

Licensing system for online gambling

Which tax-rate yields both high channelization and high tax revenues?

The Association of Online Gambling Operators (BOS)
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Translated version



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Preface

The Swedish government has given a special investigator the task to submit a proposal for a new gambling regulation based on a licensing system, which will contain, among other things, a full system of taxes and levies.

Against this background, The Association of Online Gambling Operators (BOS) has asked Copenhagen Economics to conduct a report in order to provide insights into which tax-rate would yield high channeling rates, meaning that a large proportion of Swedish online gambling is done within the forthcoming licensing system, as well as high tax revenues.

The report have been conducted during the period of June to September 2016. The report has been prepared in a Swedish version and in a translated English version. The Swedish version is the original.

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Executive Summary

The Swedish government has given a special investigator the task to submit a proposal for a new gambling regulation based on a licensing system, which will contain, among other things, a full system of taxes and levies. The system will replace the current regulation, where a few actors have the exclusive right to offer online gambling to Swedish consumers.

The directive states "*... the conditions for funding of government operations and publicly beneficial purposes is to be preserved to the largest extent possible.*"¹ Further, "*The demand for online gambling should be channelized to safe and controlled offers*"². The concept of channelization, or channeling rate, usually refers to the proportion of Swedes online gambling that occurs within the licensing system.

The directive expresses conflicting objectives. In order to maximize the channeling rate and to attract as many gambling operators as possible in joining the licensing system the tax-rate should be set to zero percent. This would minimize the cost of acquiring a license, which would increase the probability that the operators would choose to acquire a license. However, such a solution would also mean that the tax revenues would be zero, and, consequently, that there are no conditions for funding. A tax-rate that also ensures state funding should thus be set to higher than zero.

However, a higher tax-rate means that it will become more expensive and thus less attractive for the gambling operators to operate within the licensing system. If the tax-rate is set too high, gambling operators would choose to refrain from participating in the licensing system, and thus cannot be taxed and the demand for online gambling cannot be channelized to the offers within the system, i.e. channelization and tax revenues fall.

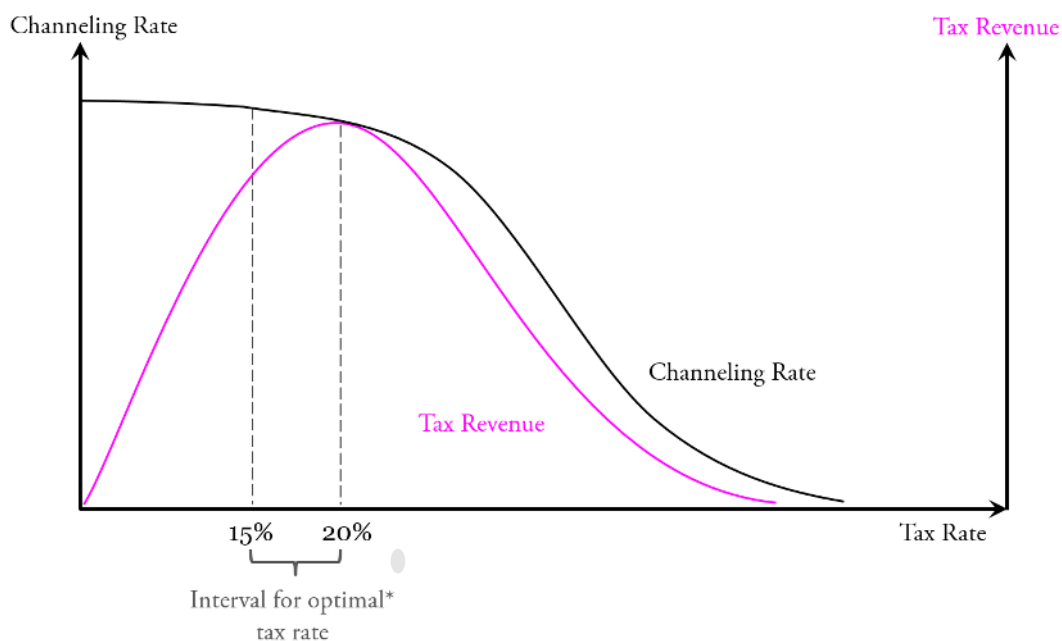
A tax-rate on online gambling within a licensing system therefore needs to balance these effects in order to achieve both high channelization rates as well as high tax revenues.

¹ Kommittédirektiv, Omreglering av spelmarknaden, Dir. 2015:95, p. 1 (freely translated by Copenhagen Economics)

² Kommittédirektiv, Omreglering av spelmarknaden, Dir. 2015:95, p. 7 (freely translated by Copenhagen Economics)

Our overall conclusion is that a tax-rate of online gambling which gives both a high channeling rate as well as high (Swe. “goda”) tax revenues lies within the range of 15 to 20 percent of the gross gambling revenue (GGR), see figure 1.³

Figure 1 A tax-rate of 15 to 20 percent gives a high channeling rate and favorable tax revenues



Source: Copenhagen Economics.

Our assessment is that a high channeling rate is reached at a tax-rate of 15 percent, and does not increase significantly at lower tax-rates. The result is that tax-rates below 15 percent would at best give marginal increases in the channeling rate, but at the expense of a substantial reduction in tax revenue. The basis for this assessment are three observations:

Firstly, an international outlook shows that tax-rate affects the channeling rate negatively. However, the UK has a tax-rate of 15 percent and a channeling rate that amounts to 95 percent. A lower tax-rate would therefore increase UK’s channeling rate with, at most, 5 percentage points.

Secondly, we assess that most of the gambling operators on the Swedish market will join the licensing system. A review of the composition and the cost structure of the operators show that most are expected to join the licensing system and be able to remain competitive at a 15 percent tax-rate.

³ Gross Gambling Revenue (GGR) is defined as total revenue less winnings.

Thirdly, we believe that Swedish consumers will follow the joining gambling operators. A consumer survey conducted as part of this study indicates that no significant substitution to gambling operators outside the licensing system are expected to occur at a 15 percent tax-rate.

We further conclude that the tax-rate should not exceed 20 percent. The reason being that at higher tax-rates gambling operators as well as consumers will choose not to join the licensing system. The result is that the channeling rate becomes low and that tax revenues cannot be expected to be higher than at a tax-rate of 20 percent. The basis for this conclusion are three observations:

Firstly, an international outlook shows that tax-rates above 20 percent results in channeling rates under 80 percent. There is no apparent indication that tax revenues would increase further if tax-rates would be above 20 percent, as gambling volumes and, in particular, the channeling rate, is expected to drop considerably above this level.

Secondly, an examination of the Swedish gambling market indicates that gambling operators, preferably smaller but also larger, would not have the financial strength to act within a system of higher tax-rates. This conclusion draws partly from a survey of The Association of Online Gambling Operators (BOS) members, which shows that gambling operators increasingly choose to refrain from attaining a license at tax-rates above 20 percent. Furthermore, gambling operators' margins and competitiveness, particularly smaller operators, would be adversely affected by higher costs of taxation.

Thirdly, higher tax-rates would cause consumers to substitute to a significant extent to gambling operators outside the licensing system. The reason being that gambling operators within the system will be less competitive and that consumers largely see these operators as substitutable to operators outside the system.

Chapter 1

Introduction

For the third time in the last 10 years, a public special investigator has received the task of reviewing the Swedish gambling legislation.⁴ This time a *licensing system* is the focus of the investigation, which means that an unlimited number of gambling operators that meet certain requirements can apply for a license to offer games to Swedish consumers.⁵ In return for a license, the operators have to follow the rules dictated by the gambling legislation, which includes paying tax in Sweden. The system will replace the current regulation, where only a few actors have the exclusive right to offer gambling to Swedish consumers.⁶

There are good reasons to reregulate the Swedish gambling market. Foreign-licensed operators are continuously taking market shares, which is resulting in reduced state control over gambling and a lower tax revenue – which leads to a lower fulfilment of two of the gambling-policy objectives. A licensing system will therefore create opportunities to meet these objectives more adequately. The goal of the former, to have control over gambling market, aims at curbing gambling addiction, and is calculated as the proportion of online gambling that take place within the licensing system. This share is defined as the degree of channeling, or the *channeling rate*. The second goal means that profits made from gambling today which goes to the public shall be maintained. Today's surplus is distributed to charities (Swe. "folkrörelserna"), the horse racing industry and the state.

Many factors affects how high the channeling rate becomes. One important factor is the tax gambling operators pay, as well as other costs that arise due to regulation. This may include, for example, administrative costs, restrictions on marketing and supply, and the cost of acquiring a license. Businesses weigh these costs against the benefits of joining the system, which may include, for example, the opportunity to market themselves to Swedish consumers, long-term stability of its business model and increased legitimacy (see the illustration in figure 2). The higher the cost, the lower the probability that operators decide to obtain a license: at a given total cost, it is more profitable to remain outside the system. At this point operators could either stop offering games to domestic consumers, or continue without a license. Another important factor is whether technical solutions are put in place to keep unlicensed operators outside the market. For example, the public investigator is to examine the possibility of introducing IP blocking,

The **channeling rate** is defined as the proportion of gambling that consumers conduct through domestically licensed channels. When the gambling is conducted through domestically licensed operators it is taxable, which is not the case when the gambling occurs through foreign licensed operators. If consumers, for example, gamble for 300 million through domestically licensed operators, and for 50 million through foreign licensed operators, the tax base would be 300 million and the channeling rate within the country would be 86 percent ($300/350$).

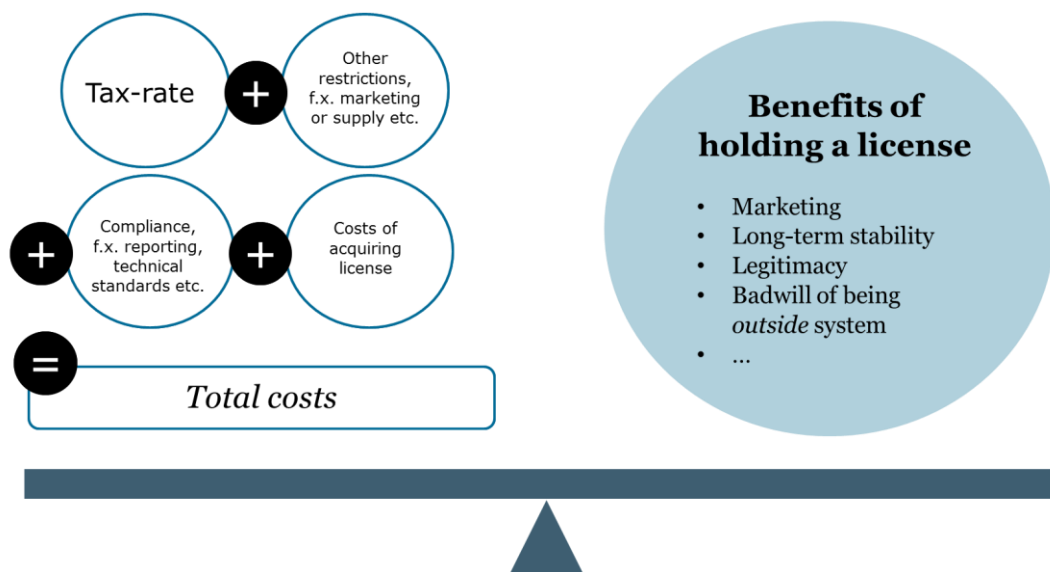
⁴ Omreglering av spelmarknaden (kommittédirektiv 2015:95) was decided at the cabinet meeting of 24 September 2015.

⁵ Kommittédirektiv 2015:95, p. 7

⁶ For example, Svenska Spel has the sole right to offer casinos and gambling machines in Sweden and ATG has the right to offer gambling on horse races.

i.e. a ban on electronic communication domains and IP addresses where illegal gambling occurs, as well as prohibit banks to transfer payments between consumers and gambling operators that are lacking a license.

Figure 2 Costs and benefits for gambling operators to be part of a licensing system – gambling operators decision making



Source: Copenhagen Economics based on interviews with The Association of Online Gambling Operators members.

The tax-rate will thus affect the channeling rate and the state's tax revenue. The following section puts forth an economic framework describing the consequences that the tax-rate has for these parameters.

1.1 The framework

In most markets where policymakers aim to achieve high tax revenues there is a need to balance the tax-rate by the quantity sold of the particular good or service. Increasing the tax-rate yields higher revenue for each unit sold, but also a decrease in sold units as the good becomes more expensive. At a certain tax-rate maximum tax revenue is reached – at that point, the tax-rate cannot increase further without a decline in sales resulting in overall lower tax revenues.

However, since gambling is a digitalized cross-border service, the equation is more complicated than that. Gambling, and thus the taxable volumes, can take place within Sweden, or anywhere else in the world. The higher tax-rate within a licensing system, the higher the proportion of gambling that is expected to take place outside Sweden (lower channeling rate). Taxes are a cost of business, and the higher they are; the lower is the probability that

operators apply for a license. The lower the channeling rate, the smaller the tax base (gambling occurs outside Sweden) and thus lower tax revenues. The maximum tax revenues on the gambling market is attained precisely at the level where the state cannot raise the tax-rate without yielding lower tax revenues due to the declination of gambling volumes *and* reduced channeling.

Figure 3 The equation for state tax revenue from gambling

$$\text{Tax-rate} \times \text{Channelization} \times \text{Volumes} = \text{Tax revenues}$$

Source: Copenhagen Economics.

A higher tax-rate will lead to a lower channeling rate and lower gambling volumes, i.e. reduce *taxable* gambling which in turn leads to lower tax revenues. A high channeling rate and thus control of the gambling is also an objective in itself. Would the state only prioritize this goal, it is possible to set the tax-rate to zero percent, which would result in maximum channeling rates. Nevertheless, taking the other goal of the state into account – high tax revenues – channelization is to some extent compromised to achieve tax revenues. A tax-rate of zero percent is thus too low in terms of the tax revenue that is foregone.

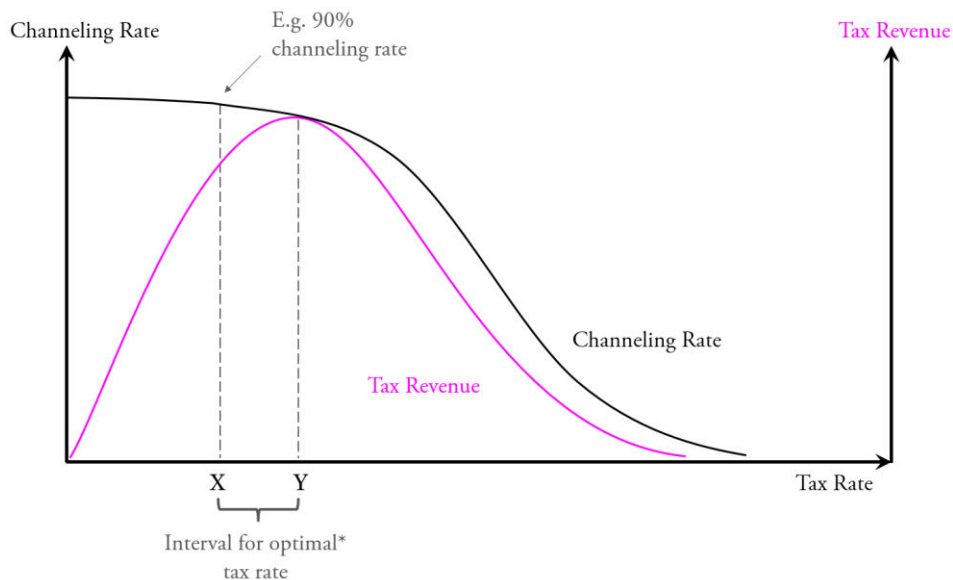
It is possible that the state sets a target of a minimum level of channeling that is to be reached within the forthcoming licensing system. If this channeling rate (hypothetically) is set to 90 percent, then the tax-rate should be set to X in Figure 4 below, creating a lower level of tax revenue.

In order to maximize the tax revenue the tax-rate should instead be point Y in figure 4. The point illustrates that the ideal tax-rate is where the state cannot increase it without reducing the tax revenues. As shown above: the lower the channeling, the smaller tax base and thus lower tax revenue.⁷

The interval between X and Y thus indicates the range that yield both high a channelization and high tax revenues.

⁷ Figure 4 assumes constant volumes.

Figure 4 Compromise between channelization and tax revenues



Note: *) Optimal as concerns the goals of high channelization and high tax revenues. The figure is illustrative.

Source: Copenhagen Economics.

1.2 Mission and disposition

The Association of Online Gambling Operators (BOS) has given Copenhagen Economics the task to identify the range of tax-rates on online gambling that can yield both high channeling rates and high tax revenues. The mission is limited to tax-rate effects and does not investigate further the effects of other regulatory requirements in a forthcoming Swedish licensing system. The results from the investigation are presented in this report.

Chapter 2 contains an international outlook that aims to highlight the lessons that can be drawn from other countries that have adopted a licensing system. In particular it examines how the tax-rate influences the channeling rate and the tax revenues in the six countries where licensing is deemed most similar to a future Swedish system.

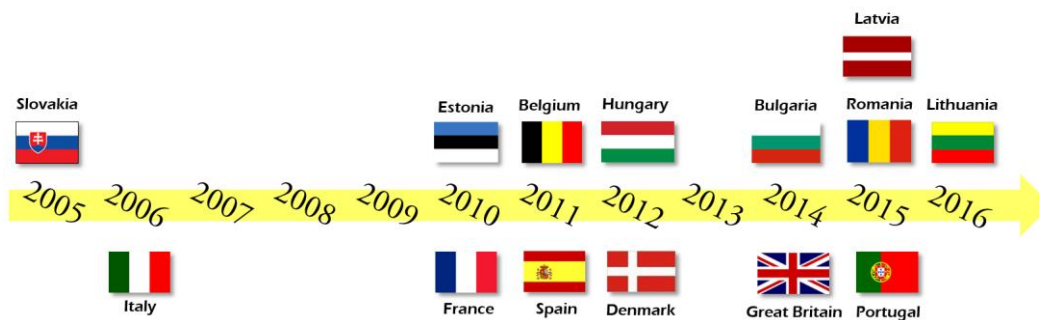
Chapter 3 examines in more detail how specific market conditions in Sweden can be expected to influence the channeling rate and tax revenues. Firstly, the gambling operators are investigated in regards to how they can be expected to behave following different tax-rates and thereafter how Swedish consumers are expected to behave.

Chapter 2

What can we learn from other countries?

In 2016, over 14 countries in Europe have introduced a licensing system for gambling, see figure 5. The outcomes in these countries in terms of channeling rates and tax revenues can partly be used to assess likely outcomes for Sweden at different tax-rate regimes. This chapter examines what lessons can be learned from these countries regarding the relationship between tax-rate, channeling rate and tax revenues.

Figure 5 Many countries have introduced a licensing system



Source: Belgium, (<http://www.iclg.co.uk/practice-areas/gambling/gambling-2016/belgium>); Bulgaria, (<http://www.dkh.minfin.bg/en/page/9>); Denmark, (<https://spillemyndigheden.dk/sites/default/files/Draft%20for%20the%20Act%20of%20gambling.pdf>); Estonia, (<https://www.riigiteataja.ee/en/eli/530102013105/consolide>); France, (<http://www.lotteriinspektionen.se/Global/Broschyter/Spelmarknaden%202015.pdf>); Italy, (<http://www.lotteriinspektionen.se/Documents/Externa%20dokument/Spelmarknadensutveckling2013.pdf>); Latvia, (<https://ceegc.eu/northern-europe/focus-on-latvia-regulation-explained/>); Lithuania, (<https://finmin.lrv.lt/en/competence-areas/taxation/main-taxes/lottery-and-gambling-tax>); Portugal, (http://www.pgdlisboa.pt/leis/lei_mostra_articulado.php?nid=2340&tabela=leis&nversao=); Slovakia, (<http://www.mfsr.sk/en/Default.aspx?CatID=389>); Spain, (<http://www.dgojuego.minhap.gob.es/en/normas-vigor>); Great Britain, (<http://www.legislation.gov.uk/ukpga/2014/17/contents>); Hungary, (<http://www.lotteriinspektionen.se/Global/Broschyter/Spelmarknaden%202014webb.pdf>).

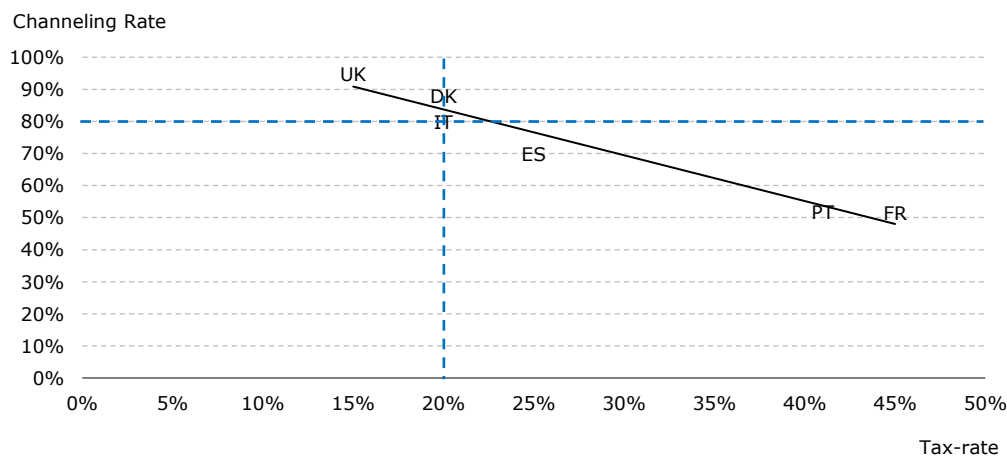
We assess that the countries that are most relevant to compare with Sweden are the United Kingdom, Denmark, Italy, Spain, Portugal and France.⁸ Although these countries are relatively similar to Sweden, there are also dissimilarities that are more difficult to observe and control. In addition, the number of observations are low. The conclusions that can be drawn from are therefore subject to some uncertainty.

⁸ These countries have similar macroeconomic conditions as the Swedish and, as far as we understand, do not have any restrictions on the number of operators that can apply for a license.

2.1 How is the channeling rate affected by the tax-rate?

A countrywide comparison of channeling rates and tax-rates indicates that there is a negative relationship between these, see figure 6. The country with the lowest tax-rate, the United Kingdom, is also the country with the highest channeling rate. The two countries with the highest tax-rates, France and Portugal, exhibits the lowest channeling rates. It can also be noted that all countries with tax-rates above 20 percent have channeling rates less than 80 percent.

Figure 6 Channeling rates and tax-rates in six countries, 2015



Note: Tax-rate as percent of GGR. France and Portugal are transformed from tax-rate on stakes.

Source: Tabell A.1.

The results further show that the tax-rate is not the sole factors affecting the channeling rate. Both Italy and Denmark have tax-rates of 20 percent, but have channeling rates of 80 and 88 percent respectively.

Even though the statistical material is limited, it still points clearly to a negative relationship between tax-rate and channeling rate. The conclusion established from the above analysis is therefore that higher tax-rates in a licensing system means lower channeling rates. As regards levels, we find that a licensing system with a tax-rate above 20 percent is not likely to yield channeling rates of 80 percent or more. Furthermore, the channeling rate cannot expect to increase significantly at tax-rates below 15 percent, as exemplified by the UK.

2.2 How is the tax revenue affected by the tax-rate?

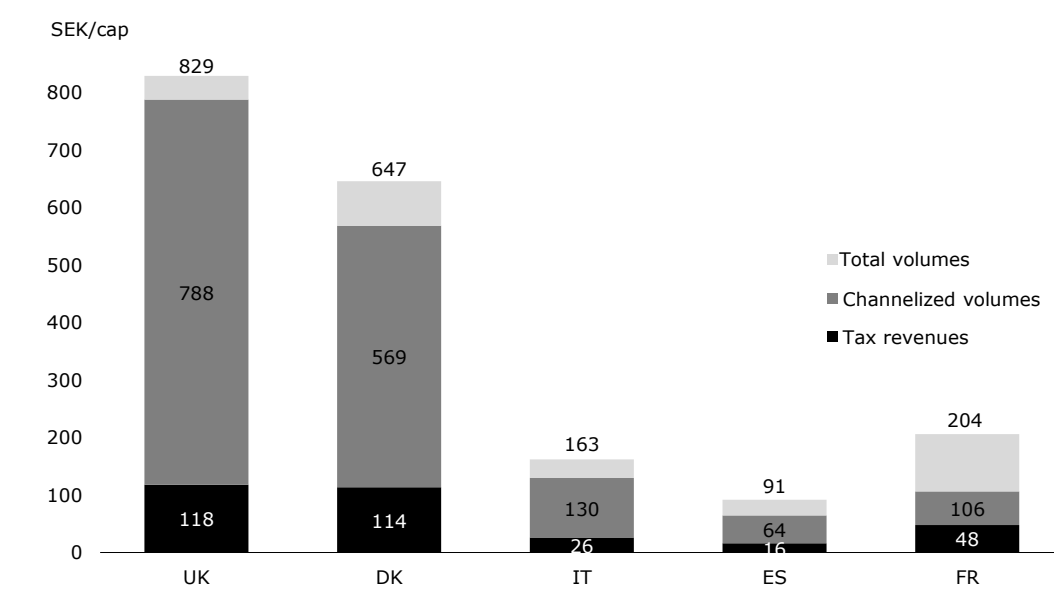
The size of the tax revenue within a licensing system does not solely depend on the tax-rate, but also the channeling rate and the gambling volumes.⁹ At the same time, there is an in-

⁹ See Figure 3

terdependent relationship between these three variables, as the tax-rate affects the channeling rate and the volumes. In order to disentangle how the tax revenue is affected by the tax-rate, channeling rate and the gambling volumes must also be considered.

Looking at total tax revenue per capita, the UK and Denmark show considerably higher numbers than the other countries, see figure 7.¹⁰ As illustrated in the figure, this is driven by two effects: the channeling rate is the first and most obvious cause, but in particular, the gambling volumes are higher than in other countries. Although Denmark and the UK have a lower tax-rate than Spain or France, the higher channeling rates in addition to larger gambling volumes fully compensates for the lower tax-rates and thus generate a larger per capita tax revenue.

Figure 7 Total gambling volumes (GGR) and tax revenues, SEK/cap., 2015



Note: The countries are sorted according to tax-rate, where the UK has the lowest tax-rate and France the highest.

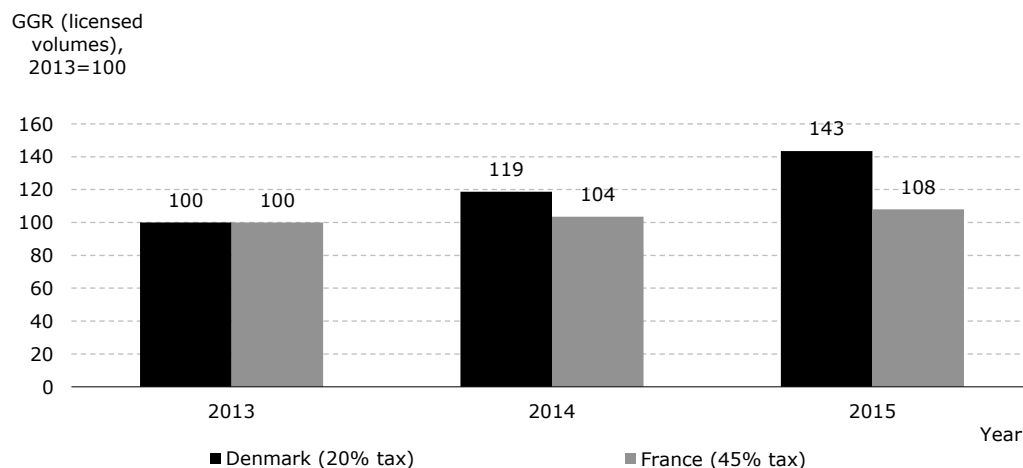
Source: Table A.1.

In the figure above there is no clear relationship between tax-rate and gambling volumes. A comparison between Denmark and Italy shows that the gambling volumes differs significantly, even though the tax-rates in the two countries are the same. Furthermore, France has the highest tax-rate but exhibits nonetheless relatively large gambling volumes.

¹⁰ It has not been possible to get reliable estimates for Portugal.

Therefore, the relationship between tax-rates and gambling volumes is scrutinized further. This is achieved by comparing the developments in GGR (licensed volumes) over time for France and Denmark, see figure 8.¹¹ The series are adjusted for potential effects caused by changes in channelization over time. The figure shows that Denmark's GGR increased by just over 40 percent 2013-2015, in contrast with France's GGR, which increased with 8 percent.

Figure 8 GGR (licensed volumes) for France and Denmark, 2013-2015



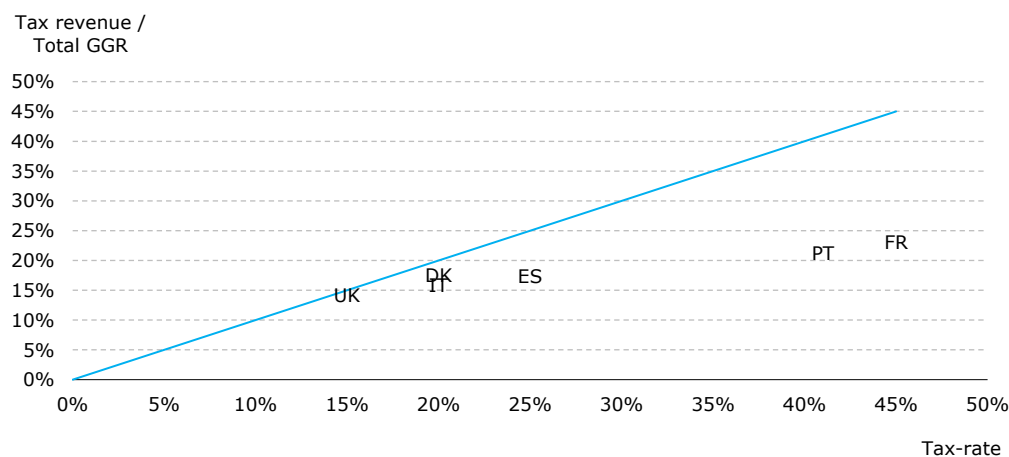
Source: Copenhagen Economics based on H2 and operators, Danske Spillemyndigheden and ARJEL.

The results above indicates that the tax-rate can be expected to affect the gambling volumes negatively. Denmark, with a tax-rate less than half that of France, has a growth in gambling volumes approximately five times larger than France.

One way to account for how the channeling rate affects the tax revenue is to measure the tax revenues share of the total gambling revenues (both licensed and non-licensed), see figure 9. The figure shows that an increased tax-rate leads to a lower channeling rate, but the tax revenues share of the gambling volumes is not particularly affected when the tax-rate increases. Countries with higher tax-rates are further away from the blue line in the figure, which shows what the tax revenues would have been under the assumption that the tax-rate does not affect the channeling rate. This shows that when the tax-rate increases more consumers choose to gamble at non-licensed operators, which in turn reduces the tax revenue.

¹¹ These two countries are considered to have the most reliable and comparable time-series data.

Figure 9 Tax revenues as a share of total GGR, 2015



Note: The blue line indicates a 1:1 relationship between the variables.

Source: Table A.1.

This effect, where an increased tax-rate does not lead to any significant increase in tax revenue, seems to appear at tax-rates of about 20 percent. In Spain, the tax revenue's share of the gambling volumes is *equal* to Denmark, despite a tax-rate that is 25 percent larger.¹² The tax-rate in France is 125 percent higher than in Denmark, but the tax revenue as a share of gambling volumes is only about 30 percent higher.¹³

Although the analysis above is subject to some uncertainty, we cannot find any evidence that supports the idea that the tax revenues increases additionally when tax-rates increase over 20 percent. The countries with the highest tax revenue per capita are subject to tax-rates of 15 and 20 percent respectively. Furthermore, higher tax-rates seem to have a negative impact on gambling volumes. Higher tax-rates also means that the channeling rate decreases, which reduces the taxable part of the gambling volumes. The consequence of both these two effects is decreased tax revenues.

¹² Denmark has 20% tax-rate and Spain has 25%. $25\%/20\%-1=25\%$. Tax revenue/Total GGR is 18% in both countries

¹³ Denmark has 20% tax-rate and France 45%. $45\%/20\%-1=125\%$. Tax revenue/Total GGR is 18% in Denmark and 24% in France. $23\%/18\%-1=33\%$

Chapter 3

What can we learn from Swedish market conditions?

A comparison of other countries gives an indication of which tax-rate that should be implemented in a forthcoming Swedish licensing system. However, a more precise analysis must consider the country specific conditions that the Swedish market exhibits. This chapter will thus investigate how Swedish gambling operators, and Swedish consumers, can be expected to behave following the introduction of a licensing system.

The results draws on analyzes of a consumer survey conducted by Ipsos during the summer of 2016, a survey to BOS's members during the summer of 2016, as well as a number of interviews with BOS board members during the spring/summer of 2016.¹⁴

3.1 What can be learned from Swedish gambling operators?

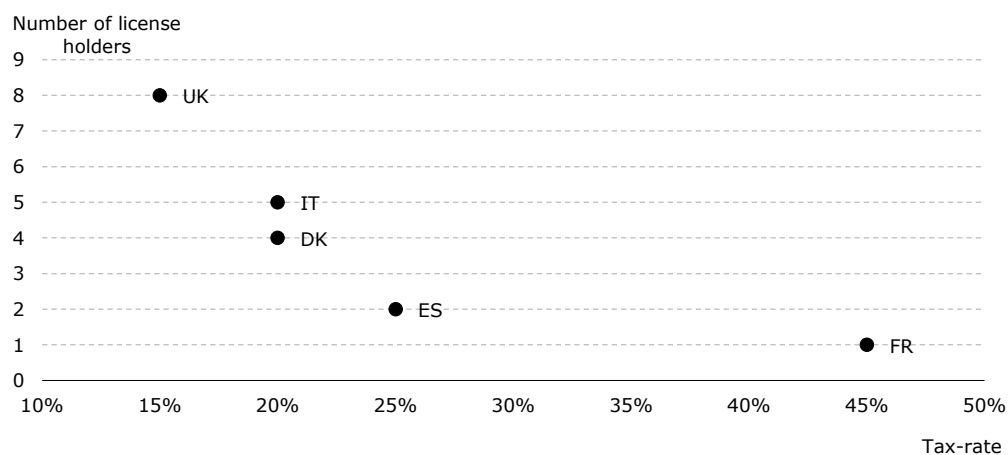
In a licensing system with a tax-rate over 20 percent, it is expected that some or several of the larger gambling operators that is currently active in Sweden choose not to participate in the system. The consequence is that tax-rates above 20 percent results in low channeling rates and the risk that tax revenues are also low. At a 15 percent tax-rate, most operators are expected to join. The consequence is that channeling rates up to 90 percent or higher can be expected.

¹⁴ See a more detailed description of the empirics in the appendix.

At which tax-rates does gambling operators choose to participate in a Swedish licensing system?

In the survey to BOS's members, it appears that gambling operators mainly attains licenses in countries with tax-rates of 15 to 20 percent, see figure 10. All of the respondents had a license in the UK (eight out of eight). Approximately half of the respondents had a license in Denmark and/or Italy, and only one of the respondents had a license in France. The gambling operators that participated in the survey are foremost larger operators that are members in BOS and listed on the stock market.

Figure 10 Countries where BOS's members have licenses in as of 1 Jan. 2016



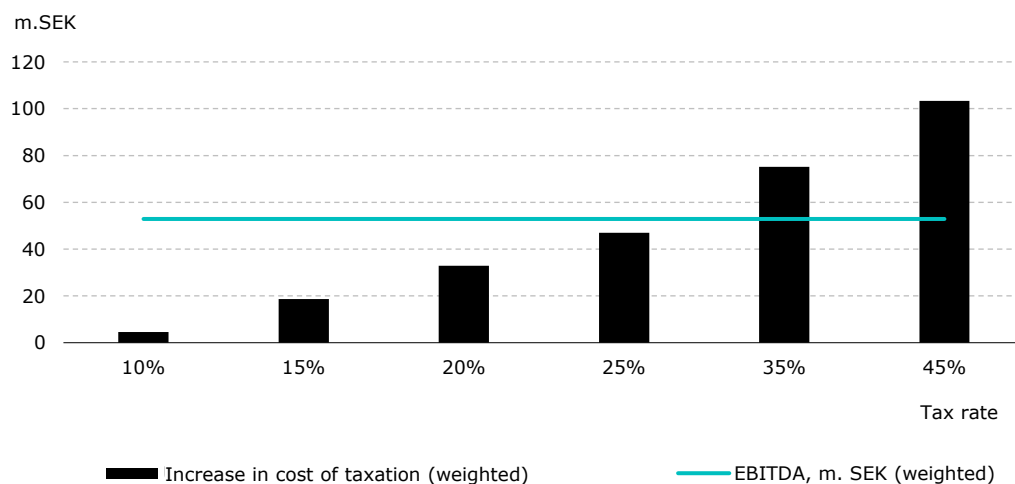
Note: n=8. The operators also holds licenses in other countries than those included here.

Source: Copenhagen Economics survey to BOS members.

According to the interviews conducted with BOS's board members, it is of importance that all of the larger gambling operators participate in the licensing system. If any of the larger operators would choose not to participate, these would not compete on equal terms, thereby disadvantaging the licensed operators.

An increased tax-rate compared with today's rate will affect the gambling operators margins substantially, see figure 11. A tax-rate, for example, of 20 percent will increase the gambling operators' average tax costs by SEK 33 million, which constitutes roughly two thirds of the operators' average margins, SEK 53 million. In terms of the operators' average margin *today* a tax-rate above 25 percent means that the tax revenues increase such that the margin becomes negative. The consequence is that the gambling operators would need to increase their margins in order to facilitate the increased costs of taxation.

Figure 11 Increased costs of taxation at different tax-rates and the operators margins, average, 2015



Note: Weighing is based on turnover. Operators included are Unibet, Mr Green, LeoVegas, Betsson, Cherry, Betfair, Ladbrokes, William Hill and Bwin.

Source: The operators' annual reports 2015 and Ipsos consumer survey.

The possibilities for the gambling operators to compensate for the increased tax costs are considered limited for tax-rates above 15 percent. To maintain their margins at higher tax-rates the gambling operators need to decrease their overall costs, or to pass-on the increased tax expenses to consumers via increased gambling prices.¹⁵

During the interviews with BOS's board members, several members stated that they already begun taking cost-efficiency measures to attempt to facilitate increased costs of taxation. Figure 11 shows that already at low tax-rates significant efficiency improvements are required.

The possibility to pass-on the tax expenses is limited the higher the tax-rates are. The reason being that higher tax-rates means lower rates of channeling and thus that consumers

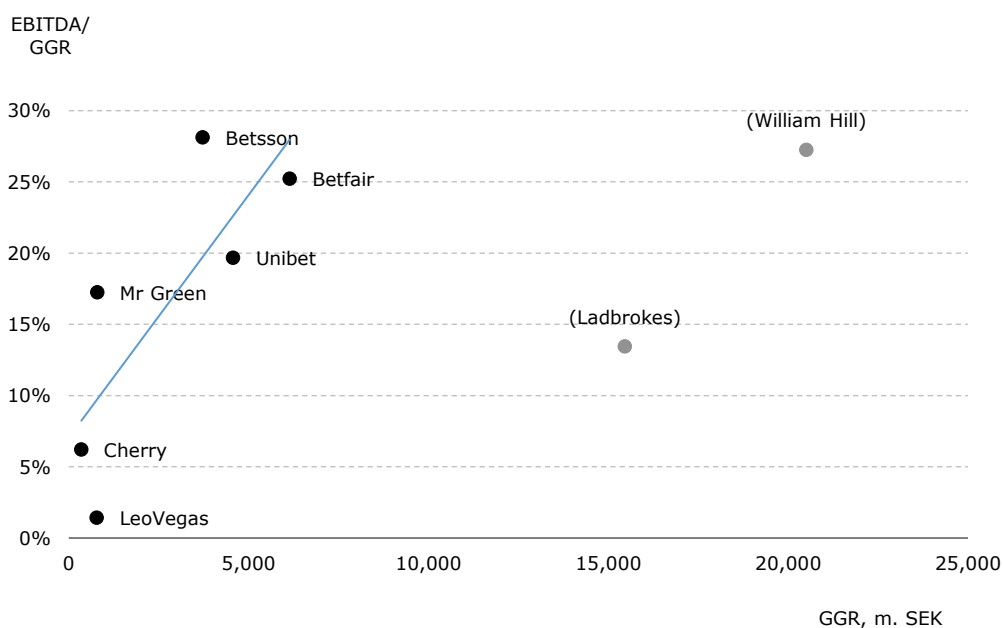
¹⁵ Furthermore, joining a licensing system can be expected to yield additional advantages that can increase the margin. From the interviews and the survey to BOS members, it is perceived that in particular improvements in the possibilities to marketing is seen as an advantage. Increased marketing increases demand and thus the margin of a revenue-maximizing operator.

increasingly choose to gamble at operators outside the licensing system, as these do not need to increase the price.

Consequently, gambling operators' possibilities to handle increased tax expenses already at tax-rates of 15 to 20 percent without considerable losses in their margins is limited. This decreases the incentive to participate in the licensing system as the profitability deteriorates significantly.

Smaller gambling operators tend to have smaller margins than larger operators, see figure 12.¹⁶ When operators have smaller margins it also means that they have less room for maneuver to facilitate increased tax expenses before the profitability becomes small or even negative. Larger gambling operators are thus better prepared for increased tax expenses.

Figure 12 Gambling operators margins and GGR, 2015



Note: The regression line is based on all observations excluding Ladbrokes and William Hill. These two operators also offer physically organized gambling. Thus, the operators have a different cost structure as they have to carry e.g. costs for premises and staff to conduct physically organized gambling.

Source: The operators' annual reports 2015.

In summary, we find that tax-rates above 20 percent creates a significant risk that larger gambling operators would refrain from participating in a licensing system. Smaller operators can be expected to participate to at least some extent at tax-rates of 20 percent, as higher tax-rates may lead to low or even negative margins. Some of the smaller operators

¹⁶ William Hill and Ladbrokes differ from the other operators in that the margin is relatively low considering the operators GGR. One explanation to this is that these two operators also offer physically organized gambling. Thus, the operators have a different cost structure as they have to carry e.g. costs for premises and staff to conduct physically organized gambling.

will not have any choice other than *not* to participate at 15 percent tax-rate, even if this share of the operators is considered small.

Which gambling operators' are important in a Swedish licensing system?

In order to achieve a high channeling rate as well as large tax revenues within a Swedish licensing system a sufficiently large share of the gambling operators active on the Swedish market need to participate. Which operators that chooses to participate depends on the tax-rate, but also on how prone the gambling operators in general are to obtain a license.

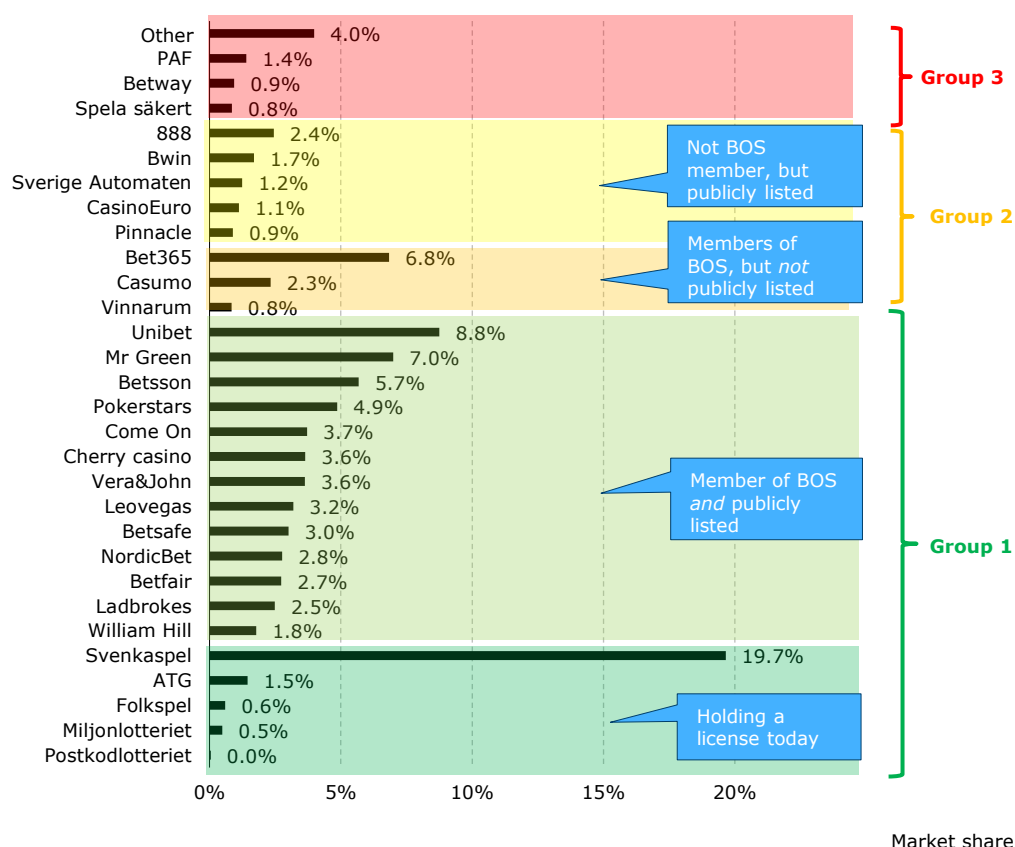
We consider that operators that are active today on the Swedish market can be categorized into three groups, based on how prone the operators are to partake in a Swedish licensing system.¹⁷ The first group are considered as the most prone and the third group as least prone.

- Group 1:
 - Gambling operators already holding a Swedish license today (state owned/governed and charity gambling)
 - Gambling operators which are members of BOS *and* publicly listed
- Group 2:
 - Gambling operators which are members of BOS *or* publicly listed
- Group 3:
 - Other gambling operators (not holding a Swedish license today, not a member of BOS nor publicly listed)

Based on Ipsos consumer survey, the gambling operators have been divided into three groups based on where the respondents gamble, and the corresponding market shares have been estimated, see figure 13. In total, the respondents stated that they play on 61 different gambling operators. Svenska spel is by far the largest operator, with a market share of 20 percent. Unibet is second, holding a market share of approximately nine percent, and barely half as large as Svenska Spel. A number of gambling operators have relatively small market shares: between one and two percent.

¹⁷ The state owned/governed operators are only active on the Swedish market. Furthermore, state ownership/governance imply that the operator can be expected to join the licensing system. Likewise, operators that hold a Swedish license today and are primarily active on the Swedish market can be expected to join. BOS mission is to ensure the implementation of a licensing system in Sweden. Membership in BOS thus imply that the operator has an explicit will to join a licensing system. Publicly traded operators often have institutional owners, such as pension funds. Such owners can be presumed to be willing to join a licensing system in order to avoid the uncertainty that follows from operating outside the system. Further, publicly traded members of BOS that have been interviewed has indicated that publicly traded operators are prone to join a licensing system.

Figure 13 Calculated market shares (stakes) for online gambling and grouping of Swedish operators, 2016



Note: n=1 014. Market shares are based on respondents volumes distributed over the operators that the respondent indicate it uses. ComeOn is owned by Cherry. Cherry is publicly listed and therefore both are categorized as publicly listed. Betsson owns NordicBet and Betsafe and therefore all three are categorized as BOS members. Unibet's market share includes MariaBingo, as it is owned by Unibet. Vinnarums market share include Bertil Bingo, as Bonnier owns both. Postkodlotteriets market share is calculated to 0,04%.

Source: Copenhagen Economics, based on Ipsos consumer survey.

The size distribution of the gambling operators within the different groups is shown in table 1. Group 1 covers three quarters of the market and is thus the largest group. In terms of size, there is a significant spread within the groups. In both group 1 and group 2, the smallest gambling operators have market shares of about one percent. Group 3 contains considerably more, and smaller, gambling operators than the other groups.

Table 1 Grouping of Swedish operators

Group	Operators	Market share (average)
1. Licensed today, Members of BOS <i>and</i> publicly listed	18	75% (4,2%)
2. Member of BOS <i>or</i> publicly listed	8	17% (2,2%)
3. Other operators	35	7% (0,2%)
Total	61	100%

Note: Market shares based on stakes.

Source: Figure 13.

The channeling rate is estimated to be 75 percent if only the operators within group 1 choose to participate in the licensing system, according to the table above. In order to reach a channeling rate above 80 percent at least some of the operators within group 2 need to join. In order to reach a channeling rate up to 90 percent, almost all operators within group 2 must join. Group 3 contains a large number of small gambling operators. If the channeling rate is to reach 95 percent or more, it is necessary that many of these operators also participate in the licensing system.¹⁸

To achieve a licensing system with both a high channeling rate as well as high tax revenues it is therefore important that gambling operators within group 2 joins. If most of these operators refrain from joining, the channeling rate and thus the tax revenues will be low. The operators within this group are generally small and have an average market share of 2.2 percent, which is roughly half the size of the average market share of group 1. We consider that the operators within group 2 are somewhat less likely than group 1 to participate in a licensing system.

The results suggest that the tax-rate should not be higher than 20 percent, since at that level there is a risk that some gambling operators within group 1, especially the smaller ones, and most operators within group 2, choose not to join the licensing system. At tax-rates closer to 15 percent, most of the operators within group 2 are likely to join and possibly some within group 3.

3.2 What can be learned from Swedish consumers?

At a tax-rate above 20 percent, consumers are expected to gamble less at gambling operators that choose to acquire a license in Sweden. The reduction follows either from consumers increasing their gambling at foreign licensed gambling operators, or by reducing their overall gambling volumes. The consequence is that the channeling rate, and, in particular,

¹⁸ Note that market shares and consequently channelization is calculated based on *stakes*, not GGR. To the extent that different operators have different repayment rates, market shares based on GGR may differ. Our assessment is that the repayment rates are similar across operators. This is based on a comparison of odds for a number of sports events for a number of operators, including both state owned and publicly listed operators. The comparison shows that repayment rates varies between 91-94 percent.

tax revenues, decrease. At a tax-rate of 15 percent the substitution rate to gambling operators outside the Swedish system is considered limited.

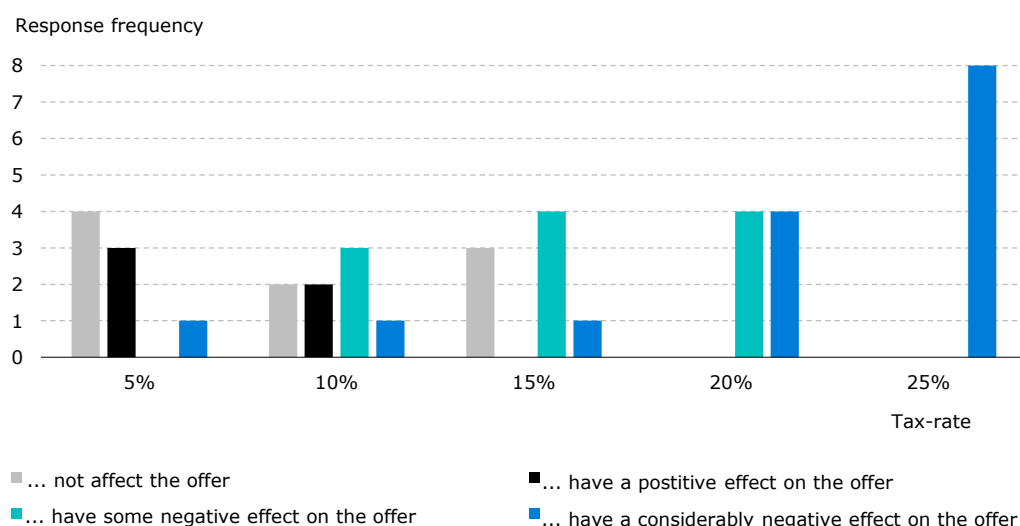
How does the tax-rate affect Swedish licensed gambling operators' offers?

A tax on GGR is comparable to an *ad valorem*-tax. This type of tax is characterized by its effect on the operators marginal cost of producing additional output, in this instance additional gambling volumes. When the tax-rates increase, the operator must increase the price in order to compensate for the increased cost.¹⁹

As stated above, operators' margins are negatively affected at tax-rates of 15 to 20 percent, in particular smaller operators. Operators that choose to participate in the licensing system at these tax-rates thus need to increase prices, or reduce the quality of its services, to compensate for the increased costs of taxation. This will consequently affect the licensed gambling operators' competitiveness compared to the operators outside the system.

Tax-rates of 20 percent or more will affect the gambling operators' price and/or quality is supported by the survey to BOS's members. All respondents indicate that tax-rates of 20 percent or more will either have "some", or "a considerably", negative impact on their offers, see figure 14.

Figure 14 How will the tax-rate in a future Swedish licensing system affect your offer to Swedish consumers? It will...



Note: n=8.

Source: Copenhagen Economics survey to BOSs members.

¹⁹ Philander, K.,S., 2013, A Normative Analysis of Gambling Tax Policy, UNLV Gaming Research & Review Journal, Volume 17 Issue 2.

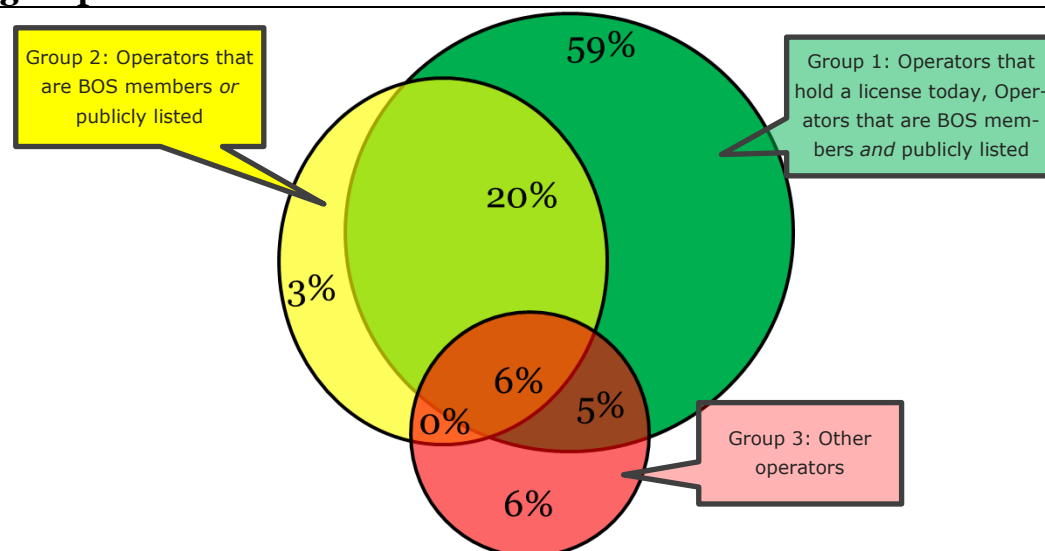
In conclusion, the results stated above indicate that gambling operators within the licensing system are at risk of being in a disadvantageous competitive position compared to the operators outside the licensing system. This effect is expected to occur already at tax-rates of 15 percent and increases thereafter.

To what extent will consumers join the licensed gambling operators?

Increased tax-rates mean that gambling operators within the licensing system may be less competitive compared to operators outside the system. The consequence is that consumers choose to gamble less at the licensed gambling operators, either by reducing the total gamble volumes or by substituting to operators outside the system.

A significant proportion of the consumers, 32 percent²⁰, state that they play on gambling operators from several different groups, see figure 15. The largest overlap is between group 1 and 2, where 20 percent of consumers place themselves. Approximately 6 percent gamble on operators from all three groups. Almost 70 percent gamble only on gambling operators within one group, preferably within group 1.

Figure 15 Consumer overlap between operators from different groups



Note: n=963. The percentages indicates the share of respondents that are located within each surface in the diagram. Note that due to rounding, the sum is not equal to 100 percent.

Source: Copenhagen Economics based on Ipsos consumer survey

²⁰ 20%+6%+5%. Note rounding up.

Gambling operators in different groups are interchangeable from the consumer's perspective, and thus constitute substitutes. Approximately 8 out of 10 state that they currently most frequently gamble at a gambling operator from group 1, and about a quarter of these (21 out of 80 percent) state they would choose an operator from another group if their preferred operator did not exist, see table 2.

Table 2 Which operator would you choose if you could not play at the operator where you play the most today?

		Operator that I would choose instead				Total
		Group 1	Group 2	Group 3	None	
Operator where I play the most today	Group 1	37%	14%	7%	21%	80%
	Group 2	8%	2%	0%	1%	11%
	Group 3	5%	1%	1%	3%	10%
Total		50%	17%	8%	25%	100%

Note: n=955.

Source: Copenhagen Economics based on Ipsos consumer survey.

In total, more than a third of the respondents, 36 percent²¹, would choose an operator from another group than their preferred operator today. A quarter of the consumers, preferably those within group 1, state that they would not gamble on any other operator other than the one where they gamble the most today.

Overall, this suggests that a significant proportion of consumers are willing to substitute between gambling operators from different groups. Therefore, at tax-rates above 20 percent a significant substitution away from operators participating in the licensing system is expected. This is due to two interrelated factors.

Firstly, fewer gambling operators are expected to acquire a license, and those that do are expected to be less competitive. *Secondly*, many consumers perceive gambling operators outside the licensing system as substitutes for the licensed gambling operators. This will consequently result in less gambling by consumers within the licensing system, either in favor of gambling operators outside the system that receives increased gambling volumes, or by reduced overall gambling. The result in both cases is that the channeling rate, but particularly the tax revenue, decreases.

²¹ 14%+7%+8%+0%+5%+1%. Note rounding.

Appendix A

Description of data and information collected for the purpose of this study

For the purpose of this report, data and information was collected from a number of sources. These are described below.

A.1 Interviews and survey to The Association of Online Gambling Operators members

During the summer 2016 interviews were conducted with four out of five of BOS current board members: Mr Green (17 June), Unibet (17 June), Betsson (20 June), PAF (30 June).

A survey was distributed to all members of BOS that are operators. The survey consisted of seven questions regarding the operators licenses in other countries, costs of acquiring a license, as well as potential benefits of joining a Swedish licensing system. One Swedish and one English version was distributed via mail to representatives of the operators.

The survey was distributed 11 July 2016 to a total of 15 members. Thereafter a number of reminders were distributed during the summer in order to increase the response rate. The last submission of the survey was received 22 August 2016. In total eight operators answered the survey, which gives a response rate of 53 percent.

A.2 Ipsos consumer survey

During the summer, Ipsos conducted a consumer survey on behalf of Copenhagen Economics.

The survey was conducted with Ipsos web-panel. The target group were Swedes +18 years that are gambling for money at least once per quarter. The survey contained 12 questions in total concerning the respondents gambling habits. The survey started 14 July 2016 and closed 26 July 2016. In total 1 014 respondents participated.

Table A.1 Key statistics, 2015

Country	Tax-rate	Channelization	GGR per capita (SEK)			Tax revenues		Tax revenue / total GGR●
			Total*	Channelized	Not channelized	Total (m. SEK)	Per capita (SEK)†	
United Kingdom	15%	95%	829	788	41	7 667	118	14%
Denmark	20%	88%	647	569	78	644	114	18%
Italy	20%	80%	163	130	33	1 575	26	16%
Spain	25%	70%	91	64	27	747	16	18%
Portugal	41% [°]	52%						21%‡
France	45% [°]	52% [°]	204	106	98	3 182	48	24%

Note: "Portugal and France have been transformed from tax revenues on stakes. Tax-rate for Portugal is calculated under the assumptions that betting and games of chance generate equal gambling volumes and that the average repayment rate is 80 percent.

* Total GGR per cap. = Channelized GGR per cap./ Channelization.

† Tax-rate* Channelized GGR per cap.

‡ Channelization * Tax-rate, which is an approximation of Tax revenue / total GGR

° France channelization has been estimated on the basis that approximately 700 000 consumers in France play online-casino. The original channelization provided by EGBA did not consider these consumers in the calculation of channelization.

● Tax revenue per cap/Total GGR per cap.

Source: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/229993/remote_gambling_summary_of_responses.pdf; <https://spillemyn-digheden.dk/sites/default/files/Draft%20for%20the%20Act%20of%20gambling.pdf>; <http://www.lotteriinspektionen.se/Documents/Externa%20dokument/Spel-marknadensutveckling2013.pdf>; <http://www.dgojuego.minhap.gob.es/en/normas-vigor>; http://www.pgdisboa.pt/leis/lei_mostra_articulo.php?nid=2340&tabela=leis&nversao=; <https://www.service-public.fr/professionnels-entreprises/vosdroits/F1279>; <http://www.egba.eu/facts-and-figures/interactive-map/>. <http://www.arjel.fr/IMG/pdf/2016T1.pdf>, H2 and operators. Joakim Rönngren, ex. dir. com. Lotteriinspektionen (<http://bos.nu/tag/joakim-ronnberg/>). The Gambling Commission: <http://www.gamblingcommission.gov.uk/Gambling-data-analysis/statistics/Industry-statistics.aspx>; Danish Online Gambling Association, DOGA: <http://doga.squarespace.com/market-numbers-2015>; Dirección General de Ordenación del Juego: <http://www.dgojuego.minhap.gob.es/en/descarga-datos-mercado-juego-online>; ARJEL: <http://www.arjel.fr/IMG/pdf/2016T1.pdf>UU. European Gaming & Betting Commission, <http://www.egba.eu/facts-and-figures/interactive-map/>, Eurostat: <http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tps00001&plugin=1>.