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State lotteries and consumer behavior

Melissa Schettini Kearney*

Department of Economics, Wellesley College, 106 Central Street, Wellesley, MA 02481, United States

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Abstract

This paper investigates two central issues regarding state lotteries. First, analyses of multiple sources of micro-level data demonstrate that household lottery spending is financed primarily by a reduction in non-gambling expenditures, not by a reduction in expenditures on other forms of gambling. The introduction of a state lottery is associated with an average decline of $46 per month, or 2.4 percent, in household non-gambling expenditures. Low-income households reduce non-gambling household expenditures by 2.5 percent on average, 3.1 percent when the state lottery includes instant games. These households experience statistically significant declines in expenditures on food and on rent, mortgage, and other bills. Second, consumer demand for lottery products responds positively to the expected value of the gamble, controlling for other statistical moments and product characteristics, including the nominal top prize amount. This finding is consistent with informed choice among consumers of lottery products, although other forms of irrational or misinformed choice cannot be ruled out.

JEL classification: D1; H1; H3; H8
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1. Introduction

In the past three decades, the prevalence and scale of state lotteries have expanded dramatically. The first modern state lottery was introduced in New Hampshire in 1964. By

* Tel.: +1 781 283 2154; fax: +1 781 283 2177.
E-mail address: mkearney@wellesley.edu.

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1973, seven states operated state lotteries and consumers spent a total of $2.1 billion on lottery products (in year 2000 dollars).[1] By 1999, there were 38 state lotteries in operation, and consumers spent a total of $37 billion. This total represents an annual average of $226 per adult living in a lottery state, or $370 per household nationwide. This is more than the average household spent in 1999 on alcoholic beverages or on tobacco products and supplies. It is more than twice the amount households spent on reading materials. And it is roughly equal to what the average household spent on life and other personal insurance.[2]

As the expansion of state lotteries continues, there is substantial public controversy surrounding the use of lotteries as a means of raising public funds. Opponents argue that state lotteries prey on minorities and the poor and that spending on state lotteries displaces consumption and savings. Some worry that governments are "tricking" people with a "sucker's bet," exploiting misinformation on the part of consumers. Supporters of state lotteries counter that people from all demographic groups play the lottery. They argue that people demand gambling products and a state lottery capitalizes on that demand by providing a product that substitutes for other forms of gambling. Some characterize lottery sales as voluntary purchases of entertainment goods.

Previous research has addressed the issue of regressivity and documented the demographic predictors of lottery gambling.[3] This paper provides an empirical investigation into the remaining, unresolved issues that are often raised in public discussions of state lotteries. First, do lotteries simply crowd out other gambling expenditures, or does the presence of a state lottery lead to a reduction in other forms of household spending? In particular, whose spending and what components of spending are most affected? Second, does consumer demand for lottery games respond to expected returns, as maximizing behavior predicts, or do consumers appear to be misinformed about the risks and returns of lottery gambles?

The paper first investigates how household spending responds to the introduction of a state lottery. I analyze household expenditures using Bureau of Labor Statistics (BLS) *Consumer Expenditure Survey (CEX)—Interview Survey* data from 1982 to 1998. During this time 21 states implemented a state lottery. I exploit the variation across states in the timing of state lottery introduction to compare the change in household expenditures among households in states that implement a lottery to the change among households in states that do not. The analysis finds that the introduction of a state lottery is associated with a decline of $137 per quarter in household expenditures on non-gambling items. This figure implies a monthly reduction in household expenditures of $24 per-adult, which compares to average monthly lottery sales of $18 per lottery-state adult. This suggests that for the average household, spending on lottery tickets is financed completely by a reduction in non-gambling expenditures.

Additional analyses are conducted to confirm the above finding. First, the data confirm that the effect of a state lottery on household expenditures is greatest among

[1] Clotfelter et al. (1999), p. 100. Their figures are in year 1997 dollars.

[2] United States Department of Labor and Bureau of Labor Statistics (2001), Table A.

[3] Recent examples include Worthington (2001), Hansen (1995), and Scott and Garen (1993); Clotfelter and Cook (1989) provide a review of earlier studies.