

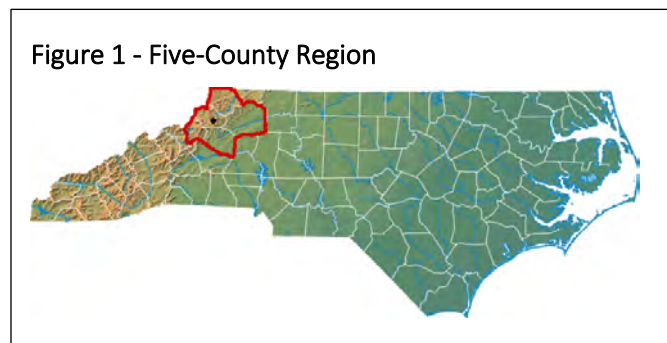
# Measuring the Economic Impact of COVID-19-Related Business Interruptions on the Regional Economy

## Overview

The Center for Economic Research and Policy Analysis (CERPA) at Appalachian State University proposes to conduct a series of economic impact studies to capture the total economic effects of COVID-19-related business interruptions on the regional economy. This effort will build both on the expertise of CERPA researchers in economic impact analyses and leverage work that has already begun in the Center to capture the economic impacts of the COVID-19 pandemic.

On March 27, Governor Roy Cooper announced a statewide “Stay At Home” order (Executive Order (EO) No. 121) that took place at 5pm on March 30. The Order impacted all economic sectors and has had two primary impacts on the regional economy.

First, non-essential businesses across the region shut down or completely reduced operations. Many of these non-essential businesses are in economically important sectors in our five-county region of interest (Ashe, Avery, Caldwell, Watauga, and Wilkes). For example, most dine-in restaurants, bars, retail establishments, hotels/short-term rentals were closed in Phase 1 of EO 121. Over 30% of all jobs in the regional economy come from the retail and accommodation/food sectors – creating 16% of regional wages. Preliminary studies by CEPRA (May, 2020) estimated that the closure of restaurant and bar establishments in April alone created over \$50 million in lost economic activity – equating to over 8,000 lost jobs. This study can be found [here](#).



Second, the presence of Appalachian State University (AppState) provides a critical engine for regional economic development. Another CERPA study (found [here](#)) estimated the total annual economic effects of the presence of Appalachian State University as 6,100 jobs, \$140 million in earnings, and a total dollar impact on the regional economy of \$560 million. For a university located in a rural area, the contribution to the regional economy is especially noteworthy because it is the largest employer and accounts for much of spending that supports local businesses. In terms of economic output, this represented an approximate 10 percent increase in contribution to the local economy. The increased economic activity arising from the presence and operation of AppState also led to \$36 million in additional indirect business taxes to local governments. The COVID-19 pandemic has already, and will continue to have, serious economic consequences with regards to operations at AppState. First, students did not return to campus following their mid-March Spring Break. Other related important events, such as Graduation were cancelled as a result. Further, some staff and contract workers were laid off, again creating economic adjustments. These effects will continue through the summer and into the Fall. The economic impact of the student body not returning to campus (together with the spillover effects of a lack of family

visitation), event cancellations, and staff/contract worker layoffs will have a profound economic consequence on the regional economy.

The purpose of the proposed work is to construct economic impact studies that will capture the total economic impacts of COVID-19-related business interruptions in these two areas. For these analyses, an input-output model provides an essential tool to measure the total economic impacts resulting from business closures and operation interruptions as it captures both the immediate (direct) impacts (lost business revenue or consumer spending), but also the downstream effects (secondary effects) of business interruptions and lost consumer spending on the supply chain. The total economic impacts will be captured through developing a geographically-specific input-output model. The key component of the input-output model is that it provides a conceptual insight into the relationship between direct and secondary effects through the multiplier process. By capturing the direct and secondary impacts, the output from these models will provide total economic impacts in the form of lost gross regional product, employment levels, earned labor income, and local/state taxes. Results will also be presented by economic sector to identify which industries have been the most impacted.

Within this framework, we propose two areas of study:

- 1) The total economic impacts of COVID-19-related business closures and operation interruptions on the regional, five-county economy. CERPA researchers have already begun developing an online survey to collect primary data on the effects of COVID-19 on business closures and operation reductions across the five-county region. Further, CERPA has reached out to the regional Chambers of Commerce and Economic Development Councils, who have agreed to aid this effort by sending the survey out to member businesses in their counties. We will augment these primary data with secondary data collection on county-level employment changes, by economic sector, from the Bureau of Labor Statistics, to get a full range of business interruptions. From this, a timeline of primary and secondary data on lost revenue and employment changes will be gathered, by economic sector for direct input into the input-output models. CERPA has already conducted two (very) preliminary COVID-19-related economic impact studies. The proposed study will expand this methodology and generate more precise estimates over an expanded timeline.
- 2) The total economic impact (and forecasted impact) of COVID-19-related interruptions to the operation of Appalachian State University on the regional economy. As we look forward, there is significant uncertainty regarding the operation of AppState in the Fall, Spring of 2021, and beyond. For example, if, as expected, fans will not be allowed to go to AppState sporting events, this will generate millions of dollars of lost revenue for the region. We first propose to measure both the expected impacts of operational changes from March through December 2020. Data for direct spending effects will be collected from different offices across campus (for example, Office of Student Financial Aid, Office of Student Athletics, etc.), plus CERPA data on student spending patterns. Next, we also propose to measure anticipated impacts through 2021. Forecasted impacts will be based on assumptions regarding student body and operational changes with a sensitivity analysis that will analyze these effects based on moderate to severe anticipated changes.

## Timeline

The proposed timeline for the study is June through December, 2020. As mentioned, work has already begun on primary data collection for preliminary economic impact analyses, so future work will leverage this effort. We anticipate an ongoing process with regard to data collection as the response to the pandemic continues.

TASK	TIMELINE
SURVEY DEVELOPMENT FOR REGIONAL BUSINESSES	May – June, 2020
SECONDARY DATA COLLECTION FOR REGIONAL BUSINESS	June – July, 2020 (ongoing)
DATA COLLECTION FOR APPSTATE IMPACTS	July – August (ongoing)
DEVELOP ECONOMIC INPUT OUTPUT MODELS	July, 2020
MODEL RUNS	First runs in August, 2020, but will be ongoing as more data are collected
REPORT WRITING	November – December, 2020

## Budget

The total budget for the effort will be \$97,850, consisting of faculty salaries for CERPA researchers (including fringe benefits and University indirect costs).

Personnel	Salary (fund) Request	Fringe Benefits	Total
CERPA Faculty	\$34,070	\$10,780	\$44,850
CERPA Research Staff	\$38,500	-	\$38,500
Graduate Student	\$12,000		\$12,000
Equipment	\$2,500		\$2,500
Total	\$86,184	\$10,780	\$97,850