ARE REGIONAL AND URBAN ECONOMICS REALLY DIFFERENT?

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Introduction

The problem that I wish to raise is not whether we should have either regional or urban economics, but what might be an effective way to integrate the materials into a curriculum. Arguing over semantics is a waste of good research time, but trying to determine how to teach a subject is part of a process of understanding its organization, theory, and relevance in an improved way.

When I first started a course in urban and regional economics, I asked the question, "Of all the materials being written in the analysis of cities and regions and their problems, what types of things add a new dimension to the economics curriculum that are not present in other courses?" After all, the problems of state and local finance are often discussed, admittedly very briefly, in a general course in public finance. Labor economics courses handle the problems of discrimination, migration, and structural employment. International trade discusses the theories of interregional multipliers and balance of payments situations. If a school has real estate or urban land economics courses, they handle the problems of land markets and housing in metropolitan areas. Economic theory courses that are required of all majors now often discuss and explain input-output analysis. So the question remains, how might one bring into the curriculum a slice that is relevant and reinforcing rather than merely repetitive.

In addition, there is another restraint that I would impose on courses. We should be teaching what is permanent and not what is temporary and ephemeral. This makes it difficult to take a purely problems approach. One might be able to develop several courses in urban and regional economics based on problems and policy solutions: urban transportation problems, cities and housing, ghetto unemployment, and environmental problems of the city. But in developing such courses each would duplicate the theories developed in the others because they all tend to be derived from a common perspective of the city. More important, however, we do not know what the problems of tomorrow may be so that what is important to teach is not our opinion on how to solve today's problems, but how we can understand social situations better so that we can evaluate alternative solutions being considered. The problems of today would certainly be used as illustrations and would be used to create and maintain interest, but the emphasis should be on the method of analysis.

My particular approach to a one-course introduction to the subject was to create a course in the theory of the spatial allocation of resources. It seems to me that when economic theory is useful, it can show the impact of a variety of factors on prices, investment, and even the spatial distribution of economic activity. In Regional Economics, I tried to weave these pieces together into a more unified whole [Nourse].

At the time it was written, I think the book covered the broad spectrum of what was included in regional economics. Nevertheless, one area of research which has been neglected as the field has developed through the Journal of Regional Science and the Papers and Proceedings of the Regional Science Association is the impact of institutions on city size and form. By

institutions I mean the social organizations of a community for public decision-making. Institutions would include restrictions on property rights, investment in public goods, and the institutional framework within which pricing and investment decisions are made. To date our research has been more oriented to the administrator who has been given a specific job, such as investment in region X to improve its residents' well being. Such a narrow focus neglects the possibilities of reorganizing the institutional framework within which the administrator operates. These are matters for the legislature to determine, but certainly the impact of changing them should be considered.

Evidence that regional economics and regional science have tended to neglect this aspect of their subject is the way courses in the field have developed. The thrust in courses in regional economics and regional science is methods: location analysis, regional accounting, input-output methods, linear programming, and gravity models--the emphasis in Walter Isard's fine introduction to regional science, Methods of Regional Analysis. More recently we have seen the rise of a new and apparently separate field of urban economics. I, too, have struggled with trying to develop such a separate course. Scholars in regional science, I think it is fair to say, see most of the topics in an urban course as just a special application of the tools that they have already developed. Why should there be a separate course for teaching urban growth and land use? Urban growth is a mixture of central place theories, economic base analysis, comparative cost theory, and externality theory. Urban land use analysis is an application of location theory to the city. Yet in Irving Hoch's survey of the development of urban courses, he commented on the fact that schools introducing some aspect of urban and regional economics in the last few years were calling their course urban economics, whereas schools that developed their courses earlier called them regional economics.

The significant difference in the trend to develop urban courses is the attempt to bring policy implications and alternatives more directly in contact with the theory and empirical work in spatial applications. Whereas regional economics tends to discuss the important problems of depressed areas and forecasting regional growth, urban economics is crowded with crisis problems in search of explanations and policy alternatives: transportation, housing, poverty and race, pollution, and urban finance. My impression, perhaps incorrect, is that there has been a shift from theory to problem orientation. Thus, the spatial tools of regional economics, that might be useful, are often neglected. The emphasis on policy, however, has led to a few more studies in how alternative social institutions might deal with our problems.

What I would like to do is to suggest a reorganization of the curriculum in regional and urban economics that may do a better job of integrating theory and policy and a better job of giving the field cohesion than has previously been the case.

Any student of regions or cities must recognize how important the costs of space are in explaining the geographic concentration or dispersion of jobs and people. Therefore, whether a course was called urban or regional economics (perhaps we should call it spatial economics) we would begin with a study of the costs of space: transportation costs, externalities, and land rents. Using the costs of space as a base I will try to indicate a way of organizing regional and urban economics into three groupings: (1) the spatial analysis of an economy when cities are considered as points, (2) the spatial analysis of economic, political, and social activities within the city, and (3) the spatial aspects of the public sector. We might call these groups

Regional Economics, Urban Economics, and the Urban Public Economy.

Regional Economics

Scholars have always considered at least one of the most important functions of the city to be as a center of trade and production. People are restricted in their locations by the job opportunities in particular places although this has been modified somewhat in recent years. Thus the place to begin is with the principles of location for the single firm, such as I have outlined in my own book in Chapter 2.

After this background we begin a discussion of the first group of topics treating the city as a point for production and trading. One can begin to formulate a theory of size and location of cities by assuming an agricultural plain as the economic base, then central place theory can be used to develop a framework of cities [Lösch]. This theory is built from the theory of spatial monopolies with free entry. In addition one can develop the impact of alternative changes in the parameters such as transportation costs, differences in productivity, etc., on the distribution of places. The model, however, views the city as having all needed resources. What is developed is a hierarchy of demand areas established by the constraint of transportation costs against the gains from internal economies of scale. Each place or city is shown, then, to depend for its size on its place in the system. The size and location of each place depends on what functions it provides to its surrounding hinterland. Some functions will be found in only one place in the center of the system because of the thinness of demand in each area and because of the large gains from internal economies of scale. Furthermore, some places will have different hinterlands for different goods for which they are the trading centers.

Now if we drop the assumption that resources are uniformly distributed we have to introduce the problem of variations in input prices among locations. This is handled by introducing the analysis of how firms are drawn from the center of their markets by reductions in material prices, low wage areas, or reductions in average costs caused by agglomeration economies. This is the classic location theory of Edgar M. Hoover (1948) and Alfred Weber. There is a difficulty in this partial equilibrium approach that we have been unable to get around. The difficulty is that the location of plants will cause a shift in population causing further shifts in market areas.

So far we have point centers and their demand or trading areas. With variability in resource availability, however, we need to bring in supply area analysis. This can be done using Hoover's (1937) analysis of the mining industry as a competitive industry. In addition to supply areas for raw materials, we have a similar analysis for the location of agricultural production supplying a single center. The modern version of the original Vöth Thunen analysis can be found in Edgar S. Dunn, Jr., The Location of Agricultural Production. It would also be useful to have similar theories relating to labor and capital market. We do, of course, have the elements of one in the writings of T. W. Schultz on the workings of labor and capital markets in and about urban industrial complexes.

For regions larger than cities we could introduce the spatial equilibrium models that include many points in the model, each point representing a region of several central places or a region without any major central places. The back-to-back international trade model then becomes useful in explaining location of production and flows between regions [Samuelson].

So far we have integrated the theories of location to explain city size

and distribution patterns, but have not explored the dynamic process of growth in such a system. We can handle partial comparative statics analysis of changes in the parameters of the supply and demand areas with this framework. But we can explore alternative approaches by adding a new dimension. The new dimension is the input-output table. The table relates the outflow of goods from the city to the rest of the hinterland as exports. It shows the value added by resources within the city and the interindustry relations within the city, as well as the import of resources from supply areas. From this accounting framework one can begin to show with appropriate assumptions the impact on the city's employment and production of changes in demand for the city's products caused by changes in transportation or access, by changes in income or taste, etc. At the same time, the limitations on the multiplier expansion of production caused by such changes can be shown by the impact of supply areas on the increased demand for resources. For example, is the typical assumption of impact studies and the simple base model about labor markets true? Is there a perfectly elastic supply curve for labor? The assumption may be adequate in the short-run in which there are no changes in demand and supply areas other than one given change. The assumption may also be adequate in the case of a newly developing center where improved technology in agriculture will likely release labor to the nearby center, but it may not be adequate in the case of older and more developed areas in which the shifts have already occurred and wages have to be raised a good deal to attract additional workers in the city.

With this framework we can also introduce the supply factors that would affect urban and regional development. Change in the conditions of the supply area for particular places may give places a comparative advantage in the production of goods previously only produced elsewhere, or produced more cheaply elsewhere. Thus, improvements in transportation within a supply area may change the average cost of production in a particular place. Technological changes or even the import of technological ideas may also lower average costs. The growth pole theories are also relevant for developing the supply side of the argument. They show that growth may take place more rapidly in and around urban industrial centers because of increased inventiveness in these areas, because of agglomeration economies generated by the complex of industries already in the area, because of the faster communications causing factor markets to work more efficiently, and because of surplus savings allowing for less restrictive capital markets [Schultz, Pred]. The impact of changes in these variables on the employment and production of an urban center can be shown by indicating the change in comparative costs in the place, and how this in turn affects the demand area of production of the place.

Thus, the input-output framework can be used to indicate the multitudinous interdependencies between the supply and demand areas of the city as a point. The input-output model is the key link between the spatial distribution of consumption and production and the analysis of change in these markets. Notice that government expenditures and taxes can be introduced into the model through the multiplier analysis of income and employment underlying the input-output model [Engerman].

Urban Economics

The second major grouping of urban and regional economics could be the spatial analysis of activity within urban areas. The division is logical in the way it follows actual industrial location decision-making. The first step in finding an industrial site is known to be the decision as to which city-region to choose for a location. The second step is the decision as to which site should be selected within the region. The factors relevant to each of

these two steps are different. In particular, land rents become a dominant part of the reasoning about locations within a city region.

In the short run the buildings and layout of a city are fixed. The problem is similar to an assignment problem [Beckmann, Smith]. Who occupies which site is determined by the family or business that is willing and able to pay the highest rent for each site. These rents represent the annual income to each property. The present discounted value of the expected annual income from each place is its value. Each site under the above conditions will be occupied by the use that maximizes the value of the site. Industrial users will select sites which will minimize their costs, since their sales will be mostly outside of the city in which they locate. Alternative sites will not cause variations in revenues, but only in costs. Industrial users will select sites in the center of their labor market to minimize wage costs, and near intercity transportation to minimize transportation costs [Moses, Hurd]. Housing rents will depend upon the costs of the journey to work and neighborhood effects, such as air pollution and who occupies adjacent sites. It would appear reasonable to reintroduce central place theory to explain the locations at which retailing distribution centers would be willing to outbid others for occupying sites [Huff].

In the short run, however, some uses might not be in the optimum location. Or there may be changes caused by the demand for new sites by new industry or households. How does the market operate to adapt to change? This mechanism is the real estate investment model neatly explained by Ralph Turvey. A site is converted to new uses as long as the value of the land in the new use is greater than the present value of the existing property plus demolition and conversion costs. Therefore, it takes some time for changes to occur in the real property market. Transitions are slow.

The long run equilibrium is portrayed by the land use models of William Alonso and Richard F. Muth. We can begin by assuming that the employment opportunities in the city are in the center. Residential areas will develop surrounding the employment center. In these models, however, we have left out many of the important spatial relations. First, it is not entirely true that manufacturing and other basic employment centers will always be in the center of the city. They can move to outlying areas as transportation technology changes [Moses and Williamson]. As industry moves, so do households since their basic determinant of location is distance from job. Retailing, of course, is distributed according to the principles of central place theory and follows consumers, and is not necessarily in the center of town.

Second, there are numerous externalities. Household locations depend not only on the journey to work costs, but also on the type of household living in the same neighborhood. Externalities are also present for some manufacturers and retailers. For example, buyers may make trips for several services or products at one time. They would like these stores to be located close together because it would save time and money. Thus, we find neighborhood shopping centers and regional shopping centers combining department stores, specialty shops, dry cleaners, banks, variety stores, supermarkets, barber shops, and drug stores. On the other hand, the principle works a different way in the case of shopping goods, such as appliances, furniture, and automobile show rooms. People want to shop around for these items. They would save transportation costs if the stores selling the same goods were located close to each other. Stores locating near each other gain customers because of the advertising done by all the firms in the same area. Thus, their average cost curve shifts down, if they should locate at such a site. Manufacturers, too, may gain from sites adjacent to a raw material refiner or a packaging firm. Racial discrimination can be treated as an ex-

ternality affecting where people live. Martin J. Bailey has shown that segregation might cause rents for blacks to be less than for whites for the same quality housing if block-busting should prevail. Transitions to new uses may be held up because of external diseconomies from surrounding properties, such as slums [Davis and Whinston].

If manufacturing is dependent on the labor market area for its location, if retailing is dependent upon household locations for its sites, if households' locations are dependent upon job locations, and if within each category externalities cause firms or households to select sites on the basis of the occupants of adjacent sites, the competitive land market will not generate a stable spatial equilibrium [Koopmans and Beckmann]. There would always be one person who could or would be ready to move because he would thereby gain.

Just as with the analysis of cities with points, the analysis of spatial relations within cities is a group of imperfectly integrated partial equilibrium models. We do not have a general equilibrium theory of land use. Nevertheless, the models that have been developed are useful for answering some questions. They can handle the impact of changes in transportation costs on the distribution of population. They can handle the variety of factors affecting the boundary between urban and rural land use, and they can explain the variation in intensity of use of land. By introducing externalities, it is possible to consider the problems of zoning, environmental controls, ghetto unemployment, and urban renewal.

The Urban Public Economy

The third main segment of spatial economics is the analysis of the public sector. The spatial theory of public goods can be introduced by discussing Charles M. Tiebout's "Pure Theory of Local Expenditures." This would lead directly into a discussion of the nature of public goods and the particular difficulty of measuring demand for them. Once again, however, externalities cause the theory to be less useful for real problems.

There are several directions that we could take from this point. One would be to go directly to the problems of hierarchies or levels of government using some variation of central place theory. These notions in conjunction with the impact of spillover benefits and costs would cover the problems and difficulties in metropolitan consolidation.

Continuing the analysis of public expenditures, we could discuss alternative pricing schemes for properly allocating usage of public goods, such as public water supplies, roads, and education. One is confronted with a tangle of issues that have been explored for many years in economics. Are marginal cost pricing schemes the most efficient alternatives open to providing public goods such as these [Hirshleifer, DeHaven, and Milliman; Meyer, Kain, and Wohl]. The issues are critical because if these goods are underpriced, the demand for new investments may be overestimated and needless expenditures will go for capital expansion in the public sector. There is the spatial implication, too, that improper pricing of utility services may promote inefficient sprawl. Proper pricing is part of the investment decision problem.

The next step is to determine the correct levels of investment in public goods, such as highways, schools, and water resources. The framework for handling the discussion is cost-benefit analysis [Meyer, Kain, and Wohl; Krutill and Eckstein; McKean]. Spatial aspects of the public economy enter these analyses because of the spatial distribution of benefits that have to be considered and because the investments themselves have an influence on the

spatial distribution of economic activity.

The impact of taxes on the spatial distribution of activity has been mostly confined to the property tax [Heilbrun, Netzer, Turvey]. It has not been related very well to the earlier discussions of public expenditures except to the extent that taxes can become prices for particular bundles of public goods. Nevertheless, there has been discussion of the impact of competitive tax venefits given to firms to locate in given political jurisdictions [Due].

Conclusion

Let me conclude by indicating that there is yet no general theory of regional and urban economics that would yield one and only one organization for teaching and learning our subject. My comments have been meant to be suggestive of one possible way to organize our subject into three groups that would reduce the overlap of things having to be taught within each segment. Thus, it could easily lead to three courses: inter-city analysis, intra-city analysis, and the public sector. These might be called regional economics, urban economics, and the urban public economy. This approach splits up theory and methods so that the problems for which they have been developed can be discussed simultaneously with the theory. Finally, this organization makes the incompleteness of our theories very clear, and should encourage scholars to improve them.

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