Can Students Truly Benefit From State Lotteries: A Look At Lottery Expenditures Toward Education In The American States?

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Abstract

State operated lotteries are often classified as panaceas for eradicating revenue disparities that exist between public school districts across the American States. This research paper examines this assumption and attempts to provide credibility for the use of lotteries by state legislatures aiming to enhance education revenues. Education spending levels in fifty states are examined. Pooled time series cross sectional analysis is utilized to test data available from 1977 to 1998 from both states with lotteries and states without lotteries. This study finds that lotteries during this time period have not significantly increased education spending in those states that have implemented these revenue enhancing mechanisms.

INTRODUCTION

The use of lotteries and other forms of gaming has encountered extreme resistance from opponents of these state revenue enhancing devices. Numerous citizens consider gambling immoral and contend that gaming burdens the less affluent in society. Opponents suggest that lotteries are institutional mechanisms used by the establishment to exploit the poor because the allure of lotteries generally draws those individuals of less affluent societal membership by creating an attainable picture of wealth and fame (Geary, 1997). These critics also theorize that the social costs of gambling addictions and increased crimes associated with legalized gaming present major disadvantages for society.

Numerous studies representing the positive and negative aspects of gaming and the damaging social implications of these revenue-enhancing programs permeate the academic literature on lotteries. This examination differs from other evaluations of lotteries because the project assesses the impact of lottery contributions to public education in American states over a period of time. Currently thirty-seven states and the District of Columbia have lotteries. Since the implementation of the lotteries, have the residents of these states experienced a substantial increase in public education expenditures? The absence of empirical research assessing the impact of lotteries on public educational funds over a period of time, in addition to predicting the future impact of lotteries on education, contributes to the necessity of this project.

The following section of this research project incorporates a literature review that assesses recent arguments regarding lotteries and their use for enhancing public education expenditures. A methodology and data section that addresses the specific methods used in testing the stated hypotheses, in addition to the findings and conclusions of this research project, compose the latter sections of this document.

LITERATURE REVIEW

When American society embraced the concept of educating its citizenry, local public school districts began emerging across the nation. Education was a means of socializing citizens to embrace the norms, values, and customs of a society; and, policy makers felt that the only method to obtain universal support for this social intervention program was to permit local governments to control education (Odden and Picus, 1992). In their view, control meant allowing local governments to fund education through various means and dictate what each student would learn in the classroom (Grissmer, Flanagan, and Williamson, 1997). The mechanism initially chosen to fund education at the local level was the property tax. However, policy-makers soon discovered that the property tax was an inadequate means of providing efficient and effective education to all American students because some districts were receiving more revenue for education when compared to others (Lewis and Maruna, 1996). More affluent societies received more revenue from property taxes; therefore, schools in these districts were able to create learning environments that were more advanced when compared to other schools across town.

Evidence of the inadequacies of funding education through property taxes can even be seen today in the disparity among America's school districts (Burns, 1994). For example, in the1995-96 school year, public schools spent an average $6,855 per pupil (in constant 1998 dollars). In this same school year, relatively high wealth school districts (those with a median household income of $35,000 or more) spent more per pupil than school districts with less wealth (Department of Education, 2000). Immense criticism of property taxes as the funding mechanism for generating educational revenue began in the early 1970's due to educational incongruities. During the 1970s and 1980s, state governments assumed a greater role in funding

educational programs. The average state's share of total educational funding increased from 41 percent in 1968 to approximately 50 percent in 1986. During this same time period, local funding decreased from approximately 50 percent in the 1960s to 43 percent in the 1980s. Elementary and secondary education expenses currently consume nearly a quarter of the average state budget, and post-secondary schools account for another 12 percent of state budgets (Wong, 2000). According to the National Center for Education Statistics (1999), education accounts for the single largest expense in most state and local government operating budgets. In the educational year of 1992-93, expenditures were estimated at more than $375 billion for all public schools and colleges.

Despite these figures, some scholars argue that the American education system is under-funded (Picus, 1995). Others contend that this funding disparity in education is not the major problem with America's education system. For instance, Tierney (2000) contends that the sole problem with education is the curriculum. This author suggests that, no matter how much money is spent on education, if the curriculum is not changed, America's system of education will continue to decline. Picus (1995) argues that a lack of funding has contributed to this curriculum problem in American schools. This shortage of revenues does not allow school districts to receive the materials and training that are necessary to provide quality education. Hence, Picus (1995) determines that education funding is the most important policy problem facing governmental and educational administrative officials today.

As revenues decline due to taxpayer revolts across the nation and demands on government services increase especially in education, state and local governments must focus on receiving the most "bang for their bucks" (Ryen, 1992). Public administrators and political functionaries, in the American states have endured one of the most intense and challenging

decades during the 1990s. State governments have experienced a tremendous increase in demands on governmental services and an unprecedented number of un-funded mandates from the federal government, along with a tax- payer revolt (Ryen, 1992). As the demand for social intervention programs has increased and the amount of available resources for funding these programs has decreased, governmental officials are left using their ingenuity in generating revenue which would offset the cost of running government and its policies and programs. "Games of chance," in one variation or another have been chosen by many state governments as their "economic savior" (Rivenbark and Rounsaville, 1995: p.3).

One of the primary arguments used to rally support for legalized gambling has been education finance. Numerous political and appointed bureaucratic functionaries stipulate that legalized gambling, in the form of lotteries, casinos, or other types of gambling, will generate enough revenue to significantly enhance education revenue. In theory, these government officials ask the populace to invest in the future of their community and country by using gambling dollars to educate the younger generations. The basic premise of their argument is that the education system in America is lagging behind most countries, and the only way America is going to compete in the global economy is by investing in the education of its children. They paint a desperate picture that some sort of gaming device must be adopted in order to allow our children a chance for survival in the newly emerging global economy. Many proponents of legalized gambling believe that the education system in America has traditionally been under-funded, and they view legalized gambling as a means to end this disparity. Others contend that under-funding in education is a result of the formulas used by states in determining "who gets what, how and why" in financing education (Dye, 1995; Alexander and Salmon, 1995).

As previously noted, legalized gambling is a mechanism often used by policy makers to offset the cost of education for tax payers. The most popular form utilized is the lottery, and some states including Florida and Georgia have displayed success in funding education with this mechanism. The literature suggests, however, that lotteries have not emerged as the panaceas that policy makers had originally intended.

Lotteries have proven to be appealing mechanisms for producing revenue because they are considered a voluntary tax. Individuals pay the tax because they want to instead of having to pay the tax because the government demands it. The voluntary aspects of lotteries are extremely appealing to governors and legislators because resources for social intervention programs are generated without unpopular tax increases (Rubin, 1993). Theoretically, legalized gambling intends to raise revenues without increasing the tax burdens of the lower class (Mikesell, 1989).

The utilization of gambling in the United States began as early as the 1700's when the lottery was used to raise revenues to pay for the colonial Army (Rodgers and Stuart, 1995). During the next two centuries, various forms of gambling were employed to finance road repairs and elevate revenues for universities and colleges, while insuring the availability of expenditures for other social intervention programs.

Corruption emerged as an unwanted side effect of sanctioned gambling, and in 1893 the Federal Government prohibited all forms of legalized gambling (Geary 1997). New Hampshire was the first state to reinstate gambling in the form of a lottery in 1963. In 1988, only Nevada and New Jersey operated legal casino gambling. Presently, forty-two states engage in some form of legalized gambling, while only Hawaii and Utah forbid wagering entirely (Gross, 1998). Legalized gambling accounts for one of the fastest growing industries in the United States. From 1982 to 1990, expenditures on legalized gaming increased at almost two times the rate of

income; and by 1992, revenues from state sanctioned gambling operations averaged approximately $30 billion a year (Gross, 1998). Numerous state and city political leaders, promote gambling enterprises of various kinds as remedies for ailing local economies. The prospect of new jobs for workers and revenues supplementing state and local budgets encourage public officials to join forces with gambling developers and promote the expansion of the industry (Livernois, 1987).

The most popular gambling device today is the lottery (Mikesell and Zorn, 1986). The allure of lotteries and other forms of gambling as a source of revenue enhancement for state and local governments ascribes amply to the continued emergence of legalized gambling over the past two decades. Currently, thirty-seven states and the District of Columbia operate lotteries, while other states debate their legalization.

A lottery is a game of chance in which individuals have an equal opportunity of winning prizes. It is defined as a form of gambling in which chances to share in a distribution of prizes are sold (Mikesell and Zorn, 1986). For centuries, lotteries have provided fun and entertainment. The first state-organized lottery began in Italy in 1530. England soon adopted the idea, and during the early 1600s, the first settlers imported the lottery idea to the limited states. America's first lottery was held in Jamestown in 1612 and provided half the budget for the town's operations. George Washington used a lottery to supplement funding of the continental army, and Thomas Jefferson implemented a lottery to fund public projects. Prior to taxation, lotteries were especially popular in the South where proceeds were used to fund the construction of bridges, toll roads, and schools. From 1790 until the Civil War, lottery revenues financed the construction of 300 schools, 200 churches, and 50 colleges, including Harvard, Yale and Princeton (Department of Audits and Accounts, State of Georgia, 1998).

The first modern state-operated lottery was authorized in 1964 in New Hampshire. The proceeds were used to support education. Today, lotteries are legal in 37 states and the District of Columbia, and revenues fund a variety of initiatives including education, transportation, prison construction, economic development, environment and natural resources programs, and senior citizen centers. The U.S. still remains the leader in the use of public organized lotteries, but the utilization of such mechanisms is becoming quite popular throughout the world. This spread can be attributed to the fact that lotteries have become a popular leisure activity and have provided crucial funding for governments and public causes. Lotteries can be found on the continents of Europe, Asia, Australia, Africa and are also located in Canada and Latin America (Department of Audits and Accounts, State of Georgia, 1998).

Many states contend that they have benefited financially from adoption of a lottery. In 1993, the lottery became a long-term solution to Georgia's problem plagued educational system, and the program has contributed significantly to Georgia's educational system since its inception. Barry (1995) postulates that lottery profits in Georgia in 1995 yielded $85 million in scholarships which allowed more than 100,000 Georgia high school graduates to receive post secondary education. Also, $157 million allowed 48,000 four-year-olds to attend pre-kindergarten. Other beneficiaries of the Georgia lottery included public schools, which purchased computers, satellite dishes, and media technology, and the state university system which obtained $98.7 million in computer equipment. Profits from this lottery also support the Help Outstanding Pupils Educationally (HOPE) Scholarship Fund, which allows students who maintain a B average in high school to receive free tuition at instate colleges and universities. This scholarship fund has improved the standards within the Georgia university system since

fewer students go out of state to college, and as a result, Georgia Tech's SAT average score has become one of the highest in the nation among public universities.

Florida was the first southern state to pass the lottery in 1986. Over a ten-year period, the lottery earned more than $7.8 billion for education. Florida law requires that $.38 of each $1.00 spent on the lottery be directed to the state's Educational Enhancement Trust Fund. These funds are distributed to the state's 67 public school districts, 28 community colleges, and nine universities. Preschool programs, minority teacher scholarship programs, the Bright Futures College Scholarship Program, as well as specific needs as determined by each school district's, community college, and state university symbolize the use of lottery profits. The Bright Futures College Scholarship Program allows Florida high school graduates having a GPA of at least 3.5 in a college preparatory program and a score of 970 on the SAT or 20 on the ACT or a passing score on the Florida College Placement Test to receive full tuition to an instate college, university, or vocational programs (National Education Association, 1997). Students, who meet the same requirements, except that their GPA is 3.0, receive 75% tuition.

Kentucky has also implemented a college scholarship program similar to those of Georgia and Florida. In fiscal year 1999, the Kentucky Educational Excellence Scholarships (KEES) began giving tuition vouchers to students who stayed in Kentucky to attend a college, university, or other approved post secondary educational system. Also, Kentucky plans to award need based scholarships financed by lottery profits. Beneficiaries of FY 1998 profits for the Kentucky lottery included Kentucky Vietnam Veterans who received a one-time bonus of $32 million, the State's educational system which received $214 million, and the State's General Fund, which obtained the remainder of more than $850 million (Kentucky Lottery Department, 1998).

While lotteries are touted by many as a means of increasing funds for needy state programs, opponents contend that lotteries are not the panaceas that policy makers and voters rave about. Miller and Pierce (1997) examined the financial aspects of education lotteries including short-term and long-term effects. They found that states which had adopted lotteries increased per capita spending on education during the early years of the lottery; however, as time passed, these same states witnessed an overall decrease in spending for education. Through pooled time series analysis, the authors were able to determine that states without lotteries actually increased their spending on education over time.

Stanley and French (1999) used a similar model to study the impact of lottery dollars on education. These authors incorporated pooled time series regression analysis as the research methodology to determine if lotteries had an impact on education spending in states with this gambling device. The authors analyzed ten southern states: five with lotteries and five without lotteries. Stanley and French (1999) incorporated six exogenous variables explaining one endogenous variable. Pierce and Miller (1997) only studied the effects of three variables in their regression model: the lottery proceeds, year of adoption (a counter variable coded by the year of inception), and a dummy variable coded 0 for states with a lottery and 1 for states without a lottery. While both studies found similar results, Stanley and French (1999) measured lottery proceeds, federal spending on education, gross state product, governor's ideology, and a dummy variable similar to the one utilized by Pierce and Miller. Stanley and French (1999) concluded that lotteries in southern states did not significantly increase the amount of revenue spent on financing education.

Several articles in the literature examine why lotteries can be termed a "fiscal hoax" in revenue generation. During the initial inception of lotteries in a state, the mechanism receives

intense play by individuals trying to "get rich quick" (Mikesell and Zorn, 1986: 312) In the early years of the lottery in a particular state, especially those states with lotteries that are surrounded by states without lotteries (e.g., Georgia is surrounded by Tennessee, Alabama, and South Carolina - all of which have rejected the inception of a lottery), the number of players is quite high. However, as the newness of the lottery wears off, the mechanism receives less and less play, especially if a bordering state adopts a lottery or another form of gambling such as casinos. If states earmark lotteries dollars to pay for a large portion of their education expense based on prior revenue figures, the educational expenses of a state may not be covered (Mikesell, 1989). Bracy (1995) points out that on the average lotteries account for approximately 3.8 percent of a state's education budget even though the general public is lead to believe that schools receive more money and that the lottery provides a large portion of these needed funds.

A second major problem associated with lottery funding of education is the concept of fungibility. Spindler (1995) reinforces the notion of fungibility in reference to lottery dollars for education. Spindler examines the lotteries of New York, New Hampshire, Ohio, Michigan, California, and Montana in order to determine their impact on educational revenue enhancement of public education expenditures. Through ARIMA time-series modeling, the author successfully supports the concept that lottery revenues are fungible. He attributes this fungibility to the "politics of the budgetary process" because education expenditures are highly visible to the public and are plagued with fiscal and political restraints (Spindler, 1995, p. 60). Spindler (1995) contends that, in states where lottery revenues are earmarked for education, lottery revenues actually substitute for general fund expenditures. Hence, this author concludes that state lotteries are robbing "Peter to pay Paul" (Spindler, 1995, p.61). Fields (1996) supports Spindler's theory and asserts that the failure of Florida's lottery to meet everyone's expectations

of success expounds on the limitations of this revenue enhancing mechanism. He points out that even though Florida's educational system has received billions of dollars from lottery proceeds, the state legislature has taken non-lottery monies previously designated for education to fund other state commitments. Public education's share of the state budget in Florida has decreased more than 5 percent over the past decade since the lottery began in 1986 (National Education Association, 1997). Even though revenues from lottery sales are intended to enhance the state's educational system, the legislature is not legally bound to boost education with these profits. As a result, the earmarking of revenues from lotteries to replace regular, budgeted educational funds instead of enhancing education depicts Florida's education policy.

A third major problem with lotteries emerges when the proceeds are used to finance a tax cut. Lotteries have proven to be appealing mechanisms for producing revenue because they are considered a voluntary tax. The voluntary aspects of lotteries are extremely appealing to governors and legislators because resources for social intervention programs are generated without unpopular tax increases, and in some cases, tax cuts also occur because a surplus of revenue exists from the lottery (Rubin, 1993). Rodgers and Stuart (1995) stipulate that "the revival of lotteries," despite immoral concerns and "negative distributional effects," has occurred because of the belief that lotteries, instead of other tax instruments, raise additional revenue by generating smaller efficiency losses than other taxes; therefore, lotteries are less painful to voters (p. 244). As a result, political leaders will endorse tax cuts and replace the lost revenue with lottery dollars. Tax cuts are highly favorable political platforms used by incumbents for re-election bids. Unfortunately, many times social intervention programs such as education will be the first to suffer so politically ambitious individuals can maintain their tenure in office (Jones and Amalfitano, 1994).

HYPOTHESES

H_1: States spending more on education will receive more fiscal allocations for education from the federal government, compared to states spending less on education.
H_2: States with larger numbers of students receive more federal dollars for education compared to states with less students.
H_3: States with higher Gross State Products spend more on education, compared to states with lower Gross State Products.
H_4: States with higher levels of population receive more federal funding for education compared to states with lower population levels.
H_5: States operating lotteries receive more federal funding for education compared to states without a lottery.
H_6: The Political Culture of a state influences the amount of proceeds they allot for education.

DATA AND METHODOLOGY

Conceptual Definitions

The conceptualizations of the variables used in this research project are as follows:

State Spending On Education - the amount of spending on education by each state.
Federal Spending On Education by State - the amount of spending the federal government spends each year on education.
Gross State Product (GSP) - the amount of earnings each individual state received as a whole.
Number Of Students - the number of elementary, secondary, and post-secondary students in each state.
Population - the number of residents of each state.
Political Culture - the political culture of each state defined in Elazar's terms as traditionalistic, individualistic, and moralistic.
Lottery Proceeds - the amount of revenue states with lotteries earmark for education.
Lottery – is the dummy variable to assist in explaining some of the unexplained variance.

Operationalization

The data for these variables was gathered from the archival files of the Bureau of the Census, Bureau of Economic Analysis, and the Department of Education. Two models were tested for empirical results. These models included 1) aggregate data and 2) the amount of spending change from year to year over time.

Deduced from the theoretical constructs previously stated were 13 exogenous variables predicting the single endogenous variable of spending on public education by states in all regions of the U.S. The operationalization of each variable occurs as follows: Federal spending on education was gathered from the Census Bureau and coded as aggregate data, spending change, and percentage change in spending over time. Presidential ideology was derived from the Census Bureau and coded 0 for Democratic presidents and 1 for Republican presidents. Congressional ideology was obtained from the Census Bureau and coded 0 for Democratic control of Congress or 1 for Republican control of Congress. Gross Domestic Product (GDP) data was collected from the Bureau of Economic Analysis and coded as aggregate spending change, and percentage change over time. Gross State Product (GSP) was also obtained from the Bureau of Economic Analysis and coded as aggregate spending, spending change and percentage change over time. Data on the number of students and the population of each state was assimilated from the Census Bureau. Political culture of each state was coded according to Elazar's measures: 1) individualistic, 2) moralistic, and 3) traditionalistic. Lottery proceeds data also was obtained from the Census Bureau and coded as aggregate spending, spending change, and percentage change over time. The dummy variable (Lottery) was coded 0 for states with a lottery and 1 for states without a lottery. The variable year was utilized as a counter variable to identify the year those states with lotteries adopted this revenue-generating device.

METHODOLOGY

Some states have been more likely to adopt a lottery for funding education as compared to other states. The lottery should have some effect on the budgetary allocations each year of those states with a lottery. This research project uses "pooled time series cross-sectional data analysis" as a measuring device for the previously stated hypotheses (Beck and Katz, 1996: 1). The dimensions of pooled time series used in this study are 50 states and 20 points in time (years). One of the most promising advantages of using this statistical tool is its ability to offer explanations of the past, while simultaneously predicting the future behavior of dependent variables in relation to independent variables. Pooled time series cross sectional analysis allows the researcher to focus on several cases in predicting social phenomenon, whereas simple time series analysis strictly deals with specific cases at different time points and often causes data management complications, while also being costly and time consuming.

Despite the advantages of pooled time series analysis using N (number of cases) at T (time points) for predicting the future of a particular social intervention program, a number of methodological disadvantages may limit the use of this statistical tool. The basic assumptions underlying traditional Ordinary Least Squares (OLS) regressions are violated in a pooled model, and such departures may exhibit severe consequences for the reliability of the estimators (Stimson, 1985). For instance, the following assumptions are usually made in regard to the error term in pooled time series regression.

1) The error term has a mean of zero,
2) The error term has a constant variance over all observations,
3) The error terms corresponding to different points in time are not correlated (Ostrom, 1978).

The accuracy of the regression model is inevitably measured by the error term. Hence, if the standard error is small, then all of the sample estimates based on the sample size tend to be similar and considered representative of the population parameters. The exact opposite is true if the error term is large. The statistics fail to represent the population parameters. Of the previously mentioned assumptions, the failure of the error term corresponding to different points in time to correlate is the most important assumption violation. When the observations from different points in time are correlated, one of the assumptions is violated, usually the latter one. When this violation occurs, autocorrelation is present and estimators that negate true representation of social phenomenon are created. Autocorrelation violates an assumption of the regression model that the residuals are independent of one another. This presence affects the accuracy of the error term, which biases the model's t-ratios and the confidence limit. Autocorrelation may be eliminated from a research project by identifying and including an independent variable that explains part of the unexplained variance. Beck and Katz (1996) addressed the issue of autocorrelation by calling it more of a nuisance than a real problem. They contended that lagging the endogenous variable(s) would assist in controlling for serial correlation. A lagged regression model relates a current endogenous variable to past values of the exogenous and endogenous variables therefore reducing the risk of autocorrelation.

A second major methodological problem that can occur with pooled time series cross-sectional data analysis is heteroskedasticity. In pooled data, some units, are inherently more various than others at all times. This technique is commonly called Least Squares with Dummy Variables (LSDV). Such differential variability is usually of modest concern in un-pooled data because it affects only a single case at a time. In pooled data, however, it is likely to inflict a larger amount of harm to data sets. Therefore, the size problem of the sample can be reduced by

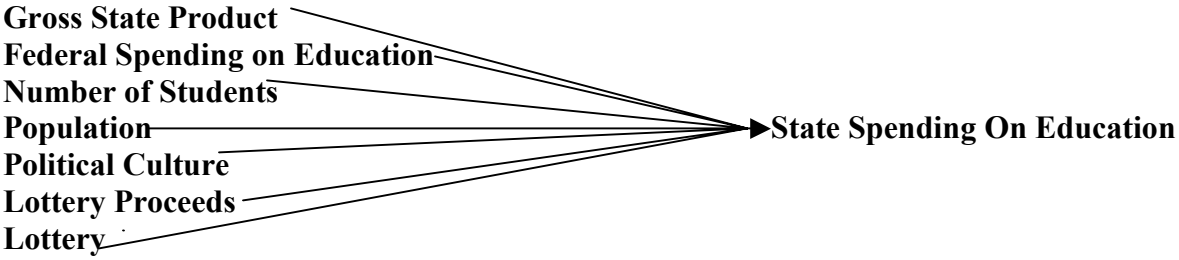
standardizing the data (Beck and Katz, 1995). However, the small number of cases in this project almost eliminates all possibilities of heteroskedasticity. This project is concerned primarily with the impact that lotteries will have on education finance. The emphasis of this study is concerned more with changes across time rather than across states. LSDV allows this project to meet its goals by controlling for the cross-sectional variation in education spending. The failure to deal with the concerns of cross-sectional differences is irrelevant (e.g., interest groups strength, state liberalism, media influence, etc.).

To account for OLS bias, the following dummy variable was added to the data set LOT to assist in explaining a portion of the unexplained variance. The additional variable PRES was used to further account for OLS bias. A final step used to prevent autocorrelation and heteroskedasticity was computation of the regression model in the SPSS statistical package for the social sciences. This package was preferred to other leading statistical packages because it possesses built in mechanisms to control for serial correlation and heteroskedasticity.

Multicollinearity has the potential to skew data; therefore, precautionary measures are necessary in the successful prevention of this methodology problem. A check for problems associated with multicollinearity included a review of the VIF tolerance levels once the regression models were successfully computed. Any high correlation levels among the exogenous variables received the appropriate measures to correct these problems.

The estimated regression equation is written as follows: Y (SPEDU) = a + (B_1) FPERPUP + (B_2) GSP + + (B_3) NUMSTU + (B_4) POPUL + (B_5) POLCUL + (B_6) LOTTERY + (B_7) DUMMY + E

Model: 1977-1997



FINDINGS

Model One		**Model Two**
FEDSPEDU	(-7.778)	(-.153)
	.103	**.139**
GSP	(3.294)	(3.192)
	.000 ***	**.000 *****
Lottery	(.102)	(-.113)
	.126	**.196**
Dummy	(68.386)	(-112.656)
	124.884	**193.793**
Population	(-9.532)	(-3.767)
	.012	**.019**
Elazar	(-9.578)	(31.421)
	23.038	**36.028**
Students	(2.977)	(-3.749)
	.003	**.005**

Note: * = (p> .001: One Tailed T-Test)**
B-values are in parentheses
Error Terms are in Bold

Discussion

Despite only two exogenous variables expressing an acceptable significance level (GSP1_1 and GSP2_1) among the predictors in the two models reported, the F-Value of 955.255, with a significance level of .000, in the first regression model, and the F-value of 775.381, with a significance of .000 in the second model, displays evidence that a relationship exists between the seven exogenous variables and the one endogenous variable. Furthermore, the .87 adjusted R-square value shows that 87 percent of the variance is being explained in model one and 84 percent is being explained in the second model. These statistical analyses suggest that the models are credible predictors of government spending on education. The Durbin-Watson statistics, 2.445 (model 1) and 2.156 (model 2) indicate that autocorrelation and heteroskedasticity are not major problems in the models. However, the lack of other significant exogenous variables in the two models establishes that the following null hypotheses cannot be rejected:

H_1- Fiscal allocations from the federal government have had little effect on the amount of resources available for states to spend on education.
H_3- The number of students does not effect spending on education.
H_4- The population of a state does not effect spending on education.
H_5- Political culture does not effect spending on education.
H_6- The presence of a lottery does not influence state education spending.

The null hypothesis that: the wealth of a state (GSP) does not influence public education spending is rejected. GSP1_1 has been successfully supported in the equation due to the variable's significance level of .000. The T-value of 80.752 indicates that GSP1_1 has a relatively large influence in predicting how much revenue states will spend on public education. For instance, the B-value shows that for every unit increase in GSP1_1 an increase of .931 will occur in SPEDU. Inferring from these statistics is the assumption that as a state's Gross State

Product increases, its public education expenditures will also receive a substantial increase in expenditures.

Furthermore, GSP2_1 also displays an acceptable significance level of .000 allowing it to be considered as a viable predictor of education expenditures in model two. The B-value indicates that for every unit increase in GSP2_1, an increase of .912 will occur in public education spending in the American states. The large T-value of 71.202 supports the assumption that GSP2_1 significantly affects public education spending among the American states. Therefore, the previously stated inference that southern states, with substantial increases in their Gross State Product, will initially contribute more revenue to public education. In reference to the variables associated with FEDSPEDU, none exhibited any significant effect on public educational expenditures among the states. The small T-values and insignificant *p* determine this conclusion. This assumption is also valid in reference to those variables associated with LOTTERY. The dummy variable LOT fails to predict any significant proportional change in educational expenditures in the data set. Therefore, inferring from the statistical information reported in the two time series regression models, the impact of lotteries on the amount of educational expenditures in American states cannot be substantiated.

Limitations

The limited number of independent variables (seven) in this study fails to explain all the indicators that may have an effect on public educational expenditures in the United States. Other variables such as legislative and gubernatorial ideology and the percentage level of tax rates that each state incorporates in raising expenditures for education may also assist in predicting spending on education. Furthermore, this project does not make any attempt to explain the shifting of current educational expenditures to other programs and their replacement with lottery

dollars (fungibility). The concept of fungibility by state legislatures in regards to education expenditures is highly probable. This fabrication makes the lottery look insignificant in generating dollars, when in reality the device works quite well. Also, those states with lotteries initially may have significantly enhanced their education expenditures, but reductions in federal spending for education counter these measures. Future explanations of these limitations may provide future research projects regarding state operated lotteries. Efforts in confronting these issues will offer public administrators with a better understanding of this revenue-generating device.

Conclusion

Can students truly benefit from state lotteries? The primary purpose of this paper has been to demonstrate that games of chance such as the lottery can play a significant role in generating valuable revenue for enhancing public educational expenditures. This relationship has not been supported by analysis of the data. When these benefits are assessed over time, the statistical models report that lotteries are not impacting education financing in the manner they were intended. Spindler (1995) and Miller and Pierce (1997) suggest that when the lottery is measured as a revenue-generating device for financing education, students may not be receiving the necessary funds needed for an adequate education because too much emphasis is being placed on an enormous hoax: the state operated lottery. This study provides additional support for this argument.

One must note, however, that problems may arise with assessing the measured impact of lotteries strictly through changes in education spending. Numerous case studies of State lotteries, including those in Georgia and Florida, indicate that students can benefit from the use of these revenue generating mechanisms. Positive changes from lottery profits may include an

increased number of state residents receiving post secondary education or an increased number of pre-school programs. Stipulating that lottery proceeds fail to enhance state education expenditures may not truly represent an accurate interpretation of the data, despite indications of this study. Lottery profits may be directed at other means of enhancing education which are not evaluated in this particular analysis.

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