Income convergence in the United States: a tale of migration and urbanization

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Abstract We use nonparametric distribution dynamics techniques to reassess the convergence of per capita personal income (PCPI) across U.S. states and across metropolitan (metro) and nonmetropolitan (nonmetro) portions of states for the period 1969–2005. The long-run distribution of PCPI is bimodal for both states and metro/nonmetro portions. Furthermore, the high-income mode of the distribution across metro and nonmetro portions corresponds to the single mode of the long-run distribution across metro portions only. These results (polarization or club-convergence) are reversed when weighting by population. The long-run distributions across people are consistent with convergence. Migration and urbanization are the forces behind convergence.

JEL Classification O51 · R11 · R23

1 Introduction

The study of convergence of living standards across countries and within a given country is one of the most important and fascinating issues in economics. Geographical units within a single country represent the best-case scenario for the convergence hypothesis, i.e., that poorer geographical units tend to grow faster than richer ones and eventually catch up. Regions, states, departments, or prefectures share the same legal institutions, currency, and a significant part of fiscal policy; productive factors,

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1 There is a vast and growing literature on regional convergence within countries and across regions in Europe. See Magrini (2004) for a survey of this literature; Rey and Janikas (2005) focus their survey on the spatial elements of regional convergence. Durlauf and Quah (1999) and Durlauf et al. (2005) provide general surveys on the empirics of growth and convergence.
capital and labor, can move freely. In many countries, they share the same language and cultural heritage. We analyze convergence within the U.S. along three dimensions: across states (and people therein), across metropolitan (metro) and nonmetropolitan (nonmetro) portions of the states (and people therein), and in time.

We reassess the convergence of per capita personal income (PCPI) across U.S. states for the period 1969–2005 by using nonparametric distribution dynamics techniques. In this setting, a unimodal long-run distribution is interpretable as evidence of convergence. Notice that our approach assumes that within each state, income is distributed equally across individuals. Convergence, or lack thereof, is to be interpreted across “average individuals”, one from each state. The long-run distribution of PCPI we obtain is bimodal. The emergence of polarization in the cross-section distribution of income across states and the corresponding twin-peakedness of the long-run distribution are relatively new phenomena. Quah (1996) and Johnson (2000) obtained unimodal long-run distributions using distribution dynamics techniques over 1948–1989 and 1948–1993 samples, respectively. We also consider the distribution dynamics weighted by the number of people within each state. Each state is now represented by a number of average individuals equal to its population; each individual is identical and has an income equal to the PCPI of that state. Our finding of polarization is attenuated after weighting by the population. The long-run distribution in this case is nearly single-peaked: while there is no convergence across states, there is evidence of convergence across people. Convergence across people is driven by the fact that states that are losing ground in the distribution of income also account for a declining share of the U.S. population.

To gain a deeper understanding of the evolution of income within the United States, we extend our analysis to the distribution dynamics across metro and nonmetro portions of the states. Most metro portions start and end up with a relatively high level of income. Conversely, nonmetro portions tend to start and remain at lower levels of income per capita. Hence, the long-run distribution is twin-peaked. The high-income mode for all portions considered together corresponds to the single mode obtained by analyzing only metro portions. As in the analysis of the long-run distribution of income across states, we find that twin-peakedness disappears after weighting by the population. This occurs for two reasons. First, consistently metro and nonmetro counties account for a decreasing share of the U.S. population between 1969 and 2005: The portions of states most dissimilar account for a decreasing fraction of the population. Second, counties that switched from nonmetro to metro—mostly suburban areas—experienced population growth and did not lose ground relative to metro per capita incomes. We interpret this as evidence of the importance of suburbanization, as opposed to rural economic development, as the driving force behind convergence.

The analysis of long-run distributions overlooks the time-series behavior of the convergence process. In order to analyze convergence over time, we compute the distance between the cross-sectional distribution for each year and the corresponding long-run distribution. For the metro/nonmetro distributions, we find that the distances increased during the 1980s and late 1990s and declined during the 1970s and 2000s. For the distributions across states, the movements just described are dominated by an increasing distance since the early 1980s. Finally, the population-weighted distribution across states moved closer to its long-run counterpart in the early 1970s, and apart