

AN ECONOMIC AND FISCAL IMPACT ANALYSIS OF A COUNTY AND MUNICIPALITY IN THE SOUTHERN APPALACHIANS

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ABSTRACT

The Brevard Music Center, a summer institute and music festival in Brevard, NC, has been a cultural destination in the region since the 1930s, bringing in both residents and visitors alike to participate in the Institute. Besides being an important cultural institution, the Music center has had an increasingly important economic impact on Brevard and Transylvania County, the county in which the municipality is located. With that in mind, this paper investigates the economic impact on output and employment attributable to the Music Center on Brevard and Transylvania County. Data were first collected in the summer of 2015 on selected performances and then extrapolated to estimate total spending throughout the entertainment season of the audiences, as well as students enrolled at the Center and their parents. The IMPLAN software system and database, (IMPLAN Group, LLC), was then used to estimate the overall economic impact of spending at the Center on Brevard and Transylvania County. In addition, this research deviates from existing impact studies by uniquely separating municipal from county taxes by generating city-to-county ratios for each category of taxes. Then in a seminal fashion these ratios were used to estimate the exclusive fiscal impact on the municipality of Brevard, NC from the economic activity of the Center. The novel method employed in this study could be generalized on a state-by-state basis to assess the economic effects of spending in terms of output and employment on individual municipalities in future studies employing IMPLAN.

INTRODUCTION

Transylvania County (Population: 33,200) is nestled in the Southern Appalachian Mountains of North Carolina and is well-known for its majestic mountains and beautiful waterfalls (Hansen & Pledger, 2000). This land of numerous mountain vistas and a cool summer climate has attracted tourists from the region and beyond since the early 20th century (Lefler, 2004, 2011). Moreover, Brevard (Population: 8,300) “has benefitted from [its] traditional [Southern Appalachian] heritage, craft, music, and dance, as well as from classical traditions celebrated at its internationally known Music Center ...” (Lefler, 2004).

The Brevard Music Center is a summer music institute and festival located in Brevard, North Carolina. The Center was founded in 1936 as the Davidson School for Boys at Davidson College, and moved to Brevard in 1944 as the Transylvania Music Camp. The first summer festival accompanying the camp was held in 1946. The summer institute and festival became known as the Brevard Music Center in 1955 and has been in operation ever since. It is now recognized as one of the country’s premier training programs for classical music and teaches students from the high school through post-baccalaureate. The Brevard Music Center puts on over 80 public concerts

from June through August each summer, and those performances are attended by more than 30,000 people annually.

While the Brevard Music Center has long been recognized as playing an important cultural role in the region, the economic and fiscal impact of its summer institute and festival on the local economy has never been estimated. Economic impact studies have been undertaken of other music festivals; specifically, The Kaustinen Folk Music Festival in Kaustinen, Finland and the Umbria Jazz Music Festival in Umbria, Italy (Tohmo 2005; Bracalente *et al.*, 2011). With that in mind, the genesis of this research was a request made by the President and CEO of the Brevard Music Center to estimate its economic significance to the local economy. More specifically, this study was designed to examine the economic impact of the Brevard Music Center on Brevard and Transylvania County.

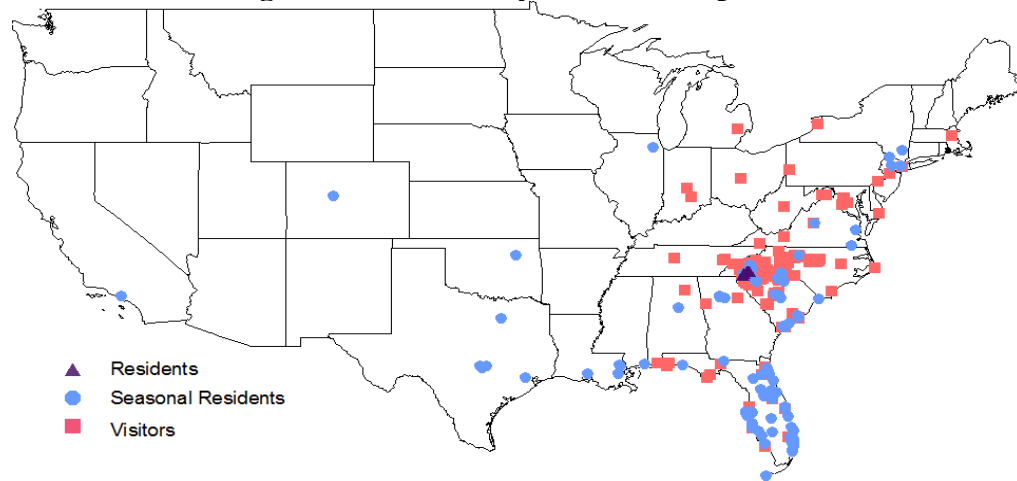
DATA AND METHODS

Three surveys were developed and used to collect primary data on the audiences, students and/or their parents, and local businesses—data from the business survey was not included in the impact analyses. The audience questionnaire was comprised of 16 questions that included demographic, economic, marketing, and tourism-related questions. Data were collected at six selected performances between June 20, 2015 and August 15, 2015, as well as through an internet link to an on-line Qualtrics survey. (Refer to Table 1 for the performance schedule). These performances were chosen because they were a representative sample in terms of audience size and make-up of the approximately 80 performances that are typically put on by the Brevard Music Center throughout the summer. Questionnaires and pencils were handed out and collected prior to each performance. Reminder cards were handed out after the performances to encourage visitors to take the survey on-line at home, if they were not able to complete a questionnaire at the performance. Subsequently, an appeal letter was also e-mailed to all current year patrons with a request to complete the survey on-line if they had not already provided their response. Audience members completed a total of 849 questionnaires—346 hard copy and 503 on-line surveys. The primary spending data that were generated by the interview instrument for these six performances were then extrapolated to estimate total spending by audiences throughout the entertainment season.

Audience members came to the Brevard Music Center from a very extensive geographic area, as can be seen from the map. (Refer to Figure 1). Most audience members had residential zip codes on the East Coast of the United States, although some attendees came from as far away as Southern California. Some of them were seasonal residents whose primary residence had distant zip codes. Still others were simply tourists to western North Carolina—the Great Smokey Mountain National Park is the most visited national park in the United States. The mean income of survey respondents was \$112,392.24. The median income of audience members was significantly higher than the United States average. Almost all respondents (91.2%) reported an annual household income of more than \$50,000, while over half (52.8%) reported a household income over \$100,000. (Refer to Table 2).

Table 1: Performance Schedule for the Audience Survey

Date	Time	Performance	Location	Attendance
Saturday, June 20th	6:00 P.M.	Opening Night! w/ André Watts	Whittington-Pfohl Auditorium	1,200
Thursday, June 25th	7:30 P.M.	Rigoletto	Porter Center	418
Tuesday, June 30th	7:30 P.M.	Steep Canyon Rangers	Whittington-Pfohl Auditorium	2,127
Wednesday, July 8th	7:30 P.M.	Chamber Music	Porter Center	287
Sunday, August 2nd	3:00 P.M.	Season Finale	Whittington-Pfohl Auditorium	1,787
Saturday, August 15th	7:30 P.M.	Garrison Keillor's A Prairie Home Companion	Whittington-Pfohl Auditorium	2,099

Figure 1: Audience by residential zip code**Table 2: Household Income for Audience**

	Frequency	Percent
Less than \$50,000	51	8.8%
\$50,000 - \$74,999	105	18.1%
\$75,000 - \$99,999	118	20.3%
\$100,000 - \$149,999	156	26.9%
\$150,000 or more	150	25.9%
Total	580	100.0%

Note: There are 269 missing responses.

Audience members were asked to report their spending on lodging, food and beverage, shopping, arts and crafts, entertainment, recreation, health and personal care, as well as sundry other spending during their trip. Expenditures by attendees to the Brevard Music Center contributed significantly to the local economy of Brevard and Transylvania County. Of the 728

attendees who responded to the questionnaire, the analysis revealed that average total spending per person was \$2,166 while median spending was \$323 per respondent. (Refer to Table 3).

Table 3: Audience Spending

	Median	Mean	Max	Min
Lodging	\$300	\$1,064	\$14,000	\$0
Dining/Food & Beverage	\$100	\$287	\$7,200	\$0
Shopping	\$100	\$591	\$50,000	\$0
Arts & Crafts	\$95	\$1,049	\$75,000	\$0
Entertainment/Special events/Festivals	\$224	\$1,024	\$125,000	\$0
Recreation	\$100	\$365	\$5,000	\$0
Health & Personal care	\$10	\$696	\$20,000	\$0
Other	\$0	\$3,057	\$120,000	\$0
Total Spending	\$323	\$2,166	\$220,000	\$1

Note: There are 121 missing responses.

The participants and parents survey was comprised of 18 questions and incorporated demographic and economic questions, advertising information, as well as travel and local spending expectations. Surveys were administered by e-mail to all 436 participants. In the case of high school students, the parents received the survey request. For college students, the students themselves received the request. A total of 93 questionnaires were completed on-line for a response rate of 21.3%.

Participants or the parents of participants received on-line surveys throughout the summer session. Of the 93 surveys completed, about half were from students and the other half from their parents. More women (51.7%) answered the survey than men (42.5%), while 5.7% preferred not to share their gender. The mean age of respondents was 30.8 years old. The map below shows the geographic distribution of participants at the Brevard Music Center and its Summer Institute. Attendees came from 45 different states, indicative of the high regard in which the Center is held. (Refer to Figure 2).

Approximately two-thirds of the respondents were first time participants at the Summer Institute, while roughly one-third had participated two or more times. The household income of respondents varies, with 48.2% having an income of \$100,000 or more and 22.4% having an income of less than \$50,000. The average income of respondents was \$105,382 with a median income of \$125,000. (Refer to Table 4).

Survey results showed that respondents spent less than one night in the area on average before checking into Brevard Music Center and one night after checking out of the Center. Parents and friends visited students at the Brevard Music Center an average of 1.9 times during their stay at the Center. Respondents were asked to report student spending, excluding tuition, during their time at Brevard Music Center's and Summer Institute. Respondents were asked how much they spent or expected to spend on a student's lodging, food and beverage, shopping, arts and crafts, entertainment, recreation, health and personal care, as well as spending on other sundry goods and

services. Of the 84 respondents to the question, analysis showed that average total spending was \$519 while the median spending total was \$325. (Refer to Table 5)

Figure 2. Participants’ residential zip codes

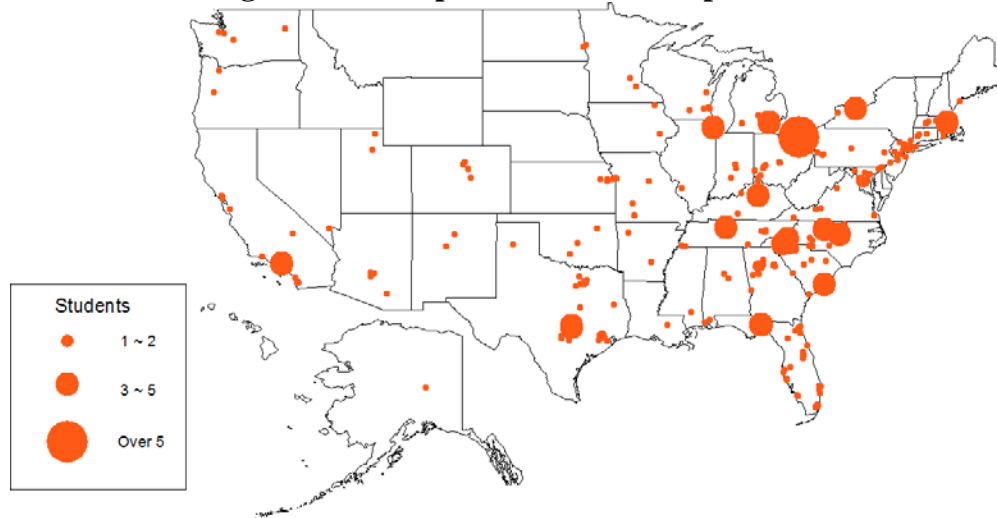


Table 4: Annual Household Income

	Frequency	Percent
Less than \$50,000	19	22.4%
\$50,000 - \$74,999	6	7.1%
\$75,000 - \$99,999	6	7.1%
\$100,000 - \$149,999	24	28.2%
\$150,000 or more	17	20.0%
Don't know	13	15.3%
Total	85	100.0%

Note: There are 8 missing responses.

Table 5: Student Spending

	Median	Mean	Max	Min
Lodging	\$0	\$155	\$2,000	\$0
Dining/Food & Beverage	\$150	\$289	\$2,000	\$0
Shopping	\$50	\$82	\$500	\$0
Arts & Crafts	\$0	\$10	\$200	\$0
Entertainment/Special events/Festivals	\$10	\$46	\$500	\$0
Recreation	\$8	\$58	\$1,000	\$0
Health & Personal care	\$15	\$27	\$200	\$0
Other	\$0	\$21	\$150	\$0
Total	\$325	\$519	\$5,400	\$0

Note: There are 9 missing responses.

ECONOMIC IMPACT ANALYSIS

This section of the paper discusses the economic impact of the Brevard Music Center as measured by output and full-time equivalent jobs (FTEs) created in Transylvania County as a result of the Center. This research used financial data provided by the Brevard Music Center, as well as primary data generated from the audience and participant/parent surveys. The study employed the IMPLAN software modeling system and database (IMPLAN Group, LLC). IMPLAN is an economic development tool that applies multipliers and performs an input-output analysis in a general equilibrium framework to estimate the economic impact of spending in a local community or region. The model is based on input-output tables from the US Department of Commerce. Many economic impact studies use IMPLAN as a major analysis tool. The Regional Economic Models (REMI) is another input-output tool commonly used. While both IMPLAN and REMI have both been found to be reliable (Rickman & Schwer, 1993), the multiplier effects generated by IMPLAN have been found to be more reliable than those generated by REMI (Crihfield & Campbell, 1991).

Transylvania County was chosen as the appropriate study area because approximately 65.1% of the Brevard Music Center's audience and fully 86.7% of full-time employees were residents of the county. Moreover, of those visitors who reported spending the night, 80% of these overnights indicated that they stayed in Transylvania County. The preponderance of residents being from Transylvania County, as well as the fact that most overnight visitors stayed in the County, were the reasons for choosing Transylvania County as the study area.

The dollar amounts of the goods and services purchased within Transylvania County were entered into the IMPLAN software modeling system. IMPLAN then employed these statistics to calculate both the direct and secondary impacts of the Brevard Music Center's economic activity on Transylvania County. Direct effects are those dollars spent on goods and services that are available within the study area and can be directly traced to the economic activities of the Brevard Music Center. Salaries paid and goods purchased by the Brevard Music Center are examples of such direct effects.

Direct spending is then employed by the IMPLAN input-output model to generate secondary economic impacts. Secondary impacts accumulate as a result of both indirect and induced effects. Indirect effects are secondary impacts that result from businesses that make expenditures in order to replenish goods and improve services that have been purchased by direct (initial) impact expenditures. An example of indirect effects would be the pens and photocopier paper purchased by a local stationary store. Induced effects are secondary impacts resulting from an increase in household spending by employees who are hired, or current employees paid to work longer hours to provide the goods and services being purchased. An example of an induced effect is the extra money earned by the manager of the stationary store due to the extra hours the store remains open to meet the needs of the Brevard Music Center.

Estimates of secondary impacts are based on a multiplier effect, a widely used economic principle designed to calculate spending that takes place as a result of the "ripple effect." The multiplier concept essentially means that every dollar received by business owners and employees that is then re-spent within the region multiplies the initial sales and generates revenues in other sectors of the local economy. IMPLAN estimates the magnitude of both primary and secondary impacts for each industry, which form the so-called "multipliers." It should be noted that a portion of direct and secondary dollar spending goes for goods and services that are not purchased in the local community and some goes to pay state and federal taxes. Money used to purchase items that are not available in the local community, as well as money used to pay state and federal taxes leave

the local economy, and therefore, do not continue to circulate within the local economy. IMPLAN does not include these leakages of spending in its multiplier effects.

In order to estimate the total economic impact of the Brevard Music Center on Transylvania County and Brevard, spending data were categorized into wages and salaries, operating expenses, visitor spending, and student/parent spending. The statistics on payroll and other operating expenditures are based on the 2015 fiscal year and were obtained from the financial records of the Brevard Music Center. Visitors are sub-divided into two groups—day-trippers and overnighters—because overnighters have the additional costs of lodging that are not incurred by day-trippers. Visitor spending is then determined by multiplying spending per-visitor times the number of attendees for both day-trippers and overnighters. Student/parent spending is estimated by taking the average spending per-student and multiplying it times the number of students. The employment effect is calculated by IMPLAN and is the estimated number of FTEs with the output effect. The total economic impact of the Brevard Music Center on Transylvania County in FY 2015 was estimated to be \$14.9 million dollars in output, along with an added 245 FTEs. (Refer to Table 6).

Table 6: Economic Impact of BMC on the Local Economy

Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	193.5	\$4,143,068	\$6,339,479	\$9,913,316
Indirect Effect	22.0	\$474,990	\$1,338,620	\$2,132,042
Induced Effect	29.5	\$807,664	\$1,751,587	\$2,851,026
Total Effect	245.0	5,425,722.0	9,429,686.0	14,896,384.0

Source: Author's estimation using IMPLAN

FISCAL IMPACT ON TRANSYLVANIA COUNTY AND BREVARD

The IMPLAN analysis also generated an estimate of the fiscal impact of the Brevard Music Center in terms of federal, state, and county taxes generated by the economic activity created by the Center—the fiscal impact on the county level is only available in the online version of IMPLAN. The model divides taxes into two categories: federal non-defense related taxes, and state and local non-education related taxes. In federal taxes, the Brevard Music Center produced a total of \$1,415,310 in tax revenue in FY 2015 in the form of social security insurance taxes, taxes on production and imports, corporate profits taxes, and personal income taxes. At the state and local level, the Brevard Music Center generated a total of \$1,108,336 in tax revenue in FY 2015 in the categories of social security insurance, taxes on production and imports, corporate profit taxes, and personal taxes. Taxes generated at the county level totaled \$424,610 in FY 2015. (Refer to Table 7).

As mentioned above, IMPLAN does not separate municipal taxes from county taxes received as a result of economic activity in its program. City managers and mayors, as well as county executives are often interested in obtaining such information. Therefore, in this study, a unique method was developed and implemented to make that kind of bifurcation between the separate fiscal impacts on Brevard and Transylvania County from the Brevard Music Center.

This unique process involved the following steps. First, tax revenue data were obtained for the city of Brevard and Transylvania County from the financial reports of tax revenue received in FY 2015. That tax revenue was then broken down by type—property tax, sales tax, and other taxes. Next, from those distributions of taxes, in a seminal fashion, a city-to-county ratio was generated

for each source of tax revenue for FY 2015. (Refer to Table 8). Finally, the city-to-county distribution ratios were applied to the three categories of taxes received by Transylvania County to estimate the fiscal impact exclusively on Brevard attributable to the economic activity of the Brevard Music Center. The tax revenue received exclusively by the city of Brevard as a result of the economic activity of the Center was estimated to be \$87,347 for FY 2015. (Refer to Table 9).

Table 7: Fiscal Impact of Brevard Music Center

Type of Tax	Federal Government Non-Defense	State/Local Government Non-Education	County Only
Social Ins Tax- Employee Contribution	\$408,958	4,140.39	-
Social Ins Tax- Employer Contribution	\$364,656	8,365.55	-
Tax on Production and Imports: Excise Taxes	\$74,817	-	-
Tax on Production and Imports: Custom Duty	\$29,352	-	-
Tax on Production and Imports: Fed NonTaxes	\$49,980	-	-
Tax on Production and Imports: Sales Tax	-	442,701.25	\$82,407
Tax on Production and Imports: Property Tax	-	379,100.80	\$321,308
Tax on Production and Imports: Motor Vehicle Li	-	9,028.69	-
Tax on Production and Imports: Severance Tax	-	70.05	-
Tax on Production and Imports: Other Taxes	-	55,754.96	\$13,918
Tax on Production and Imports: S/L NonTaxes	-	0.00	-
Corporate Profits Tax	\$189,541	11,471.26	-
Personal Tax: Income Tax	\$298,006	159,276.93	-
Personal Tax: NonTaxes (Fines- Fees)	-	27,159.35	4614.34
Personal Tax: Motor Vehicle License	-	6,711.69	-
Personal Tax: Property Taxes	-	2,720.93	2306.13
Personal Tax: Other Tax (Fish/Hunt)	-	1,318.72	-
Dividends	-	515.10	\$56
Total	\$1,415,310	\$1,108,336	\$424,610

Source: IMPLAN analysis

Table 8: Estimating the City-to-County Ratio

	Tax Revenue from the County Report	Tax Revenue from the City Report	City-to-County Ratio
Property Tax	\$30,292,321	\$4,825,006	0.1593
Sales Tax	\$7,011,688	\$1,347,461	0.1922
Other Taxes	\$610,459	\$593,841	0.9728
Total	\$37,914,468	\$6,766,308	

Source: City and County Financial Reports FY 2015

Table 9: Fiscal Impact on Transylvania County and City of Brevard

	Estimated Fiscal Impact on County	City-to-County Ratio	Estimated Fiscal Impact on City
Property Tax	\$321,308	0.1593	\$51,184
Sales Tax	\$82,407	0.1922	\$15,838
Other Taxes	\$20,894	0.9728	\$20,325
Total	\$424,610		\$87,347

Source: City and County Financial Reports FY 2015 and author's estimation

CONCLUSION AND RECOMMENDATIONS

The results of this study demonstrate the economic and fiscal importance of the Brevard Music Center to the economy of Transylvania County and the Municipality of Brevard NC. Approximately \$14.9 million of additional spending in Transylvania County was attributable to the primary and secondary impacts of the Brevard Music center in FY 2015. This additional economic activity resulted in the creation of approximately 245 FTEs. Also, \$2.4 million were raised in local, state and federal taxes as a result of the economic activity engendered by the Brevard Music Center. Of the approximately \$425,000 of tax revenue generated by the Center in FY 2015, the municipality of Brevard received \$87,347.

In this study, a seminal approach was employed to estimate the fiscal impact of the economic activity of the Brevard Music Center on an individual municipality—Brevard NC. A city-to-county distribution ratio was generated and employed to ascertain the tax revenue received solely by the municipality as a result of the economic activity generated by the Center. In future impact studies, the method developed and employed in this research can provide city mayors, managers, and council members with important revenue information regarding the impact of specific economic activity on their municipal budgets. Further research into how this seminal approach to estimating the budgetary impact of economic entities on particular municipalities could be refined. A method of generalizing this approach, perhaps in the form of an algorithm developed on a state-by-state basis, would further enhance this contribution to economic impact analyses.

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