5/18/88 U2160-1 A

A publication of the
Indiana Business Research Center,
Indiana University School of Business

Indiana Business Review

Volume 63, No. 1 April 1988

in this issue. . .

Government regulation is rarely subject to the vote of the people. This November, however, Hoosiers will have an opportunity to decide on aspect of that complex subject with their votes on the so-called "lottery" issue. The articles presented here on that popular topic are the result of academic research and should be of interest and concern to all citizens.

Of the many issues that will remain for the legislature if the constitutional amendment passes, one will be, "Who may enter the gambling business?" States that have entered the lottery field in this century have opted for government monopolies. But one could imagine a competitive-enterprise approach that would permit multiple lotteries, regulated and taxed by the state but competing with each other for the recreation dollar. In other heavily regulated industries, the private market operates under conditions established by government. Airlines, banking, and medicine are examples of this practice.

Even the "sin" sector of our society, when commerce is permitted in it, is open to the private sector. In Indiana, cigarettes and liquor are distributed and sold by private firms, not by the state. The regulation of the wine-and-spirits industry has undergone many changes, as social perceptions have varied over time and as market conditions have changed. For an added view of government regulatory issues, we offer a report on a fragment of that industry that does not receive extensive public attention, but which is a fascinating example of public regulation interacting with private forces.

We are indebted to all four authors for their thoughtful approaches to important questions of public policy.

MJM

The Lottery: Its Financial Effects

John L. Mikesell

Professor of Public and Environmental Affairs, Indiana University

Lotteries are the fiscal gimmicks of state finance in the 1980s. They have received legislative attention far exceeding their fiscal significance, have been popular beyond reason, and have spread across the nation like a fire out of control. From being a fiscal oddity, raising disappointing amounts of revenue in New York and New Hampshire in 1970, the lottery has become a common feature of state finance. In 1980, 14 states containing slightly over one-third of the nation's population operated lotteries. They now operate in 26 states and the District of Columbia; two more states, Wisconsin and Virginia, have approved lottery referenda and are setting up administrative structures to operate their lotteries. More than 60% of the nation's population lives in lottery jurisdictions.

The lottery retains remarkable public acceptance. Of the 23 lotteries operating in 1986, 13 had received statewide voter approval before going into operation. Seven more states approved lottery referendums in 1986 or 1987. In fact, since the first modern state lottery began in New Hampshire in 1964, only once, in North Dakota in 1986, has a statewide lottery question been defeated.

How Much Revenue?

During fiscal year 1986, state-administered lottery sales exceeded $11 billion, while net state proceeds after prize payouts and administrative costs exceeded $4.69 billion. Net proceeds in the 14 states that operated lotteries in both 1980 and 1986 grew at the astounding average annual compounded rate of almost 26% per year; the total rate was 32%. On a gross basis, this is a very large revenue pool. But the relative size of lottery proceeds is a different matter. The comparison can easily be made by computing the share of general revenues generated by lotteries. States such as Maryland have occasionally been able to generate as much as 3% of their general revenues from their lotteries. Typically, however, the share is much smaller. The mean share in 1986 was below 1.5%. Of the 23 lottery jurisdictions, eleven had shares below 1%.

What about Indiana? We can hope that an Indiana lottery would perform, in per capita sales, about as well as the Ohio lottery. Ohio has a mature lottery with a full line of products and no major scandals in its past. An Indiana lottery with a similar record might net around $190 million. That is a large figure, but it is still only around 2% of state general revenues. A new lottery, of course, could not be expected to perform at that level immediately. In general, lottery revenue is not likely to be sufficient to remedy any major fiscal imbalance. This is the case even in the urbanized states of the northeast, where relative proceeds from the lottery have been most lucrative. It would certainly be the case in Indiana.

An Indiana lottery with a similar record might net around $190 million. That is a large figure, but it is still only around 2% of state general revenues.

Lotteries Over Time

Research shows that lottery sales are especially sensitive to economic growth, increasing around 3% for each 1% increase in state personal income. This suggests that the lottery could be an effective state magnet for gathering additional resources as economic growth continues. Unfortunately, lottery revenue does not follow a constant pattern over time. A number of forces complicate the flow of lottery sales, the base from which states ultimately generate their profits.

These forces include lottery activities in adjacent states, the maturation of the lottery, the advent and decline of new state lottery products, and so on. Although lottery sales are heavily shaped by marketing efforts, not all countervailing trends can be controlled. This produces dramatic instability of cash flow. The lottery in fact provides neither a sizeable nor a stable revenue foundation for government.

Administrative Costs

All important revenue sources for state government require considerable resources for their collection. Much of the expense is private, involving taxpayer record keeping, accounting, and the like, but the costs of enforcement are not small. Most state taxes can be collected at a cost no greater than 5% or 6% of collections, including both taxpayer and administrative costs. Costs much greater than that would be clearly excessive and would cause a tax to be dismissed as an inefficient revenue producer. On revenue efficiency, the lottery does not rate well. Analysis of several lotteries shows that from 1978-84, the average cost as a percentage of revenue has never been as low as 15%. Only a few times has any state ever achieved a cost percentage as low as 5%. And these percentages are understatements, because lottery accounting principles take most commissions paid to lottery vendors directly out of recorded sales, excluding them from recorded administrative costs. These high costs are necessary in lottery management. They cannot be avoided.

Why not? First, because the lottery must be aggressively marketed and promoted. Without these sizeable marketing costs, total and net proceeds will be disappointing. Second, the lottery customers must be certain that the game has not been fixed. This requires continued security precautions to preserve the integrity of the game. Both marketing and security are necessary elements of successful lottery operations, but both are costly and prevent major reductions in administrative expense. By necessity, the lottery is a remarkably high-cost revenue source. Such revenue inefficiency would disqualify a tax as a revenue source. Lotteries may be immune from that criticism, because they are classed as voluntary payments. But the high costs associated with them show that they do require substantial marketing to be successful. And if marketing is so necessary, how voluntary can the revenue truly be?

It is difficult to determine to what extent the lottery revenue represents new resources to the designated function and to what extent it represents resources that the function would have received anyway from some other state source.

Earmarking Revenues

Many states direct lottery profits to the general fund, but about a dozen designate proceeds for individual items. Lottery profits may be a small part of overall state resources, but wouldn't they be significant for a specific function to which they might be dedicated, such as education?

They could be, of course, but the comparison is not that simple. Lottery profits, regardless of accounting formality, are mixed with other revenues available for state expenditure. Therefore, it is difficult to determine to what extent the lottery revenue represents new resources to the designated function and to what extent it represents resources that the function would have received anyway from some other state source. Accounting reports simply cannot provide the information needed to track down that influence. Some evidence can be seen, however, in states that have both some lottery history and very explicit designation of revenues to particular functions. Michigan, New Hampshire, and New Jersey meet these criteria, and education was the supportive function in each of those states. By comparing the percentage of total state and local expenditures going for education in the years before and after lottery revenues began to be earmarked, one can see whether there was a marked shift as a result of the lottery. Only in New Hampshire did the percentage spent on education increase. There was, in fact, some decline in the other two states. Of course, the decline could have been greater without the lottery, so clear conclusions are difficult. It is impossible, however, to conclude that lottery designation guarantees more money for the supported function. A lottery in Indiana, if earmarked for primary and secondary education, might add around 5% to current spending in that area. That is not enough for a quantum jump, but it certainly is within the range that would allow these funds to be substitutes for, not additions to, the current funds spent on education.

Conclusions

Does the fiscal evidence suggest that a state without a lottery, Indiana, in this case, should start one? The state could certainly function indefinitely without a lottery. It is an entertainment service, being critical neither for anyone's survival nor for the protection of persons or property. If lottery entertainment is important, why can't private businesses, rather than the state, provide the service? The lottery's sole purpose is to provide revenue for the state. That revenue, while large in an absolute sense and capable of rapid growth, would be relatively small, rather unreliable, and expensive to generate. Few positive statements can be made about a lottery's fiscal aspects, except that it does generate some revenue and appears to do no major fiscal damage. The greatest fiscal damage done by the lottery is to divert state attention from more important and more pressing fiscal concerns. □

The Lottery: Its Economic Effects

C. Kurt Zorn

Assistant Professor of Public and Environmental Affairs, Indiana University. For more detail and a complete bibliography, see John L. Mikesell and C. Kurt Zorn, "Another Look at the Structure and Performance of State Lotteries" (Bloomington, IN: Office of the Dean, School of Public and Environmental Affairs, August 1987).

Despite the overwhelming acceptance of state lotteries by the public and politicians alike, it is important to keep in mind some of the significant issues associated with the adoption and operation of a lottery. As one researcher noted, the true worth of a lottery can only be found by a careful and thoughtful balancing of all its economic, political, social, and moral implications.[1]

This article will briefly discuss three significant economic questions about lotteries: Is the lottery a form of taxation? If it is, who bears the burden? What are the limits to growth in lottery revenue? It will also suggest two questions as candidates for further analysis.

Is A Lottery A Tax?

It is argued by some that the application of standard tools of public-finance analysis to state lotteries is inappropriate, because the lottery is not a form of taxation. As a result, they say, public finance-economists should not even try to analyze a lottery. This argument is probably correct: the lottery is not a tax in the strict sense. Participation in a lottery is voluntary, and by definition a tax is compulsory if one performs the acts that are taxed (own property, buy taxable items, earn taxable income). It can then be argued that a state lottery should be viewed as a business being operated by the public sector where the profits go to the state's general fund or are earmarked to some specific expenditure category.

If we look at it this way, if the lottery is indeed a profit-making business, a few interesting questions can and should be raised. Is it proper for the state to be engaged in this type of business? States restrain or restrict private gambling operations presumably because of the negative effects generated by gambling. But there is little distinction between a state-run numbers game, or lottery, and the numbers games being run by the underground sector of the economy. In fact, it's not uncommon for illegal number games to use the winning numbers drawn in a state-run lottery, even using the state game as a form of security in case they sell too many tickets for a specific set of numbers.

There is little distinction between a state-run numbers game, or lottery, and the numbers games being run by the underground sector of the economy.

Is it proper for a state to reap monopoly profits from lottery operations? More to the point, is it economically efficient? Even if a lottery is not a tax, a public-finance economist can still get involved in the issue by talking about monopoly profits.

And why should the lottery be the government service most heavily marketed? A glance at lottery annual reports and newspaper, radio, and television advertisements shows that the merchandising of lotteries is quite intense and somewhat misleading. Lotteries are seldom anxious to disclose critical details of their operations. The odds against winning are not advertised clearly, and the prizes that are distributed are always talked about in total payment over a time period instead of the present value. A million dollars paid over 20 years is not worth a million dollars right now.

It is common for public-finance economists to reject the argument that the lottery is not a tax. They consider net revenue from lottery ticket sales a tax placed on ticket sales, which should be looked at as being similar to sumptuary excise taxes--those taxes that attempt to discourage consumption of a particular item, such as cigarette and alcoholic-beverage taxes and the luxury excise taxes we find in states' fiscal structures. When a state lottery is viewed as a tax, the objections concerning the use of standard public-finance analysis diminish.

When a state lottery is viewed as a tax, the objections concerning the use of standard public-finance analysis diminish.

Is a Lottery Regressive?

Accepting the fact that the lottery is a form of excise taxation, the question becomes, who bears the tax? Who bears the largest burden? At the very least, the same degree of concern for the equity of sumptuary and luxury taxes should be applied to the lottery "tax." Lottery proponents argue that the lottery is ideal, even if it is a tax, because it is voluntary, has broad participation, and is not regressive. Surveys indicate that participation is heaviest in the middle- to upper-income groups, and that the lottery is a game that appeals to a wide spectrum of the population, not just to the poor.

Unfortunately, participation data do not address the question of incidence. Standard analysis of vertical equity asks whether a tax places a greater relative burden on low-income families or high-income families. If the higher burden is on low-income people, the tax is regressive because it reduces the net income of low-income groups relative to that of the high-income groups.

Numerous studies have demonstrated decisively that state lotteries are a regressive form of raising revenue.[2] These studies clearly indicate that the arguments based on participation rates do not apply to the consideration of equity. There may be quibbling over the degree of regressiveness, but the raising of lottery tax revenues worsens the overall fairness of the state's revenue system.

What Are the Limits to a Lottery's Growth?

We've all heard about the phenomenal growth in lottery revenues. This growth can be traced to two things: new adoptions and increased participation in existing lotteries. By the end of 1986, 27 states had lotteries. Since we only have 50 states in our union, there is a limit to the total number of adoptions. The increase in participation will level off someplace, although no one knows quite where. So there are limits to growth. One researcher concludes it's likely that the growth in lottery revenues will slow before 1995.[3]

Other studies have tried to identify the determinants of lottery sales, and it is clear from the studies that lotteries are affected by employment rates, per capita income levels, and so forth. Any predictions of future growth, therefore, must consider the effects of the business cycle on sales. Probably more important, though, is the finding of some of these studies that other factors besides economic conditions have significant effects on sales. As more states adopt lotteries, there will (of course) be fewer non-lottery states. It turns out, though, that a lottery state that has a non-lottery state on its border will have significant higher sales per capita than a state that has no non-lottery states on its border. The Illinois lottery, with Indiana on its border, illustrates that very well.

Lottery games have also been found to have a natural life cycle. As people get bored with the games, interest wanes and sales decrease. Despite the relative newness of the Lotto game, sales will peak at some point and then slowly slide, as has been the case with instant games and numbers games. Thus, there has been intense marketing, variations in existing games, and creation of new games to ensure total sales do not fall.

It seems likely that the lottery has no aggregate impact on the state economy, that it does simply transfer business activity from one set of vendors to another, but that has not been proven.

Issues for Exploration

At least two significant issues need further analysis before they can be answered definitively. First, there is concern about loss of income that is suffered by a non-lottery state when its citizens cross the border to play a neighboring state's lottery. Almost everyone either makes trips across the border to pick up lottery tickets or knows someone who does. There is ample anecdotal evidence that this border effect exists, although there has been no scholarly demonstration of either its importance, its significance, or of the winnings brought back to Indiana.

Second, there is no consensus on a lottery's impact on a state's business activity. Proponents of lotteries note the sizable commissions paid to vendors who sell the lottery tickets to the public and argue that these dollars stimulate economic activities. Opponents suggest that the commissions represent simple economic transfers--the money is not being spent at other stores on other goods and services, it is just transferred from a grocery store to a convenience store that sells the lottery tickets. It seems likely that the lottery has no aggregate impact on the state economy, that it does simply transfer business activity from one set of vendors to another, but that has not been proven. Of course, if a negative border effect is significant, the lottery state would gain business activity at the expense of the non-lottery state.

Conclusion

There are a number of economic issues that a state should consider when weighing the pros and cons of adopting a lottery. First, the lottery is similar to sumptuary excise taxes imposed on tobacco and alcohol; consumption is voluntary, yet once the choice is made to consume, the tax is compulsory. Second, since the lottery is a form of taxation, it should be subjected to vertical equity analysis, which has typically indicated that the lottery is a regressive revenue source. Third, despite predictions that revenue from lotteries will continue to grow, some evidence indicates that lottery sales growth will slow in the early 1990s This slowdown will increase emphasis on the introduction of new games and the stepped-up marketing of existing games. Without consideration of these points, the state, and its citizens, cannot make informed choices on the lottery question. □

Notes

1. Robert Blakey, "State Conducted Lotteries: History, Problems, and Promises," *Journal of Social Issues*, Summer 1979, pp. 62-86.

2. See: Roger Brinner and Charles Clotfelter, "An Economic Appraisal of State Lotteries," *National Tax Journal*, December 1975, pp. 395-404; Charles Clotfelter, "On the Regressivity of State-Operated 'Number' Games," *National Tax Journal*, December 1979, pp. 543-548; Jerome E. Heavey, "The Incidence of State Lottery Taxes," *Public Finance Quarterly*, October 1978, pp. 415-426; M.H. Spiro, "On the Tax Incidence of the Pennsylvania Lottery," *National Tax Journal,* March 1974, pp. 57-61; and Daniel B. Suits, "Gambling Taxes: Regressivity and Revenue Potential," *National Tax Journal*, March 1977, pp. 19-35.

3. Larry DeBoer, "When Will State Lottery Sales Growth Slow?" *Growth and Change*, January 1986, pp. 28-36.