

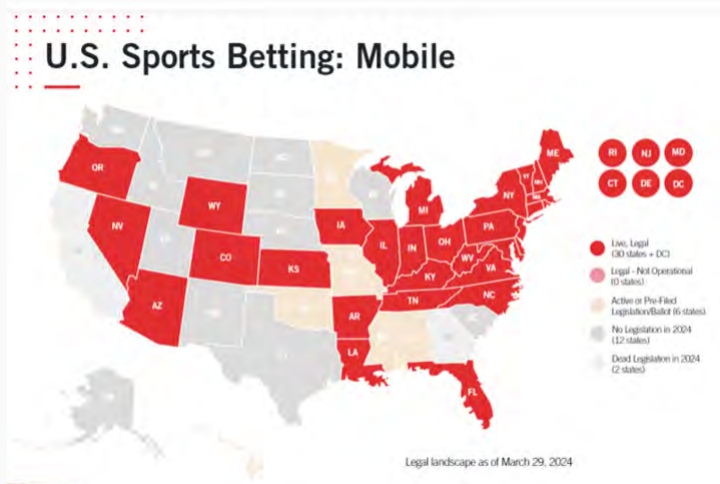
Sports Betting Policy Effects on Irresponsible Gambling

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A social experiment began in 2018



Gambling revenues and gambler helpline calls

U.S. ANNUAL GGR BY VERTICAL AND ONLINE SHARE



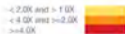
*Land-based gaming comprises casino slots, table games and hotel/casino betting. Other gaming included online sports betting and iGaming.
Source: American Gaming Association



Canadian Centre on Substance Use and Addiction (2021):

Table 4. Change in risk from reference group (i.e., <=0.1%) occurring when gambling expenditure (%) per month predicts financial, relationship, emotional and psychological, and health harms (N=59,099)

Sample size in category	(0.1%]	0.11 to 0.50	0.51 to 1.00	1.1 to 2.0	2.1 to 3.0	3.1 to 4.0	4.1 to 5.0	5.1 or more
HARM								
Financial								
Sample reporting harm (n)	335	535	429	507	337	221	148	1,510
% reporting harm	1.0%	3.4%	5.6%	8.1%	13.3%	13.0%	12.9%	26.0%
Risk relative to reference group		1.62	3.30	4.24	5.99	6.80	7.08	13.74
Relationship								
Sample reporting harm (n)	173	249	207	257	179	126	99	1,043
% reporting harm	1.2%	1.6%	2.7%	4.6%	6.0%	7.6%	8.1%	16.0%
Risk relative to reference group		1.62	2.24	4.74	6.14	7.74	6.34	14.34
Emotional/psychological								
Sample reporting harm (n)	441	638	480	518	374	290	179	1,581
% reporting harm	2.5%	4.0%	6.0%	8.9%	12.5%	14.7%	16.6%	26.7%
Risk relative to reference group		1.62	2.44	3.64	5.34	5.94	6.64	10.74
Health problems								
Sample reporting harm (n)	142	221	157	219	133	97	76	779
% reporting harm	0.6%	1.4%	2.0%	3.5%	4.8%	3.7%	2.0%	13.4%
Risk relative to reference group		1.62	2.44	4.44	5.54	6.44	4.74	16.64



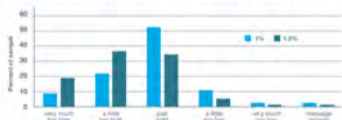
When examining increase in risk associated with expenditures of 1.0% to 3.0% of gross monthly household income (Table 4), it was clear that, relative to those gambling less than 0.1%, risk of harm increases four times as expenditure increases beyond 1.0% of gross monthly household income. This increase aligns with the lower limit for monthly expenditure when expressed as Canadian dollars. According to the 2016 Canadian census,⁴ the median Canadian household pre-tax income was \$70,336. One percent of \$70,000 is equivalent to approximately \$60 per month. The limit of 1% (vs. 1.5%) was also preferred by respondents in our online panel survey (Figure 2).

Gamble no more than 1% of household income before tax per month.

Expenditure

The expenditure guideline derived from the risk curve analyses ranged between \$60 and \$120 per month when expressed as Canadian dollars and between 1% and 3% of gross monthly household income. Information acquired via the online survey of people who gamble regularly and the focus groups indicated that, for many, an exact dollar figure would not be credible given the variability of income among Canadians. For this reason, percentage of household income was preferred.

Figure 2. Responses (n=4,563) to the question: "To reduce the risk of experiencing problems, does the message of gambling no more than 2% or 1.0% per month seem too high, too low or just right for most people who gamble?"



Replications in Norway and UK

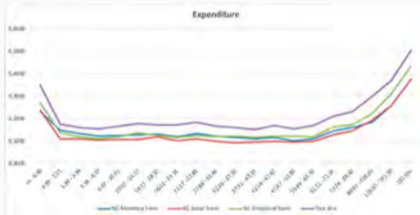
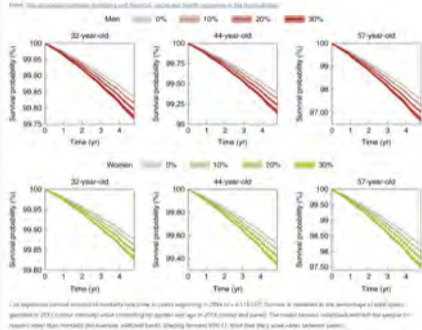


Fig. 2: Gambling and mortality.



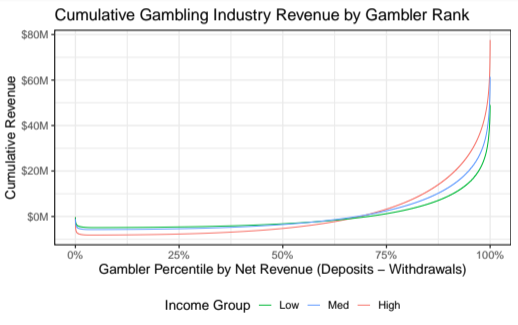
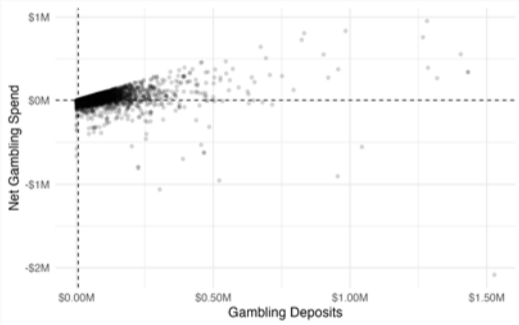
- Jonsson et al. (2022): Gambling harm risks rise with passively measured *Gamble%*
- Muggleton et al (NHB 2021) partnered with UK bank ($N=6MM$): *Gamble%* associates with All Cause Mortality

Financial Panel Data

- Online gambling enables passive gambling spend measurements
- Anonymous digital spending panel, ~10mm adults
 - Transaction records sourced from consumer financial statements
 - 28.4MM transfers to/from 42 gambling merchants
 - Unit of obs: Card payment to ~5k large merchants
 - We select a balanced panel of 234k consumers from 2019Q1-2023Q3 with observed monthly income and 1+ transfers to/from gambling merchants
 - We classify gamblers by state-specific income terciles (Low, Med, High)
- Limitations:
 - We see deposits/withdrawals, not gambles
 - Cash and intermediated payments unobserved
 - Products/services unobserved: Daily Fantasy Sports (DFS) v sports betting

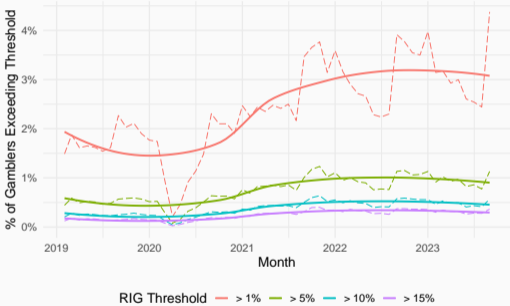
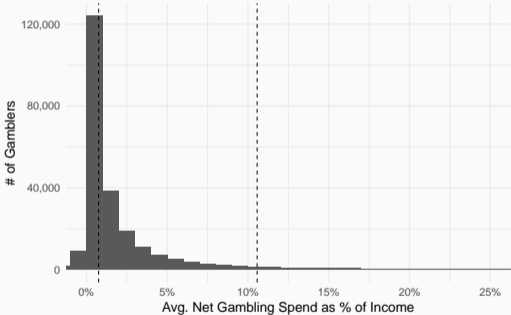
Gamblers by total deposits and net spend; industry revenue by profit ranks

Dashed lines: 95th quantiles



Irresponsible gambling metrics

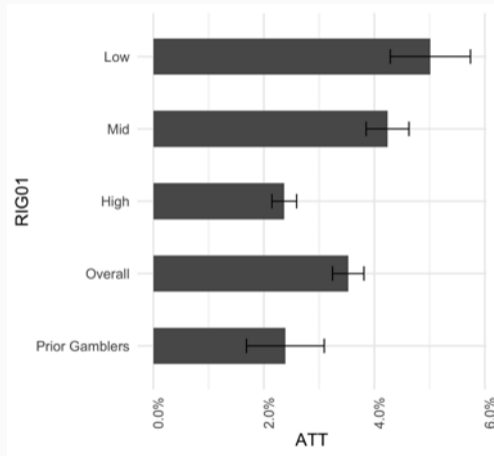
Dashed lines: 50th and 95th quantiles



Methods: How did SB legalizations change irresponsible gambling?

- Generalized Synthetic Control with Interactive Fixed Effects:
 - Estimates control unit weights for each treated unit to improve counterfactuals
 - Conceptually similar to staggered diff-in-diff, but never uses treated units as controls
- Research design
 - Quasi-Treatment: 9 states that legalized sports betting (online+retail)
 - Quasi-Control: 14 states without legal sports betting (never-treated)
 - Excluded: Partial treatments, drip treatments, bespoke treatments, always-treated
- Outcome variables: RIG01; by income tercile; among prior gamblers

ATTs on RIG01



Takeaways

- We can track some digital gambling behaviors; & so can operators
- Sports betting policies increased monthly irresponsible gambling by 3.4%, on avg
- Gambling taxes are progressive but irresponsible gambling is regressive
 - SB legalizations increased monthly irresponsible gambling by low-income consumers 2.2x more than by high-income consumers (5.0% vs. 2.3%)
- Full paper goes much deeper, online [here](#)
 - We invite comments as we continue to revise