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**Analysis of Tax Revenues Accruing to
North Dakota Under Selected Nongaming and
Gaming Scenarios**

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and F. Larry Leistritz**

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Gaming Division
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Bismarck, North Dakota**

Analysis of Tax Revenues Accruing to North Dakota Under
Selected Nongaming and Gaming Scenarios

Randal C. Coon, Thor A. Hertsgaard, and F. Larry Leistritz*

State-sponsored gaming is an issue currently being discussed as a means to augment North Dakota's tax revenue. Recent budgetary problems have resulted in numerous suggestions for increasing tax revenues; however, gaming tax revenues have gained support because they are paid by those participating in this type of activity. Critics of this type of tax revenue collection argue that the money spent for games of chance actually removes expenditures from other sectors of the economy. At the request of the Gaming Division of the North Dakota Attorney General's Office, the tax revenues associated with several scenarios of gaming and a situation where the estimated gross proceeds from gaming were distributed to other sectors of the state's economy were analyzed in this study. This study takes into account not only the direct tax revenues but also the secondary revenues resulting from money generated via the multiplier process.

Objectives

The objective of this analysis was to estimate tax revenues accruing to the North Dakota general fund for three games of chance (i.e., instant tickets, on-line numbers, and lotto). Instant tickets and on-line numbers games were analyzed for both North Dakota and a tri-state basis (i.e., North Dakota, South Dakota, and Montana). Lotto was analyzed from a three-state perspective because a larger population is necessary to support it. Revenues from the direct tax on gaming proceeds will be added to those resulting from

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operating expenditures and the multiplier effect upon them. Also, the tax revenue for each corresponding level of gaming proceeds will be estimated for a situation in which gaming was nonexistent but identical expenditures were made to the retail trade sector instead. Net tax revenue proceeds for one type of expenditure versus the other will be calculated.

Assumptions

Several assumptions were necessary to perform the previously described analysis. Estimates of the distribution of gross proceeds from the gaming activities were provided (Keller 1987) for a situation of only North Dakota participation and for a three-state level of gaming to include North Dakota, South Dakota, and Montana (Table 1).

TABLE 1. DISTRIBUTION OF GROSS PROCEEDS FOR THREE GAMING ACTIVITIES FOR NORTH DAKOTA AND TRI-STATE LEVELS OF PARTICIPATION, 1987

Operation ^a	Distribution of Proceeds				Total
	General Fund Revenue	Prizes to Winners	Administration Costs	Venders Charges	
-----percent-----					
Instant tickets:					
North Dakota	26	50	19	5	100
Tri-state	26	50	19	5	100
On-line numbers:					
North Dakota	26	50	19	5	100
Tri-state	26	50	19	5	100
Lotto:					
North Dakota	--	--	--	--	--
Tri-state	30	50	15	5	100

^aTri-state includes North Dakota, South Dakota, and Montana.

SOURCE: Keller (1987).

Gross proceeds from the three gaming activities for the two levels of participation also were provided by Keller (1987) and are presented in Table 2.

TABLE 2. GROSS PROCEEDS TO NORTH DAKOTA FOR THREE GAMING ACTIVITIES ON A NORTH DAKOTA AND A TRI-STATE BASIS, 1987-1989 BIENNIUM

Operation ^a	Gross Proceeds	
	1st Year of Biennium	2nd Year of Biennium
-----Dollars-----		
Instant tickets:		
North Dakota	5,678,650	5,962,582
Tri-state	5,760,850	6,048,893
On-line numbers:		
North Dakota	---	815,150
Tri-state	---	828,850
Lotto:		
North Dakota	---	---
Tri-state	---	14,919,300

^aTri-state includes North Dakota, South Dakota, and Montana.

SOURCE: Keller (1987).

Venders' share of the gross proceeds was assumed to be for wages and salaries, and these values were thus applied to the multiplier effect to estimate indirect and induced tax revenues generated. Prizes to winners were not subject to income tax in North Dakota; however, these values were applied to the multipliers to estimate the indirect and induced tax collections resulting from the subsequent rounds of spending. Gross proceeds for administration costs of the games were for supplies necessary to enact the gaming activities. These expenditures were assumed to be primarily to out-of-state businesses and would thus generate no tax revenues for North Dakota.

It also was assumed that if the gross proceeds for each gaming activity were not spent for that activity, an equal amount of money would be spent in the retail trade sector of the state's economy. These retail trade purchases would be subject to the 5 percent state sales tax. In addition, the indirect and induced tax revenues resulting from these retail purchases also can be estimated using the multiplier process.

Tax revenues were estimated for the 1987-1989 biennium period because the North Dakota budget currently being developed will cover that period. Instant ticket operations can be easily initiated, so tax revenues can be collected for each year of the biennium. Instant ticket operations could exist for either the North Dakota or the tri-state participation scenario. On-line numbers and lotto gaming operations require more time to set up and become operational, so tax revenues would not be generated until the second year of the biennium. On-line games of chance could exist for a North Dakota or a tri-state scenario; however, the necessary revenues to support lotto would require the states of North Dakota, South Dakota, and Montana to participate.

Procedures

Tax revenues generated for the three gaming activities and two levels of participation were estimated for the direct and indirect and induced levels of business activity. The North Dakota Input-Output model (Coon et al. 1986) and tax revenue estimating equations previously developed (Coon et al. 1984) were used to estimate general fund revenues for gaming versus nongaming expenditures. The sales and use tax estimating equation was adjusted to reflect the current 5 percent rate. Direct and indirect and induced tax revenues were calculated on a per dollar of gross proceeds basis with these amounts being applied to the respective revenue projections. For gaming activities, \$1.00 of revenue would yield direct tax revenues of \$0.26 to the state general fund for a North Dakota or tri-state level of participation for instant tickets and on-line numbers and \$0.30 for lotto at a tri-state level of participation (Table 3). Sales and use, personal income, and corporate income taxes also are generated as a result of the income to the winners and the vendors' wages and salaries (i.e., additions to the household sector of the economy). Table 3 also presents tax revenues associated with these categories on a per dollar of gaming basis.

TABLE 3. TAX REVENUES ASSOCIATED WITH A ONE DOLLAR GAMING EXPENDITURE FOR THREE GAMING ACTIVITIES FOR NORTH DAKOTA AND TRI-STATE GAMING SCENARIOS, AND A CORRESPONDING RETAIL TRADE PURCHASE, 1987

Expenditure	Direct Tax	Indirect and Induced Tax		
		Sales & Use	Personal Income	Corporate Income
-----cents per dollar of purchase-----				
Instant tickets--ND and tri-state:				
General fund	26.000	--	--	--
Winners	--	1.850	0.600	0.200
Administration	--	--	--	--
Venders	--	0.185	0.165	0.020
On-line numbers--ND and tri-state:				
General fund	26.000	--	--	--
Winners	--	1.850	0.600	0.200
Administration	--	--	--	--
Venders	--	0.185	0.165	0.020
Lotto--tri-state:				
General fund	30.000	--	--	--
Winners	--	1.850	0.600	0.200
Administration	--	--	--	--
Venders	--	0.185	0.165	0.020
Retail trade	5.000	1.400	0.800	0.500

If the dollar spent for gaming activities was used instead for a retail purchase, tax revenues would accrue to the state in the form of sales and use tax, personal income tax, and corporate income tax. Tax revenues for a \$1.00 purchase of this type are presented in the bottom row of Table 3. These tax collections are both the direct (5 percent) and the indirect and induced revenues that would result from the original expenditure and the multiplier process. Applying the tax revenues (on a per dollar basis) to the distributed gross proceeds from gaming operations yielded the estimated total tax revenues resulting from the respective games of chance. Tax revenues were estimated for retail trade purchases in amounts equal to the gaming proceeds by using the per dollar tax revenues.

Results

Estimated tax revenues generated as a result of the three gaming operations for the next biennium are presented in Table 4 as scenarios 1 through 7. The tax revenues for corresponding retail purchase amounts also are given in Table 4 as alternative scenarios 1 through 7. Instant ticket games provided tax revenues ranging from \$1.6 million for the first year of North Dakota operations to \$1.8 million for second year of a tri-state level of participation. Of these estimated revenues, the overwhelming majority (about 90 percent) was the result of the 26 percent tax on the gross proceeds. On-line numbers generated a much smaller amount of tax revenue, principally because of the smaller gross proceeds. Again, approximately 90 percent of the total tax revenue generated from this source was from the direct tax on the activity.

It was assumed that lotto gaming activity involves a considerably larger volume than the other games of chance. As would be expected, it also generates a larger amount of tax revenue. Estimated tax revenue from the direct tax on lotto gross proceeds amounted to \$4,475,790, while the total direct and indirect and induced revenues totaled \$4,926,353.

Results of the tax revenue estimates generated from gaming activities and retail purchases are compared in Table 5. Because of the high rate of taxation (26 or 30 percent) on the gaming gross proceeds, the estimated tax revenues were much higher when consumers spent their money on games of chance rather than on retail purchases. Instant ticket gaming activities would generate \$1.2 and \$1.3 million more general fund tax dollars than equal retail purchases for the first and second years of the biennium, respectively. On-line numbers games result in significantly lower levels of tax revenues, although the revenues resulting from this type of gaming were much larger than corresponding retail trade related taxes. In the first year of revenues, the

TABLE 4. ESTIMATED DIRECT AND INDIRECT AND INDUCED TAX REVENUES ACCRUING TO NORTH DAKOTA FOR SELECTED GAMING SCENARIOS AND CORRESPONDING RETAIL TRADE LEVELS, 1987

Activity	Gross Proceeds	Direct Taxes	Tax Revenues			Total	
			Indirect and Induced Taxes				
			Sales & Use	Personal Income	Corporate Income		
-----dollars-----							
Scenario	Instant tickets:						
1	ND only--year 1	5,678,650	1,476,449	115,561	43,442	12,493	1,647,945
2	ND only--year 2	5,962,582	1,550,271	121,339	45,613	13,118	1,730,341
3	Tri-state--year 1	5,760,850	1,497,821	117,234	44,070	12,674	1,671,799
4	Tri-state--year 2	6,048,893	1,572,712	123,095	46,274	13,308	1,755,389
	On-line numbers:						
5	ND--year 2	815,150	211,939	16,588	6,236	1,793	236,556
6	Tri-state--year 2	828,850	215,501	16,867	6,341	1,824	240,533
	Lotto:						
7	Tri-state--year 2	14,919,300	4,475,790	303,607	114,133	32,823	4,926,353
Alternative Scenario							
1	Retail trade	5,678,650	283,933	79,501	45,429	28,393	437,256
2	Retail trade	5,962,582	298,129	83,476	47,701	29,813	459,119
3	Retail trade	5,760,850	288,042	80,652	46,087	28,804	443,585
4	Retail trade	6,048,893	302,445	84,684	48,391	30,244	465,764
5	Retail trade	815,150	40,758	11,412	6,521	4,076	62,767
6	Retail trade	828,850	41,442	11,604	6,631	4,144	63,821
7	Retail trade	14,919,300	745,965	208,870	119,354	74,597	1,148,786

TABLE 5. COMPARISON OF ESTIMATED TAX REVENUES FROM EQUAL EXPENDITURES FOR GAMING ACTIVITIES AND RETAIL TRADE PURCHASES, FOR SELECTED GAMING SCENARIOS, 1987

Item	Gross Proceeds	Associated Tax Revenues		Tax Revenue Differences
		Gaming	Retail	
-----Dollars-----				
Instant tickets:				
ND only--year 1	5,678,650	1,647,945	437,256	1,210,689
ND only--year 2	5,962,582	1,730,341	459,119	1,271,222
Tri-state--year 1	5,760,850	1,671,799	443,585	1,228,214
Tri-state--year 2	6,048,893	1,755,389	465,764	1,289,625
On-line numbers:				
ND only--year 2	815,150	236,556	62,767	173,789
Tri-state--year 2	828,850	240,533	63,821	176,712
Lotto:				
Tri-state--year 2	14,919,300	4,926,353	1,148,786	3,777,567

gaming-related tax collections from on-line numbers were \$236,556 compared to \$62,767 from retail purchases for North Dakota participation. The largest amount of estimated tax revenue was generated from the lotto gaming operation. A 30 percent general fund tax rate on the gross proceeds would generate almost \$5 million in tax revenues alone. Total tax revenues from the lotto gaming operation were \$4,926,353, or \$3,777,567 greater than the tax revenues resulting from retail purchases equal to the gross proceeds from the lotto gaming operations. The large amounts by which tax revenues from gaming operations exceeded retail-purchase-associated tax collections indicate the state's general fund would benefit from the operation of the gaming activities described within this analysis.

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