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Why Has Regional Income Convergence in the U.S. Declined?

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The convergence of per capita incomes across U.S. states from 1880 to 1980 is one of the most striking patterns in macroeconomics. For over a century, incomes across states converged at a rate of 1.8 percent per year. Over the past 30 years, this relationship has weakened dramatically; the convergence rate from 1990 to 2010 was less than half the historical norm, and in the period leading up to the Great Recession, there was virtually no convergence at all.

During the century-long era of strong convergence, population also flowed from poor to rich states. Like convergence, however, this historical pattern has declined over the past 30 years.

We link these two fundamental reversals in regional economics using a model of local labor markets. Our model considers a hypothetical world with two locations. When the population in a location rises, wage rates fall. When the local housing supply is unconstrained, workers of all skill types will choose to move to the productive locations. This migration pushes down wages and skill differences, generating income convergence. Unskilled workers are more sensitive to changes in housing prices. When housing supply becomes constrained in the productive areas, housing becomes particularly expensive for unskilled workers. We argue that these price increases slow the labor and human capital rebalancing that generated convergence.

The model's mechanism can be understood through an example. Historically, both janitors and lawyers earned considerably more in the tri-state New York area (NY, NJ, CT) than their colleagues in the Deep South (AL, AR, GA, MS, SC). This was true in both nominal terms and after adjusting for differences in housing prices. Migration responded to these differences, and this labor reallocation reduced income gaps over time.

Today, though nominal premiums to being in the New York area are large and similar for these two occupations, the high costs of housing in the New York area has changed this calculus. Though lawyers still earn much more in the New York area in both nominal terms and net of housing costs, janitors now earn less in the New York area after housing costs than they do in the Deep South. This sharp difference arises because for lawyers in the New York area, housing costs are equal to 21 percent of their income, while housing costs are equal to 52 percent of income for New York area janitors. While it may still be "worth it" for skilled workers to move to productive places like New York, for unskilled workers New York's high housing prices offset the nominal wage gains.

We build on research showing that differences in incomes across states have been increasingly capitalized into housing prices. In our work, we show that the returns to living in productive places net of housing costs have fallen

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for unskilled workers but have remained substantial for skilled workers. In addition, we show that skilled workers continue to move to areas with high nominal income, but unskilled workers are now moving to areas with low nominal income but high income net of housing costs. Each of these stylized facts represents the aggregate version of the lawyers and janitors example above.

To better understand the causes and consequences of housing price increases, we construct a new measure of land use regulation across states and over time. Our measure is a scaled count of the number of decisions for each state that mention "land use," as tracked through an online database of state appeals court records. We validate this measure of regulation using existing cross-sectional survey data. To the best of our knowledge, this is the first measure that tracks land use regulations over time across the United States.

Using differential regulation patterns across states, we report five empirical findings that connect housing supply limits to declines in migration and income convergence. Tight land use regulations weaken the historic link between high incomes and new housing permits. Instead, income differences across places become more capitalized into housing prices. With constrained housing supply, the net migration of workers of all skill types from poor to rich places is replaced by skill sorting. Skilled workers move to high-cost, high-productivity areas, and unskilled workers move out. Finally, income convergence persists among places unconstrained by these regulations, but it is diminished in areas with supply constraints.

To assess whether these patterns reflect a causal relationship, we conduct three tests designed to address the possibility of omitted factors or possible reverse causality. First, we repeat our analysis using a placebo measure of all court cases, not just those restricted to the topic of land use. In contrast to our results for land-use cases, we find no impact on the outcomes of interest using this measure. Second, we use a state's historical tendency to regulate land use as measured by the number of cases in 1965 and study the differential impact of broad national changes in the regulatory environment after this date. We find that income convergence rates fell after 1985, but only in those places with a high latent tendency to regulate land use. We repeat this exercise using another predetermined measure of regulation sensitivity based on geographic land availability at both the state and county levels. Again, we find income convergence declined the most in areas with supply constraints.

In this paper, we highlight a single channel—labor mobility—which can help explain both income convergence through 1980 and its subsequent disappearance from 1980 to 2010. Much of the literature on regional convergence has focused on the role of capital, racial discrimination, or sectoral reallocations. We build on an older tradition of work by economic historians in which directed migration drives convergence. Similarly, much of the existing literature on recent regional patterns in the United States emphasizes changes in labor demand from skill-based technological change and its place-based variants. Our explanation, which is complementary to these other channels, emphasizes the role of housing supply constraints.

These findings have important implications not only for the literature on land use and regional convergence, but also for the literature on inequality and segregation. A simple back-of-the-envelope calculation finds that cross-state convergence accounted for approximately 30 percent of the drop in hourly wage inequality from 1940 to 1980 and that had convergence continued apace through 2010, the increase in hourly wage inequality from 1980 to 2010 would have been approximately 10 percent smaller. The United States is increasingly characterized by segregation along economic dimensions, with limited access for most workers to America's most productive cities and their amenities. We hope that this paper will highlight the role land-use restrictions play in supporting this segregation.

NOTE

This research brief is based on Peter Ganong and Daniel Shoag, "Why Has Regional Income Convergence in the U.S. Declined," manuscript, Harvard University, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2081216.