

RE: Wagering Advertisement Research [SEC=OFFICIAL]

From s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>
Date Tue 2024-06-11 15:21
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s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>
Cc s22(1)(a)(ii) <s22(1)(a)(ii)@INFRASTRUCTURE.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@infrastructure.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@infrastructure.gov.au>

📎 1 attachment (373 KB)
Wagering Advertising Research DITRDCA_overview of preliminary findings_11June2024.pdf;

Hi s22(1)(a)(ii),

I hope you all had a great long weekend.
Please see the attached file for an overview of our preliminary findings. If you have any questions, please let us know.

Now we have submitted an overview of the preliminary findings, is it possible to do the scheduled **interim presentation on 24 June instead of 17 June?**
As we will be attending the AIFS conference for the next three days, we won't be adding any findings to what we currently have in this overview.

Of course, if you need clarifications for our methods and findings, we are more than happy to respond as soon as and as best as we can.

With best wishes

s22(1)(a)(ii)

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Australian Institute of Family Studies
Level 4, 40 City Road, Southbank VIC 3006, Australia
Tel: s22(1)(a)(ii)
Web: aifs.gov.au



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Wagering Advertising Research:

Socio-economic benefits of a ban on wagering advertising in Australia

Draft preliminary findings to the Department of Infrastructure, Transport, Regional Development, Communications, and the Arts (DITRDCA)

Australian Gambling Research Centre at AIFS, 11 June, 2024

Key messages

- This document outlines the preliminary findings from the Australian Gambling Research Centre (AGRC) of socio-economic benefits of a partial ban on wagering advertising in Australia for 2023. These findings may be adjusted by the AGRC following an external peer review of the costings and submission of the draft and final report to DITRDCA on 28th June 2024 and the 15th July 2024 respectively.
- The proposed partial ban on wagering advertisement by DITRDCA (100% reduction in online advertisements including social media, 49% reduction in TV advertisements including streaming, 23% reduction in radio advertisements, 80% reduction in advertisements through betting affiliates) would generate estimated annual \$240,004,247 worth of socio-economic benefits (the sum of the Table 3 total and the Table 4 total).
- Multiple data sources were used for the estimation including Household, Income and Labour Dynamics in Australia (HILDA) Survey: Wave 22 (2022), National Gambling Trends Study (NGTS) 2023, and the Community Attitudes Study (CAS) 2022.
- This research focused on gambling-related harms across several domains: financial, health, relationships, psychological, and work domains.
- Under the proposed partial ban, it was estimated that on average, wagering activities would be annually reduced by 13.6% (8 days).
- Based on the estimated reduction in wagering activities, the reduction in the costs associated with wagering harm were applied to four gambling categories as measured by the Problem Gambling Severity Index (PGSI): non-risk, low-risk, moderate-risk, and high-risk (problem) gambling.
- Appropriate counterfactual adjustments and double counting adjustments were made for the estimation.

Overview

The aim of this research is to estimate the social-economic benefits of a ban on wagering advertising in Australia in reducing gambling harm. The Australian Gambling Research Centre (AGRC) at the Australian Institute of Family Studies (AIFS) has been commissioned by DITRDCA

to conduct this economic evaluation. This document outlines the methodology and preliminary summary findings ahead of the latter deliverables of a presentation, draft report, and final report.

Methodology

The methodological assumptions used in deriving the *total estimates of the cost of wagering related to harm in Australia* are as follows:

- The approach used existing gambling costing frameworks to include a range of gambling-related harms across several domains and sub-categories, including:
 - Financial: direct wagering saving, excessive wagering expenditure, credit card debt, cost of unpaid debts
 - Health: alcohol use and expenditure around wagering, illicit drug use around wagering
 - Relationships: emotional costs to affected others, separation
 - Psychological: mental health including depression and anxiety, other psychological costs
 - Work: absenteeism, presenteeism (productivity loss)
- The costs associated with wagering harm were applied to four gambling categories as measured by the Problem Gambling Severity Index (PGSI): non-risk, low-risk, moderate-risk, and high-risk (problem) gambling.
- Prevalence data for harm associated with wagering were taken from two main data sources, and projected to the Australian adult wagering population in 2023 (1,680,985 adults):
 - Household, Income and Labour Dynamics in Australia (HILDA) Survey: Wave 22 (2022) – weighted to the 2022 adult population (1,570,200 wagerers) adjusted to 2023 (1,680,985 adults)
 - National Gambling Trends Study (NGTS) 2023 – sample of regular (at least monthly) wagerers (n = 2,603) adjusted to the 2023 population (467,980 adults)
- Costs apply to the 2023 year. Where prices from previous years were only available, CPI was used to adjust costs to June 2023.
- Multiple data sources were used in assuming the cost per harm item per person:
 - Statistical Value of Life in a Year (VLY) 2023: \$235,000 (health and psychological items)
 - Proxy cost of emotional distress was \$9,180 per person based on the victims of crime final determination 2022-23 by VOCAT (as per previous gambling cost frameworks)
 - Cost of excessive spend and credit card debit calculated for regular wagerers from NGTS 2023 data
 - Cost of absenteeism and presenteeism from the 2019 Absence Management and Wellbeing Survey
 - Disability weights were applied to some costs:
 - Global Burden of Disease (GBD) Study 2021 for mild major depressive disorder, mild anxiety disorder, mild alcohol dependence, other drug use disorders
 - gambling-related harm for low-risk, moderate-risk, and high-risk gamblers (Browne et al., 2016)

- a counterfactual adjustment of 80% was applied to reduce the population for all harm items (as per other gambling cost frameworks)
- double counting was adjusted for where relevant (e.g., depression and anxiety costs subtracted from other psychological harm costs).

The calculation of the *cost benefits/reduction due to a ban in wagering advertising in Australia* to the overall costs took the following approach:

- Assumed the ban of wagering advertising in Australia consisted of a reduction in advertising across the following channels as determined by DITRDCA and provided to the AGRC:
 - 100% ban online, including social media
 - 49% reduction on television, including streaming
 - 23% reduction on radio
 - 80% reduction through betting affiliates
- The Community Attitudes Study (CAS) 2022 dataset was used to estimate the impact exposure to wagering advertising (number of days per year) had on the number of days wagering per year. After estimation, we applied the percentage ban assumptions to the model and then estimated the impact the reduction in the number of days wagering had on PGSI category membership (i.e., how many people fall into each category of PGSI?).
- PGSI category membership was compared before and after the ban model simulations to calculate a percentage reduction in PGSI category membership due to the ban. The reduction in PGSI category membership was used to calculate new costs per item, which allows an estimate of cost reduction after the ban on advertising.

Results

Table 1 summarises the estimated socio-economic costs to wagerers (placed a wager in the last 12 months) in 2023. The total overall cost was calculated at \$12.9 billion dollars, with 18.1% of the total cost attributed to the high-risk wagerers (\$2.33 billion), 26% to moderate-risk wagerers (\$3.32 billion), 18.4% to low-risk wagerers (\$2.37 billion), and 38.8% to non-risk wagerers (\$4.86 billion).

Table 1: Total cost of wagering to Australia by PGSI category, 2023 (HILDA data, H2 Gambling Capital 2024 dataset)

Cost item	Non-risk wagerers (PGSI = 0)	Low-risk wagerers (PGSI = 1-2)	Moderate-risk wagerers (PGSI = 3-7)	High-risk wagerers (PGSI ≥ 8)	Total wagerers
Direct cost					
Yearly expenditure	\$2,461,694,609	\$1,439,315,136	\$2,191,129,976	\$1,394,960,278	\$7,487,100,000
Mental health					
Depression SF-36 < 40	\$1,596,995,415	\$608,697,606	\$812,560,156	\$605,611,015	\$3,623,864,192
Relationship harm					
Separation Costs	\$513,058,163	\$210,039,644	\$197,544,964	\$174,999,904	\$1,095,642,676
Finance					
Cost of worsening finances	\$285,666,451	\$115,657,101	\$115,367,301	\$158,982,996	\$675,673,849
Total cost to wagerers	\$4,857,414,639	\$2,373,709,487	\$3,316,602,398	\$2,334,554,194	\$12,882,280,717

Notes: Source H2 Gambling Capital 2024 dataset, applied to the weighted HILDA Wave 22 dataset (total wagering) and projected to the Australian adult population 30 June 2023 (ABS).

Table 2 summarises the estimated socio-economic costs of regular (at least monthly) wagering to Australia in 2023. The total overall cost was calculated at \$19.3 billion dollars, with 45.9% of the total cost attributed to the high-risk wagerers (\$8.87 billion), 30.6% to moderate-risk wagerers (\$5.93 billion), 10.7% to low-risk wagerers (\$2.07 billion), and 12.8% to non-risk wagerers (\$2.47 billion). Across the harm domains, the largest cost was to health (\$8.19 billion) followed by relationship harm (\$4.66 billion), psychological harm (\$3.92 billion), financial harm (\$2.07 billion), and work harm (\$497.7 million).

Table 2: Total cost of regular wagering to Australia, by PGSI category, 2023

Cost item	Non-risk wagerers (PGSI = 0)	Low-risk wagerers (PGSI = 1-2)	Moderate-risk wagerers (PGSI = 3-7)	High-risk wagerers (PGSI ≥ 8)	Total wagerers
Estimated 2023 Australian adult population wagerers (last 12 months)	1,008,653	315,191	254,027	103,114	1,680,985
Estimated 2023 Australian adult population regular wagerers (≥ monthly)	187,912	86,331	115,608	78,129	467,980
Financial harm					
Excessive wagering spend	\$0	\$5,816,333	\$423,420,754	\$1,539,423,219	\$1,968,660,306
Credit card debt due to wagering	\$4,384,177	\$881,339	\$11,562,677	\$87,518,406	\$104,346,599
Total financial harm	\$4,384,177	\$6,697,672	\$434,983,431	\$1,626,941,625	\$2,073,006,905
Health harm					
Cost of mild alcohol dependence	\$2,233,196,449	\$1,363,883,636	\$2,021,242,343	\$1,741,831,084	\$7,360,153,512
Expenditure on alcohol around wagering	\$53,103,002	\$38,861,325	\$87,114,184	\$75,047,651	\$254,126,162
Cost of drug use disorder	\$109,715,986	\$57,439,203	\$177,382,736	\$232,330,091	\$576,868,016
Total health harm	\$2,396,015,438	\$1,460,184,164	\$2,285,739,262	\$2,049,208,826	\$8,191,147,690
Relationship harm					
Emotional costs to affected others	\$21,390,413	\$114,756,400	\$1,355,039,036	\$3,163,837,169	\$4,655,023,018
Total relationship harm	\$21,390,413	\$114,756,400	\$1,355,039,036	\$3,163,837,169	\$4,655,023,018
Psychological harm					
Depression – emotional distress to wagerer	\$25,689,369	\$47,208,946	\$347,702,306	\$1,155,687,973	\$1,576,288,595
Anxiety – emotional distress to wagerer	\$7,320,879	\$44,684,717	\$270,237,696	\$408,745,454	\$730,988,746
Other psychological costs to wagerers	\$0	\$362,058,697	\$1,140,243,953	\$113,811,935	\$1,616,114,585
Total psychological harm	\$33,010,248	\$453,952,360	\$1,758,183,955	\$1,678,245,362	\$3,923,391,925
Work harm					
Cost of absenteeism	\$7,797,133	\$16,918,614	\$38,615,552	\$209,057,339	\$272,388,638
Cost of presenteeism	\$12,183,020	\$14,247,254	\$52,466,783	\$146,436,477	\$225,333,533
Total work harm	\$19,980,152	\$31,165,868	\$91,082,335	\$355,493,816	\$497,722,171
Total cost of regular wagering to Australian consumers	\$2,474,780,428	\$2,066,756,464	\$5,925,028,019	\$8,873,726,798	\$19,340,291,710

Notes: Source NGTS 2023 dataset (monthly wagerers), applied to the weighted HILDA Wave 22 dataset (total wagering) and projected to the Australian adult population 30 June 2023 (ABS).

Table 3 provides cost benefit (reduction) estimates for each PGSI category. Overall, the net benefit to wagerers across all cost domains was \$93,859,458. These estimates reflect the cost benefit attributed to the partial wagering advertisement ban and the impact it has on reductions of harmed wagerers within each at-risk PGSI group. The moderate-risk and high-risk wagerer groups show negative values (values in pink in Table 3), which represents these categories having a lower number of harmed people after the ban in these categories relative to before the

ban. Non-risk and low-risk groups show positive values (values in black in Table 3), which represents these categories having a higher number of people after the ban relative to before the ban. Positive values in the non-risk and low-risk categories do not mean that the partial ban is adding to the cost attributable to the non-risk and low-risk wagerers. The increase in the non-risk and low-risk wagerers costs due to harm after the ban are comprised of the movement of the moderate-risk and high-risk wagerers into these lower-risk groups. These inflows from higher risk categories to lower risk categories have reduced the costs. Thus, the distribution of people across PGSI categories after the wagering advertising ban leads to a net cost benefit that is displayed in the 'Total wagerer' column. The total across all PGSI categories for a particular cost item and can be interpreted as the net benefit attributed to the partial ban in wagering advertising.

Table 3: Total cost benefits of a ban on wagering advertising to Australia by PGSI category, 2023 (HILDA data, H2 Gambling Capital 2024 dataset)

Cost item	Non-risk wagerers (PGSI = 0)	Low-risk wagerers (PGSI = 1-2)	Moderate-risk wagerers (PGSI = 3-7)	High-risk wagerers (PGSI ≥ 8)	Total wagerers (Net Benefit)
Direct cost					
Yearly expenditure	\$12,553,871	\$2,993,716	-\$6,959,745	-\$67,540,535	-\$58,952,693
Mental health					
Depression SF-36 < 40	\$8,144,176	\$1,266,066	-\$2,580,957	-\$29,322,191	-\$22,492,906
Relationship harm					
Separation costs	\$2,616,436	\$436,874	-\$627,467	-\$8,473,064	-\$6,047,221
Finance					
Cost of worsening finances	\$1,456,809	\$240,562	-\$366,444	-\$7,697,564	-\$6,366,637
Total cost to wagerers	\$24,771,292	\$4,937,217	-\$10,534,614	-\$113,033,354	-\$93,859,458

Notes: Source H2 Gambling Capital 2024 dataset, applied to the weighted HILDA Wave 22 dataset (total wagering) and projected to the Australian adult population 30 June 2023 (ABS). Black values represent an increase in costs for a specific PGSI category after the wagering advertising ban. Pink values represent a decrease in costs and therefore a social cost benefit.

Table 4 summarises the estimated cost benefit (reduction) of a partial ban on wagering advertising for regular (at least monthly) wagering in Australia in 2023. The total cost benefit of a wagering advertising ban is estimated at \$146 million. Across the harm domains, approximately 40% of the total cost benefits are to relationship harm costs (reduced by \$58.5 million), followed by psychological harm (reduced by \$32.1 million), financial harm (reduced by \$29.7 million), health harm (reduced by \$19.5 million), and work harm (reduced by \$6.3 million).

Table 4: Total cost benefits of a ban on wagering advertising to Australia to regular wagerers, by PGSI category, 2023 (NGTS 2023 data)

Cost item	Non-risk wagerers (PGSI = 0)	Low-risk wagerers (PGSI = 1-2)	Moderate-risk wagerers (PGSI = 3-7)	High-risk wagerers (PGSI ≥ 8)	Total wagerers
Financial harm					
Excessive wagering spend	\$0	\$12,296	-\$822,724	-\$27,385,899	-\$28,196,327
Credit card debt due to wagering	\$33,410	\$1,863	-\$22,467	-\$1,556,927	-\$1,544,121
Total financial harm	\$33,410	\$14,160	-\$845,191	-\$28,942,826	-\$29,740,447
Health harm					
Cost of mild alcohol dependance	\$17,018,480	\$2,883,390	-\$3,927,359	-\$30,986,677	-\$15,012,165
Expenditure on alcohol around wagering	\$404,681	\$82,157	-\$169,267	-\$1,335,076	-\$1,017,505
Cost of drug use disorder	\$836,111	\$121,432	-\$344,662	-\$4,133,086	-\$3,520,205
Total health harm	\$18,259,271	\$3,086,980	-\$4,441,287	-\$36,454,839	-\$19,549,875
Relationship harm					
Emotional costs to affected others	\$163,010	\$242,607	-\$2,632,898	-\$56,283,758	-\$58,511,039
Total relationship harm	\$163,010	\$242,607	-\$2,632,898	-\$56,283,758	-\$58,511,039
Psychological harm					
Depression – emotional distress to wagerer	\$195,771	\$99,805	-\$675,600	-\$20,559,358	-\$20,939,383
Anxiety – emotional distress to wagerer	\$55,790	\$94,468	-\$525,083	-\$7,271,465	-\$7,646,290
Other psychological costs to wagerer	\$0	\$765,429	-\$2,215,542	-\$2,024,682	-\$3,474,794
Total psychological harm	\$251,561	\$959,702	-\$3,416,225	-\$29,855,505	-\$32,060,467
Work harm					
Cost of absenteeism	\$59,419	\$35,768	-\$75,032	-\$3,719,070	-\$3,698,915
Cost of presenteeism	\$92,843	\$30,120	-\$101,945	-\$2,605,063	-\$2,584,045
Total work harm	\$152,262	\$65,888	-\$176,977	-\$6,324,133	-\$6,282,960
Total cost benefit of a ban on wagering advertising to consumers	\$18,859,514	\$4,369,336	-\$11,512,578	-\$157,861,060	-\$146,144,789

Notes: Source NGTS 2023 dataset (monthly wagerers), applied to the weighted HILDA Wave 22 dataset (total wagering) and projected to the Australian adult population 30 June 2023 (ABS). Black values represent an increase in costs for a specific PGSI category after the wagering advertising ban. Pink values represent a decrease in costs and therefore a social cost benefit.



PowerPoint Slides [SEC=OFFICIAL:Sensitive]

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Date Mon 2024-06-24 17:41
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Wagering Advertising Research presentation to DITRDCA.pptx;

Dear s22(1)(a)(ii),

Please see attached a copy of the PowerPoint slides used in today's interim presentation.

Please let me know if there are any questions about the content.

Talk soon,

s22(1)(a)(ii)
s22(1)(a)(ii) | Australian Gambling Research Centre

Australian Institute of Family Studies

Level 4, 40 City Road, Southbank VIC 3006, Australia

Tel: s22(1)(a)(ii)

Web: aifs.gov.au



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Wagering Advertising Research

Socio-economic benefits of a ban on wagering advertising in Australia

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Acknowledgement of Country



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The current gambling advertising climate

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- Around 73% of Australians gambled between July 2021 and July 2022.
- \$239 million was spent on gambling advertising on free-to-air TV, Metro radio and online between May 2022 and April 2023.
- Australians support more than oppose outright bans on all forms of sports and race betting advertising.
- Australian parents have reported being bothered by gambling advertising but were especially concerned about their children's exposure to it.

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The effects of gambling advertising

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- Gambling ads lead to misconceptions about the extent to which gambling is normal and how much gambling is reasonable.
- Migrants that have no gambling background may believe they need to gamble to fit into Australia's culture.
- Three quarters of a sample of children who participated in AFL, NRL and soccer in New South Wales (NSW) and Victoria thought that betting was a normal part of sport.
- Regular bettors are exposed to wagering advertisements almost daily.
- Increased exposure to gambling advertising is associated with more favourable attitudes toward gambling and increases in bet size and frequency.

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The extent of gambling harm

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- Individuals with gambling problems experience financial, health, relationship, psychological, cultural, educational/occupational, and crime related harm.
- The social cost of gambling to the state of Victoria across these domains was estimated to be a total of \$7 billion in 2014-15.
- One individual's gambling problem negatively affects at least six others.
- Gambling harms do not end as soon as gambling activity stops. Most legacy harms that accrue to gamblers have a half-life of 4 years.

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Policy recommendations

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- The parliamentary inquiry into online gambling harm recommended that the Australian Government, with the cooperation of the states and territories, implement a comprehensive ban on all forms of advertising for online gambling.
- The ban would be introduced in four phases over three years.
- By the end of year three, there would be a prohibition on all online gambling advertising and sponsorship.

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Will banning gambling advertising reduce harm?

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- Sports bettors spend 56% more money if exposed to 5 or more ads compared to being exposed to no ads.
- Race bettors spend 95% more money if exposed to 5 or more ads compared to being exposed to no ads.
- In 2023, Belgium was one of the first countries to 'ban' gambling advertising. Gambling operators have found strategies to navigate the ban.
- We conducted research to estimate the social-economic benefits of a ban on wagering advertising in Australia in reducing gambling harm.

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Data assets

- Community Attitudes Study (CAS) 2022
 - Exposure to gambling advertising
 - Number of days gambling in the past 12 months
- The Household, Income and Labour Dynamics in Australia (HILDA) Survey Wave 22 (2022)
 - Depression, separation, financial hardship, expenditure
- National Gambling Trends Study (NGTS) 2023
 - Excessive wagering expenditure, credit card debt, alcohol use, illicit drug use, emotional costs to affected others, depression, anxiety and other psychological costs, absenteeism, presenteeism (productivity loss)
- All data assets contained the problem gambling severity index

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Calculating the effectiveness of an advertising ban

**AIFS**

Step 1

- Two multiple linear regression models
- Predictor: the number of days per year individuals were exposed to gambling ads.
- Outcome: the number of days an individual wagered in the past year



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Calculating the effectiveness of an advertising ban

Step 1

- Two multiple linear regression models
- Predictor: the number of days per year individuals were exposed to gambling ads.
- Outcome: the number of days an individual wagered in the past year

For the second model:

- TV and Streaming: reduced by 49%
- Radio: reduced by 23%
- Online: reduced by 100%
- Affiliate: reduced by 80%

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Calculating the effectiveness of an advertising ban

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Step 2

- Two ordered logistic regression models
- Predictor: included the number of days wagering per year estimated from the linear regression models.
- Outcome: membership probabilities in the no-risk, low-risk, moderate-risk and high-risk problem gambling severity index categories.

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Calculating the effectiveness of an advertising ban

Step 2

- Two ordered logistic regression models
- Predictor: included the number of days wagering per year estimated from the linear regression models.
- Outcome: membership probabilities in the no-risk, low-risk, moderate-risk and high-risk problem gambling severity index categories.

The second model uses the adjusted number of days wagering.

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Social-economic benefit calculation: depression example

PGSI in HILDA	Prevalence of depression
Non-risk gambler	65018
Low-risk gambler	19366
Moderate-risk gambler	28273
High-risk gambler	28832

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Social-economic benefit calculation: depression example

Cost of depression per person =

Value of Statistical Life Year × Disability weight × Counterfactual discount

PGSI in HILDA	Prevalence of depression	Cost of depression per person
Non-risk gambler	65018	\$27,342
Low-risk gambler	19366	\$27,342
Moderate-risk gambler	28273	\$27,342
High-risk gambler	28832	\$27,342

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Social-economic benefit calculation: depression example



PGSI in HILDA	Prevalence of depression	Cost of depression per person	Total cost of depression
Non-risk gambler	65018	\$27,342	\$1,777,709,720
Low-risk gambler	19366	\$27,342	\$529,507,695
Moderate-risk gambler	28273	\$27,342	\$773,040,440
High-risk gambler	28832	\$27,342	\$788,317,654

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Social-economic benefit calculation: depression example

PGSI in HILDA	Prevalence of depression	Cost of depression per person	Total cost of depression	Estimated change in PGSI numbers after add ban
Non-risk gambler	65018	\$27,342	\$1,777,709,720	5144
Low-risk gambler	19366	\$27,342	\$529,507,695	656
Moderate-risk gambler	28273	\$27,342	\$773,040,440	807
High-risk gambler	28832	\$27,342	\$788,317,654	4993

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Social-economic benefit calculation: depression example

PGSI in HILDA	Prevalence of depression	Cost of depression per person	Total cost of depression	Estimated change in PGSI numbers after add ban	Estimated change in PGSI numbers that have depression
Non-risk gambler	65018	\$27,342	\$1,777,709,720	5144	332
Low-risk gambler	19366	\$27,342	\$529,507,695	656	40
Moderate-risk gambler	28273	\$27,342	\$773,040,440	807	90
High-risk gambler	28832	\$27,342	\$788,317,654	4993	1396

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Social-economic benefit calculation:
depression example

PGSI in HILDA	Prevalence of depression	Cost of depression per person	Total cost of depression	Estimated change in PGSI numbers after add ban	Estimated change in PGSI numbers that have depression	Total benefit of ad ban on depression cost
Non-risk gambler	65018	\$27,342	\$1,777,709,720	5144	332	\$9,065,762
Low-risk gambler	19366	\$27,342	\$529,507,695	656	40	\$1,101,354
Moderate-risk gambler	28273	\$27,342	\$773,040,440	807	90	\$2,455,429
High-risk gambler	28832	\$27,342	\$788,317,654	4993	1396	\$38,168,396

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**Social-economic benefit calculation:
depression example**

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PGSI in HILDA	Total benefit of ad ban on depression cost
Non-risk gambler	\$9,065,762
Low-risk gambler	\$1,101,354
Moderate-risk gambler	\$2,455,429
High-risk gambler	\$38,168,396

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Social-economic benefit calculation:
depression example



PGSI in HILDA	Total benefit of ad ban on depression cost
Non-risk gambler	\$9,065,762
Low-risk gambler	\$1,101,354
Moderate-risk gambler	\$2,455,429
High-risk gambler	\$38,168,396
Total net benefit \$30,456,709	

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Results

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- These domains were calculated from HILDA.
- They represented individuals who have wavered in the past 12 months.

Expenditure
 Depression
 Separation
 Worsening finances
 Excessive spend
 Credit card debt
 Mild alcohol dependence
 Expenditure on alcohol
 Drug use disorder
 Costs to affected others
 Depression
 Anxiety
 Other psychological
 Absenteeism
 Presenteeism

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Results

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Expenditure
Depression
Separation
Worsening finances
Excessive spend
Credit card debt
Mild alcohol dependence
Expenditure on alcohol
Drug use disorder
Costs to affected others
Depression
Anxiety
Other psychological
Absenteeism
Presenteeism

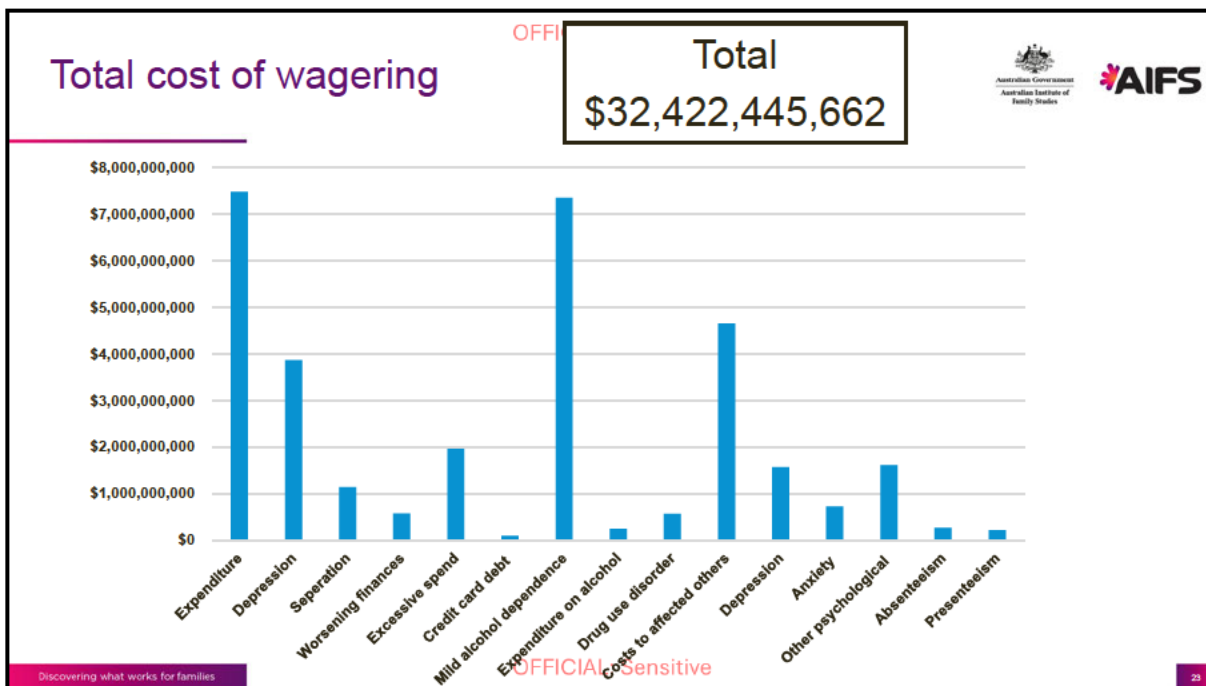
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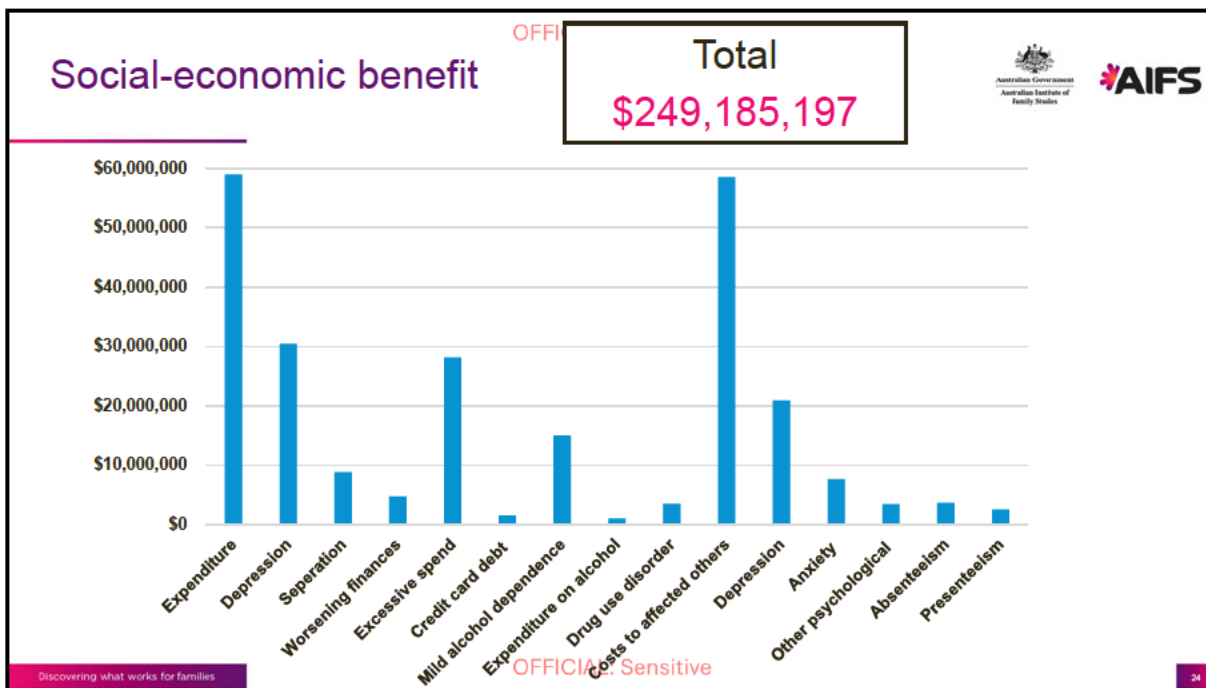
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22

These domains were calculated from NGTS.
They represented individuals who wager at least monthly

AIFS





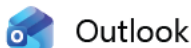
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Summary

**AIFS**

- Under the proposed partial ban, it was estimated that on average, wagering activities would be annually reduced by 13.6% (8 days).
- Multiple data sources were used for the estimation including HILDA, NGTS and CAS. From these data assets we estimated the annual cost to wagerers to be \$32,422,445,662
- The proposed partial ban on wagering advertisement by DITRDCA would generate estimated annual \$249,185,197 worth of socio-economic benefits.

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**RE: Wagering Advertisement Research [SEC=OFFICIAL]**

From s22(1)(a)(ii) s22(1)(a)(ii) @aifs.gov.au>
Date Fri 2024-06-28 16:32
To s22(1)(a)(ii) s22(1)(a)(ii) @INFRASTRUCTURE.gov.au>; s22(1)(a)(ii) s22(1)(a)(ii) @aifs.gov.au>;
s22(1)(a)(ii) s22(1)(a)(ii) @aifs.gov.au>
Cc s22(1)(a)(ii) s22(1)(a)(ii) @INFRASTRUCTURE.gov.au>; s22(1)(a)(ii) s22(1)(a)(ii) @infrastructure.gov.au>;
s22(1)(a)(ii) s22(1)(a)(ii) @infrastructure.gov.au>

📎 1 attachment (1 MB)

Wagering Advertising Research_Interim Report 28 June.docx;

Hi s22(1)(a)(ii),

Please see the attached file for our interim report.

We have made some adjustments for potential double counting and corrected some errors in calculations.

Please contact us next week if you have any questions.

Please also let us know if you would like us to examine alternative scenarios of partial ban.

Have a great weekend!

With best wishes

s22(1)(a)(ii)

s22(1)(a)(ii)
s22(1)(a)(ii) | Australian Gambling Research Centre

Australian Institute of Family Studies

Level 4, 40 City Road, Southbank VIC 3006, Australia

Tel: s22(1)(a)(ii)

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From: s22(1)(a)(ii) s22(1)(a)(ii) @INFRASTRUCTURE.gov.au>
Sent: Thursday, June 20, 2024 9:55 AM
To: s22(1)(a)(ii) s22(1)(a)(ii) @aifs.gov.au>; s22(1)(a)(ii) s22(1)(a)(ii) @aifs.gov.au>; s22(1)(a)(ii)

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Wagering Advertising Research

Socio-economic benefits of a ban on wagering advertising in Australia

s22(1)(a)(ii), s22(1)(a)(ii), s22(1)(a)(ii), and s22(1)(a)(ii)

Australian Gambling Research Centre, Australia Institute of Family Studies

Interim Report

28 June 2024



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Wagering Advertising Research

Acknowledgements

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The Australian Gambling Research Centre (AGRC) was established under the *Commonwealth Gambling Measures Act 2012*. Our gambling research program reflects the Act, embodies a national perspective and has a strong family focus. We are part of the Australian Institute of Family Studies (AIFS). The authors would like to acknowledge AIFS for supporting this work. Particular thanks go to s22(1)(a)(ii), s22(1)(a)(ii), s22(1)(a)(ii), and s22(1)(a)(ii) for their guidance and contributions.

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Key Terms

Acronym	Description
ABS	Australian Bureau of Statistics
ACMA	Australian Communications and Media Authority
AGRC	Australian Gambling Research Centre
AIFS	Australian Institute of Family Studies
AUDIT-C	Alcohol Use Disorders Identification Test
BoD	Burden of Disease
CAS	Community Attitudes Study
CPI	Consumer Price Index
DITRDCA	Department of Infrastructure, Transport, Regional Development, Communications, and the Arts
DSS	Department of Social Services
DW	Disability Weight
EMA	Ecological Momentary Assessment
GBD	Global Burden of Disease
GRA	Gambling Research Australia
HILDA	The Household, Income and Labour Dynamics in Australia
IPV	Intimate Partner Violence
NGTS	National Gambling Trends Study
PC	Productivity Commission
PGSI	Problem Gambling Severity Index
SF-36	36-Item Short Form Survey
SPLA	Social Policy and Legal Affairs
VCEC	Victorian Competition and Efficiency Commission
VLY	Statistical Value of Life in a Year
WSP	Wagering Service Provider

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Executive summary

This document outlines the findings from the Australian Gambling Research Centre (AGRC) of the socio-economic benefits of a partial ban on wagering advertising in Australia for 2023. These findings may be adjusted by the AGRC following an external peer review of the costings and submission of the final report to DITRDCA on the 15 July 2024.

Research aims

The aim of this evaluation is to estimate socio-economic benefits of a partial ban on wagering advertising in Australian for 2023. The proposed partial ban on wagering advertisement by DITRDCA included:

- 100% reduction in online advertisements, including social media
- 49% reduction in TV advertisements, including streaming
- 23% reduction in radio advertisements
- 80% reduction in advertisements through betting affiliates.

The total cost of wagering to Australia was estimated first in order to derive the cost benefit of this partial wagering advertising ban to the total cost of wagering.

Methodology

The socio-economic costs of wagering to Australia were costed following similar gambling costing frameworks (e.g., Browne et al., 2017; Productivity Commission, 1999; Victorian Competition and Efficiency Commission, 2012). Costs were estimated for 12 wagering items in six domains:

1. Direct wagering expenditure
2. Financial
3. Psychological
4. Relationships
5. Health
6. Work

Where possible, the cost associated with wagering harm was applied to four at-risk gambling categories as measured by the Problem Gambling Severity Index (PGSI: Ferris & Wynne, 2001): non-risk, low-risk, moderate-risk, and high-risk (problem) gambling. The following methodological approaches were applied sourcing data and the cost calculations:

- two main sources of data were used for the prevalence estimates of wagering and harm items:
 - Household, Income and Labour Dynamics in Australia (HILDA) Survey: Wave 22 (2022) adjusted to the ABS 2023 population (1,680,985 adult wagerers)
 - National Gambling Trends Study (NGTS) 2023 dataset of regular (at least monthly) wagerers adjusted to the 2023 population (467,980 adult regular wagerers)
- total wagering expenditure (loss) for 2023 was sourced from the H2 Gambling Capital dataset, and proportions of spend per PGSI category were based on HILDA W22 data
- costs apply to the 2023 year. Where prices from previous years were only available, CPI was used to adjust costs to June 2023 (ABS, 2024)

- appropriate counterfactual and double counting adjustments were made for the estimation
- the Community Attitudes Study (CAS) 2022 data was used to estimate the impact of exposure to wagering advertising on days wagering, and how much wagering would be reduced by the proposed partial wagering advertising ban in respect to PGSI categorisation.

Results

Table 1 summaries the estimate total costs of wagering to Australia in 2023, as well as the estimated cost benefit of a partial ban on wagering advertising overall and by problem gambling severity (PGSI) category.

The estimated total cost of wagering to Australia in 2023 was \$26.7 billion. Under the proposed partial wagering advertising ban it was estimated that on average, wagering would be reduced annually by 13.6% (8 days). When applied to the total cost, the partial ban on wagering advertisement proposed by DITRDCA would generate estimated annual \$180.2 million worth of socio-economic benefits.

Table 1: Estimated total cost of wagering and the cost benefit of a wagering advertising ban to Australia, by PGSI category, 2023

Cost item		Non-risk wagerers (PGSI = 0)	Low-risk wagerers (PGSI = 1-2)	Moderate-risk wagerers (PGSI = 3-7)	High-risk wagerers (PGSI ≥ 8)	Total wagerers
Direct wagering expenditure	Cost of wagering	\$2,461,694,609	\$1,439,315,136	\$2,191,129,976	\$1,394,960,278	\$7,487,100,000
	Ban benefit	\$12,553,871	\$2,993,716	-\$6,959,745	-\$67,540,535	-\$58,952,693
Financial (bankruptcy)	Cost of wagering	\$16,860,457	\$6,098,652	\$4,915,186	\$9,282,571	\$37,156,866
	Ban benefit	\$85,983	\$12,685	-\$15,612	-\$449,439	-\$366,383
Psychological harm	Cost of wagering	\$1,162,092,757	\$799,524,064	\$1,899,801,228	\$1,070,997,311	\$4,932,415,360
	Ban benefit	\$5,944,765	\$1,676,865	-\$4,294,864	-\$35,850,254	-\$32,523,489
Relationship harm	Cost of wagering	\$514,011,165	\$301,452,874	\$1,486,863,624	\$3,298,902,325	\$5,601,229,987
	Ban benefit	\$2,675,221	\$630,928	-\$3,051,616	-\$62,823,279	-\$62,568,747
Health harm	Cost of wagering	\$2,396,015,438	\$1,460,184,164	\$2,285,739,262	\$2,049,208,826	\$8,191,147,690
	Ban benefit	\$18,259,271	\$3,086,980	-\$4,441,287	-\$36,454,839	-\$19,549,875
Work harm	Cost of wagering	\$19,980,152	\$31,165,868	\$91,082,335	\$355,493,816	\$497,722,171
	Ban benefit	\$152,262	\$65,888	-\$176,977	-\$6,324,133	-\$6,282,960
Total	Cost of wagering	\$6,570,654,577	\$4,037,740,758	\$7,959,531,611	\$8,178,845,128	\$26,746,772,075
	Ban benefit	\$39,671,373	\$8,467,061	-\$18,940,101	-\$209,442,479	-\$180,244,147

Notes: 'Benefit' is the cost benefit of a partial ban on wagering advertising in Australia. Black values represent an increase in costs for a specific PGSI category after the wagering advertising ban. Pink values represent a decrease in costs and therefore a socio-economic benefit.

Conclusions

In a submission to the 'You Win Some, You Lose More' parliamentary inquiry on online gambling harm (House of Representatives Standing Committee on Social Policy and Legal Affairs, SPLA 2023), it was recommended that a comprehensive ban on gambling advertisement would be introduced in four phases over three years. The aim of this report was to analyse available data to estimate the potential socio-economic benefit of a proposed partial ban on wagering advertising across a range of harm domains for Australian wagerers.

In total we found an annual benefit of \$180.2 million estimated to occur assuming a partial ban in advertising across TV, radio, streaming, online and betting affiliates.

Limitations

Our estimate is likely to be an underestimate of socio-economic benefits due to limitations in available data and methodology. These limitations include:

- data sets we used for this evaluation all have different populations and sampling methods. It may lack consistency
- the prevalence of gambling and gambling harms in the HILDA data set may be an underestimate compared to other prevalence studies
- due to the limitations of data, we were unable to estimate social costs of many gambling related harm items: crime (legal costs and job loss), costs of job loss and job change, productivity loss for study (unable to complete a degree for example), emotional costs after separation, suicide, gambling debt prior to bankruptcy, loss of assets, physical health, tobacco use, IPV and domestic violence, and the costs to the health system
- due to the limitation of data, we did not model inflows and outflows of wagerers due to the ban
- this study only evaluated the short-term impacts of a partial ban.

Future directions

Based on the limitations, we propose the following recommendations to:

- conduct an Australian gambling prevalence study
- access to Wagering Service Provider (WSP) data and link the WSP data to administrative data so that we could estimate the costs to health system, employment, and suicide (via death record)
- conduct a long-term evaluation of the impact of a wagering advertising ban
- simulate different scenarios in the cost estimation (e.g., the total advertising ban, banning direct messaging, banning promotions)
- comprehensively estimate social costs of gambling-related harms including crime (legal costs and job loss), costs of job loss and job change, productivity loss for study (unable to complete a degree for example), emotional costs after separation, suicide, gambling debt prior to bankruptcy, loss of assets, physical health, tobacco use, IPV and domestic violence, and the costs to the health system.

Background

The current gambling advertising climate

Gambling is the placement of a wager or bet on the outcome of a future uncertain event and wagering refers to gambling on racing and sporting events (Australasian Gaming Council, 2021). Around 73% of Australians gambled in the 12 months between July 2021 and July 2022 (Australian Gambling Research Centre, 2023b). Although gambling is a common form of entertainment for Australians, it can have severe and lasting socio-economic impacts on individuals and their families. These negative impacts are at the core of ongoing debate and policy consideration surrounding the role that gambling advertising has in increasing gambling harm.

Measuring gambling-related harm

Gambling-related harm is commonly assessed via the Problem Gambling Severity Index (PGSI). The PGSI provides a measure of at-risk gambling behaviour during the previous 12-month period.

It consists of 9 items (questions), such as 'have you bet more than you could really afford to lose?', with response options being never (0), sometimes (1), most of the time (2) and almost always (3).

Scores are summed for a total between 0 and 27.

Respondents are grouped into 4 categories based on their scores:

- non-risk ('non-problem') gambling (0)
- low-risk gambling (1–2)
- moderate-risk gambling (3–7)
- high-risk ('problem') gambling (8–27).

Respondents scoring 1+ may be classified as being at some risk of, or already experiencing, gambling-related harm.

Source: Ferris & Wynne, 2001.

Between the 1st May 2022 and 30th April 2023, the Australian Communications and Media Authority (ACMA) found that over 502,800 gambling advertisements aired on free-to-air TV and metro radio from gambling providers offering online gambling services (ACMA, 2023). Gambling marketing is broader including not only television and radio, but pop-ups on websites, inducements, celebrity brand ambassadors, direct and third-party email and messages, loyalty programs, sponsorship and promotions. ACMA's analysis of Nielsen Ad Intel data revealed that \$238.6 million was spent on gambling advertising on free-to-air TV, Metro radio and online between May 2022 and April 2023. This figure was estimated to be \$89.7 million in 2011 by the Victorian Responsible Gambling Foundation (2023), which represents a 266% increase.

A recent Australian Gambling Research Centre (AGRC) report highlighted the extent of negative community attitudes towards sports and race betting (wagering) advertising (Australian Gambling Research Centre, 2023a). In the report, 69% of Australians reported that wagering

advertisements were too common. The majority of Australians stated that wagering advertising makes sport less family-friendly, normalises gambling among children and targets people at risk of experiencing gambling problems. Most Australians believed that wagering advertising encourages people to bet for the first time, bet more than usual and engage in riskier betting. In the report, Australians supported more than opposed outright bans on all forms of wagering advertising.

Australian parents have reported being bothered by gambling advertising but were especially concerned about their children's exposure to it (Australian Communications and Media Authority, 2019). In a submission to the 'You Win Some, You Lose More' parliamentary inquiry on online gambling harm (House of Representatives Standing Committee on Social Policy and Legal Affairs, SPLA 2023), both the ACMA and the Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA) reported an increase in the complaints they received about gambling advertising. Taken together, public sentiment appears to be in support of a reduction in wagering advertisements.

The parliamentary inquiry into online gambling harm recommended that the Australian Government, with the cooperation of the states and territories, implement a comprehensive ban on all forms of advertising for online gambling (SPLA, 2023). The ban would be introduced in four phases over three years. By the end of year three, there would be a prohibition on all online gambling advertising and sponsorship. Such a ban should be backed by literature around the effects of gambling advertising, the extent of gambling harm and evidence that a reduction in gambling advertising will lead to a reduction in gambling harm. In the literature review below we overview the effects of gambling advertising and the extent of gambling harm. We then present literature that supports the idea that a reduction in gambling advertising will lead to a reduction in gambling harm, which is then followed by our social cost benefit analysis that further tests this hypothesis.

The impact of gambling advertising

Gambling advertising reaches a range of different groups. Different age cohorts are typically exposed to different types of advertising mediums (Australian Gambling Research Centre, 2023c). People aged between 18 to 34 years are more likely to be exposed to gambling advertising online and via social media. People aged 55 and above are more likely to be exposed to traditional media such as television, radio and print media. Qualitative research that has analysed the content of gambling advertisements (Deans et al., 2016) as well as the views of men who gamble on sports (Westberg et al., 2017) highlighted how gambling advertisements lead to misconceptions about the extent to which gambling is normal and how much gambling is reasonable. This is because advertising creates misperceptions about the extent to which Australians gamble. Vulnerable groups such as migrants can be targeted by gambling advertisements (Wardle et al., 2019). Therefore, migrants that have no gambling background may believe they need to gamble to fit into Australia's culture.

Children's exposure to gambling advertising may be higher than it is for adults. A 2015 study found that adolescents were more likely to be exposed to gambling advertising on TV than adults, including adults engaged in regular sports betting (Sproston et al., 2015). This exposure normalises gambling for young people, including children, across Australia. Three quarters of a sample of children who participated in AFL, NFL and soccer in New South Wales (NSW) and Victoria thought that betting was a normal part of sport (Pitt et al., 2016). Youth being exposed to gambling advertising are likely to experience long-term consequences. For example, men aged 18 to 24 are the largest group of sports bettors in Victoria (Rockloff et al., 2020). In one study, it

was found that nearly a third (31 per cent) of Victorian secondary students had gambled, of which 38 per cent had bet on sports (Freund et al., 2019). Similarly, national research undertaken by the Australian Institute of Family Studies shows that 6 per cent of people aged 16 and 17 have bet on sport in the past 12 months (Warren & Yu, 2018).

Regular bettors are exposed to wagering advertisements almost daily (Hing et al., 2019). The most common types of advertisements include direct messages (emails, texts, or phone calls from betting operators) and advertising on betting websites or apps. Gamblers at moderate risk and high risk of harm (as measured by the Problem Gambling Severity Index, PGSI; Ferris & Wynne, 2001) were significantly more likely to report having been exposed to social media gambling promotions because they actively engaged with gambling operators on these platforms (Gainsbury et al., 2016). Over one-third of these gamblers indicated that the promotions had worsened their gambling problems. Gamblers who set limits for their gambling reported a negative influence from advertising more often than those who did not set limits (Binde et al., 2019) because advertising hinders efforts to reduce excessive gambling. Social media and direct messages (emails, text messages, phone calls) enable gambling operators to target individual gamblers with personalised marketing (Syvertsen et al., 2021). Although this study found that online advertising was the strongest predictor of perceived advertising impact on gambling involvement, TV advertising had the most impact on increasing awareness and knowledge of gambling forms and operators (Syvertsen et al., 2021). Nonetheless, gambling advertisements and inducements have negative effects on all gamblers by interacting with situational, structural, and individual factors to influence betting behaviours (Hing et al., 2018).

There is a causal relationship between exposure to gambling advertising and positive attitudes towards gambling, greater intentions to gamble, and increased gambling activity (McGrane et al., 2023). A study by Hing and colleagues (2019) which conducted an ecological momentary assessment (EMA) with regular wagerers found an increase in bet size and frequency on days bettors were exposed to wagering advertising and these effects were consistent across different levels of at-risk gambling (Hing et al., 2019). The same study found bettors with a moderate risk of harmful gambling bet when not planning to do so and exceed their intended spending, especially if exposed to direct messaging (Browne et al., 2019). A meta-analytic review found that increased exposure to gambling advertising was associated with more favourable attitudes toward gambling likely due to a dose-response relationship, where greater exposure to advertising was associated with more significant positive effects on gambling attitudes and behaviour (Bouguettaya et al., 2020). Another study found that the strongest predictors of frequency of sports betting were higher problem gambling severity, previous sports betting participation, more frequent exposure to promotions, and more positive attitudes towards them (Hing et al., 2015).

The cost of gambling harm

Individuals who gamble are at risk of experiencing a range of harms associated with their gambling, including financial, health, relationship, psychological, cultural, educational/occupational, and crime related harms (Langham et al., 2016; Marionneau, Egerer & Raisamo, 2022). Gambling harms can also extend beyond the gambler to others close to them (affected others), and the broader community (Langham et al., 2016). The social cost of gambling to the state of Victoria across these domains was estimated to be a total of \$7 billion in 2014-15 (Browne et al., 2017).

Financial problems may consist of people not paying bills or going without basic necessities (Walker et al., 2012). Individuals have reported being fired from their jobs due to gambling-related

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issues or even paying off debt while in recovery from gambling (Kerber et al., 2015). In fact, consumer credit use and debt problems are risk factors for experiencing gambling-related harm (Swanton & Gainsbury., 2020) as gambling and the use of credit are positively correlated at the household level (Brown et al., 2012).

The DSM-5 considers gambling disorder to be persistent and recurrent problematic gambling behaviour leading to clinically significant impairment or distress (American Psychiatric Association, 2013). Health issues, alcohol use disorder and drug use disorder have relatively high prevalence estimates in individuals diagnosed with gambling disorder (Petry et al., 2005; Barnes et al., 2015). Gambling disorder diagnosis is also associated with daily tobacco use (Ford & Håkansson, 2020). The directionality of the relationship between gambling and these health issues are yet to be clarified as binge drinking, tobacco use, and cannabis use in youth have been shown to predict higher gambling rates at ages 31-32 (Merkouris et al., 2021).

Gambling does not only affect the individual but also relationship partners and concerned significant others (CSO). Gambling by both men and women intensifies intimate partner violence (IPV) against women, likely because financial, emotional and relationship stressors from gambling reinforce IPV (Hing et al., 2020). Children who have a parent with high-risk gambling can be subjected to psychological, family, financial, physical, and behavioural harms and may also experience violence (Suomi et al., 2022). Estimates of affected others in the general Australian adult population vary (2–19%) based on definitions and measurement quality. Nonetheless, it has been estimated that one individual's high-risk gambling negatively affects at least six others where low-risk and moderate-risk gamblers impacts one and three others, respectively (Goodwin et al., 2017).

Individuals with gambling disorder have high rates of comorbid mood (37.9%) and anxiety (37.4%) disorders (Lorains, Cowlishaw, & Thomas, 2011). Moreover, self-harm is higher among people who are experiencing gambling harms (Heather et al., 2021) and people with a history of high-risk gambling have a higher risk of suicide (Andreeva., 2022). High-risk online gambling is associated with poorer mental health outcomes and individuals who engaged in excessive online gambling are more likely to experience symptoms of anxiety, depression, and stress (Scholes-Balog & Hemphill, 2012). People who experience gambling harms are over-represented in primary care and mental health treatment populations, with rates of high-risk gambling identified in up to 30 per cent of treatment seekers (Lubman et al., 2017). High-risk gambling typically precedes and predicts the onset of other mental health conditions, suggesting that it has the potential to complicate treatment plans and hamper treatment outcomes, particularly if it goes unidentified and untreated (Lubman et al., 2017). The association between high-risk gambling and mental health has been repeatedly demonstrated in the literature, and aspects of mental health have even been shown to improve after exclusion from land-based gambling (Kotter et al., 2019).

There are several populations that are at greater risk of gambling harm than others. Sports bettors face a higher risk of problem gambling than non-sports bettors due to differences in attitudes toward gambling, personality traits, thinking styles, erroneous cognitions, and gambling motivations (Cooper et al., 2022). People who experience homelessness are less likely to gamble than the general population but are more likely to gamble in harmful ways (Vandenberg, 2022). Internationally, first nations populations have higher rates of problem gambling than other population groups (Bertossa & Harvey, 2014; Breen et al., 2010; Larsen et al., 2013; Young et al., 2007, 2008).

It is also important to note that gambling harms do not end as soon as gambling activity stops. Legacy harms to individuals can be broadly categorised as financial, relationship, emotional/psychological, health, culture, work/study and criminal/deviance harms. Legacy harms

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affect entire communities by drawing funds and social capital away from vulnerable communities, leaving them socially, culturally and materially impoverished. Most legacy harms that accrue to gamblers have a half-life of 4 years, although financial harms last longer at 5 years (Rockloff et al., 2022).

Policy recommendations

Given the clear consensus in the literature surrounding the impacts of gambling advertising and the cost of gambling harm, the 'You Win Some, You Lose More' parliamentary inquiry on online gambling harm provided recommendations in relation to gambling advertising (House of Representatives Standing Committee on Social Policy and Legal Affairs, 2023).

5.148 The Committee recommends the Australian Government, with the cooperation of the states and territories, implement a comprehensive ban on all forms of advertising for online gambling, to be introduced in four phases, over three years, commencing immediately:

- *Phase One: prohibition of all online gambling inducements and inducement advertising, and all advertising of online gambling on social media and online platforms. Removal of the exemption for advertising online gambling during news and current affairs broadcasts. Prohibition of advertising online gambling on commercial radio between 8.30-9.00 am and 3.30-4.00 pm (school drop off and pick up).*
- *Phase Two: prohibition of all online gambling advertising and commentary on odds, during and an hour either side of a sports broadcast. Prohibition on all in-stadia advertising, including logos on players' uniforms.*
- *Phase Three: prohibition of all broadcast online gambling advertising between the hours of 6.00 am and 10.00 pm.*
- *Phase Four: by the end of year three, prohibition on all online gambling advertising and sponsorship.*

5.149 Gambling advertising on dedicated racing channels and programming should be exempt from the ban.

5.150 Small community radio broadcasters should be exempt from further restrictions until December 2025.

Will banning gambling advertising reduce harm?

Wagering advertisements and inducements influences intended and actual betting behaviour (Browne et al., 2019). For example, sports bettors spend 56.2% more money if exposed to 5 or more wagering advertisements compared to those being exposed to none. Similarly, race bettors spend 94.8% more money if exposed to 5 or more wagering advertisements compared to those exposed to none.

Another approach to analysing the effectiveness of a gambling advertising ban is to look towards countries who have implemented similar regulation. In 2023, Belgium was one of the first countries to 'ban' gambling advertising. Although the ban was comprehensive, it allowed operators to advertise to individuals who are interested in gambling via mediums such as search engines. Despite the regulation, gambling operators have found strategies to navigate the ban (De Jans, Hudders & Newall, 2024). For example, by increasing communication about their corporate social responsibility activities to create media coverage. This might include posting about their sponsorship or charitable causes on their own channels that will then be disseminated

more broadly through the media. Other strategies include starting podcast shows, live streaming sports matches on their websites, and organising free prize draws that do not require a betting account.

Extending beyond this review of the literature, we conducted research to estimate the social-economic benefits of a ban on wagering advertising in Australia in reducing gambling harm. The Australian Gambling Research Centre (AGRC) at the Australian Institute of Family Studies (AIFS) has been commissioned by DITRDCA to conduct this economic evaluation. We used multiple data sources including Household, Income and Labour Dynamics in Australia (HILDA) Survey: Wave 22 (2022), National Gambling Trends Study (NGTS) 2023, the Community Attitudes Study (CAS) 2022, and H2 Gambling Capital data. The report estimates how a reduction in wagering advertising will lead to social-economic benefits related to gambling harms across several domains: financial, health, relationships, psychological, and work domains.

Methodology

The aim of this evaluation is to estimate socio-economic benefits of a partial ban on wagering advertising in Australian for 2023. In this section, we will outline the methodology. First, we will clarify how the prevalence of wagering and wagering harms were estimated, along with the cost per harm item. Then, we will provide details of how we calculated how much wagering was costing Australian using the Household, Income and Labour Dynamics in Australia (HILDA) Survey: Wave 22 (2022), the National Gambling Trends Study (NGTS) 2023, and the H2 Gambling Capital data for Australian wagering expenditure. We estimated costs of 12 wagering items in six domains. The six domains are:

1. Direct wagering expenditure
2. Financial
3. Psychological
4. Relationships
5. Health
6. Work

After explaining how the overall socio-economic costs of wagering were calculated, we will demonstrate how we estimated the effectiveness of an advertising ban. We will show how much wagering activities can be reduced by the proposed ban and in turn how much gambling harms can be reduced. We took a two-step approach using the Community Attitudes Study (CAS) 2022. We first predicted how exposure to wagering advertising from different types of media affect the number of days of wagering. Then, we estimated how days of wagering affected selection into four PGSI categories (non-risk; low-risk; moderate-risk and high-risk gambling). The estimated results from the two-step approach enabled us to simulate how the proposed partial ban can reduce the number of days that people wager and further reduce wagering expenditure and gambling harms. Finally, we will show how socio-economic benefits of the proposed ban was calculated and added up.

Data sources

Several key data source types were required to calculate 1) the cost of wagering to Australia and 2) the cost benefit of a reduction in wagering advertising in Australia:

- Australian adult population prevalence of wagering (in the last 12 months) overall and by Problem Gambling Severity Index (PGSI) status

- Australian adult population prevalence of regular wagering (at least monthly in last 12 months) overall and by PGSI status
- prevalence of costed harm items due to wagering by PGSI status
- exposure to wagering advertisement by medium (e.g., TV, radio etc) and PGSI status
- average cost per harm item.

Prevalence of wagering in Australia

Data on the prevalence of wagering in Australia in total and by PGSI was sourced from the HILDA Wave 22 weighted dataset for adults who participated in sports or race wagering in the past 12 months in 2022 (8% of adults). These 2022 prevalence estimates were then applied to the Australian adult population as of 30 June 2023 (Australian Bureau of Statistics, 2024). Table 2 below shows the prevalence estimates of wagering in Australia in 2023 by PGSI status. An estimated total of 1,680,985 Australian adults wagered in 2023. The prevalence figures for any gambling activity are included in the table for the purpose of contextualising wagering harm relative to all gambling.

Table 2: Prevalence of any gambling and wagering in Australia, by problem gambling severity, 2023

Problem gambling severity index (PGSI)	Prevalence in the Australian adult population (%), 2023		Estimated number in the Australian adult population, 2023	
Non-gambler (last 12 months)	65.5%		13,693,715	
	Any gambling	Wagering	Any gambling	Wagering
Non-risk gambler (PGSI = 0)	27.4%	4.8%	5,720,688	1,008,653
Low-risk gambler (PGSI = 1-2)	3.6%	1.5%	750,083	315,191
Moderate-risk gambler (PGSI = 3-7)	2.4%	1.2%	505,627	254,027
High-risk gambler (PGSI ≥ 8)	1.1%	0.5%	223,562	103,114
Total	34.5%	8.0%	7,199,960	1,680,985

Notes: Sourced from weighted HILDA Wave 22 dataset, projected to the Australian adult population 30 June 2023 (ABS, 2024).

Table 3 shows the estimated 2023 prevalence of regular (at least monthly) wagering in the Australian adult population in total and by PGSI status. These estimates were based on the 2022 data from the Community Attitudes Study figures for wagering frequency by PGSI status, projected onto the estimated 2023 wagering population. CAS 2022 data was utilised to gain these estimates as the HILDA Wave 22 dataset did not collect frequency data for wagering or other gambling activities. The estimated 2023 prevalence of regular wagering (monthly or more) in the Australian adult population was 467,980 wagerers.

Table 3: Prevalence of wagering in Australia, by frequency, 2023

Problem gambling severity index (PGSI)	Prevalence in the Australian adult population (%), 2023		Estimated number in the Australian adult population, 2023	
	Less than monthly	Monthly or more	Less than monthly	Monthly or more
Wagering frequency				
Non-risk wagerer (PGSI = 0)	81.4%	18.6%	820,741	187,912
Low-risk wagerer (PGSI = 1-2)	72.6%	27.4%	228,860	86,331
Moderate-risk wagerer (PGSI = 3-7)	54.5%	45.5%	138,419	115,608
High-risk wagerer (PGSI ≥ 8)	24.2%	75.8%	24,985	78,129
Total	64.4%	35.6%	1,213,005	467,980

Notes: Proportions of wagering frequency by PGSI sourced from the Community Attitudes Study (2022) dataset, applied to the weighted HILDA Wave 22 dataset (total wagering) and projected to the Australian adult population 30 June 2023 (ABS, 2024).

Prevalence of wagering harm items

HILDA data

HILDA contains economic, health and wellbeing, collected through a household-based panel. In this analysis we only used data from the questions of interest collected in Wave 22. In relation to gambling, HILDA includes two survey question items of value to our methodology. The first being on gambling participation (expenditure) and the second being the PGSI. The SF-36 used in this analysis was derived through the HILDA survey as it covers 8 key domains of physical and mental health and wellbeing: physical functioning (PF), role-physical (RP), bodily pain (BP), general health (GH), vitality (VT), social functioning (SF), role-emotional (RE) and mental health (MH) (Rand Corporation 2024). The MH domain was utilised to investigate the relationship between gambling harm and the impact on mental health. Additionally, HILDA provides information on major life events asking respondents if in the past 12 months they have either “separated from their spouse” and/or experienced a “major worsening in financial situation (e.g., went bankrupt)”. As the question includes financial hardship other than bankruptcy, we assumed 5% of those who experienced “major worsening in financial situations” as bankruptcy. These items were used in this analysis to analyse the impact of gambling harms on separation and bankruptcy. Table 4 shows the prevalence figures of bankruptcy, depression, and separation used in the analysis.

Table 4: Prevalence of bankruptcy, depression, and separation Australia, by problem gambling severity, 2023 (HILDA W22 data)

Problem gambling severity index (PGSI)	Prevalence of bankruptcy in the Australian adult wagering population (%), 2023	Prevalence of depression (SF-36 < 40) in the Australian adult wagering population (%), 2023	Prevalence of separation in the Australian adult wagering population (%), 2023
Non-risk gambler (PGSI = 0)	675 (0.09%)	65,018 (6.4%)	30,410 (3.0%)
Low-risk gambler (PGSI = 1-2)	209 (0.09%)	19,366 (6.1%)	9,289 (2.9%)
Moderate-risk gambler (PGSI = 3-7)	235 (0.12%)	28,273 (11.1%)	12,287 (4.8%)
High-risk gambler (PGSI ≥ 8)	305 (0.37%)	28,832 (28%)	13,245 (12.8%)

Notes: Sourced from weighted HILDA Wave 22 dataset, projected to the Australian adult population 30 June 2023 (ABS, 2024). Note that percentages represent the proportion within each PGSI category and not the total wagering population.

National Gambling Trends Study data

The National Gambling Trends Study (NGTS) is a mixed methods online survey conducted annually and provides trends on gambling participation, emergent issues and future directions related to gambling participation and harm. The 2023 NGTS sample included respondents who gambled regularly, which is defined as gambling least once a month or more on either online wagering or land-based electronic gaming machines (pokies). The 2023 online wagering sample data was utilised in the estimations of the socio-economic costs of wagering. Table 5 provides the prevalence estimates by PGSI status for each harm item used on the cost of wagering to Australia from the NGTS 2023 dataset.

Table 5: Prevalence estimates (n, %) for harm items by PGSI for regular wagerers, 2023

Item	Non-risk wagerers (PGSI = 0)	Low-risk wagerers (PGSI = 1-2)	Moderate-risk wagerers (PGSI = 3-7)	High-risk wagerers (PGSI ≥ 8)	Item description
Population ≥ monthly wagerers (n)	187,912	86,331	115,608	78,129	See
Financial					
Excessive wagering spend (opportunity cost)	0.0%	0.3%	21.5%	78.2%	Increased per wagerer spend by PGSI status over that of non-problem gamblers (PGSI=0). Prevalence figures represent percentage of total excessive spend.
Health harm					
Alcohol dependance	50,493 (26.9%)	30,838 (35.7%)	45,701 (39.5%)	39,383 (50.4%)	Hazardous drinking (AUDIT-C) and consumes alcohol around online wagering
Expenditure on alcohol around wagering	36,002 (19.2%)	21,611 (25.0%)	31,922 (27.6%)	23,323 (29.9%)	Average yearly spend on alcohol around online wagering for those providing typical spend
Drug use disorder	8,080 (4.3%)	4,230 (4.9%)	13,064 (11.3%)	17,110 (21.9%)	Affected by illicit drugs in last 12 months while gambling
Relationships					
Emotional cost to affected others	5,825 (3.1%)	15,626 (18.1%)	61,503 (53.2%)	71,801 (91.9%)	Any harm to relationships due to gambling / online wagering
Psychological					
Depression*	940 (0.5%)	1,727 (2.0%)	12,717 (11.0%)	42,268 (54.1%)	Depression related to gambling / online wagering
Anxiety	1,315 (0.7%)	8,029 (9.3%)	48,555 (42.0%)	73,442 (94.0%)	Anxiety or stress related to gambling / online wagering
Other psychological harm	5,262 (2.8%)	44,080 (51.1%)	62,232 (53.8%)	4,094 (5.2%)	Other psychological harm (minus depression and anxiety) due to gambling / online wagering
Work					
Presenteeism	2,067 (1.1%)	2,417 (2.8%)	8,902 (7.7%)	24,845 (31.8%)	Reduced performance at work / study due to gambling

Item	Non-risk wagerers (PGSI = 0)	Low-risk wagerers (PGSI = 1-2)	Moderate-risk wagerers (PGSI = 3-7)	High-risk wagerers (PGSI ≥ 8)	Item description
Absenteeism	661 (0.4%)	1,435 (1.7%)	3,276 (2.8%)	17,735 (22.7%)	Estimated work absenteeism based on presenteeism using figures from Li et al (2017)

Notes: Source NGTS 2023 dataset (monthly wagerers), applied to the weighted HILDA Wave 22 dataset (last 12-month wagerers) and projected to the Australian adult population 30 June 2023 (ABS, 2024). *Depression from the NGTS 2023 data was not included in the total cost of wagering due to factoring in double counting with HILDA data. However, depression from NGTS 2023 data which was comorbid with anxiety or other psychological harm was subtracted from the cost calculations for those harm items.

Estimation of cost items

Table 6 summarises the cost estimation for each harm item and their data sources which were used in determining the average cost per harm item.

Table 6: Harm cost items and sources, 2023

Harm item	Cost estimation	Cost estimate data source/s
Financial		
Yearly wagering expenditure	Total wagering expenditure for 2023 by PGSI category.	HILDA Wave 22 dataset – percentage of total wagering expenditure by PGSI category. H2 Gambling Capital (2024) – total betting (onshore) gross win in Australian dollars (\$ million) for race and sports betting for 2023 (projected).
Cost of bankruptcy	Cost of fees for administering bankruptcy (\$9,630) + cost of unpaid debts due to bankruptcy (\$28,152) = \$37,782.	Fees and charges for bankruptcy (Australian Financial Security Authority (2024) – Fees and charges for the cost of administering bankruptcy 2023. VCEC (2012) - cost of unpaid debts estimate 2011, adjusted CPI to 2023 (ABS, 2024)
Excessive wagering spend (opportunity cost)	Increased per person wagering spend by PGSI score weighted by increased relative prevalence of financial harms by PGSI score.	NGTS 2023 dataset – average wagering spend per year by PGSI score and average number of financial harms reported.
Health		
Cost of mild alcohol dependence	Statistical Value of Life in a Year (VLY) in 2023 dollars \$235,000 x mean disability weight for mild alcohol dependence (0.2353).	Department of the Prime Minister and Cabinet (2023) - VLY 2023. Global Burden of Disease Collaborative Network (2024) - Global Burden of Disease Study 2021 (GBD 2021) mean disability weight (DW) for mild alcohol dependence.
Expenditure on alcohol around wagering	Average typical yearly expenditure on alcohol consumed around wagering.	NGTS 2023 dataset – average yearly spend on alcohol for last online wagering session by PGSI category, for sample reporting this as a typical session.
Cost of drug use disorder	Statistical Value of Life in a Year (VLY) in 2023 dollars \$235,000 x mean disability weight for other drug use disorder (0.1156).	Department of the Prime Minister and Cabinet (2023) - VLY 2023. Global Burden of Disease Collaborative Network (2024) - Global Burden of Disease Study 2021 (GBD 2021) mean disability weight (DW) for other drug use disorder.
Relationships		

Harm item	Cost estimation	Cost estimate data source/s
Emotional costs to affected others	Average amount of financial assistance awarded to victims of crime on final determination in 2022-2023 - \$9,180 x average number of affected others by PGSI category.	Victims of Crime Assistance Tribunal (VOCAT) (2023, page 27). Goodwin et al (2017) – average number of affected others by PGSI category: 1:1 (low-risk gambler); 1:3 (moderate-risk gambler); 1:6 (high-risk gambler). Authors assumed 1:0.5 non-risk gambler to affected others.
Financial cost of separation	An estimate of overall average cost of separation (borrowing funds, sourced from legal law providers specialising in family law): \$21,554.	The State of Separation Impact Report 2023 (2023, page 15). The cost converted to 2023 cost using CPI (ABS, 2024).
Psychological		
Depression – emotional distress to wagerer	Statistical Value of Life in a Year (VLY) in 2023 dollars \$235,000 x mean disability weight for mild major depressive disorder (0.1454).	Department of the Prime Minister and Cabinet (2023) - VLY 2023. Global Burden of Disease Collaborative Network (2024) - Global Burden of Disease Study 2021 (GBD 2021) mean disability weight (DW) for mild major depressive disorder.
Anxiety – emotional distress to wagerer	Statistical Value of Life in a Year (VLY) in 2023 dollars \$235,000 x mean disability weight for mild anxiety disorder (0.0296).	Department of the Prime Minister and Cabinet (2023) - VLY 2023. Global Burden of Disease Collaborative Network (2024) - Global Burden of Disease Study 2021 (GBD 2021) mean disability weight (DW) for mild anxiety disorder.
Other psychological costs to wagerers	Statistical Value of Life in a Year (VLY) in 2023 dollars \$235,000 x mean disability weight (DW) by PGSI status (Non-risk gambler = 0; Low-risk gambler = 0.13; Moderate-risk gambler = 0.29; High-risk gambler = 0.44) x attributable fraction of DW from psychological harm (minus depression and anxiety) of 33.6%.	Department of the Prime Minister and Cabinet (2023) - VLY 2023. Victorian Gambling-Related Harms Study (Browne et al., 2016) national survey dataset – disability weights for PGSI categories. NGTS 2023 dataset – average number of harms by harm domain: financial, depression/anxiety, other psychological harms, relationships, work/study, and crime.
Work		
Cost of absenteeism	Average annual cost to business per employee due to absenteeism (direct labour cost + indirect costs).	2019 Absence Management & Wellbeing Survey (Direct Health Solutions, 2019) - \$281 direct labour costs per absent day + \$563 indirect costs per absent day (1:1, e.g., replacement labour, training etc). Total \$844 in 2019 cost converted to 2023 cost of \$982 using CPI (ABS, 2024).
Cost of presenteeism	Average annual cost to business per employee due to presenteeism.	50% the cost of absenteeism (see above) - \$491.

Community Attitudes Study (CAS) data

The Community Attitudes Study (CAS) was used to estimate how much wagering activities can be reduced by the proposed ban and in turn how much gambling harms can be reduced. CAS conducted in July 2022 with 1,765 respondents aged 18 years or older. The age, gender, and location of residence of the participants in this sample is aligned with ABS population parameters making is suitable for our analysis. This survey includes questions about individuals' exposure to gambling advertisements, their gambling participation in the past 12 months, the products used, amount of money spent, platform used, and how this gambling activity impacted their health and

wellbeing. For our analysis we used the question item asking participants where in the past 12 months they had seen or heard gambling advertising. The options to select from included, television, streamed content (e.g., Kayo, SBS on Demand), radio, print media (e.g., newspapers, magazines), outdoor signage (e.g., stadiums, billboards), team/player uniforms or merchandise, social media (e.g. Facebook), online (e.g. news websites, YouTube, podcasts), direct messages (e.g. email, SMS) and/or betting affiliates (e.g. through paid third-party publishers / bloggers / tipsters). Additionally, CAS also asked participants about their gambling expenditure. We focused on the question item addressing respondent's wagering activities on racing and sports betting. Respondents could state their engagement in sports and race betting as "not in the past 12 months", "once or twice a year", "a few times a year", "about once a month", "2 to 3 times a month", "about once a week", "2 to 3 times a week" or "4 or more times a week". Thus, CAS is extremely useful in teasing out how different scenarios of advertisement ban can reduce wagering activities and subsequently reduce gambling harms.

Data analysis

Approach to cost calculations

The framework applied in estimating the cost of wagering to Australia in 2023 generally followed the formula below, costing each harm item by PGSI category and totalling the cost. The calculations for each harm item are presented in the results section along with the findings. The basic approach was the following formula with four key components (A to D):

$$Total\ Cost = A \times B \times C \times D \quad (1)$$

Where:

- A is the number of last 12-month wagerers (HILDA) or regular wagerers (NGTS 2023 data) experiencing harm item in the adult Australian population by PGSI category
- B is the 80% counterfactual adjustment (unless otherwise stated)
- C is the cost of harm item per person
- D is the disability weight (mean) – psychological and health harm items only

Disability weights were only applied to health status conditions available from the Global Burden of Disease Study 2021 under the psychological domain (depression, anxiety) and the health domain (alcohol, illicit drugs). Otherwise, the formula followed $A \times B \times C$.

80% counterfactual adjustment

Our approach to the cost calculations included applying an 80% counterfactual adjustment to the estimated population experiencing each harm item. This approach is consistent with previous gambling costing studies conducted by the Productivity Commission (1999), the VCEC (2012), and Browne et al (2017).

Double-counting adjustment

To avoid double-counting items with potential comorbidity (e.g., anxiety and depression) or an overlap between the HILDA W22 data (last 12-month wagerers) and NGTS 2023 data (at least monthly wagerers), the following discounts were applied in the calculations.

- The cost of excessive wagering spend for regular wagerers is reported as a sub-component of total yearly wagering expenditure for the entire wagering population (not added to it).

- The number of regular wagerers experiencing other psychological harms were discounted by the overlapping population also experiencing anxiety and depression.
- The cost of depression for regular wagerers was calculated from the NGTS 2023 data (\$1.58 billion) but was not reported on, given depression was costed for last 12-month wagerers using the HILDA W22 data.
- The cost of credit card debt due to wagering for regular wagerers was calculated from the NGTS 2023 data (\$104 million) but was not reported on for a few reasons:
 - Credit card debt would overlap partially with the cost of unpaid debt due to bankruptcy for last 12-month wagerers using HILDA data
 - As of 11 June 2023, the use of credit cards for online gambling was prohibited under the *Interactive Gambling Amendment (Credit and Other Measures) Bill 2023* (Cth), no. 114. Therefore, any future bans on wagering advertising would have no impact on credit card debt associated with wagering given its prohibition.
- The emotional cost of separation to affected others was excluded, as this may partially overlap with the cost estimated for relationship harm to affected others.

Calculating expenditure items

Three types of expenditure were calculated in the cost analysis by PGSI category:

- total wagering expenditure in Australia for 2023
- excessive wagering expenditure as an indicator of financial harm
- financial cost of alcohol expenditure around wagering.

The total wagering expenditure in Australia for 2023 was sourced from H2 Gambling Capital data (24 May 2024 update) as the projected 2023 'gross win' (expenditure loss) total for onshore race and sports betting. Onshore betting includes regulator wagering operators, excluding the unregulated offshore expenditure by Australians. The total project onshore wagering expenditure for 2023 was projected at \$AU 7.5 billion. The HILDA Wave 22 dataset was used to estimate wagering expenditure by PGSI category. Total year wagering expenditure was calculated from the monthly wagering expenditure figure in HILDA and the proportion of the total wagering expenditure was calculated by PGSI category (32.9% non-risk, 19.2% low-risk, 29.3% moderate-risk, and 18.5% high-risk). These proportions by PGSI category were then applied the total \$7.5 billion for 2023 wagering expenditure. The results are reported in the results section under 'Yearly wagering expenditure'.

The NGTS 2023 data was used to calculate of the total 2023 wagering expenditure the proportion of which was considered excessive and resulting in financial harm, also known as an opportunity cost. The calculation followed that of Browne et al (2017, page 43-44) in estimating the relative increase in spends and financial harms as PGSI increases, using this costing formula:

$$C = \sum_{k=1}^{15+} N_k \cdot (S_k - S_0) \cdot \left(1 - \frac{H_0}{H_k}\right) \quad (2)$$

where $\left(1 - \frac{H_0}{H_k}\right)$ describes the weight W , or the proportion of the excessive spend assumed to incur opportunity cost to regular wagerers in excess of any entertainment benefit. It is assumed that 100% of the spend S_0 by recreational wagerers is theoretically all entertainment and therefore not harmful. As financial harms H increase for non-recreational wagerers with increasing PGSI score k , then a relative proportion (weight) of the increased spend $(S_k - S_0)$ by those with non-zero PGSI scores is considered an excessive spend resulting in financial harms. The financial harms H variable was the average harms by PGSI score experienced (out of a total of 6 financial harms). The expenditure variable used was the average yearly wagering spend by PGSI score. The results are reported in the results section under the 'Cost of excessive wagering expenditure'.

The NGTS 2023 data was also used to estimate the financial cost of alcohol expenditure around wagering. Regular wagerers in NGTS who reported consuming alcohol around their last wagering session were asked to report the amount spent on alcohol, as well as whether their last wagering session expenditure was 'typical'. Average yearly expenditure on alcohol consumed around wagering was estimated for those reported it as a typical session, and the average alcohol expenditure by PGSI category was used in the cost calculations.

Calculating other psychological harms

The NGTS 2023 dataset contained psychological harms experienced by regular wagerers separate to depression and anxiety. The approach to costing other psychological harms followed that taken by Browne et al (2017) using a Burden of Disease (BoD) methodology to calculate the attributable fraction of 'other psychological harms' relative to other types of harms to the disability weights for gambling by PGSI score. A regression dominance analysis was implemented on the NGTS 2023 data of 29 harms, using the average number of harms reported within the psychological, health, financial, relationship, work/study, and crime domains. Psychological harms were split into depression/anxiety and other psychological harms to partition out the unique variance other psychological harms attributed to the disability weight (an estimated 33.6%).

Dominance analysis involves fitting multiple subset models with different combinations of predictors. For each predictor, the marginal contribution to the model's R-squared is calculated. This is the increase in R-squared when the predictor is added to a model that does not include it. We then average the marginal contributions of each predictor over all possible orders of inclusion in the model. The results from dominance analysis provide relative importance scores for each predictor. These scores indicate how much each predictor contributes to the total R-squared, expressed as a proportion. The scores are normalised to sum to 1 (or 100%). The results of the dominance analysis are shown in Table 7 below.

The cost calculation then followed the same approach of A (population experienced) x B (80% counterfactual) x C (cost of item) x D (disability weight for PGSI status) with an additional x E = attributable fraction other psychological harm (33.6%). Note that the main difference from the Browne et al (2017) approach is that the cost of other psychological harm used the Statistical Value of Life in a Year (VLY) in replacement of GDP.

Table 7: Regression dominance analysis estimated of the relative contribution of other psychological harm to disability weights (NGTS 2023 data)

Gambling-related harm domains	Relative contribution (%)
Financial harms	30.5%
Other psychological harms	33.6%
Depression / anxiety	16.0%
Relationship harms	12.1%
Health harms	4.7%
Work or study harms	2.7%
Crime harm	0.4%

Calculating the effectiveness of an advertising ban

Our analysis was a two-step approach where we first predict how many days people wager per year from exposure to several types of advertising using the Community Attitudes Study (CAS; 2022).

Step one in our analysis used two multiple linear regression models to predict the number of days an individual wagered in the past year from a set of exposure variables: the number of days per year individuals were exposed to TV, streaming, radio, print, signage, merchandise, social media, online ads, direct ads and affiliate ads.

We included control variables that accounted for gambling frequencies for lotteries, keno/bingo, EGMs, CTGs, online casino games, esports, fantasy sports, novelty betting, and virtual sports. The model also included demographic control variables such as age, gender, English language proficiency, First Nation status, living alone, number of dependent children, education level, employment status and income.

The linear regression models were specified as follows:

$$Y = \alpha + E\beta + C\gamma + \varepsilon \quad (3)$$

Where:

- n is the total sample size
- i is the number of exposure variables
- j is the number of control variables
- Y is an $n \times 1$ column vector containing the number of days wagered in the past 12 months
- α is the intercept of the model
- E is an $n \times i$ matrix containing exposure variable values
- β is a $i \times 1$ column vector of estimated coefficient parameters for the exposure variables
- C is an $n \times j$ matrix containing control variable values
- γ is a $j \times 1$ column vector of estimated coefficient parameters for the control variables
- ε is an $n \times 1$ column vector containing residual error values

We simulated the effect of advertising bans by adjusting the values of the exposure variables for several media types. The adjustments were based on the proposed restrictions by the Department of Infrastructure, Transport, Regional Development, Communications, and the Arts (DITRDCA):

- TV and Streaming: Reduced by 49%
- Radio: Reduced by 23%
- Social Media and Online Ads: Completely banned (reduced by 100%)
- Affiliate Ads: Reduced by 80%

We estimated two linear regression models based on equation $Y = \alpha + E\beta + C\gamma + \varepsilon$

(3) that predict the number of days wagered per year, where one model used the unadjusted data (i.e., in place of E) and one model used the adjusted data (i.e., in place of E). These analyses provided us with two sets of values for the number of days wagering per year:

one set based on no ban in advertising and one set based on a partial ban in advertising. These two sets of values were used in step two, which used two ordered logistic regression model.

Ordered logistic regression models were conducted to predict membership probabilities in the no-risk, low-risk, moderate-risk and high-risk problem gambling severity index categories. The predictors were the same as the linear regression models, but excluded the exposure frequency variables and instead included the number of days wagering per year estimated from the linear regression models.

The ordered logistic regression models were specified as follows:

$$\text{logit}(P(Y \leq k)) = \alpha_k - (W\beta + C\gamma) \quad \text{for } k = 1, 2, 3 \quad (4)$$

Where:

- n is the total sample size
- j is the number of control variables
- Y is an $n \times 1$ column vector containing the problem gambling severity index categories represented as integer values from 1 to 4
- α is a 3×1 column vector containing the intercept values for each value of k and serve as the cut-off thresholds in the model
- W is an $n \times 1$ column vector containing wagering variable values
- β is an estimated coefficient parameter for the number of days wagering variable
- C is an $n \times j$ matrix containing control variable values
- γ is a $j \times 1$ column vector of estimated coefficient parameters for the control variables

To simulate the effect of proposed advertising restrictions on problem gambling, we calculated the predicted probabilities for the Problem Gambling Severity Index categories using equation $\text{logit}(P(Y \leq k)) = \alpha_k - (W\beta + C\gamma) \quad \text{for } k = 1, 2, 3 \quad (4)$ $\text{logit}(P(Y \leq k)) = \alpha_k - (W\beta + C\gamma) \quad \text{for } k = 1, 2, 3 \quad (4)$ for a model that uses the unadjusted number of days wagering per year (i.e., in place of W) then a model that uses the adjusted number of days wagering per year (i.e., in place of W). The difference in predicted probabilities of category membership between the model with no advertising ban and the model with a partial advertising ban represents the potential impact of the advertising restrictions. The differences in predicted probabilities estimated were:

$$\Delta P(\text{No Risk}) = 0.3\%$$

$$\Delta P(\text{Low Risk}) = 0.03\%$$

$$\Delta P(\text{Moderate Risk}) = -0.05\%$$

$$\Delta P(\text{High Risk}) = -0.3\%$$

Note that when the probability values are negative then that PGSI category has had a reduction in numbers due to the advertising ban. If the values are positive, then that PGSI category has had an increase in numbers due to the advertising ban. An increase in numbers may occur if high risk gamblers move down to low risk or no risk groups, which would increase numbers in the lower risk categories.

After estimating predicted probabilities from the CAS dataset, we applied these values to HILDA in order to generalise our analysis to the wider wagering population of Australia. With the HILDA dataset we determined the change in number of wagerers in each of the PGSI categories by

multiplying the differences in predicted probabilities by the number of total wagerers in HILDA as follows:

Change in No Risk Gamblers = $\Delta P(\text{No Risk}) \times \text{Total Wagerers}$

Change in Low Risk Gamblers = $\Delta P(\text{Low Risk}) \times \text{Total Wagerers}$

Change in Moderate Risk Gamblers = $\Delta P(\text{Moderate Risk}) \times \text{Total Wagerers}$

Change in High Risk Gamblers = $\Delta P(\text{High Risk}) \times \text{Total Wagerers}$

The Change in No Risk Gamblers, Change in Low Risk Gamblers, Change in Moderate Risk Gamblers and Change in High Risk Gamblers values are used as the basis for all our social-economic benefit calculations. These values represent the increase or decrease in the number of wagerers that fall into a PGSI category after the ban. For example, if Change in High Risk Gamblers = -5000, then there are 5000 less high risk gamblers in the population as a result of the advertising ban. Similarly, if Change in Low Risk Gamblers = 5000, then there are 5000 more low risk gamblers in the population as a result of the advertising ban. Note that this calculation assumes that the total number of wagerers doesn't change after the advertising ban. It only models how individuals may move between no risk, low risk, moderate risk, and high risk PGSI categories as a result of the ban.

In all our social-economic benefit calculations below we calculate the pre-ban cost to financial, health, relationships, psychological, and work domains for individuals in each of the PGSI categories using the H2 Capital, HILDA and NGTS datasets. Then, by applying the changes in numbers in each of the PGSI categories due to the advertising ban, we can estimate the social-economic benefit for each of the harm domains.

Social-economic benefit calculation

One domain that we costed was related to depression and we will work through the costing here to demonstrate our methodology. To apply the changes in numbers in each of the PGSI categories due to the advertising ban, we first needed to estimate the total cost of depression due to wagering. HILDA included the Short-Form Health Survey (SF-36) to assess mental health (RAND Corporation, 2024). The SF-36 can be used to screen for depressive disorders where a threshold of ≤ 40 has a 92.3% sensitivity and 70.2% specificity for detecting depression, correctly classifying 76.3% of patients (Matcham et al, 2016). Using this threshold, we can categorise individuals in the HILDA population into depressed and not depressed, which we use to calculate the prevalence in depression across PGSI categories.

By substituting values related to depression into the general costing equation $Total Cost = A \times B \times C \times D$ (1) we would calculate the following:

Total cost of depression due to wagering =

$$(\text{Total Wagerers} \times \text{Prevalence of depression}) \times \text{Counterfactual discount} \\ \times \text{Value of Statistical Life Year} \times \text{Disability weight}$$

The social economic benefit calculation also uses equation $Total Cost = A \times B \times C \times D$ (1).

For example, for high-risk gamblers the calculation would instead use 'change in high-risk gamblers' instead of 'total wagerers'. Moreover, the prevalence of depression will be for high-risk gamblers instead of total wagerers and this data is contained in HILDA. Therefore, the social economic benefit specific to high-risk gamblers can be calculated as:

Social Economic Benefit High Risk Gamblers =

$$(\text{Change in High Risk Gamblers} \times \text{Prevalence of depression}) \times \text{Counterfactual discount} \\ \times \text{Value of Statistical Life Year} \times \text{Disability weight}$$

The same calculation can then be applied to the no risk, low risk and moderate risk groups. The social economic benefit estimates reflect the increase or decrease in cost attributed to the partial wagering advertisement ban. By calculating the benefit for no-risk, low-risk, moderate-risk and high-risk separately we can quantify the impact the ban has on wagerers within each PGSI group. For example, we can expect moderate-risk and high-risk wagerer groups to show negative dollar values, which represents these categories having a lower number of harmed people after the ban relative to before the ban. On the other hand, non-risk and low-risk groups may show positive dollar values, which represents these categories having a higher number of people after the ban relative to before the ban. Positive dollar values in the non-risk and low-risk categories do not mean that the partial ban is adding to the cost attributable to the non-risk and low-risk wagerers. The increase in the non-risk and low-risk wagerers costs are comprised of the movement of the moderate-risk and high-risk wagerers into these lower-risk groups. These inflows from higher risk categories to lower risk categories have reduced costs relative to before the ban. Once social economic benefit values have been calculated for each PGSI category we can sum across all categories and the result can be interpreted as the net benefit to depression related costs attributed to the partial ban in wagering advertising.

Results

Table 8 summarises the estimated socio-economic costs of wagering to Australia in 2023. The total overall cost was calculated at \$26.7 billion dollars, with 30.6% of the total cost attributed to the high-risk wagerers (\$8.2 billion), 29.8% to moderate-risk wagerers (\$8.0 billion), 15.1% to low-risk wagerers (\$4.0 billion), and 24.6% to non-risk wagerers (\$6.6 billion). Across the harm domains, the largest cost was to health (\$8.2 billion) followed by psychological harm (\$4.9 billion), relationship harm (\$5.6 billion), work harm (\$500 million) and financial harm (\$37.2 million).

Table 8: Total cost of wagering to Australia, by PGSI category, 2023

Cost item	Non-risk wagerers (PGSI = 0)	Low-risk wagerers (PGSI = 1-2)	Moderate-risk wagerers (PGSI = 3-7)	High-risk wagerers (PGSI ≥ 8)	Total wagerers
Estimated 2023 Australian adult population wagerers (last 12 months) (A)	1,008,653	315,191	254,027	103,114	1,680,985
Estimated 2023 Australian adult population regular wagerers (≥ monthly) (B)	187,912	86,331	115,608	78,129	467,980
Direct wagering expenditure					
Yearly wagering expenditure (A)	\$2,461,694,609	\$1,439,315,136	\$2,191,129,976	\$1,394,960,278	\$7,487,100,000
Financial					
Bankruptcy (A)	\$16,860,457	\$6,098,652	\$4,915,186	\$9,282,571	\$37,156,866
Psychological harms					
Depression SF-36 < 40 (A)	\$1,154,771,878	\$392,780,650	\$489,319,579	\$548,439,922	\$2,585,312,029
Anxiety (emotional distress to wagerer) (B)	\$7,320,879	\$44,684,717	\$270,237,696	\$408,745,454	\$730,988,746

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Cost item	Non-risk wagerers (PGSI = 0)	Low-risk wagerers (PGSI = 1-2)	Moderate-risk wagerers (PGSI = 3-7)	High-risk wagerers (PGSI ≥ 8)	Total wagerers
Other psychological costs to wagerers (B)	\$0	\$362,058,697	\$1,140,243,953	\$113,811,935	\$1,616,114,585
Total psychological cost to wagerers	\$1,162,092,757	\$799,524,064	\$1,899,801,228	\$1,070,997,311	\$4,932,415,360
Relationship harm					
Separation (A)	\$492,620,752	\$186,696,474	\$131,824,588	\$135,065,156	\$946,206,969
Emotional costs to affected others (B)	\$21,390,413	\$114,756,400	\$1,355,039,036	\$3,163,837,169	\$4,655,023,018
Total relationship cost to wagerers	\$514,011,165	\$301,452,874	\$1,486,863,624	\$3,298,902,325	\$5,601,229,987
Health harm					
Cost of mild alcohol dependence (B)	\$2,233,196,449	\$1,363,883,636	\$2,021,242,343	\$1,741,831,084	\$7,360,153,512
Expenditure on alcohol around wagering (B)	\$53,103,002	\$38,861,325	\$87,114,184	\$75,047,651	\$254,126,162
Cost of drug use disorder (B)	\$109,715,986	\$57,439,203	\$177,382,736	\$232,330,091	\$576,868,016
Total health cost to wagerers	\$2,396,015,438	\$1,460,184,164	\$2,285,739,262	\$2,049,208,826	\$8,191,147,690
Work harm					
Cost of absenteeism (B)	\$7,797,133	\$16,918,614	\$38,615,552	\$209,057,339	\$272,388,638
Cost of presenteeism (B)	\$12,183,020	\$14,247,254	\$52,466,783	\$146,436,477	\$225,333,533
Total work cost to wagerers	\$19,980,152	\$31,165,868	\$91,082,335	\$355,493,816	\$497,722,171
Total cost of wagering to Australian wagerers	\$6,570,654,577	\$4,037,740,758	\$7,959,531,611	\$8,178,845,128	\$26,746,772,075

Notes: Source NGTS 2023 dataset (monthly wagerers) and HILDA Wave 22 dataset (last 12-month wagerers) projected to the Australian adult population 30 June 2023 (ABS, 2024). (A) refers to cost to the wagering population (i.e., HILDA) and (B) refers to cost to the regular wagering population (i.e., NGTS).

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Cost of wagering to Australia

Direct wagering expenditure

Yearly wagering expenditure

Table 9 summarises the direct yearly wagering expenditure for wagerers in 2023. The H2 Gambling Capital data projected for 2023 provided the total expenditure around wagering and the HILDA dataset provided the proportions of PGSI status. When projected to the Australian population of wagerers the direct yearly wagering totalled to \$7.5 billion in 2023.

Table 9: Direct yearly wagering expenditure by PGSI category, 2023

Variable	Non-risk wagerers (PGSI = 0)	Low-risk wagerers (PGSI = 1-2)	Moderate-risk wagerers (PGSI = 3-7)	High-risk wagerers (PGSI ≥ 8)	Total wagerers
Estimated 2023 Australian adult population wagerers (last 12 months)	1,008,653	315,191	254,027	103,114	1,680,985
% of total yearly wagering expenditure	32.9%	19.2%	29.3%	18.6%	100%
Yearly wagering expenditure	\$2,461,694,609	\$1,439,315,136	\$2,191,129,976	\$1,394,960,278.44	\$7,487,100,000

Cost of excessive wagering expenditure

Of the total \$7.5 billion in wagering expenditure in 2023, it was estimated that \$1.97 billion was attributable to excessive wagering by regular wagerers. Another interpretation is that 26.3% of total wagering expenditure is borne by regular wagerers who are experiencing financial harm, going beyond a purely recreational or entertainment benefit.

Table 10 shows the calculation of excessive wagering expenditure for regular wagerers by PGSI score. Of the total cost of excessive wagering \$1.97 billion in excessive wagering resulting in financial harm, 78.2% is attributable to high-risk wagerers (\$1.5 billion, PGSI ≥8), 21.5% to moderate-risk wagerers (\$423 million, PGSI = 3-7), and 0.3% to low-risk wagerers (\$12.3 million, PGSI = 1-2).

Table 10: Calculation and cost of excessive wagering expenditure by PGSI score, 2023

PGSI score	Estimated number ≥monthly wagerers in Australia (N)	Average wagering spend per person (S)	Average number of financial harms (H)	Discount weight (W)	Aggregate excessive spend (N*S*W)
0	187,912	\$4,430.4	0.0	0.0	\$0
1	64,443	\$4,650.9	0.6	0.4	\$5,816,333
2	22,534	\$3,098.0	1.0	0.7	\$0*
3	36,071	\$8,409.9	1.4	0.5	\$73,512,115
4	35,709	\$5,760.1	1.7	0.7	\$33,533,443
5	16,682	\$38,132.6	2.3	0.4	\$250,919,979
6	15,249	\$10,102.6	2.6	0.7	\$63,384,213
7	11,482	\$4,771.8	3.0	0.5	\$2,071,004
8	15,716	\$8,556.4	3.4	0.6	\$39,018,296
9	13,780	\$10,183.1	4.0	0.4	\$33,630,613

PGSI score	Estimated number ≥monthly wagerers in Australia (N)	Average wagering spend per person (S)	Average number of financial harms (H)	Discount weight (W)	Aggregate excessive spend (N*S*W)
10	4,907	\$31,664.0	4.1	0.9	\$122,259,710
11	3,839	\$10,199.5	4.3	0.8	\$17,387,627
12	6,494	\$98,863.5	4.2	1.1	\$664,651,173
13	3,009	\$6,352.4	4.3	0.9	\$5,105,241
14	6,897	\$74,661.8	4.4	0.9	\$458,344,680
15+	12,824	\$35,618.9	4.9	0.5	\$199,025,879
Total					\$1,968,660,306

Notes: *Aggregate excessive spend for wagerers PGSI score 2 negative value (-\$20,477,426) and treated as \$0 excessive spend.

Financial harms

Bankruptcy

Table 11 shows the cost of bankruptcy due to wagering by PGSI category. We applied the counterfactual discount and the assumption that 5% of “major worsening in financial situations” in HILDA are bankruptcy to the cost of bankruptcy debts for 2023, scaled to the proportion of Australians experiencing bankruptcy due to wagering. The estimated total cost of bankruptcy due to wagering in Australia was \$37.2 million, with 25% of this cost attributable to high-risk wagerers and 13.2% to moderate-risk wagerers.

Table 11: Cost of bankruptcy due to wagering by PGSI category, 2023

Variable	Non-risk wagerers (PGSI = 0)	Low-risk wagerers (PGSI = 1-2)	Moderate-risk wagerers (PGSI = 3-7)	High-risk wagerers (PGSI ≥ 8)	Total wagerers
Estimated 2023 Australian adult population wagerers (last 12 months)	1,008,653	315,191	254,027	103,114	1,680,985
Estimated % who experienced bankruptcy due to wagering (%n)	0.06%	0.06%	0.06%	0.30%	0.06%
Number in Australia who experienced bankruptcy due to wagering (%n x n x 80%)	446	161	130	246	983
Cost of bankruptcy 2023			\$37,782		
Total cost of bankruptcy from wagering for regular wagerers	\$16,860,457	\$6,098,652	\$4,915,186	\$9,282,571	\$37,156,866

Psychological harms

Cost of depression

Table 12 shows the cost of depression by applying the disability weight for mild major depression disorder to the Statistical Value of Life in a Year (VLY) for 2023, scaled to the proportion of Australians experiencing depression due to wagering. The estimated total cost of depression due to wagering in Australia was \$2.6 billion, with 21.2% of this cost attributable to high-risk wagerers and 18.9% to moderate-risk wagerers.

Table 12: Cost of depression due to wagering by PGSI category, 2023

Variable	Non-risk wagerers (PGSI = 0)	Low-risk wagerers (PGSI = 1-2)	Moderate- risk wagerers (PGSI = 3-7)	High-risk wagerers (PGSI ≥ 8)	Total wagerers
Estimated 2023 Australian adult population wagerers (last 12 months)	1,008,653	315,191	254,027	103,114	1,680,985
% who experienced depression due to their wagering (%n)	4.2%	4.6%	7.0%	19.5%	5.6%
Number in Australia who experienced depression due to their wagering (%n x n x 80%)	33788	11492	14317	16047	75644
Statistical Value of Life in a Year (VLY) 2023			\$235,000		
Disability weight (mean) – mild major depression disorder			0.145		
Total cost of depression from wagering for wagerers	\$1,154,771,878	\$392,780,650	\$489,319,579	\$548,439,922	\$2,585,312,029

Cost of anxiety

Table 13 shows the cost of anxiety by applying the disability weight for mild anxiety disorder to the Statistical Value of Life in a Year (VLY) for 2023, scaled to the proportion of Australians experiencing anxiety/stress due to regular wagering. The estimated total cost of anxiety due to regular wagering in Australia was \$731 million, with 55.9% of this cost attributable to high-risk wagerers and 37.0% to moderate-risk wagerers.

Table 13: Cost of anxiety due to regular wagering by PGSI category, 2023

Variable	Non-risk wagerers (PGSI = 0)	Low-risk wagerers (PGSI = 1-2)	Moderate-risk wagerers (PGSI = 3-7)	High-risk wagerers (PGSI ≥ 8)	Total wagerers
Estimated 2023 Australian adult population ≥ monthly wagerers (n)	187,912	86,331	115,608	78,129	467,980
% who experienced anxiety/stress due to their wagering (%n)	0.7%	9.3%	42.0%	94.0%	33.2%
Number in Australia who experienced anxiety/stress due to wagering (%n x n x 80%)	1,052	6,423	38,844	58,753	105,073
Statistical Value of Life in a Year (VLY) 2023			\$235,000		
Disability weight (mean) – mild anxiety disorder			0.0296		
Total cost of anxiety/stress to wagering for regular wagerers	\$7,320,879	\$44,684,717	\$270,237,696	\$408,745,454	\$730,988,746

Cost of other psychological harms

The NGTS 2023 dataset contained other psychological harm items, separate to depression and anxiety. These included survey items around experiencing guilt, regrets, and/or mood swings related to their gambling and/or wagering, an increasing tolerance to gambling, or feeling like they might have a problem with gambling.

Table 14 shows the cost other psychological harms by applying the disability weight by PGSI category to the Statistical Value of Life in a Year (VLY) for 2023, scaled to the proportion of Australians experiencing other psychological harms (minus depression and anxiety) due to regular wagering. As described previously, a dominance analysis with all NGTS 2023 harm domains was conducted to partition out the attributable fraction of other psychological harms to the PGSI disability weights (33.6%). The estimated total cost of other psychological harms due to regular wagering in Australia was \$1.6 billion, with 70.6% of this cost attributable to moderate-risk wagerers and 22.4% to low-risk wagerers.

Table 14: Cost of other psychological harm due to regular wagering by PGSI category, 2023

Variable	Non-risk wagerers (PGSI = 0)	Low-risk wagerers (PGSI = 1-2)	Moderate-risk wagerers (PGSI = 3-7)	High-risk wagerers (PGSI ≥ 8)	Total wagerers
Estimated 2023 Australian adult population ≥ monthly wagerers (n)	187,912	86,331	115,608	78,129	467,980
% experienced other psychological harm, minus depression and anxiety (%n)	2.8%	51.1%	53.8%	5.2%	24.7%
Number in Australia experienced other psychological harm due to wagering (%n x n x 80%)	4,209	35,264	49,785	3,275	92,534
Statistical Value of Life in a Year (VLY) 2023			\$235,000		
Disability weight for PGSI category	0	0.13	0.29	0.44	-
Attributable fraction of disability weight from other psychological harm			33.6%		
Total cost of other psychological harm from wagering for regular wagerers	\$0	\$362,058,697	\$1,140,243,953	\$113,811,935	\$1,616,114,585

Relationship harms

Cost of separation

Table 15 shows the cost of separation by scaling The State of Separation Impact Report 2023 cost of separation to the proportion of Australians who separated due to wagering. The estimated total cost of separation due to wagering in Australia was \$946 million, with 14.3% of this cost attributable to high-risk wagerers and 13.9% to moderate-risk wagerers.

Table 15: Cost of separation due to wagering by PGSI category, 2023

Variable	Non-risk wagerers (PGSI = 0)	Low-risk wagerers (PGSI = 1-2)	Moderate- risk wagerers (PGSI = 3-7)	High-risk wagerers (PGSI ≥ 8)	Total wagerers
Estimated 2023 Australian adult population wagerers (last 12 months)	1,008,653	315,191	254,027	103,114	1,680,985
% who separated due to their wagering (%n)	2.8%	3.4%	3.0%	7.6%	3.2%
Number in Australia who separated due to their wagering (%n x n x 80%)	22855	8662	6116	6266	43899
Cost of separation 2023	\$21,554				
Total cost of separation due to wagering for wagerers	\$492,620,752	\$186,696,474	\$131,824,588	\$135,065,156	\$946,206,969

Cost of emotional distress to affected others

Regular wagerers in the NGTS 2023 were identified as having experienced harm to their relationships if due to their gambling and/or wagering they spent less time with people they cared about, neglected their commitments, had greater conflict in their relationships, experienced relationship problems, had their betting criticised or told they have a gambling problem. Table 16 shows the calculations of emotional distress cost to affected others. The average number of affected others was estimated as ratio of the wagerers: affected others by PGSI status as per Goodwin et al (2017), with the exclusion of non-risk wagers who having reported relationship harm were assumed to affected 0.5 others. The number of affected others was then multiplied by \$9,180 cost per person, a proxy cost for emotional distress for 2023.

The total estimated cost of emotional distress to affected others due to regular wagering in 2023 was \$4.7 billion, with 68.0% of this cost attributable to the relationship harm caused by high-risk wagerers (\$3.2 billion) and 29.1% to moderate-risk wagerers (\$1.3 billion).

Table 16: Cost of emotional distress to affected others due to regular wagering by PGSI category, 2023

Variable	Non-risk wagerers (PGSI = 0)	Low-risk wagerers (PGSI = 1-2)	Moderate-risk wagerers (PGSI = 3-7)	High-risk wagerers (PGSI ≥ 8)	Total wagerers
Estimated 2023 Australian adult population ≥ monthly wagerers (n)	187,912	86,331	115,608	78,129	467,980
% experienced harm to relationships due to their wagering (%n)	3.1%	18.1%	53.2%	91.9%	38.3%
Number in Australia experienced relationship harm due to wagering (%n x n x 80%)	4,660	12,501	49,203	57,441	123,804
Average number of affected others	0.5	1	3	6	-
Estimated number in Australia of affected others due to wagering	2,330	12,501	147,608	344,645	507,083

Variable	Non-risk wagerers (PGSI = 0)	Low-risk wagerers (PGSI = 1-2)	Moderate-risk wagerers (PGSI = 3-7)	High-risk wagerers (PGSI ≥ 8)	Total wagerers
Cost of emotional distress per affected other			\$9,180		
Total cost of emotional distress to affected others due to wagering by regular wagerers	\$21,390,413	\$114,756,400	\$1,355,039,036	\$3,163,837,169	\$4,655,023,018

Health harms

Cost of mild alcohol dependence

Table 17 summarises the cost of mild alcohol dependence related to regular wagering in Australia in 2023. Wagerers were considered to have experienced mild alcohol dependence if they met criteria for hazardous drinking on the AUDIT-C (score ≥ 4 for males and ≥ 3 for females; Bush et al, 1998). Only wagerers who also consumed alcohol around wagering were included in the cost calculation, which applied the disability weight for mild alcohol dependence to the Statistical Value of Life in a Year (VLY) for 2023. The estimated total cost of mild alcohol dependence due to regular wagering in Australia was \$7.4 billion.

Table 17: Cost of mild alcohol dependence around regular wagering by PGSI category, 2023

Variable	Non-risk wagerers (PGSI = 0)	Low-risk wagerers (PGSI = 1-2)	Moderate-risk wagerers (PGSI = 3-7)	High-risk wagerers (PGSI ≥ 8)	Total wagerers
Estimated 2023 Australian adult population ≥ monthly wagerers (n)	187,912	86,331	115,608	78,129	467,980
% consumed alcohol around wagering and met criteria for hazardous drinking – mild alcohol dependence (%n)	26.9%	35.7%	39.5%	50.4%	35.6%
Number in Australia experienced mild alcohol dependence and consumer alcohol around wagering (%n x n x 80%)	40,395	24,670	36,561	31,507	133,132
Statistical Value of Life in a Year (VLY) 2023			\$235,000		
Disability weight (mean) – mild alcohol dependence			0.2353		
Total cost of mild alcohol dependence around wagering to regular wagerers	\$2,233,196,449	\$1,363,883,636	\$2,021,242,343	\$1,741,831,084	\$7,360,153,512

Financial cost of alcohol expenditure

Table 18 summarises the financial cost of alcohol expenditure around wagering for regular wagerers in 2023. The NGTS 2023 dataset provided the average yearly alcohol expenditure around wagering by PGSI status, when projected to the Australian population of wagerers spending money on alcohol consumed around wagering totalled to \$254 million in 2023.

Table 18: Financial cost of alcohol expenditure around regular wagering by PGSI category, 2023

Variable	Non-risk wagerers (PGSI = 0)	Low-risk wagerers (PGSI = 1-2)	Moderate-risk wagerers (PGSI = 3-7)	High-risk wagerers (PGSI ≥ 8)	Total wagerers
Estimated 2023 Australian adult population ≥ monthly wagerers (n)	187,912	86,331	115,608	78,129	467,980
% consumed alcohol around wagering and reported typical alcohol expenditure per session (%n)	19.2%	25.0%	27.6%	29.9%	24.1%
Number in Australia consumed alcohol around wagering reporting typical alcohol expenditure (%n x n x 80%)	28,801	17,289	25,538	18,658	90,286
Average yearly alcohol spend, adjusted for CPI 2023	\$1,844	\$2,248	\$3,411	\$4,022	-
Total financial cost of alcohol expenditure around wagering to regular wagerers	\$53,103,002	\$38,861,325	\$87,114,184	\$75,047,651	\$254,126,162

Cost of illicit drug use

Table 19 shows the cost associated with wagerers impacted by illicit drugs while gambling. A 50% counterfactual was applied to the population prevalence, assuming that only half would be impacted at a level high enough to be decrement to their health. The disability weight for other drug use disorder was applied to the Statistical Value of Life in a Year (VLY) for 2023, scaled to the proportion of regular wagerers in Australian (discounted by 50%) impacted by illicit drugs while gambling. The estimated total cost of illicit drug use to regular wagering in Australia was \$577 million, with 40.3% of this cost attributable to high-risk wagerers and 30.7% to moderate-risk wagerers.

Table 19: Cost of illicit drug use around regular wagering by PGSI category, 2023

Variable	Non-risk wagerers (PGSI = 0)	Low-risk wagerers (PGSI = 1-2)	Moderate-risk wagerers (PGSI = 3-7)	High-risk wagerers (PGSI ≥ 8)	Total wagerers
Estimated 2023 Australian adult population ≥ monthly wagerers (n)	187,912	86,331	115,608	78,129	467,980
% affected by illicit drugs while gambling (%n)	4.3%	4.9%	11.3%	21.9%	10.1%
Number in Australia affected by illicit drugs while wagering (%n x n x 50%)	4,040	2,115	6,532	8,555	21,242
Statistical Value of Life in a Year (VLY) 2023			\$235,000		
Disability weight (mean) – other drug use disorder			0.1156		
Total cost of illicit drug use around wagering for regular wagerers	\$109,715,986	\$57,439,203	\$177,382,736	\$232,330,091	\$576,868,016

Work harms

Cost of absenteeism

Table 20 summarises the cost of absenteeism by PGSI status due to regular wagering in 2023. The prevalence of absenteeism amongst regular wagerers was estimated from the NGTS 2023 dataset figures on reduced work performance (presenteeism) by applying the % difference from prevalence figures report by Li et al (2017, Table 4, page 235) between absenteeism (Absent variable) and reduced work performance (Red.Perf. variable) for each PGSI category. It was assumed that the average estimated days a year absent due to wagering was 15 days. The total estimated cost of absenteeism due to regular wagering in Australia was \$272 million, with 76.7% of the cost attributable to high-risk wagerers (\$209 million).

Table 20: Cost of absenteeism due to regular wagering by PGSI category, 2023

Variable	Non-risk wagerers (PGSI = 0)	Low-risk wagerers (PGSI = 1-2)	Moderate-risk wagerers (PGSI = 3-7)	High-risk wagerers (PGSI ≥ 8)	Total wagerers
Estimated 2023 Australian adult population ≥ monthly wagerers (n)	187,912	86,331	115,608	78,129	467,980
% estimated absent from work due to wagering (%n)	0.4%	1.7%	2.8%	22.7%	4.9%
Number in Australia absent from work due to wagering (%n x n x 80%)	529	1,148	2,621	14,188	18,486
Total cost per absent day			\$982		
Estimated average days a year absent due to wagering			15		
Total cost of absenteeism per year due to wagering			\$14,735		
Total cost of absenteeism due to wagering for regular wagerers	\$7,797,133	\$16,918,614	\$38,615,552	\$209,057,339	\$272,388,638

Cost of presenteeism

Table 21 summarises the cost of reduced work performance (presenteeism) by PGSI status due to regular wagering in 2023. Reduce performance was assumed to be half of a full-time working day (half cost of an absent day), and with an the average estimated presenteeism days a year due to wagering equalling 15 days. The total estimated cost of presenteeism due to regular wagering in Australia was \$225 million, with 65.0% of the cost attributable to high-risk wagerers (\$146 million) and 23.3% to moderate-risk wagerers (\$52 million).

Table 21: Cost of presenteeism due to regular wagering by PGSI category, 2023

Variable	Non-risk wagerers (PGSI = 0)	Low-risk wagerers (PGSI = 1-2)	Moderate-risk wagerers (PGSI = 3-7)	High-risk wagerers (PGSI ≥ 8)	Total wagerers
Estimated 2023 Australian adult population ≥ monthly wagerers (n)	187,912	86,331	115,608	78,129	467,980
% experienced reduced performance at work/study due to wagering (%n)	1.1%	2.8%	7.7%	31.8%	8.2%

Variable	Non-risk wagerers (PGSI = 0)	Low-risk wagerers (PGSI = 1-2)	Moderate-risk wagerers (PGSI = 3-7)	High-risk wagerers (PGSI ≥ 8)	Total wagerers
Number in Australia experienced reduced performance at work/study due to wagering (%n x n x 80%)	1,654	1,934	7,121	19,876	30,585
Total cost per day of presenteeism			\$491		
Estimated average days reduced performance at work due to wagering			15		
Total cost of presenteeism per year due to wagering			\$7,367		
Total cost of presenteeism due to wagering for regular wagerers	\$12,183,020	\$14,247,254	\$52,466,783	\$146,436,477	\$225,333,533

Cost benefit of a wagering advertising ban to Australia

Table 22 provides cost benefit (reduction) estimates for each PGSI category. Overall, the net benefit to wagerers across all cost domains was \$180.2 million. These estimates reflect the cost benefit attributed to the partial wagering advertisement ban and the impact it has on reductions of harmed wagerers within each at-risk PGSI group. The moderate-risk and high-risk wagerer groups show negative values (values in pink), which represents these categories having a lower number of harmed people after the ban in these categories relative to before the ban. Non-risk and low-risk groups show positive values (values in black), which represents these categories having a higher number of people after the ban relative to before the ban.

Table 22: Total cost benefits of a ban on wagering advertising to Australia, by PGSI category, 2023

Cost item	Non-risk wagerers (PGSI = 0)	Low-risk wagerers (PGSI = 1-2)	Moderate-risk wagerers (PGSI = 3-7)	High-risk wagerers (PGSI ≥ 8)	Total wagerers
Post-ban reduction in 2023 Australian adult wagerer population (last 12 months)	5144	656	-807	-4993	-
Post-ban reduction in 2023 Australian adult regular wagerer population (≥ monthly)	1432	183	-225	-1390	-
Direct wagering expenditure					
Yearly wagering expenditure	\$12,553,871	\$2,993,716	-\$6,959,745	-\$67,540,535	-\$58,952,693
Financial					
Bankruptcy	\$85,983	\$12,685	-\$15,612	-\$449,439	-\$366,383
Psychological harms					
Depression SF-36 < 40	\$5,888,975	\$816,967	-\$1,554,239	-\$26,554,108	-\$21,402,405

Cost item	Non-risk wagerers (PGSI = 0)	Low-risk wagerers (PGSI = 1-2)	Moderate-risk wagerers (PGSI = 3-7)	High-risk wagerers (PGSI ≥ 8)	Total wagerers
Anxiety (emotional distress to wagerer)	\$55,790	\$94,468	-\$525,083	-\$7,271,465	-\$7,646,290
Other psychological harm	\$0	\$765,429	-\$2,215,542	-\$2,024,682	-\$3,474,794
Total psychological cost benefit	\$5,944,765	\$1,676,865	-\$4,294,864	-\$35,850,254	-\$32,523,489
Relationship harm					
Separation	\$2,512,211	\$388,321	-\$418,718	-\$6,539,522	-\$4,057,707
Emotional costs to affected others	\$163,010	\$242,607	-\$2,632,898	-\$56,283,758	-\$58,511,039
Total relationship cost benefit	\$2,675,221	\$630,928	-\$3,051,616	-\$62,823,279	-\$62,568,747
Health harm					
Mild alcohol dependence	\$17,018,480	\$2,883,390	-\$3,927,359	-\$30,986,677	-\$15,012,165
Expenditure on alcohol around wagering	\$404,681	\$82,157	-\$169,267	-\$1,335,076	-\$1,017,505
Drug use disorder	\$836,111	\$121,432	-\$344,662	-\$4,133,086	-\$3,520,205
Total health cost benefit	\$18,259,271	\$3,086,980	-\$4,441,287	-\$36,454,839	-\$19,549,875
Work harm					
Absenteeism	\$59,419	\$35,768	-\$75,032	-\$3,719,070	-\$3,698,915
Presenteeism	\$92,843	\$30,120	-\$101,945	-\$2,605,063	-\$2,584,045
Total work cost benefit	\$152,262	\$65,888	-\$176,977	-\$6,324,133	-\$6,282,960
Total cost benefit of wagering advertising ban to Australia	\$39,671,373	\$8,467,061	-\$18,940,101	-\$209,442,479	-\$180,244,147

Notes: Source NGTS 2023 dataset (monthly wagerers) and HILDA Wave 22 dataset (last 12-month wagerers) projected to the Australian adult population 30 June 2023 (ABS, 2024). Black values represent an increase in costs for a specific PGSI category after the wagering advertising ban. Pink values represent a decrease in costs and therefore a social cost benefit.

Discussion

Australians believe there is currently too much gambling advertising. Gambling advertisements increase betting frequency and bet size and foster more positive attitudes towards gambling. This increase in gambling can lead to financial, health, relationship, psychological, cultural, educational, occupational and crime related harm. The recommended ban on gambling advertising (SPLA, 2023), and in a recent survey (AGRC, 2023a), such a ban is supported by more Australians than it is opposed. There is some evidence that reducing gambling advertising will lead to a reduction in gambling spending and associated harm, which may generate a socio-economic benefit to Australian consumers. The aim of this report was to analyse available data to estimate the potential socio-economic benefit of a ban on wagering advertising across a range of harm domains for Australian wagerers.

In total we estimated an annual benefit of \$180.2 million assuming a partial ban in advertising across TV, radio, streaming, online and affiliates. We found that that for individuals who wagered in the past 12-months there would be a socio-economic benefit of approximately \$84.8 million,

which was related to the cost of depression, separation, bankruptcy and direct gambling expenditure. We found that for individuals who wagered at least monthly there would be a socio-economic benefit of approximately \$95.5 million, which was related to the cost of financial, health, relationship, psychological and work-related harm. The 'You Win Some, You Lose More' parliamentary inquiry report provided (SPLA, 2023) a wide range of evidence that supports their recommendation to ban gambling advertising, and the ban aligns with public sentiment. The current report provides further evidence that a gambling advertising ban could mitigate some harmful effects associated with gambling promotion.

Our results are consistent with research showing that wagering advertisements can increase betting frequency and spending by 56-95% (Browne et al., 2019). Under the proposed partial ban, we estimated that on average, wagering activities would be annually reduced by 13.6% (8 days). To our knowledge, all previous social costings of gambling to Australia have focused on the overall cost of gambling and not specific activities (such as wagering) and none have evaluated the impact that implementation of measures to reduce gambling-related harm would have on the cost of gambling (such as a wagering advertising ban).

Limitations

Our estimate is likely lower due several limitations in available data and methodology. We used HILDA, NGTS, CAS, and H2 Gambling Capital data and they all have different populations and sampling methods. This can introduce heterogeneity in the characteristics of the population we are trying to generalise to. For example, the prevalence of gambling in the past 12 months is approximately 35% in the HILDA data set, which is an underestimate of the prevalence of gambling in comparison to a 2019 Australian national gambling prevalence of 56.9% (Hing et al., 2021) and Australian state and territory gambling prevalence studies which range in prevalence from 53.0% in NSW (Browne et al., 2019) to 71.5% in the NT (Stevens, Gupta, & Flack, 2019). In our study, given the proportions in PGSI categories were based on HILDA for all analyses, then we may be underestimating the cost of gambling as well as the socio-economic benefits from an advertising ban. HILDA is thought to be "representative", but there has been only one top-up sample in 2011 since 2001. Considering the attrition over 20 years, the prevalence of any outcomes needs to be treated with caution.

This study only reports the short-term impacts of the proposed partial ban on gambling advertisements, but the proposed partial ban may have long lasting impacts. Moreover, due to the limitations of data, we were unable to estimate social costs of many gambling related harm items: crime (legal costs and job loss), costs of job loss and job change, productivity loss for study (unable to complete a degree for example), emotional costs after separation, suicide, gambling debt prior to bankruptcy, loss of assets, physical health, tobacco use, IPV and domestic violence, and the costs to the health system.

Our report only considered changes in proportion in the PGSI categories. Due to the limitation of data, we did not model inflows and outflows of wagerers due to the ban. We modelled how the advertising ban would change the distribution of individuals across the PGSI categories. Our results are dependent on the validity and reliability of the PGSI scale, both of which have been demonstrated in large samples of participants (Currie et al., 2013). Moreover, it is possible that the advertising ban would affect the total number of wagerers over time, but this was not modelled due to the information contained in the data assets.

Future directions

One way to address the issue of using a representative sample to consistently estimate the social costs of gambling in the future is to conduct an Australian gambling prevalence study with reliable estimates of harm outcomes for wagerers (and gamblers), along with the impact of wagering advertising by medium (e.g., TV, online, etc) and type (e.g., promotion/inducement, product placement, sponsorship etc).

In addition to an Australian gambling prevalence study, access to Wagering Service Provider (WSP) data could generate more accurate and better estimates. The WSP data then should be linked to administrative data so that we could estimate the cost of gambling to the health system, employment, and suicide (via death records).

Beyond our short-term evaluation conducted here, a long-term evaluation needs to be conducted to see the full extent of the socio-economic benefits of the proposed ban. Future work could simulate different scenarios (e.g., the total advertising ban) to investigate how this would affect the socio-economic benefit estimation. For example, in our regression models direct messaging was a significant predictor in gambling participation. Therefore, banning direct messaging would likely lead to a significant reduction in gambling-related harm.

In order to comprehensively estimate social costs of gambling related harms, the following items should be added: crime (legal costs and job loss), costs of job loss and job change, productivity loss for study (unable to complete a degree for example), emotional costs after separation, suicide, gambling debt prior to bankruptcy, loss of assets, physical health, tobacco use, IPV and domestic violence, and the costs to the health system.

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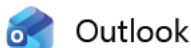
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**RE: Wagering Advertisement Research [SEC=OFFICIAL]**

From s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>
Date Thu 2024-07-18 15:05
To s22(1)(a)(ii) <s22(1)(a)(ii)@INFRASTRUCTURE.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>
Cc s22(1)(a)(ii) <s22(1)(a)(ii)@INFRASTRUCTURE.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@infrastructure.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@infrastructure.gov.au>

📎 2 attachments (3 MB)

Wagering Advertising Research Final Report 18072024.docx; Wagering Advertising Research Final Report 18072024.pdf;

Hi s22(1)(a)(ii),

Thank you so much for your ongoing support on the Wagering Advertisement Research. Please see the attached files for our final report.

Please do not hesitate to contact us if you have any questions.

With best wishes

s22(1)(a)(ii)

s22(1)(a)(ii) | Australian Gambling Research Centre

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Sent: Thursday, July 11, 2024 2:30 PM
To: s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>
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Subject: RE: Wagering Advertisement Research [SEC=OFFICIAL]

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Hi s22(1)(a)(ii)

That's totally fine. Later next week is also fine if you need the extra time.

Regards

s22(1)(a)(ii)

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I recognise and respect their continuing connection to the land, waters and communities.

I pay my respects to Elders past and present and to all Aboriginal and Torres Strait Islanders.

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Sent: Thursday, 11 July 2024 1:59 PM

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Subject: RE: Wagering Advertisement Research [SEC=OFFICIAL]

Hi s22(1)(a)(ii)

I hope you are well.

After updating the figures for a new partial ban, the final report has been under exec review now. We are couple of days behind the schedule and will still have to get a final approval on Monday 15 July.

Is it possible to submit the final report on COB Tuesday 16 July?

This will give us some breathing space to sign off the final draft in our end.

With best wishes

s22(1)(a)(ii)

s22(1)(a)(ii)

s22(1)(a)(ii)

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Subject: RE: Wagering Advertisement Research [SEC=OFFICIAL]

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HI s22(1)(a)(ii)

Thank you for your email.

I will send the new proposed approach (Option A) via secure email via s22(1)(a)(ii) at DSS.

We are happy with your proposed approach below - **update the entire report with Option A, then add in a sub-section briefly outlining the benefits for Options B (previous partial) and C (full ban).**

A full ban would be across every medium except direct messaging (email, SMS) – shaded yellow below. It would also have the same carve out (as per Options A and B) for solely Horse racing mediums, e.g. Racing channels – Sky racing, Racing websites racing.com.au, racetracks, Rosehill Racecourse etc.

We will look to provide you feedback on the interim report. However, apart from the change of Option, we are happy with the approach, methodology and analysis so would be only minimal comments.

Regards

s22(1)(a)(ii)

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Sent: Thursday, 4 July 2024 11:21 AM

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Subject: RE: Wagering Advertisement Research [SEC=OFFICIAL]

Hi s22(1)(a)(ii),

Just following up on our discussion at today's project meeting. To confirm what we discussed:

- DITRDCA is now providing revised wagering advertising reduction figures for TV and radio given to us verbally and to be sent through in a confidential document (lets call this option A)
- We are to revise the report for these revised assumptions for the wagering advertising ban
- Alternative ban options are to be included in the report 1) the previous partial ban provided in the interim report (option B), 2) a full wagering advertising ban (option C)

First, a question for clarification on what a full ban would look like. Would it be 100% ban applied to online, TV, radio, and betting affiliates? Or would it extend to 100% to all wagering advertising mediums we have data for:

- television
- streamed content (e.g., Kayo, SBS on Demand) – NOTE: included in online
- radio
- print media (e.g., newspapers, magazines)
- outdoor signage (e.g., stadiums, billboards)
- team / player uniforms or merchandise
- social media (e.g., Facebook) – NOTE: included in online
- online (e.g., news websites, YouTube, podcasts)
- direct messages (e.g., email, SMS)
- betting affiliates (i.e., through paid third-party publishers / bloggers / tipsters)

Second, our team had a discussion about the amount of work it would take to cost and write-up Options A and C. The minimal approach which wouldn't add too much time and would mean we still meet our deadlines is to update the entire report with Option A, then add in a sub-section briefly outlining the alternative benefits for Options B and C. If you would prefer that Options B and C be discussed throughout the report (executive summary, methodology, results, discussion) that is additional work that goes beyond the project scope and requires some discussion.

Lastly, when do you think you would get us feedback on the interim report? We have an internal deadline of 10 July to get a final report draft to our executive for review, so would ideally need feedback and a response to the above requirements as soon as possible.

Look forward to hearing from you.

Kind regards,

s22(1)(a)(ii)

s22(1)(a)(ii)

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Pronouns: s22(1)(a)(ii)

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Subject: RE: Wagering Advertisement Research [SEC=OFFICIAL]

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Thanks s22(1)(a) See you on Monday.

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Sent: Thursday, 20 June 2024 9:41 AM

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Subject: RE: Wagering Advertisement Research [SEC=OFFICIAL]

Hi s22(1)(a)(ii)

It's all good. See you next week then!

s22(1)

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Subject: RE: Wagering Advertisement Research [SEC=OFFICIAL]

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Hi s22(1)

I just tried to call you.

As we have the interim presentation on Monday, we may not need to meet this morning. But happy to do so if you have anything to discuss from your end.

Regards

s22(1)(a)(ii)

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To: s22(1)(a)(ii) <s22(1)(a)(ii) aifs.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii) aifs.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii) aifs.gov.au>
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Subject: RE: Wagering Advertisement Research [SEC=OFFICIAL]

OFFICIAL

Hi s22(1)(a)(ii)

10am Monday is good for the interim presentation.

Regards
s22(1)(a)(ii)

s22(1)(a)(ii)

Director • Broadcasting and Gambling Regulation Section / Media Industry and Sustainability Branch • Online Safety, Media and Platforms Division

s22(1)(a)(ii) infrastructure.gov.au

P s22(1)(a)(ii) M s22(1)(a)(ii)

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From: s22(1)(a)(ii) <s22(1)(a)(ii) aifs.gov.au>
Sent: Monday, 17 June 2024 9:09 AM
To: s22(1)(a)(ii) <s22(1)(a)(ii) INFRASTRUCTURE.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii) aifs.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii) aifs.gov.au>
Cc: s22(1)(a)(ii) <s22(1)(a)(ii) INFRASTRUCTURE.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii) infrastructure.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii) infrastructure.gov.au>
Subject: RE: Wagering Advertisement Research [SEC=OFFICIAL]

Hi s22(1)(a)(ii)

I hope you all had a nice weekend.

Re Interim presentation Could you please let us know your availability on Monday 24 June?
How about 10am-11am? If this time doesn't suit you, we are flexible and can do other time on Monday.

With best wishes

s22(1)(a)(ii)

s22(1)(a)(ii)

s22(1)(a)(ii) | Australian Gambling Research Centre

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Level 4, 40 City Road, Southbank VIC 3006, Australia

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From: s22(1)(a)(ii) <s22(1)(a)(ii)@INFRASTRUCTURE.gov.au>

Sent: Fr day, June 14, 2024 9:33 AM

To: s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>

Cc: s22(1)(a)(ii) <s22(1)(a)(ii)@INFRASTRUCTURE.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@infrastructure.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@infrastructure.gov.au>

Subject: RE: Wagering Advertisement Research [SEC=OFFICIAL]

OFFICIAL

Great to hear its going well. No doubt you will all be able to relax a bit later today!

Thanks for sending the research to us. Will take a look.

Regards

s22(1)(a)(ii)

s22(1)(a)(ii)

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Sent: Friday, 14 June 2024 9:01 AM
To: s22(1)(a)(ii) <s22(1)(a)(ii)@infrastructure.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>;
s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>
Cc: s22(1)(a)(ii) <s22(1)(a)(ii)@infrastructure.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@infrastructure.gov.au>;
s22(1)(a)(ii) <s22(1)(a)(ii)@infrastructure.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@infrastructure.gov.au>
Subject: RE: Wagering Advertisement Research [SEC=OFFICIAL]

Hi s22(1)(a)(ii)

Thank you for your message and the update on the reforms.
The conference is going well. You may be already aware of this research, but please see below. This may be of your interests.

With best wishes

s22(1)(a)(ii)

s22(1)(a)(ii)

Families, Relationships and Parenting

Preventing online harms against children and young people: learning from the evidence

Thu, June 13
Meeting Room 102
MCEC
Symposium

Part of:
6.2 Child wellbeing online

Info

Chair / Facilitator:

s22(1)(a)(ii) - eSafety Commissioner (s22(1)(a)(ii)@esafety.gov.au)

Streams:

Family relationships & Parenting

Overview/description of Symposium:

Online access and activity are becoming increasingly ubiquitous amongst Australian children and young people in the digital age. Furthermore, the right of all children to have adequate, equitable and safe online access has been recognised, ensuring they can benefit from the opportunities provided in online environments. However, as online access increases, so too are the threats children face online.

The eSafety Commissioner (eSafety) is committed to reducing the risk, extent and impact of online harms on children and young people by increasing Australian parents'/carers' knowledge and skills to prevent, moderate, and respond to risks online.

This symposium will explore recent research into effective strategies for the prevention of online violence against children and young people. Professor Kerryann Walsh (QUT) will share highlights from a recent global review into effective prevention which signals how funds can be best invested to improve prevention efforts.

Digital parenting needs to evolve as children grow so that young people are well prepared to prevent and respond safely to harmful online content. Parents and carers have an important role to play in children's online lives and evidence shows that their awareness and digital involvement has increased since 2016. But there are still some significant gaps.

In this symposium, WhereTo Research will unpack key findings from eSafety's market research with culturally and linguistically diverse families. This research conducted in 2022 investigated families' attitudes towards technology, their awareness of online harms including child sexual abuse, and how best to engage with CALD families on this sensitive topic.

Finally in this symposium, eSafety will share findings from the evidence base underpinning the Families Capacity Building project including effective approaches to family-focused online child sexual abuse prevention. eSafety will present new foundational guidance for developmentally-appropriate conversations with children and young people about sex and relationships in the digital environment.

This symposium will raise awareness of effective family-focused online harm prevention approaches, particularly those that address online child sexual abuse. Attendees will also build knowledge about engaging with CALD families on this sensitive topic.

Authors

s22(1)(a)(ii)

Senior Education Advisor
eSafety Commissioner

Kerryann Walsh
Queensland University of Technology

Penny Burke
Where to Research

Catherine Boekel
Where to Research

s22(1)(a)(ii)
s22(1)(a)(ii) | Australian Gambling Research Centre

Australian Institute of Family Studies

Level 4, 40 City Road, Southbank VIC 3006, Australia

Tel: s22(1)(a)(ii)

Web: aifs.gov.au



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Sent: Thursday, June 13, 2024 10:29 AM
To: s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>
Cc: s22(1)(a)(ii) <s22(1)(a)(ii)@INFRASTRUCTURE.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@infrastructure.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@infrastructure.gov.au>
Subject: RE: Wagering Advertisement Research [SEC=OFFICIAL]

OFFICIAL

Hi s22(1)(a)(ii)

Thank you for sending over your preliminary findings. We will review and come back to you with any queries.

Happy to move the interim presentation to 24 June. Our Minister's Office informed us yesterday that consideration of the reforms will more than likely not occur on 25 June. Next date is mid-July.

Hope the conference is going very well and look forward to talking to you all soon.

Regards
s22(1)(a)(ii)

s22(1)(a)(ii)

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Sent: Tuesday, 11 June 2024 3:21 PM

To: s22(1)(a)(ii) <s22(1)(a)(ii)@INFRASTRUCTURE.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>;

s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>

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Subject: RE: Wagering Advertisement Research [SEC=OFFICIAL]

Hi s22(1)(a)(ii)

I hope you all had a great long weekend.

Please see the attached file for an overview of our preliminary findings. If you have any questions, please let us know.

Now we have submitted an overview of the preliminary findings, is it possible to do the scheduled **interim presentation on 24 June instead of 17 June?**

As we will be attending the AIFS conference for the next three days, we won't be adding any findings to what we currently have in this overview.

Of course, if you need clarifications for our methods and findings, we are more than happy to respond as soon as and as best as we can.

With best wishes

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Sent: Wednesday, May 22, 2024 1:59 PM
To: s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>
Cc: s22(1)(a)(ii) <s22(1)(a)(ii)@INFRASTRUCTURE.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@infrastructure.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@infrastructure.gov.au>
Subject: RE: Wagering Advertisement Research [SEC=OFFICIAL]

OFFICIAL

Hi s22(1)(a)(ii)

No worries. Sounds like a good idea.

See you all tomorrow.

Regards

s22(1)(a)(ii)

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From: s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>
Sent: Wednesday, 22 May 2024 1:51 PM
To: s22(1)(a)(ii) <s22(1)(a)(ii)@INFRASTRUCTURE.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>
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Subject: RE: Wagering Advertisement Research [SEC=OFFICIAL]

Hi s22(1)(a)(ii)

We look forward to catching up with you tomorrow.

s22(1)(a)(ii) will be also joining us tomorrow.

AIFS is appearing on the Senate Estimates on 4th June and she needs some clarification on how much we can discuss about this project if the related questions are raised.

With best wishes

s22(1)(a)(ii)

s22(1)(a)(ii)

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Sent: Thursday, May 16, 2024 12:21 PM

To: s22(1)(a)(ii) <s22(1)(a)(ii) aifs.gov.au>

Cc: s22(1)(a)(ii) <s22(1)(a)(ii) INFRASTRUCTURE.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii) infrastructure.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii) infrastructure.gov.au>

Subject: RE: Wagering Advertisement Research [SEC=OFFICIAL]

OFFICIAL

Yes, that's good s22(1)

OFFICIAL

From: s22(1)(a)(ii) <s22(1)(a)(ii) aifs.gov.au>

Sent: Thursday, 16 May 2024 12:16 PM

To: s22(1)(a)(ii) <s22(1)(a)(ii) INFRASTRUCTURE.gov.au>

Cc: s22(1)(a)(ii) <s22(1)(a)(ii) INFRASTRUCTURE.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii) infrastructure.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii) infrastructure.gov.au>

Subject: RE: Wagering Advertisement Research [SEC=OFFICIAL]

Hi s22(1)(a)(ii)

Of course. Does 4:30pm this afternoon work for you?

With best wishes

s22(1)

s22(1)(a)(ii)

s22(1)(a)(ii)

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Sent: Thursday, May 16, 2024 11:59 AM
To: s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>
Cc: s22(1)(a)(ii) <s22(1)(a)(ii)@[INFRASTRUCTURE.gov.au](https://infrastructure.gov.au)>; s22(1)(a)(ii) <s22(1)(a)(ii)@infrastructure.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@infrastructure.gov.au>
Subject: RE: Wagering Advertisement Research [SEC=OFFICIAL]

OFFICIAL

Hi s22(1)(a)(ii)

No worries. In hindsight, we should have confirmed as well so all good.

Yes, please send an invite for a fortnightly occurring meeting starting next Thursday at 10am. Please include my team members copied in.

If possible, I wouldn't mind a quick phone call with you later this afternoon if you're available

Regards

s22(1)(a)(ii)

s22(1)(a)(ii)

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Sent: Thursday, 16 May 2024 10:53 AM
To: s22(1)(a)(ii) <s22(1)(a)(ii)@INFRASTRUCTURE.gov.au>
Subject: RE: Wagering Advertisement Research [SEC=OFFICIAL]

s22(1)(a)(ii)

Sorry about the delayed reply. I've just come out of another meeting.

I am terribly sorry about not informing you properly. There's no meeting this week, but would you be available next week Thursday morning 10am?
We will send you an invite.

s22(1)

s22(1)(a)(ii)
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Sent: Thursday, May 16, 2024 10:04 AM
To: s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>
Subject: RE: Wagering Advertisement Research [SEC=OFFICIAL]

OFFICIAL

Hi s22(1)

Are we meeting now?

Regards
s22(1)(a)(ii)

OFFICIAL

From: s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>
Sent: Friday, 10 May 2024 9:34 AM
To: s22(1)(a)(ii) <s22(1)(a)(ii)@INFRASTRUCTURE.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@infrastructure.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@infrastructure.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@INFRASTRUCTURE.gov.au>
Cc: s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>; s22(1)(a)(ii) <s22(1)(a)(ii)@aifs.gov.au>
Subject: Wagering Advertisement Research [SEC=OFFICIAL]

Hi s22(1)(a)(ii)

As we discussed last week, we have scoped what outcome measures should be included in consumer benefits of banning wagering advertisements.

We have conducted some data analyses for HILDA and NGTS to explore what is feasible. The analyses of HILDA at this stage revealed that some outcome variables worked, but others didn't. We have narrowed down to the followings:

- Financial cost (direct savings. We have discussed in our previous meeting)
- Productivity (employment)
- Psychological health
- Physical health (e.g. sleep)
- Relationship

It's worth noting that these were the main domains from [The social cost of gambling to Victoria \(responsiblegambling.vic.gov.au\)](https://www.responsiblegambling.vic.gov.au/).

We will continue to analyse the data and update you which domain is working well in estimating HILDA and NGTS. For example, we are still investigating if possible to monetise items such as legal problems and AOD while gambling. Where necessary, we will propose alternative approaches to measure the consumer benefits.

I hope our Finance has sent you the first invoice. I am terribly sorry about the delay. If there's any other issues, please let us know.

s22(1)(a)(ii)

s22(1)(a)(ii)
 s22(1)(a)(ii) | Australian Gambling Research Centre

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Wagering Advertising Research

Socio-economic benefits of a ban on wagering advertising in Australia

s22(1)(a)(ii), s22(1)(a)(ii), s22(1)(a)(ii) and s22(1)(a)(ii)

Australian Gambling Research Centre, Australia Institute of Family Studies

Final Report

18 July 2024



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Key terms

Acronym	Description
ABS	Australian Bureau of Statistics
ACMA	Australian Communications and Media Authority
AGRC	Australian Gambling Research Centre
AIFS	Australian Institute of Family Studies
AANA	Australian Association of National Advertisers
AUDIT-C	Alcohol Use Disorders Identification Test
BoD	Burden of Disease
CAS	Community Attitudes Study
CPI	Consumer Price Index
DITRDCA	Department of Infrastructure, Transport, Regional Development, Communications and the Arts
DSM	Diagnostic and Statistical Manual of Mental Disorders
DSS	Department of Social Services
DW	Disability Weight
EMA	Ecological Momentary Assessment
GBD	Global Burden of Disease
GRA	Gambling Research Australia
HILDA	The Household, Income and Labour Dynamics in Australia
IPV	Intimate Partner Violence
NGTS	National Gambling Trends Study
PC	Productivity Commission
PGSI	Problem Gambling Severity Index
SF-36	36-Item Short Form Survey
SGHS	Short Gambling Harms Screen
SPLA	Social Policy and Legal Affairs
TV	Television
VCEC	Victorian Competition and Efficiency Commission
VLV	Statistical Value of Life in a Year
WSP	Wagering Service Provider

Glossary

Term	Description
Advertising	'A paid, mediated form of communication from an identifiable source, designed to persuade the receiver to take some action, either now or in the future' (Richards & Curran, 2002, p 74)
Affected others	Affected others relates to individuals who experience gambling-related harm as a result of another person who gambles. An affected other could be, but is not limited to, a partner, family member, friend, colleague or an individual who themselves gambles.
DSM	The <i>Diagnostic and Statistical Manual of Mental Disorders</i> (DSM) is a reference handbook that outlines, describes and helps define mental and brain related conditions. It is published by the American Psychiatric Association (APA) and is the primary system used in Australia to identify mental health conditions. The DSM-V (most recent version) includes gambling disorder as a substance-related and addictive disorder.
Gambling	Gambling requires a player to risk losing something of value (usually money) for the chance of winning more. Gambling outcomes may depend on correctly predicting an uncertain outcome (such as a particular horse coming first in a race) or luck (such as a winning combination of symbols on a poker machine).
Gambling-related harm	Adverse consequences that occur as a result of someone's gambling. Gambling-related harm can be divided into key areas: financial harm, relationship disruption, emotional or psychological distress, decrements to health, cultural harm, reduced work or study performance and criminal activity. These harms can further be considered as general harms, which occur at any time, crisis harms, which are associated with attempts to seek help, and legacy harms, which occur long after gambling has ceased. Gambling-related harm can be experienced by the gambler and others close to them (affected others).
High-risk gambling	Terminology applied to 'problem gambling', as measured by the PGSI. The use of the term 'high-risk' is less stigmatising than the use of 'problem' and focuses on a public health approach, moving away from a clinical definition.
Inducement	Gambling inducements are marketing offers that intend to attract new gambling customers or encourage existing customers to continue gambling (Hing et al., 2018). This could include, but are not limited to, methods such as bonus and multi-bets, rewards programs or direct messaging to consumers (Hing et al., 2018).
Low-risk gambling	Low-risk gambling is characterised by the experience of a low level of harm with few or no identified negative consequences. Low-risk gamblers have scores of one or two on the PGSI.
Marketing	'Marketing is the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large' (American Marketing Association, 2017). Advertisements and inducements are considered to be components of marketing (Hing et al., 2018).

Term	Description
Moderate-risk gambling	Moderate-risk gambling is characterised by the experience of a moderate level of harm from gambling, with some negative consequences, such as spending more than you can afford, losing track of time or feeling guilty about your gambling. Moderate-risk gamblers have scores of 3 to 7 on the PGSI.
Non-problem gambling	Non-problem gambling is characterised by the experience of no negative consequences from gambling. Non-problem gamblers have a score of zero. Also labelled 'non-risk gambling'.
Non-risk gambling	Terminology applied to 'non-problem gambling', as measured by the PGSI. The use of the term 'non-risk' is less stigmatising than the use of 'non-problem' and focuses on a public health approach, moving away from a clinical definition.
Problem gambling	Problem gambling is characterised by difficulties in limiting money and/or time on gambling, which leads to adverse consequences for the person gambling and often others in the community. Problem gamblers have scores of 8 or more on the PGSI. In this report problem gambling has been labelled as 'high-risk gambling'. 'Problem gambling' is also language used for the DSM-V criteria for a gambling disorder and which entails clinical treatment or interventions targeting an individual's gambling behaviour. This may also be called a 'gambling problem'.

~~Problem Gambling – The PGSI is a Canadian screening tool for use in community~~

~~Screening Tool (PGSI) – adapted from (Fergusson & Winters, 2004). It has been adapted for use in~~

Executive summary

This document outlines the findings of the socio-economic benefits of a partial ban on wagering advertising in Australia for 2023. The research was conducted by the Australian Gambling Research Centre (AGRC) and commissioned by the Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA or 'the Department').

Background

Wagering refers to gambling money on racing and sporting events of which the outcome is uncertain (Australasian Gaming Council, 2021). Although wagering is a common form of entertainment for Australians, as with other gambling activities, it can have severe and lasting socio-economic impacts on individuals and their families.

Wagering advertising in Australia is commonplace, with research finding high levels of exposure to wagering advertising found among children and adults, especially in the context of sports (AGRC, 2023b; Pitt et al., 2016; Sproston et al., 2015). This exposure to wagering advertising acts to normalise gambling and is associated with high levels of wagering and gambling-related harm (Hing et al., 2018).

These negative impacts are at the core of ongoing debate and policy consideration surrounding the role that wagering advertising has in increasing gambling-related harms associated with wagering to wagerers, affected others and the broader community. Given the evidence, it is reasonable to assume that reducing wagering advertising will lead to a reduction in wagering spending and harm, which may generate a socio-economic benefit for Australia.

In 2023 the House of Representatives Standing Committee on Social Policy and Legal Affairs (SPLA or 'the Committee') conducted the *You Win Some, You Lose More* parliamentary inquiry on online gambling harm. The inquiry recommended that the Australian Government, with the cooperation of the states and territories, implement a comprehensive ban on all forms of advertising for online gambling, excluding lotteries (SPLA, 2023). Since lotteries and wagering are the forms of online gambling that are legal for operators to provide to Australians, the recommendations for a 'gambling' advertising ban only applied to wagering advertising.

The recommended wagering advertising ban would be introduced in 4 phases over 3 years. By the end of year 3, there would be a prohibition on all online wagering advertising and sponsorship.

Purpose of this research

The Department engaged the AGRC to analyse available data to estimate the potential socio-economic benefit of a partial ban on wagering advertising in Australia for 2023, which included benefits to wagerers, affected others, the community and government.

The scope of this proposed partial ban on wagering advertising by DITRDCA is broadly in line with elements of the Committee's recommendations under Phases 1 and 2, and specifically included:

- banning wagering advertising during live sports and 60 minutes on either side of the sports broadcast on television and radio
- banning wagering advertising during children's television programming

- limiting the frequency of wagering advertising on television and radio to no more than 2 advertisements per channel, per hour (between 6 am and 10 pm)
- banning wagering advertising on online platforms at all times, including social media, websites and apps.

Exclusions applied to wagering advertising on dedicated racing channels.

Based on the above, the parameters provided by DITRDCA for estimating the socio-economic benefits on wagering advertising were:

- complete ban (100% reduction) on online advertisements, including social media
- 28% reduction in TV advertisements, including streaming
- 25% reduction in radio advertisements
- 80% reduction in advertisements through betting affiliates.

Alternative scenario benefit estimates requested by DITRDCA were provided for (a) a greater reduction of 49% in TV and streaming wagering advertising, and (b) a complete ban on the majority of wagering advertising (excluding direct messages).

Methodology

The total cost of wagering in Australia was estimated first, to derive the benefit of this partial wagering advertising ban.¹

It is important to note that in this report the costs of wagering mean **the costs of wagering loss and monetised value of wagering harms**. The term does **not** mean the costs of providing wagering services.

Outlined below are the steps that were taken to estimate the socio-economic costs of wagering in Australia (steps 1 to 2) and the benefits (cost savings) due to the proposed wagering advertising ban (steps 3 to 5).

Estimate the socio-economic costs of wagering in Australia		Estimate the benefits/cost savings		
1. Estimate how many wagerers are categorised in non-risk, low-risk, moderate-risk and high-risk gambling in Australia (4PGSI	2. Estimate the total cost of wagering in Australia.	3. Estimate how many days wagering per year the proposed wagering advertising ban can reduce in each	4. Estimate how much the reduction in days wagering per year in each PGSI category	5. Calculate net cost savings (benefit) from all four PGSI categories.

Costs were estimated for 12 wagering items in 6 domains:

1. Direct wagering expenditure (loss)
2. Financial (bankruptcy – administration cost, unpaid debts)
3. Psychological (depression, anxiety, other psychological harm)
4. Relationships (financial cost of separation, emotional cost to affected others)
5. Health (mild alcohol dependence, expenditure on alcohol around wagering, drug use disorder)
6. Work (absenteeism, reduced work performance).

Costs borne by wagerers themselves were direct wagering expenditure (loss), as well as health and psychological harms. Costs borne by affected others (i.e. family, friends, others close to the wagerer) were represented by the unpaid debts of bankruptcy and relationship harms resulting in emotional distress.

Governments are responsible for administering bankruptcies and some financial costs associated with separation. The costs to community were associated with unpaid debt (i.e. to businesses), financial cost of separation, and the cost of work absenteeism and reduced performance by wagerers to their employers.

The costs associated with wagering harm were disaggregated in to 4 at-risk gambling categories as measured by the Problem Gambling Severity Index (PGSI; Ferris & Wynne, 2001): non-risk, low-risk, moderate-risk and high-risk (problem) gambling.

The following methodological approaches were applied to sourcing data and data analysis.

- The main sources of data used to estimate the cost of wagering in Australia were:
 - Australian adult population prevalence of wagering (in the last 12 months) overall and by Problem Gambling Severity Index (PGSI) status: Household, Income and Labour Dynamics in Australia (HILDA) Survey: Wave 22 (2022) adjusted to the Australian Bureau of Statistics (ABS) 2023 population (1,680,985 adult wagerers)
 - Australian adult population prevalence of regular wagering (at least monthly in last 12 months) overall and by PGSI status: National Gambling Trends Study (NGTS) 2023 dataset of regular (at least monthly) wagerers adjusted to the 2023 population (467,980 adult regular wagerers)
 - prevalence of costed harm items due to last 12-month wagering (HILDA Wave 22) and regular wagering (NGTS 2023) by PGSI status
 - total wagering expenditure (loss) for 2023, sourced from the H2 Gambling Capital dataset, and proportions of spend per PGSI category, based on HILDA W22 data.
- Costs apply to the 2023 year. Where prices from previous years were only available, CPI was used to adjust costs to June 2023 (ABS, 2024).
- Appropriate counterfactual and double counting adjustments were made in the estimations.
- The basic approach to costing each item was: prevalence of item to wagering population (A) x 80% counterfactual adjustment (B) x cost of item per person (C) x disability weight (D – psychological and health items only)
- The benefit of a partial ban (reduction) in wagering advertising in Australia was calculated using the Community Attitudes Study (CAS, 2022) data by estimating the impact of the number of days exposed to wagering advertising per year on the number of days wagering per year. The number of days exposed to wagering advertising was then reduced by the proposed partial wagering advertising ban in order to estimate how the reduction would change PGSI categorisation in the wagerer and regular wagerer population.

Findings

The estimated total cost of wagering in Australia for 2023 was \$26.7 billion. Under the proposed partial wagering advertising ban it was estimated that wagering would be reduced annually by an average of 5 days (8.7%) per person. When applied to the total cost, the partial ban on wagering advertisement proposed by DITRDCA would generate an estimated annual \$117.6 million of socio-economic benefits.

Overall, one-third of the benefit of this proposed wagering advertising ban was the emotional cost due to relationship harm to affected others (33.2%), followed by direct wagering expenditure (loss) to wagerers (32.4%), the cost of depression to wagerers (12.2%), and the cost of mild alcohol dependence to wagerers (8.1%).

Alternative scenario benefit estimates provided by a greater reduction of 49% in TV and streaming wagering advertising resulted in an increased benefit of \$182.2 million. A complete ban on the majority of wagering advertising (excluding direct messages) had an estimated benefit of \$332.1 million.

Conclusions

This report provides evidence that the proposed reduction in wagering advertising by DITRDCA could mitigate some harmful effects associated with wagering and generate a socio-economic benefit in Australia. Furthermore, this report provides evidence that further reductions in wagering advertising generate larger decreases in wagering, wagering spend and harm, and an increase in socio-economic benefits.

The findings suggest this proposed reduction in wagering could inform part of a phased approach by the Australian Government, in collaboration with the states and territories, which eventually may lead to a ban on all wagering advertising in Australia. The extent to which the proposed reduction in wagering advertising is sufficient to mitigate harmful effects should be subject to monitoring and evaluation, including (based on international experience) monitoring of the wagering industry's strategies to navigate the ban (e.g. increase in direct messaging) to inform need for further adjustments of the phased approach.

Limitations

The estimates in this report are likely to be an underestimate of socio-economic benefits due to limitations in available data and methodology. These limitations include:

- The data sources used for this analysis (HILDA, NGTS, CAS and H2 Gambling Capital data) all have different populations and sampling methods, which introduces a lack of consistency.
- The prevalence of gambling and gambling harms in the HILDA data may be an underestimate compared to other prevalence studies – for example, the prevalence of wagering in HILDA is 8%, whereas a 2019 national gambling prevalence study with a sample of 15,000 Australian adults representative of the population found the prevalence of race betting to be 16.8% and sports betting 9.6% (Hing et al., 2021).
- Given estimates of the cost of wagering and the socio-economic benefits from a wagering advertising ban were estimated to the prevalence figures from HILDA, both are likely underestimates.
- Due to limitations of the data, several socio-economic costs related to harm associated with wagering (and therefore benefits due to a wagering advertising ban) were unable to be

estimated. These include crime (legal costs, cost to business), costs of job loss and job change, productivity loss for study (unable to complete a degree for example), emotional costs after separation, suicide (ideation, attempt, completion), debt prior to bankruptcy, loss of assets, physical health (e.g. loss of sleep), tobacco use, IPV and domestic violence, the cost to the health system, and the cost to governments at all levels (e.g. justice system).

- Due to data limitations, costs and benefits associated with those who started or stopped wagering due to the ban were not estimated.
- This study only estimated the short-term impacts of a partial wagering advertising ban.
- The proposed plan ruled out restricting wagering advertising through direct messaging, which the researchers found was a significant and strong predictor in wagering participation.

Future directions

Based on the findings, this report recommends:

- The government should consider a total ban on wagering advertising in Australia.
- Future work could simulate a scenario where direct messaging is also including in the wagering advertising ban as banning wagering advertising through direct messages would be more likely to significantly reduce harm associated with wagering.
- DITRDCA and/or the Department of Social Services commission an Australian gambling prevalence study, in order to gain accurate prevalence estimates of wagering; the impact of exposure to wagering advertising; and a wider range of harms associated with wagering.
- The Department of Social Services facilitates access to and linkage of Wagering Service Provider (WSP) data to administrative data so that estimates can be calculated for costs to the health system, employment, government and suicide (via death records).
- DITRDCA commissions a long-term evaluation of the impact of a wagering advertising ban.

Background

The current wagering advertising climate

Wagering refers to gambling money on racing and sporting events of which the outcome is uncertain (Australasian Gaming Council, 2021). Although wagering is a common form of entertainment for Australians – as with other gambling activities, it can have severe and lasting socio-economic impacts on individuals and their families.

Wagering advertising in Australia is commonplace, with research finding high levels of exposure to wagering advertising found among children and adults, especially in the context of sports (AGRC, 2023b; Sproston et al., 2015; Pitt et al., 2016). This exposure to wagering advertising acts to normalise gambling and is associated with high levels of wagering and gambling-related harm (Hing et al., 2018).

These negative impacts are at the core of ongoing debate and policy consideration surrounding the role that wagering advertising has in increasing gambling-related harm associated with wagering to wagerers, affected others and the broader community. Given the evidence, it is reasonable to assume that reduced wagering advertising will lead to a reduction in wagering spending and harm, which may generate a socio-economic benefit for Australia.

Measuring gambling-related harm

Gambling-related harm is commonly assessed via the Problem Gambling Severity Index (PGSI). The PGSI provides a measure of at-risk gambling behaviour during the previous 12-month period.

It consists of 9 items (questions), such as ‘have you bet more than you could really afford to lose?’, with response options being never (0), sometimes (1), most of the time (2) and almost always (3).

Scores are summed for a total between 0 and 27.

Respondents are grouped into 4 categories based on their scores:

- non-risk (‘non-problem’) gambling (0)
- low-risk gambling (1–2)
- moderate-risk gambling (3–7)
- high-risk (‘problem’) gambling (8–27).

Respondents scoring 1+ may be classified as being at some risk of, or already experiencing, gambling-related harm.

Source: Ferris & Wynne, 2001. See Appendix A for the full PGSI instrument.

The Australian Association of National Advertisers (AANA, 2024) considers wagering advertising to be any material that is published or broadcast, using any medium, related to a wagering product or service provided by a licensed operator that offers betting on horse races, harness races, greyhound races, sporting events, novelty events, fantasy sport teams, odds compilation, tipping services and/or other contingencies.

The number of wagering advertisements shown per year is not currently publicly available; however, between 1 May 2022 and 30 April 2023, the Australian Communications and Media Authority (ACMA) found that over 502,800 gambling advertisements aired on free-to-air TV and metro radio from gambling providers offering online gambling services (ACMA, 2023), which are primarily wagering products.

Gambling marketing is broader than television and radio, and includes pop-ups on websites, inducements, celebrity brand ambassadors, direct and third-party email and messages, loyalty programs, sponsorship and promotions. ACMA's analysis of Nielsen Ad Intel data revealed that \$238.6 million was spent on gambling advertising on free-to-air TV, metro radio and online between May 2022 and April 2023. This figure was estimated to be \$89.7 million in 2011 by the Victorian Responsible Gambling Foundation (Hetherington & Phillips, 2023), which represents a 266% increase.

Recent research by the Australian Gambling Research Centre (AGRC) highlighted the extent to which Australians are exposed to wagering advertising and the negative community attitudes towards wagering advertising (AGRC, 2023a; 2023b). In a representative sample of 1,765 Australian adults, this study found that three-quarters (78%) reported seeing or hearing wagering advertising at least once a week in the past 12 months, while 2 in 5 (41%) were exposed 4 or more times a week (AGRC, 2023b).

The most frequent exposure to wagering advertising was through TV, with 66% of the sample seeing or hearing wagering advertisements on TV once a week or more, and 32% four or more times a week (AGRC, 2023b). When asked about their attitudes towards wagering advertising, 69% of the sample of Australians reported that wagering advertisements were too common (AGRC, 2023a). The majority of respondents in this survey stated that wagering advertising 'makes sport less family-friendly', normalises gambling among children, and targets people at risk of experiencing gambling problems.

Most respondents believed that wagering advertising 'encourages people to bet for the first time', 'bet more than usual' and 'engage in riskier betting'. In the sample, Australians were more likely to support than oppose outright bans on all forms of wagering advertising (AGRC, 2023a).

Australian parents have reported being bothered by gambling advertising and were particularly concerned about their children's exposure to it (ACMA, 2019). In a submission to the *You Win Some, You Lose More* parliamentary inquiry on online gambling harm (House of Representatives Standing Committee on Social Policy and Legal Affairs [SPLA], 2023), both the ACMA and the Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA) reported an increase in the number of complaints they received about gambling advertising. Taken together, public sentiment appears to be in support of a reduction in wagering advertisements.

The parliamentary inquiry into online gambling harm recommended that the Australian Government, with the cooperation of the states and territories, implement a comprehensive ban on all forms of advertising for online gambling, excluding lotteries (SPLA, 2023). Given that lotteries and wagering are the only forms of online gambling that are legal for operators to provide to Australians, the assumption is that the SPLA recommendations are solely directed at wagering advertising.

The recommended ban would be introduced in 4 phases over 3 years. By the end of year 3, there would be a prohibition on all online wagering advertising and sponsorship. However, such a ban should be backed by literature around the effects of wagering advertising, the extent of gambling harm and evidence that a reduction in wagering advertising will lead to a reduction in

gambling harm. The literature review below provides an overview of the literature related to the effects of wagering advertising and the extent of gambling harm.

The impact of wagering advertising

Wagering advertising reaches a range of different groups. Different age cohorts are typically exposed to different types of advertising mediums (AGRC, 2023b). People aged between 18 and 34 years are more likely to be exposed to wagering advertising online and through social media. Whereas people aged 55 and above are more likely to be exposed to wagering advertising through traditional media such as television, radio and print.

Qualitative research analysing the content of sports betting advertisements (Deans et al., 2016) and the views of men who bet on sports (Westberg et al., 2017) highlighted how wagering advertisements can lead to misconceptions about the normalcy of gambling and how much gambling engagement and expenditure is reasonable. This is because advertising can create misperceptions about the extent to which Australians gamble.

Vulnerable groups such as migrants can be targeted by gambling advertisements (Wardle et al., 2019). Therefore, some migrants, particularly those that have no gambling background, may believe they need to gamble to fit in to Australian culture.

Children's exposure to wagering advertising may be higher than it is for adults. A 2015 study found that adolescents were more likely to be exposed to wagering advertising on TV than adults, including adults engaged in regular sports betting (Sproston et al., 2015). This exposure normalises gambling for young people, including children, across Australia. Three-quarters of a sample of children who participated in AFL, NFL and soccer in New South Wales (NSW) and Victoria thought that betting was a normal part of sport (Pitt et al., 2016).

Youth exposed to wagering advertising are likely to experience long-term consequences. For example, men aged 18 to 24 are the largest group of sports bettors in Victoria (Rockloff et al., 2020). In one study, it was found that nearly a third (31%) of Victorian secondary students had gambled, of which 38% had bet on sports (Freund et al., 2019). Similarly, national research undertaken by the Australian Institute of Family Studies (AIFS) shows that 6% of people aged 16 and 17 had bet on sport in the past 12 months (Warren & Yu, 2018).

Regular bettors on sports and racing are exposed to wagering advertisements almost daily (Hing et al., 2019). The most common types of advertisements include direct messages (emails, texts or phone calls from betting operators) and advertising on betting websites or apps. Gamblers at moderate risk and high risk of harm (as measured by the Problem Gambling Severity Index, PGSI: Ferris & Wynne, 2001) were significantly more likely to report having been exposed to social media gambling promotions because they actively engaged with gambling operators on these platforms (Gainsbury et al., 2016).

Over one-third of these moderate-risk and high-risk gamblers indicated that the promotions had worsened their gambling problems. A Swedish study found gamblers who set limits to their gambling reported a negative influence from advertising more often than those who did not set limits (Binde & Romild, 2019). This relationship was explained as possibly arising from perceptions that gambling advertising hinders efforts to reduce excessive gambling (Binde & Romild, 2019).

Social media and direct messages (emails, text messages, phone calls) enable gambling operators to target individual gamblers with personalised marketing (Syvertsen et al., 2022). Although this study found that online advertising was the strongest predictor of perceived advertising impact on gambling involvement, TV advertising had the most impact on increasing

awareness and knowledge of gambling forms and operators (Syvertsen et al., 2022). Nonetheless, wagering advertisements and inducements, by interacting with situational, structural and individual factors influence betting behaviours and negatively impact all gamblers (Hing et al., 2018).

Greater exposure to gambling advertising is associated with more positive attitudes towards gambling, greater intentions to gamble and increased gambling activity (McGrane et al., 2023). An ecological momentary assessment (EMA) with regular wagerers found an increase in bet size and frequency on days bettors were exposed to wagering advertising, with consistent effects across various levels of at-risk gambling (Hing et al., 2019).

The same study found bettors with a moderate risk of harmful gambling bet when not planning to do so and exceeded their intended spending, especially if exposed to direct messaging (Browne et al., 2019).

A meta-analytic review found that increased exposure to gambling advertising was associated with more favourable attitudes toward gambling, likely due to a dose-response relationship, where greater exposure to gambling advertising was associated with more significant positive effects on gambling attitudes and behaviour (Bouguettaya et al., 2020).

Another study found that the strongest predictors of frequency of sports betting were higher problem gambling severity, previous sports betting participation as well as more frequent exposure to and positive attitudes towards promotions (Hing et al., 2015).

The cost of gambling harm

Individuals who gamble are at risk of experiencing a range of harms associated with their gambling, including financial, health, relationship, psychological, cultural, educational/occupational and crime related harms (Browne et al., 2016; Langham et al., 2016; Marionneau et al., 2022).

A comprehensive taxonomy of harms experienced by people who gamble was developed by academics in 2016, following a public health approach (Browne et al., 2016). This produced 73 gambling-related harm items, which were later developed in to the 10-item Short Gambling Harms Screen (SGHS; Browne et al., 2018).

Based on the Victorian prevalence estimates on a range of gambling-related harms, the social cost of gambling to the state of Victoria across these domains was estimated to be a total of \$7 billion in 2014–15 (Browne et al., 2017). It is also important to note that gambling harms do not end as soon as gambling activity stops. Most legacy harms that accrue to gamblers have a half-life of 4 years, although financial harms last longer at 5 years (Rockloff et al., 2022).

Financial

Financial impacts due to gambling are often the primary harm, which then causes or exacerbates harms across other domains for the gambler, affected others and the community (Browne et al., 2016).

Financial harms identified in the Browne and colleagues' taxonomy of gambling-related harms (2016) included (but were not limited to) experiencing: a reduction or loss of discretionary spending on non-gambling-related entertainment or other family members' activities, erosion of savings, managing short-term cash flow (i.e. credit card debt, pay day loans, selling or pawning items), reduction in important expenses (i.e. insurances, health, household items, food, clothing, housing or accommodation), loss of major assets (i.e. car, home, business), and bankruptcy.

Other research has identified financial problems as including people not paying bills on time or going without basic necessities (Walker et al., 2012).

Individuals have reported being fired from their jobs due to gambling-related issues and others have reported paying off debt while in recovery from gambling (Kerber et al., 2015). In fact, consumer credit use and debt problems are risk factors for experiencing gambling-related harm (Swanton & Gainsbury, 2020) as gambling and the use of credit are positively correlated at the household level (Brown et al., 2012).

Psychological

Individuals with a gambling disorder have high rates of comorbid mood (37.9%) and anxiety (37.4%) disorders (Lorains et al., 2011). Moreover, self-harm is higher among people who are experiencing gambling harms (Gray et al., 2021), and people with a history of high-risk gambling have a higher risk of suicide (Andreeva et al., 2022).

High-risk online gambling is associated with poorer mental health outcomes, and individuals who engaged in excessive online gambling are more likely to experience symptoms of anxiety, depression and stress (Scholes-Balog & Hemphill, 2012).

People who experience gambling harms are over-represented in primary care and mental health treatment populations, with rates of high-risk gambling identified in up to 30% of treatment seekers (Lubman et al., 2017). High-risk gambling typically precedes and predicts the onset of other mental health conditions, suggesting that it has the potential to complicate treatment plans and hamper treatment outcomes, particularly if it goes unidentified and untreated (Lubman et al., 2017).

Emotional or psychological distress caused by gambling was itemised in Browne and colleagues' (2016) taxonomy of gambling-related harms and included (but was not limited to): reduced feelings of self-worth, distress from an inability to control gambling, guilt, increased feelings of powerlessness, distress from owing money, feeling shame or stigma, and suicidal ideation.

Relationships

Gambling harms can also extend beyond the gambler to others close to them (affected others) and the broader community (Browne et al., 2016; Langham et al., 2016). Gambling by both men and women intensifies intimate partner violence (IPV) against women, likely because financial, emotional and relationship stressors from gambling reinforce IPV (Hing et al., 2020).

Children who have a parent with high-risk gambling can be subjected to psychological, family, financial, physical and behavioural harms and may also experience violence (Suomi et al., 2022). Estimates of affected others in the general Australian adult population vary (2%–19%) based on definitions and measurement quality.

Nonetheless, it has been estimated that one individual's high-risk gambling negatively affects at least 6 others, where low-risk and moderate-risk gamblers impact one and three others, respectively (Goodwin et al., 2017). Other relationship harms identified in Browne and colleagues (2016) taxonomy of gambling-related harms included (but were not limited to): reduced amount and/or quality of time spent with people close to the gambler, increased level of neglect of relationships, conflict, separation, loss of other relationships and divorce.

Health

The Diagnostic and Statistical Manual of Mental Disorders fifth edition (DSM-V) considers a gambling disorder to be persistent and recurrent problematic gambling behaviour leading to clinically significant impairment or distress (American Psychiatric Association [APA], 2013). Health issues, alcohol use disorder and drug use disorder have relatively high prevalence in individuals diagnosed with a gambling disorder (Barnes et al., 2015; Petry et al., 2005).

Gambling disorder diagnosis is also associated with daily tobacco use (Ford & Håkansson, 2020). The directionality of the relationship between gambling and these health issues is yet to be clarified as binge drinking, tobacco use and cannabis use in youth have been shown to predict higher gambling rates at ages 31–32 (Merkouris et al., 2021). In their public health approach to gambling-related harm, Browne and colleagues (2016) identified specific decrements to health due to gambling, which included (but was not limited to): increased sedentary behaviour during time spent gambling, biological manifestation of psychological distress, reduced self-care (e.g. nutrition, loss of sleep, reduced quality of living), causing or exacerbating other behaviour that was a risk to their health (e.g. drinking alcohol, smoking, illicit drug use), self-harm, headaches or migraines, and an ongoing decrement to their health.

Work

Gambling can have several impacts related to work affecting the gambler, their employer and affected others. Work harms identified in the Browne and colleagues' (2016) taxonomy of gambling-related harms included: reduced performance, increased absenteeism, workplace consequences of using work resources for gambling, loss of job (i.e. due to poor performance, theft or fraud), and ultimately a legacy impact of reduced opportunity for employment due to past poor performance or criminal activity.

Job loss and reduced employment opportunities also impact others close to the gambler, such as their family, which may rely on their income for housing and other necessities (Browne et al., 2016). Lastly, employers are affected by the gamblers reduced work performance and the cost of replacing their employee due to job loss.

You win some, you lose more: recommendations from the parliamentary inquiry report into online gambling harm

Given the clear consensus in the literature surrounding the impacts of gambling advertising and the cost of gambling harm, the *You Win Some, You Lose More* parliamentary inquiry on online gambling harm provided the following recommendations in relation to gambling advertising (SPLA, 2023):

Recommendation 26

5.148 The Committee recommends the Australian Government, with the cooperation of the states and territories, implement a comprehensive ban on all forms of advertising for online gambling, to be introduced in 4 phases, over 3 years, commencing immediately:

- *Phase One: prohibition of all online gambling inducements and inducement advertising, and all advertising of online gambling on social media and online platforms. Removal of the exemption for advertising online gambling during news and current affairs broadcasts.*

Prohibition of advertising online gambling on commercial radio between 8.30–9.00 am and 3.30–4.00 pm (school drop-off and pick-up).

- *Phase Two: prohibition of all online gambling advertising and commentary on odds, during and an hour either side of a sports broadcast. Prohibition on all in-stadia advertising, including logos on players' uniforms.*
- *Phase Three: prohibition of all broadcast online gambling advertising between the hours of 6.00 am and 10.00 pm.*
- *Phase Four: by the end of year 3, prohibition on all online gambling advertising and sponsorship.*

5.149 Gambling advertising on dedicated racing channels and programming should be exempt from the ban.

5.150 Small community radio broadcasters should be exempt from further restrictions until December 2025.

The Committee also stated that 'lotteries have a lower risk of gambling harm than other forms of online gambling and should also be exempt from further restrictions' (SPLA, 2023, p 127). Since lotteries and wagering are the only legal forms of online gambling, the recommendations for a 'gambling' advertising ban only applies to wagering.

The growing evidence base on banning wagering advertising and an international example

Wagering advertisements and inducements have been shown to influence intended and actual betting behaviour (Browne et al., 2019). For example, sports bettors spend 56.2% more money and race bettors spend 94.8% more money if exposed to 5 or more wagering advertisements, compared to those exposed to none.

Evidence from a recent natural experiment showed betting on football games during the World Cup was affected by whether the individuals were watching the game on a TV channel showing advertisements compared to on a TV channel showing no advertisements. Specifically, individuals were 22%–33% more likely to place a bet on football, and had a 16%–24% increase in frequency of football betting, when a live game was televised on a channel with gambling advertisements compared to a channel without gambling advertisements (McGrane et al., under review).

Based on this evidence, and that greater harm is associated with greater exposure to wagering advertising, it is therefore reasonable to assume that a reduction in wagering advertising would result in a reduction in wagering behaviour and wagering-related harm.

Another approach to analysing the effectiveness of a gambling advertising ban is to look towards countries who have implemented similar regulation. In 2023, Belgium was one of the first countries to partially 'ban' gambling advertising (Federal Public Service Justice, 2023). The advertising ban applied to holders of licences for land-based casinos, gaming arcades, organising bets as well as online casino games, online arcade (dice) games, and online betting.

Despite the regulation, gambling operators found strategies to navigate the ban (De Jans et al., 2024). Examples of these strategies included increasing communication about their corporate social responsibility activities to create media coverage, posting about their sponsorship or charitable causes on their own channels, which would then be disseminated more broadly through the media. Other strategies included starting podcast shows, live streaming sports

matches on their websites, and organising free prize draws that do not require a betting account.

This report

The Australian Gambling Research Centre (AGRC) at AIFS has been commissioned by DITRDCA to estimate the socio-economic benefits of a ban on wagering advertising in Australia that reduces harm associated with wagering.

The scope of this proposed ban on wagering advertising by DITRDCA is broadly in line with elements of the Committee's recommendations under Phases 1 and 2, including:

- banning wagering advertising during live sports and 60 minutes on either side of the sports broadcast on television and radio
- banning wagering advertising during children's television programming
- limiting the frequency of wagering advertising on television and radio to no more than 2 advertisements per channel, per hour (between 6 am and 10 pm)
- banning wagering advertising on online platforms at all times, including social media, websites and apps.

Exclusions applied to wagering advertising on dedicated racing channels. Based on the above, the parameters provided by DITRDCA for estimating the socio-economic benefits on wagering advertising were: 100% ban for online and social media, 28% reduction for television and streaming, 25% reduction for radio and 80% reduction through betting affiliates.

This report contains estimates of the cost of wagering in Australia directly due to wagering expenditure (loss) and harms associated with wagering across several domains: financial, health relationships, psychological and work harms. This report also contains the impact of a partial ban on wagering advertising as represented by the benefits (cost saving) to the total cost, estimated on the average changes in wagering days per year in respect to PGSI categorisation.

Methodology

The aim of this study is to estimate socio-economic benefits of a partial ban on wagering advertising in Australia for 2023. Outlined below are the steps taken to estimate the socio-economic costs of wagering in Australia (steps 1 to 2) and the benefits (cost savings) due to the proposed wagering advertising ban (steps 3 to 5).

1. Estimate how many wagerers are categorised in non-risk, low-risk, moderate-risk and high-risk gambling in Australia (4 PGSI categories).
2. Estimate the total cost of wagering in Australia.
3. Estimate how many days wagering per year the proposed wagering advertising ban can reduce in each PGSI category.
4. Estimate how much the reduction in days wagering per year in each PGSI category generates in cost savings.
5. Calculate net cost savings (benefit) from all 4 PGSI categories.

Twelve wagering items across 6 domains were used in the calculations to arrive at the total costs and cost savings as outlined in Table 1 below.

Table 1: Cost framework for wagering in Australia, 2023

Cost category	Sub-category	Cost attributed to
Direct wagering expenditure (loss)	Direct wagering expenditure (loss) and, within this measure, excessive wagering spend	Wagerer
Financial	Bankruptcy	
	Administration of bankruptcy	Government
	Unpaid debts	Affected others and community (i.e. business)
Health	Mild alcohol dependence	Wagerer
	Expenditure on alcohol around wagering	Wagerer
	Drug use disorder	Wagerer
Relationships	Financial cost of separation	Government and community (i.e. business)
	Emotional distress to affected others	Affected others
Psychological	Depression	Wagerer
	Anxiety	Wagerer
	Other psychological harm	Wagerer
Work	Absenteeism	Community (i.e. employers)
	Reduced work performance	Community (i.e. employers)

Data sources

Several key data source types were required to calculate: (a) the cost of wagering in Australia and (b) the benefit of a reduction in wagering advertising in Australia:

- Australian adult population prevalence of wagering (in the last 12 months) overall and by Problem Gambling Severity Index (PGSI) status
- Australian adult population prevalence of regular wagering (at least monthly in last 12 months) overall and by PGSI status
- prevalence of costed harm items due to wagering by PGSI status
- exposure to wagering advertisement by medium (e.g. TV, radio, etc.) and PGSI status
- average cost per harm item.

Prevalence of wagering in Australia

Data on the prevalence of wagering in Australia in total and by PGSI was sourced from the HILDA Wave 22 weighted dataset for adults who participated in sports or race wagering in the past 12 months in 2022 (8% of adults). These 2022 prevalence estimates were then applied to the Australian adult population as of 30 June 2023 (Australian Bureau of Statistics [ABS], 2024). Table 2 shows the prevalence estimates of wagering in Australia in 2023 by PGSI status.

An estimated total of 1,680,985 Australian adults wagered in 2023. The prevalence figures for any gambling activity are included in the table for the purpose of contextualising wagering relative to all gambling.

Table 2: Prevalence of gambling and wagering in Australia, by problem gambling severity, 2023

Problem gambling severity index (PGSI)	Prevalence in the Australian adult population (%), 2023		Estimated number in the Australian adult population, 2023	
Non-gambler (last 12 months)	65.5		13,693,715	
	Any gambling	Wagering	Any gambling	Wagering
Non-risk gambling (PGSI = 0)	27.4	4.8	5,720,688	1,008,653
Low-risk gambling (PGSI = 1–2)	3.6	1.5	750,083	315,191
Moderate-risk gambling (PGSI = 3–7)	2.4	1.2	505,627	254,027
High-risk gambling (PGSI ≥ 8)	1.1	0.5	223,562	103,114
Total	34.5	8.0	7,199,960	1,680,985

Notes: Sourced from weighted HILDA Wave 22 dataset, projected to the Australian adult population 30 June 2023 (ABS, 2024).

Table 3 shows the estimated 2023 prevalence of regular (at least monthly) wagering in the Australian adult population in total and by PGSI status. These estimates were based on the 2022 data from the Community Attitudes Study (CAS) figures for wagering frequency by PGSI status, projected onto the estimated 2023 wagering population. CAS 2022 data were used to produce these estimates as the HILDA Wave 22 dataset did not collect frequency data for wagering or other gambling activities.

The estimated 2023 prevalence of regular wagering (monthly or more) in the Australian adult population was 467,980 wagerers.

Table 3: Prevalence of wagering in Australia, by frequency, 2023

Problem gambling severity index (PGSI)	Prevalence in the Australian adult population (%), 2023		Estimated number in the Australian adult population, 2023	
Wagering frequency	Less than monthly	Monthly or more	Less than monthly	Monthly or more
Non-risk wagerer (PGSI = 0)	81.4	18.6	820,741	187,912
Low-risk wagerer (PGSI = 1–2)	72.6	27.4	228,860	86,331
Moderate-risk wagerer (PGSI = 3–7)	54.5	45.5	138,419	115,608
High-risk wagerer (PGSI ≥ 8)	24.2	75.8	24,985	78,129
Total	64.4	35.6	1,213,005	467,980

Notes: Proportions of wagering frequency by PGSI sourced from the Community Attitudes Study (2022) dataset, applied to the weighted HILDA Wave 22 dataset (total wagering) and projected to the Australian adult population 30 June 2023 (ABS, 2024).

Prevalence of wagering harm

HILDA data

HILDA contains economic, health and wellbeing data, collected through a household-based panel. The analyses only used data from the questions of interest collected in HILDA Wave 22. In relation to gambling, HILDA includes 2 survey question items of value to our methodology.

The first item is on gambling participation (expenditure) and the second is the PGSI. The SF-36 used in this analysis was derived through the HILDA survey as it covers 8 key domains of physical and mental health and wellbeing: physical functioning (PF), role-physical (RP), bodily

pain (BP), general health (GH), vitality (VT), social functioning (SF), role-emotional (RE) and mental health (MH) (Rand Corporation, 2024).

The MH domain was used to investigate the relationship between gambling harm and the impact on mental health. Additionally, HILDA provides information on major life events, asking respondents if in the past 12 months they have either 'separated from their spouse' and/or experienced a 'major worsening in financial situation (e.g. went bankrupt)'. As the question includes financial hardship other than bankruptcy, it was assumed 5% of those who experienced 'major worsening in financial situations' had experienced bankruptcy.

These items were used in this analysis to analyse the impact of gambling harms on separation and bankruptcy. Table 4 shows the prevalence figures of bankruptcy, depression and separation used in the analysis. See Appendix C for the HILDA Wave 22 questions sourced for this analysis.

Table 4: Prevalence of bankruptcy, depression and separation in Australia, by problem gambling severity, 2023 (HILDA W22 data)

Item	Non-risk wagering (PGSI = 0)	Low-risk wagering (PGSI = 1–2)	Moderate-risk wagering (PGSI = 3–7)	High-risk wagering (PGSI ≥ 8)
Estimated 2023 Australian adult population wagerers (last 12 months)	1,008,653	315,191	254,027	103,114
Prevalence of bankruptcy in the Australian adult wagering population (%), 2023	558 (0.06%)	202 (0.06%)	163 (0.06%)	307 (0.30%)
Prevalence of depression (SF-36 < 40) in the Australian adult wagering population (%), 2023	42,235 (4.19%)	14,366 (4.56%)	17,896 (7.05%)	20,059 (19.45%)
Prevalence of separation in the Australian adult wagering population (%), 2023	28,569 (2.83%)	10,827 (3.44%)	7,645 (3.01%)	7,833 (7.60%)

Notes: Sourced from weighted HILDA Wave 22 dataset, projected to the Australian adult population 30 June 2023 (ABS, 2024).

National Gambling Trends Study data

The National Gambling Trends Study (NGTS) is a mixed methods online survey conducted annually. It provides trends on gambling participation, emergent issues and future directions related to gambling participation and harm. The 2023 NGTS sample included respondents who gambled regularly, which is defined as gambling at least once a month or more on either online wagering or land-based electronic gaming machines (pokies).

The 2023 online wagering sample data were used in the estimations of the socio-economic costs of wagering. Table 5 provides the prevalence estimates by PGSI status for each harm item used to estimate the cost of wagering in Australia from the NGTS 2023 dataset. See Appendix C for the NGTS 2023 questions sourced for this analysis.

Items that counted the impacts to wagerers included: excessive wagering spend, mild alcohol dependence, alcohol expenditure around wagering, drug use disorder, depression, anxiety, and other psychological harm. Relationship harm was considered an impact to affected others (i.e. family, friends, colleagues) that would cause emotional distress. Reduced work performance and absenteeism were costs to the community, primarily employers.

Table 5: Prevalence estimates (n, %) for harm items by PGSI for regular wagerers, 2023

Item	Non-risk wagering (PGSI = 0)	Low-risk wagering (PGSI = 1–2)	Moderate-risk wagering (PGSI = 3–7)	High-risk wagering (PGSI ≥ 8)	Item description
Population ≥ monthly wagerers (n)	187,912	86,331	115,608	78,129	See Table 3
Financial harm					
Excessive wagering spend	0.0%	0.5%	31.5%	68.0%	Excessive spend as the increase in average annual wagering by PGSI scores ≥1 factoring in average number of financial harms above that of non-risk (problem) gamblers (PGSI = 0). Prevalence figures represent percentage of total excessive wagering spend by PGSI category.
Psychological harm					
Depression ^a	940 (0.5%)	1,727 (2.0%)	12,717 (11.0%)	42,268 (54.1%)	Depression related to gambling/online wagering
Anxiety	1,315 (0.7%)	8,029 (9.3%)	48,555 (42.0%)	73,442 (94.0%)	Anxiety or stress related to gambling/online wagering
Other psychological harm	5,262 (2.8%)	44,080 (51.1%)	62,232 (53.8%)	4,094 (5.2%)	Other psychological harm (minus depression and anxiety) due to gambling/online wagering
Relationship harm					
Emotional distress to affected others	5,825 (3.1%)	15,626 (18.1%)	61,503 (53.2%)	71,801 (91.9%)	Any harm to relationships due to gambling/online wagering
Health harm					
Mild alcohol dependence	50,493 (26.9%)	30,838 (35.7%)	45,701 (39.5%)	39,383 (50.4%)	Hazardous drinking (AUDIT-C) and consumes alcohol around online wagering
Expenditure on alcohol around wagering	36,002 (19.2%)	21,611 (25.0%)	31,922 (27.6%)	23,323 (29.9%)	Average yearly spend on alcohol around online wagering for those providing typical spend
Drug use disorder	8,080 (4.3%)	4,230 (4.9%)	13,064 (11.3%)	17,110 (21.9%)	Affected by illicit drugs in last 12 months while gambling
Work harm					
Reduced work performance	2,067 (1.1%)	2,417 (2.8%)	8,902 (7.7%)	24,845 (31.8%)	Reduced performance at work/study due to gambling
Absenteeism	661 (0.4%)	1,435 (1.7%)	3,276 (2.8%)	17,735 (22.7%)	Estimated work absenteeism based on reduced work performance using figures from Li et al. (2017)

Notes: Sourced from NGTS 2023 dataset (monthly wagerers), applied to the weighted HILDA Wave 22 dataset (last 12-month wagerers) and projected to the Australian adult population 30 June 2023 (ABS, 2024). ^aDepression from the NGTS 2023 data was not included in the total cost of wagering due to factoring in double counting with HILDA data.

However, depression from NGTS 2023 data that was comorbid with anxiety or other psychological harm was subtracted from the cost calculations for those harm items.

Estimation of cost items

Table 6 summarises the cost estimation for each item and the data sources used in determining the average cost per item.

Table 6: Harm cost items and sources, 2023

Cost item	Cost estimation	Cost estimate data source/s	Cost bearer
Direct financial loss			
Yearly wagering expenditure (loss)	Total wagering expenditure for 2023 by PGSI category	HILDA Wave 22 dataset – percentage of total wagering expenditure by PGSI category H2 Gambling Capital (2024) – total betting (onshore) gross win in Australian dollars (\$ million) for race and sports betting for 2023 (projected)	Wagerer
Financial harm			
Excessive wagering spend	Increased average annual wagering spend by PGSI score weighted by increased relative prevalence of number of financial harms by PGSI score – for PGSI score ≥ 1 beyond that of non-risk gamblers (PGSI = 0)	NGTS 2023 dataset – average wagering spend per year by PGSI score and average number of financial harms reported	Wagerer
Bankruptcy	Cost of fees for administering bankruptcy (\$9,630) + cost of unpaid debts due to bankruptcy (\$28,152) = \$37,782	Fees and charges for bankruptcy (Australian Financial Security Authority (n.d.)) – Fees and charges for the cost of administering bankruptcy 2023 VCEC (2012) – cost of unpaid debts estimate 2011, adjusted CPI to 2023 (ABS, 2024)	Administration of bankruptcy – government Unpaid debts – affected others and community (business)
Psychological harm			
Depression – emotional distress to wagerer	Statistical Value of Life in a Year (VLY) in 2023 dollars \$235,000 x mean disability weight for mild major depressive disorder (0.1454)	Department of the Prime Minister and Cabinet (2023) – VLY 2023 Global Burden of Disease Collaborative Network (2024) – Global Burden of Disease Study 2021 (GBD 2021) mean disability weight (DW) for mild major depressive disorder	Wagerer
Anxiety – emotional distress to wagerer	Statistical Value of Life in a Year (VLY) in 2023 dollars \$235,000 x mean disability weight for mild anxiety disorder (0.0296)	Department of the Prime Minister and Cabinet (2023) – VLY 2023 Global Burden of Disease Collaborative Network (2024) – Global Burden of Disease Study 2021 (GBD 2021) mean disability weight (DW) for mild anxiety disorder	Wagerer

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Cost item	Cost estimation	Cost estimate data source/s	Cost bearer
Other psychological harm	Statistical Value of Life in a Year (VLY) in 2023 dollars \$235,000 x mean disability weight (DW) by PGSI status (non-risk gambler = 0; low-risk gambler = 0.13; moderate-risk gambler = 0.29; high-risk gambler = 0.44) x attributable fraction of DW from psychological harm (minus depression and anxiety) of 33.6%	Department of the Prime Minister and Cabinet (2023) – VLY 2023 Victorian Gambling-Related Harms Study (Browne et al., 2016) national survey dataset – disability weights for PGSI categories NGTS 2023 dataset – average number of harms by harm domain: financial, depression/anxiety, other psychological harms, relationships, work/study, and crime	Wagerer
Relationship harm			
Financial cost of separation	An estimate of overall average cost of separation (borrowing funds, sourced from legal law providers specialising in family law): \$21,554	The State of Separation Impact Report 2023 (2023, page 15). The cost \$21,088 (Dec 2022) converted to June 2023 cost using CPI (ABS, 2024)	Government and community (business)
Emotional distress to affected others	Average amount of financial assistance awarded to victims of crime on final determination in 2022–23 – \$9,180 x average number of affected others by PGSI category	Victims of Crime Assistance Tribunal (VOCAT) (2023, page 27) Goodwin et al. (2017) – average number of affected others by PGSI category: 1:1 (low-risk gambler); 1:3 (moderate-risk gambler); 1:6 (high-risk gambler). Authors assumed 1:0.5 non-risk gambler to affected others.	Affected others
Health harm			
Mild alcohol dependence	Statistical Value of Life in a Year (VLY) in 2023 dollars \$235,000 x mean disability weight for mild alcohol dependence (0.2353)	Department of the Prime Minister and Cabinet (2023) – VLY 2023. Global Burden of Disease Collaborative Network (2024) – Global Burden of Disease Study 2021 (GBD 2021) mean disability weight (DW) for mild alcohol dependence	Wagerer
Expenditure on alcohol around wagering	Average typical yearly expenditure on alcohol consumed around wagering	NGTS 2023 dataset – average yearly spend on alcohol for last online wagering session by PGSI category, for sample reporting this as a typical session	Wagerer
Drug use disorder	Statistical Value of Life in a Year (VLY) in 2023 dollars \$235,000 x mean disability weight for other drug use disorder (0.1156)	Department of the Prime Minister and Cabinet (2023) – VLY 2023 Global Burden of Disease Collaborative Network (2024) – Global Burden of Disease Study 2021 (GBD 2021) mean disability weight (DW) for other drug use disorder	Wagerer
Work harm			
Absenteeism	Average annual cost to business per employee due to absenteeism (direct labour cost + indirect costs)	2019 Absence Management & Wellbeing Survey (Direct Health Solutions, 2019) – \$281 direct labour costs per absent day + \$563 indirect costs per absent day (1:1, e.g. replacement labour, training etc). Total \$844 in 2019 cost converted to 2023 cost of \$982 using CPI (ABS, 2024)	Community (employers)
Reduced work performance	Average annual cost to business per employee due to reduced work performance	50% the cost of absenteeism (see above) – \$491.	Community (employers)

The data used to estimate the impact of wagering advertising on days wagering

The Community Attitudes Study (CAS) data on wagering advertising was used to estimate the number of days wagering per year can be reduced by the proposed ban and, in turn, how much wagering harms can be reduced. CAS was conducted in July 2022 with 1,765 respondents aged 18 years or older. The age, gender and location of residence of the participants in this sample is aligned with ABS population parameters, making it suitable for our analysis.

This survey included questions about individuals' exposure to wagering advertisements, their gambling participation in the past 12 months, the products used, amount of money spent, platform used, and gambling-related harm as measured by the PGSI. For this analysis, the question item asking participants frequency of having seen or heard wagering advertising in the last 12 months by advertising medium was used.

The wagering advertising mediums included: television, streamed content (e.g. Kayo, SBS on Demand), radio, print media (e.g. newspapers, magazines), outdoor signage (e.g. stadiums, billboards), team/player uniforms or merchandise, social media (e.g. Facebook), online (e.g. news websites, YouTube, podcasts), direct messages (e.g. email, SMS) and betting affiliates (e.g. through paid third-party publishers/bloggers/tipsters). While CAS asked participants about their gambling expenditure, this analysis focused on the question item addressing respondents' wagering activities on racing and sports betting.

Respondents could state their engagement in sports and race betting as 'not in the past 12 months', 'once or twice a year', 'a few times a year', 'about once a month', '2 to 3 times a month', 'about once a week', '2 to 3 times a week' or '4 or more times a week'. The main data sources from CAS used in the analysis were:

- frequency of exposure to wagering advertising in the past 12 months by medium converted to days per year
- frequency of wagering in the past 12 months converted to days per year
- yearly wagering expenditure (estimated from typical daily expenditure and wagering frequency)
- PGSI status: non-risk, moderate-risk and high-risk.
- socio-demographics (control variables)
- frequency of gambling on activities other than sports and race betting in the past 12 months converted to days per year (control variables).

See Appendix C for the CAS questions sourced for this analysis.

Data analysis

Approach to cost calculations

The framework applied in estimating the cost of wagering to Australia in 2023 generally followed the formula below, costing each harm item by PGSI category and totalling the cost. The calculations for each harm item are presented in the results section along with the findings. The basic approach was the following formula with 4 key components (A to D):

$$Total\ Cost = A \times B \times C \times D \quad (1)$$

Where:

- A is the number of last 12-month wagerers (HILDA) or regular wagerers (NGTS 2023 data) experiencing harm item in the adult Australian population, by PGSI category
- B is the 80% counterfactual adjustment (unless otherwise stated)
- C is the cost of item per person
- D is the disability weight (mean) – psychological and health harm items only

Disability weights were only applied to health status conditions available from the Global Burden of Disease Study 2021 under the psychological domain (depression, anxiety) and the health domain (alcohol, illicit drugs). Otherwise, the formula followed $A \times B \times C$.

80% counterfactual adjustment

The approach to the cost calculations included applying an 80% counterfactual adjustment to the estimated population experiencing each harm item. This approach is consistent with previous gambling costing studies conducted by the Productivity Commission (1999), the VCEC (2012), and Browne et al. (2017).

Double-counting adjustment

To avoid double-counting items with potential comorbidity (e.g. anxiety and depression) or an overlap between the HILDA Wave 22 data (last 12-month wagerers) and NGTS 2023 data (at least monthly wagerers), the following discounts were applied in the calculations.

- The cost of excessive wagering spend for regular wagerers is reported as a sub-component of total yearly wagering expenditure for the entire wagering population (not added to it).
- The number of regular wagerers experiencing other psychological harms were discounted by the overlapping population also experiencing anxiety and depression.
- The cost of depression for regular wagerers was calculated from the NGTS 2023 data (\$1.58 billion) but was not reported on, given depression was costed for last 12-month wagerers using the HILDA Wave 22 data.
- The cost of credit card debt due to wagering for regular wagerers was calculated from the NGTS 2023 data (\$104 million) but was not reported on for a few reasons:
 - Credit card debt would overlap partially with the cost of unpaid debt due to bankruptcy for last 12-month wagerers using HILDA data.
 - As of 11 June 2024, the use of credit cards for online gambling was prohibited under the Interactive Gambling Amendment (Credit and Other Measures) Bill 2023 (Cth), no. 114. Therefore, any future bans on wagering advertising would have no impact on credit card debt associated with wagering given its prohibition.
- The emotional cost of separation to affected others was excluded, as this may partially overlap with the cost estimated for relationship harm to affected others.

Calculating expenditure items

Three types of expenditure were calculated in the cost analysis by PGSI category:

- total wagering expenditure in Australia for 2023
- excessive wagering expenditure as an indicator of financial harm
- financial cost of alcohol expenditure around wagering.

The total wagering expenditure in Australia for 2023 was sourced from H2 Gambling Capital data (24 May 2024 update) as the projected 2023 'gross win' (expenditure loss) total for

onshore race and sports betting. 'Onshore' betting includes wagering service providers (WSPs) licensed in Australia, excluding the 'offshore' expenditure loss by Australians through unlicensed, and therefore unregulated, wagering service providers.

The total project onshore wagering expenditure for 2023 was projected at \$AU 7.5 billion. The HILDA Wave 22 dataset was used to estimate wagering expenditure by PGSI category. Total year wagering expenditure was calculated from the monthly wagering expenditure figure in HILDA and the proportion of the total wagering expenditure was calculated by PGSI category (32.9% non-risk, 19.2% low risk, 29.3% moderate risk, and 18.5% high risk). These proportions by PGSI category were then applied to the total \$7.5 billion for 2023 wagering expenditure. The results are reported in the results section under 'Yearly wagering expenditure'.

The NGTS 2023 data were used to calculate, of the total 2023 wagering expenditure, the proportion of which was considered excessive and resulting in financial harm, also known as an opportunity cost. The calculation followed that of Browne and colleagues (2017, pp 43–44) in estimating the relative increase in spends and financial harms as PGSI increases, using this costing formula:

$$C = \sum_{k=1}^{15+} N_k \cdot (S_k - S_0) \cdot \left(1 - \frac{H_0}{H_k}\right) \quad (2)$$

where $\left(1 - \frac{H_0}{H_k}\right)$ describes the weight W , or the proportion of the excessive spend incurred in excess of any entertainment benefit. It is assumed that 100% of the spend S_0 by recreational wagers (PGSI score of 0) is theoretically all entertainment and therefore not harmful. In the NGTS data this was reflected in the average number of financial harms experienced by non-risk gamblers equalling 0.04 harms. As financial harms H increase for non-recreational wagers with increasing PGSI score k , then a relative proportion (weight) of the increased spend $(S_k - S_0)$ by those with non-zero PGSI scores is considered an excessive spend resulting in financial harms. The financial harms H variable was the average harms by PGSI score experienced (out of a total of 6 financial harms). The expenditure variable used was the average yearly wagering spend by PGSI score. The results are reported in the results section under the 'Cost of excessive wagering expenditure'.

The NGTS 2023 data were also used to estimate the financial cost of alcohol expenditure around wagering. Regular wagers in NGTS who reported consuming alcohol around their last wagering session were asked to report the amount spent on alcohol, as well as whether their last wagering session expenditure was 'typical'. Average yearly expenditure on alcohol consumed around wagering was estimated for those who reported it as a typical session, and the average alcohol expenditure by PGSI category was used in the cost calculations.

Calculating other psychological harms

The NGTS 2023 dataset contained psychological harms experienced by regular wagers separate to depression and anxiety. The approach to costing other psychological harms followed that taken by Browne and colleagues (2017) using a Burden of Disease (BoD) methodology to calculate the attributable fraction of 'other psychological harms' relative to other types of harms to the disability weights for gambling by PGSI score.

A regression dominance analysis was implemented on the NGTS 2023 data of 29 harms, using the average number of harms reported within the psychological, health, financial, relationship, work/study, and crime domains. Psychological harms were split into depression/anxiety and other psychological harms to partition out the unique variance other psychological harms attributed to the disability weight (an estimated 33.6%).

Dominance analysis involves fitting multiple subset models with different combinations of predictors. For each predictor, the marginal contribution to the model's *R*-squared is calculated. This is the increase in *R*-squared when the predictor is added to a model that does not include it. The marginal contributions of each predictor are then averaged over all possible orders of inclusion in the model.

The results from dominance analysis provide relative importance scores for each predictor. These scores indicate how much each predictor contributes to the total *R*-squared, expressed as a proportion. The scores are normalised to sum to 1 (or 100%). The results of the dominance analysis are shown in Table 7 below.

The cost calculation then followed the same approach of A (population experienced) x B (80% counterfactual) x C (cost of item) x D (disability weight for PGSI status) with an additional x E = attributable fraction other psychological harm (33.6%). Note that the main difference from the Browne and colleagues' (2017) approach is that the cost of other psychological harm used the Statistical Value of Life in a Year (VLY) in replacement of GDP.

Table 7: Regression dominance analysis estimated of the relative contribution of other psychological harm to disability weights (NGTS 2023 data)

Gambling-related harm domains	Relative contribution (%)
Financial harms	30.5
Other psychological harms	33.6
Depression/anxiety	16.0
Relationship harms	12.1
Health harms	4.7
Work or study harms	2.7
Crime harm	0.4

Calculating the effectiveness of a wagering advertising ban

The analysis involved a two-step approach using the Community Attitudes Study data (CAS 2022).

The analysis involved using 2 multiple linear regression models to predict the number of days an individual wagered in the past year from the set of wagering advertising exposure variables: the number of days per year individuals were exposed to wagering advertisements through TV, streaming, radio, print, signage, merchandise, social media, online, direct messaging and betting affiliates.

The calculation included control variables that accounted for gambling frequencies for lotteries, keno/bingo, electronic gaming machines (EGMs or pokies), casino table games, online casino games, esports betting, fantasy sports betting, novelty betting and virtual sports betting. The model also included the following demographic control variables: age, gender, English language proficiency, First Nations status, living alone, number of dependent children, education level, employment status and income.

The linear regression models were specified as follows:

$$Y = \alpha + E\beta + Cy + \varepsilon \quad (3)$$

Where:

- n is the total sample size

- i is the number of exposure variables
- j is the number of control variables
- Y is an $n \times 1$ column vector containing the number of days wagered in the past 12 months
- α is the intercept of the model
- E is an $n \times i$ matrix containing exposure variable values
- β is a $i \times 1$ column vector of estimated coefficient parameters for the exposure variables
- C is an $n \times j$ matrix containing control variable values
- γ is a $j \times 1$ column vector of estimated coefficient parameters for the control variables
- ε is an $n \times 1$ column vector containing residual error values.

The effect of wagering advertising bans was simulated by adjusting the values of the wagering advertising exposure variables for several types of mediums. The adjustments were based on the proposed restrictions on wagering advertising by the Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA):

- Television and streaming: reduced by 28%
- Radio: reduced by 25%
- Social media and online: completely banned (reduced by 100%)
- Betting affiliates: reduced by 80%.

Two linear regression models were estimated based on equation $Y = \alpha + E\beta + C\gamma + \varepsilon$

(3) that predict the number of days wagering per year, where one model used the unadjusted data (i.e. in place of E) and one model used the adjusted data (i.e. in place of E). These analyses provided us with 2 sets of values for the number of days wagering per year: one set based on no ban in advertising and one set based on a partial ban in advertising. These 2 sets of values were used in step 2, which used 2 ordered logistic regression model.

Ordered logistic regression models were conducted to predict membership probabilities in the no-risk, low-risk, moderate-risk and high-risk problem gambling severity index categories. The predictors were the same as the linear regression models but excluded the exposure frequency variables and instead included the number of days wagering per year estimated from the linear regression models.

The ordered logistic regression models were specified as follows:

$$\text{logit}(P(Y \leq k)) = \alpha_k - (W\beta + C\gamma) \quad \text{for } k = 1, 2, 3 \quad (4)$$

Where:

- n is the total sample size
- j is the number of control variables
- Y is an $n \times 1$ column vector containing the problem gambling severity index categories represented as integer values from 1 to 4
- α is a 3×1 column vector containing the intercept values for each value of k and serves as the cut-off threshold in the model
- W is an $n \times 1$ column vector containing wagering variable values
- β is an estimated coefficient parameter for the number of days wagering variable
- C is an $n \times j$ matrix containing control variable values
- γ is a $j \times 1$ column vector of estimated coefficient parameters for the control variables.

To simulate the effect of proposed wagering advertising restrictions on at-risk gambling, the predicted probabilities for the Problem Gambling Severity Index categories were calculated

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The difference in predicted probabilities of category membership between the model with no wagering advertising ban and the model with a partial wagering advertising ban represents the potential impact of the advertising restrictions. The differences in predicted probabilities estimated were:

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$$\Delta P(\text{Non Risk Gambling}) = 0.177\%$$

$$\Delta P(\text{Low Risk Gambling}) = 0.045\%$$

t

$$\Delta P(\text{Moderate Risk Gambling}) = -0.02\%$$

$$\Delta P(\text{High Risk Gambling}) = -0.202\%$$

n

Note: ΔP denotes the difference in predicted probabilities between pre-ban and post-ban ($\Delta P = P_{\text{post}} - P_{\text{pre}}$)

Note that when the probability values are negative then that PGSI category has had a reduction in numbers due to the proposed wagering advertising ban. If the values are positive, then that PGSI category has had an increase in numbers due to the advertising ban. An increase in numbers may occur if high-risk gamblers move down to low-risk or non-risk groups, which would increase numbers in the lower risk categories.

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The predicted probabilities from the CAS dataset were then used to generalise the findings to the wider wagering population in Australia, by using the HILDA dataset to determine the change in number of wagerers in each of the PGSI categories. This was done by multiplying the differences in predicted probabilities by the number of total wagerers in HILDA as follows:

7

$$\text{Change in Non Risk Gambling} = \Delta P(\text{Non Risk}) \times \text{Total Wagerers}$$

3

$$\text{Change in Low Risk Gambling} = \Delta P(\text{Low Risk}) \times \text{Total Wagerers}$$

9

$$\text{Change in Moderate Risk Gambling} = \Delta P(\text{Moderate Risk}) \times \text{Total Wagerers}$$

3

$$\text{Change in High Risk Gambling} = \Delta P(\text{High Risk}) \times \text{Total Wagerers}$$

8

The Change in Non Risk Gamblers, Change in Low Risk Gamblers, Change in Moderate Risk Gamblers and Change in High Risk Gamblers values were used as the basis for all of the socioeconomic benefit calculations. These values represent the increase or decrease in the number of wagerers that fall into a PGSI category after the advertising ban.

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For example, if Change in High Risk Gamblers = -5,000, then there are 5,000 less high-risk wagerers in the population as a result of the wagering advertising ban. Similarly, if Change in Low Risk Gamblers = 5,000, then there are 5,000 more low-risk wagerers in the population as a result of the wagering advertising ban. Note that this calculation assumes that the total number of wagerers does not change after the wagering advertising ban. It only models how individuals may move between non-risk, low-risk, moderate-risk and high-risk PGSI categories as a result of the wagering advertising ban.

R

Modelling the total number of individuals who stop wagering due to advertising was not feasible given the data did not include individuals who do not wager or who have stopped wagering recently. One option was to assume that individuals who are reduced to zero days wagering

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have stopped wagering – however, this assumes a linear relationship between advertising exposure and wagering behaviour.

It is likely that there are threshold effects, where certain levels of advertising exposure have a more significant impact, or no impact at all at lower levels of wagering. Keeping total wagerers constant in the analysis likely results in an underestimation of the benefit of the ban because it ignores the potential for an advertising ban to result in an individual stopping all wagering behaviour.

In the socio-economic benefit calculations, the pre-ban cost to financial, health, relationships, psychological and work domains for individuals in each of the PGSI categories is calculated using the H2 Capital, HILDA and NGTS datasets. Then, by applying the changes in numbers in each of the PGSI categories due to the advertising ban, the socio-economic benefit for each of the harm domains can be estimated. See Appendix B for an example calculation using the depression domain.

Results

Total cost of wagering in Australia, by cost category and PGSI

Table 8 summarises the estimated total socio-economic costs of wagering in Australia in 2023 by PGSI category. The total overall cost was calculated at \$26.7 billion dollars, with 30.6% of the total cost attributed to high-risk wagering (\$8.2 billion), 29.8% to moderate-risk wagering (\$8.0 billion), 15.1% to low-risk wagering (\$4.0 billion) and 24.6% to non-risk wagering (\$6.6 billion). A total of \$7.5 billion (28% of total) in wagering expenditure (loss) by wagerers was estimated for 2023.

Across the harm domains, the largest cost was to health (\$8.2 billion, 30.6% of total) followed by relationship harm (\$5.6 billion, 20.9% of total), psychological harm (\$4.9 billion, 18.4% of total), work harm (\$497.7 million, 1.9% of total) and the financial harm of bankruptcy (\$37.2 million, 0.1% of total).

Table 8: Total cost of wagering in Australia, by PGSI category, 2023

Cost item	Non-risk wagering (PGSI = 0)	Low-risk wagering (PGSI = 1–2)	Moderate-risk wagering (PGSI = 3–7)	High-risk wagering (PGSI ≥ 8)	Total wagering
Estimated 2023 Australian adult population wagerers (last 12 months) (A)	1,008,653	315,191	254,027	103,114	1,680,985
Estimated 2023 Australian adult population regular wagerers (≥ monthly) (B)	187,912	86,331	115,608	78,129	467,980
Direct wagering expenditure					
Yearly wagering expenditure (loss) (A)	\$2,461,694,609	\$1,439,315,136	\$2,191,129,976	\$1,394,960,278	\$7,487,100,000
Financial harm					
Bankruptcy – cost of administration (A)	\$4,297,448	\$1,554,445	\$1,252,799	\$2,365,972	\$9,470,664
Bankruptcy – cost of unpaid debts	\$12,563,008	\$4,544,208	\$3,662,387	\$6,916,599	\$27,686,202

Wagering Advertising Research

Cost item	Non-risk wagering (PGSI = 0)	Low-risk wagering (PGSI = 1–2)	Moderate-risk wagering (PGSI = 3–7)	High-risk wagering (PGSI ≥ 8)	Total wagering
Total financial cost	\$16,860,457	\$6,098,652	\$4,915,186	\$9,282,571	\$37,156,866
Psychological harm					
Depression (emotional distress to wagerers) (A)	\$1,154,771,878	\$392,780,650	\$489,319,579	\$548,439,922	\$2,585,312,029
Anxiety (emotional distress to wagerers) (B)	\$7,320,879	\$44,684,717	\$270,237,696	\$408,745,454	\$730,988,746
Other psychological harm to wagerers (B)	\$0	\$362,058,697	\$1,140,243,953	\$113,811,935	\$1,616,114,585
Total psychological cost	\$1,162,092,757	\$799,524,064	\$1,899,801,228	\$1,070,997,311	\$4,932,415,360
Relationship harm					
Financial cost of separation (A)	\$492,620,752	\$186,696,474	\$131,824,588	\$135,065,156	\$946,206,969
Emotional costs to affected others (B)	\$21,390,413	\$114,756,400	\$1,355,039,036	\$3,163,837,169	\$4,655,023,018
Total relationship cost	\$514,011,165	\$301,452,874	\$1,486,863,624	\$3,298,902,325	\$5,601,229,987
Health harm					
Mild alcohol dependence (B)	\$2,233,196,449	\$1,363,883,636	\$2,021,242,343	\$1,741,831,084	\$7,360,153,512
Expenditure on alcohol around wagering (B)	\$53,103,002	\$38,861,325	\$87,114,184	\$75,047,651	\$254,126,162
Drug use disorder (B)	\$109,715,986	\$57,439,203	\$177,382,736	\$232,330,091	\$576,868,016
Total health cost	\$2,396,015,438	\$1,460,184,164	\$2,285,739,262	\$2,049,208,826	\$8,191,147,690
Work harm					
Absenteeism (B)	\$7,797,133	\$16,918,614	\$38,615,552	\$209,057,339	\$272,388,638
Reduced work performance (B)	\$12,183,020	\$14,247,254	\$52,466,783	\$146,436,477	\$225,333,533
Total work cost	\$19,980,152	\$31,165,868	\$91,082,335	\$355,493,816	\$497,722,171
Total cost of wagering in Australia	\$6,570,654,577	\$4,037,740,758	\$7,959,531,611	\$8,178,845,128	\$26,746,772,075

Notes: Sourced from HILDA Wave 22 dataset (A = last 12-month wagerers) and NGTS 2023 dataset (B = monthly wagerers) projected to the Australian adult population 30 June 2023 (ABS, 2024).

Total cost of wagering in Australia, by bearer of cost and PGSI

Table 9 summarises the estimated total cost of wagering in Australia by the bearer of the cost and PGSI category. More than three-quarters of the total cost (77.1%) is borne by the wagerers themselves, followed by 17.5% to affected others, 3.7% to the community and 1.8% to the government.

Table 9: Estimated total cost of wagering in Australia, by bearer of cost and PGSI category, 2023

Bearer of cost	Non-risk wagering (PGSI = 0)	Low-risk wagering (PGSI = 1–2)	Moderate-risk wagering (PGSI = 3–7)	High-risk wagering (PGSI ≥ 8)	Total wagering
Wagerers Cost	\$6,019,802,804	\$3,699,023,364	\$6,376,670,467	\$4,515,166,415	\$20,610,663,050

Wagering Advertising Research

Bearer of cost		Non-risk wagering (PGSI = 0)	Low-risk wagering (PGSI = 1–2)	Moderate-risk wagering (PGSI = 3–7)	High-risk wagering (PGSI ≥ 8)	Total wagering
	% of total	22.5	13.8	23.8	16.9	77.1
Affected others	Cost	\$27,671,917	\$117,028,504	\$1,356,870,230	\$3,167,295,469	\$4,668,866,120
	% of total	0.1	0.4	5.1	11.8	17.5
Community	Cost	\$272,572,032	\$126,786,209	\$158,825,822	\$426,484,693	\$984,668,757
	% of total	1.0	0.5	0.6	1.6	3.7
Government	Cost	\$250,607,824	\$94,902,681	\$67,165,093	\$69,898,550	\$482,574,148
	% of total	0.9	0.4	0.3	0.3	1.8
Total cost of wagering in Australia	Cost	\$6,570,654,577	\$4,037,740,758	\$7,959,531,611	\$8,178,845,128	\$26,746,772,075
	% of total	24.6	15.1	29.8	30.6	100.0

Notes: Bearer of cost groups estimated by totalling the following items. Wagerers – direct wagering expenditure, depression, anxiety, other psychological harm, mild alcohol dependence, and experience on alcohol around wagering. Affected others – 50% of bankruptcy cost of unpaid debts and emotional harm to affected others (relationships). Community – 50% of bankruptcy cost of unpaid debts, 50% cost of separation, absenteeism, and reduced work performance. Government – bankruptcy cost of administration and 50% cost of separation.

Cost of wagering in Australia, by cost category and PGSI

Direct wagering expenditure

Yearly wagering expenditure

Table 10 summarises the direct yearly wagering expenditure for wagerers in 2023. The H2 Gambling Capital data projected for 2023 provided the total expenditure for onshore wagering and the HILDA dataset provided the proportions of PGSI status. When projected to the Australian population of wagerers the direct yearly wagering totalled to \$7.5 billion in 2023.

Table 10: Direct yearly wagering expenditure by PGSI category, 2023

Variable	Non-risk wagering (PGSI = 0)	Low-risk wagering (PGSI = 1–2)	Moderate-risk wagering (PGSI = 3–7)	High-risk wagering (PGSI ≥ 8)	Total wagering
Estimated 2023 Australian adult population wagerers (last 12 months)	1,008,653	315,191	254,027	103,114	1,680,985
% of total yearly wagering expenditure	32.9	19.2	29.3	18.6	100
Yearly wagering expenditure by wagerers	\$2,461,694,609	\$1,439,315,136	\$2,191,129,976	\$1,394,960,278.44	\$7,487,100,000

Cost of excessive wagering expenditure

Of the total \$7.5 billion in wagering expenditure in 2023, it was estimated that \$2.6 billion was attributable to excessive wagering by regular wagerers. Another interpretation is that 35.1% of

total wagering expenditure is borne by regular wagerers who are experiencing financial harm, going beyond a purely recreational or entertainment benefit.

Table 11 shows the calculation of excessive wagering expenditure for regular wagerers by PGSI score. The total cost of excessive wagering that results in financial harm is estimated at \$1.97 billion. Sixty-eight per cent is attributable to high-risk wagering (\$1.8 billion, PGSI ≥8), 31.5% to moderate-risk wagering (\$826 million, PGSI = 3–7) and 0.5% to low-risk wagering (\$12.3 million, PGSI = 1–2).

Table 11: Calculation and cost of excessive wagering expenditure by PGSI score, 2023

PGSI score	Estimated number ≥monthly wagerers in Australia (N)	Average wagering spend per person (S)	Average number of financial harms (H)	Discount weight (W)	Aggregate excessive spend ($N \times S_k - S_0 \times W$)
0	187,912	\$4,430.4	0.0	0.0	\$0
1	64,443	\$4,650.9	0.6	0.93	\$13,246,301
2	22,534	\$3,098.0	1.0	0.95	\$0
3	36,071	\$8,409.9	1.4	0.97	\$139,257,846
4	35,709	\$5,760.1	1.7	0.98	\$46,304,300
5	16,682	\$38,132.6	2.3	0.98	\$551,654,266
6	15,249	\$10,102.6	2.6	0.98	\$85,037,086
7	11,482	\$4,771.8	3.0	0.99	\$3,864,825
8	15,716	\$8,556.4	3.4	0.99	\$64,028,836
9	13,780	\$10,183.1	4.0	0.99	\$78,419,848
10	4,907	\$31,664.0	4.1	0.99	\$132,225,674
11	3,839	\$10,199.5	4.3	0.99	\$21,925,329
12	6,494	\$98,863.5	4.2	0.99	\$607,012,911
13	3,009	\$6,352.4	4.3	0.99	\$5,725,071
14	6,897	\$74,661.8	4.4	0.99	\$479,638,378
15+	12,824	\$35,618.9	4.9	0.99	\$396,455,635
Total					\$2,624,796,307

Notes: *Aggregate excessive spend for wagerers PGSI score 2 negative value (-\$28,666,53 and treated as \$0 excessive spend.

Financial harms

Bankruptcy

Table 12 shows the cost of bankruptcy due to wagering by PGSI category. It is assumed that the cost of administrating bankruptcy is borne by the government and the costs of unpaid debts are to those close to the wagerers (affected others, e.g. family, friends) and the community (e.g. businesses).

A counterfactual discount was applied with the assumption that 5% of 'major worsening in financial situation' in HILDA is due to bankruptcy, scaled to the proportion of Australians experiencing bankruptcy due to wagering. The estimated total cost of bankruptcy due to wagering in Australia was \$37.2 million, with 25% of this cost attributable to high-risk wagering and 13.2% to moderate-risk wagering.

Table 12: Cost of bankruptcy due to wagering by PGSI category, 2023

Variable	Non-risk wagering (PGSI = 0)	Low-risk wagering (PGSI = 1–2)	Moderate-risk wagering (PGSI = 3–7)	High-risk wagering (PGSI ≥ 8)	Total wagering
Estimated 2023 Australian adult population wagerers (last 12 months)	1,008,653	315,191	254,027	103,114	1,680,985
Estimated % who experienced bankruptcy due to wagering (%n)	0.06	0.06	0.06	0.30	0.06
Number in Australia who experienced bankruptcy due to wagering (%n x n x 80%)	446	161	130	246	983
Cost of administrating bankruptcy			\$9,630		
Cost of unpaid debts due to bankruptcy debts			\$28,152		
Total cost of administrating bankruptcy (government)	\$4,297,448	\$1,554,445	\$1,252,799	\$2,365,972	\$9,470,664
Total cost of unpaid debts (affected others, the community)	\$12,563,008	\$4,544,208	\$3,662,387	\$6,916,599	\$27,686,202
Total cost of bankruptcy	\$16,860,457	\$6,098,652	\$4,915,186	\$9,282,571	\$37,156,866

Psychological harms

Cost of depression

Table 13 shows the cost of depression by applying the disability weight for mild major depressive disorder to the Statistical Value of Life in a Year (VLY) for 2023, scaled to the proportion of Australians experiencing depression due to wagering. The estimated total cost of depression to wagerers due to wagering in Australia was \$2.6 billion, with 21.2% of this cost attributable to high-risk wagering and 18.9% to moderate-risk wagering.

Table 13: Cost of depression due to wagering by PGSI category, 2023

Variable	Non-risk wagering (PGSI = 0)	Low-risk wagering (PGSI = 1–2)	Moderate- risk wagering (PGSI = 3–7)	High-risk wagering (PGSI ≥ 8)	Total wagering
Estimated 2023 Australian adult population wagers (last 12 months)	1,008,653	315,191	254,027	103,114	1,680,985
% who experienced depression due to their wagering (%n)	4.2	4.6	7.0	19.5	5.6
Number in Australia who experienced depression due to their wagering (%n x n x 80%)	33,788	11,492	14,317	16,047	75,644
Statistical Value of Life in a Year (VLY) 2023			\$235,000		
Disability weight (mean) – mild major depressive disorder			0.145		
Total cost of depression to wagers	\$1,154,771,878	\$392,780,650	\$489,319,579	\$548,439,922	\$2,585,312,029

Cost of anxiety

Table 14 shows the cost of anxiety by applying the disability weight for mild anxiety disorder to the Statistical Value of Life in a Year (VLY) for 2023, scaled to the proportion of Australians experiencing anxiety/stress due to regular wagering. The estimated total cost of anxiety to wagers due to regular wagering in Australia was \$731 million, with 55.9% of this cost attributable to high-risk wagering and 37% to moderate-risk wagering.

Table 14: Cost of anxiety due to regular wagering by PGSI category, 2023

Variable	Non-risk wagering (PGSI = 0)	Low-risk wagering (PGSI = 1–2)	Moderate-risk wagering (PGSI = 3–7)	High-risk wagering (PGSI ≥ 8)	Total wagering
Estimated 2023 Australian adult population ≥ monthly wagers (n)	187,912	86,331	115,608	78,129	467,980
% who experienced anxiety/stress due to their wagering (%n)	0.7	9.3	42.0	94.0	33.2
Number in Australia who experienced anxiety/stress due to wagering (%n x n x 80%)	1,052	6,423	38,844	58,753	105,073
Statistical Value of Life in a Year (VLY) 2023			\$235,000		
Disability weight (mean) – mild anxiety disorder			0.0296		
Total cost of anxiety to regular wagers	\$7,320,879	\$44,684,717	\$270,237,696	\$408,745,454	\$730,988,746

Cost of other psychological harms

The NGTS 2023 dataset contained other psychological harm items, separate to depression and anxiety. These included survey items around experiencing guilt, regrets and/or mood swings

related to their gambling and/or wagering, an increasing tolerance to gambling, or feeling like they might have a problem with gambling.

Table 15 shows the cost of other psychological harms to wagerers by applying the disability weight by PGSI category to the Statistical Value of Life in a Year (VLY) for 2023, scaled to the proportion of Australians experiencing other psychological harms (minus depression and anxiety) due to regular wagering.

As described previously, a dominance analysis with all NGTS 2023 harm domains was conducted to partition out the attributable fraction of other psychological harms to the PGSI disability weights (33.6%). The estimated total cost of other psychological harms due to regular wagering in Australia was \$1.6 billion, with 70.6% of this cost attributable to moderate-risk wagering and 22.4% to low-risk wagering.

Table 15: Cost of other psychological harm due to regular wagering by PGSI category, 2023

Variable	Non-risk wagering (PGSI = 0)	Low-risk wagering (PGSI = 1–2)	Moderate-risk wagering (PGSI = 3–7)	High-risk wagering (PGSI ≥ 8)	Total wagering
Estimated 2023 Australian adult population ≥ monthly wagerers (n)	187,912	86,331	115,608	78,129	467,980
% experienced other psychological harm, minus depression and anxiety (%n)	2.8	51.1	53.8	5.2	24.7
Number in Australia experienced other psychological harm due to wagering (%n x n x 80%)	4,209	35,264	49,785	3,275	92,534
Statistical Value of Life in a Year (VLY) 2023			\$235,000		
Disability weight for PGSI category	0	0.13	0.29	0.44	-
Attributable fraction of disability weight from other psychological harm			33.6%		
Total cost of other psychological harm to regular wagerers	\$0	\$362,058,697	\$1,140,243,953	\$113,811,935	\$1,616,114,585

Relationship harms

Cost of separation

Table 16 shows the cost of separation by scaling the *State of Separation Impact Report 2023* (The Separation Guide, 2023) cost of separation to the proportion of Australian wagerers who separated due to wagering. The estimated total cost of separation to affected others and the community due to wagering in Australia was \$946 million, with 14.3% of this cost attributable to high-risk wagering and 13.9% to moderate-risk wagering.

Table 16: Cost of separation due to wagering by PGSI category, 2023

Variable	Non-risk wagering (PGSI = 0)	Low-risk wagering (PGSI = 1–2)	Moderate-risk wagering (PGSI = 3–7)	High-risk wagering (PGSI ≥ 8)	Total wagering
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Estimated 2023 Australian adult population wagerers (last 12 months)	1,008,653	315,191	254,027	103,114	1,680,985
% who separated due to their wagering (%n)	2.8	3.4	3.0	7.6	3.2
Number in Australia who separated due to their wagering (%n x n x 80%)	22,855	8,662	6,116	6,266	43,899
Cost of separation 2023	\$21,554				
Total cost of separation to affected others and the community	\$492,620,752	\$186,696,474	\$131,824,588	\$135,065,156	\$946,206,969

Cost of emotional distress to affected others

Regular wagerers in the NGTS 2023 were identified as having experienced harm to their relationships if, due to their gambling and/or wagering, they spent less time with people they cared about, neglected their commitments, had greater conflict in their relationships, experienced relationship problems, had their betting criticised or were told they have a gambling problem.

Table 17 shows the calculations of emotional-distress cost to affected others. The average number of affected others was estimated as a ratio of the wagerers: affected others by PGSI status as per Goodwin and colleagues (2017), with the exclusion of non-risk wagers who, having reported relationship harm, were assumed to affect 0.5 others. The number of affected others was then multiplied by \$9,180 cost per person, a proxy cost for emotional distress for 2023.

The total estimated cost of emotional distress to affected others due to regular wagering in 2023 was \$4.7 billion, with 68% of this cost attributable to the relationship harm caused by high-risk wagering (\$3.2 billion) and 29.1% to moderate-risk wagering (\$1.3 billion).

Table 17: Cost of emotional distress to affected others due to regular wagering by PGSI category, 2023

Variable	Non-risk wagering (PGSI = 0)	Low-risk wagering (PGSI = 1–2)	Moderate-risk wagering (PGSI = 3–7)	High-risk wagering (PGSI ≥ 8)	Total wagering
Estimated 2023 Australian adult population ≥ monthly wagerers (n)	187,912	86,331	115,608	78,129	467,980
% experienced harm to relationships due to their wagering (%n)	3.1	18.1	53.2	91.9	38.3
Number in Australia experienced relationship harm due to wagering (%n x n x 80%)	4,660	12,501	49,203	57,441	123,804
Average number of affected others	0.5	1	3	6	-
Estimated number in Australia of affected others due to wagering	2,330	12,501	147,608	344,645	507,083
Cost of emotional distress per affected other	\$9,180				
Total cost of emotional distress to affected others	\$21,390,413	\$114,756,400	\$1,355,039,036	\$3,163,837,169	\$4,655,023,018

Health harms

Cost of mild alcohol dependence

Table 18 summarises the cost of mild alcohol dependence related to regular wagering in Australia in 2023. Wagerers were considered to have experienced mild alcohol dependence if they met criteria for hazardous drinking on the AUDIT-C (score ≥ 4 for males and ≥ 3 for females; Bush et al., 1998). Only wagerers who also consumed alcohol around wagering were included in the cost calculation, which applied the disability weight for mild alcohol dependence to the Statistical Value of Life in a Year (VLY) for 2023. The estimated total cost of mild alcohol dependence to wagerers due to regular wagering in Australia was \$7.4 billion.

Table 18: Cost of mild alcohol dependence around regular wagering by PGSI category, 2023

Variable	Non-risk wagering (PGSI = 0)	Low-risk wagering (PGSI = 1–2)	Moderate-risk wagering (PGSI = 3–7)	High-risk wagering (PGSI ≥ 8)	Total wagering
Estimated 2023 Australian adult population $\geq$ monthly wagerers (<i>n</i>)	187,912	86,331	115,608	78,129	467,980
% consumed alcohol around wagering and met criteria for hazardous drinking – mild alcohol dependence (% <i>n</i>)	26.9	35.7	39.5	50.4	35.6
Number in Australia experienced mild alcohol dependence and consumed alcohol around wagering (% <i>n</i> x <i>n</i> x 80%)	40,395	24,670	36,561	31,507	133,132
Statistical Value of Life in a Year (VLY) 2023			\$235,000		
Disability weight (mean) – mild alcohol dependence			0.2353		
Total cost of mild alcohol dependence around wagering to regular wagerers	\$2,233,196,449	\$1,363,883,636	\$2,021,242,343	\$1,741,831,084	\$7,360,153,512

Financial cost of alcohol expenditure

Table 19 summarises the financial cost of alcohol expenditure around wagering for regular wagerers in 2023. The NGTS 2023 dataset provided the average yearly alcohol expenditure around wagering by PGSI status, when projected to the Australian population of wagerers money spent on alcohol consumed around wagering totalled \$254 million in 2023.

Table 19: Financial cost of alcohol expenditure around regular wagering by PGSI category, 2023

Variable	Non-risk wagering (PGSI = 0)	Low-risk wagering (PGSI = 1–2)	Moderate-risk wagering (PGSI = 3–7)	High-risk wagering (PGSI ≥ 8)	Total wagering
Estimated 2023 Australian adult population $\geq$ monthly wagerers (<i>n</i>)	187,912	86,331	115,608	78,129	467,980
% consumed alcohol around wagering and reported typical	19.2	25.0	27.6	29.9	24.1

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alcohol expenditure per session (%n)					
Number in Australia consumed alcohol around wagering reporting typical alcohol expenditure (%n x n x 80%)	28,801	17,289	25,538	18,658	90,286
Average yearly alcohol spend, adjusted for CPI 2023	\$1,844	\$2,248	\$3,411	\$4,022	-
Total financial cost of alcohol expenditure around wagering to regular wagerers	\$53,103,002	\$38,861,325	\$87,114,184	\$75,047,651	\$254,126,162

Cost of illicit drug use

Table 20 shows the cost associated with wagerers impacted by illicit drugs while gambling. A 50% counterfactual was applied to the population prevalence, assuming that only half would be impacted at a level high enough to be a decrement to their health. The disability weight for other drug use disorder was applied to the Statistical Value of Life in a Year (VLY) for 2023, scaled to the proportion of regular wagerers in Australia (discounted by 50%) impacted by illicit drugs while gambling.

The estimated total cost of illicit drug use to wagerers around regular wagering in Australia was \$577 million, with 40.3% of this cost attributable to high-risk wagering and 30.7% to moderate-risk wagering.

Table 20: Cost of illicit drug use around regular wagering by PGSI category, 2023

Variable	Non-risk wagering (PGSI = 0)	Low-risk wagering (PGSI = 1–2)	Moderate-risk wagering (PGSI = 3–7)	High-risk wagering (PGSI ≥ 8)	Total wagering
Estimated 2023 Australian adult population ≥ monthly wagerers (n)	187,912	86,331	115,608	78,129	467,980
% affected by illicit drugs while gambling (%n)	4.3	4.9	11.3	21.9	10.1
Number in Australia affected by illicit drugs while wagering (%n x n x 50%)	4,040	2,115	6,532	8,555	21,242
Statistical Value of Life in a Year (VLY) 2023			\$235,000		
Disability weight (mean) – other drug use disorder			0.1156		
Total cost of illicit drug use around wagering for regular wagerers	\$109,715,986	\$57,439,203	\$177,382,736	\$232,330,091	\$576,868,016

Work harms

Cost of absenteeism

Table 21 summarises the cost of absenteeism by PGSI status due to regular wagering in 2023. The prevalence of absenteeism among regular wagerers was estimated from the NGTS 2023 dataset figures on reduced work performance by applying the % difference from prevalence figures report by Li and colleagues (2017, Table 4, page 235) between absenteeism (Absent variable) and reduced work performance (Red.Perf. variable) for each PGSI category.

It was assumed that the average estimated days a year absent due to wagering was 15 days. The total estimated cost of absenteeism due to regular wagering to the community (i.e. employers) in Australia was \$272 million, with 76.7% of the cost attributable to high-risk wagering (\$209 million).

Table 21: Cost of absenteeism due to regular wagering by PGSI category, 2023

Variable	Non-risk wagerers (PGSI = 0)	Low-risk wagerers (PGSI = 1– 2)	Moderate-risk wagerers (PGSI = 3–7)	High-risk wagerers (PGSI ≥ 8)	Total wagerers
Estimated 2023 Australian adult population ≥ monthly wagerers (n)	187,912	86,331	115,608	78,129	467,980
% estimated absent from work due to wagering (%n)	0.4	1.7	2.8	22.7	4.9
Number in Australia absent from work due to wagering (%n x n x 80%)	529	1,148	2,621	14,188	18,486
Total cost per absent day			\$982		
Estimated average days a year absent due to wagering			15		
Total cost of absenteeism per year due to wagering to the community			\$14,735		
Total cost of absenteeism due to wagering to the community	\$7,797,133	\$16,918,614	\$38,615,552	\$209,057,339	\$272,388,638

Cost of reduced work performance

Table 22 summarises the cost of reduced work performance by PGSI status due to regular wagering in 2023. Reduced performance was assumed to be half of a full-time working day (half cost of an absent day), and with the average estimated reduced work performance days a year due to wagering equalling 15 days.

The total estimated cost of reduced work performance to the community (i.e. employers) due to regular wagering in Australia was \$225 million, with 65% of the cost attributable to high-risk wagering (\$146 million) and 23.3% to moderate-risk wagering (\$52 million).

Table 22: Cost of reduced work performance due to regular wagering by PGSI category, 2023

Variable	Non-risk wagering (PGSI = 0)	Low-risk wagering (PGSI = 1–2)	Moderate-risk wagering (PGSI = 3–7)	High-risk wagering (PGSI ≥ 8)	Total wagering
Estimated 2023 Australian adult population ≥ monthly wagerers (n)	187,912	86,331	115,608	78,129	467,980
% experienced reduced performance at work/study due to wagering (%n)	1.1	2.8	7.7	31.8	8.2
Number in Australia experienced reduced performance at work/study due to wagering (%n x n x 80%)	1,654	1,934	7,121	19,876	30,585
Total cost per day of reduced work performance			\$491		

Variable	Non-risk wagering (PGSI = 0)	Low-risk wagering (PGSI = 1–2)	Moderate-risk wagering (PGSI = 3–7)	High-risk wagering (PGSI ≥ 8)	Total wagering
Estimated average days reduced performance at work due to wagering			15		
Total cost of reduced work performance to the community per year due to wagering			\$7,367		
Total cost of reduced work performance due to wagering to the community	\$12,183,020	\$14,247,254	\$52,466,783	\$146,436,477	\$225,333,533

The benefit of a wagering advertising ban in Australia

Table 23 provides the benefit (reduction) estimates for each PGSI category that would result from a wagering advertising ban that involves:

- a complete ban (100% reduction) on online advertisements, including social media
- 28% reduction in TV advertisements, including streaming
- 25% reduction in radio advertisements
- 80% reduction in advertisements through betting affiliates.

Overall, the net benefit across all items was \$117.6 million. These estimates reflect the benefit attributed to the partial wagering advertisement ban and the impact it has on reductions of harmed wagerers within each at-risk PGSI group. The moderate-risk and high-risk wagering groups show negative values (values in pink), which represent these categories having a lower number of harmed people after the ban relative to before the ban.

Non-risk and low-risk wagering groups show positive values (values in black), which represents these categories having a higher number of people after the ban relative to before the ban. For example, it can be expected that moderate-risk and high-risk wagering groups show negative dollar values, which represent these categories having a lower number of people experiencing wagering related harms after the ban relative to before the ban. On the other hand, non-risk and low-risk groups may show positive dollar values, which represent these categories having a higher number of people after the ban relative to before the ban.

It is important to keep in mind that positive dollar values in the non-risk and low-risk categories do not mean that the partial ban is adding to the cost attributable to the non-risk and low-risk wagerers. The increase in the non-risk and low-risk wagerers costs is a result of the movement of the moderate-risk and high-risk wagerers into these lower-risk groups. These inflows from higher risk categories to lower risk categories result in reduced overall costs relative to before the ban.

Overall, one-third of the benefit of a wagering advertising ban was the emotional cost of relationship harm to affected others (33.2%), followed by direct wagering expenditure (loss) to wagerers (32.4%), the cost of depression to wagerers (12.2%), and the cost of mild alcohol dependence to wagerers (8.1%). Proportionate to the total, all other benefits per harm item were below 10%.

Table 23 also presents the post-ban average reduction in the predicted number of days an individual wagered in the past year due to the reduction in wagering advertising exposure

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variables. This value is calculated by subtracting the post-ban predicted number of days an individual wagered estimated from Equation (3) from the pre-ban value estimated from Equation (3), which is then averaged across all participants in the CAS dataset.

Note that because the HILDA and NGTS datasets did not contain information about the number of days an individual was exposed to wagering advertising, these reduction estimates were not generalised to the wagerer and regular wagerer populations. Instead, the reduction in the predicted number of days an individual wagered is based on the CAS data sample.

Table 23: Total benefits of a ban on wagering advertising in Australia, by PGSI category, 2023

Cost item	Non-risk wagering (PGSI = 0)	Low-risk wagering (PGSI = 1– 2)	Moderate-risk wagering (PGSI = 3–7)	High-risk wagering (PGSI ≥ 8)	Total wagering
Post-ban average reduction in number of days wagering per year	4	5	6	6	5
Post-ban change in PGSI category in 2023 Australian adult wagerer population (last 12 months) (A)	2,975	756	-336	-3,396	0
Post-ban change in PGSI category in 2023 Australian adult regular wagerer population (≥ monthly) (B)	828	211	-94	-945	0
Direct wagering expenditure					
Yearly wagering expenditure (A)	\$7,261,553	\$3,454,287	-\$2,899,894	-\$45,936,660	-\$38,120,714
Financial harm					
Bankruptcy – admin (A)	\$12,677	\$3,731	-\$1,658	-\$77,913	-\$63,163
Bankruptcy – unpaid debts (A)	\$37,059	\$10,906	-\$4,847	-\$227,767	-\$184,649
Total financial benefit (bankruptcy)	\$49,735	\$14,636	-\$6,505	-\$305,679	-\$247,813
Psychological harm					
Depression (emotional distress to wagerer) (A)	\$3,406,368	\$942,655	-\$647,600	-\$18,060,370	-\$14,358,947
Anxiety (emotional distress to wagerer) (B)	\$32,271	\$109,002	-\$218,785	-\$4,945,575	-\$5,023,088
Other psychological harm (B)	\$0	\$883,188	-\$923,142	-\$1,377,056	-\$1,417,011
Total psychological benefit	\$3,438,638	\$1,934,844	-\$1,789,527	-\$24,383,001	-\$20,799,045
Relationship harm					
Separation (A)	\$1,453,142	\$448,063	-\$174,466	-\$4,447,755	-\$2,721,017
Emotional costs to affected others (B)	\$94,290	\$279,931	-\$1,097,041	-\$38,280,536	-\$39,003,356
Total relationship benefit	\$1,547,432	\$727,994	-\$1,271,507	-\$42,728,291	-\$41,724,372
Health harm					
Mild alcohol dependence (B)	\$9,844,023	\$3,326,989	-\$1,636,400	-\$21,075,113	-\$9,540,501
Expenditure on alcohol around wagering (B)	\$234,080	\$94,796	-\$70,528	-\$908,032	-\$649,683
Drug use disorder (B)	\$483,633	\$140,114	-\$143,609	-\$2,811,055	-\$2,330,917
Total health benefit	\$10,561,735	\$3,561,900	-\$1,850,536	-\$24,794,200	-\$12,521,101
Work harm					
Absenteeism (B)	\$34,370	\$41,270	-\$31,263	-\$2,529,469	-\$2,485,091
Reduced work performance (B)	\$53,703	\$34,754	-\$42,477	-\$1,771,794	-\$1,725,814

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Cost item	Non-risk wagering (PGSI = 0)	Low-risk wagering (PGSI = 1– 2)	Moderate-risk wagering (PGSI = 3–7)	High-risk wagering (PGSI ≥ 8)	Total wagering
Total work benefit	\$88,073	\$76,024	-\$73,740	-\$4,301,262	-\$4,210,905
Total benefit of wagering advertising ban in Australia	\$22,947,167	\$9,769,685	-\$7,891,709	-\$142,449,094	-\$117,623,951

Notes: Sourced from HILDA Wave 22 dataset (A = last 12-month wagerers) and NGTS 2023 dataset (B = monthly wagerers) projected to the Australian adult population 30 June 2023 (ABS, 2024). Black values represent an increase in costs for a specific PGSI category after the wagering advertising ban. Pink values represent a decrease in costs and therefore a benefit.

Table 24 below summarises as a proportion of at-risk group (PGSI category), the bearer of the benefits of a partial wagering advertising ban in Australia. Across all at-risk groups the wagerers themselves have the greatest benefit (60.7%) but this decreases as at-risk wagering increases. Of the benefit attributable to high-risk wagering, 27% of the benefit is to affected others.

Table 24: Total benefits of a ban on wagering advertising in Australia, by bearer of the cost within PGSI category, 2023

Bearer of benefit		Non-risk wagering (PGSI = 0)	Low-risk wagering (PGSI = 1–2)	Moderate-risk wagering (PGSI = 3–7)	High-risk wagering (PGSI ≥ 8)	Total wagering	
Wagerers	Benefit	\$21,261,926	\$8,951,031	-\$6,539,957	-\$95,113,861	-\$71,440,861	
	% at-risk group	92.7	91.6	82.9	66.8	60.7	
Affected others	Benefit	\$112,819	\$285,384	-\$1,099,464	-\$38,394,419	-\$39,095,680	
	% at-risk group	0.5	2.9	13.9	27.0	33.2	
Community	Benefit	\$833,174	\$305,509	-\$163,397	-\$6,639,023	-\$5,663,738	
	% at-risk group	3.6	3.1	2.1	4.7	4.8	
Government	Benefit	\$739,248	\$227,762	-\$88,891	-\$2,301,790	-\$1,423,672	
	% at-risk group	3.2	2.3	1.1	1.6	1.2	
Total benefit of wagering advertising ban in Australia		Benefit	\$22,947,167	\$9,769,685	-\$7,891,709	-\$142,449,094	-\$117,623,951

Notes: Bearer of benefit groups estimated by totalling the following items. Wagerers – direct wagering expenditure, depression, anxiety, other psychological harm, mild alcohol dependence, and experience on alcohol around wagering. Affected others – 50% of bankruptcy cost of unpaid debts and emotional harm to affected others (relationships). Community – 50% of bankruptcy cost of unpaid debts, 50% cost of separation, absenteeism, and reduced work performance. Government – bankruptcy cost of administration and 50% cost of separation.

Alternative scenario benefit estimates provided for a greater reduction of 49% in TV and streaming wagering advertising, which resulted in increased benefit of \$182.2 million. A complete ban on the majority of wagering advertising (excluding direct messages) had an estimated benefit of \$332.1 million. For the full details of the 2 alternative scenario estimates see Appendix D.

Discussion

Previous research has shown that many Australians believe there is currently too much wagering advertising (AGRC, 2023a, 2023b). Wagering advertisements have been shown to

increase betting frequency and bet size and foster more positive attitudes towards gambling (Bouguettaya et al., 2020; Browne et al., 2019; Hing et al., 2015, 2019).

This increase in wagering can lead to financial, health, relationship, psychological, cultural, educational, occupational and crime related harm. Given this evidence, it is reasonable to assume that reducing wagering advertising will lead to a reduction in wagering spending and harm, which may generate a socio-economic benefit for Australian.

Based on their parliamentary inquiry findings on the harm associated with online gambling, the House of Representatives Standing Committee on Social Policy and Legal Affairs (SPLA) recommended a 4-staged ban for wagering advertising (SPLA, 2023). The aim of this research was to analyse available data to estimate the potential socio-economic benefit of a partial ban on wagering advertising in Australia, which included benefits to wagerers, affected others, the community and government.

In total, an estimated socio-economic benefit of \$117.6 million in 2023 was estimated for a partial ban in wagering advertising. This wagering advertising ban assumed a 100% reduction through online and social media advertising, 28% reduction in TV advertisements including streaming, 25% reduction in radio advertisements and an 80% reduction in advertisements through betting affiliates.

Overall, the largest benefit of this proposed wagering advertising ban was to wagerers themselves (60.7%) followed by affected others (33.2%). By individual items, one-third of the benefit was the emotional cost due to relationship harm to affected others (33.2%), followed by direct wagering expenditure (loss) to wagerers (32.4%), the cost of depression to wagerers (12.2%), and the cost of mild alcohol dependence to wagerers (8.1%).

The current findings are consistent with research showing that wagering advertisements can increase betting frequency and spending by 56%–95% (Browne et al., 2019). Under the proposed partial ban, we estimated that, on average, wagering would be annually reduced by 5 days per wagerer (8.7%).

To the authors' knowledge, all previous socio-economic costings of gambling to Australia have focused on the **overall** cost of gambling and have not estimated the impact that an implementation of measures would have on reducing gambling-related harm.

This highlights the importance of the current study in specifically estimating the cost of wagering spend loss and harm in Australia, and the benefit that the proposed reductions to wagering advertising would have on reducing harm.

The *You Win Some, You Lose More* parliamentary inquiry report (SPLA, 2023) provided a wide range of evidence that supports their recommendation to gradually ban wagering advertising – and the ban aligns with public sentiment. The current report provides further evidence that the proposed reduction in wagering advertising, which reflects elements of the proposed SPLA recommendations under Phases 1 and 2, could mitigate some harmful effects associated with wagering.

Furthermore, alternative scenario estimates reflecting latter phases of a wagering advertising ban show evidence of a greater reduction in harm with an increased benefit of \$182.2 million by further restricting through television and \$332.1 million for a complete ban on all platforms (excluding direct messages through WSPs).

The findings suggest this proposed reduction in wagering could inform part of a phased approach by the Australian Government, in collaboration with the states and territories, which eventually may lead to a ban on all wagering advertising in Australia. The extent to which the

proposed reduction in wagering advertising is sufficient to mitigate harmful effects should be subject to monitoring and evaluation, including (based on international experience) monitoring of the wagering industry's strategies to navigate the ban (e.g. increase in direct messaging) to inform need for further adjustments of the phased approach.

Limitations

The current estimate of the benefits of a wagering advertising ban is likely to be an underestimate due to several limitations in available data. The data sources used for analysis (HILDA, NGTS, CAS and H2 Gambling Capital data) have different populations and sampling methods. This can introduce heterogeneity in the characteristics of the population being generalised.

For example, in the HILDA Wave 22 dataset, the prevalence of last 12-month wagering is approximately 8%. This may be an underestimate of the prevalence of wagering in comparison to a 2019 Australian national gambling prevalence study, with a sample of 15,000 Australian adults' representative of the population, which found the prevalence of sports and race betting were 16.8% and 9.6% respectively (Hing et al., 2021).

In this study, given the proportions in PGSI categories were based on HILDA for all analyses, the cost of wagering and the socio-economic benefits from a wagering advertising ban may be underestimated. HILDA is thought to be 'representative' of the Australian population but there has been only one top-up sample since 2001, in 2011, to account for the representativeness of recent migrants. Considering the attrition over 20 years, the prevalence of any outcomes needs to be treated with caution.

This study only reported the short-term and annual cost of wagering and cost saving (benefits) of the proposed partial ban on wagering advertisements. However, it is important to highlight that gambling-related harm has a legacy impact that continues well after gambling has ceased (e.g. 4–5 years: Rockloff et al., 2022). Furthermore, such a wagering advertising ban may have longer lasting impacts.

Due to the limitations of data, many socio-economic costs associated with wagering were unable to be estimated, such as: crime (legal costs, cost to business), costs of job loss and job change, productivity loss for study (unable to complete a degree for example), emotional costs after separation, suicide (ideation, attempt, completion), debt prior to bankruptcy, loss of assets, physical health (e.g. loss of sleep), tobacco use, IPV and domestic violence, the cost to the health system, and the cost to governments at all levels (e.g. justice system).

The reported benefits were only modelled to estimate how the wagering advertising ban would change the distribution of individuals across PGSI categories. It is possible that the wagering advertising ban would reduce the total number of wagerers over time but this was not modelled due to the information contained in the data assets (i.e. cross-sectional data assets). To model such impacts, a longitudinal study will be required. The results are also dependent on the validity and reliability of the PGSI scale, both of which have been demonstrated in large samples of participants (Currie et al., 2013).

Future directions

This report provides evidence that the proposed reduction in wagering advertising by DITRDCA could mitigate some harmful effects associated with wagering and generate a socio-economic benefit in Australia. Furthermore, this report provides evidence that further reductions in wagering advertising generate larger decreases in wagering, wagering spend and harm, and an

increase in socio-economic benefits. The findings could help inform the Australian Government on the approach taken in phasing in a reduction in wagering advertising in Australia.

Based on the findings, the government should consider a total ban on wagering advertising in Australia. Moreover, the proposed plan ruled out restricting wagering advertising through direct messaging. In regression models, direct messaging was a significant and strong predictor in wagering participation. Future work could simulate a scenario where direct messaging is also banned. Banning wagering advertising through direct messages would be more likely to significantly reduce harm associated with wagering.

One way to address the issue of using a representative sample to consistently estimate the socio-economic costs of wagering in the future is to conduct an Australian gambling prevalence study with reliable estimates of harm outcomes for wagerers (and gamblers), along with the impact of wagering advertising by medium (e.g. TV, online, etc.) and type (e.g. promotion/inducement, product placement, sponsorship, etc.).

In addition to an Australian gambling prevalence study, access to Wagering Service Provider (WSP) data could generate more accurate and better estimates. The WSP data contains the detailed information on how and how much their customers wager (e.g. betting frequency, bet type, amount bet). The WSP data could be also linked to administrative data so that the cost of wagering to the health system, employment and suicide (via death records) could be estimated.

Beyond the short-term analysis conducted here, a longer-term analysis would be able to determine the full extent of the socio-economic benefits of the proposed wagering advertising ban.

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Appendices

Appendix A: Problem Gambling Severity Index (PGSI) instrument

Thinking about the last 12 months...

PGSI item	Never	Sometimes	Most of the time	Almost always
1. Have you bet more than you could really afford to lose?	0	1	2	3
2. Have you needed to gamble with larger amounts of money to get the same feeling of excitement?	0	1	2	3
3. When you gambled, did you go back another day to try to win back the money you lost?	0	1	2	3
4. Have you borrowed money or sold anything to get money to gamble?	0	1	2	3
5. Have you felt that you might have a problem with gambling?	0	1	2	3
6. Has gambling caused you any health problems, including stress or anxiety?	0	1	2	3
7. Have people criticised your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?	0	1	2	3
8. Has your gambling caused any financial problems for you or your household?	0	1	2	3
9. Have you felt guilty about the way you gamble or what happens when you gamble?	0	1	2	3

Total scoring:

- 0: non-problem gambling
- 1–2: low-risk gambling
- 3–7: moderate-risk gambling
- 8 or more: problem gambling

Appendix B: Socio-economic benefit calculation depression example

To apply the changes in numbers in each of the PGSI categories due to the advertising ban, the total cost of depression due to wagering was first estimated. HILDA included the Short-Form Health Survey (SF-36) to assess mental health (RAND Corporation, 2024). The SF-36 can be used to screen for depressive disorders where a threshold of ≤ 40 has a 92.3% sensitivity and 70.2% specificity for detecting depression, correctly classifying 76.3% of patients (Matcham et al., 2016). Using this threshold, individuals in the HILDA population are then categorised in to depressed and not depressed, which were then used to calculate the prevalence in depression across PGSI categories.

By substituting values related to depression into the general costing equation $Total\ Cost = A \times B \times C \times D$ (1) the following is calculated:

Total cost of depression due to wagering =

$$(\text{Total Wagerers} \times \text{Prevalence of depression}) \times \text{Counterfactual discount} \\ \times \text{Value of Statistical Life Year} \times \text{Disability weight}$$

The socio-economic benefit calculation also uses equation $Total\ Cost = A \times B \times C \times D$ (1). For example, for high-risk wagerers the calculation would instead use 'change in high-risk gamblers' instead of 'total wagerers'. Moreover, the prevalence of depression will be for high-risk wagerers instead of total wagerers and these data are contained in HILDA. Therefore, the socio-economic benefit specific to high-risk gamblers can be calculated as:

Socio Economic Benefit High Risk Gamblers =

$$(\text{Change in High Risk Gamblers} \times \text{Prevalence of depression}) \times \text{Counterfactual discount} \\ \times \text{Value of Statistical Life Year} \times \text{Disability weight}$$

The same calculation can then be applied to the non-risk, low-risk and moderate-risk groups. The socio-economic benefit estimates reflect the increase or decrease in cost attributed to the partial wagering advertisement ban. By calculating the benefit for non-risk, low-risk, moderate-risk and high-risk groups separately, the impact the wagering advertising ban would have as attributable to at-risk wagering group was quantified.

For example, it can be expected that moderate-risk and high-risk wagering group show negative dollar values, which represents these categories having a lower number of people experiencing wagering related harms after the ban relative to before the ban. On the other hand, non-risk and low-risk groups may show positive dollar values, which represents these categories having a higher number of people after the ban relative to before the ban.

It is important to keep in mind that positive dollar values in the non-risk and low-risk categories do not mean that the partial ban is adding to the cost attributable to the non-risk and low-risk wagerers. The increase in the non-risk and low-risk wagerers costs is a result of the movement of the moderate-risk and high-risk wagerers into these lower-risk groups. These inflows from higher risk categories to lower risk categories result in reduced overall costs relative to before the ban. Once socio-economic benefit values have been calculated for each PGSI category, the sum across all categories can be interpreted as the net benefit to depression related costs attributed to the partial ban in wagering advertising.

Appendix C: Survey questionnaires (selected items)

Community Attitudes Study (CAS) data – Selected items

In this section we would like to ask where you may have seen advertising for sports and/or race betting, and how often.

[Ask all, single response (set)].

E1. Thinking about the past 12 months, how often did you see or hear sports or race betting advertising in the following places?

	Not in the past 12 months	Once or twice a year	A few times a year	About once a month	2 to 3 times a month	About once a week	2 to 3 times a week	4 or more times a week
Code	0	1	2	3	4	5	6	7
Television								
Streamed content (e.g. Kayo, SBS on Demand)								
Radio								
Print media (e.g. newspapers, magazines)								
Outdoor signage (e.g. stadiums, billboards)								
Team/player uniforms or merchandise								
Social media (e.g. Facebook)								
Online (e.g. news websites, YouTube, podcasts)								
Direct messages (e.g. email, SMS)								
Betting affiliates (i.e. through paid third-party publishers/bloggers/tipsters)								

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F1. Thinking about the past 12 months, how often did you spend money on the following gambling activities?

This includes gambling online (e.g. via smartphone, on a laptop), at land-based venues (e.g. TAB, casino), or via telephone calls.

	Not in the past 12 months	Once or twice a year	A few times a year	About once a month	2 to 3 times a month	About once a week	2 to 3 times a week	4 or more times a week
Code	0	1	2	3	4	5	6	7
[F1a] Sports betting (e.g. AFL, NRL, soccer, basketball, cricket, motorsports, etc.)								
[F1b] Horse race betting								
[F1c] Greyhound race betting								
[F1d] Harness race/trots betting								
[F1e] Lotteries or scratchies								
[F1f] Keno or bingo								
[F1g] Poker machines (pokies)								
[F1h] Casino table games (e.g. blackjack or roulette, poker)								
[F1i] Online casino games								
[F1j] eSports (professional video game competitions such as League of Legends, CSGO, Fortnite)								
[F1k] Fantasy sports (e.g. entering a paid competition based on virtual sports teams or events)								
[F1l] Novelty betting (e.g. politics, events)								
[F1m] Virtual sports (e.g. virtual motor racing, virtual horse racing)								

[Ask if F1>0, multiple response]

The Household, Income and Labour Dynamics in Australia (HILDA) – Selected items

Gambling participation/expenditure

In a typical month, roughly how much do you spend on the following activities? This includes money spent online (on a computer, mobile/smart phone, iPad, etc.). If you are unsure, please make your best guess.

		Any expenditure in a typical month?		HOW MUCH PER MONTH? (on average)	
		No	Yes		
a	Instant scratch tickets ('scratchies')			→	\$
b	Bingo			→	\$
c	Lotto or lottery games, like Powerball or Oz Lotto			→	\$
d	Keno			→	\$
e	Private betting (e.g. playing cards or mah-jong with friends and family)			→	\$
f	Poker			→	\$
g	Casino table games (e.g. blackjack, roulette)			→	\$
h	Poker machines ('pokies') or slot machines			→	\$
i	Betting on horse or dog races (but not sweeps)			→	\$
j	Betting on sports			→	\$

SF-36 (mental health)

These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 4 weeks:

		All of the time	Most of the time	A good bit of the time	Some of the time	A little of the time	None of the time
a	Did you feel full of pep?	1	2	3	4	5	6
b	Have you been a very nervous person?	1	2	3	4	5	6
c	Have you felt so down in the dumps that nothing could cheer you up?	1	2	3	4	5	6
d	Have you felt calm and peaceful?	1	2	3	4	5	6
e	Did you have a lot of energy?	1	2	3	4	5	6

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f	Have you felt downhearted and blue?	1	2	3	4	5	6
g	Did you feel worn out?	1	2	3	4	5	6
h	Have you been a happy person?	1	2	3	4	5	6
i	Did you feel tired?	1	2	3	4	5	6

Separation and major worsening in finance in the past 12 months

We now would like you to think about major events that have happened in your life over the past 12 months. For each statement cross either the YES box or the NO box to indicate whether each event happened during the past 12 months. If you answer 'YES', then also cross one box to indicate how long ago the event happened or started:

Did any of these happen to you in the past 12 months?		If 'YES' indicate how many months ago it happened				
	Yes	No	0-3 months ago	4-6 months ago	7-9 months ago	10-12 months ago
Separated from spouse or long-term partner						
Major worsening in financial situation (e.g. went bankrupt)						

National Gambling Trends Study data – Selected items

B1. Thinking about the past 12 months, how often did you **spend money** on the following **gambling** activities? This includes gambling online, at land-based venues, or via telephone calls.

Gambling activity	Not in the past 12 months	Once or twice a year	A few times a year	Once a month	2 to 3 times a month	Once a week or more often
Code	0	1	2	3	4	5
[B1a] Sports events, e.g. AFL, NRL, Soccer, basketball, cricket, motorsports, etc.						
[B1b] Horse racing						
[B1c] Greyhound racing						
[B1d] Harness racing						
[B1e] Poker machines or pokies						
[B1f] Casino table games, e.g. blackjack or roulette, but not poker						
[B1g] Poker						
[B1h] Keno						
[B1i] Lotto or lottery games, like Powerball or Oz Lotto						
[B1j] Instant scratch tickets (scratchies)						
[B1k] Bingo						
[B1l] Betting on fantasy sports, e.g. entering a paid competition based on virtual sports teams or events						
[B1m] Betting on esports (professional video game competitions such as League of Legends, CSGO, Fortnite)						
[B1n] Betting on virtual sports, e.g. virtual motor racing, virtual horse racing						
[B1p] Betting on novelty events, e.g. current affairs, TV shows, daily weather markets, etc.						

F3. Have you experienced any of these issues as a result of your gambling in the **last 12 months**? (Select all that apply) {RANDOMISE}

	Select	Domain (hidden)
Spent less time with people you care about	0/1	Relationships
Had regrets that made you feel sorry about your gambling	0/1	Emotional/ psychological
Increased credit card debt	0/1	Financial
Had less spending on recreational expenses such as eating out, going to movies or other entertainment	0/1	Financial
Increased my consumption of alcohol	0/1	Health
Increased experience of depression	0/1	Health
Loss of sleep due to stress or worry about gambling or gambling-related problems	0/1	Health
Experienced greater conflict in my relationships (arguing, fighting, ultimatums)	0/1	Relationships
Used my work or study time to gamble	0/1	Work/study
Reduced performance at work or study (i.e. due to tiredness or distraction)	0/1	Work/study
None of the above [exclusive response]	0/1	

B7. When you spent money on these activities in the **past 12 months**, roughly how much money did you spend on each activity in a **typical day (excluding winnings)**? (Enter Amount in Australian dollars. Amount for each gambling activity must be between \$1 and \$99,999.)

Gambling activity	Amount Australian dollars (\$AUD) per day:
Sports events, e.g. AFL, NRL, Soccer, basketball, cricket, motorsports, etc.	
Horse racing	
Greyhound racing	
Harness racing	
Poker machines or pokies	
Casino table games, e.g. blackjack or roulette, but not poker	
Poker	
Keno	
Lotto or lottery games, like Powerball or Oz Lotto	
Instant scratch tickets (scratchies)	
Bingo	
Betting on fantasy sports, e.g. entering a paid competition based on virtual sports teams or events	
Betting on esports (professional video game competitions such as League of Legends, CSGO, Fortnite)	
Betting on virtual sports, e.g. virtual motor racing, virtual horse racing	
Betting on novelty events, e.g. current affairs, TV shows, daily weather markets etc	

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B9. In the past 12 months, what payment methods have you used to gamble on each of the below gambling activities? (Select all that apply)

	B9a. Gambling on poker machines or pokies in a venue	B9b. Gambling online on sports or races
Cash		
Debit card		
Credit card		
Cash advance by credit card		
Buy now pay later (e.g. Afterpay, Zip Pay)		
Cryptocurrency (e.g. Bitcoin)		
Other (please specify)		
Cash		

B20. In the past 12 months, what motivated you to bet online on sports and/or racing? (Select all that apply)

	Select
I enjoy a punt	0/1
I have a lot of experience/knowledge of sports and/or racing	0/1
Having a bet makes watching sports/racing more interesting	0/1
Betting is a social activity for me	0/1
The adrenaline rush	0/1
To feel part of the atmosphere of a big sport/race event	0/1
To make money/get ahead financially	0/1
To chase losses/win back money lost	0/1
I bet when I drink alcohol	0/1
I bet when I use drugs	0/1
Boredom	0/1
Loneliness	0/1
To relax	0/1
To escape from my responsibilities	0/1
To forget my worries	0/1
Easy (24-hour) access to betting	0/1
Betting advertisements	0/1
Betting promotions	0/1
Other (specify)	0/1

[AUDIT C alcohol scale C1 to C4]

We are now going to ask you questions about your consumption of alcohol and tobacco. When we ask about a 'drink' of alcohol we mean a standard drink. A standard drink could be a small glass of wine, a 285ml glass of regular beer, a nip of spirits, or a mixed drink or similar.

C1. How often do you have a drink containing alcohol? (select one response only)

	Code
Never	0
Monthly or less	1
2 to 4 times a month	2
2 to 3 times a week	3
4 or more times a week	4

[Ask if C1 = 2; single response]

C2. You said that you drink alcohol 2 to 4 times a month. Was that: (Select one response only)

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	Code
Weekly	0
Less than weekly	2

[Ask if C1 = 1 to 4; single response]

C3. How many drinks containing alcohol do you have on a typical day when you are drinking?
(Select one response only)

A 'drink' of alcohol means a standard drink of alcohol. A standard drink could be a small glass of wine, a 285ml glass of regular beer, a nip of spirits, or a mixed drink or similar.

	Code
1 to 2 drinks	0
3 to 4 drinks	1
5 to 6 drinks	2
7 to 9 drinks	3
10 drinks or more	4

[Ask if C1 = 1 to 4; single response]

C4. How often do you have 6 or more drinks on one occasion? (Select one response only)

	Code
Never	0
Less than monthly	1
Monthly	2
Weekly	3
Daily or almost daily	4

C8. In the past 12 months were you affected by any illicit drugs while gambling? (select one response only)

	Code
No	0
Yes	1
Prefer not to say	99

The next questions are about any help that you may have sought in relation to your gambling.

G1. In the past 12 months, have you sought any help for your gambling? (select one response)

	Code
Yes	1
No, I wanted to seek help but didn't	2
No, I didn't need help	0
Prefer not to say	99

[Ask if G1 = yes, code 1; multiple response, randomise]

G2. What prompted you to seek help for your gambling? (select all that apply)

	Select
Financial problems	0/1
Work or study problems	0/1
Relationship problems	0/1
Health problems	0/1
Legal problems	0/1
Someone urged me to	0/1

Other (specify)	0/1
-----------------	-----

Q13. Was this a **typical amount of money** for you to spend when you bet online on sports/racing?

	Code
No, I spent a lot more money than usual	1
No, I spent a little more money than usual	2
Yes, this was typical	3
No, I spent a little less money than usual	4
No, I spent a lot less money than usual	5

We are now going to ask some questions about your consumption of alcohol and tobacco during your most recent session of online betting.

Q18. Still thinking of your most recent session of online sports/race betting, did you consume any alcohol that day? (if yes, select all that apply)

	Code
Yes, I drank alcohol before betting	1
Yes, I drank alcohol while betting	2
Yes, I drank alcohol after betting	3
No [Exclusive]	0
Prefer not to say [Exclusive]	99

[Ask all online sport/race bettors who drank alcohol in their last online betting session, codes 1–3 at Q18] [Quantity: min 1, max 1,000]

Q20. Roughly how much money did you spend on alcohol **that you consumed** that day? (Amount entered must be between \$1 and \$1,000.)

	Code
Amount spent on alcohol (in Australian dollars):	
Can't say/can't recall	9999

Q24. Thinking of your most recent session where you bet online on sports/racing, did you make any decisions that you later regretted? (select all that apply)

	Select
Spent too much time betting	0/1
Spent too much money betting	0/1
Bet on impulse	0/1
Bet on things I normally wouldn't bet on	0/1
Neglected other commitments because I was betting	0/1
Behaved in ways I normally wouldn't have because of my betting (e.g. with friends and family)	0/1
Drank too much alcohol	0/1
Other (specify)	0/1
None – I did not make any decisions while betting that day I later regretted [exclusive]	0/1
Don't know/prefer not to say [exclusive]	0/1

Q25. Did your online betting on sports/racing that day have any negative impacts on you in the days following? (select all that apply)

	Select
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Lacked motivation	0/1
Felt depressed	0/1
Felt anxious	0/1
Felt guilty	0/1
Experienced mood swings	0/1
Experienced sleeping problems	0/1
Experienced social/relationship problems	0/1
Experienced work/study problems	0/1
Experienced financial problems	0/1
Experienced legal/police problems	0/1
Other (specify)	0/1
None – my betting that day did not negatively impact me [exclusive]	0/1
Don't know/prefer not to say [exclusive]	0/1

Appendix D: Alternative scenario estimates for wagering advertising bans

Two alternative scenarios of a wagering advertising ban were estimated. The proposed alternative options were provided by the research funder DITRDCA and are aimed at informing future iterations of the wagering advertising ban as the phased approach is rolled out.

Alternative scenario A is outlined in Table 25 below, and shows the benefits of a partial wagering advertising ban with the following reductions:

- complete ban (100% reduction) on online advertisements, including social media
- 49% reduction in TV advertisements, including streaming
- 23% reduction in radio advertisements
- 80% reduction in advertisements through betting affiliates.

The total benefit of alternative scenario A for a wagering advertising ban was \$182.2 million.

Table 25: Alternative scenario A total benefits of a ban on wagering advertising in Australia, by PGSI category, 2023

Cost item	Non-risk wagering (PGSI = 0)	Low-risk wagering (PGSI = 1–2)	Moderate-risk wagering (PGSI = 3–7)	High-risk wagering (PGSI ≥ 8)	Total wagering
Post-ban average reduction in number of days wagering per year	7	8	9	8	8
Post-ban change in PGSI category in 2023 Australian adult wagerer population (last 12 months) (A)	5,043	1,681	-1,681	-5,043	0
Post-ban change in PGSI category in 2023 Australian adult regular wagerer population (≥ monthly) (B)	1,404	468	-468	-1,404	0
Direct wagering expenditure					
Yearly wagering expenditure (A)	\$12,307,716	\$7,676,194	-\$14,499,469	-\$68,222,762	-\$62,738,321
Financial harm					
Bankruptcy – admin (A)	\$21,486	\$8,290	-\$8,290	-\$115,712	-\$94,226
Bankruptcy – unpaid debts (A)	\$62,811	\$24,235	-\$24,235	-\$338,267	-\$275,456
Total financial benefit (bankruptcy)	\$84,297	\$32,525	-\$32,525	-\$453,979	-\$369,682
Psychological harm					
Depression (emotional distress to wagerer) (A)	\$5,773,504	\$2,094,788	-\$3,237,998	-\$26,822,331	-\$22,192,036
Anxiety (emotional distress to wagerer) (B)	\$32,271	\$109,002	-\$218,785	-\$4,945,575	-\$5,023,088
Other psychological harm (B)	\$0	\$765,429	-\$2,215,542	-\$2,024,682	-\$3,474,794
Total psychological benefit	\$5,805,775	\$2,969,219	-\$5,672,324	-\$33,792,588	-\$30,689,918
Relationship harm					
Separation (A)	\$2,462,952	\$995,695	-\$872,329	-\$6,605,577	-\$4,019,260
Emotional costs to affected others (B)	\$163,010	\$242,607	-\$2,632,898	-\$56,283,758	-\$58,511,039
Total relationship benefit	\$2,625,962	\$1,238,301	-\$3,505,227	-\$62,889,335	-\$62,530,299
Health harm					
Mild alcohol dependence (B)	\$17,018,480	\$2,883,390	-\$3,927,359	-\$30,986,677	-\$15,012,165

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Cost item	Non-risk wagering (PGSI = 0)	Low-risk wagering (PGSI = 1–2)	Moderate-risk wagering (PGSI = 3–7)	High-risk wagering (PGSI ≥ 8)	Total wagering
Expenditure on alcohol around wagering (B)	\$404,681	\$82,157	-\$169,267	-\$1,335,076	-\$1,017,505
Drug use disorder (B)	\$836,111	\$121,432	-\$344,662	-\$4,133,086	-\$3,520,205
Total health benefit	\$18,259,271	\$3,086,980	-\$4,441,287	-\$36,454,839	-\$19,549,875
Work harm					
Absenteeism (B)	\$59,419	\$35,768	-\$75,032	-\$3,719,070	-\$3,698,915
Reduced work performance (B)	\$92,843	\$30,120	-\$101,945	-\$2,605,063	-\$2,584,045
Total work benefit	\$152,262	\$65,888	-\$176,977	-\$6,324,133	-\$6,282,960
Total benefit of wagering advertising ban in Australia	\$39,235,284	\$15,069,107	-\$28,327,810	-\$208,137,637	-\$182,161,055

Notes: Sourced from HILDA Wave 22 dataset (A = last 12-month wagers) and NGTS 2023 dataset (B = monthly wagers) projected to the Australian adult population 30 June 2023 (ABS, 2024). Black values represent an increase in costs for a specific PGSI category after the wagering advertising ban. Pink values represent a decrease in costs and therefore a benefit.

Alternative scenario B is outlined in Table 26, and shows the benefit of complete ban (100% reduction) of wagering advertising through the following mediums:

- online, including social media
- television, including streaming
- radio
- print media (e.g. newspapers, magazines)
- outdoor signage (e.g. stadiums, billboards)
- on team/player uniforms or merchandise
- betting affiliates.

Wagering advertising through direct messages (e.g. email, SMS) from WSPs were excluded from alternative scenario B complete wagering advertising ban.

The total benefit of alternative scenario B for a wagering advertising ban was \$332.1 million.

Table 26: Alternative scenario B total benefits of a ban on wagering advertising in Australia, by PGSI category, 2023

Cost item	Non-risk wagering (PGSI = 0)	Low-risk wagering (PGSI = 1–2)	Moderate-risk wagering (PGSI = 3–7)	High-risk wagering (PGSI ≥ 8)	Total wagering
Post-ban average reduction in number of days wagering per year	15	17	17	14	15
Post-ban change in PGSI category in 2023 Australian adult wagerer population (last 12 months) (A)	10,405	420	-1,967	-8,859	0
Post-ban change in PGSI category in 2023 Australian adult regular wagerer population (≥ monthly) (B)	2,897	117	-548	-2,466	0
Direct wagering expenditure					
Yearly wagering expenditure (A)	\$25,394,922	\$1,919,048	-\$16,964,379	-\$119,844,652	-\$109,495,061
Financial harm					
Bankruptcy – admin (A)	\$44,333	\$2,073	-\$9,700	-\$203,267	-\$166,561
Bankruptcy – unpaid debts (A)	\$129,600	\$6,059	-\$28,355	-\$594,223	-\$486,919

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Cost item	Non-risk wagering (PGSI = 0)	Low-risk wagering (PGSI = 1–2)	Moderate-risk wagering (PGSI = 3–7)	High-risk wagering (PGSI ≥ 8)	Total wagering
Total financial benefit (bankruptcy)	\$173,933	\$8,131	-\$38,055	-\$797,490	-\$653,480
Psychological harm					
Depression (emotional distress to wagerer) (A)	\$11,912,664	\$523,697	-\$3,788,457	-\$47,117,895	-\$38,469,991
Anxiety (emotional distress to wagerer) (B)	\$112,856	\$60,556	-\$1,279,890	-\$12,902,565	-\$14,009,043
Other psychological harm (B)	\$0	\$490,660	-\$5,400,383	-\$3,592,617	-\$8,502,341
Total psychological benefit	\$12,025,521	\$1,074,913	-\$10,468,731	-\$63,613,077	-\$60,981,374
Relationship harm					
Separation (A)	\$5,081,892	\$248,924	-\$1,020,625	-\$11,603,798	-\$7,293,607
Emotional costs to affected others (B)	\$329,748	\$155,517	-\$6,417,688	-\$99,870,506	-\$105,802,930
Total relationship benefit	\$5,411,640	\$404,441	-\$7,438,313	-\$111,474,304	-\$113,096,537
Health harm					
Mild alcohol dependence (B)	\$34,426,271	\$1,848,327	-\$9,572,937	-\$54,983,093	-\$28,281,432
Expenditure on alcohol around wagering (B)	\$818,620	\$52,665	-\$412,587	-\$2,368,974	-\$1,910,277
Drug use disorder (B)	\$1,691,348	\$77,841	-\$840,114	-\$7,333,792	-\$6,404,717
Total health benefit	\$36,936,238	\$1,978,833	-\$10,825,638	-\$64,685,858	-\$36,596,425
Work harm					
Absenteeism (B)	\$120,198	\$22,928	-\$182,890	-\$6,599,158	-\$6,638,922
Reduced work performance (B)	\$187,810	\$19,308	-\$248,491	-\$4,622,452	-\$4,663,826
Total work benefit	\$308,008	\$42,236	-\$431,381	-\$11,221,610	-\$11,302,747
Total benefit of wagering advertising ban in Australia	\$80,250,261	\$5,427,603	-\$46,166,497	-\$371,636,992	-\$332,125,625

Notes: Sourced from HILDA Wave 22 dataset (A = last 12-month wagerers) and NGTS 2023 dataset (B = monthly wagerers) projected to the Australian adult population 30 June 2023 (ABS, 2024). Black values represent an increase in costs for a specific PGSI category after the wagering advertising ban. Pink values represent a decrease in costs and therefore a benefit.