

Appalachian Theatre

Economic and Tax Revenue Impacts

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Executive Summary

TBD

I. Introduction

The purpose of this study is to analyze the economic impacts that are projected to accrue to the region (Ashe, Avery, and Watauga counties in western North Carolina) from the operation of the Appalachian Theatre located in Boone, NC. In conducting this study we utilize methods applied to many other similar studies (see references below).

The Theatre will generate economic impacts to the region through the spending of attendees on related activities such as overnight accommodations, restaurant meals, and further retail spending on items in local establishments.

Brief description of theater and activities.

II. Measuring the Economic Impact of the Appalachian Theatre

Research Method

The first step in this type of analysis is to define the region to be studied. The Theatre is located in Boone, NC but those who will be affected by the spending of those attending events at the Theatre will include businesses and individuals located in the surrounding counties. For the purposes of our analysis we focus on the impacts in adjacent mountain counties in NC – Ashe and Avery Counties – as well as Watauga CO. Constructing the region on this basis is known as the “policy criterion” approach (see Berrens et al, 1999).

Input-output (IO) models, developed by the Nobel Laureate Wassily Leontief are the most widely used tool for conducting regional economic impact analyses.¹ We construct a 12 sector input-output model for the region to investigate the overall effects of direct spending of those attending Theatre events. The model is based on the county-level database generated by the Minnesota IMPLAN Group (MIG). These data incorporate adjustments using regional purchase coefficients accounting for leakages from the local economy. IMPLAN is also used to estimate the final economic impacts resulting from the Theatre operations. The model generates projections of the employment, output, and tax impacts generated by the Theatre activity.

There are two sources of direct impacts to the regional economy generated by the Theatre operations. These consist of visitors from outside the region who travel to the region primarily for the purpose of attending an event, perhaps staying in the area overnight, and local residents who attend an event at the Theatre rather than traveling outside to attend an event elsewhere. The first impact constitutes an export (of entertainment or recreation services) by the region while the second is an example of import substitution. Both sources result in injections of money to the region. The total effect of these injections consists of these direct impacts of the local spending and the subsequent indirect and induced impacts as these dollars circulate through local businesses and are, in turn, spent locally again. The initial injections of money and subsequent spending would not occur in the region in the absence of the Theatre.

The Appalachian Theatre Direct Economic Impacts

We base the impact analysis on the projected use of the Theatre when it reaches a steady state of usage (the third year of operation). The physical configuration of the Theatre will allow for a variety of types of events – full theater productions as well as smaller events in the community use

¹ This approach has been used for many purposes including valuing electricity reliability (McKee et al, 1992), impacts of forest fires (Starbuck et al, 2006), economic growth (McKee, 2001), the value of surface mine reclamation (Talberth et al, 2001), and the economic impacts of universities (Cherry et al, 2007; McKee and Morgan, 2012).

rooms. Projected events include the Mountain Home Music Series (14 events), individual concerts (28 events), film series (38 events), and a variety of miscellaneous events such as Appalachian State Theatre productions and local independent theater productions (25 events).²

Each of the activity types is expected to provide a mix of out of town attendees and in town attendees. Further each type of event is projected to result in different visit characteristics such as the propensity to stay overnight, visit local restaurants, and so on. Based on studies of comparable theaters we have constructed tables (Table 1 and Table 2) of the mix of events and the direct expenditures for a visitor day associated with each type of Theatre event.

The usual approach when computing the impacts of institutions such as the Theatre is to construct representative “visitor day” spending patterns. In the case of existing venues we can conduct surveys to obtain data on visitor spending patterns.³ Since the Theatre is not operating as yet, we must utilize the alternative approach of transferring estimates from similar venues. For the types of events provided in Table 1 we estimate visitor day spending for each type of event based on data for existing venues.

For individual concerts and plays that are likely to represent destination events for out-of-town visitors we use local costs for accommodation and restaurants to obtain expenditure estimates: hotel (\$75, double occupancy), meals (\$30), ticket (\$25), and miscellaneous spending (\$95) for a total of \$225 per overnight visitor day. For day-trippers this amount is \$150. The Mountain Home Music program has typically offered afternoon concerts and so the likelihood of an overnight stay is lower but for those who do the expenditure is the same as for individual concert or play. Based on the number of events and the distribution of out of town, in town and day-trippers shown in Table 1, the total direct expenditures generated by the Theatre is for these two destination oriented events is \$2,309,125. This is allocated to the Recreation Services Sector in our model with 50% of the miscellaneous spending allocated to Retail Trade.⁴

The attendance figures are based on projections derived from similar entertainment in the region and for similar venues in the broader region. A recent study commissioned by the Barter Theatre in Abingdon, VA provides some useful benchmarks although we have adjusted for some differences. Abingdon is located directly off Interstate 81 which improves transportation to and from the venue. While this may increase attendance at events, it also reduces the fraction that may stay overnight. Boone, as is fairly well known, is not an easy place to get to but this may lead to greater likelihood that out of town patrons will remain in the area overnight leading to greater expenditures on hotels and meals.

² Other proposed uses include weddings, church services, and broadcasts of Appalachian State football games.

³ See Stoddard, et al, (2003) for an example applied to Watauga CO, NC.

⁴ We assume that 50% of the local residents attending Theatre events would have gone out of town to consume the entertainment offered by the Theatre in its absence. This import substitution is a direct economic impact. The fraction that would have gone elsewhere within the region is not a direct impact since it is merely a transfer from an alternate source of entertainment to the Theatre.

Table 1 – Events, Attendance, Spending

Event Type	Attendance	% Out of Town	% Overnight Stay	Number of Events	Visitor Day Spending	Total Spending
Individual Concert/Play	350	40%	30%	28	D: \$150 O: \$225	\$1,029,000 \$661,500
Movies	250	20%	0%	32	D: \$30	\$240,000
Church Related Events	50	0%	0%	90	D: \$15	\$34,000
Mountain Home Music	250	40%	10%	14	D: \$150 O: \$225	\$210,000 \$78,750
Independent Local Theater Productions	250	20%	20%	16	D: \$120 O: \$225	\$384,000 \$180,000
Community Events – Meetings, Gatherings, etc	75	0%	0%	25	D: \$25	\$46,875
Total Direct Spending						\$2,864,125

Note: Under Visitor Day Spending the values refer to Overnight visitors (O) and Day Trip visitors (D)

III. Appalachian Theatre's Impacts on the Regional Economy

A dollar of injected spending into the region results in both indirect effects (the spending by the establishment on other inputs produced in the region) and induced effects (spending from the earnings of those employed in activities supporting the Theatre). Thus, the direct spending impacts circulate throughout the regional economy and generate additional indirect spending through economic linkages (suppliers to the directly affected industries) and induced spending by those who earn income through the Recreation Services and Retail Trade sectors. The combined effects of these circulations constitute the *multiplier effect*. The multipliers for selected sectors in the Region are reported in Table 2. Type II multipliers include the “indirect” effects, resulting from purchases of one industry for inputs being the output of the industry supplying the good or service, and the “induced” effects as the wages earned by the additional labor required are spent within the region. These multipliers can be interpreted as the overall impact of an additional \$1 being spent in the region in the particular sector. For example, the multiplier for the Recreation Services Sector, which includes entertainment facilities such as the Theatre, is 1.50 indicating that for each dollar spent in the region in this sector the economy grows by \$1.50.

Table 2 – Regional Economic Output Multipliers by Sector

Industry Name	Direct Effects	Indirect Effects	Induced Effects	Type II Multiplier
Primary Industry	1.00	0.24	0.36	1.61
Construction	1.00	0.20	0.22	1.42
Food & Beverage Manufacturing	1.00	0.25	0.10	1.35
Non-food Manufacture	1.00	0.19	0.13	1.31
Wholesale & Retail	1.00	0.19	0.27	1.46
TCU	1.00	0.23	0.14	1.37
FIRE	1.00	0.26	0.07	1.33
Business Services	1.00	0.23	0.22	1.45
Health & Education	1.00	0.25	0.34	1.59
Personal Services	1.00	0.25	0.38	1.63
Recreation Services	1.00	0.25	0.25	1.50
Gov't Services	1.00	0.26	0.25	1.52

Note: The industry names are those assigned when we aggregated the regional dataset into 12 industry sectors.

The direct expenditures associated with the Theatre are assigned to the Recreation Sector (includes accommodation and food services industries) and the Wholesale and Retail Trade Sector.

Table 3 reports the overall annual economic impacts associated with the projected use of the Theatre at the steady state level attained in year 3 of operations. The direct spending by visitors and residents who attend Theatre events rather than travel elsewhere is projected to be \$2.864 million per year. The total impact on economic output in the region (direct plus indirect plus induced effects) is \$4.257 million per year. This additional economic activity would generate 53 new full time equivalent jobs with total additional labor earnings of \$1.376 million per year.

Table 3 – Annual Economic Impacts Summary: Appalachian Theatre

Impact Type	Employment	Labor Income	Dollar Value of Output
Direct Effect	42	\$1,017,109.80	\$2,864,123.90
Indirect Effect	5	\$152,871.70	\$659,310.10
Induced Effect	6	\$206,099.70	\$733,204.70
Total Effect	53	\$1,376,081.20	\$4,256,638.70

While most of the employment effects accrue to the Recreation and Retail Trade sectors, since these are the sources of the direct spending, as these additional dollars circulate through the local economy there are employment and output effects elsewhere. For example, the Business Services, health and Education Services, and Personal Services sectors are each projected to add 2 additional full time equivalent jobs.

The spending by visitors and those residents who choose to attend a Theatre event rather than venture outside the region also generates tax revenue from a variety of sources: State and Local Sales Tax, Hotel and ABC taxes, Property Taxes, as well as Income and Payroll taxes. Annually these add up to more than \$300,000. Sales and Property taxes are especially relevant since these are largely local and these taxes annually amount to \$155,689 and \$112,216 respectively.

Table 4 – Annual Tax Impacts: Appalachian Theatre

Description	Employee Compensation	Tax on Production and Imports	Households
Social Ins Tax- Employee Contribution	\$1,159.00		
Social Ins Tax- Employer Contribution	\$2,055.00		
Tax on Production and Imports: Sales Tax		\$155,689.00	
Tax on Production and Imports: Property Tax		\$112,216.00	
Tax on Production and Imports: Motor Vehicle Lic		\$4,294.00	
Tax on Production and Imports: Other Taxes		\$14,683.00	
Tax on Production and Imports: S/L NonTaxes		\$14,540.00	
Personal Tax: Income Tax			\$25,655.00
Personal Tax: NonTaxes (Fines- Fees)			\$4,459.00
Personal Tax: Motor Vehicle License			\$1,298.00
Personal Tax: Property Taxes			\$367.00
Personal Tax: Other Tax (Fish/Hunt)			\$187.00
Total State and Local Tax	\$3,215.00	\$301,443.00	\$33,966.00

Overall, the annual economic impacts generated by the Appalachian Theatre are considerable.

IV. Concluding Remarks

TBD Overall, the impacts generated by the Appalachian Theatre are considerable. It is important to note that the assumptions concerning visitor spending are quite conservative in comparison with other studies of this sort of facility.

These numbers, however, fail to capture all of the Appalachian Theatre's impacts on the region. While the analysis is comprehensive in accounting for activity measured in dollars, venues such as the Theatre provide substantial additional benefits such as greater opportunities to local performers, residents etc.

V. Bio for Michael McKee

Dr. McKee has held the position of Professor of Economics at Appalachian State University (ASU) since August 2007. Prior to moving to ASU, Dr. McKee held several academic appointments including the J Fred Holly Professor of Economics at the University of Tennessee, Knoxville, the Arthur Child Professor of Defence Economics at the University of Calgary (Aberta, Canada), and Professor of Economics at the University of New Mexico, Albuquerque, NM. He has been conducting economic impact analyses since the mid-1980s. Previous clients include Los Alamos National Laboratories, Los Alamos, NM; Bernalillo County Government, NM; the US Fish and Wildlife Service, Washington DC; the US Forest Service, Flagstaff, AZ; the US Geologic Survey, Reston VA; Appalachian State University, Boone, NC; and Mission Health Services, Asheville, NC. Dr. McKee has published more than 75 papers in academic journals including the *American Economic Review* and the *RAND Journal of Economics*. He has served as co-editor and/or member of the editorial board of several journals including *Economic Inquiry*, the *Journal of Environmental Economics and Management*, and *Public Finance Review*. Dr. McKee's research has been funded by the US Internal Revenue Service, US Forest Service, the US Fish and Wildlife Service, Oak Ridge National Laboratories, the US Environmental Protection Agency, Los Alamos National Laboratories, the US Office of Naval research, and the National Science Foundation.

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