
An Assessment of the Economic Impact of a Multipurpose Arena

Ronald John Hy
Chair & Professor of Political Science
Department of Political Science
University of Central Arkansas
ronnh@mail.uca.edu

R. Lawson Veasey
Professor of Political Science
Department of Political Science
University of Central Arkansas
lawsonv@mail.uca.edu

Abstract

This research project was conducted to assess the economic impact of an arena on the economy of Pulaski County, Arkansas. Money to build the arena will come from three sources: (1) \$20 million from a one-cent, one-year countywide sales tax levy, (2) \$20 million from the State of Arkansas, and (3) \$10 million from private donations. An input-output analysis was conducted to analyze the economic impact of the arena on the community for years 1998 through 2000.

Total industry output showed an increase of \$46.7 million in the value of industry production over the three years. A final positive feature was the addition of 153 net new jobs directly and indirectly resulting from arena activity in Pulaski County during the initial three years of the project, most of which were in the construction sector.

Problem to be Addressed

In 1995, Pulaski County residents voted to support the construction of a multipurpose arena. Arena proponents believed it was necessary to build such a facility to provide a synergy for additional economic development. The arena, in other words, was designed to be a symbol of a united community working together for a common purpose. In addition to uniting area communities, the arena would generate millions of dollars for the Pulaski County economy. To arena proponents, this meant not only

jobs, but also dollars that would multiply and stimulate expanded employment throughout the community (*Kennedy, 1996: 1*).

The \$50 million arena was to be built from funds generated from three sources: (1) \$20 million from a one-cent, one-year countywide sales tax levy, (2) \$20 million from the State of Arkansas, and (3) \$10 million from private donations. The multipurpose arena was designed to host basketball games, concerts, and other special events generating revenues that would support its operation. The arena would have maximum seating for approximately 18,000 with the ability to accommodate events such as ice capades and ice hockey (*Kennedy, 1996: 1*).

Because of the construction and operation expenditures associated with the arena, its presence will have a positive impact upon the economy of Pulaski county. For example, local construction contractors will be hired, local supplies purchased, and jobs will be generated within the county. On the other hand, increasing the county sales tax by one-cent for one-year will have a negative effect in the county's economy. The purpose of this analysis is to determine the net economic impact felt throughout Pulaski County. *The basic question is what specifically will the county receive for its investment?* An Input-Output analysis was used to answer this question.

Input-Output Modeling

Input-Output modeling is an attempt to quantify the mutual interrelationship and interdependence of multiple economic sectors within a complex economic system. Such modeling determines the patterns of the flows of good and services in the economy and uses these measured patterns to simulate future events (*Hy, 1997: 1449*). These patterns are measured by a series of sectoral allocation equations, each including several interdependent variables (*Makridakis and Wheelwright, 1973: 21*). Modeling, therefore, estimates mathematical relationships among business and industry, household, and government outputs, using dollars as the primary means of measurement (*Leontief, 1986: 4*).

Input-Output models rely on massive data sets that allow them to measure direct, indirect, and induced effects but do not incorporate feedback relationships into succeeding impacts. *Direct effects* are associated with immediate changes in demands generated by employment, personal and household income, governmental expenditures, and private and public capital investment and formation.

Indirect effects essentially, they are interindustry impacts. Changes in employment, household income, governmental expenditures, and private and public capital investment and formation added from industry purchases of all items needed to furnish a product or service are measured. For example, construction contractors buy goods and services from other sectors that in turn buy goods and services from suppliers, each of whom makes additional purchases from still other suppliers. Indirect effects measure the impacts of these purchases.¹

Building a new bridge in a county illustrates these concepts. Building a bridge in a county causes the contractor to purchase various types of building materials from suppliers (*direct effect*). In turn, suppliers must buy materials from various manufacturers (*indirect effect*). This process, to be sure, also works in reverse, permitting one to estimate the impact of reductions as well as expansions (*Hy 1997: 1452-1453*).

Assumptions

Between 1998 and 2000 a total of \$50 million will be spent building a multipurpose arena. Of the \$50 million, \$20 million will come from a one-year, one-cent increase in the county's sales tax, \$20 million from a state appropriation, and \$10 million from private funds through donations and the sale of skyboxes.

For 1998, the effects of removing \$20 million in personal income via the sales tax from the county economy were examined. Next, spending \$20 million for the arena construction and another \$5 million for real estate purchases were evaluated. Twenty-five million will be spent in 1999 to complete the construction of the arena. Since the one-year, one-cent countywide sales tax increase will end in 1999, the impact of the tax increase is negligible. By early 2000, most of the money for the construction of the arena will have been appropriated. With that in mind, the analysis for 2000 examined the cost of operating the arena for only six months. The six-month arena operating costs was assumed to be \$2,227,692. These operating expenses would include some start-up costs such as office furniture and equipment and salaries and benefits for employees of the new arena. It was further assumed that the arena would generate \$6.9 million in revenues in its first six month of operation (*Kennedy, 1996: 1*).

The following findings include the direct and indirect effects of the arena in Pulaski County.

Findings

1996 Positive Impact

Table 1 shows that the positive effects of construction activities will amount to \$31.9 million in total industry output, which is the total value of all production for the year. It is equal to the sum of value added and intermediate costs of goods and services. Personal income will be increased by \$11.8 million, and employee compensation income, which is total payroll costs (wages, salaries, and benefits) paid by local industries, will grow to just over \$7 million. A final positive feature included the creation of 317 jobs in the Pulaski County economy, 64 percent of which are in construction. These figures reflect construction expenditures, which include supplied labor and purchased materials for use at the job site.

TABLE 1

1998 - CONSTRUCTION AND SALES TAX EFFECTS

Industry	Total Industry Output	Employee Comp Income	Personal Income	Number of Jobs
Positive Effects				
Agriculture, Forestry & Fisheries	\$38,453	\$18,075	\$30,124	2
Mining	\$3,382	\$438	\$731	0
Construction	\$21,180,055	\$4,619,526	\$7,699,210	203
Manufacturing	\$1,232,405	\$275,446	\$459,076	8
Transp., Communications & Utilities	\$763,512	\$189,098	\$315,163	5
Wholesale & Retail Trade	\$1,751,965	\$701,843	\$1,169,738	32

Assessment of the Economic Impact**498**

Finance, Insurance & Real Estate	\$4,331,563	\$366,792	\$611,320	22
Services	\$2,431,296	\$846,845	\$1,411,409	44
Government	\$231,380	\$68,147	\$113,579	2
Total - Positive Effects	\$31,964,011	\$7,086,210	\$11,810,350	317

1998 Negative Impact

The total positive economic impact on the Pulaski County economy was derived from money spent for the purchase of land and construction the arena. However, \$20 million of the \$50 million came from a reduction in personal consumption expenditures via a one-cent countywide sales tax. Moreover, it was assumed that the \$10 million in private donations would come primarily from residents and companies in Pulaski County. These dollars represent a negative economic impact. Table 2 shows that total industry output will be reduced by \$15.6 million, while employee compensation income will decrease by \$4.9 million. Personal income will be reduced by \$5.6 million, and the number of jobs will be decreased by 226 positions.

TABLE 2**1998 - CONSTRUCTION AND SALES TAX EFFECTS**

Industry	Total Industry Output	Employee Comp Income	Personal Income	Number of Jobs
Negative Effects				
Agriculture, Forestry & Fisheries	(\$31,924)	(\$10,446)	(\$18,408)	(1)

Mining	(\$17,218)	(\$1,924)	(\$3,017)	0
Construction	(\$341,838)	(\$108,950)	(\$150,558)	(5)
Manufacturing	(\$968,793)	(\$173,353)	(\$177,084)	(5)
Transp., Communications & Utilities	(\$1,390,007)	(\$293,036)	(\$340,188)	(7)
Wholesale & Retail Trade	(\$3,891,965)	(\$1,592,633)	(\$1,759,501)	(92)
Finance, Insurance & Real Estate	(\$3,650,943)	(\$460,267)	(\$503,050)	(17)
Services	(\$4,962,220)	(\$2,237,506)	(\$2,596,819)	(96)
Government	(\$410,115)	(\$118,836)	(\$118,837)	(3)
Total - Negative Effects	(\$15,665,023)	(\$4,996,951)	(\$5,667,462)	(226)

1998 Net Impact

Table 3 reveals that the net effects of adding \$25 million to the economy and subtracting \$20 million from the economy will produce a net increase of \$16.5 million in total industry output. Employee compensation income will increase by \$2 million and personal income will increase by \$6 million. There will be a net increase of 91 new jobs, mainly at the entry level with low salaries. The majority of the jobs gained will be in the construction sector. The wholesale and retail sectors will net a loss of 112 jobs. Of the 525 economic sectors analyzed, only the construction sector saw a positive effect in total industry output and employee compensation income—as one would expect. Increases in all other economic sectors were negligible.

TABLE 3
1998 - CONSTRUCTION AND SALES TAX EFFECTS

Industry	Total Industry Output	Employee Comp Income	Personal Income	Number of Jobs
Net Effects				
Agriculture, Forestry & Fisheries	\$6,529	\$7,629	\$11,716	1
Mining	(\$13,836)	(\$1,486)	(\$2,286)	0
Construction	\$20,838,217	\$4,510,576	\$7,548,652	198
Manufacturing	\$263,612	\$102,093	\$281,992	3
Transp., Communications & Utilities	(\$626,495)	(\$103,938)	(\$25,025)	(2)
Wholesale & Retail Trade	(\$2,140,000)	(\$890,790)	(\$589,763)	(60)
Finance, Insurance & Real Estate	\$680,620	(\$93,475)	\$108,270	5
Services	(\$2,530,924)	(\$1,390,661)	(\$1,185,410)	(52)
Government	\$101,490	(\$50,689)	(\$5,258)	(1)
Total - Net Effects	\$16,579,213	\$2,089,259	\$6,142,888	91

1999 Impact

In 1998, the countywide one-cent sales tax will end. Therefore, there will not be a diversion of money from personal consumption expenditures to sales tax revenues. The construction expenditures will continue with the committal of the final \$25 million to finish the arena construction. Table 4 shows that this \$25 million addition to the Pulaski County economy will generate an additional \$34 million in total industry output. Employee compensation income will rise by \$8.5 million, as 372 new jobs will be created. The construction sector will be the leader with \$26.1 million in total industry output and 259 new jobs. Other significant benefactors in total industry output and jobs will be the wholesale and retail and services sectors.

TABLE 4**1999 - CONSTRUCTION AND SALES TAX EFFECTS**

Industry	Total Industry Output	Employee Comp Income	Personal Income	Number of Jobs
<i>Positive Effects</i>				
Agriculture, Forestry & Fisheries	\$38,453	\$18,075	\$30,124	2
Mining	\$3,382	\$438	\$731	0
Construction	\$21,180,055	\$4,619,526	\$7,699,210	203
Manufacturing	\$1,232,405	\$275,446	\$459,076	8
Transp., Communications & Utilities	\$763,512	\$189,098	\$315,163	5
Wholesale & Retail Trade	\$1,751,965	\$701,843	\$1,169,738	32
Finance, Insurance & Real Estate	\$4,331,563	\$366,792	\$611,320	22

Assessment of the Economic Impact**502**

Services	\$2,431,296	\$846,845	\$1,411,409	44
Government	\$231,380	\$68,147	\$113,579	2
<hr/>				
Total - Positive Effects	\$31,964,011	\$7,086,210	\$11,810,350	317
<hr/>				

2000 Impact

As with most construction projects, funds are committed at the earliest possible date. The arena is scheduled to be completed in early 2000; therefore, almost all of the construction funds will have been spent by the end of 1999. Construction funds, therefore, were not figured in the year 2000 analysis. With construction being completed in early 2000, it is expected that the arena will see use for about one-half of the fiscal year. Thus, the revenue and expense figures used for analysis in 2000 are based on one-half year. Events projected for this analysis were six concerts, six basketball games, ten family shows, and six miscellaneous commercial events. Together, they provided \$6.9 million in total revenue. Based on these events, projected operating expenses and product costs were assumed to be \$2.2 million.

Table 5 shows that these revenues flowing into the Pulaski County economy will result in a \$5.5 million increase in total industry output, while employee compensation income will rise \$2.8 million with 153 new jobs. In 2000, the largest portion of new jobs will be in the service and government sectors. The service sector jobs are primarily in the restaurant, hotel, and related industry and the government jobs are primarily related to the operation of the arena.

TABLE 5

2000 - REVENUES & OPERATING EXPENSES

Industry	Total Industry Output	Employee Comp Income	Personal Income	Number of Jobs
<i>Positive Effects</i>				
Agriculture, Forestry & Fisheries	\$19,524	\$3,422	\$10,679	0
Mining	\$977	\$120	\$178	0
Construction	\$69,636	\$24,599	\$33,976	1
Manufacturing	\$64,729	\$16,902	\$17,539	1
Transp., Communications & Utilities	\$148,788	\$32,153	\$37,369	1
Wholesale & Retail Trade	\$44,139	\$17,183	\$18,454	1
Finance, Insurance & Real Estate	\$158,007	\$19,078	\$22,813	1
Services	\$2,655,349	\$777,373	\$920,110	92
Government	\$2,401,379	\$1,911,921	\$1,911,921	56
Total - Positive Effects	\$5,543,004	\$2,802,751	\$2,973,038	153

Concluding Remarks

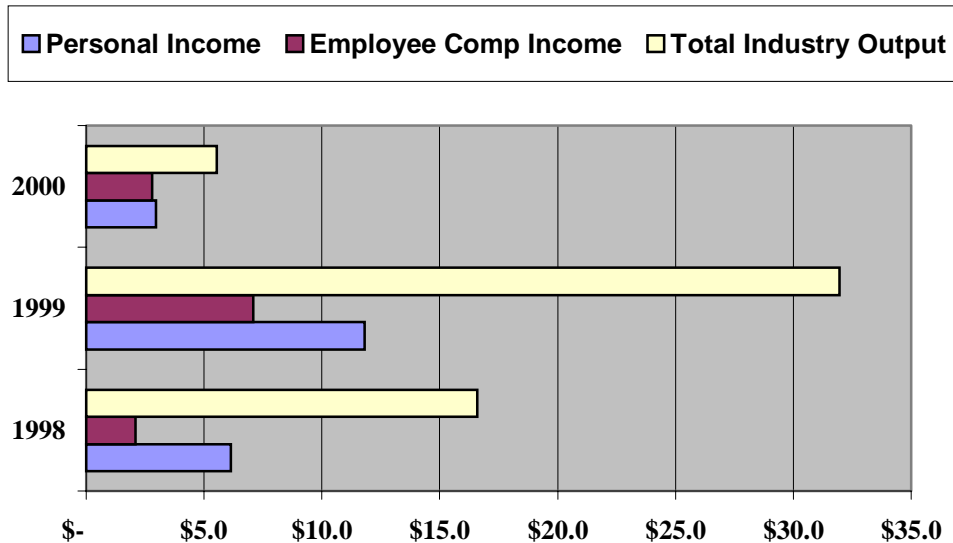
The basic question is, what specifically will the county receive for its investment? Figure 1 shows that for the cost of \$20 million of local funds in 1998, the county will have a net increase in its total industry output of \$54.9 million, employee compensation income will increase by \$11.8 million, personal income by \$20.8 million, and created 153 net new jobs. Thus, the approximate ratio of total industry output to county based revenues for the arena is 2.7:1. That is, for every dollar that the county spent on the arena, a net increase of \$2.70 will be generated in total industry output over the three years of the project.

The primary reason for this positive economic impact is that the state of Arkansas contributed \$20 million to the construction of the arena. As a result, the economic impact of building the arena in Pulaski County is greater than it would be if the county had funded the arena by itself. A vast majority of the jobs that will be created will be in the service sector that frequently offers lower wages than jobs in other sectors of the economy.

Although the revenues generated by the arena are unknown at this time, evidence suggests that most arenas do not generate enough revenues to cover their operating costs. A careful analysis by Deloitte and Touche (1991) implies that this statement may be true for the Pulaski county arena. Moreover, Rosentraub and his colleagues (1994: 221-239) argue that an arena should not be viewed as a public investment by a local government—though it usually is sold to the public as such. Rather, an arena should be portrayed as a much-needed symbol of a united community and as a tool for bringing the community together—much like a library. Pulaski County should expect the same.

FIGURE 1:

Total Impact of Proposed Area (in thousands of dollars)



	1998	1999	2000
Personal Income	\$ 6,142,888	\$ 1,181,035	\$ 2,973,038
Employee Comp Income	\$ 2,089,259	\$ 708,621	\$ 2,802,751
Total Industry Output	\$ 16,579,213	\$ 31,964,011	\$ 5,543,004

Note

¹Input-Output modeling also estimates *induced effects*. Induced effects are changes in spending patterns of households caused by changes in household income--generated by direct and indirect effects. These new expenditures are reintroduced into the economy as a new demand. For example, an increase in construction and in demand for building products leads to income and employment increases that stimulate spending in the economy in general (*induced effect*). Induced effects were omitted from the analysis because so much of the \$50 million is being spent on construction, and its effects on the spending patterns of households in Pulaski county is unreliable given the low level of unemployment in the county.

References

- Deloitte and Touche 1991, City of Little Rock Financial Feasibility Study for Diamond Project
- Elliott-Jones M. F. 1972, Input-Output Analysis: A Nontechnical Approach, New York: The Conference Board.
- Hy, Ronald John 1997, "Economic Modeling and Local Government," International Journal Of Public Administration, 20.
- Kennedy, Dale, et al. 1996, "An Assessment of the Economic Impact of the River Project's Multipurpose Arena on Pulaski County," unpublished paper.
- Leontief, Wassily W., 1986. Input-Output Economics, 2nd. ed. Oxford University Press, New York.
- Makridakis, Spyros and Wheelwright, Steven C., 1973, Forecasting Methods for Management, 5th ed. John Wiley and Sons, New York.
- Pulaski County Quorum Court River Project Memorandum, May 25, 1995.
- Quade, E. S. 1982, Analysis for Public Decisions, New York: North Holland.
- Rosentraub, Mark et al. (1994, "Sport and Downtown Development Strategy: If You Build It, Will Jobs Come?" Journal of Urban Affairs, 16, Greenwich, Conn.: JAI Press.