An Economic Analysis of a Lottery in Mississippi

November 2017

Introduction

This paper attempts to address the following two separate but related questions regarding a potential lottery in Mississippi:

1. How much revenue would a lottery generate for the state of Mississippi?
2. Is a lottery good economic policy?

In addressing these questions, the following major points are observed:

1. The creation of a lottery in Mississippi would create leakages of economic activity that equal or exceed those currently existing through Mississippians purchasing lottery tickets in other states. These leakages are due primarily to the state's contribution to multi-state lottery payouts as well as costs of operation.
2. A lottery would create a slight decrease in total economic activity within the state. Lottery sales will largely come from a reduction in existing economic activity and a portion of that will be leaked from the state as mentioned in point 1, leading to the decline in total economic activity within the state. The decline in economic activity will grow proportional to lottery sales within the state – the more lottery sales increase, the more total economic activity is reduced.
3. Despite the loss of economic activity, General Fund revenues will increase significantly with a state lottery. We estimate gross revenue to the state of $101.4-$116 million from lottery ticket sales. This revenue will be offset by a decline in retail sales tax. The maximum offset is estimated to be $18.8-$22.2 million, yielding a net gain to the state General Fund of between $82.6 to $93.8 million.
4. Actual lottery sales may differ substantially from the URC estimate due to the complexities of lotteries and the number of factors which impact sales. Furthermore, the state's share of total sales could easily fall below national averages, yielding a lower gain to the General Fund for the same level of total lottery sales. For example, if Mississippi's share of the total sales is similar to Arkansas and Kansas, net gains to the General Fund would be as little as $61.2 million.
5. Lottery sales will come primarily from lower income groups.

How much revenue would a lottery generate for the state of Mississippi?

We used two methodologies to estimate potential revenue from a lottery. The first approach was to average the per capita sales in Arkansas and Kansas, and apply that to the lottery-eligible population in Mississippi. From this, we estimated the portion of sales going to the state. The second approach was to use econometric analysis to model state revenue from lotteries across ten states over the 2008-2015 period. While both approaches offer a reasonable method of estimating potential revenue, neither is without limitations. The experience across states varies widely, not only because of the different games offered, the payout percentages, the timing of new games, etc., but also their economies and socio-economic conditions. Substantial uncertainty remains as to what games will be offered in Mississippi, how those games will be managed, and how the state population will respond to a lottery. Our analysis is then an educated guess amidst this substantial uncertainty.

Sales Per Capita Approach

According to the North American Association of State and Provincial Lotteries (NASPL), population is the best indication of total lottery sales. They suggested we look at the experience of states such as Arkansas and Kansas which are similar in size to Mississippi. The Arkansas lottery is relatively new. The Kansas lottery has been in place for decades. The NASPL gave us access to their databanks for analysis.

Total sales per capita can vary greatly depending on the games being offered. It is our understanding that the state intends to participate in the Powerball and Mega-Millions but will also consider some form of instant games. Most states initially introduce instant games since the launch time is short. Most states also participate in the Powerball and Mega-Millions. States will then introduce other games such as a Daily Pick, online lotteries, etc., according to a timeframe that works for the state and the vendor. Revenues are affected by the timing of new games and optimizing sales requires a careful strategy.

For our analysis, we focused only on the Powerball, Mega-Millions and Instant tickets as these will likely be the initial form of lottery in the state. Among the states that participate in the Powerball and Mega-Millions, sales per capita range from $25 to $65 per capita for the legal age population. This is a relatively small variance. Given Mississippi's population of 18 years old and older, lottery ticket sales would range from $61 million to $141 million. If we focus on Arkansas and Kansas as suggested by NASPL, and average their per capita sales and apply to Mississippi's population, the state would generate $72 million in sales (NOTE: this is total sales, not the revenue generated to the state).

Instant ticket sales have a much higher variance, ranging from $24 to $753 per capita (legal age) among the states that have such games. The high variance in per capita instant games sales is due in part to the varying requirements to return a certain percentage to the state in transfers. For example, some lotteries are required to return a minimum percentage (say 30 percent) to the state. Instant ticket demand is tied directly to the size of its prize fund, which is affected by the percentage requirement. A lower state requirement increases the prize fund which increases demand for the instant ticket. Additional variance occurs due to the variety of instant tickets that are offered. Accurately predicting instant ticket sales is then complicated by the uncertainty surrounding return-requirements to the state as well as the products that will be offered.

Variance in instant ticket sales may also be due to variation in socio-economic characteristics of the population in the state. The economic literature on lotteries shows them to be regressive in nature. That is, lower income individuals spend a larger proportion of their total income compared to higher income individuals. Other studies found lottery ticket sales per capita were higher among lower income groups. Thus, not only do lower income groups spend a higher proportion of their income on lotteries, they buy more tickets than their higher income counterparts. While lotteries in general are regressive, instant games are considered the most regressive. Lottery officials in a state where

instant games make up the bulk of lottery sales stated that lower income individuals are drawn to the instant gratification from these games and, according to their focus groups, often pin hopes on winning sufficient money to pay their bills. Economic research confirms this attitude and has in fact found a significant correlation between unemployment and lottery sales. As unemployment rises, so too do lottery sales. Variation across states in ticket demand may then be due to income levels and the economic conditions within the state.

Given these complexities, accurately predicting demand for instant ticket games in Mississippi is extremely difficult. Based on the experience of Arkansas, Mississippi instant ticket sales might reach $365 million. However, if the state has the experience of Kansas, sales would reach only $168 million. Averaging the two states would yield $266 million.

Suppose the state generated lottery sales of $72 million in Powerball and Mega-Millions games and $266 million in instant ticket sales for a total of $338 million in total lottery ticket sales. These sales would be divided between payout to winners, the government's share and costs. A general rule of thumb, based on the experience of all states is 50 percent to payouts, 30 percent to the government, and 20 percent to costs. Using this breakdown would net Mississippi $101.4 million from a lottery. This should be viewed as an upper bound however, especially in the first few years of operation. The government's share in Arkansas is 18.7 percent and in Kansas is 28.8 percent. If Mississippi has the experience of the average of these two states in terms of the government share of lottery ticket sales, the state's share would be 23.7 percent of sales or $80.1 million ($338 * 23.7 percent).

It should be noted that this is not the net gain to the state. Limited income in Mississippi means any lottery sales will be accompanied by a reduction of retail sales tax. The net impact to the state's revenue picture is expected to be positive however, since the state's share of total lottery ticket sales (30 percent) exceeds the sales tax rate (7 percent).

If the state experiences $338 million in lottery sales, retail sales tax would theoretically fall by a maximum of $23.7 million ($338 million times 7 percent). However, three border states have a lottery and Mississippians are already purchasing tickets in these states. We have no in-house means of estimating the level of Mississippi lottery spending in these states. We therefore contacted officials in each state to determine their estimates of Mississippi purchases. Based on sales near the state line, Arkansas estimates that Mississippi purchases account for $5 to $10 million of their lottery sales. Based on payout records, Louisiana estimates that Mississippi purchases account for $30.4 million. Tennessee did not respond to our request. If we assume Mississippi purchases of Tennessee tickets are similar to that of Louisiana and if we assume the upper bound of the Arkansas estimate, total existing purchases of lottery tickets by Mississippi residents would be roughly $70 million. Retail sales purchases will then be reduced by $268 million ($338 million minus $70 million). A reduction of this size would reduce retail sales tax by a <u>maximum</u> of $18.8 million[1] ($268 million times 0.7 percent). The net return to the state revenue from a lottery, taking into account the reduction in retail sales, would then be an estimated $82.6 million ($101.4 million minus $18.8 million). If the state's share of lottery sales was similar to that of Arkansas and Kansas, gains to the general fund net of the decline in retail sales would be as low as $61.2 million. It should be noted that while the shift from retail sales to lottery sales results in a net gain to the state's revenue, the decline in retail sales tax reduces the diversion to municipalities.

<u>Econometric Analysis Approach</u>

Following similar methodology to Ashley, Liu and Chang (1999), and Caudill, Gropper, and Peng (1995), we examined state revenue from lotteries in ten other states (ID, IA, KS, LA, ME, NE, NH, NM, OK, SC). Since Mississippi is a relatively small state, we limited our modeling to states with populations comparable to Mississippi. Mississippi's population is

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[1] Realistically, the loss of sales tax revenue would be less, since a portion of lottery sales will come from diverting money from savings and non-taxed purchases. We used this upper bound here in order obtain a conservative estimate of net gains to the General Fund.

just under 3 million. We examined states with population of at least two million but less than five million. We excluded West Virginia, Arkansas, and Kentucky due to some data constraints for the period under consideration.

The model used the state's net lottery revenue per capita (in natural log form) as the dependent variable. Explanatory variables were percentage of population in poverty, non-lottery gaming revenue per capita (in natural log form), per capita income (in natural log form), population per square mile and regional indicator variables. The ten states were examined for the period 2008 to 2015.

Each variable had the expected sign. The poverty rate was found to be significant and positive, indicating that the higher the poverty rate, the higher the per capita lottery revenue. Population per square mile was likewise positive and significant, indicating that higher density areas have higher revenue from lotteries. Per capita income was negative and significant, indicating that the higher the per capita income the lower the revenue from lotteries. Non-lottery gaming revenue was negative but not significant, suggesting a lottery in Mississippi would not significantly affect gaming revenue.

Applying the coefficients to Mississippi data from 2013-2015 yields an estimated $116 million in lottery revenue. Ashley, Liu and Chang (1999) estimated potential Mississippi lottery revenue using two different modeling techniques. Depending on the technique, their estimate for 1995 was either $46.9 million or $73.8 million. These estimates are equivalent to $81.5 or $128.3 million in 2015 dollars. The lower estimate is from their preferred model. Caudill, Gropper, and Peng (1995) estimated potential Mississippi lottery revenue of $20.8 million in 1990 (or $45.7 million in 2015 dollars). The large variance in these estimates reflects the complexity of estimating lottery sales. Each state is unique in terms of the socio-economic environment and the administration of its lotteries. Despite these complexities, the analysis suggests our estimates are reasonable.

The estimate of $116 million does not take into account any loss of retail sales tax revenue as we did with the sales per capita approach. Using similar assumptions as with that approach, there would be an estimated $22.2 million loss in sales tax revenue leaving a net gain in revenue of $93.8 million.

Using the per capita approach yields a net gain in state revenue from a lottery of $82.6 million; using the econometric modeling approach yields an estimate of $93.8 million. These are based solely on ticket sales and the potential reduction in retail sales. This does not take into account any impact from a lottery.

Is a lottery good economic policy?

To address the question of whether a lottery is good economic policy, we will first demonstrate conceptually how the introduction of a lottery creates its own leakages of economic activity. Then, using the REMI model, we will simulate the economic impact of a lottery using two different scenarios. We conclude with a few additional factors that should be taken into account when considering whether a lottery is good economic policy.

The Economic Leakage Created by a Lottery

Mississippi lottery sales will come primarily from the disposable income in Mississippi. An additional amount will come from disposable income in Alabama. Of the money from Mississippi households, a portion will come from capturing the Mississippi dollars already leaving the state in the form of lottery sales to Arkansas, Louisiana, and Tennessee. Lottery sales will reduce retail sales, which will reduce employment, income, gross domestic product (GDP) and the General Fund. Since the government's share of lottery sales exceeds the Mississippi retail sales tax rate, the net effect to state government revenue will be positive.

Lottery sales dollars will be divided into the government's share, payouts to winners, and costs. As already stated, a general rule of thumb is that 50 percent of lottery sales dollars goes to payout, 30 percent goes to government and 20 percent goes to costs. It should be stressed that this is just a general rule of thumb and this breakdown is not guaranteed. As previously stated, the government share of total lottery sales in Arkansas was 18.7 percent in 2016. Most of Arkansas lottery tickets are sold in the form of instant games which tend to have lower government shares. Mississippi's government share will depend on many factors.

While a Mississippi lottery is likely to capture dollars currently leaving the state, it creates its own leakages of Mississippi dollars leaving the state. We believe these leakages would likely exceed current purchases of lottery tickets by Mississippians. While the government's share of lottery sales is expected to be spent almost entirely in the state, the other two uses of lottery sales (payouts and costs) contain notable leakages. These include the following:

1. A small but significant share of the payouts from instant ticket sales is likely to go to winners in other states. Louisiana estimates that 10 percent of their instant ticket payouts goes to winners in other states.

2. A much higher share of the state's contribution to the multi-state jackpot games will go to winners outside of the state. It is not clear how much this leakage will be. State contributions to these games represent 50 percent of sales (Louisiana contributes roughly 33.3 percent to the large jackpot games and the remaining 16.7 percent to lower tier prizes). In the 21 years that Louisiana has participated in these games, there have been nine years without a Louisiana winner of the jackpot. We do not know how many lower tier games had Louisiana winners. Mississippi's lower population suggests the probability of a multi-state jackpot winner coming from Mississippi is lower than that of Louisiana.

   Additionally, of the winnings going to Mississippi winners, a portion will leave the state through out-of-state spending and investments. Because of these issues, it is reasonable to assume that the leakage associated with the multi-state games would be significantly higher than that of the instant ticket games.

3. The portion of the lottery sales going to costs is expected to be divided between in-state (retailers and administrative costs) and out-of-state (vendors and miscellaneous expenses). Mississippi does not have vendors within the state. The leakage from costs would then be higher than in states where the vendors reside.

Based on the above information, we believe the leakages created by a Mississippi lottery would exceed those estimated losses from existing purchases by Mississippians in the lotteries of surrounding states. This is illustrated in the table below.

Table 1. Understanding Leakages Created With a Mississippi Lottery.

		Scenario 1 Based on Per capita Approach		Scenario 2 Assuming Sales Exceed Expectations	
Assumed MS lottery sales		$	338.0	$	500.0
Instant ticket games		$	266.0	$	393.5
Multi-State jackpot games		$	72.0	$	106.5
Government's share*	30.0%	$	101.4	$	150.0
Payout to winners	50.0%	$	169.0	$	250.0
Lottery expenses	20.0%	$	67.6	$	100.0
Leakages from lottery					
Out-of-state Instant ticket game winnings					
50% of ticket sales with 10% of winnings going to other states	5.0%	$	13.3	$	19.7
Payout for prizes in multi-state games					
50% of ticket sales with 75% of winnings going to other states	37.5%	$	27.0	$	39.9
Expenses					
Out-of-state lottery expenses (venders, misc. expenses)					
20% of ticket sales with half spent in other states	10.0%	$	33.8	$	50.0
Total leakages to other states		$	74.1	$	109.6
Estimated current leakage from lottery purchases in LA, AR, & TN		$	70	$	70

* This estimate does not reflect the potential reduction in retail sales tax from a lottery.

In the table above, two scenarios are presented. The first assumes lottery ticket sales per capita in Mississippi equal the average per capita sales of Arkansas and Kansas for both instant ticket and jackpot games. The second scenario assumes total tickets sold equal $500 million and the breakdown between instant ticket sales and jackpot games is the same as in scenario 1. We assume 30 percent of sales goes to the state government, 50 percent goes to payouts, and 20 percent goes to pay lottery expenses. We further assume that 10 percent of the payout from instant ticket sales will go to participants in other states; that 75 percent of the state's contribution to the multi-state game winners will go to other states; and that half of anticipated expenses will be spent in other states. Under these assumptions the total leakage to other states is $74.1 million compared to the estimated $70 million currently lost by leakage from Mississippians purchasing lottery tickets from other states. Scenario 2 shows that if sales exceed expectations, the additional loss from a Mississippi lottery is greater.

Obviously, these scenarios rely upon assumptions and a different set of assumptions would generate a different dollar figure for the total leakage. However, we have attempted to be realistic and have relied on information obtained from other states. Regardless of the specific assumptions, a lottery will reduce the level of money currently spent in the Mississippi economy. Under our assumptions, the state loses 15 percent of the instant ticket sales and almost half of the multi-state ticket sales in the form of leakages to other states. For a Mississippi lottery to be economically beneficial, it would need to generate sufficient economic activity from the dollars remaining in the state to exceed these leakages. We believe this is unlikely based on the analysis done in the next section.

The Economic Impact of a Lottery

Using the two scenarios depicted in Table 1 and the REMI model, we estimated the hypothetical economic impact of a lottery. Since we are interested in isolating the economic impact of the lottery itself, we examined the impact of the lottery separately from the impact generated by government spending of the revenue created by a lottery. It is worth noting that the economic impact of the government spending would be the same regardless of the source of revenue.

Scenario 1: An Estimated $338 million in Lottery Ticket Sales

In the first scenario, a lottery will generate an estimated $338 million in ticket sales in Mississippi, annually. Approximately 50 percent of this amount will be remitted to lottery winners, 20 percent will go toward administration of the lottery and 30 percent will accrue to the General Fund revenue. The increase to the General Fund revenue solely from the lottery is estimated to be $101.4 million.

Lottery ticket purchases will be made using existing disposable income. Thus, Mississippi lottery ticket sales will result in a reduction in the sale of retail goods and consumer services. As shown in Table 2, in 2019, this reduction in economic activity will generate a decrease in employment (-1,561), wages and salaries (-$52,980,000) and state Gross Domestic Product (GDP) (-$93,590,000). The effect is almost negligible as these amounts represent less than 0.1 percent reduction in economic activity. Although the General Fund is projected to gain $101.4 million from lottery ticket sales, it will lose an estimated $8,315,930 from the reduction in sales tax for retail goods and consumer services, resulting in a net gain to General Fund revenue from the sales of lottery tickets of $93,084,070 in 2019[2].

The negative impact on jobs, wages and salaries, and GDP all decline slightly in years 2020 through 2023. Additions to the General Funds also decline during this period. From 2019 through 2023, the average annual change in jobs is -1,491, -$56.8 million in wages and salaries, and -$91.8 million in state GDP. The average annual increase in General Fund revenue over this 5-year period is $92.3 million.

Table 2: Impact of a lottery independent of how the state spends the increase.

Year	2019	2020	2021	2022	2023	5-year average
Employment	-1,561	-1,560	-1,518	-1,445	-1,371	-1,491
Wages and Salaries	-$52,980,000	-$56,750,000	-$58,310,000	-$58,370,000	-$57,640,000	-$56,810,000
GDP	-$93,590,000	-$94,810,000	-$93,390,000	-$90,440,000	-$86,930,000	-$91,832,000
General Fund Revenue*	$93,084,070	$92,433,450	$92,105,640	$91,929,770	$91,847,940	$92,280,174

*The impact to General Fund Revenue equals the increase to the state from the sale of lottery tickets ($101,400,000) minus the lost revenue ($8,315,930) generated by the shift in consumer spending from retail goods and consumer service to lottery tickets.

Impacts to General Fund revenue must be considered a best-case scenario because this analysis assumes that lottery ticket winnings are subject to the same income tax requirements that apply to casino gambling winnings. Since an estimated 75 percent of lottery ticket sales are projected to be instant-win tickets, this may be difficult to enforce.

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2 The REMI model assumes lottery ticket purchases are made by diverting money from taxable retail purchases, non-taxable purchases and from savings. The model yields a lower estimate for potential lost retail sales tax than assumed in the first section of this document. However, the REMI model likely understates the lost retail sales taxes as it does not recognize that lottery purchases will come primarily from lower income groups. Due to limited resources, lottery ticket purchases from lower income groups will come disproportionally from taxable retail sales.

Even though lottery ticket sales are projected to contribute $101.4 million to the General Fund, only an estimated $93.1 million accrues to the General Fund revenue. This amount ($93.1 million) is available to be spent by the state and will generate new economic activity that will offset some or all of the drain on employment, wages and salaries and GDP generated by the lottery. Although the state legislature determines how this additional funding will be spent, in our analysis we devoted all the increase ($93.1 million) to state road and bridge repair.

If the state spends the proceeds of a lottery on state road and bridge repair, increased economic activity will generate an estimated 1,114 jobs, $40.4 million in wages and salaries, $64.6 million in state GDP, and $6.8 million in General Fund revenue in 2019 (see Table 3).

Table 3: Impact of spending state increase on road and bridge repair.

Year	2019	2020	2021	2022	2023	5-year average
Employment	1,114	1,088	1,041	978	917	1,028
Wages and Salaries	$40,428,229	$42,269,616	$42,728,297	$42,293,134	$41,449,327	$41,833,721
GDP	$64,589,696	$63,937,694	$61,776,179	$58,811,481	$55,724,707	$60,967,951
General Fund Revenue	$6,776,594	$7,040,986	$7,171,341	$7,212,045	$7,203,813	$7,080,956

The positive impact on jobs declines in years 2020 through 2023. The increase in state GDP declines during this period as well. Additions to the General Funds grow about 6 percent during this period. From 2019 through 2023, the average annual growth in jobs from new road and bridge expenditures is 1,028, $41.8 million in wages and salaries, and $61.0 million in state GDP and $7.1 million in General Fund revenue.

The net impacts of implementing a lottery in Mississippi and spending the state increase to repair state roads and bridges is mixed. In this scenario, employment falls by 447 jobs in 2019. The average annual decline in employment from 2019 through 2023 is 463 jobs, or about a 0.03 percent decline. Wages and salaries decline $12.5 million in 2019; increasing to a decline of $16.2 million in 2023. The average annual decline in wages and salaries in Mississippi associated with this scenario is $15.0 million, also a decline of about 0.03 percent. Mississippi GDP declines approximately $29.0 million in 2019. The average annual decline in state GDP during this five-year period is $30.8 million, or about 0.03 percent.

State General Fund revenue generated by $338 million in lottery ticket sales is estimated to be $99.8 million in 2019. From 2019 through 2023, average annual additions to General Fund revenue resulting from $338 million in lottery ticket sales is estimated to be $99.4 million, or an increase of about 1.43 percent. One of the assumptions in this analysis dictates that the $99.4 million in General Fund revenue has already been spent on road and bridge repair and therefore, is not available for other purposes.

Scenario 2: An Estimated $500 million in Lottery Ticket Sales
In the second scenario, a lottery will generate an estimated $500 million ticket sales in Mississippi, annually. As in the first scenario, approximately 50 percent of this amount will be remitted to lottery winners, 20 percent will go toward administration of the lottery and 30 percent will accrue to General Fund revenue. The increase to the General Fund revenue solely from the lottery is estimated to be $150.0 million.

Mississippi lottery ticket sales will result in a reduction in the sale of retail goods and consumer services. As shown in Table 4, in 2019, this reduction in economic activity will generate a decrease in employment (-2,309), wages and salaries (-$78,400,000) and state GDP (-$138,480,000). Although the General Fund is projected to gain $150.0 million from

lottery ticket sales, it will lose an estimated $12,038,850 from the reduction in sales for retail goods and consumer services, resulting in a net gain to state General Fund revenue from the sales of lottery tickets of $137,696,150 in 2019.

The negative impact on jobs, wages and salaries, and GDP all decline slightly in years 2020 through 2023. Additions to the General Fund also decline during this period. From 2019 through 2023, the average annual change in jobs is -2,206, -$84.1 million in wages and salaries, and -$135.9 million in state GDP. The average annual increase in General Fund revenue over this 5-year period is $136.5 million.

Table 4: Impact of a lottery independent of how the state spends the increase.

Year	2019	2020	2021	2022	2023	5-year average
Employment	-2,309	-2,308	-2,246	-2,139	-2,029	-2,206
Wages and Salaries	-$78,400,000	-$84,000,000	-$86,300,000	-$86,400,000	-$85,300,000	-$84,080,000
GDP	-$138,480,000	-$140,280,000	-$138,180,000	-$133,810,000	-$128,630,000	-$135,876,000
General Fund Revenue*	$137,696,150	$136,733,600	$136,248,580	$135,988,370	$135,867,300	$136,506,800

*The impact to General Fund Revenue equals the increase to the state from the sale of lottery tickets ($150,000,000) minus the lost revenue ($12,038,850) generated by the shift in consumer spending from retail goods and consumer service to lottery tickets.

> As in scenario 1, impacts to General Fund revenue must be considered a best-case scenario because this analysis assumes that lottery ticket winnings are subject to the same income tax requirements that apply to casino gambling winnings. Since an estimated 75 percent of lottery ticket sales are projected to be instant-win tickets, this may be difficult to enforce.

Even though lottery ticket sales are projected to contribute $150.0 million to the General Fund, only an estimated $137.7 million accrues to General Fund revenue. This amount ($137.7 million) is available to be spent by the state and will generate new economic activity that will offset some or all of the drain on employment, wages and salaries and GDP generated by the lottery. Although the state legislature determines how this additional funding will be spent, in our analysis we devoted all the increase ($137.7 million) to state road and bridge repair.

If the state spends the proceeds of a lottery on state road and bridge repair, increased economic activity will generate an estimated 1,647 jobs, $59.9 million in wages and salaries, $95.6 million in state GDP, and $10.0 million in General Fund revenue in 2019 (see Table 5).

Table 5: Impact of spending state increase on road and bridge repair.

Year	2019	2020	2021	2022	2023	5-year average
Employment	1,647	1,611	1,540	1,447	1,357	1,520
Wages and Salaries	$59,851,927	$62,532,833	$63,219,341	$62,554,650	$61,321,441	$61,896,038
GDP	$95,561,128	$94,619,651	$91,377,381	$87,032,557	$82,426,162	$90,203,376
General Fund Revenue	$10,024,922	$10,416,092	$10,608,133	$10,668,922	$10,656,253	$10,474,865

The positive impact on jobs declines in years 2020 through 2023. The increase in state GDP declines during this period as well. Additions to the General Fund grow about 6 percent during this period. From 2019 through 2023, the average annual growth in jobs from new road and bridge expenditures is 1,520, $61.9 million in wages and salaries, and $90.2 million in state GDP and $10.5 million in the General Fund revenue.

The net impacts of implementing a lottery in Mississippi and spending the state increase to repair state roads and bridges is mixed. In this scenario, employment falls by 662 jobs in 2019. The average annual decline in employment from 2019 through 2023 is 686 jobs, or about a 0.04 percent decline. Wages and salaries decline $18.5 million in 2019; increasing to a decline of $24.0 million in 2023.   The average annual decline in wages and salaries in Mississippi associated with this scenario is $22.0 million, also a decline of about 0.04 percent. Mississippi GDP declines approximately $43.0 million in 2019.   The average annual decline in state GDP during this five-year period is $45.7 million, or about -0.04 percent.

State General Fund revenue generated by $500 million in lottery ticket sales is estimated to be $147.7 million in 2019. From 2019 through 2023, average annual additions to General Fund revenue resulting from $500 million in lottery ticket sales is estimated to be $147.0 million, or an increase of about 2.12 percent.   One of the assumptions in this analysis dictates that the $137.7 million in General Fund revenue has already been spent on road and bridge repair and therefore, is not available for other purposes.

Other points to consider regarding a lottery in Mississippi

Policy makers should be aware of potential social costs associated with a lottery.   The economic literature almost unanimously finds lotteries are regressive for those who play; that is, lower income individuals spend a larger percentage of their total income than higher income individuals. Moreover, surveys have found lottery participants in lower income brackets spend more total dollars per year on lottery purchases than participants in higher income brackets. (Instant games are particularly regressive.) Thus, the lottery has the opposite effect of a progressive income tax: more revenue is transferred to the government from lower income participants than higher income participants. Some individuals will note that lottery purchases are voluntary while taxes are not, but governments also advertise and market state lotteries, often aggressively and are not subject to the same regulations as other advertising[3].

Economic researchers have found greater income inequality in states with lotteries than states without lotteries, a reflection of the outcomes described above. At least one study cites the proliferation of state lotteries in the rise in income inequality in the U.S. which began in the 1970s. Income concentration occurs as payouts are transferred to a small number of individuals in addition to the revenues retained by the government. Other social costs of lotteries difficult to measure include increased problems associated with gambling for individuals such as addiction due to the increased availability of opportunities to gamble as well as the potential effects on views of the work ethic relative to gambling. Overall, how the state uses the proceeds it receives from a lottery and how efficiently it operates the lottery play a large role in determining if the lottery increases welfare for the economy as a whole, or at least does not reduce overall welfare.   Lower income individuals, in particular must specifically benefit from government use of lottery proceeds in order to enhance overall welfare of the economy.

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[3] According to Clott (2015) "The federal government, which banned lottery advertising until 1975, no longer exercises any authority over the substance of state lottery advertising. As with all state entities, state lotteries are exempt from the regulatory power of the Federal Trade Commission (FTC).   Truth-in-advertising rules were set forth by the FTC to protect the public from deceiving, misleading ads. Researchers have roundly criticized this exemption when it comes to lotteries. If the lottery were run purely by private industry instead of by state governments, it is likely the FTC guidelines would prohibit much of the current lottery advertising. Without this baseline of protection, consumers fall prey to sophisticated, deceptive marketing strategies which are backed by massive financial resources…Although most states have some form of regulation on lottery advertising, they are not consistently enforced out of fear of decreasing profits. Lottery promotion has become so omnipresent that researchers have found it difficult to separate the adverse effects that the lottery itself has on society from the adverse effects caused by lottery promotion itself."

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