

Internet Appendix

Gambling Away Stability: Sports Betting's Impact on Vulnerable Households

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Table A.1
Definition of Variables

This table provides definitions for the variables used in our analysis. Unless otherwise noted, the source for all variables is the transaction data from our undisclosed financial aggregator and the variables are constructed based on the authors' calculations.

Variable	Definition
<i>Dependent Variables</i>	
Sports Bets	Total quarterly household deposits (in dollars) to online sports betting apps such as DraftKings or FanDuel.
Bets to Income	Total quarterly household deposits (in dollars) to online sports betting apps divided by quarterly income.
Brokerage Deposits	Total quarterly household deposits to post-tax brokerage accounts minus withdrawals from these accounts (in dollars).
Robinhood Deposits	Total quarterly household deposits to Robinhood minus withdrawals from these accounts (in dollars).
Robo Advisor Deposits	Total quarterly household deposits to Robo Advisor brokerage accounts (Acorns, Betterment, and Wealthfront) minus withdrawals from these accounts (in dollars).
CC Debt	Total credit card balance as of the end of the quarter, summed across all of the household's credit cards. Balances are extrapolated based on observable credit card flows from two point-in-time snapshots of credit card balances.
Loan Payments	Total quarterly personal loan payments, including FinTech loans, auto loans, and other identifiable consumer loans.
Lotto	Total quarterly household spending on lottery tickets.
Poker	Total quarterly household spending on online poker games.
Crypto	Total quarterly household deposits (in dollars) to crypto brokerages (e.g., Coinbase, Gemini, etc.).
Restaurants	Total quarterly household spending on transactions categorized by data provider as restaurants.
Alcohol	Total quarterly household spending at bars, sports bars, and alcohol-focused retailers.
Cable/Telecom	Total quarterly household spending on transactions categorized by data provider as cable/telecommunications
Entertain/Travel	Total quarterly household spending on transactions categorized by data provider as entertainment or travel.
Other Spending	Total quarterly household spending minus the sum of <i>Sports Bets</i> , <i>Restaurants</i> , <i>Alcohol</i> spending not included in <i>Restaurants</i> , and <i>Cable/Telecom</i> .
<i>Control Variables</i>	
Treat	Indicator variable equal to one if the household currently lives in a state that legalizes online sports betting at some point during our sample (through September 2023). A list of states that legalize online sports betting is available in Appendix Table A.2.
Post	Indicator variable equal to one for quarters following the launch of online sports betting for households living in a state with legal online sports betting. Legalization dates are available in Appendix Table A.2.
Low Savings	Indicator variable equal to one if the household's average savings flow over the 10 quarters prior to 2018 Q3 is less than the sample median. We calculate savings flows as total income minus total spending.

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Variable	Definition
<i>Control Variables: Continued</i>	
Frequent Bettor	Indicator variable equal to one if the household deposits money to a sport betting app in at least 50% of months following their first post-legalization betting deposit.
Intense Bettor	Indicator variable equal to one if the household had an average quarterly bet deposits to income ratio, post-legalization, of at least one percent.
Quarterly Income	Total household quarterly income, defined as salary plus other income plus deposits.
Stimulus Payments	Total household quarterly COVID-19 stimulus payments, including any child tax credits received.
<i>Household Characteristics: Tables 1 and 2</i>	
Total Betting Deposits	Lifetime sum of household deposits (in dollars) to online sports betting apps.
Avg. Quarterly Betting Deposits	Quarterly household deposits (in dollars) to online sports betting apps averaged across all quarters that the household appears in our sample.
Avg. Bets to Income	Quarterly household deposits (in dollars) to online sports betting apps divided by quarterly income, averaged across all quarters that the household appears in our sample.
Avg. Quarterly Income	Quarterly household income averaged across all quarters that the household appears in our sample.
Avg. Quarterly Investment	Quarterly household deposits to post-tax brokerage accounts averaged across all quarters that the household appears in our sample.
Pr(Ever Play Poker)	Indicator variable equal to one if the household ever spends money on online poker sites during our sample.
Pr(Ever Play Lotto)	Indicator variable equal to one if the household ever spends money on lottery tickets during our sample, primarily identified from online lottery ticket purchases.
Pr(Ever Buy Crypto)	Indicator variable equal to one if the household ever deposits money to a crypto brokerage account during our sample.
Pr(Below Median Savings)	Indicator variable equal to one if the household is <i>Low Savings</i> , as defined above.
Pr(Ever Overdraw)	Indicator variable equal to one if the household ever overdraws their bank accounts during our sample.
CC Debt to Income	End of quarter household credit card balance divided by quarterly income averaged across all quarters that the household appears in our sample.
Received Child Tax Credit	Indicator variable equal to one if the household receives any amount of child tax credit as part of the third round of COVID Stimulus.

Table A.2
Sports Betting Legalization Dates

This table shows the legal status of sports betting by state. States have legalized sports betting exclusively at retail locations, exclusively through online apps, or through both methods as indicated. Note that Mississippi, Montana, and Washington allow online betting, but only when physically on the premises of a retail location. For our purposes, we consider these states as not allowing online betting. Launch dates represent the first date on which bets could actually be placed. Our experiment is based on the online launch date of sports betting in states for which it is legal to bet through online apps. Our sample includes all states that launch online sports betting prior to September 2023.

State	Online Betting	Retail Betting	Online Launch	Retail Launch
Arizona	YES	YES	9/9/2021	9/9/2021
Arkansas	YES	YES	3/6/2022	7/1/2019
Colorado	YES	YES	5/1/2020	6/17/2020
Connecticut	YES	YES	10/19/2021	9/30/2021
Delaware	YES	YES	12/27/2023	6/5/2018
Florida	YES	YES	11/7/2023	12/7/2023
Illinois	YES	YES	3/5/2022	3/9/2020
Indiana	YES	YES	10/3/2019	9/1/2019
Iowa	YES	YES	8/15/2019	8/15/2019
Kansas	YES	YES	9/1/2022	9/1/2022
Kentucky	YES	YES	9/28/2023	9/7/2023
Louisiana	YES	YES	1/28/2022	10/6/2021
Maine	YES	YES	5/2/2022	5/2/2022
Maryland	YES	YES	11/23/2022	12/9/2021
Massachusetts	YES	YES	3/10/2023	1/31/2023
Michigan	YES	YES	1/22/2021	3/11/2020
Mississippi	NO	YES	—	8/1/2018
Montana	NO	YES	—	3/11/2020
Nebraska	NO	YES	—	6/22/2023
Nevada	YES	YES	1/1/2010	1/1/1949
New Hampshire	YES	YES	12/30/2019	8/12/2020
New Jersey	YES	YES	8/1/2018	6/14/2018
New Mexico	NO	YES	—	10/16/2018
New York	YES	YES	1/8/2022	7/16/2019
North Carolina	YES	YES	3/11/2024	3/18/2021
North Dakota	NO	YES	—	6/23/2021
Ohio	YES	YES	1/1/2023	1/1/2023
Oregon	YES	YES	8/27/2019	8/27/2019
Pennsylvania	YES	YES	5/1/2019	11/15/2018
Rhode Island	YES	YES	9/14/2019	11/26/2018
South Dakota	NO	YES	—	9/9/2021
Tennessee	YES	NO	11/1/2020	—
Vermont	YES	NO	1/11/2024	—
Virginia	YES	YES	1/21/2021	1/21/2021
Washington	NO	YES	—	9/9/2021
District of Columbia	YES	YES	5/28/2020	8/31/2020
West Virginia	YES	YES	12/1/2018	9/1/2018
Wisconsin	NO	YES	—	11/30/2021
Wyoming	YES	YES	9/1/2021	9/1/2021

Table A.3
Predicting Sports Betting Legalization

This table reports estimates from state-by-quarter OLS and hazard model regressions predicting the timing of a state's legalization of sports betting. Quarterly estimates of private and state-government employment, number of establishments, and wages come from the Quarterly Census of Employment and Wages (QCEW). Reported t -statistics in parentheses are heteroskedasticity-robust and clustered at the state level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1) Legalization	(2) Legalization	(3) Legalization
Private Employment Growth $_{t-1}$	-5.769 (-1.32)	1.602 (1.55)	-0.082 (-0.36)
State Employment Growth $_{t-1}$	3.985 (0.57)	-0.991 (-0.62)	0.162 (0.76)
Private Employment Growth $_{t-4}$	-1.844 (-0.56)	0.684 (0.86)	-0.044 (-0.22)
State Employment Growth $_{t-4}$	-7.851 (-1.12)	1.488 (0.99)	0.138 (0.57)
Private Establishment Growth $_{t-4}$	-4.700 (-1.08)	1.222 (1.07)	0.058 (0.36)
Private Wage Growth $_{t-4}$	1.441 (0.29)	-0.367 (-0.35)	0.036 (0.11)
State Wage Growth $_{t-4}$	1.768 (0.60)	-0.307 (-0.49)	0.158 (1.23)
Ln(Lagged Total Private Income)	0.137 (0.78)	-0.027 (-0.69)	-0.088 (-0.64)
State FE	No	No	Yes
Year-Quarter FE	No	No	Yes
Model	Cox	Log logistic	OLS
Observations	1,110	1,110	1,110
Adj. R-squared			0.018

Table A.4
Legalization leads to increased net betting

This table reports difference-in-differences estimates of the effect of sports betting legalization on betting behavior, using quarterly household-level panel data and the imputed difference-in-differences estimator of [Borusyak et al. \(2024\)](#). The sample extends from Q3 2014 to Q3 2023. The dependent variable in columns (1)–(3) is total quarterly net deposits to online betting apps (i.e., deposits less withdrawals in dollars). In column (4), the dependent variable is quarterly total net deposits to sports betting apps (in dollars) divided by quarterly income. $Post \times Treat$ is an indicator equal to one for quarters following the launch of legal online sports betting in a state. Column (1) shows the overall effect of sports betting legalization. Column (2) examines heterogeneity by *Frequent Bettor*, an indicator for households that deposit money to sports betting apps in at least 50% of months following their first legal bet. Columns (3) and (4) examine heterogeneity by *Low Savings*, an indicator for households with below-median savings flows during the 10 quarters preceding the first legalization of online betting. The imputation produces separate treatment effect estimates for each subsample (reported in the main table), and the footer reports the difference in estimated effects across subsamples. All regressions control for income and stimulus payments received in the quarter and include household and year-quarter fixed effects. Variable definitions are provided in Appendix Table A.1. Reported Z-statistics (in parentheses) are heteroskedasticity-robust and clustered at the household level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1) Net Bets	(2) Net Bets	(3) Net Bets	(4) Net Bets to Income
Post $\times$ Treat	14.88*** (18.82)			
Post $\times$ Treat $\times$ Frequent Bettor=0		2.586*** (7.99)		
Post $\times$ Treat $\times$ Frequent Bettor=1		580.7*** (19.25)		
Post $\times$ Treat $\times$ Low Savings=0			15.98*** (13.14)	0.000704*** (12.98)
Post $\times$ Treat $\times$ Low Savings=1			13.85*** (13.73)	0.00106*** (15.97)
Controls	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes
Year-quarter FE	Yes	Yes	Yes	Yes
Observations	4,277,376	4,277,376	4,277,376	4,214,331
Frequent minus Infrequent Bettor		578.091***		
Low minus High Savings			-2.131	0.000***

Table A.5
Online Betting Effects Grow Over Time

This table reports estimates of the effect of the legalization of sports betting on betting behavior. The underlying data are a quarterly household-level panel. We use a two-way fixed effects difference-in-differences (TWFE) regression to estimate the effect of legalizing sports betting. $\# \text{ Quarters Post} \times \text{Treat}$ indicates the number of quarters that have passed since the legalization of online sports betting; it is defined as zero for all states that have not yet legalized betting. Panel A shows the overall sample estimates, while Panel B reports interactions with *Low Savings*, which is an indicator for households that had below-median savings during the 10 quarters preceding the first legalization of online betting. Column (1) show the estimates of the effect of legalization on quarterly deposits to sports betting apps, while the remaining columns show the effect on various measures of household spending, as indicated by the column header. The regressions include controls for income and the amount received from stimulus payments in the quarter in addition to household and year-quarter fixed effects. Variable definitions are found in Appendix Table A.1. Reported t -statistics in parentheses are heteroskedasticity-robust and two-way clustered at the household- and year-quarter-levels. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Main Effects						
	(1) Sports Bets	(2) Brokerage Deposits	(3) Loan Payments	(4) Restaurants	(5) Alcohol	(6) Cable/Telecom
$\# \text{ Quarters Post} \times \text{Treat}$	4.094*** (11.41)	-9.499*** (-5.50)	0.177*** (3.37)	11.84*** (5.56)	0.578*** (7.03)	7.938*** (8.71)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes
Year-quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,279,302	4,279,302	4,279,302	4,279,302	4,279,302	4,279,302
Adjusted R^2	0.230	0.239	0.375	0.602	0.544	0.662
Panel B: Low Savers						
	(1) Sports Bets	(2) Brokerage Deposits	(3) Loan Payments	(4) Restaurants	(5) Alcohol	(6) Cable/Telecom
$\# \text{ Quarters Post} \times \text{Treat}$	4.142*** (8.87)	-2.538 (-1.33)	-0.00877 (-0.13)	5.873** (2.60)	0.437*** (4.78)	5.042*** (6.05)
$\text{Low Savings}=1 \times \# \text{ Quarters Post} \times \text{Treat}$	-0.0939 (-0.19)	-13.45*** (-4.26)	0.359*** (4.24)	11.53*** (8.84)	0.273*** (3.73)	5.596*** (11.30)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes
Year-quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,279,302	4,279,302	4,279,302	4,279,302	4,279,302	4,279,302
Adjusted R^2	0.230	0.239	0.375	0.602	0.544	0.662

Table A.6
Imputed Diff-in-Diff: Intense Bettors

This table reports difference-in-differences estimates of the effect of sports betting legalization on household spending, using quarterly household-level panel data and the imputed difference-in-differences estimator of [Borusyak et al. \(2024\)](#). The sample extends from Q3 2014 to Q3 2023. The dependent variable is shown in the column header. $Post \times Treat$ is an indicator equal to one for quarters following the launch of legal online sports betting in a state. We examine heterogeneity in this effect by *Intense*, an indicator for households that have an average quarterly bet-to-income ratio, post-legalization, of at least one percent. The imputation produces separate treatment effect estimates for each subsample (reported in the main table), and the footer reports the difference in estimated effects across subsamples. All regressions control for income and stimulus payments received in the quarter and include household and year-quarter fixed effects. Variable definitions are provided in Appendix Table [A.1](#). Reported Z-statistics (in parentheses) are heteroskedasticity-robust and clustered at the household level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Sports Bets	Brokerage Deposits	Loan Payments	Restaurants	Alcohol	Cable/Telecom
Post $\times$ Treat $\times$ Intense=0	0.216 (0.64)	-79.23*** (-9.28)	0.857** (2.18)	88.52*** (27.62)	4.182*** (13.24)	57.60*** (36.26)
Post $\times$ Treat $\times$ Intense=1	1112.5*** (24.81)	-139.4*** (-3.90)	12.82*** (2.91)	219.8*** (11.95)	18.08*** (6.38)	97.51*** (11.77)
Controls and FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,277,376	4,277,376	4,277,376	4,277,376	4,277,376	4,277,376
High minus Low Intensity Bettor	1112.328***	-60.140*	11.966***	131.286***	13.901***	39.910***

Table A.7

Legalization in Counties that Border Already Legal States

This table reports difference-in-differences estimates using quarterly household-level panel data and the imputed difference-in-differences estimator of [Borusyak et al. \(2024\)](#). The sample extends from Q3 2014 to Q3 2023, but is restricted to all counties in control states plus border counties in treatment states. These border counties are included only if (i) its own state legalizes online sports betting during our sample, and (ii) at least one bordering state had already legalized betting in the past. This tests whether legalization has additional effects in areas already exposed to neighboring-state legalization. The dependent variable in columns (1)–(2) is total quarterly deposits to online betting apps (in dollars). The dependent variable in columns (3)–(4) is net investment deposits to brokerages (in dollars). $Post \times Treat$ is an indicator equal to one for quarters following the launch of legal online sports betting in a state. Columns (1) and (3) show the overall effect of cross-border sports betting legalization. Columns (2) and (4) examine heterogeneity by *Low Savings*, an indicator for households with below-median savings flows during the 10 quarters preceding the first legalization of online betting. The imputation produces separate treatment effect estimates for each subsample (reported in the main table), and the footer reports the difference in estimated effects across subsamples. All regressions control for income and stimulus payments received in the quarter and include household and year-quarter fixed effects. Variable definitions are provided in Appendix Table A.1. Reported Z-statistics (in parentheses) are heteroskedasticity-robust and clustered at the household level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Treatment: Border county after legalization where cross-border state previously legal			
	(1) Sports Bets	(2) Sports Bets	(3) Brokerage Deposits	(4) Brokerage Deposits
Post $\times$ Treat	26.35*** (9.19)		-51.41*** (-3.47)	
Post $\times$ Treat $\times$ Low Savings=0		24.85*** (5.47)		42.16 (1.50)
Post $\times$ Treat $\times$ Low Savings=1		23.70*** (5.36)		-108.5*** (-6.69)
Controls	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes
Year-quarter FE	Yes	Yes	Yes	Yes
Observations	3,395,259	3,359,660	3,395,259	3,359,660
Low minus High Savings		-1.145		-150.611***

Table A.8
Triple Difference with Frequent Bettors

This table reports triple-difference estimates of the effect of sports betting legalization on household financial outcomes, using quarterly household-level panel data and TWFE DiD estimation. The sample extends from Q3 2014 to Q3 2023. Dependent variables are various measures of household spending, as indicated in the column header. $Post \times Treat$ is an indicator equal to one for quarters following the launch of legal online sports betting in a state. We focus on the further interaction of this effect with *Frequent Bettor*, an indicator for households that deposit money to sports betting apps in at least 50% of months following their first legal bet. All regressions include the fully saturated set of *Post*, *Treat*, and *Frequent Bettor* controls, controls for both income and stimulus payments received in the quarter, and household and state-year-quarter fixed effects. Variable definitions are provided in Appendix Table A.1. Reported *t*-statistics (in parentheses) are heteroskedasticity-robust and two-way clustered at the household- and year-quarter-levels. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Sports Bets	Brokerage Deposits	Loan Payments	Restaurants	Alcohol	Cable/Telecom	Other Spending
Post $\times$ Treat $\times$ Frequent Bettor	1160.4*** (9.70)	-120.6*** (-3.24)	13.39** (2.56)	149.7*** (6.35)	16.94*** (4.00)	62.74*** (5.73)	66.21 (0.46)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State by Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,279,282	4,279,282	4,279,282	4,279,282	4,279,282	4,279,282	4,279,282
Adjusted R^2	0.286	0.239	0.375	0.604	0.545	0.663	0.732

Table A.9
Deposits fall at both Robo Advisors and Robinhood

This table reports difference-in-differences estimates of the effect of sports betting legalization on household investments, using quarterly household-level panel data and the imputed difference-in-differences estimator of [Borusyak et al. \(2024\)](#). The sample extends from Q3 2014 to Q3 2023. We focus on deposits to different types of brokerages. The dependent variable in columns (1)–(3) is total brokerage deposits to Robinhood. The dependent variable in columns (4)–(6) is total brokerage deposits to robo advisors. *Post* $\times$ *Treat* is an indicator equal to one for quarters following the launch of legal online sports betting in a state. Columns (1) and (4) examine the overall effect of legalization. Columns (2) and (5) examine heterogeneity by *Frequent Bettor*, an indicator for households that deposit money to sports betting apps in at least 50% of months following their first legal bet. Columns (3) and (6) examine heterogeneity by *Low Savings*, an indicator for households with below-median savings flows during the 10 quarters preceding the first legalization of online betting. The imputation produces separate treatment effect estimates for each subsample (reported in the main table), and the footer reports the difference in estimated effects across subsamples. All regressions control for income and stimulus payments received in the quarter and include household and year-quarter fixed effects. Variable definitions are provided in Appendix Table A.1. Reported Z-statistics (in parentheses) are heteroskedasticity-robust and clustered at the household level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1) Robinhood Deposits	(2) Robinhood Deposits	(3) Robinhood Deposits	(4) Robo Advisor Deposits	(5) Robo Advisor Deposits	(6) Robo Advisor Deposits
Post $\times$ Treat	-4.474*** (-4.35)			-1.854*** (-2.63)		
Post $\times$ Treat $\times$ Frequent Bettor=0		-4.672*** (-4.55)			-1.827*** (-2.58)	
Post $\times$ Treat $\times$ Frequent Bettor=1		4.608 (0.65)			-3.090 (-1.38)	
Post $\times$ Treat $\times$ Low Savings=0			-1.913 (-1.32)			0.131 (0.13)
Post $\times$ Treat $\times$ Low Savings=1			-6.887*** (-6.30)			-3.724*** (-5.45)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes
Year-quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,277,376	4,277,376	4,277,376	4,277,376	4,277,376	4,277,376
Frequent minus Infrequent Bettor		9.280			-1.262	
Low minus High Savings			-4.975***			-3.855***

Table A.10

The Effects of Sports Betting on Other Risk Taking

This table reports difference-in-differences estimates of the effect of sports betting legalization on other types of risk taking, using quarterly household-level panel data and the imputed difference-in-differences estimator of [Borusyak et al. \(2024\)](#). The sample extends from Q3 2014 to Q3 2023. The dependent variable in columns (1)–(2) is the dollar value of lottery ticket purchases. The dependent variable in columns (3)–(4) is total spending on online poker. The dependent variable in columns (5)–(6) is the deposits to crypto brokerages (in dollars). $Post \times Treat$ is an indicator equal to one for quarters following the launch of legal online sports betting in a state. Columns (1), (3) and (5) examine heterogeneity in the effect of legalization by *Frequent Bettor*, an indicator for households that deposit money to sports betting apps in at least 50% of months following their first legal bet. Columns (2), (4) and (6) examine heterogeneity by *Low Savings*, an indicator for households with below-median savings flows during the 10 quarters preceding the first legalization of online betting. The imputation produces separate treatment effect estimates for each subsample (reported in the main table), and the footer reports the difference in estimated effects across subsamples. All regressions control for income and stimulus payments received in the quarter and include household and year-quarter fixed effects. Variable definitions are provided in Appendix Table A.1. Reported Z-statistics (in parentheses) are heteroskedasticity-robust and clustered at the household level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1) Lotto	(2) Lotto	(3) Poker	(4) Poker	(5) Crypto	(6) Crypto
Post $\times$ Treat $\times$ Frequent Bettor=0	1.001*** (7.29)		-0.0146 (-0.83)		-14.05*** (-6.32)	
Post $\times$ Treat $\times$ Frequent Bettor=1	9.682*** (3.01)		4.170* (1.85)		-6.305 (-0.50)	
Post $\times$ Treat $\times$ Low Savings=0		1.546*** (6.69)		0.0729 (1.18)		-2.594 (-0.85)
Post $\times$ Treat $\times$ Low Savings=1		0.846*** (4.70)		0.0760 (0.96)		-24.52*** (-10.60)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Household FE	Yes	Yes	Yes	Yes	Yes	Yes
Year-quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,277,376	4,277,376	4,277,376	4,277,376	4,277,376	4,277,376
Frequent minus Infrequent Bettor	8.681***		4.184*		7.744	
Low minus High Savings		-0.700**		0.003		-21.925***

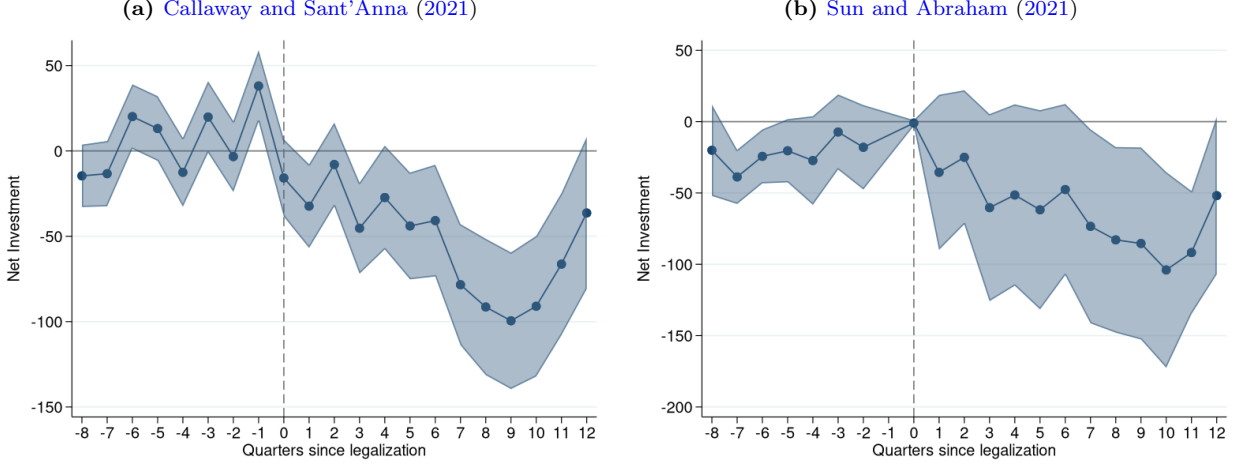


Figure A.1. Parallel Trends in Net Investment around Sports Betting Legalization. This figure presents event-time coefficients of the effect of the legalization of sports betting on net investment (e.g., deposits less withdrawals at equity brokerages). The x -axis indicates quarters surrounding the legalization of sports betting, where $t = 0$ represents the quarter during which online betting was first possible. The y -axis shows the average causal effect of legalization on quarterly net investment. We estimate the difference-in-difference event-time coefficients following [Callaway and Sant'Anna \(2021\)](#) in Panel (a), and following [Sun and Abraham \(2021\)](#) in Panel (b). These methods account for the staggered rollout of the legalization of state betting. The shaded region represents the 95% confidence interval.

References

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