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Impact of Online Lottery Sales Prohibition on the Structure of Lottery Consumers: A Time Cost Perspective in China

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Protocol status: Working

We use this protocol and it's working

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Keywords: improvement of the lottery consumer structure, impact of online lottery sales prohibition, sales within the lottery industry, lottery tickets on consumer demand, time cost perspective in china lottery, online lottery sale, prohibition of online lottery sale, online lottery sales prohibition, structure of lottery consumer, lottery consumer structure, china lottery, convenience on the lottery industry, lottery consumer, purchasing lottery ticket, lottery industry, various types of lottery ticket, sports lottery tickets in distinct income region, lottery ticket, sports lottery ticket, lotto, impact of purchasing, sales of welfare, consumer demand, fiscal revenue, augmenting sale, decline in demand, sale, different income group

Disclaimer

This dataset belongs to the paper "Impact of Online Lottery Sales Prohibition on the Structure of Lottery Consumers: A Time Cost Perspective in China", which is currently under review at PLOS ONE.

Abstract

Lottery public welfare funds constitute a significant source of government fiscal revenue. Consequently, it is of crucial importance to objectively analyze the impact of purchasing convenience on the lottery industry. This study employs the discrete-time dynamic optimization Bellman equation to examine the influence of time costs associated with purchasing lottery tickets on consumer demand across different income groups, considering various types of lottery tickets. Utilizing panel data spanning from 2007 to 2021 from 30 provinces in China, the Difference-in-Differences (DID) method is employed to assess the effects of the ban on online lottery sales, implemented in 2015, on the sales of welfare and sports lottery tickets in distinct income regions. The findings indicate that the prohibition of online lottery sales leads to a more rapid decline in the demand for betting-lottery tickets in high-income areas compared to low-income areas, while no significant variation in the rate of decline in demand for lotto-lottery tickets is observed. This trend hampers the improvement of the lottery consumer structure and overall sales. The research outcomes furnish valuable references for enhancing the structure of lottery consumers and augmenting sales within the lottery industry.

Attachments

					
<u>Common Trends</u>	<u>DID Test.do</u>	<u>The Dataset of</u>	<u>The Dataset of Corre...</u>	<u>The Dataset of DID.d...</u>	<u>Data Correlation Tes...</u>
<u>Test.d...</u>		<u>Commo...</u>			
3KB	0B	78KB	22KB	85KB	1KB

Materials

To facilitate the reproducibility of the experiment, the data we provide only includes what is necessary for the paper, along with the most streamlined commands. We present the data sources below.

Data Source

This study employs provincial panel data from 30 Chinese regions (2007–2021) to evaluate the differential impacts of internet lottery sales prohibition on sports and welfare lottery markets across income tiers, complemented by national time-series data (January 2012–December 2021) to analyze cross-system correlations in homologous lottery products (e.g., lottos vs. lotteries). Post-2021 data exclusion derives from two unrecorded market responses: (a) Post-pandemic expansion of physical lottery outlets, with over 150,000 new stores licensed in 2022 (China Commerce Daily, 2023), substantially reduced consumers' time costs for offline purchases; (b) 83% of vendors adopted WeChat-mediated proxy betting during the 2022 FIFA World Cup (Tencent Consumer Report, 2023), enabling customers to commission purchases remotely via cash transactions that evaded official tracking. These undocumented adaptations would artificially attenuate the policy's observed effects by reintroducing time-efficient alternatives, necessitating temporal truncation for causal identification.

Data were sourced from the China Statistical Yearbook, National Bureau of Statistics, People's Bank of China, CEID macroeconomic database, and lottery regulatory agencies. The Tibet Autonomous Region, Hong Kong, Macau, and Taiwan were excluded due to data availability constraints.

China Commerce Daily: Trade publication without audit oversight; store count methodology undisclosed.

Tencent Consumer Report: Convenience sample of 1,200 vendors near sports venues; no rural coverage.

Before start

Installing Stata version 18 or higher



Common Trends Test

- 1 Use Stata version 18 or higher. First, import the Stata data file named The Dataset of Common Trends Test.
- 2 then import the file Common Trends Test.do and run it.
- 3 If there are any uninstalled commands, please first install the required ones using ssc install.
- 4 You will then obtain Figures S1, S2, Table S2, and Table S3 as shown in the Manuscript.

Data Correlation Test

- 5 Using Stata version 18 or higher, first import the Stata data file named The Dataset of Correlation Test.
- 6 Then import the file Data Correlation Test.do and run it.
- 7 If there are any uninstalled commands, please first install the required ones using ssc install.
- 8 You will then obtain Table S1 as shown in the Manuscript.

DID Test

- 9 Using Stata version 18 or higher, first import the Stata data file named The Dataset of DID.
- 10 Then import the file DID Test.do and run it.
- 11 If there are any uninstalled commands, please first install the required ones using ssc install.



12 This will generate Table 4 as presented in the Manuscript.

Protocol references

Data were sourced from :

China Statistical Yearbook

National Bureau of Statistics

People's Bank of China

CEID macroeconomic database

lottery regulatory agencies