Comments on Papers by Henderson, Andrews, and Garcia-Milà and McGuire

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The three interesting, diverse articles I discuss here cover externalities, urban growth, and regional change. In this article I comment briefly on them and relate them to the concerns of the U.S. Department of Housing and Urban Development.

Vernon Henderson

In his article on page 75, Vernon Henderson tackles the important subject of externalities as they affect industrial growth in cities. He begins by contrasting the traditional industrial location literature's approach with literature that maintains that existing locations of firms are affected by the history of urban environments.

He focusses on a debate about whether externalities for a firm derive specifically from other firms (Marshall-Arrow-Romer) in the *same industry* locally or from the *general diversity and scale* of cities (Jane Jacobs). He also looks at another debate about externalities: whether they are static or dynamic. He cites his own work, as well as that of others, on dynamic externalities. This body of literature argues that industrial environments of 10 to 30 years ago affect current industrial locations. But Henderson also notes that there are "fixed/random effects" which imply that unmeasured regional resource endowments persist and influence current patterns.

He builds an interesting theoretical model and empirically tests these alternative formulations, using 10 years of panel data for four 2-digit manufacturing industries. In doing so, he tries to overcome several statistical problems that make estimation difficult.

The model is summarized in his article's equations (3) and (4). First, equation (3) shows that the change in employment in location j at time t is a function of two sets of variables and an error term. In equation (3) the right-hand side variables are (a) the change in lagged employment (lagged to period m), which represents the economic history of j, and (b) the change in other lagged variables, both exogenous and endogenous. Some manipulations lead to equation (4), which allows him to estimate coefficients of the time-invariant variables. This formulation means that there is serial correlation, which Henderson notes and seems to overcome. His estimation of a variant of equation (3) includes estimated coefficients of (3) into equation (2) and uses time dummy variables to pick up the effects of history.

He then uses *Country Business Pattern* employment data from 1978 to 1987 for 742 urban counties and additional data to capture a variety of exogenous data. He tests the model for the chemicals, primary metals, machinery, and electrical machinery industries. For generalized three-stage, least-square estimates of the time-variant variables, he finds that the MAR and Jacobs externalities are present. Henderson then looks at the set of time-invariant variables and their influence on employment. Here, education, increased quality of the labor force, and coastal location matter most. Henderson then finds that there are fixed/random effects that imply greater employment in the counties.

Questions and Issues

The effects of past activities dissipate as soon as one moves back in time. Therefore I wonder whether these effects are really those of externalities (for which I expected longer lasting effects) or whether they reflect the effects of other economic activities. I kept asking myself, "What is really being measured here?" I tend to think that Henderson has gotten it right, but I have some doubts.

These doubts are compounded by some of his findings. For example, other variables that prove to be significant sometimes do not make complete sense. For instance, the variable "State right-to-work laws" has the wrong sign. But his analysis of the lag structure shows that there is relatively little lag. This finding is troubling, because one would expect to have a much longer historical impact on current employment if externalities were really the phenomenon that one is trying to study. Also, attempts to "proxy" age do not work well when the model is estimated. The variable "weighted average size of firm" has the wrong sign for all but one industry, nor is it clear that this proxy is correct: Henderson's measure could also be heavily influenced by a country's industry mix.

Henderson shows the seemingly contradictory result that industrial growth is stimulated both by concentration in the particular industry and by diversity in the industrial base. He argues that this contradiction might be understood by saying that firms benefit from a concentration in their own sector and diversity in supporting sectors.

These findings mean that cities trying to increase employment must try to attract, or "grow," a relatively small number of industries and have several supporting industries as well. This idea is consistent with many successful local economic development policies practiced around the country. In fact, one sees it in many of the attempts to encourage high technology-led development in places such as the Silicon Valley in California, and Austin, Texas. In addition, some of Henderson's findings on education and the labor force have significant, although obviously not new, implications for the importance of education in economic development.

But there is a chicken-and-egg problem here: Are these diverse support industries the precursors to later growth in key industries that Henderson is measuring, or do the support industries grow in reaction to key industries in the past? If the latter is true, then the causality may be backwards.

In all, however, this is an interesting and important paper.

Marcellus Andrews

Marcellus Andrews' useful article on page 53 deserves wide circulation and discussion. The author presents an ambitious theoretical article on the relationships among several forces that shape the growth of cities, including class and race relations, spending on education and crime prevention, and middle class flight. In effect, he examines theoretically the balancing acts that many of the Nation's mayors face in deciding how to spend public money on various public services in the presence of middle class revolt against higher taxes, fear of crime, and the ever-present threat that the middle class will leave the city.

Andrews presents a model of a city that produces one good and has an uneven distribution of human capital. He models the underclass and the middle class. The underclass tries to maximize consumption and minimize the disutility associated with crime. The middle class, whose members have the option of moving to the suburbs, weighs the costs and benefits of staying in the city; they will stay if the benefits outweigh the costs. The model also takes into account a government budget constraint in which the city government must balance spending on education, crime reduction, and welfare. The author predicts the effects of various policy mixes on the stability of the city's population.

Questions and Issues

I do not understand Andrews' argument that members of the middle class should care whenever their emigration to the suburbs imposes psychological and cultural costs on the underclass as he seems to assume in his analysis of the middle class. In a world of class and racial conflict, why should the middle class care what the underclass feels? And would the middle class not receive positive utility from a move to the suburbs, since such a move would allow the middle class to leave behind the underclass and its attendant problems? These questions also apply to new workers in the labor force, who are assumed to be averse to living in the suburbs. In the world that Andrews assumes for his model, I do not think that these assumptions hold.

I also do not fully understand the discussion concerning the transition from school to work for school graduates. A middle-class flight to the suburbs does not necessarily lead to a decrease in the size of the labor force, if the labor force growth in the city exceeds the rate of emigration to the suburbs. I have not worked through all of the implications of these assumptions on the outcome of the model, but it would be useful for the author to do so.

Some of his conclusions are not intuitive. For instance, he shows that increases in the arrest rate of criminals have an ambiguous effect on middle class flight and a negative effect on employment. Here the direct effect is a reduction of crime and a lower rate of outmigration, because the city is safer. But the lower exit rate is assumed to increase the growth rate of both the labor force and employment.

The conclusions that Andrews draws are important to policymakers. He shows that urban education reforms can reduce outmigration of the middle class only if cities reduce crime at the same time. However, restrictions on tax rates set by middle class voters and by businesses that might opt to move away make such urban reform programs impossible (according to the author) or, at least, quite difficult. One need only look to many of the large cities, trying desperately to save their schools despite major fiscal constraints, to see this theory as a reality.

Teresa Garcia-Milà and Therese McGuire

Teresa Garcia-Milà and Therese McGuire have written a good empirical article that examines the industrial composition of eight census regions. The authors use three types of data: industrial composition, employment growth by industry, and growth of earnings per worker.

Their main findings are clear. First, industrial change between 1969 and 1991 led to a more homogeneous employment mix among the eight regions, as manufacturing-dominated regions lost employment relative to those where manufacturing was less concentrated. Second, manufacturing employment—both durable and nondurable—had the most variable interregional employment change, with the South and West gaining employment at the expense of the New England, Mideast, and Great Lakes regions. Third, although the South and West grew the fastest, especially between 1969 and 1983, they lost ground relative to other regions between 1983 and 1991. Fourth, retail trade and services had even growth rates across regions. Finally, income per capita rose while earnings per capita fell. This phenomenon reflects the increase in the number of two-worker families.

Questions and Issues

It is interesting to examine the authors' conclusions. Garcia-Milà and McGuire argue that a high concentration of manufacturing industries is a predictor of future economic activity. That is, having a number of manufacturing industries has had adverse effects on employment growth in the past, and the shift to services means that future growth among regions will be more equal. Thus having already gone through deindustrialization is a "blessing in disguise" for some regions.

I have two basic comments on this central finding. First, I doubt that the regions suffering deindustrialization will share the authors' view that it was a "blessing in disguise," since the regions have suffered a great deal in past decades.

An important related issue concerns the distribution of job growth in the future. Can one really assume that there will be a further convergence, based on this very broad analysis? I know that this Nation and others have had a long history of convergence, but I also know that one cannot count on continued convergence. However, the data in this article do not necessarily predict that or any other conclusion about the future of the regional economies. Using the current industrial distribution will help only a little. One also needs to know the mix of industries across regions and the way that industries in various regions compare in terms of productivity and other factors. Such a scope is clearly beyond the intent of this article but is worth considering in future work. It would require greater disaggregated knowledge of the way various industries are likely to fare in the future, given changes in the international division of labor, new technologies, and many other variables. That, however, is what is necessary to get at the heart of the matter concerning the next "hot" growth regions.

I have a few quibbles with some of the authors' other findings. Having spent most of the 1980s in Texas, I find the omission of the energy industry's boom and bust in their discussion of the Southwest and Rocky Mountain area puzzling. Related to the energy bust were the dual disasters in real estate and construction centered in the Southwest and West. The effects of the declines in these three industries and the ripple effects that took place surely have had a major impact on the regions as a whole.

The findings that retail trade and services are uniform among regions are not surprising, since this industry serves the population at large and should be fairly evenly distributed.

Summary

In all, these are three very interesting articles, covering a wide range of urban and regional economic issues. They would have been more useful to HUD if the authors had commented more directly on current policy issues, but they are useful nonetheless.

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