taken to heart. The second is more difficult to establish empirically, as the Koa Act was introduced during the COVID-19 pandemic, which had maverick effects on the land-based gambling sector. As of 2024, the effect of the pandemic is expected to have dissipated sufficiently to determine such interaction effects adequately. Finally, the future development of the online market is also uncertain, as is the hypothetical development of the illegal market in the baseline alternative without the law.

10. What role can an SCBA play in such a review of the Koa Act?

The evaluation of the Koa Act is a broad evaluation, looking at the matter not only through an economic lens, but where the legal, administrative, process and social effects of the Act's introduction will all be considered. An SCBA comes into the picture as a tool only for the latter aspect.

However, an SCBA is ideally suited to identify and analyse, quantify and monetise all the diverse financial and non-financial costs and benefits of the law in a coherent manner. It avoids a one-sided focus on one or a few effects, whether or not motivated by a private interest.

In addition, the present study offers starting points for future *ex ante* SCBAs of concrete policy alternatives for the current gambling market. Examples include an exploration of alternative future options for state ownership (such as privatisation) of the Dutch Lottery or Holland Casino, or harmonisation of the various lottery licences or modernisation of the gambling machine market. Such *ex-ante* SCBAs can assess coherent policy packages against the current (post-Koa) situation.