

### **Graduate Research Plan Statement**

**Motivation:** Rural areas across the United States are disproportionately poor. These areas have lower wages and often lack access to fundamental services like supermarkets and health facilities. Low-income rural residents particularly suffer from durable joblessness and face a lack of economic opportunities. These rural problems stem in part from decades of historic disinvestment and declining infrastructure.

Place Based Policies (PBPs) historically have addressed geographic inequalities in the form of regionally-targeted investments that aim to improve a given area's local economy. Examples of PBPs include regionally-targeted tax credits and block grants. The New Markets Tax Credit (NMTC) is a specific PBP with several unique features that enables an empirical study of policy effectiveness. Congress has authorized \$76 billion for the life of the program, and ten billion for the following two fiscal years [1]. The NMTC funds specific projects to "incentivize community development and economic growth" for counties with low-income communities. [2]. The NMTC is unique among PBPs as i) each project is clearly defined and tailored to the local community, and ii) the intended outcomes are specified in each application. Local Community Development Entities identify low-income community business and infrastructure needs and propose projects to that end. The Treasury's Community Development Financial Institutions (CDFI) Fund selects which projects are funded. Since 2000, the NMTC has created unique rural projects across industries that are catered to increasing living standards for poor residents.

Communities tailor their NMTC projects to meet their area's own unique needs, creating a diverse range of NMTC projects. This is ideal to evaluate rural communities' desired outcomes to alleviate the diversity of social and economic problems they disproportionately suffer from. With this proposal, **I will study whether this sizable place-based policy has effective and intended outcomes for impoverished rural residents and communities.**

**Intellectual Merit:** Place Based Policy literature lacks a clear consensus on policy design and effectiveness. Research on PBPs is largely focused on urban areas, neglecting the prevalence of place-based approaches for addressing rural problems. Most studies also focus on the average effects of PBPs on targeted neighborhoods with limited attention to unequal distributional effects. Despite providing generally positive average effects, PBPs may harm low earning residents should rents rise and consequently force them to move away [3]. These destabilizing effects can be reduced when low-income migration responses are low [4]. Forced migrations disturb people's strong preferences to remain where they currently live [5]. Characteristics of rural areas, such as higher population shares of elderly and homeownership, emphasize these preferences. This makes rural communities well-suited for examining distributional effects of PBPs such as the NMTC [6]. My proposal would be the first to empirically incorporate migration responses of low-income individuals into my analysis of PBP effectiveness.

To understand how PBPs like the NMTC affect people, and not just the place where the policies are implemented, I will 1) reframe how NMTC and PBP effectiveness should be primarily evaluated by community and quality of life outcomes over typical economic measures, 2) address destabilizing effects by incorporating yearly migration responses into the comprehensive dataset I will create, and 3) bring granular analysis on the distributional effects of these policies by income distribution.

**Methodology:** The majority of rural NMTC firms are either in community services, education, healthcare, manufacturing, and retail. [2] Therefore, my set of  $j$  relevant rural economic and well-being outcomes will be the following five measures: K-12 enrollment, number of healthcare workers, number of reported grand theft auto crimes, employment rates, and poverty rates. My regression analysis will include control variables such as firm type, race, population, and other place and demographic measures.

At the tract level, I plan to implement a difference-in-differences (DiD) regression model to determine the impact of the NMTC on (i) low-income out-migration responses and (ii) community and economic outcomes after the NMTC is awarded. More specifically, for census tract  $c$ , income deciles  $i$  when applicable, and years  $t$ , and my set of outcome variables  $j$  using  $T_c$  as an indicator for the NMTC being awarded, the coefficients  $\beta_3$  estimate the effects of the NMTC on chosen outcome variables  $Y_{jict}$  in equation (1).

$$(1) \quad Y_{jict} = \beta_0 + \beta_1 treat_{ic} + \beta_2 post_{ct} + \beta_3 (post_t * T_c) + \beta_4 Controls_{ict} + \epsilon_{ict}$$

I will use migration both as an outcome and a control variable in two separate DiD regressions. First, to understand how the NMTC affected rural residents, I set my  $Y_{ict}$  as low-income out-migration responses. High migration responses may signal the NMTC may be improving the rural places, but not poor, rural residents who lived there. Lower migration responses may signal that poor, rural residents are not forced out by the policy. My second regression estimates what happens to community outcomes when controlling for migration.

To ensure robust estimates, I use the Oaxaca-Blinder (OB) Decomposition to identify mean differences between rural NMTC counties and (i) non-selected rural counties and (ii) selected persistently poor rural counties. Oaxaca-Blinder regressions are advantageous when identifying the average NMTC effect in cases of heterogeneous policy impacts. Furthermore, this methodology is flexible to estimating and comparing other policy effects between any relevant two sample groups. The results from group (i) provide robustness for my DiD model while group (ii) provides NMTC effectiveness in persistently poor areas. I will compare demographic and economic pretrends of rural NMTC counties with the other counties using OB regressions. Based on these estimates, I will create a propensity score reweighting estimator to construct a counterfactual. [7] Counties more similar to selected NMTC counties preceding the NMTC receive greater weight.

**Data:** Data from the CDFI Fund describes the awarded county: the census tract of where the project will be built, rural or metropolitan status, the year, amount awarded, and the project purpose. The CDFI Fund also provides a separate database of all U.S. counties that satisfy eligibility requirements for NMTC receipt. It also provides data on persistently poor American counties, which are categorized as a LIC for greater than 30 years. I plan to combine these datasets with data I will collect of accepted and rejected applications within that same year. For migration, outcome and control variables, I will apply for access to aggregate confidential American Community Survey public use microdata by tract, year and income decile. For education outcomes, I plan to aggregate tract-level K-12 enrollment data from the National Center for Education Statistics. Finally, I will use Bureau of Justice Statistics data and aggregate individual-level data to the tract-year level. To avoid any race related bias in reported crimes, I focus on the number of grand theft auto crimes which are shown to be more reliably reported [8].

**Broader Impacts:** The NMTC has funded hundreds of unique projects to revitalize rural communities [2]. I study the NMTC so policymakers can better understand **what kind** of PBPs work, **where** they work, and **for whom** they work. State, federal, and international governments all employ place-based policies and subsidies. Furthermore, a tax credit PBP like the NMTC is politically palatable, easier to enact, and more capable for congressional renewal than direct budgetary expenditures, like subsidies. My work will further policymakers' specific understanding of how to effectively produce desired outcomes and address health, education, employment, and other dimensions that create durable rural poverty.

Rural residents' face greater barriers to economic mobility than other Americans. They also live in fiscally constrained environments with limited local tax revenues to fund local spending. This results in lower access to high quality healthcare, low-cost financial services, transportation infrastructure, and other related public goods. Consequently, Place Based Policies may be necessary to reduce America's growing political and economic gaps across places. Economist Angus Deaton, noting that recent economic changes have worsened life for the working class in rural, white America, wrote "The more extreme the economic inequality, the greater the threat to democracy." [9]

**References:** [1] Community Development Financial Institutions Fund, "New Markets Tax Credit Program." [2] New Markets Tax Credit Coalition, "Special Report New Markets Tax Credit A Big Deal for Rural America." [3] Neumark, D., & Simpson, H. (2015). NBER Working Paper 20049. [4] Gaubert, C., Kline, P., Yagan, D. (2021). NBER Working Paper 28337. [5] Choi, H., Schoeni, R., Wiemers, E., Hotz, V., Seltzer, J. (2020). *Journal of Marriage and the Family*. 82(2), 822–840. [6] Anarde, S. (2019). *Generations: Journal of the American Society on Aging*, 43(2), 17–23. [7] Kline, P., 2011. *American Economic Review*, 101(3):532-37. [8] Buil-Gil, D., Moretti, A. & Langton, S. (2022). *Journal of Experimental Criminology* 18, 515–541 (2022). [9] Deaton, A., Case, A., 2021. *Princeton University Press*.