Prepared for: Danish Online Gambling Association

Denmark Online Gambling Market – Impact Analysis

Independent Report

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Prepared by:

Premium business solutions

h2gc.com

H2 Gambling Capital

Executive Summary

This is a stand-alone specialist report prepared by **H2 Gambling Capital (H2)** - the lead independent authority regarding market intelligence on the global gambling industry. It has been commissioned by the **Danish Online Gambling Association (DOGA)** to provide an objective assessment of the proposed regulatory change in the Danish online gambling market.

The analysis has been commissioned to inform on the outlook for the market, current market trends, competitive dynamics, and to collate the gambling operators' view of the market impact. We hope our report is of value to all stakeholders in enhancing their understanding of the Danish online gambling market – particularly with regards to the proposed regulatory changes.

The report is structured into five sections:

Section 1: **Denmark Gambling Market Overview**	*Overview of the Danish gambling market, and impact of new measures introduced in 2020*
Section 2: **Danish Online Tax Rate Impact**	*Impact on the onshore and offshore online market of a change in tax rate from 20% to 28% of GGR*
Section 3: **Sensitivity Analysis of Tax Rates**	*Analysis of tax generation and onshore channelling at different tax rates*
Section 4: **Benchmarking Comparable Markets**	*Benchmarking Denmark against comparable markets and tackling the offshore market*
Section 5: **H2 Analysis and Conclusions**	*Analysis of the proposed regulatory change and key conclusions of the report*

Headline Findings:

- **Danish licensed online gambling operator GGR has already dropped c.17% since the new measures surrounding the Danish online gambling market were introduced on 1 January 2020.**

- **H2 forecasts that the current proposal to increase the tax rate to 28% will initially increase overall tax revenue, but notes that this comes at the detriment to consumer welfare, with more players moving to offshore sites where there are lower levels of consumer protection.**

- **When looking at the period 2021-24e, H2 estimates that an increase in tax rate from 20% to 28% would lead to a cumulative decline in onshore online GGR of c. DKK 4.5bn, or -25%. Over this period, the tax revenue is broadly similar, as the higher initial tax take gets eroded by lower market growth.**

- **In terms of channelling, an increase in the tax rate from 20% to 28% of GGR would increase Danish offshore channelling from 12% of the online market (88% onshore) to 24% of the online market (76% onshore) for the period 2021-24e.**

- **By contrast, an increase in tax rate to 22% would likely lead to an increase in tax revenue, while not impacting onshore channelling, thereby providing an 'optimal' tax rate for both consumer protection and tax generation.**

H2 Independent Report – 10 Key Conclusions

1. ***On 1 January 2020, new measures surrounding player deposit limits and promotions were introduced. Analysis of operator data suggests that the estimated impact on licensed market revenues has been a c.17% reduction in GGR.***

2. ***H2 has reduced its 2020 onshore online GGR forecasts by -12.5% to take into account the impact of these new measures. This reduces the channelling rate of the onshore online market. Prior to this, H2 forecast the offshore market to represent 13% of the Danish online market in 2020e, but now estimates it to represent 16% of the online market in 2020e.***

3. ***The current proposal is for the Danish online gambling tax rate to increase from 20% of GGR to 28% of GGR in 2021. While tax rate is not the only driver of channelling rates, when we benchmark Denmark against a number of other similar markets, it is clear that increasing the tax rate will have a significant impact on channelling.***

4. ***H2 forecasts that an increase in tax rate to 28% will initially increase overall tax revenue, but notes that this comes at the detriment to consumer welfare, with more players moving to offshore sites where there are lower levels of consumer protection.***

5. ***When looking at the period 2021-24e, H2 estimates that the total cumulative decline in onshore online GGR would be c.DKK 4.5bn, or c.-25%. Over this period, the tax revenue is broadly similar, as the higher initial tax take gets eroded by lower market growth.***

6. ***Furthermore, given the low profit margin of operators, any significant increase in tax rate will lead to a reduction in marketing spend, as well as aggressive cost cutting. Not only is this a further reduction in investment in the Danish economy, but a significant reduction in marketing spend will lead to yet further leakage of players to the offshore market.***

7. ***In terms of channelling, an increase in the tax rate from 20% to 28% of GGR would increase Danish offshore channelling from 12% of the online market (88% onshore) to 24% of the online market (76% onshore) for the period 2021-24e.***

8. ***Market analysis using standard economic theory of a smooth Laffer Curve shows that any increase in tax rate would lead to a decrease in onshore channelling, but that the optimal tax rate for maximising tax revenues would be 26%/27%. At this point, we estimate an increase in tax revenue of c.DKK 62m compared to a 20% tax rate, although when taking into account the reduction in Danske Spil's profits, this leads to a total increase in revenue to the State of only c.DKK 34m.***

9. ***However, the market reality is that the curve is more 'stepped' – that is to say that if the tax rate increased by a small amount, then it is unlikely that this would materially change an operator's behaviour, and one could assume that the onshore market size would be unaffected. However, at a certain point, the increase in tax rate would cause a significant shift in operators' behaviour.***

10. ***Under the 'stepped' theory, an increase in tax rate to 22% would likely lead to an increase in tax revenue, while not impacting onshore channelling, thereby providing an 'optimal' tax rate for both consumer protection and tax generation. We estimate that this would increase tax revenue by c.DKK 83m compared to a 20% tax rate, and increase revenue to the State by c.DKK 46m.***

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H2 Credentials

H2 – a global company based in the UK - is widely recognised as **the leading authority** regarding market intelligence on the gambling industry worldwide. Together, our analysts have been tracking the value of the sector in real time since 2000. We have strong professional credibility and impartiality, and good experience of our analysis and reports standing up to scrutiny from a variety of stakeholders including legislators, regulators and the news media.

The intelligence generated by H2's industry forecasting model has become by far the most quoted source regarding the sector in published company reports, transaction documentation and sell-side analysts' notes, as well as in the trade/business media – including the BBC, Thomson Reuters, Bloomberg, *The Economist, The FT, The New York Times* and *The Wall Street Journal*. Today, it represents a living databank covering over 150 world markets, with circa 2m data points and 2,500 postings per year, and 5-year forecasts out to 2025e.

The **H2 Subscription** service is used by the vast majority of the sector's Tier 1 operators and suppliers; its major financial institutions, governments and regulators; and also its media outlets in their benchmarking of performance to shareholders.

The **H2 Premium** 'deep dive' service is used regularly as part of bespoke market entry assessments; strategy/new business development; tax rate benchmarking/sensitivity analyses; the due diligence processes associated with major investment decisions; financial transactions; market share analyses, and also to assess the impact of any regulatory change in the sector.

H2 is partnered with Clarion Gaming and *iGaming Business* in the trade media, Princeton Public Affairs Group in the North American market, and the International Betting Integrity Association within sports integrity.

Terminology and H2 Data Model Explained

H2 utilises the **'Gross Win (GW)'** or **'Gross Gambling Revenue (GGR)'** metric (i.e. turnover less prizes, but including any bonuses played) rather than the turnover/sales measure to value the gambling sector. This is due to the fact that across different product verticals, geographies and market channels pay-out rates are all different. Therefore, Gross win/Gross Gaming Revenue provides a much more consistent measure for comparison across the sector. Furthermore, it also provides a much better reflection of operators' top line revenue as opposed to turnover, which can include the same money that has been recycled a number of times in many of the product verticals.

H2's analysis categorises sector activity into three markets – gambling where the operator is licensed 'onshore' in the same jurisdiction as the player is located **('white market'**); gambling where the operator is licensed 'offshore' in a different jurisdiction (**'grey market'**); and gamblingwhere the operator is completely unregulated or illegal **('black market'**).

The unique H2 model collates and compiles data via key **primary sources** that include:

- ✓ Actual published primary/secondary market and organisation data;
- ✓ Knowledge/assessment of the supply side by product vertical;
- ✓ H2's own in house tracking of activity;
- ✓ Regular contact with private organisations/investors, including subscriber feedback;
- ✓ Knowledge/opinion of third parties - including providers and other industry analysts.

Market forecasts are based on a number of key **secondary drivers** including:

- ✓ Maturity of product;
- ✓ Expected product development;
- ✓ GDP/broadband/mobile growth;
- ✓ Benchmarked markets;
- ✓ Incorporating the impact of past and expected legislation.

Section 1: Denmark Gambling Market Overview

The Danish online onshore gambling market opened up to commercial operators on 1 January 2012; it was expanded to include horseracing and bingo licenses on 1 January 2018.

On 1 January 2020, new measures surrounding player deposit limits and promotions were introduced. Analysis of operator data suggests that the estimated impact on GGR from the new measures has been c.17% of GGR. However, the new measures have had a disproportionate impact on certain segments of the market. Analysis of DOGA member operators suggests that sophisticated players have seen a reduction of c.30% in GGR spend, while the recreational customers who tend to have lower staking levels have shown a c.10% reduction in GGR.

H2 has reduced its 2020 onshore online GGR forecasts by -12.5% to take into account the impact of these new measures, which reduces the channelling of the onshore online market. Prior to these new measures, H2 forecast the offshore market to represent 13% of the Danish online market in 2020e, but now estimates it to represent 16% of the online market in 2020e.

1.1 Current Regulatory Framework

1. The Danish gambling market is regulated by the Danish Gambling Authority (DGA), with the commercial online gaming market launching on 1 January 2012. Under Danish legislation, commercial licenses became available for sports-betting, casino and poker. On 1 January 2018, commercial licenses became available for horse / greyhound race betting and bingo, ending Danske Spil's monopoly on the products. However, as interactive lottery products can only be offered by the Government-run monopoly, we exclude lottery GGR from our analysis in this report.

2. It is not illegal for dot com 'unlicensed' operators to accept Danish players, as long as the operator is not actively promoting itself in the Danish market. While offshore unlicensed operators generally do not actively promote themselves in the market, there remains a sizable offshore market, although this has been shrinking over the past few years.

3. The current tax rate for interactive sportsbetting and gaming is 20% of GGR, although there has been a proposal to increase this to 28% from 2021.

4. In January 2019, the Danish government introduced draft legislation to increase the social responsibility controls of licensed operators. These measures came into force on 1 January 2020, and include:

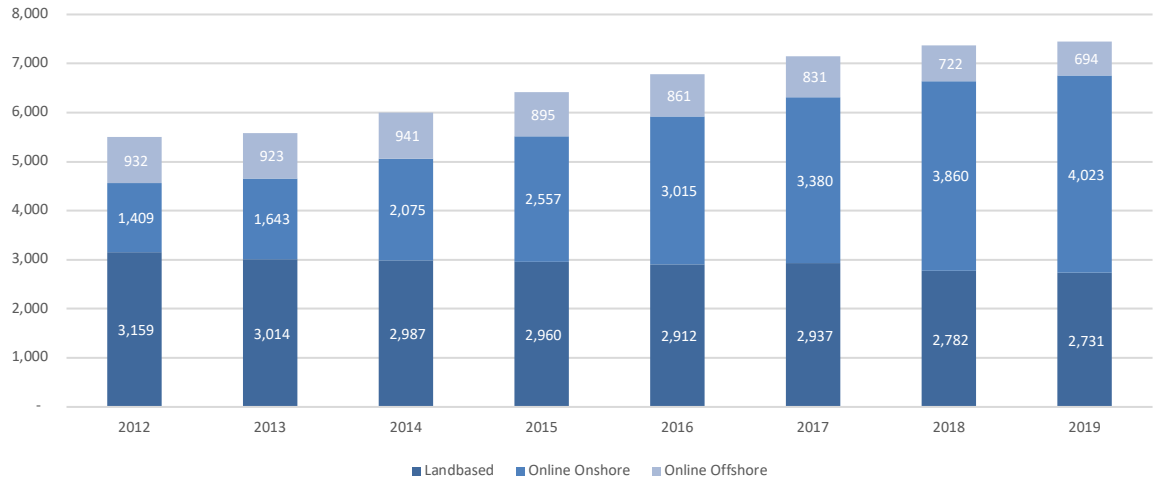
   - The updating of the online casino certification process making monthly, weekly or daily player deposit limits mandatory
   - Restrictions on sales promotions across both offer and pay-out limits including not obligating players to deposit more than DKK1k, with promotional sums themselves not exceeding DKK1k
   - Betting promotions to not exceed over ten (10) times the players' stake
   - Players to be given at least 60 days to fulfil the terms of a promotion, and no offer can be tailored to a single player - at least 100 players must be targeted with the same offer.

1.2 Market Evolution and Growth 2012-19

5. **Product Definition:** We value the Denmark gambling market using the **'gross win' or 'gross gaming revenue' (GGR)** metric (i.e. turnover less prizes, but including any bonuses played). We do not include in our analysis any unlicensed, or 'black market' operators. We also exclude lottery from our analysis, as it is run by the state monopoly Danske Spil, and instead focus on products that are commercially available.

6. Based on the above, the total Danish onshore gambling market increased from DKK 4.57bn of GGR in 2012 to **DKK 6.76bn in 2019;** including the offshore online market, we estimate that this increases to DKK 5.50bn in 2012, growing to **DKK 7.45bn in 2019**.

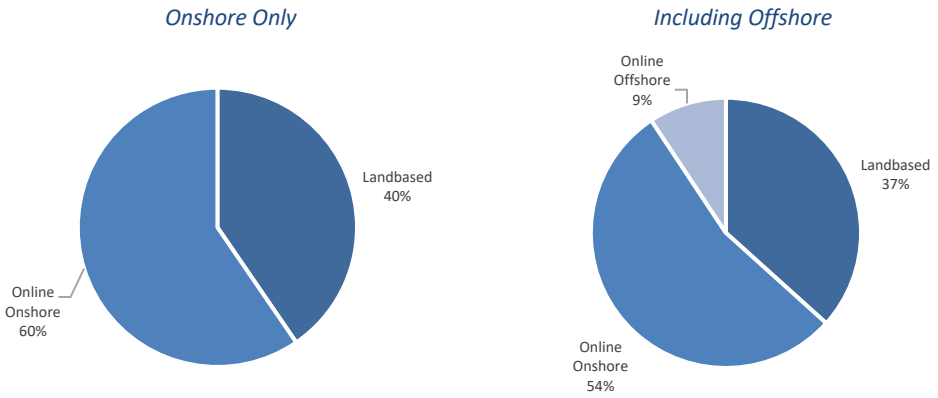
Fig 1: Danish Gambling GGR by Channel 2012-19 (DKK m)



Source: H2 Gambling Capital, 2020

7. In 2019, online represented 60% of the total onshore market, and landbased 40% of onshore GGR; if we include the offshore online GGR, this represents 9% of the overall market, meaning that 91% of the total market is onshore.

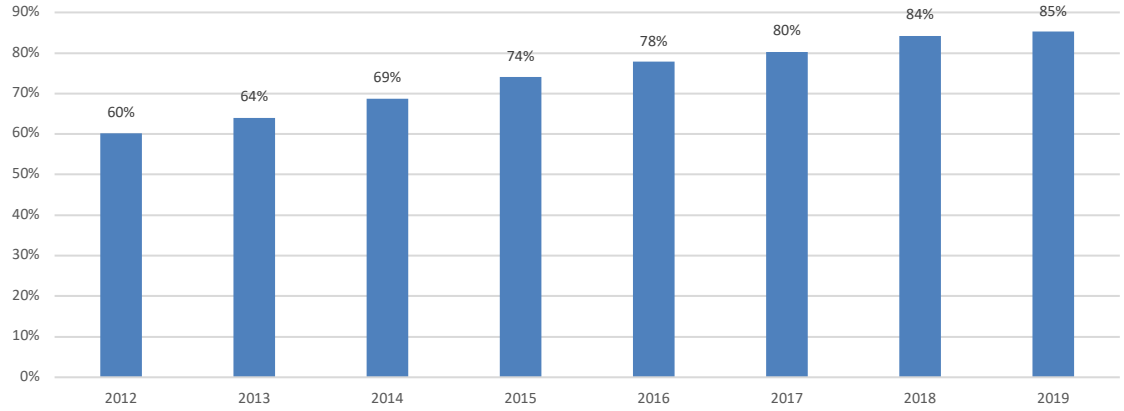
Fig 2: Danish Gambling GGR (exc. Lottery) 2019



Source: H2 Gambling Capital, 2020

8. In terms of the onshore / offshore split, 85% of the online market is now onshore, up from 60% in 2012 when the online market first opened to commercial operators.

Fig 3: Onshore % of Danish Online Market 2012-19



Source: H2 Gambling Capital, 2020

9. This increase in onshore channelling is due to strong growth in the onshore online market capturing revenues from the offshore market. Since 2012, the onshore online market has grown at a 16% CAGR (2012-19), whereas the offshore market has declined at a -4% CAGR. The landbased market has also seen declines over this period as gambling activity has shifted onshore.

Fig 4: Danish Gambling GGR (2012-19) – Excluding Lottery (DKK m)

GGR (DKK m)	2012	2013	2014	2015	2016	2017	2018	2019	2012-19 CAGR
Landbased	3,159	3,014	2,987	2,960	2,912	2,937	2,782	2,731	-2.1%
Onshore Online	1,409	1,643	2,075	2,557	3,015	3,380	3,860	4,023	16.2%
Total Onshore	**4,568**	**4,657**	**5,062**	**5,517**	**5,926**	**6,318**	**6,642**	**6,755**	**5.7%**
Offshore Online	932	923	941	895	861	831	722	694	-4.1%
Total Market	**5,500**	**5,580**	**6,003**	**6,412**	**6,787**	**7,149**	**7,364**	**7,449**	**4.4%**

Source: H2 Gambling Capital, 2020

1.3 Impact of Regulatory Change in 2020

10. As noted above, a number of new measures came into force on 1 January 2020, and include:

    - The updating of the online casino certification process making monthly, weekly or daily player deposit limits mandatory
    - Restrictions on sales promotions across both offer and pay-out limits including not obligating players to deposit more than DKK1k, with promotional sums themselves not exceeding DKK1k
    - Betting promotions to not exceed over ten (10) times the players' stake
    - Players to be given at least 60 days to fulfil the terms of a promotion, and no offer can be tailored to a single player - at least 100 players must be targeted with the same offer.

11. It is difficult to ascertain the exact impact of these new measures, due to the many moving and inter-related parts that effect the operation of an online onshore casino and/or gaming platform. For this report, operator members of the Danish Online Gambling Association (DOGA) supplied H2 Gambling Capital with data on the impact that deposit limits and restrictions on betting promotions have had on their businesses. Although operators now have 3 months of data since the new regulations came into force, figures for January and February were also impacted by a stronger than usual betting gross win margin, and March data has been impacted by the effects of COVID-19.

12. Out of the operators that responded to our request for data, the estimated impact on GGR from the new measures has been c.17% of GGR. However, the new measures have had a disproportionate impact on certain segments of the market.

13. As there is no such thing as an 'average' customer for gambling operators, we broadly split the market between sophisticated players and recreational players. While this definition can vary between operators, our analysis of the market suggests that sophisticated players represent c.35% of the total online onshore market GGR. These players are more price-sensitive, and therefore are more likely to take advantage of promotions, and in general are higher spending players. Therefore, the new measures have had a disproportionate impact on their activity.

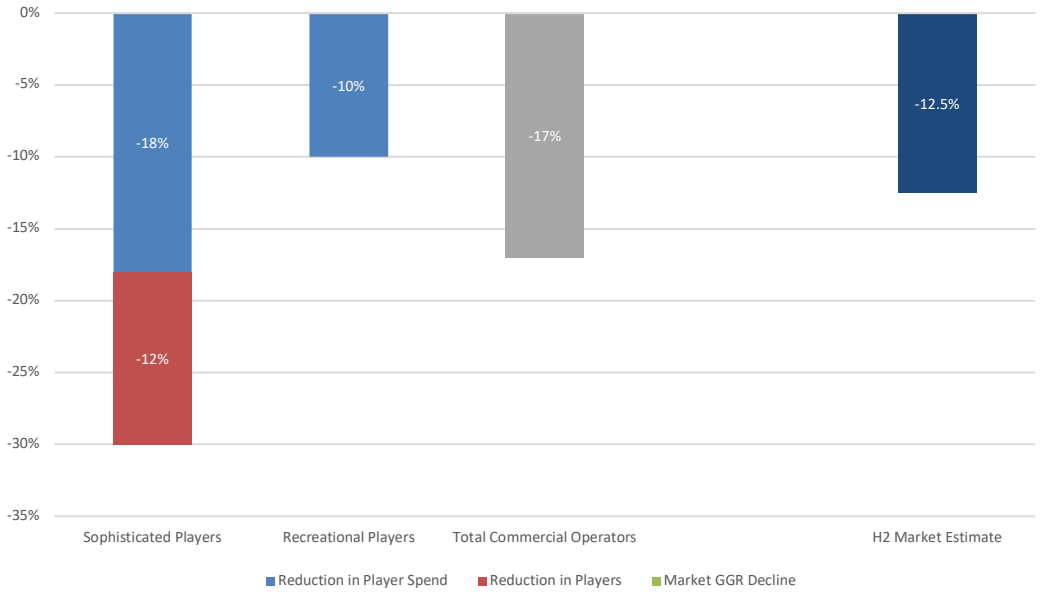
14. Analysis of DOGA member operators suggests that sophisticated players have seen a reduction of c.30% in GGR spend, while the recreational customers who tend to have lower staking levels have shown a c.10% reduction in GGR.

15. Within the sophisticated players, c.60% of this impact has been due to lower spend of existing customers, and c. 40% of this impact is from a reduction in the number of customers, with the assumption being that these customers have moved to offshore operators that are not subject to these new measures.

16. We note that this analysis is based upon the responses from commercial operators, and does not take into account Danske Spil, which is likely to be less affected by the new measures, given its less sophisticated customer base. Therefore, the 17% reduction in GGR is likely to be slightly lower when looking at the market as a whole, taking into account Danske Spil.

17. H2 has reduced its 2020 onshore online GGR forecasts by -12.5% to reflect the impact of these new measures. While this is lower than the impact that has been estimated by operators, this takes into account the lower impact on Danske Spil, and H2 also believes that some of these initial declines may partially reverse as customers get used to the 'new normal'.

Fig 5: Impact on GGR of New Measures in Danish Onshore Online Gambling Market (%)

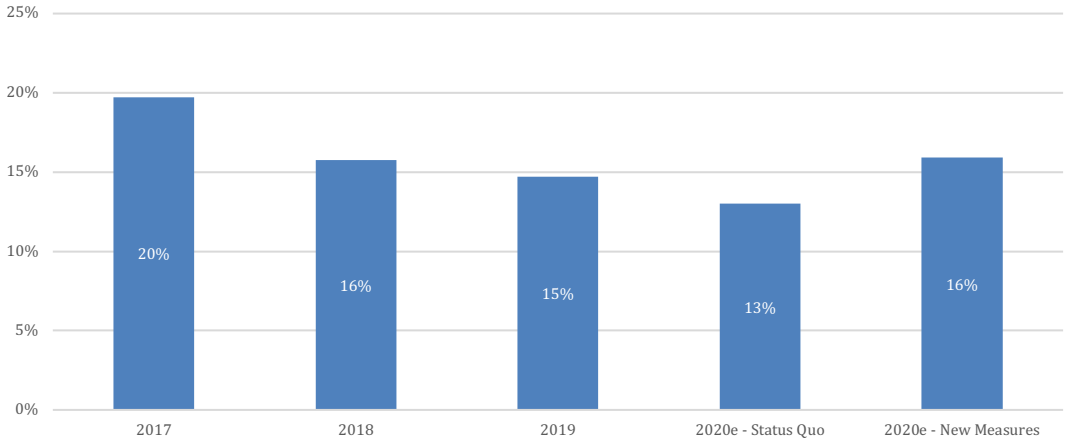


Source: H2 Gambling Capital, 2020

18. Part of the reduction in onshore online GGR will shift to offshore operators, notably the 12% reduction in GGR of sophisticated customers who are no longer gambling with onshore operators. While this represents only c.4% of onshore GGR, given the lower base of the offshore market, assuming that only c.50% of this sum shifts offshore, this increases the size of the offshore market by c.15% compared to what we estimate it would have been in 2020e.

19. This therefore reduces the channelling of the onshore online market. Prior to these new measures, H2 forecast the offshore market to represent 13% of the Danish online market in 2020e, but now estimates it to represent 16% of the online market in 2020e.

Fig 6: Danish Online Offshore Channelling (%)



Source: H2 Gambling Capital, 2020

Section 2: Danish Online Tax Rate Impact

The current proposal is for the Danish online gambling tax rate to increase from 20% of GGR to 28% of GGR in 2021. Given the low profit margin of operators, any significant increase in tax rate will lead to a reduction in marketing costs in order to retain profitability.

H2 forecast a reduction in onshore channelling from 84% in 2020e to 76% in 2021e due to the proposed increase in taxation to 28% of GGR. This leads to a decline in the onshore market of c. 22% year on year, or a decline of c.DKK 900m in onshore GGR.

While a lower tax rate leads to higher levels of onshore channelling, it doesn't necessarily lead to the optimal tax generation. H2 forecasts that an increase in tax rate to 28% will increase overall tax revenue, but notes that this comes at the detriment to consumer welfare with more players moving to offshore sites where there are lower levels of consumer protection.

When looking at the period 2021-24e, H2 estimates that the total cumulative decline in onshore online GGR from an increase in the tax rate to 28% would be c.DKK 4.5bn, or c.-25%. Over this period, the tax revenue is broadly similar, as the higher initial tax take gets eroded by lower market growth. This results in a 32% decline in post-tax gross profit for operators, or a reduction of DKK 3.2bn.

This will lead to a reduction of DKK 1bn in bonuses (over 40% decline), which is likely to have a significant impact on the channelling of the sophisticated customer base. Furthermore, we estimate a DKK 2bn reduction in marketing spend, as well as aggressive cost cutting to reduce operating and central costs by DKK 1bn over the next four years. Not only is this a further reduction in investment in the Danish economy, but a 40% reduction in marketing spend will lead to further leakage of players to the offshore market.

The DDK 4.5bn reduction in onshore online GGR will not all shift offshore, rather the majority of this will be a decrease in overall gambling activity. However, we have illustrated that the market is sensitive to changes in promotional activity – especially the price sensitive customers – and a 42% reduction in bonuses is likely to lead to significant leakage to offshore sites who are able to offer superior promotions to customers. This would be compounded were sportsbooks to increase their odds to offset the higher tax rate.

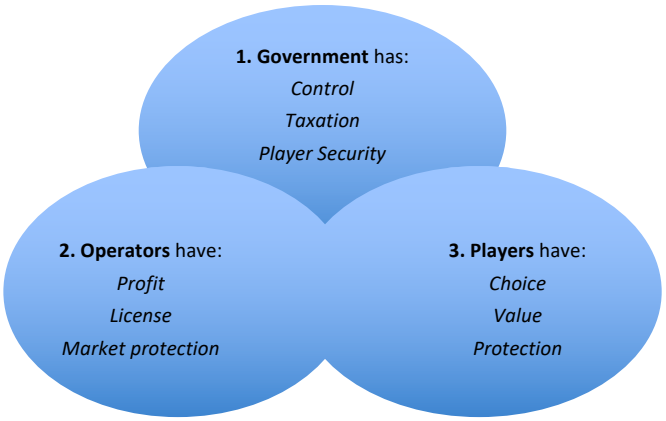
A combination of the above leads us to believe that c. 40% of the decline in the onshore GGR will shift offshore, with the remaining 60% disappearing from the market entirely. Therefore, out of a DKK 4.5bn reduction in onshore GGR, we estimate that DKK 1.9bn of this sum shifts offshore. However, as the offshore market is smaller than the onshore market, this represents an 80% increase in the size of the offshore market.

In terms of channelling, this increases the offshore channelling from 12% of the online market (88% onshore) to 24% of the online market (76% onshore).

2.1 Market Equilibrium

20. In terms of regulation, the most mature online gambling markets tend to balance government tax revenues with new commercial opportunity in order to achieve market equilibrium (see Fig 7 below). Such regulations reflect dynamic market conditions where technology advancements and pace of change - particularly online - can benefit all parties and attract new players, without disenfranchising core consumer groups.

Fig 7: *'Something for Everyone'* – Online Gambling Market Equilibrium



Source: H2 Gambling Capital, 2020

21. Financially, main benefits Include:

- ✓ **Increased tax revenues**: Driven by effective licensing;
- ✓ **Increased consumer spend**: As a result of increased customer retention, driven by a more transparent regulated system that makes players feel safer.

22. The economic benefits of a regulated market over an illegal market are not just financial. Other key factors are:

- ✓ **Security:** There exists a legal place to bet safely, in a straightforward manner, and securely (in terms of data protection and cash pay-out);
- ✓ **Jobs:** An upturn in employment opportunity, with the potential to replace offshore employment with onshore jobs – the majority within indirect sectors e.g. marketing (as onshore regulated activity leads to more use of the mainstream media), payments and geo-location;
- ✓ **Economic growth:** Enhanced cross-channel marketing opportunities for associated non-gambling sector operators, brands and sectors.

2.2 Channelling and Laffer Curve Theory

23. When analysing the optimal tax rate for a market, there are many variables, including product restrictions, freedom of marketing and the ability of regulators to block offshore operators from targeting the market / citizens from finding offshore operators.

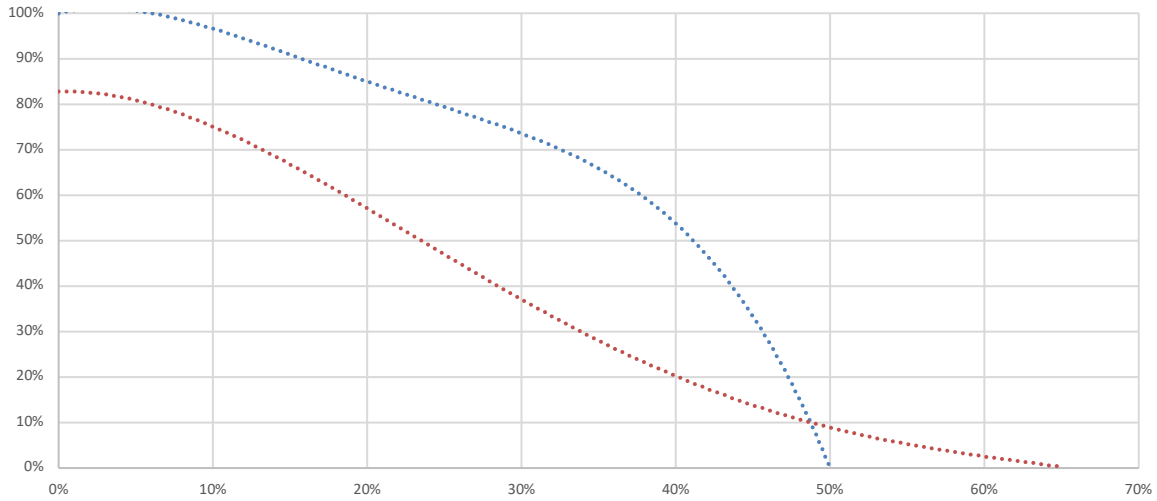
24. There is no 'one size fits all' calculation, and there are markets that have a higher tax rate and a higher rate of onshore channelling than other markets, due to these variables. However, in general the higher the tax rate, the lower the proportion of the online GGR which gets channelled onshore.

25. We also note that the optimal tax rate in terms of channelling is not necessarily the optimum tax rate in terms of maximising the tax revenue, and different regulators / governments have different motivations when setting online gambling tax rates. While the reality is that most markets have a balance between the two, H2 believes that tax rates should be set with a focus on channelling, given the benefits of consumer protection from the onshore market.

26. Another factor in the channelling of a market at different levels of taxation is the profitability of the market participants. In a competitive market with high levels of marketing spend and a fragmented market share, operators will make lower levels of profit compared to a market with a monopolistic / oligopolistic structure where operators have the advantage of lower marketing costs and economies of scale in operating costs. Therefore, under an monopolistic model, the operator will be able to remain profitable at a higher level of taxation than under a competitive market; however, given the lower marketing spend and lower product choice for customers, at any given tax rate the onshore channelling will be lower than in a competitive market, all else being equal.

27. In the chart below, we illustrate the onshore channelling on the y-axis of a competitive market (blue line) compared to a monopoly (red line) at any given tax rate (x-axis)

Fig 8: Competitive Market vs Monopoly Onshore Channelling



Source: H2 Gambling Capital, 2020

2.3 Impact of Increase in Tax Rate to 28% of GGR

28. The current proposal is for the Danish online gambling tax rate to increase from 20% of GGR to 28% of GGR in 2021. In order to estimate the impact of a change in tax rate to the onshore channelling of the Danish online gambling market, we take into account the 'standard' channelling estimates, the current channelling of the Danish market which takes into account any product / marketing restrictions as well as the ability to prevent offshore operators targeting the market, and the profitability of existing operators.

29. Under the current Danish model, based upon the data supplied by DOGA members, we believe that the levels of profitability of commercial operators are relatively low. It is difficult to get exact figures due to the apportioning of central costs, and that operating costs as a proportion of revenues differ greatly depending upon the scale of operators. However, based upon the data that H2 has received, we estimate that the 'contribution margin' – that is to say, after bonuses / marketing / tax and cost of sales, but before any operating costs or apportioning of central costs, is c.30% on average. Once these operating and central costs have been taken into account, this falls to between 0% and 10% operating margin – although in some cases where entrants are new to the market, there are currently loss-making businesses.

30. Given the low profit margins, any significant increase in tax rate (such as the proposed increase from 20% of GGR to 28% of GGR) will lead to a reduction in marketing costs in order to retain profitability. This also assumes that operators are able to make operational cost savings within their business, with operating / central costs reduce in line with GGR, rather than remaining fixed.

Fig 9: Danish Onshore Operator Profitability Estimates

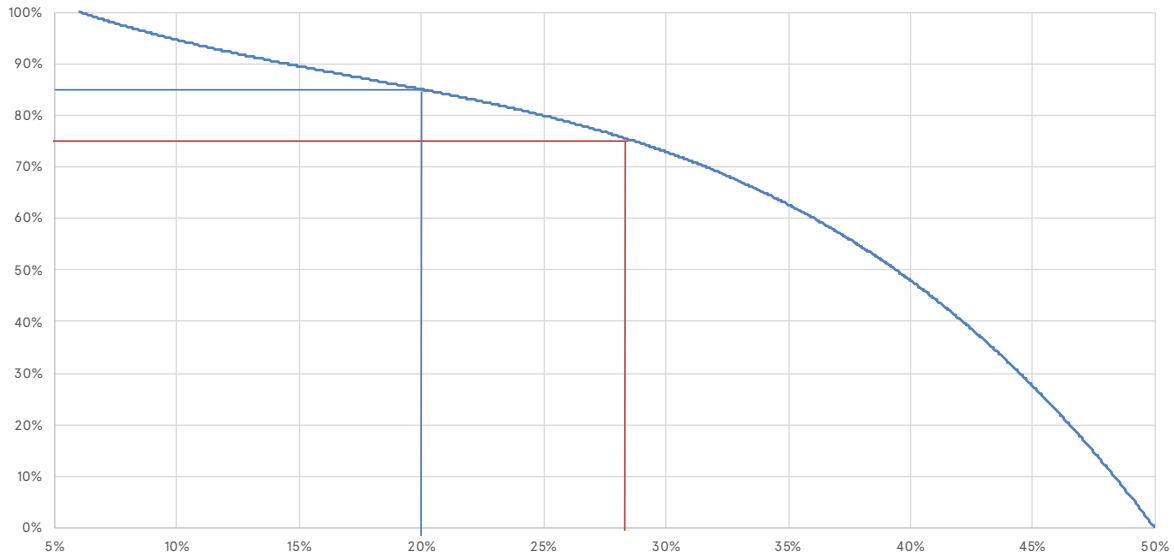
Tax Rate	20%	28% - No Change to Marketing Spend	28% - Reduction in Marketing Spend
Gross Revenues	100%	100%	100%
Bonuses	-14%	-14%	-11%
Net Revenue	**86%**	**86%**	**89%**
Cost of Sales	-10%	-10%	-10%
Pre-tax Gross Profit	**76%**	**76%**	**79%**
Tax	-20%	-28%	-28%
Post-Tax Gross Profit	**56%**	**48%**	**51%**
Marketing	-27%	-27%	-22%
Contribution Margin	**29%**	**21%**	**29%**
Operating / Legal & Compliance / Central Costs	-20% to - 30%	-20% to - 30%	-20% to - 30%
Operating Profit	**c. 0% to +10%**	**c. -10% to 0%**	**c. 0% to +10%**

Source: H2 Gambling Capital, 2020

31. We have seen a reduction in the proportion of marketing spend in other markets that have increased the tax rate (such as the UK) and the operators that responded to H2 for this report have confirmed that any increase in tax will lead to a fall in marketing percentage in order to retain a minimum return on investment in the market. With the overall onshore market forecast to fall, the impact of a reduction in marketing percentage will accentuate the reduction in marketing spend in monetary terms, and this will have a further negative impact on channelling rates.

32. Based on the above, we estimate that the current channelling of c.85% at a 20% GGR tax rate would fall to c.75% were the tax rate to be increased to 28% of GGR, and illustrate this in the chart below, with the tax rate on the x-axis and the onshore channelling on the y-axis.

Fig 10: Danish Onshore Gambling Market Channelling vs Tax Rate



Source: H2 Gambling Capital, 2020

33. This is in line with our forecasts, where we forecast a reduction in onshore channelling from 84% in 2020e to 76% in 2021e due to the proposed increase in taxation to 28% of GGR. This leads to a decline in the onshore market of c. 22% year on year, or a decline of c.DKK 900m in onshore GGR.

Fig 11: Danish Online Gambling GGR (2019-24e) – Excluding Lottery (DKK m)

GGR (DKK m)	2019	2020e	2021e	2022e	2023e	2024e	2019-24e CAGR
Online Onshore	4,023	4,063	3,156	3,303	3,400	3,504	-2.7%
Online Offshore	694	770	1,023	1,041	1,054	1,075	9.1%
Total Online	**4,717**	**4,833**	**4,179**	**4,344**	**4,454**	**4,579**	**-0.6%**
% Onshore	***85%***	***84%***	***76%***	***76%***	***76%***	***77%***	

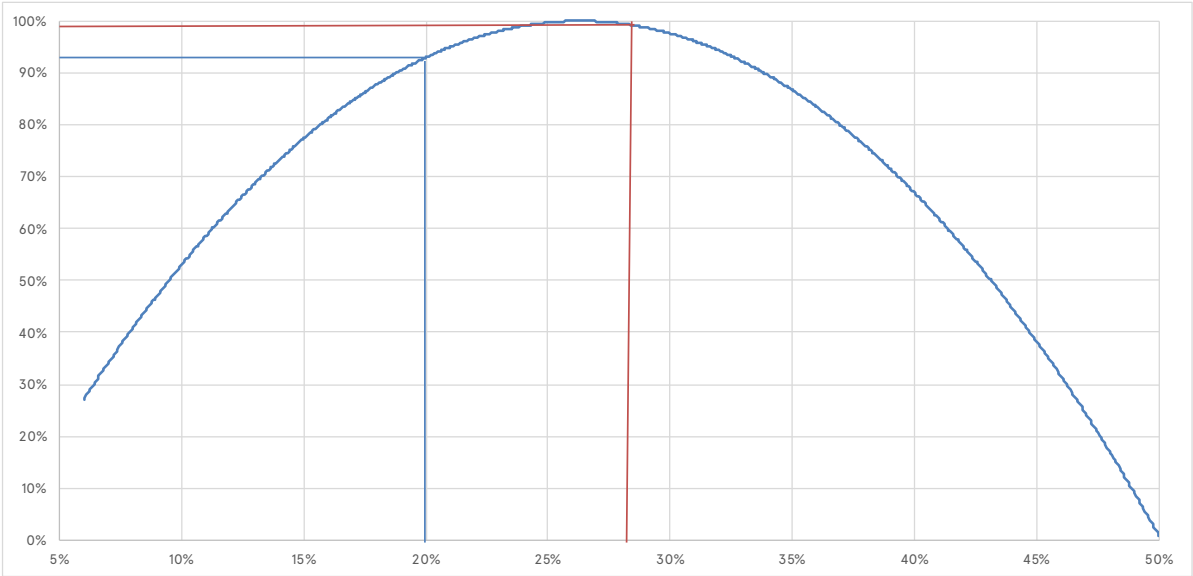
Source: H2 Gambling Capital, 2020

34. When analysing the impact on the offshore market, we again split the customer base between sophisticated customers and mass market customers, with the sophisticated customers being disproportionately affected as they are price sensitive. We have already illustrated the impact that the new regulations introduced this year have had on the market, and further reductions in bonus spend / any changes to pricing in the onshore sportsbooks due to an increased tax rate will make the offshore market more attractive by comparison.

35. Although we only forecast that less than 30% of this decline in onshore GGR will shift to the offshore market, this still leads to 33% increase in offshore GGR, increasing it by DKK 253m.

36. While a lower tax rate leads to higher levels of channelling, it doesn't necessarily lead to the optimal tax generation. Below we show a Laffer Curve representing the optimal tax rate with regards to maximising tax generation for the Danish online gambling market.

Fig 12: Danish Tax Generation vs Tax Rate



Source: H2 Gambling Capital, 2020

37. Under the current proposals of increasing the tax rate to 28%, H2 estimates that the tax generation would increase slightly for the Danish government, and this is in line with our forecasts. An 8 percentage point increase in the tax rate equates to a 40% relative increase in the tax rate. We forecast that this will lead to a year on year decline in GGR of 22%, which would lead to a 9% increase in tax revenue – in line with what we have illustrated on the Laffer Curve above.

Fig 13: Danish Online Gambling Tax Generation (DKK m)

GGR (DKK m)	2020e	2021e	Change (%)
Tax Rate (%)	20%	28%	8% / 40%
GGR Forecast	4,063	3,156	-22%
Tax Revenue	**813**	**884**	**9%**

Source: H2 Gambling Capital, 2020

38. However, we also note that this is increased tax revenue comes at the detriment to consumer welfare with more players moving to offshore sites where there are lower levels of consumer protection.

2.4 2021-24e Financial Impact

39. Using the above analysis, we estimate the cumulative financial impact over the next four years of an increase in the tax rate to 28%.

40. H2 estimates that the total decline in onshore online GGR over the period 2021-24e from an increase in the tax rate to 28% would be c.DKK 4.5bn, or c.-25% - we note that this is higher than the initial -22% decline in 2021e because of the lower future growth rate associated with a higher tax rate. This will lead to a reduction of DKK 1bn in bonuses (over 40% decline), which is likely to have a significant impact on the channelling of the sophisticated customer base.

Fig 14: Danish Onshore Market Profitability Estimates 2021-24e (DKK m)

2021-24e (DKK m)	20% Tax Rate	28% Tax Rate	Change (DKK m)	Change (%)
Gross Revenue	17,861	13,363	(4,498)	-25%
Bonuses	(2,456)	(1,437)	1,019	-42%
Net Revenue	**15,405**	**11,927**	**(3,479)**	**-23%**
Cost of Sales	(1,786)	(1,336)	450	-25%
Pre-Tax Gross Profit	**13,619**	**10,590**	**(3,029)**	**-22%**
Tax	(3,572)	(3,742)	(169)	5%
Post-Tax Gross Profit	**10,047**	**6,849**	**(3,198)**	**-32%**

Source: H2 Gambling Capital, 2020

41. Over the period of four years, the tax revenue is broadly similar, as the higher initial tax take gets eroded by lower market growth. This results in a 32% decline in post-tax gross profit for operators, or a reduction of DKK 3.2bn.

42. Operators will look to make further operational efficiencies in their business, and we have assumed aggressive cost cutting to reduce operating and central costs by just under DKK 1bn over the next four years; part of this will impact investment in the Danish business, and some of this could be manipulated by a reshuffling of central cost allocation. However, the largest line item that will be cut is a c.DKK 2bn reduction in marketing spend. Not only is this a further reduction in investment in the Danish economy, but a 40% reduction in marketing spend will lead to further leakage of players to the offshore market.

Fig 15: Danish Onshore Market Profitability Estimates 2021-24e (DKK m)

2021-24e (DKK m)	20% Tax Rate	28% Tax Rate	Change (DKK m)	Change (%)
Post-Tax Gross Profit	10,047	6,849	(3,198)	-32%
Marketing	**(4,822)**	**(2,940)**	**1,883**	**-39%**
Contribution to EBITDA	5,224	3,909	(1,316)	-25%
Operating / Central Costs @20% GGR	(3,572)	(2,673)	900	-25%
Operating Profit	**1,652**	**1,236**	**(416)**	**-25%**
Operating Profit Margin	9%	9%		0%

Source: H2 Gambling Capital, 2020

43. By making such large cuts to marketing spend and the operational cost base, operators would be able to maintain their already low operating profit margin, but operating profit would decline by DKK 416m over the period, or by -25%.

44. The DDK 5bn reduction in onshore online GGR will not all shift offshore, rather the majority of this will be a decrease in overall gambling activity. However, we have demonstrated that the market is sensitive to changes in promotional activity – especially the price sensitive customers – and a 43% reduction in bonuses is likely to lead to significant leakage to offshore sites who are able to offer superior promotions to customers.

45. Furthermore, a reduction in marketing spend of 41% will also have a negative impact on the channelling of the onshore market, as will decreased investment in product as operators look to reduce investment to lower the operational costs of the business. Finally, there is the possibility that sportsbooks will increase their odds to offset the higher costs, therefore making their product relatively less attractive to price sensitive customers compared to that offered by offshore operators.

46. A combination of the above leads us to believe that c. 40% of the decline in the onshore GGR will shift offshore, with the remaining 60% disappearing from the market entirely. Therefore, out of a DKK 4.5bn reduction in onshore GGR, we estimate that DKK 1.9bn of this shifts offshore. However, as the offshore market is smaller than the onshore market, this represents an 80% increase in the size of the offshore market.

Fig 16: Danish Online Market Channelling Estimates 2021-24e (DKK m)

2021-24e (DKK m)	20% Tax Rate	28% Tax Rate	Change (DKK m)	Change (%)
Onshore GGR	17,861	13,363	(4,498)	-25%
Offshore GGR	2,330	4,193	1,862	80%
Total Online GGR	20,191	17,556	(2,636)	-13%
% Offshore	**12%**	**24%**		**12%**

Source: H2 Gambling Capital, 2020

47. In terms of channelling, this increases the offshore channelling from 12% of the online market (88% onshore) to 24% of the online market (76% onshore).

Section 3: Sensitivity Analysis of Tax Rates

Standard economic theory dictates a smooth Laffer Curve, whereas in reality the curve is more 'stepped'. For example, if the tax rate increased by 1%, then it is unlikely that this would materially change an operator's behaviour, and one could assume that the onshore market size would be unaffected. However, at a certain point, the increase in tax rate would cause a significant shift in operators' behaviour.

Under the 'smooth' theory, any increase in tax rate would lead to a reduction in the onshore channelling, making 20% the optimal tax rate in terms of consumer protection. However, the optimal tax rate for tax generation is 26%/27% - above which tax revenues start to decline. At 26%/27% tax rate, we estimate an increase in tax revenue of c.DKK 62m compared to a 20% tax rate, although when taking into account the reduction in Danske Spil's profits, this leads to a total increase in revenue to the State of only c.DKK 34m.

Under the 'stepped' theory, onshore channelling remains at 85% up until a 22% tax rate, and 22% is also the tax rate that would generate the highest levels of tax revenue; we estimate that this would increase tax revenue by c.DKK 83m compared to a 20% tax rate, and increase revenue to the State by c.DKK 46m.

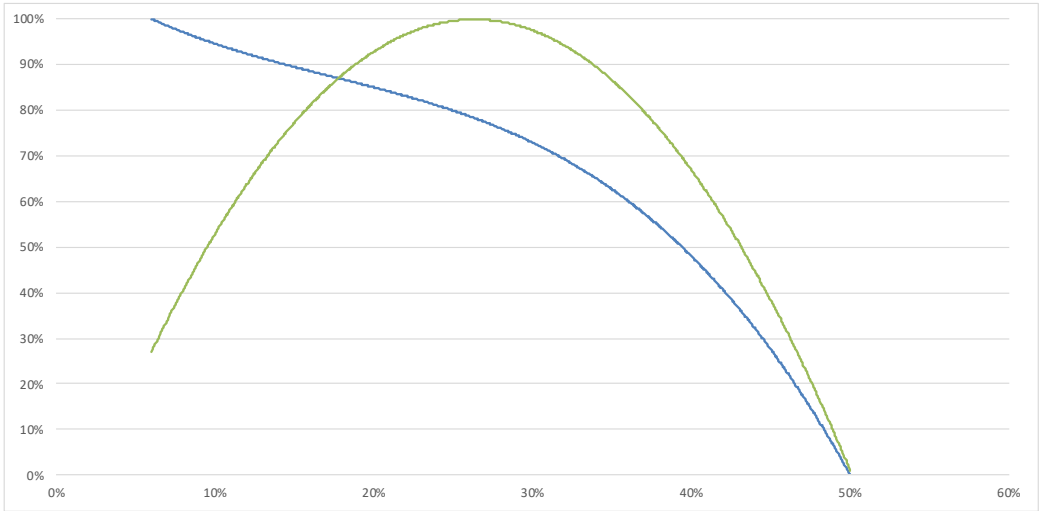
3.1 Tax Rate Sensitivity

48. As we have illustrated in the previous section, the gaming tax rate affects both the onshore / offshore channelling as well as the tax revenue. However, it is important to note that an increase in tax rate does not necessarily lead to an increase in tax take, as customers shift offshore and therefore the taxable base of the market reduces as the tax rate increases.

49. At lower levels of tax, the increase in tax rate is greater than the reduction in the underlying taxable market size, leading to an increase in overall tax generation. This continues up until a tax rate of c.26%, beyond which the onshore market declines are greater than the increases in tax rate, leading to an overall decrease in the amount of tax generated.

50. Below we combine the charts from the previous section showing the tax rate on the x-axis, the percentage of the market onshore in the blue line, and the percentage of the maximum tax take in the green line.

Fig 17: Danish Onshore Gambling Market Channelling & Tax Generation vs Tax Rate



Source: H2 Gambling Capital, 2020

3.2 Tax Generation and Channelling

51. By using the analysis in figure 17, we can estimate the tax generation and onshore / offshore channelling at different rates of tax – and again note that the 'optimal' level of gaming tax for onshore channelling is different to the optimal level of tax for maximum tax generation. Therefore, an optimal gambling market is likely to have a compromise between these two objectives, which are not necessarily completely aligned.

52. We highlight that the tax generation that we show in our analysis is purely the primary revenues generated from the gaming tax; this is calculated by taking the size of the overall online gambling market, the proportion of this which is onshore, and the tax rate. However, it does not include any secondary economic impacts, such as the lower marketing spend, investment, and local employment that accompanies a higher tax rate, all of which would lead to incremental tax generation and economic growth.

53. Below we show the estimated 2021 online GGR split between onshore and offshore at differing levels of tax rate between 20% and 28% of GGR. We also show the change in the onshore and offshore market GGR at each tax rate compared to the current tax rate of 20%. As the tax rate increases, the proportion of the market that is channelled offshore also increases.

Fig 18: Danish Online Gambling GGR (2021e) at Different Tax Rates (DKK m)

GGR 2021e (DKK m)	20%	21%	22%	23%	24%	25%	26%	27%	28%
Onshore Market	4,144	3,998	3,864	3,743	3,632	3,529	3,428	3,301	3,156
Offshore Market	731	769	806	843	880	917	953	979	1,023
Total Market	**4,875**	**4,766**	**4,670**	**4,586**	**4,511**	**4,446**	**4,380**	**4,280**	**4,179**
% Onshore	85%	84%	83%	82%	81%	79%	78%	77%	76%
% Offshore	**15%**	**16%**	**17%**	**18%**	**20%**	**21%**	**22%**	**23%**	**24%**
Change vs 20% Tax Rate (DKK m)									
Onshore Market	-	(146)	(280)	(401)	(512)	(615)	(716)	(843)	(988)
Offshore Market	-	37	74	111	148	186	221	248	291
Total Market	**-**	**(109)**	**(205)**	**(290)**	**(364)**	**(429)**	**(495)**	**(596)**	**(697)**
Change vs 20% Tax Rate (%)									
Onshore Market	-	-3.5%	-6.7%	-9.7%	-12.4%	-14.8%	-17.3%	-20.4%	-23.8%
Offshore Market	-	5.1%	10.2%	15.2%	20.3%	25.4%	30.3%	33.9%	39.8%
Total Market	**-**	**-2.2%**	**-4.2%**	**-5.9%**	**-7.5%**	**-8.8%**	**-10.2%**	**-12.2%**	**-14.3%**

Source: H2 Gambling Capital, 2020

54. As the tax rate increases, the decline in the onshore market is significantly higher than the increase in the offshore market, as some of the gambling activity ceases rather than shifts offshore. Therefore, the overall market declines as the tax rate increases. However, given the lower base of the offshore market, the percentage change in the offshore market is much higher than the percentage decline in the onshore market.

55. Based on the onshore market size, we estimate the tax generated at each tax rate. As the tax rate increases, the total primary tax take also increases up until 26%/27%, and then starts to fall again.

Fig 19: Tax Generation (2021e) at Different Tax Rates (DKK m)

2021e (DKK m)	20%	21%	22%	23%	24%	25%	26%	27%	28%
Onshore GGR	4,144	3,998	3,864	3,743	3,632	3,529	3,428	3,301	3,156
Tax Rate (%)	20%	21%	22%	23%	24%	25%	26%	27%	28%
Tax Generation	**829**	**839**	**850**	**861**	**872**	**882**	**891**	**891**	**884**

Source: H2 Gambling Capital, 2020

56. While figure 19 shows the tax generated at different levels tax rate, it does not take into account the fact that Danske Spil has a significant share of the Danish online gambling market. Because Danske Spil owned by the State, any incremental tax generated from Danske Spil is a zero-sum game, as this is directly offset by lower income tax and dividends to the State. Therefore, rather than focusing purely on tax generation, we also show the true increase in State revenues as a result of a change in the tax rate, based on an estimated online market share of 45% for Danske Spil.

Fig 20: Increase in State Revenues (2021e) at Different Tax Rates vs 20% (DKK m)

2021e (DKK m)	20%	21%	22%	23%	24%	25%	26%	27%	28%
Onshore GGR	4,144	3,998	3,864	3,743	3,632	3,529	3,428	3,301	3,156
Tax Rate (%)	20%	21%	22%	23%	24%	25%	26%	27%	28%
Tax Generation	**829**	**839**	**850**	**861**	**872**	**882**	**891**	**891**	**884**
Increase in Tax Revenues	-	11	21	32	43	53	62	62	55
Danske Spil Impact	-	(5)	(10)	(14)	(19)	(24)	(28)	(28)	(25)
Increase in State Revenues	**-**	**6**	**12**	**18**	**24**	**29**	**34**	**34**	**30**

Source: H2 Gambling Capital, 2020

57. While the above analysis assumes a smooth Laffer curve, as per standard economic theory, in reality the curve is more 'stepped'. For example, if the tax rate increased by 1%, then it is unlikely that this would materially change an operator's behaviour, and one could assume that the onshore market size would be unaffected. However, at a certain point, the increase in tax rate would cause a significant shift in operators' behaviour.

58. It is impossible to forecast exactly what point each operator will change their behaviour, and by what quantum. However, below we illustrate what we believe to be a very plausible scenario of how Danish online gambling operators could react to different tax rates, as opposed to the smooth curve advocated by standard economic theory.

59. Our starting assumption is that the tax rate could increase to 22% without a material change in operator behaviour, and therefore we assume the same onshore market size at a tax rate of 20%/21%/22%. However, at 23% we assume a shift in behaviour, as at this point the relative tax rate increase is 15%; at 23%/24%/25%, we therefore assume an onshore market size of the scale that our economic theory suggests it would be at the mid-point of this range – i.e. at 24%. As the tax rate increases, we assume that operators react more quickly, and therefore the next step is just two percentage points, with a 26% and 27% tax rate leading to the market size that we would forecast at a 26.5% tax rate, and at 28% the onshore market size shifts down to what we have already forecast.

60. We illustrate this below, along with the implied onshore channelling at each tax rate, which we also assume moves in a 'stepped' manner rather than the curve that we previously illustrated.

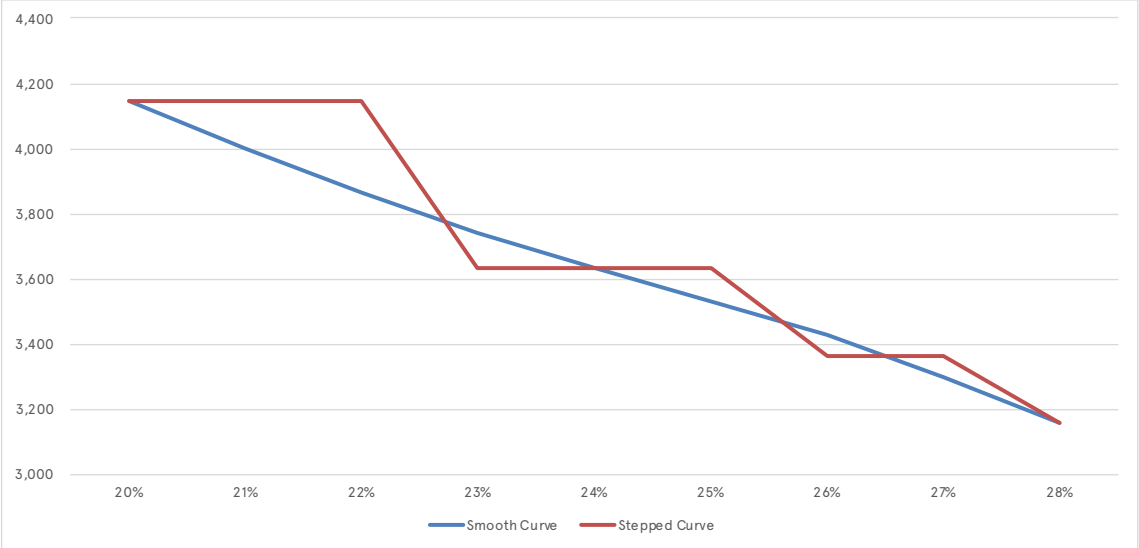
Fig 21: 'Stepped' Onshore Market Size (2021e) at Different Tax Rates (DKK m)

2021e (DKK m)	20%	21%	22%	23%	24%	25%	26%	27%	28%
Equivalent 'Smooth' Tax Rate Onshore Market Size	20%	20%	20%	24%	24%	24%	26.5%	26.5%	28%
Onshore Market Channelling	**85.0%**	**85.0%**	**85.0%**	**80.5%**	**80.5%**	**80.5%**	**77.7%**	**77.7%**	**76.0%**
Onshore GGR	4,144	4,144	4,144	3,632	3,632	3,632	3,364	3,364	3,156

Source: H2 Gambling Capital, 2020

61. This leads to a 'stepped' curve when forecasting the onshore market size at different tax rates, rather than the smooth curve that we illustrated earlier.

Fig 22: Danish Onshore Gambling Market Size (2021e) at Different Tax Rates (DKK m)



Source: H2 Gambling Capital, 2020

62. When applying this 'stepped' onshore market size to the tax rate, we see spikes in the tax revenue at points just before operators' behaviour shifts. An optimal tax rate of 22% leads to a total increase in tax revenue of DKK 83m, although when adjusted for Danske Spil's contribution, we estimate the increase in revenue to the State of c.DKK 46m.

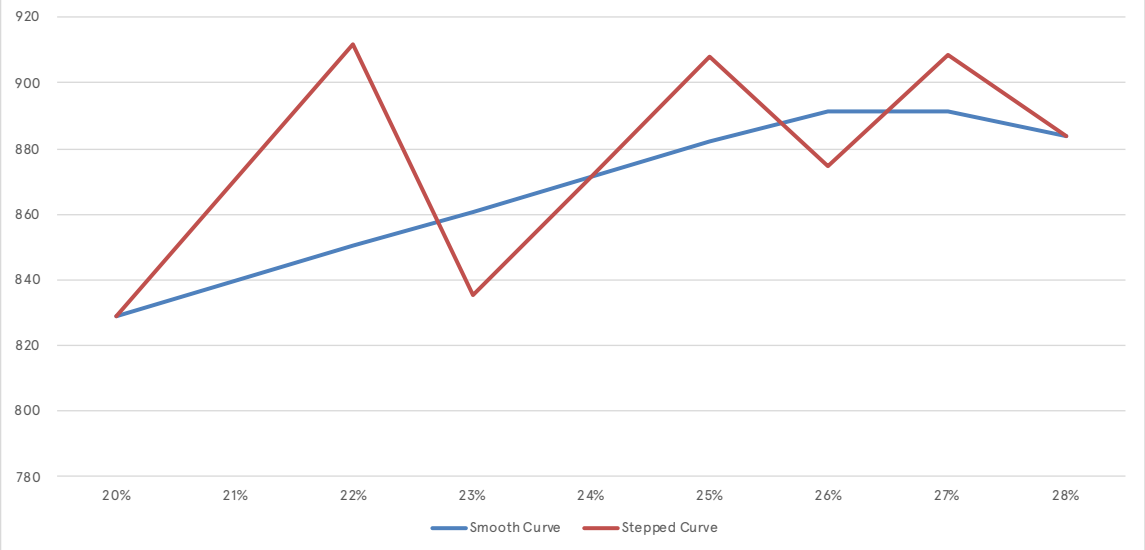
Fig 23: 'Stepped' Onshore Market Size (2021e) at Different Tax Rates (DKK m)

2021e (DKK m)	20%	21%	22%	23%	24%	25%	26%	27%	28%
Equivalent 'Smooth' Tax Rate Onshore Market Size	20%	20%	20%	24%	24%	24%	26.5%	26.5%	28%
Onshore Market Channelling	85.0%	85.0%	85.0%	80.5%	80.5%	80.5%	77.7%	77.7%	76.0%
Onshore GGR	4,144	4,144	4,144	3,632	3,632	3,632	3,364	3,364	3,156
Tax Rate (%)	20%	21%	22%	23%	24%	25%	26%	27%	28%
Tax Generation	**829**	**870**	**912**	**835**	**872**	**908**	**875**	**908**	**884**
Increase in Tax Revenues	-	41	83	6	43	79	46	80	55
Danske Spil Impact	-	(19)	(37)	(3)	(19)	(36)	(21)	(36)	(25)
Increase in State Revenues	**-**	**23**	**46**	**4**	**24**	**44**	**25**	**44**	**30**

Source: H2 Gambling Capital, 2020

63. We illustrate this in a chart below, compared to the smooth curve that we illustrated earlier. Here we can see that the tax generation at 20% is almost identical to that at 23%; the tax generated at 21% is broadly the same as at 24% and 26%. The highest tax is generated at a tax rate of 22%, with 25% and 27% tax rates also generating almost the same level of tax.

Fig 24: Danish Onshore Gambling Tax Revenues (2021e) at Different Tax Rates (DKK m)



Source: H2 Gambling Capital, 2020

64. When taking into account all of the above analysis, we get different levels of 'optimum' tax rate depending upon whether you subscribe to the classical economic theory of a smooth curve, or the concept of a 'stepped' change in operator behaviour.

65. Under the 'smooth' theory, any increase in tax rate would lead to a reduction in the onshore channelling, making 20% the optimal tax rate for consumer protection, and the optimal tax rate for maximising tax revenues is 26%/27%. However, under the 'stepped' theory, onshore channelling remains at 85% up until a 22% tax rate, and 22% is also the tax rate that would generate the highest levels of tax revenue.

Fig 25: 'Smooth' vs 'Stepped' Onshore Market Size and Tax Generation (2021e) at Different Tax Rates (DKK m)

2021e (DKK m)	20%	21%	22%	23%	24%	25%	26%	27%	28%
Smooth Curve									
Onshore Market Channelling	85.0%	83.9%	82.8%	81.6%	80.5%	79.4%	78.3%	77.1%	76.0%
Tax Generation	829	839	850	861	872	882	891	891	884
Increase in State Revenues	-	**6**	**12**	**18**	**24**	**29**	**34**	**34**	**30**
Stepped Curve									
Onshore Market Channelling	85.0%	85.0%	85.0%	80.5%	80.5%	80.5%	77.7%	77.7%	76.0%
Tax Generation	829	870	912	835	872	908	875	908	884
Increase in State Revenues	-	**23**	**46**	**4**	**24**	**44**	**25**	**44**	**30**

Source: H2 Gambling Capital, 2020

Section 4: Benchmarking Comparable Markets

There are many variables which contribute to the onshore channelling rate of online gambling; while the tax rate is not the only driver of channelling rates, when we benchmark Denmark against a number of other markets, it is clear that the tax rate has a material impact on the channelling rate.

Those markets which are more mature have also seen a higher level of onshore channelling, all things being equal, and markets with a more stringent approach towards offshore operators (in particular France) also benefit from a lower offshore market.

By 2024, we forecast the Danish offshore market to represent less than 10% of online GGR, compared to over 20% if the tax rate were to increase to 28% of GGR.

4.1 Benchmarking Versus Comparable Markets

66. There are many variables which contribute to the onshore channelling rate of online gambling, including tax rates, advertising, wagering limits, number of licenses, blocking of offshore websites and plethora of other regulatory restrictions.

67. While the tax rate is not the only driver of channelling rates, when we benchmark Denmark against a number of other markets, it is clear that the tax rate has a material impact on the channelling rate. Those markets which are more mature have also seen a higher level of onshore channelling, all things being equal, and markets with a more stringent approach towards offshore operators (in particular France) also benefit from a lower offshore market.

Fig 26: Danish Online Market Channelling Estimates 2021-24e (DKK m)

2019	Tax Rate	% Offshore	Notes
France	High T/O Tax	18%	High tax rate partially offset by stringent enforcement against offshore operators
Italy	20%-25%	8%	Casino at 20% tax rate, and market benefitting from onshore maturity
Portugal	25% & T/O Tax	22%	25% GGR for gaming, Turnover tax for sportsbetting
Spain	20%	20%	However, the inclusion of regional taxes means effective rate closer to 25%
Sweden	18%	13%	Offshore channelling forecast to increase due to advertising restrictions
UK	21%	2%	Benefit from mature market, large onshore market size & no product restrictions
Denmark 2021	20%	15%	Channelling has shifted offshore slightly due to new promotional restrictions
Denmark 2024	20%	9%	Channelling shifts onshore as the market matures
Denmark 2021	**28%**	**24%**	**Increased tax rate leads to increased shift offshore**

Source: H2 Gambling Capital, 2020

68. While no markets are directly comparable, if we were to take France, Portugal and Spain, which have either turnover tax or an effective GGR tax rate of c.25%, the offshore market represents c.20% of GGR. By contrast, when taking Italy, the UK and Sweden only c.10% of the market remains offshore.

69. By 2024, we forecast the Danish offshore market to represent less than 10% of online GGR, compared to over 20% if the tax rate were to increase to 28% of GGR.

4.2 Tackling the Offshore Market

70. The ability to prevent customers using offshore providers is another important factor in channelling activity onshore. The Danish regulators have been very proactive in their attempts to block offshore operators from targeting the market, including litigation against telecom companies to block offshore operators illegally targeting the market. However, despite the efforts of the regulators, H2 understands that it is not illegal for operators to accept Danish players, provided their services are not actively promoted.

71. It is also apparent that once established, eliminating an offshore gambling market is extremely difficult. Implementing a broad and fair onshore licensing system with an attractive tax rate has historically been more effective at combating offshore operators, as well as enabling licensed operators to service customers' existing (as well as future) demands for the latest technologies, products and services.

72. It is clear from established onshore-regulated online gambling markets that, providing the product is competitive and the value on offer is similar, consumers prefer to transact within an onshore-regulated scheme due to the additional protection that this ensures them.

73. The above said, if we accept that 'something for everyone' market equilibrium is the optimum industry model for online gambling, then there are a number of key considerations (based on experience in other markets) that should ideally be addressed within the Danish market as part of its regulatory framework, namely:

    - ✓ **Balancing consumer protection with meeting consumer demand:** Best practice regulation includes stringent consumer protection measures, including limits on how much operators incite gambling activity. However, as we have illustrated, a large part of the market GGR is generated from sophisticated players, and if they are able to get significantly more attractive promotions offshore, then this will lead to leakage to the offshore market;

    - ✓ **Tax Rate:** While a higher tax rate can generate increased tax revenue, it can also lead to less competitive pricing and lower levels of marketing spend – both of which can lead to increased leakage to the offshore market, particularly for more price sensitive players;

74. If a licensed market is too restrictive – as could be the case when combining the latest Danish regulatory measures along with a significant increase in the tax rate - a **regulatory gap** emerges, within which offshore operators enjoy considerable economic advantages. In short, they continue to:

    - × *pay no taxes;*
    - × *pay no licensing fees;*
    - × *contribute no funds to promoting responsible gambling;*
    - × *contribute nothing to the wider Danish economy.*

    and also:

    - ✓ *generate straight profit;*
    - ✓ *do not have to create or sustain jobs, and pay associated taxes, nor invest in technology within their targeted country;*
    - ✓ *do not have to adhere to that country's licensing requirements, operating standards and/or codes of practice (including advertising controls and responsible gambling measures);*
    - ✓ *do not have to adhere to that country's regulatory practices (e.g. can offer products not permitted domestically and/or the same products cheaper);*
    - ✓ *are harder to track if criminal or anti-money laundering proceedings are enacted.*

Section 5: H2 Analysis and Conclusions

An increase in tax rate to 28% would lead to an increase in tax revenue, but at the detriment to consumer welfare as DKK 2bn of GGR shifts to offshore operators over the period 2021-24e.

Furthermore, reductions in marketing spend and aggressive operational cost cutting would have an incremental negative impact on investment in the country.

By contrast, an increase in tax rate to 22% would likely lead to an increase in tax revenue, while not impacting onshore channelling, thereby providing an 'optimal' tax rate for both consumer protection and tax generation.

5.1 H2 Analysis

75. **Balancing consumer protection and incentives to gamble:** Best practice regulation includes stringent consumer protection measures, including limits on how much operators incite gambling activity. However, as we have illustrated, a large part of the market GGR is generated from sophisticated players, and if they are able to get significantly more attractive promotions offshore, then this will lead to leakage to the offshore market.

76. **Tax Rate:** While a higher tax rate can generate increased tax revenue, it can also lead to less competitive pricing and lower levels of marketing spend – both of which can lead to increased leakage to the offshore market, particularly for more price sensitive players. For Denmark, over the period 2021-24e, we estimate that the tax revenue is broadly similar at a 20% and 28% tax rate, as the higher initial tax take from a 28% tax rate gets eroded by lower market growth.

77. **Market Impact:** When looking at the period 2021-24e, H2 estimates that the total cumulative decline in onshore online GGR from an increase in the tax rate to 28% would be c.DKK 4.5bn, or c.-25%. This will lead to a reduction of DKK 1bn in bonuses (over 40% decline), which is likely to have a significant impact on the channelling of the sophisticated segment of the customer base.

78. Despite the reduction in bonusing, this results in a 32% decline in post-tax gross profit for operators, or a reduction of DKK 3.2bn. To offset this, we estimate a DKK 2bn reduction in marketing spend, as well as aggressive cost cutting to reduce operating and central costs by just under DKK 1bn over the next four years. Not only is this a further reduction in investment in the Danish economy, but a 40% reduction in marketing spend will lead to further leakage of players to the offshore market.

79. **Channelling:** A combination of the above leads us to believe that an increase in the tax rate from 20% to 28% of GGR would increase Danish channelling from the current 88% onshore to 76%.

80. **Operator Behaviour Leading to a 'Stepped' Curve:** While our analysis is based upon standard economic theory of a smooth Laffer Curve, in reality the curve is more 'stepped'. For example, if the tax rate increased by 1%, then it is unlikely that this would materially change an operator's behaviour, and one could assume that the onshore market size would be unaffected. However, at a certain point, the increase in tax rate would cause a significant shift in operators' behaviour.

81. Under the 'stepped' theory, onshore channelling remains at 85% up until a 22% tax rate, and 22% is also the tax rate that would generate the highest levels of tax revenue, thereby providing an 'optimal' tax rate for both consumer protection and tax generation. We estimate that a 22% tax rate would increase tax revenue by c.DKK 83m compared to a 20% tax rate, and increase revenue to the State (after taking into account the impact on Danske Spil's profits) by c.DKK 46m.

5.2 Key Conclusions

H2 Independent Report – 10 Key Conclusions

1. ***On 1 January 2020, new measures surrounding player deposit limits and promotions were introduced. Analysis of operator data suggests that the estimated impact on licensed market revenues has been a c.17% reduction in GGR.***

2. ***H2 has reduced its 2020 onshore online GGR forecasts by -12.5% to take into account the impact of these new measures. This reduces the channelling rate of the onshore online market. Prior to this, H2 forecast the offshore market to represent 13% of the Danish online market in 2020e, but now estimates it to represent 16% of the online market in 2020e.***

3. ***The current proposal is for the Danish online gambling tax rate to increase from 20% of GGR to 28% of GGR in 2021. While tax rate is not the only driver of channelling rates, when we benchmark Denmark against a number of other similar markets, it is clear that increasing the tax rate will have a significant impact on channelling.***

4. ***H2 forecasts that an increase in tax rate to 28% will initially increase overall tax revenue, but notes that this comes at the detriment to consumer welfare, with more players moving to offshore sites where there are lower levels of consumer protection.***

5. ***When looking at the period 2021-24e, H2 estimates that the total cumulative decline in onshore online GGR would be c.DKK 4.5bn, or c.-25%. Over this period, the tax revenue is broadly similar, as the higher initial tax take gets eroded by lower market growth.***

6. ***Furthermore, given the low profit margin of operators, any significant increase in tax rate will lead to a reduction in marketing spend, as well as aggressive cost cutting. Not only is this a further reduction in investment in the Danish economy, but a significant reduction in marketing spend will lead to yet further leakage of players to the offshore market.***

7. ***In terms of channelling, an increase in the tax rate from 20% to 28% of GGR would increase Danish offshore channelling from 12% of the online market (88% onshore) to 24% of the online market (76% onshore) for the period 2021-24e.***

8. ***Market analysis using standard economic theory of a smooth Laffer Curve shows that any increase in tax rate would lead to a decrease in onshore channelling, but that the optimal tax rate for maximising tax revenues would be 26%/27%. At this point, we estimate an increase in tax revenue of c.DKK 62m compared to a 20% tax rate, although when taking into account the reduction in Danske Spil's profits, this leads to a total increase in revenue to the State of only c.DKK 34m.***

9. ***However, the market reality is that the curve is more 'stepped' – that is to say that if the tax rate increased by a small amount, then it is unlikely that this would materially change an operator's behaviour, and one could assume that the onshore market size would be unaffected. However, at a certain point, the increase in tax rate would cause a significant shift in operators' behaviour.***

10. ***Under the 'stepped' theory, an increase in tax rate to 22% would likely lead to an increase in tax revenue, while not impacting onshore channelling, thereby providing an 'optimal' tax rate for both consumer protection and tax generation. We estimate that this would increase tax revenue by c.DKK 83m compared to a 20% tax rate, and increase revenue to the State by c.DKK 46m.***