

Proposal Title:

Economic Analysis of COVID-19 for Western North Carolina

Co-Principal Investigators:

Inhyuck “Steve” Ha

Professor of Economics

Faculty Affiliate, Center for the Study of Free Enterprise

iha@wcu.edu

Edward J. Lopez

Professor of Economics

Director, Center for the Study of Free Enterprise

ejlopez@wcu.edu

Sean E. Mulholland

Professor of Economics

Associate Director, Center for the Study of Free Enterprise

semulholland@wcu.edu

Department of Economics, Management, and Project Management

College of Business

Western Carolina University

Cullowhee, NC 28723

Proposal Overview: This proposal consists of three parts, which will render as three chapters of a combined report. Chapter 1 presents an economic impact analysis of the closure of Western Carolina University due to the pandemic. Estimates of dollar cost and job loss throughout the Western Carolina region will be presented. Chapter 2 presents an econometric analysis of North Carolina’s response to COVID-19 at the county level. Industry-level estimates of Western North Carolina counties relative to others will be presented, on how the responses to executive orders, and on predicted effects of relaxing restrictions. Chapter 3 presents a comprehensive policy analysis that incorporates the implications from Chapters 1 and 2 along with leading results from the literature on rural economic development.

Part 1: The Economic Impact of the Closure of Western Carolina University on the Economy of Western North Carolina

This chapter outlines an economic impact study to measure the economic impact of the closure of Western Carolina University on campus itself and the western North Carolina region due to the COVID-19 pandemic. WCU is one of the largest providers of higher-skilled and higher wage employment in

western North Carolina. The community has significant economic losses along with the loss of students and visitors when the school closes. This study examines both dollars and jobs lost as a result of WCU's closure.

First, the investigators will collect a wide variety of financial and employment data from the university including operating expenditures and personnel data. Second, the investigators will define the geographic market of WCU in order to understand the extent of the economic influence in the region. Using financial indicators, the investigators will test a number of geographic definitions to comprehend how widely the university, its visitors and students spend money in the region. What we may test are: Seven County Region including Jackson County where WCU is located, all towns within x miles of the university, or specific counties in western North Carolina. Third, the investigators will contact all faculty, staff, students, and local businesses by email to survey them about the changes in their spending in the area during the period of the COVID-19 pandemic. The online survey tool, Qualtrics, will be used. To estimate both direct (or primary) and indirect (or secondary) effects, we will use IMPLAN software and database, which has been widely used for this type of analysis.

Part 2: The Economic Impact of Covid-19 and North Carolina's Response on the 23 Western Counties: A panel data and a synthetic control investigation

Covid-19 and Governor Cooper's executive orders to limit the virus's transmission dramatically altered the economic landscape across the Old North State. The economic engine of Western North Carolina powered by small businesses related to travel, hospitality, and entertainment was shuttered. Moreover, the shutdown coincided with the annual Appalachian trail through-hikers and the traditional return of many part-time residents who live in the western counties from May through October. Though federal and state governments provided some support for those who lost their livelihoods, many small business owners and their employees are still suffering and uncertain about their future. To provide local and state leaders with a better understanding of the impacts of Covid-19 and these Executive orders, I will investigate two main questions:

- 1) relative to the entire state of North Carolina and counties in the neighboring states of Georgia, South Carolina, and Tennessee, how has Covid-19 and Governor Cooper's executive orders affected economic activity in the 23 western counties of North Carolina and,
- 2) what might future economic activity look like as Governor Cooper relaxes restrictions and residents utilize local businesses and services

To analyze how the decline in economic activity affected the 23 western counties of North Carolina, we will match executive orders to the corresponding affected industries by NAICS codes. Using a panel of counties from 2015 through the first half of 2020 and focusing on each executive order's timing and reach, we will first estimate the employment and payroll declines realized by the affected industries across all counties in North Carolina. Given these industry-specific estimates, we will then use the industrial composition unique to each of the 23 western counties to generate an industry weighted estimate of the decline in employment and payroll witnessed by each county in response to Covid-19 and the government orders. Summing up these county-specific declines by sector will provide an estimate of the total employment and payroll declines witnessed by all 23 western counties.

To investigate the economic decline relative to neighboring counties, we will use pre-shutdown characteristics and trends of counties in Georgia, South Carolina, and Tennessee to design synthetic twins for each of the 23 counties of western North Carolina. Each synthetic NC county will be generated by using a weighted average of GA, SC, and TN counties that best explain the economic activity of each particular Western NC county before the threat of Covid-19. Then, we will assess how each of the western NC counties performed relative to their synthetic twin. By looking at the shutdown, we will see how the Western NC counties would have performed under an alternative scenario.

To investigate what the future growth rate of economic activity might look like for the 23 western counties, we will again use these synthetic county twins. As of this writing, much of North Carolina remains under a stay-at-home-order. However, neighboring counties in GA, SC, and TN have witnessed a reduction in restrictions and more economic activity. Therefore, by describing the path of economic activity experienced by each county's synthetic twin, we can provide leaders and community members with an educated estimate of how relaxing the executive orders in NC might play out in the 23 counties of Western NC.

Part 3: Economic Development in Rural Settings: Top-Down and Bottom-Up Approaches

This chapter will present policy implications and further discussion. The determinants of economic development depend on the social and geographic contexts of regional economies. Since the Western North Carolina economy is integrated with the economies of upstate South Carolina, north Georgia, and Southeast Tennessee, we face unique circumstances when it comes to designing sound public policy to support economic development. The scholarly wisdom has shifted from tax incentives and large anchors, to a more ecological approach. The investigators will compare and contrast the results of Chapters 1 and 2 against current policies, incorporating the latest results and direction of the literature on economic development in rural settings.

Proposed Budget with Line Descriptions:

Software:	
STATA 16 MP 2-core (perpetual license)	\$550
Student STATA 16 IC (one-year) for 2 research assistants (\$94 each)	\$188
IMPLAN software including NC county-level data	\$5,100
Research Assistance:	
3 Research Assistants (\$18 per hour × 10 hours per week × 26 weeks)	\$14,040
Faculty salary and Fringe Benefits	\$90,000
<hr/>	
Proposed Total	\$109,878