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State-Sponsored Gambling Advertising

An observational study on the effect of Svenska Spel's advertising spending on gambling in Sweden

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- Stockholm School of Economics -

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Abstract

Gambling in Sweden is increasing and is a large issue for both individuals and the state. The largest actor on the Swedish market is the state-owned company Svenska Spel which offers gambling services online and with a monopoly runs casinos and physical slot machines. To promote their games, Svenska Spel advertises through multiple channels. Since 2019, on a monthly basis, Svenska Spel has had a share of the total advertising in the gambling market, i.e. a share of voice (SoV), of between 6.3 and 25,7 percent. Using an empirical research method, the thesis examines whether Svenska Spel's advertising spending influences gambling turnover at the market level. Using data from Kantar Sifo and Spelmyndigheten, trends are observed and correlation and regression tests of Svenska Spel's SoV and the net turnover of Swedish gambling companies, which is a proxy for market level gambling spending, are conducted. The SoV of Svenska Spel is found to have a correlation of 0.301 with the Net-turnover and the regression analysis implies that a one percentage point increase in Svenska Spel's SoV increases net-turnover in the market by 0.65%. The correlation and effect is stronger when conducting this test using a SoV variable that lag net-turnover by one month. The thesis concludes that Svenska Spel's advertising spending influences spending on the gambling market positively and discusses implications of the findings for Swedish society, the gambling industry and the research area of gambling advertising at large. As it does not cover why this effect occurs, it aims to inspire further research on the causes of the observed effect and what the total effects for society are. In doing so it hopes to contribute novel and useful insights to the general debate on whether Svenska Spel and its advertisements are net-positive for Swedish society.

Key Words: Swedish gambling market, Gambling advertising, Svenska Spel, Share of Voice

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1.Introduction

1.1 Background

The first instance of a state-run gambling product in Sweden was in 1896 when a lottery was put in place to fund the finalization of the Nordic Museum of Sweden for the Stockholm World Fair in 1897. This was also the first recorded instance of extensive queues in Stockholm as people were eager to enter and have a chance to win the big prize of 50,000 SEK. The effectiveness of lotteries as a revenue source for the state did not go unnoticed and the Swedish government has continued to offer gambling services in various ways ever since. (Svanell & Gustavsson, 2012)

Svenska Spel proclaims themselves the number one supporter of Swedish athletics and the Swedish government states that Svenska Spel has a purpose of reducing the negative effects of gambling, which is meant to take precedence over their profit motive. With increasing gambling and associated societal costs, it becomes natural to question Svenska Spels role in this. What effects does 50 MSEK a month on gambling-advertising by a state-owned company have, and does that, as the mandate from the Swedish government require, minimize the negative effects of gambling to a greater extent than it gives profits?

“The care of our customers and our ambition of minimizing the negative effects of gambling weighs heavier than the profit motive.”

Quote 1: Swedish government’s website on Svenska Spel. Translation in appendix.

Svenska Spel has a history of encouraging gambling and leading people inside of Svenska Spel, such as prior CEO Jesper Kärrbring, has also shown an attitude of that negating the amount of gambling made is not a top priority:

“Play moderately! What do you mean play moderately? Well, what is moderate to you? A million may be moderate for some, whilst 200 SEK is way too much for another. You decide, we don’t intervene.”

Quote 2: Jesper Kärrbrink, CEO of Svenska Spel 2004-2008. Translation in appendix.

1.1.1 Gambling & Gambling Advertising in Sweden

Gambling in Sweden is increasing. One evidence of this is that from 2006 to 2022 the gross profit of Swedish gambling companies has increased from 15 to 27,4 BSEK, according to reports published by *Spelmyndigheten (the Swedish Gambling Authority)*. These profits show that gambling is increasing as they are also corresponding losses for individual players in the market. Out of all Swedish adults the average person lost 3150 SEK to gambling in 2021 (Statskontoret, 2022, p. 81). Connected with this, 3.4% of the adult population in Sweden is reported as having some form of gambling problem, leading to a total cost for the Swedish society of an estimated 9,1 BSEK in 2021 (Institutet för Hälso- och Sjukvårdsekonomi, 2021).

Gambling advertising is, like most advertising, aimed at trying to push sales for the gambling products being promoted. In Sweden such advertising is only allowed for actors with a specific gambling license since the 2019 Swedish gambling legislation that went into effect with the law *Spellag (2018:1138)*. In the new legislation there are several requirements set on licensees for the advertising made and importantly it demanded that the advertisements marketed gambling *moderately*. There are no restrictions on the amount of advertising or the advertising spending by an actor, and in 2021 Kantar Sifo estimated 4 BSEK was spent on gambling advertising.

1.1.2 Svenska Spel

Svenska Spel in its current form came to be in 1996 and consists of three segments, *Sport & Casino* which is betting and online casino games, *Tur* (Luck) which is the lottery businesses and *Casino Cosmopol & Vegas* which is the physical casinos and the physical slot machines. The third segment *Casino Cosmopol & Vegas* are businesses where Svenska Spel, has a monopoly on the Swedish market.



According to the 2021 annual report the three segments combined for total gross profits of 8,1 BSEK and paid a dividend to the state of 2,9 BSEK. To achieve this Svenska Spel advertises

their gambling services in media ranging from television to social media. Data provided by Kantar Sifo shows that Svenska Spel spent an average of 50,9 MSEK per month between January 2019 and November 2022 on advertising. Commonly used advertisements are advertisements promoting Stryktipset with the famous song “See you on saturday”, the Lotto commercials showing customers trying to explain that they always have a specific number but *forgot* this week and the Christmas themed Triss commercials. Versions of these and many more can be found on the *Svenska Spel Tur* and *Svenska Spel Sport & Casino* Youtube channels.

Another important communicated aspect of Svenska Spel is its contributions to the Swedish athletic movement (Svenska Idrottsförbundet). In 2021 donations totaled 257 MSEK, but it also communicates its interlink with the Swedish athletic movement through sponsorships of Swedish national teams and Swedish leagues. Svenska Spel themselves proclaim themselves to be *Idrottens huvudsponsor (the main sponsor of Swedish athletics)*. The ads and sponsorships are controversial and one example of this is that famous skier Charlotte Kalla refused to partake in commercials with the team supporting Svenska Spel when the company entered into a new sponsorship agreement with the national team in 2019 (Aftonbladet, 2019-11-04).

1.2 Purpose and Research Question

With an increasing gambling problem in Sweden, costly for both its people and the state, the purpose of this thesis is to investigate one potential cause for this. Through an empirical research method this thesis examines the research question(RQ):

- **RQ:** What effects does the advertising spending of Svenska Spel have on gambling in Sweden?

The research method is based on looking for connections between the share of voice (SoV), i.e. the advertising-share of Svenska Spel, and the turnover of the Swedish gambling market. Connected with this a more general discussion and recommendations for further research around Svenska Spel’s advertisements will be presented. Because of a lack of previous research around the topic, the aim of this thesis is to spark increased debate and research as to whether the advertisements of Svenska Spel are net-positive for Swedish society and to contribute to the wider field of gambling advertising.

1.3 Scope

This thesis has a scope which is limited to the Swedish gambling market because of the internationally unique role of Svenska Spel. However, as the findings will have relevance for the global phenomenon of gambling advertising, the implications of the findings will be discussed not only as they relate to the Swedish market but also to the gambling advertising research area. In particular the important question relating to whether there is a primary demand effect for gambling will be more generally discussed.

Because of changes caused by the 2019 legislation the study only focuses on the period of 2019 to 2022. Being an observational study on data, this thesis examines *if* there are effects and what potential consequences of the effects could be. However, it is important to note, that with the exception of limited speculative remarks and suggestions for future research, the study does not strive to cover the very important questions of *why* the effects exist.

1.4 Intended Contribution

The intention of examining Svenska Spel's advertising is to increase the understanding of Svenska Spel's influence on the Swedish gambling market and to add to the research field of gambling advertising. This thesis contributes a new type of data to use for examining this issue that, to the knowledge of the authors, has not been utilized in existing literature.

It strives to inspire further work that, together with this thesis, creates a deepened understanding on what the effects of state-run gambling advertising are. There is an ongoing public debate revolving around the existence of Svenska Spel. For example, the industry association for online gambling posted a debate article in Dagens Nyheter on the 26th of December 2022 calling for a sale of Svenska Spel because of its negative impact on the market, citing in particular that the existence of Svenska Spel's advertisements creates a need for more advertising in the market as a whole. One overarching goal is therefore for this thesis to contribute facts to this public debate and issue.

Additionally, reviews of the literature in the research area of the effects of advertising on gambling attitudes, intentions and behavior (Torrance et al., 2021; O'Brien et al., 2020) have found notable gaps particularly in the research on the effect of advertising on gambling behavior. Causes of this gap have been identified as a lack of longitudinal and experimental studies, as well as a reliance on self reported data (Newall et al., 2019). In conducting a longitudinal study with externally sourced data this thesis contributes to filling a reported research gap in the research field.

2. Review of Literature

By empirically investigating the effects of advertising spending on gambling behavior, this study draws from previous research on gambling and its societal impact, the effect of advertising on gambling, and the wider fields of advertising and statistics. The following section introduces five areas: (2.1) the negative societal effects of gambling, (2.2) the effect of gambling advertising on gambling behavior, (2.3) the effect of advertising share-of-voice on consumer behavior and (2.4) the spillover effect in advertising.

2.1 Negative Societal Outcomes linked to Gambling

The effects of gambling on individual and public health, as well as the unintended costs incurred by society as a result of gambling, are well researched. The primary health concern associated with gambling is problem gambling. A popular definition of problem gambling was presented by Ferris & Wynne (2001): “Problem gambling is gambling behavior that creates negative consequences for the gambler, others in his or her social network, or for the community.”

Problem gambling, as defined above, is a broader term than Pathological Gambling and Gambling Disorder, which are medical terms used to describe and diagnose individuals with problematic gambling habits. The term problem gambling is preferred in research on gambling as a public health issue as it takes into account effects on the wider community, rather than being limited to the individual (Kourgiantakis et al., 2013). A cost-of-illness study for the year 2018 found that the direct, indirect and intangible costs of problem gambling in Sweden were 14,6 billion Swedish Krona (1,42 billion euros) for the year (Hofmarcher et al., 2020). Problem gambling has also been linked to numerous negative individual health outcomes, including

anxiety disorders (Panic Disorder, Social Phobia, Generalized Anxiety Disorder, and Post-Traumatic Stress Disorder)(Sundqvist & Wennberg, 2022), as well as increased suicide ideation and attempts (Edson et al., 2022)

There is evidence that the prevention paradox applies to gambling related harm at the population level, meaning that most of the harm affects low- and moderate-risk individuals because it is a much larger group than high risk individuals (Canale et al., 2016). This means that at the population level, non-problem gamblers can incur significant financial and social harm. In turn, this might suggest that public policy aimed at minimizing the harmful effects of gambling should not just focus on limiting problem gambling, but also that lower gambling participation and lower gambling expenditure overall are desirable societal outcomes (Abbott, 2020).

2.2 Advertising Effects on Gambling

The effects of advertising on gambling attitudes, intentions and behaviors are not as well studied as the advertising effects on comparable products with established health risks such as tobacco or alcohol, and the literature on gambling advertising is lacking methodological diversity (Torrance et al., 2021), particularly longitudinal and experimental studies (O'Brien et al., 2020). O'Brien et al. (2020) establishes positive relationships between exposure to gambling advertising and gambling attitudes, intentions and behaviors. Newall et al. (2019) concludes that there is a lack of research particularly on the effects of advertising on gambling behavior, largely because much of the literature relies on self reported data. However, Newall et al. conclude that there is emerging evidence that gambling advertising prompts more frequent and riskier gambling behavior. Binde (2014) found in a review commissioned by the Responsible Gambling Trust of the UK that advertising is one environmental factor that contributes to the level of problem gambling, concluding that the impacts of gambling advertisement is “neither negligible nor considerable, but rather relatively small”. While the literature is consistent in its dismissal of advertising as a major contributor to increased gambling on a population level, several studies find that gambling advertising might be harmful to particularly vulnerable groups. In Sweden specifically, few people self-report negative influence from gambling advertising, but risk gamblers and problem gamblers are overrepresented among those who report negative influence, indicating that gambling advertising worsens gambling problems (Binde & Romild, 2019). There

is also evidence that young people are particularly vulnerable to gambling advertising, with a large percentage, particularly among those with established gambling habits, reporting that advertising prompts them to gamble (Derevensky et al., 2010). A systematic review of research on cigarette advertising, which is often, along with alcohol, likened to the gambling due to the similarly harmful and addictive nature of the products, found that advertising positively affects the tendency of consumers to begin smoking, continue smoking and to switch cigarette brands (Capella et al., 2011).

2.3 Share of Voice

The share of voice of a brand is defined as “the brand's share of the total value of the main media exposure in the product category” (Jones, 1990). Jones introduced the classification of brands and companies as either investment brands or profit takers depending on their share of voice (SoV) in relation to share of market (SoM). Brands with a SoV larger than their SoM, overspenders, are investment brands and brands with a SoV smaller than their SoM, underspenders, are profit takers. Jones also showed that larger brands were more likely to be profit takers, whereas smaller brands were more likely to be investment brands. The relationship between SoV and SoM is described by the Advertising Intensiveness Curve. One explanation for this relationship is that small brands need to invest to increase their market share, whereas large brands can underspend on advertising for the purpose of short term savings and maximized profits (Buck, 2001). The overspending of smaller brands has been shown to be higher in oligopoly markets than in competitive markets, perhaps because of an increased need for advertising to compete with dominant market leaders (Hansen & Christensen, 2005). The positive effect of Share of Voice on market share has been demonstrated in numerous markets, including the South African automotive market (De Canha et al., 2020) and the American market for proton pump inhibitors (pharmaceuticals) (Lu et al. 2006).

2.4 Spillover Effects of Advertising and Primary Demand

Positive spillover effects of advertising on competitors, i.e. advertising resulting in positive attitudes towards competitors of the advertising firm, have been demonstrated in many retail settings and in many advertising mediums. In a large-scale field-experiment, Anderson &

Simester (2013) found that when a consumer is a customer of a retailer and there are switching costs, receiving advertising from a competing retailer will lead to increased spending at the retailer they already visit. Positive spillover effects to competitors have been found in numerous categories and markets. Shapiro (2018) finds that television advertising of antidepressants in the US has a significant positive spillover effect on the demand for competitors. Sahni (2016) finds significant spillovers to competitors in online restaurant advertisements in India, particularly for competitors with similar offerings to the advertiser.

At the market level, the spillover effect is strongly related to the primary demand effect, i.e. the increased demand for the market or category as a whole resulting from advertising. Empirical research on the connection between advertising and primary demand has come to different conclusions depending on the market. Studies of the U.S. automobile market found no evidence of a primary demand effect (Kwoka, 1993), whereas there is evidence of a primary demand effect in the U.S. pharmaceutical market (Fischer & Albers, 2010).

The effects of advertising on cigarette demand are particularly well researched and especially relevant to this thesis due to the similarly controversial natures of advertising of cigarettes and gambling due to their documented health risks. Empirical research on the effect of cigarette advertising on aggregate demand for cigarettes has yielded varying results. Numerous studies have found significant evidence of a primary demand effect, i.e. a positive association between advertising and market level demand (Chetwynd et al., 1988; Seldon & Doroodian, 1989; Tremblay & Tremblay, 1995) while other studies have been unable to find significant evidence of a primary demand effect (Duffy, 2003; Gallet, 1999). To the knowledge of the authors, there have been no studies conducted on a possible primary demand effect in the gambling market.

3. Method

In this section insights can be gained on how to conduct similar studies and data sources to use when analyzing the Swedish gambling market. This section consists of: (1) the choice of method & approach, (2) the gathering of data sources, and (3) the study design, the use of lagging variables and its reliability and validity.

3.1 Research Method & Approach

The approach of this thesis is deductive, as it aims to utilize established theory from the literature on advertising and gambling and apply that theory to examine a novel research question (Bryman & Nilsson, 2011). A quantitative research method was used for the study, as quantitative methods are preferred when the goal is to determine the prevalence of a well defined phenomenon within a population (Eliasson, 2013, p. 30), which is the aim of this thesis. An observational method was used, rather than an experimental one, as there was high quality data available for access from large existing databases. Because of the lack of observational studies on the Swedish gambling market, the observational method provided an opportunity to contribute novel data to the literature without the practical need to conduct surveys. More specifically, the study was longitudinal and retrospective. A need for more longitudinal studies in the literature on gambling advertising has been identified (O'Brien et al., 2020).

As the effects of the advertising spending of a state owned gambling company on market level gambling spending has not previously been researched and because of the uncertain and exploratory nature of this study, it was decided to use a general research question instead of more specific hypotheses. The added benefit of keeping the topic broad weighed heavily as that would give this study good chances of inviting further research, in which hypotheses left unexamined here could be delved into. Furthermore, the openness of the research question enabled a broader discussion on the current system as a whole.

3.2 Data Sources

Multiple Svenska Spel employees were contacted and asked if they had prior knowledge or data on their advertising spending which could be examined further. Unfortunately, these inquiries were rejected based on the fact that if such data existed it was considered confidential for competitive reasons. Instead, the data that this study analyzes was gathered from two primary sources, *Spelmyndigheten (Swedish Gambling Authority)*, using data from *Skatteverket (Swedish Tax Agency)*, and the market research firm Kantar Sifo. The data runs from January 2019 through November 2022. The reason no data is included from before 2019 is the new legislation, introduced on the first of January 2019, which included a new system where a license was needed in order to operate a gambling business on the Swedish market and to advertise that business (Spellag (2018:1138)). Because of this license, comparisons of the advertising in the Swedish gambling market using publicly available data before and after the introduction of the 2019 legislation is associated with large problems. As a result of the need for a license, there is now knowledge of all actors doing advertisements on the market. Before 2019 there was no effective way to with certainty conclude who all businesses active on the market were.

From Spelmyndigheten, we collected monthly data on the amount of gambling tax paid by all Swedish gambling companies with a license to operate on the Swedish market. The gambling tax is based on a figure called *net turnover*, which is calculated as *Bets - Paid Winnings*. The reported figures in the data set is the paid gambling tax, which is 18% of the *net turnover*. This means that in reality the data doesn't show the turnover of the respective companies, but instead proxies something similar to gross profit. A numerical example of how one can calculate gross profit using this metric and the 2021 Svenska Spel results are:

- $1545 \text{ MSEK paid in gambling tax} \rightarrow \text{Net turnover} = 1545 / 0,18 = 8583,3$

The reported gross margin of Svenska Spel has stayed very similar from 2019-2021, at 28, 31, and 30 percent (Svenska Spel Annual Report 2021). This means that the data, at least for Svenska Spel, could also be used to draw conclusions on the overall turnover. Whether the gross margin remains stable for other companies making net-turnover possible to use as a proxy for turnover has not been tested on the data and will not be done for Svenska Spel throughout the thesis. Instead the paid taxes will be used as a measure to show what gross profits gambling companies are making and respectively what losses players are suffering.

From Kantar Sifo we have been able to take part of their *raw-data* for the gambling companies advertising spending. This data is used inside Kantar Sifo to make reports which they sell to interested parties. Lars Näsström of Kantar Sifo explains that the raw data is presented as *gross-numbers*. The data is collected by monitoring numerous advertising mediums and tracking the amount of advertisement of each company, and the final values are calculated by multiplying the observed levels of advertisement with the rates of the advertising agencies that made them. This means that it does not show what companies actually paid for advertising, but instead what they would have paid had they not received any discounts from advertising agencies. As this is treated similarly for all the companies and we use the assumption that they get similar discounts it was decided that this data is a good enough proxy to actual advertising expenditure to draw conclusions on share of voice in the gambling market.

3.3 Study Design

In order to examine whether the advertising spending of Svenska Spel had an effect on the net turnover of Swedish gambling companies, analyzes to determine correlation and causality were conducted. In order to increase the likelihood of significant findings for these tests, there was a need for many data points. This was the reason for choosing monthly data (rather than quarterly or yearly) as it gave the largest number of data points. As the research question concerns the advertising spending of Svenska Spel, the idea was that the optimal variable to analyze would be one that not only indicated whether Svenska Spel's advertising created higher market turnover, but also if the advertising spending of Svenska Spel comparatively encouraged gambling to a greater extent than other gambling advertising. As such, Share of Voice (SoV) was chosen as the independent variable. As if the tests found that changes in the SoV of Svenska Spel lead to changes in market level gambling net turn, i.e. a correlational and causal relationship, the explanation for this change would be the influence of Svenska Spel advertisements.

3.3.1 Lagging Variables

In empirical economic analysis there are many examples of using lagging variables, i.e. variables that lag an independent value by 1 of a given time unit ($t-1$) (Jensen & Paldam, 2006). The lagging variable can be used when researchers believe one variable could affect another with a

delay, or when a lagging variable is thought to be a part in describing an entire equation. However, whether a lagging variable helps in eliminating simultaneity bias is disputed and lagging variables should most reliably be viewed as another variable which can be used to estimate an effect (Reed, 2015). A lagging effect of gambling advertising has previously been found to be relevant both for the short and the very long term (Binde, 2014). The very long term lag effect relates to that exposure to gambling advertising normalizes gambling behavior which as previously discussed increases the likelihood of problem gambling thereafter.

3.3.2 Reliability & Validity in the Study Design

Reliability of the study is ensured by being transparent about the sources for the data used and the methods used in analysis. For the regressions relating to Svenska Spel's SoV and net-turnover significance levels of 0,05 was accepted as statistically significant. Other reliability tests are presented in section 4.4.1.

In this study the SoV of Svenska Spel is tested as a potential independent variable that influences the dependent variable net-turnover of gambling companies. This is problematic from a validity point of view as there could be simultaneity bias associated with this. Simultaneity bias is what happens when one uses an ordinary least squares regression on one variable to explain an event caused by a system of equations. It is common in quantitative studies on social sciences as most variables are determined by complex interactions with each other. Essentially there are risks that the SoV of Svenska Spel and the turnover on the gambling market influence each other simultaneously. Furthermore this helps in explaining the flaws in the regression models. The flaw is that they have a high error term, since there are other variables than Svenska Spel's SoV which influences the Net-turnover in the Swedish Gambling market. The regression analysis is included despite its limited validity because of the exploratory nature of this thesis.

4. Results

In this section, analysis of and primary takeaways from the data sources are presented. It covers: (1) relevant trends in the gambling market, (2) correlation and (3) regression analyses of SoV and net-turnover, and (4) the SoV and net-turnover relationship in further analysis with reliability measures.

4.1 Relevant trends

4.1.1 The Gambling Market

The total gambling tax and thus the net-turnover of the licensed gambling market companies has been quite stable in 2019-2022 with a slightly increasing trend.

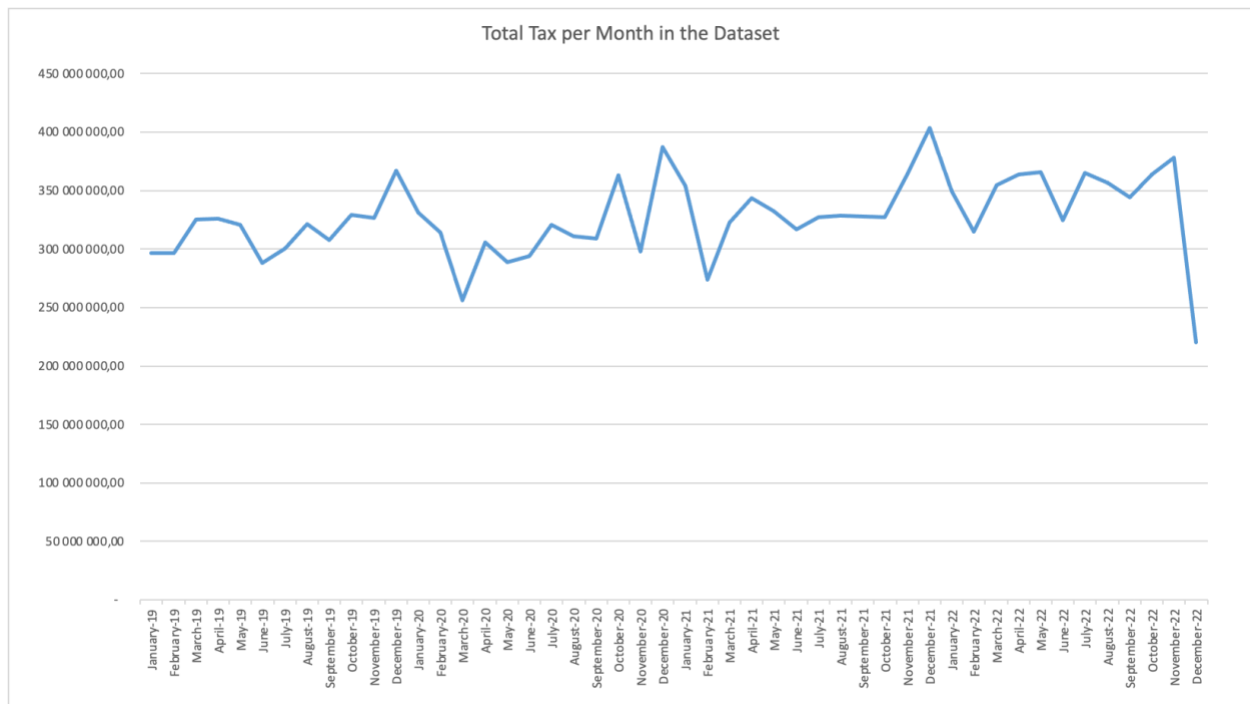


Figure 1: Total Gambling Tax

There is a moderate seasonality effect where Oct-Feb is the high season for gambling. Be advised that the shown figures are average monthly turnover and that month December only

includes figures until year 2021, whereas the others are based on 2019-2022.

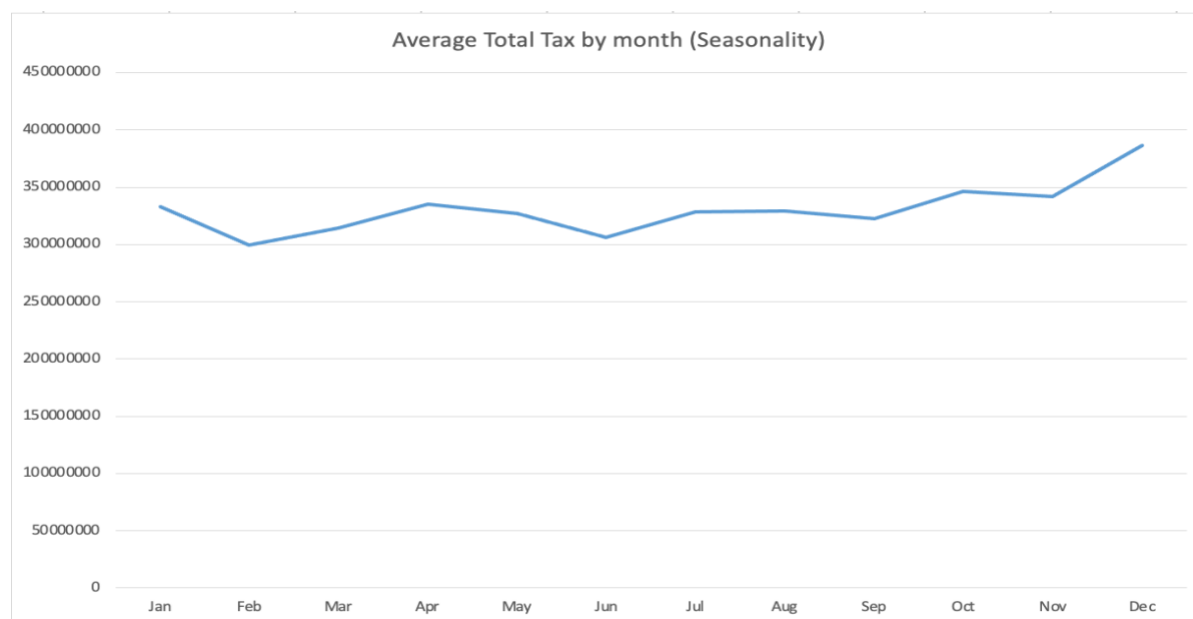


Figure 2: Seasonality in Total Gambling Tax

4.1.2 Svenska Spel

The SoV of Svenska Spel changes dramatically. During the last four years in the SoV has been in a range from 6,3 to 25,7 percent. The SoV changes irregularly but is trending slightly increasing on average.

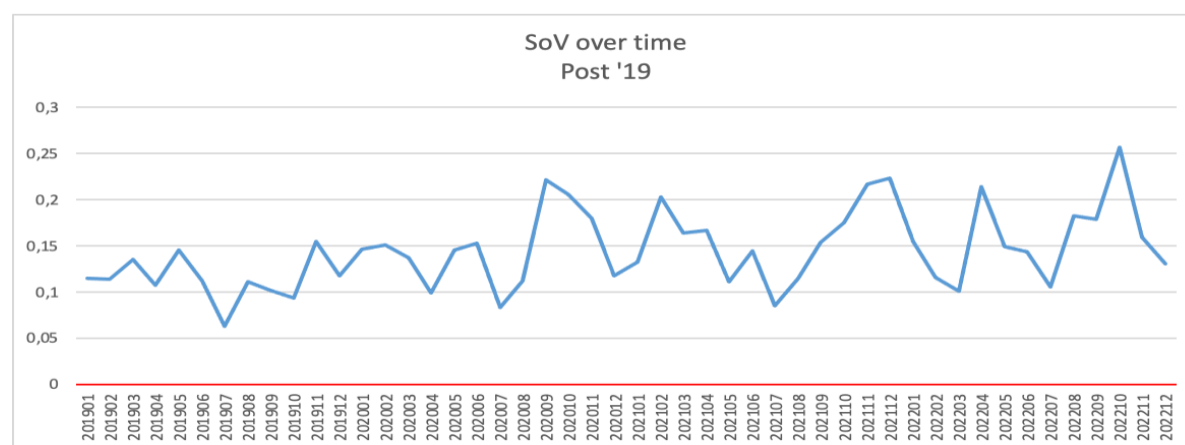


Figure 3: Svenska Spel's SoV

The share of gambling tax (SoT) of Svenska Spel in the licensed Swedish market has ranged from 44,7 to 27,9 percent. This variable is more stable compared to SoV and is in a slightly declining trend.

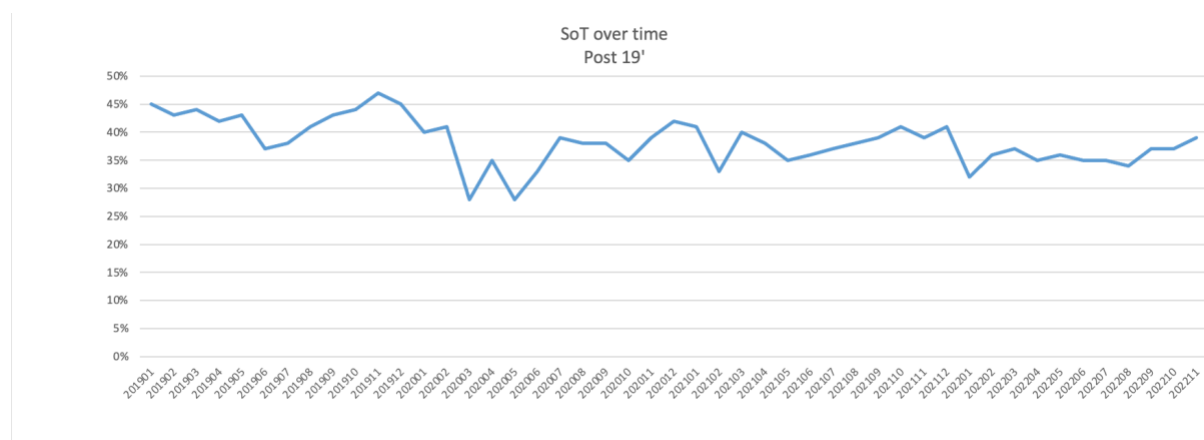


Figure 4: Svenska Spel's SoT

4.1.3 Advertising Spending

The Advertising spend market as a whole has decreased substantially since 2019. The decrease in advertising spending is explained by the regulation change in 2019 as in a longer perspective the advertising spending has increased aggressively from 2010. The downfall started when the legislation was introduced in 2018 where there was a dramatic drop as shown by the Institute for Public Health in Sweden (Graph in Appendix).

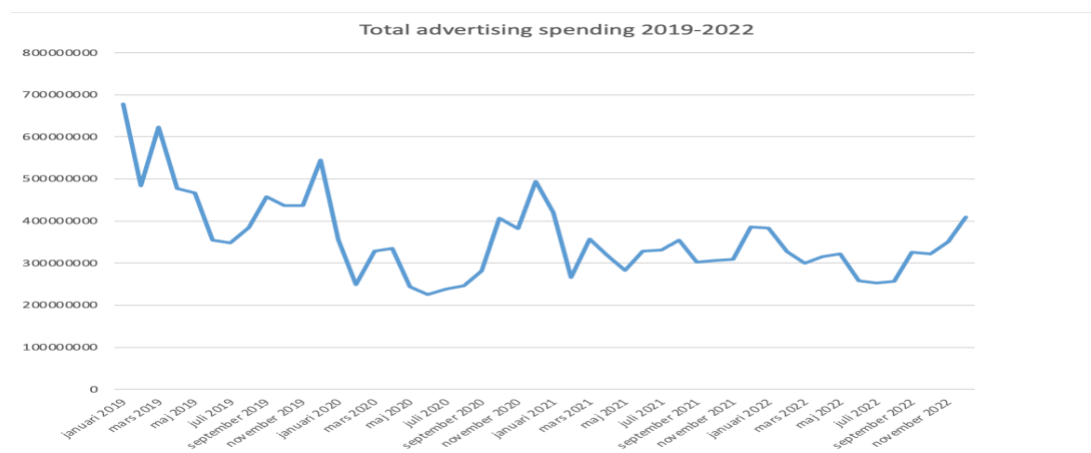


Figure 5: Advertising Spending

4.2 Correlation Analysis

<i>Testing variables</i>	<i>Pearson correlation</i>	<i>Significant (Green if <0.05)</i>
SoV & Total Gambling Tax	0.301	0.04
SoVLag & Total Gambling tax	0,438	0.002
SoV & Svenska Spel Gambling Tax	0.064	0.669
SoV & SoT	-0.174	0.241

Table 1: Correlations

Svenska Spel's SoV and total gambling tax in the gambling market correlates with a Pearson correlation of 0.301 and this correlation is significant at a 0.04 significance level. The lagging SoV has a higher correlation of 0.438 at a 0.002 significance level. There is no significant correlation between the SoV of Svenska Spel and the reported gambling tax, or the SoT of Svenska Spel.

4.3 Regression Analysis

<i>Testing variables (D=dependent, I=independent)</i>	<i>R Square</i>	<i>Adjusted R squared</i>	<i>Unstandardized Beta (Tax)</i>	<i>Unstandardized Beta (Net-turnover)</i>	<i>Significant (Green if <0,05)</i>
Total Tax (D) & SoV (I)	0.091	0.07	2,154,754	11,970,856	0.04
Total Tax (D) & SoVLag (I)	0.192	0.174	3,104,189	17,245,494	0.002
Svenska Spel Tax (D) & SoV (I)	0.004	-0.018	282382	1,568,789	0.669
SoV & SoT	0.03	0.009	-0.166	N/A	0.241

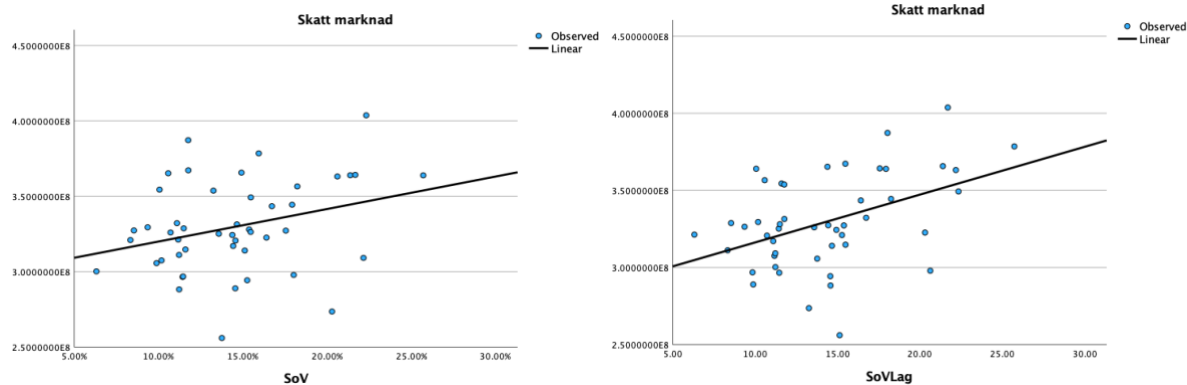
Table 2: Regressions

The regression for SoV shows an influence to total gambling tax with an adjusted R square of 0.07 and an Unstandardized Beta of 2.15MSEK. The SoVLag variable affects total gambling tax with an adjusted R square of 0.174 and an unstandardized Beta of 3.1MSEK. The unstandardized Betas multiplied with the tax rate gives unstandardized betas as net turnover of $(2.15/0.18)$ 11.97 MSEK for the SoV variable and $(3.1/0.18)$ 17.25 MSEK for the SoV-Lag variable.

There were no significant results on the SoV's relationship with Svenska Spel's gambling tax or turnover.

4.4 SoV and Gambling Tax in Depth

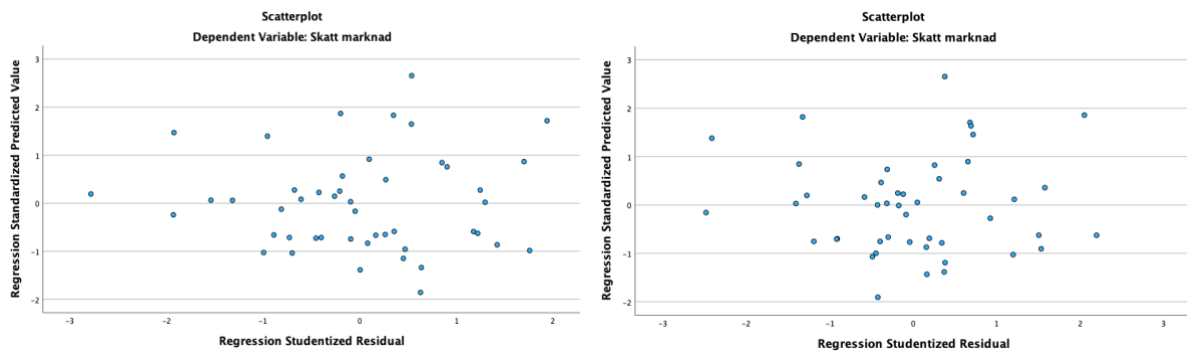
The relationship between SoV and Total gambling Tax of the Swedish gambling market is most resembling a linear relationship (F statistic 4.45), which also holds true for the lagging variable (F statistic 10.7). The relationship could not be proven to have seasonal effect by doing regressions on the observed high (Oct-Feb) vs low (Feb-Oct) seasonal periods because of a lack of significance.



Figures 6 & 7: Linear relationship plots

4.4.1 Reliability Concerns

The Durbin Watson test gave values of 1.624 for the SoV regression model and 1.509 for the SoV-lag model. Multicollinearity is not an issue for the regression tests as they have been done separately. However, when doing the regression analysis with both SoV and SoVLag as independent variables the VIF statistic gives a value of 1.154. Finally testing for heteroscedasticity the regressions produced seemingly random scatter plots.



Figures 8 & 9: Scatter plots

5. Main Findings

This section summarizes the result section and its most relevant findings.

The primary aim of this study was to examine the effect of Svenska Spel advertising spending on the amount of gambling on the Swedish market. Correlation and regression analyses of the advertising spending of Swedish gambling companies and the net turnover of Swedish gambling companies found that advertising spending of Svenska Spel has a significant positive effect on the total net turnover of Sweden's gambling companies. The correlation analysis found the net-turnover to correlate by 0.301 with SoV and a one month lagging SoV variable to correlate with 0.431. The regression analysis found that SoV had an adjusted R square of 0.74 and the lagging SoV had an adjusted R^2 of 0.174 with net-turnover. Furthermore our regression model found that a one percent increase in the SoV of Svenska Spel has a 11,97 MSEK effect for the current, and a 17,25 MSEK effect on the market's following month's net turnover. The average monthly net turnover in the data set was 1831 MSEK, which would imply that according to the regression, a one percent change in SoV has a 0,65% effect for the current market level net-turnover and a 0,94% effect on the following month's market level net-turnover.

6. Discussion

This section discusses how the findings can be applied to Svenska Spel and the Swedish gambling system, and how they relate to prior literature. It consists of discussions on (1) the spillover and primary demand effects, (2) the lagging effects of Svenska Spel advertising, (3) the effect of SoV on Svenska Spel's net-turnover, (4) the Swedish gambling system at large

6.1 Spillover and Primary Demand Effects

This study found significant evidence that increased advertising spending by Svenska Spel leads to increased net-turnover in the Swedish gambling market, but no significant evidence that it leads to increased net-turnover for Svenska Spel themselves. This indicates that the advertising of Svenska Spel exhibits spillover effects to competitors and that the advertising primarily

benefits Svenska Spel not by taking market share from competitors, but rather by growing the market. It could be the case that characteristics, such as size, shared with other gambling companies is what causes this spillover effect, however this is not examined. Since only the advertising of Svenska Spel is analyzed, it is unclear if the observed spillover effects are unique to Svenska Spel or part of a primary demand effect in the Swedish market. Studies on markets of products with similar characteristics to gambling, specifically the cigarette market, have come to varying conclusions regarding the presence of a primary demand effect, (Chetwynd et al., 1988; Seldon & Doroodian, 1989; Tremblay & Tremblay, 1995, Duffy, 2003; Gallet, 1999) and no valid conclusions on the presence of a primary demand effect in the Swedish gambling market can be drawn from the findings of this thesis.

6.2 The lagging effect of Svenska Spel advertising

The lagging SoV variable has a stronger connection to net-turnover than the SoV variable. A reason for the higher correlation beta could be that the effect of Svenska Spel advertising is stronger with a lag. Binde (2014) found lagging effects of gambling advertising, which is consistent with the findings of this study. Possible explanations are that some consumers might need time to deposit money and find games/slots on which they want to bet. Associated with the previously discussed long term effects of gambling advertising this helps to provide evidence for the long term dangers associated with Svenska Spel's advertising. There could be other explanations for this effect, having to do with competitors using Svenska Spels SoV in their advertising strategies, however there is no previous research that would suggest this.

6.3 Lack of Significant Results on the SoV's effect on Svenska Spel

This study did not find significant evidence that the SoV of Svenska Spel has an effect on Svenska Spel's net turnover. This could be explained by a multiple of factors. One possible reason could be the characteristics of the Svenska Spel games-portfolio. Svenska Spel has a portfolio of some of the most beloved games in the Swedish gambling market. Two prominent examples are the lottery tickets *Triss* and the saturday soccer-betting staple *Stryktipset*. Gambling on games such as these is integral to the life of many Swedes and part of their routine; people like to *place a Stryktipset row on saturdays* or *buy the family Triss-tickets for christmas*. Patterns

such as these are less likely to change quickly because of advertising and could help to explain why there were no significant connections between Svenska Spels SoV and Svenska Spels performance.

6.4 A Complex and Delicate System

The fact that a state owned company advertises products and services harmful to its citizens for profit is a delicate thing. On the one hand, the argument can be made that the profits of the gambling market are better served ending up as government funds and donations to local athletic organizations than profits to tax-haven-based private companies. On the other hand the current system has a state-owned actor running a business that makes revenues from gambling losses of the Swedish people and, as our findings indicate, advertises in a way that increases the amount Swedes gamble. Since higher gambling spending is linked with negative societal outcomes (Abbott, 2020), the findings of this study suggest that the advertising of Svenska Spel contributes to effects that do not serve the interest of the Swedish population or state.

The net turnover is calculated with the formula *Bets - Paid Winnings*. This is a measure resembling a gross profit for the gambling companies. Relevant for this discussion is that net turnover from the point of view of the consumers also represents the total amount lost to gambling companies, as this is what is left when the wins are subtracted from the total bets. Thus the net-turnover figure is also a representation of what Swedish consumers lose to gambling and this means that the advertising of Svenska Spel causes increased losses for the people. Regarding these losses, it is also worth noting that if one wanted to view Svenska Spel's profits as a sort of tax; the general desired equalizing effect of a tax is not only not there, but reversed, as low income individuals in Sweden lose more to gambling than high income individuals (Statskontoret, 2022, p. 151). This creates an added level of complexity when assessing Svenska Spel as their operations using this logic increases the wealth gap.

7. Implications

This section discusses practical and theoretical implications of the findings. These are divided into: (1) societal implications consisting of nuance to the debate, (2) managerial implications for Svenska Spel and their competitors, and (3) theoretical implications for gambling advertising studies both for the Swedish market and in general.

7.1 Societal Implications

Because Svenska Spel is a highly discussed government owned company, findings on the effect of its advertising could have effects on the public debate. The continued success and operations of Svenska Spel is reliant on state-support, which in turn hinges on the opinion of Swedish politicians and the Swedish public. In this debate one weighs the positive aspects of Svenska Spel, being that they support Swedish athletics and that their profits go to the state against the negative aspects to answer whether their operations are net positive for Swedish society at large. The findings of this study, in particular the main finding that the advertising of Svenska Spel causes increased gambling, bring added nuance to the negative aspects of Svenska Spel. The fact that Svenska Spel's SoV influences gambling at the market level could be an argument used by those who oppose Svenska Spel in general, or their advertising practices in particular.

7.2 Managerial Implications

The existence of a primary demand effect on the Swedish gambling markets would have advertising strategy implications for all gambling companies in the market. The identified spillover effects on the advertising of Svenska Spel, are very relevant even though the existence of a wider primary demand effect for gambling advertising is unknown. This might be strategically valuable to Svenska Spel themselves, as well as their competitors. For instance, this could give actors on the Swedish gambling market useful signs of when to expect spikes in net turnover on market level.

7.3 Theoretical Implications

As the area of gambling advertising has been found to be in need of new research, and particularly in need of studies with more varied methodology, this thesis has implications which can influence future research (Torrance et al., 2021). Longitudinal studies have been identified as lacking from the existing literature on gambling advertising (O'Brien et al., 2020), a need which this study addresses. Furthermore, this study introduces publicly available datasets not previously utilized in research on the Swedish gambling market, to the knowledge of the authors, and presents how that data can be used to gain valuable insights. The introduction of this method of data gathering to the literature on gambling advertising is especially valuable because of the reliance on self reported data in the research area, which has limited the ability of researchers to draw conclusions on the effects of gambling advertising on gambling behavior (Newall et al., 2019). Possible uses for the presented data, and of other similar datasets, extend beyond the analysis conducted in this study, providing opportunities for further research on advertising in the gambling markets of Sweden as well as other countries.

This study shows that the advertising of Svenska Spel exhibits positive spillover effects to its competitors, but does not draw conclusions regarding a primary demand effect on the Swedish gambling market. The finding of a company that exhibits positive spillover effects does, nonetheless, suggest that such a primary demand effect could exist. As no primary demand effect has, to the knowledge of the authors, been found in any gambling market, the indication that one might exist in the Swedish gambling market is a valuable addition to the literature.

The findings of this study also contribute to the emerging, but inconclusive, evidence that gambling advertising contributes to increased gambling at the market level. By showing that the advertising spending of one large gambling company has a positive effect on market level gambling spending, this study provides a valuable example of how gambling advertising affects gambling behavior. However, the fact that the focal company is unique at the global level, due to its status as state owned and a legal monopolist until recently, puts into question the generalizability of that finding.

8. Limitations

In the following section limiting factors of the study are discussed. Theoretical gaps and methodological limitations are presented. The section is divided into: (1) lacking explanation of why the observed effect occurs, (2) The limited quantifying and specifying of gambling costs and (3) The limited sample.

8.1 Reasons for the Observed Effect

This thesis shows that Svenska Spel's advertising spending has an effect on gambling spending in Sweden as a whole. Its key limitation is that it does not test effects of other gambling companies' advertising. Put simply; it could be the case that other companies' advertising have similar effects on gambling, and if this were true, the societal impact of Svenska Spels advertising could be nuanced and understood better.

One possible cause for the effect of Svenska Spels advertising could be that there is a primary demand effect of gambling advertising in the Swedish market, which holds true for more actors than Svenska Spel. For example, it could be that Svenska Spels advertising is increasing gambling because of the size and/or brand strength. This would mean that large dominant brands have spillover effects associated with their advertising. This is just speculation, but it does show the need for analyzing effects of other large gambling companies in order to get to the bottom of if the effect is unique for Svenska Spel, which showcases the limited insights this thesis contributes to the question of *if* this effect is unique to Svenska Spel and explanations on *why* it exists.

8.2 Specifying the Costs of Gambling Further

Throughout this thesis the figure used for representing Svenska Spel's impact on gambling is the net turnover of the gambling companies. This metric is not however the full extent of the societal costs of gambling. Gambling addiction is costing society much more than the net turnover of the gambling companies (Folkhälsomyndigheten, 2023). Albeit hard to measure, a comprehensive

look at the impact of Svenska Spel's advertising on society would need to include societal costs. One example of these costs are the treatment of gambling addiction paid by the state.

8.3 Concerns with the Sample

The analysis is made on data from Jan. 2019 to Nov. 2022. As explained throughout, making analysis that stretches before and after the new regulations is associated with great uncertainties. One example of why this is troublesome is that the method for counting turnover, which is the basis for the gambling tax figure reported, changed as part of the 2019 legislation (Statskontoret, 2022, p. 69). The data points are monthly which gave 47 data points for analysis. Even with this small of a sample, significant results were able to be extracted. With that being said, this will be an analysis possible to conduct in future years with more data points, which will lead to better results. The gambling tax is reported directly to Skatteverket, posted by Spelmyndigheten, and readily available to the public by contacting one of the two authorities. The only thing needed is the generosity of a research institute with data on the gambling advertising market. Hopefully, future research will continue to be possible with the help of Kantar Sifo or others.

Another limitation of this sample is that advertisements are not separated by the different sections of Svenska Spel. This makes spillover effects harder to investigate as one would like to relate these to a given market. Additionally the monopolized section of Svenska Spel is completely without spillover effects making the lack of division more problematic for analysis on the aggregate spillover-effect.

Covid-19 occurred during the time-period of this dataset and naturally had an impact, which is not addressed in this thesis. Examples of the pandemics impact are that Physical casinos were shut down in March 2022 (Dagens Industri, 2022-03-28) and that online casinos were very prevalent causing the Swedish government to limit deposits to a maximum of 5,000 SEK a month for a period (Dagens Industri, 2022-04-23). Effects caused by these events are not part of this thesis as they were shared by the market, however there is room for further research on this topic.

9. Suggestions for Future Research

In this segment, possible future research to improve understanding of how and why Svenska Spel's advertisements influences gambling is presented. The section consists of: (1) Qualitative studies examining consumer behavior to, state compared to private, gambling advertising, and (2) quantitative studies using a similar method to this thesis on other companies gambling advertising's influence on overall gambling, and what the net turnover of gambling companies corresponds to in societal cost.

9.1 Qualitative Studies

To understand the effects of Svenska Spel's advertising further research needs to be conducted looking at *why* increased advertising spending from Svenska Spel leads to higher gambling in the market. An important addition to this field would be qualitative studies investigating what, if anything, in Svenska Spel's advertisements specifically causes increased gambling. Such studies could also compare this with gambling advertisements made by private companies and look for similarities and differences. This would help clarify if the fact that Svenska Spel is owned by the state causes their advertising to promote gambling. In the qualitative answers one could also start finding ways for Svenska Spel to decrease its influence on gambling overall.

9.2 Quantitative Studies

The method and data sources used in this thesis could be applied to other private companies and other gambling markets. As previously mentioned it is possible that there is a primary demand effect of gambling advertising, true for more actors than Svenska Spel. By using SoV or other metrics, quantitative studies looking at the possibility of there being a primary demand effect for gambling advertising would drastically improve understanding of the dangers associated with gambling advertising as a whole. Furthermore, findings on studies such as these for the Swedish market would also help in understanding if the spillover effects of Svenska Spel found is because they are state-owned, or if this effect is shared by others and thus also possibly caused by other factors.

Attempts to weigh the societal contribution of Svenska Spel against its costs have not been made, more than to the extent that according to the Swedish institute of public health, the societal costs outweigh the proceeds of Svenska Spel (Folkhälsomyndigheten, 2023). It would be helpful if that statement could be further specified and broken down. For instance a study establishing how much gambling companies net turnover costs in the form of societal costs, would be a very interesting addition to this research field. If such information was available one could start seeing a clearer connection between the gambling advertising and the societal costs for gambling addiction. For these types of studies one can start out by looking through the government's own report on the development of the Swedish gambling market from 2022, and through figures of costs for society presented there, link these with for instance the net turnover figures that are reported as the basis for the gambling tax.

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11. Appendix

11.1 Translated Quotes

Quote 1 in its original Swedish:

- “Omtanken om kunden och strävan efter att minimera de negativa effekterna av spelandet väger alltid tyngre än vinstintresset.”

Quote 2 in its original Swedish:

- “Spela Lagom! Vadå spela Lagom? Tja, vad är lagom för dig? En miljon kanske är lagom för någon, medan 200 kronor är alldeles för mycket för någon annan. Bestäm det själv, vi lägger oss inte i.”

11.2 External Graph

Advertising spending by gambling companies in Sweden. Graph by *Folkhälsomyndigheten*, published in May 2022 (*Miljarder kronor* = *Billions of SEK* & *År* = *Years*):

