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NSF GRFP Application – Research Proposal

**Research Question and Intellectual Merit:** How does internal migration influence the geographic diversity of intergenerational income mobility (IIM[1]) in the U.S.? The IIM literature has seen a surge in activity, in part thanks to Chetty et al. (2014) (henceforth CHKS), who link several years of IRS tax data to investigate IIM in the U.S. on an unprecedented scale. Among their key findings is that the expected economic outcomes of a child vary drastically based on their commuting zone (CZ) of origin.

Both CHKS and much of the literature that has followed it have focused on the importance of the characteristics of where an individual is *from* in influencing their expected income mobility as opposed to where (or whether) they *go.* This may be in part because CHKS themselves appear to put the issue to rest: they find that their IIM estimates do not change meaningfully after limiting their sample to individuals who stay in their original commuting zone, nor do they appear to be strongly correlated with CZ-level net migration rates.

However, limiting the sample to stayers is insufficient to fully investigate the role of self-selected migration in forming the landscape of IIM in the U.S. if this sample is endogenously determined[2], and focusing on more narrow migration patterns than net rates uncovers a more suggestive relationship. Figure 1 juxtaposes state-level IIM estimates with the college graduate outflow rate[3] in each state. With few exceptions, the most income-mobile states in the country (namely, those in the rural Midwest and the Mountain States) also exhibit some of the highest rates of out-migration. Table 1 reveals this visual association to be statistically robust on a basic level after controlling for the most important correlates of IIM that CHKS identify.

This project will more meticulously consider the importance of internal migration in generating spatial variation in IIM through the development and estimation of a structural model. In doing this, I will provide new insight on an oddity that has not been thoroughly probed hitherto: the fact that children from underprivileged backgrounds seem to fare the *best* when coming from some of the most remote and forgotten-about places in the country. Creating a formal model will also allow me to add to the relatively much smaller recent literature that carefully evaluates policy counterfactuals regarding IIM.

**Methodology:** I intend to construct and solve a lifecycle model that follows the migration and child-rearing decisions of agents from high school graduation into early adulthood. The model will expand the classic Becker and Tomes (1979) framework to incorporate local labor market conditions and moving opportunities. Agents are born in a home CZ to parents of a certain income level, who also endow them with a set of inherited attributes and human capital investments. The children then choose whether to stay or move to a new location, after which they select how many children to have of their own and how much to invest in them. Investments in children are differentially costly across locations to reflect heterogeneity in public school quality. In this framework, local labor market quality will induce dual effects on IIM: stronger labor markets will improve the outcomes of stayers but will also depress incentives for agents to leave and find a better match. This may provide motivation for recent empirical findings that conventional measures of local labor market quality have little predictive power for IIM.

[1] Measured as the expected national income percentile in 2011-2012 of a child born in 1980-1982 to parents who were in exactly the 25th national income percentile over the years 1996-2000.

[2] If a highly income mobile CZ also has high rates of out-migration, and natives who stay do so because they received *unusually good* income realizations in their home, then the CZ will continue to exhibit high levels of IIM even after the sample restriction. The related-but-distinct thought experiment I consider is what would happen to IIM in the U.S. if those that *would* move from their home CZ are somehow restricted from doing so.

[3] Measured by taking the sample of income-earning college graduates from the 1980-1982 birth cohorts in 2011-2012 and computing the percentage of individuals born in a state who are observed living elsewhere.

**Figure 1: IIM (Percentile) and College Graduate Outflow (%) in U.S. States**

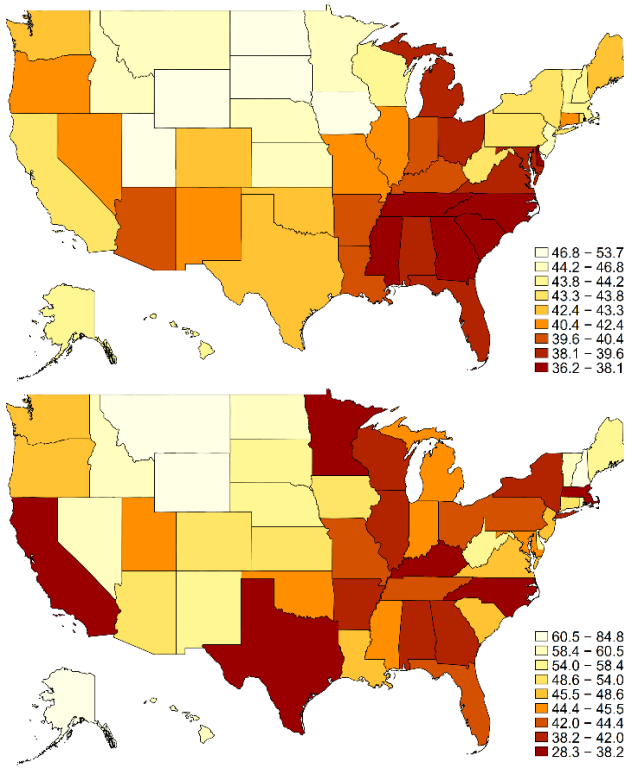


**Table 1: OLS Estimates for Various Covariates of State-Level IIM**

| VARIABLES | IIM |
|---|---|
| College grad outflow | 0.0899** |
| | (0.037) |
| Share single mothers | -0.728*** |
| | (0.240) |
| Student-teacher ratio | -0.336 |
| | (0.193) |
| Constant | 66.81*** |
| | (13.19) |
| Observations | 49 |
| R-Squared | 0.697 |

**Table Notes:** Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Non-displayed controls include share black, Theil segregation index, college graduation rate, labor force participation rate, high school graduation rate, violent crime rate, and Gini coefficients.
**Figure Notes:** IIM estimates for top map from http://www.equality-of-opportunity.org/data/. Data for bottom map from 2011 and 2012 American Community Survey (Ruggles et al., 2017).

The central mechanism I aim to capture resembles an intranational brain drain: parents from areas with cheap human capital and poor labor market conditions will face incentives to heavily invest in their children, who in turn will leave their home CZ. The process of leaving will allow the child to select their *most* compatible labor market, greatly increasing their chances of claiming a higher wage and bolstering the measured IIM of their place of origin.

**Broader Impact and Conclusion:** In addition to motivating the high IIM of remote areas, I intend to evaluate the efficacy of various educational policies. An example is New York's Excelsior Scholarship, which remits tuition under the stipulation that recipients stay in the state for some time following graduation. Such a policy may work well in increasing the supply of college graduates in states where opportunities are abundant such as New York, but it may not be nearly as effective in rural areas with more condensed wage distributions. Expanding this model to consider general equilibrium effects could also allow me to address myriad issues. How will geographic wage distributions in the U.S. evolve over time in response to self-selected migration flows? Will the brain drain I capture lead to further economic deterioration in the rural U.S., or will its declining living costs induce more highly skilled individuals to return? These are important questions that my model may be extended to answer.

**References**

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