EDUCATION IN REGIONAL ECONOMICS

William A. Schaffer

Georgia Institute of Technology

This paper is concerned with the number and content of region-related courses in economics now in our college curricula. The increased interest of society in the regional approach to solving current social and economic problems is clear. The last two decades have seen rapid increases in the number of programs stressing regional development and through casual observation it is clear that the academic community has responded to the academic needs these developments have created. But what of the nature of this response? Are the techniques of regional analysis worth including in the bag of tools assembled for tomorrow's leaders? Are university curricula reflecting changes in regional policy and research interest? In which schools and at the hands of professors with which backgrounds? And how do the courses themselves reflect current interest?

In what follows, we present an outline of our survey procedures, a statistical profile of education in regional science--with an emphasis on regional economics--both for the nation and the Southeast, and a discussion of various aspects of the courses themselves.

Survey Procedure

The information reported here was gathered through two surveys of regional scientists.

The first survey was conducted in the summer of 1968. A questionnaire was mailed in mid-July to members of the Regional Science Association living in the United States. Questionnaires were not mailed to Canada because of a postal strike; due to language barriers and postal expense, none were mailed to other countries. Of the approximately 1400 questionnaires mailed, 188 were returned, a response of approximately 13 percent. This low response may be partly attributed to the fact that not all members of The Regional Science Association are in the teaching profession. And of those who are, many are away for the summer working on special studies of research projects.

In retrospect, we can see several problems associated with the questions asked. One was in the definition of a "regional science" department, professor, or course. Several respondents expressed confusion on this point--many courses and professors which some would classify as related to "regional science" are traditionally classified in a specific subdiscipline. Another was in forcing the educator to recall the year in which a course was first offered, its frequency of offering, and the average number of students. Only where the educator appears intimate with (was teaching) a particular course could we rely on his response, which was typically hurried. An early conclusion of our analysis is that most professors are neither familiar with nor interested in courses offered by colleagues and other departments.

Included in our questionnaire was a request for copies of materials used by the respondent in teaching his courses, to give us insight into the current state of the art of teaching regional science. We felt that course outlines and reading lists, as well as quizzes or special class handouts, would indicate which topics are considered by most professors to be important in helping students approach today's regional problems. Our request

for teaching materials drew a response of 88 outlines, or reading list-outline combinations. Of these, 68 courses seem to represent a true regional approach and have formed our sample for a review of courses across the nation.

The second survey was conducted in March and April 1970. This time we concentrated our effort on the courses associated with the economics of space and regions as offered by colleges in the Southeast. We limited our survey of the Southeast to those states contained within the bounds defined by the Southeastern Regional Science Association. Included by this definition are Maryland, West Virginia, Virginia, Kentucky, Tennessee, North and South Carolina, Georgia, Florida, Alabama, and Mississippi. A fairly extensive collection of catalogues for colleges in the Southeast was reviewed for initial coverage. We should note here that the catalogues available were not always the most recent and that even the most recent are not always accurate records of courses actually being offered. Statements describing the course offerings of departments of economics, geography, and business were examined for their regional content. We noted courses in the economics of location, regional or urban economics, regional science, and economic geography. Since geography departments by nature teach courses dealing with space we selected only those explicitly associated with economics. Planning departments were lightly considered for the same reason and because of their relative scarcity in the Southeast.

Given this list of colleges offering regional courses, we then attempted to interview by telephone an appropriate faculty member at each institution in order to collect information comparable to that collected earlier on the national level. While our coverage of the area has not amounted to a census, we have nevertheless gotten in touch with someone at most of the major colleges and universities listing regional economics courses in their catalogues. These interviews form the basis for our conclusions with respect to the Southeast.

Characteristics of Regional Scientists and Their Institutions

Our survey of the Regional Science Association drew replies from 188 persons. Of these respondents, 68 were employed by organizations not usually classified as teaching institutions, although an occasional response mentioned previous or possible future teaching duties, presumably in addition to the primary job. Table I shows that most of these respondents were working for government agencies. Almost 70 percent held a master's degree, with the remainder split evenly between bachelor and doctoral degrees. While a significant 60 percent graduated after 1960, almost 25 percent graduated before 1950. The schools from which they graduated were scattered across the nation, with no one school providing more than three graduates in our sample.

Table II records the characteristics of regional scientists responding to our survey who were teaching at the time. These educators represent 106 institutions in 33 states plus the District of Columbia. Less than one fourth of these institutions are privately supported. Over 80 percent of these respondents possess a doctorate; most degrees were in economics (42 percent), geography (34 percent), and regional science (6 percent). Over 70 percent of this sample graduated after 1960, with the remainder concentrated largely in the 1950's. By school, some concentration was also evident, with the University of Washington producing 10 percent of the sample, Pennsylvania 9 percent, Chicago 6 percent, and Berkeley, Harvard, Michigan, and Syracuse 5 percent each.

Thirty-three of the respondents holding teaching positions were in the

Southeast, accounting for about 27 percent of the educator sample, and they show up as having similar characteristics to those in the rest of the nation. Most of them hold a doctoral degree, and they are generally young, having received their degrees in the 1960's. One difference is their specialization: fewer are geographers and more are economists. By degree, professors in the Southeast are reasonably scattered. Nine percent (3 respondents) of the sample graduated from each of the following: Harvard, North Carolina, Ohio State, Syracuse, and Tennessee. Michigan and West Virginia each provided 6 percent (2 respondents) of the sample.

TABLE I. CHARACTERISTICS OF REGIONAL SCIENTISTS EMPLOYED BY NON-EDUCATIONAL INSTITUTIONS: THE NATION

<u>Characteristic</u>		<u>Percent</u>
Types of institutions:	Government	68
	Private	32
Degree level	Bachelor	16
	Master	68
	Ph. D.	16
Date conferred:	Before 1930	-
	1930-1939	4
	1940-1949	18
	1950-1959	17
	1960-1968	61

TABLE II. CHARACTERISTICS OF EDUCATORS IN REGIONAL SCIENCE, 1968

<u>Characteristic</u>	<u>Percent for Nation</u>	<u>Southeast</u>
(1) Highest academic degree		
Bachelor: Economics	1	3
Master's: Economics or Business	5	12
Geography	7	-
Urban Planning	3	-
Sociology	1	-
Total Master's	16	15
Doctor: Agricultural Economics	4	-
Business Administration	3	-
Economics	37	58
Geography	24	21
Economic Geography	3	-
Operations Research	1	-
Political Science	1	-
Regional Science	6	-
Sociology	3	-
Natural Sciences (Water Resources)	1	-
Total Doctor's	83	79
(2) Date degree conferred		
Before 1930	1	-
1930-1939	3	3
1940-1949	3	-
1950-1959	21	12
1960-1968	72	85
	100	100

Table III provides information on characteristics of the institutions offering courses in regional science. Most are large universities offering courses used at all three degree levels. But 25 percent concentrate their work exclusively on the graduate level, while 18 percent teach only to undergraduates. Economics barely predominates as a department, followed closely by geography.

Schools in the Southeast generally conform to this pattern. Southern schools tend to be smaller and bear larger titles. The degree levels involving regional-science courses are roughly similar to those in the national pattern. Slightly more of the courses than would be expected are taught in economics departments.

TABLE III. PROFILE CHARACTERISTICS OF INSTITUTIONS OFFERING COURSES RELATED TO REGIONAL SCIENCE, 1968

<u>Characteristic</u>	<u>Percent for</u>	
	<u>Nation</u>	<u>Southeast</u>
(1) Size of institution		
Less than 1,000	2	-
1,000- 4,999	9	9
5,000- 9,999	24	26
10,000-19,999	35	52
20,000-50,000	28	13
Over 50,000	<u>2</u>	<u>-</u>
	100	100
(2) Orientation of institution		
University	78	92
Liberal arts	15	4
Engineering	3	4
Teacher education	<u>4</u>	<u>-</u>
	100	100
(3) Degree levels involving regional-science courses		
Bachelor only	18	13
Master only	9	-
Doctor only	6	-
Bachelor and Master	12	33
Master and Doctor	10	4
Bachelor, Master, and Doctor	<u>45</u>	<u>50</u>
	100	100
(4) Departments offering regional-science courses		
Agricultural Economics	3	3
Economics	36	47
Geography	35	38
Planning	14	3
Sociology	3	3
Urban Affairs or Real Estate	<u>9</u>	<u>6</u>
	100	100

Regional Economics in the Southeast

The results of our survey of regional courses in the Southeast in 1970 are summarized in Table IV. They indicate economic geography to be a frequently offered course across the Southeast. The number of courses offered per state generally correlates with population, with North Carolina and Tennessee leading by number.

Regional-economics courses are not quite so ubiquitous and appear to

TABLE IV. REGION-RELATED COURSES IN ECONOMICS AND
GEOGRAPHY IN THE SOUTHEAST, 1970

School	Offering department		
	Economics	Other	Geography
Alabama	9		5
University of Alabama (Tuscaloosa)	4		
University of Alabama (Birmingham)	2		
University of Alabama (Huntsville)	1		
Florence State College	1		
Samford University	1		
Florida	8	4	5
Florida State University	3	1	
Florida Technological University	1		
University of Florida	2	3	
Jacksonville University	1		
University of Miami	1		
Georgia	7	4	16
Emory University	1		
Georgia Institute of Technology	2		
Georgia State University	2	2	
University of Georgia	2	2	
Kentucky	4	1	18
University of Kentucky	3		
Murray State University		1	
Morehead State University	1		
Maryland	4		13
Johns Hopkins University	1		
University of Maryland	3		
Mississippi	2		7
Mississippi College	1		
University of Southern Mississippi	1		
North Carolina	7		28
Atlantic Christian University	1		
Duke University	1		
UNC (Asheville)	1		
UNC (Chapel Hill)	3		
Wake Forest University	1		
South Carolina	5		5
Clemson University	2		
University of South Carolina	3		
Tennessee	14	2	22
East Tennessee State University	1		
King College	1		
Memphis State University	2		
Middle Tennessee State University	2		
University of the South	1		
University of Tennessee	5	2	
Vanderbilt University	2		
Virginia	4	1	12
Richmond Professional Institute	1		
Virginia Polytechnic Institute	2		
College of William and Mary	1		
West Virginia	3		8
West Virginia University	3		
Total	67	12	139

depend more upon special faculty skills. Not every economist is prepared to teach a regional specialty. Tennessee leads, with many courses spread throughout the state system. Alabama follows, with interests largely based on faculty holding degrees from the University of Tennessee. The courses tend to be concentrated in the universities, where graduate work and faculty versatility are the rule. The exception is Mississippi, where we found only two courses throughout the state and these at neither of the two largest schools in the state.

Organization of Courses in Regional Economics

Limiting our range only to the broad outline of courses in location, regional, and urban economics, let us briefly examine several course formats. This task is difficult. Very few of the courses we reviewed are similarly organized. Some provide only one-level divisions followed by reading assignments whose titles indicate the major contents of each section; others are detailed at several levels. And none can be relied upon to use definitions comparable to those of others. As a consequence, we review these courses with up to two-level detail at the risk of slighting some respondents and confusing some readers.

Few courses identifiable as "location theory" or "the economics of location" appear to be pure. One exception is a graduate level course by Hugh Nourse (Illinois). It concentrates on location questions presented in the first part of his text¹ and is organized as follows:

- I. Introduction
- II. Location of the individual producer
- III. Systems of cities
 - A. Trading areas in a homogeneous plain
 - B. A simple model of a system of cities
 - C. Trading areas in more complex situations
 - D. Systems of cities
- IV. Industrial location patterns
 - A. Geographic dispersion of manufacturing
 - B. Geographic variations in input prices
 - C. Orientation
 - D. Agglomeration economies
- V. Land use
 - A. Rent
 - B. Supply areas
 - C. Agricultural land use
 - D. Commercial and industrial land use
 - E. Residential land use
 - F. Spatial equilibrium and land-use patterns
- VI. General equilibrium in location theory

Nourse extends his text material with numerous reading references. In a lower-level course, Nourse remains substantially within the confines of his text, adding the following topics to the first six listed above:

- VII. Measurement of regional economic activity
- VIII. Interregional theory of income and trade
- IX. Regional economic growth
- X. The impact of growth on regional structure
- XI. Public policy

Another variation on the upper-level course, labelled "The Economics of Spatial Relations," has been organized by Alan Winger (Kentucky)

around Martin Beckmann's text² as follows:

- I. Space in the economic system
- II. Earlier location models
- III. Location of the plant
- IV. Location of an industry
- V. Central places
- VI. Intra-urban location
- VII. Equilibrium
- VIII. Locational dynamics

Here Winger deemphasizes the regional structure, concentrating on more traditional location models.

A more typical senior-level course is that of Bernard McCarney (Illinois State). Called "Location Theory and Regional Analysis," this survey is outlined as follows around a series of readings:

- I. Introduction
 - A. Definitions and purposes of regional economics
 - B. Scope of regional economics
- II. Location theory--broad outlines
 - A. Von Thunen--location of agricultural activities
 - B. Alfred Weber--the location of a firm
 - C. August Lösch--the locational pattern of industries
 - D. Extensions and synthesis of location theory
- III. Specific topics in location theory
 - A. Transfer costs
 - B. Scale economies, market and supply areas
 - C. Spatial differentials in cost of local inputs, and substitution
 - D. Competition for space
 - E. Labor and location
 - F. Agglomeration
- IV. Regional economic analysis--techniques and a survey of applications
 - A. The economic base approach
 - B. Regional input-output analysis
 - C. Regional income accounts

While this organization provides the instructor more opportunities to create interest in continued study, it obviously pushes against some serious time constraints for a one-quarter course. Policy implications and special topics seem crowded out by a need to cover the essential economic framework.

If more time is available or if the course is cast on a less restricted graduate level, other variations are common. John Cumberland (Maryland), for example, extends his course (Location Theory and Regional Analysis) to include other methods of analysis and concludes with a topic of personal interest, natural resource management and environmental quality. Koichi Mera (Harvard) intensifies his one-semester course on "Location and Regional Economics" for undergraduates and graduates to include all of the above plus policy discussions.

- I. Introduction
 - A. Objectives of regional analysis
 - B. History of regional growth
 - C. Regional policies
 - D. Definition of regions
- II. Theory of industrial location
 - A. Competition along a linear space

- B. Comparative-cost analysis
 - C. Current formulations
- III. Interregional trade
 - A. Factor and resource endowment
 - B. Direction of trade change over time
- IV. Spatial and interregional equilibrium theory
 - A. Spatial competition equilibrium
 - B. Interregional equilibrium
 - C. Central place theory
 - D. Interregional input-output model
- V. Regional growth: theory and history
 - A. Factor movements
 - B. Regional efficiency
 - C. Measurement of historical growth patterns
 - D. Changes in the distribution over time
- VI. Regional income and employment
 - A. Income components
 - B. Produced and received income
 - C. Cyclical fluctuations
- VII. Economies of agglomeration
 - A. Scale economies
 - B. Industrial complex analysis
 - C. Urbanization economies

Other courses could be outlined. In general, our review indicates that introductory regional courses spread over a wide range, almost always starting with a review of location theory and venturing into regional economics, but usually staying within the context of traditional economics. The approach commonly depends on the text. Edgar Hoover's The Location of Economic Activity³ is an easy text for a course such as McCarney's, allowing room for expansion or change as desired. Nourse's Regional Economics forces a fairly broad coverage, but requires more economic sophistication. Beckmann's Location Theory, clear and concise, provides ample opportunity to use supplementary material. Siebert's Regional Economic Growth⁴ is more specific and demands closer attention to an integrates text; it is less readily divisible.

Urban economics is a more demanding topic, in the sense of requiring the instructor to be more of a political economist than an economic analyst. Through its high density, the city intensifies problems of location, movement, and growth and clearly forces us to examine problems overlapping with those of other disciplines. Topics covered at three schools give the tenor of these courses as currently taught.

R. L. Pfister (Indiana) organizes his "Applied Urban Economics" course as follows:

- I. Introduction--regional and urban growth trends
- II. Location theory
- III. The theory of urban growth
- IV. Urban transportation
- V. Urban public economy
- VI. Pollution and the urban environment
- VII. Urban poverty and racial problems
- VIII. Urban housing, urban renewal, and city planning
- IX. The private sector and urban development
- X. Overview

While maintaining contact with an economic base, Pfister quickly moves on to a discussion of transportation, pollution, poverty, housing, and other critical problems.

While changing the economic base of the course slightly, Hugh Knox (North Carolina) presents a similar list of topics in his "Urban Economics":

- I. General equilibrium theory and urban development
- II. Urban economic growth theory
- III. Optimum city size and spatial patterns
- IV. Urban growth and the environment
- V. Urban public economy
- VI. Housing and urban renewal
- VII. Urban transportation
- VIII. Urban poverty and race
- IX. A national urban policy

A third arrangement is that of a course presented jointly by John Mayer, John Kain, and Koichi Mera (Harvard):

- I. General theoretical models
- II. Simulation models of metropolitan structure
- III. Intra-metropolitan industry location
- IV. The determinants of residential location and the travel behavior of urban households
- V. Racial problems in metropolitan areas
- VI. Urban education systems, de facto segregation, and equality of educational opportunity
- VII. Costs and benefits of urban services and municipal finance
- VIII. Housing markets

Again, the major difference appears to be in the theoretical base of the course and perhaps in the emphasis awarded to problems. While course details and readings may differ substantially, the general outlines appear similar.

In conclusion, we can simply note that regional economics is generally taught in three stages. The first takes a microeconomic approach in examining traditional location problems. The second takes a macroeconomic approach to regional economics and explores methods of regional analysis. The third tackles urban problems in an economic context. Neither the undergraduate nor the graduate curriculum in today's diversified programs in economics seems capable of expanding to permit an orderly development of these stages. Given this restriction it seems that we should make room in our introductory surveys for at least a brush with urban problems.

FOOTNOTES

*The research underlying this paper was supported by the Office of Economic Research, Economic Development Administration, U.S. Department of Commerce (OER-163-G-67-13). I am indebted to Mr. Charles L. Webb and Mrs. Stanlee L. Schaffer for their assistance.

¹Hugh O. Nourse, Regional Economics (McGraw-Hill, 1968).

²Martin Beckmann, Location Theory (Random House, 1968).

³Edgar M. Hoover, The Location of Economic Activity (McGraw-Hill, 1948).

⁴Horst Siebert, Regional Economic Growth: Theory and Policy (International Textbook Company, 1969).