ARIZONA STATE UNIVERSITY
GENERAL STUDIES COURSE PROPOSAL COVER FORM

Course information:
Copy and paste current course information from Class Search/Course Catalog.

<table>
<thead>
<tr>
<th>Academic Unit</th>
<th>SGSUP</th>
<th>Department</th>
<th>School of Geographical Sciences and Urban Planning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject</td>
<td>PUP</td>
<td>Number</td>
<td>494 Title Economic Development Planning Units: 3</td>
</tr>
<tr>
<td>Is this a cross-listed course?</td>
<td>(Choose one)</td>
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<tr>
<td>If yes, please identify course(s)</td>
<td>No</td>
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<tr>
<td>Is this a shared course?</td>
<td>(choose one)</td>
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<tr>
<td>Course description:</td>
<td>If so, list all academic units offering this course No</td>
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</table>

Requested designation: (Choose One)
Note: a separate proposal is required for each designation requested

Eligibility:
Permanent numbered courses must have completed the university's review and approval process.
For the rules governing approval of omnibus courses, contact the General Studies Program Office at (480) 965-0739.

Area(s) proposed course will serve:
A single course may be proposed for more than one core or awareness area. A course may satisfy a core area requirement and more than one awareness area requirements concurrently, but may not satisfy requirements in two core areas simultaneously, even if approved for those areas. With departmental consent, an approved General Studies course may be counted toward both the General Studies requirement and the major program of study.

Checklists for general studies designations:
Complete and attach the appropriate checklist
- Literacy and Critical Inquiry core courses (L)
- Mathematics core courses (MA)
- Computer/statistics/quantitative applications core courses (CS)
- Humanities, Fine Arts and Design core courses (HU)
- Social and Behavioral Sciences core courses (SB)
- Natural Sciences core courses (SC/SG)
- Global Awareness courses (G)
- Historical Awareness courses (H)
- Cultural Diversity in the United States courses (C)

A complete proposal should include:
- Signed General Studies Program Course Proposal Cover Form
- Criteria Checklist for the area
- Course Syllabus
- Table of Contents from the textbook, and/or lists of course materials

Contact information:
Name: Elizabeth Mack Phone: 480-965-6165
Mail code: 5302 E-mail: eamack1@asu.edu

Department Chair/Director approval: (Required)

Chair/Director name (Typed): David Pijawka Date: 3/18/13
Chair/Director (Signature): 

Rev. 1/94, 4/95, 7/98, 4/00, 1/02, 10/08, 11/11/12/11, 7/12
Arizona State University Criteria Checklist for

SOCIAL AND BEHAVIORAL SCIENCES [SB]

Rationale and Objectives

The importance of the social and behavioral sciences is evident in both the increasing number of scientific inquiries into human behavior and the amount of attention paid to those inquiries. In both private and public sectors people rely on social scientific findings to assess the social consequences of large-scale economic, technological, scientific, and cultural changes.

Social scientists' observations about human behavior and their unique perspectives on human events make an important contribution to civic dialogue. Today, those insights are particularly crucial due to the growing economic and political interdependence among nations.

Courses proposed for General Studies designation in the Social and Behavioral Sciences area must demonstrate emphases on: (1) social scientific theories and principles, (2) the methods used to acquire knowledge about cultural or social events and processes, and (3) the impact of social scientific understanding on the world.
Proposer: Please complete the following section and attach appropriate documentation.

### ASU--[SB] CRITERIA

A SOCIAL AND BEHAVIORAL SCIENCE [SB] course should meet all of the following criteria. If not, a rationale for exclusion should be provided.

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>Identify Documentation Submitted</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>1. Course is designed to advance basic understanding and knowledge about human interaction.</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>This information may be found in the &quot;Course Description and Objectives&quot; portion of the syllabus.</td>
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<tr>
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<td>2. Course content emphasizes the study of social behavior such as that found in:</td>
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<td>X</td>
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<td>- ANTHROPOLOGY</td>
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<td>- ECONOMICS</td>
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<td>- CULTURAL GEOGRAPHY</td>
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<td>- HISTORY</td>
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<td>This information may be found on pages 4, 9, and 10 of the &quot;Course Outline&quot; portion of the syllabus.</td>
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<td>3. Course emphasizes:</td>
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<td>a. the distinct knowledge base of the social and behavioral sciences (e.g., sociological anthropological).  <strong>OR</strong></td>
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<td>b. the distinct methods of inquiry of the social and behavioral sciences (e.g., ethnography, historical analysis).</td>
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<td>This information may be found on pages 4, 9, and 10 of the &quot;Course Outline&quot; portion of the syllabus.</td>
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<td></td>
<td>4. Course illustrates use of social and behavioral science perspectives and data.</td>
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<td>This information may be found on pg. 4 in the &quot;Course Outline&quot; portion of the syllabus and the attached sample reading entitled &quot;Introduction to Analytical Methods for Local Economic Development Planning.&quot;</td>
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</table>

THE FOLLOWING TYPES OF COURSES ARE EXCLUDED FROM THE [SB] AREA EVEN THOUGH THEY MIGHT GIVE SOME CONSIDERATION TO SOCIAL AND BEHAVIORAL SCIENCE CONCERNS:

- Courses with primarily fine arts, humanities, literary, or philosophical content.
- Courses with primarily natural or physical science content.
- Courses with predominantly applied orientation for professional skills or training purposes.
### ASU--[SB] CRITERIA

<table>
<thead>
<tr>
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<tr>
<td>Courses emphasizing primarily oral, quantitative, or written skills.</td>
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<td>Criteria (from checksheet)</td>
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<tr>
<td>C1: Course is designed to advance basic understanding and knowledge about human interaction.</td>
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<tr>
<td>C2: Course content emphasizes the study of social behavior such as that found in: Anthropology, Economics, Cultural Geography, and History</td>
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<tr>
<td>C3: Course emphasizes: the distinct knowledge base of the social and behavioral sciences (e.g. sociological, anthropological)</td>
</tr>
<tr>
<td>C4: Course illustrates use of social and behavioral science perspectives and data</td>
</tr>
<tr>
<td>Sciences in general. These tools include: location quotients, shift-share analysis, input-output analysis, and cluster analysis.</td>
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</table>
Attached Descriptions for Criteria 1-4

C1: Course is designed to advance basic understanding and knowledge about human interaction.

This course is designed to provide students with a broad overview of urban economic development in the U.S. This overview will include the role and goals of economic development in today’s global information economy. It will also provide students with a sense of the breadth of topics that fall beneath the umbrella of “economic development”.

C2: Course content emphasizes the study of social behavior such as that found in: Anthropology, Economics, Cultural Geography, and History.

Economic development is an interdisciplinary topic that covers a wide range of topics in the social and behavioral sciences including economics, history, sociology, governance, and politics. The readings listed on pages 4, 9, and 10 of the “Course Outline” portion of the syllabus provide a sense of the range of topics in the social and behavioral sciences that fall underneath the umbrella of economic development.

C3: Course emphasizes:
   a. the distinct knowledge base of the social and behavioral sciences (e.g. sociological, anthropological)

As mentioned previously, economic development is an interdisciplinary topic that covers a wide range of topics in the social and behavioral sciences including economics, history, sociology, governance, and politics. The readings listed on pages 4, 9, and 10 of the “Course Outline” portion of the syllabus provide a sense of the range of topics in the social and behavioral sciences that fall underneath the umbrella of economic development.

C4: Course illustrates use of social and behavioral science perspectives and data

This information may be found on pg. 4 in the "Course Outline" portion of the syllabus and the attached sample reading entitled "Introduction to Analytical Methods for Local Economic Development Planning." The sample reading highlights the ranges of analytical tools and data that are used in analyses critical to economic development planning and social and behavioral sciences in general. These tools include: location quotients, shift-share analysis, input-output analysis, and cluster analysis.
Arizona State University
PUP 494: Economic Development Planning
Spring 2013

Professor:
Elizabeth A. Mack
Office: Coor Hall 5616
Email: eamack1@asu.edu
Office Hours: Thursday 2pm-4pm or by appointment

Lecture Time and Location
Tempe Campus, Coor L1-88
Tuesday and Thursday
12:00-1:15pm

Required Materials

Textbooks
There is one required text for this class. Selected chapters will be taken from this text as part of
the required reading. These chapters will be supplemented with additional readings, as noted in
the schedule of classes, to provide students with the most complete introduction to economic
development possible.

Required:
Blakely, Edward and Green Leigh, Nancy. 2010. Planning Local Economic Development:

Recommended:

Course Description and Objectives
This course is designed to provide students with a broad overview of urban economic
development in the U.S. This overview will include the role and goals of economic development
in today’s global information economy. It will also provide students with a sense of the breadth
of topics that fall beneath the umbrella of “economic development”. The objective of this course
is to instill a working knowledge of economic development concepts that students may utilize in
future course work or on the job market. A key focus of the course will be the application of
course concepts to real world urban development issues in a U.S. context.
Format

The course is comprised of two classes per week. Classes will consist of lectures, discussion, and time dedicated for group work. The lectures will elaborate on information presented in the required reading, but may deviate from this material. Notes for this course will be provided as needed for comprehension of the readings, but students should plan on taking their own notes to better understand course concepts. If you are unable to attend class, it is the responsibility of the student to obtain notes from a classmate. Notes will not be provided by the instructor for students who are unable to come to class.

COURSE EVALUATION

Reading Responses: You will hand in 5 responses to the readings over the course of the semester. The classes for which reading responses are required are noted in the Course Outline portion of the syllabus. Responses are due at the beginning of class. The goal of the responses is to get students to read the required materials before class on that particular day to facilitate class discussion. Guidelines for required elements in your reading responses will be posted on Blackboard. These will be graded on a 0 or check basis. Good assignments that clearly summarize course readings will be given a check or full points. Assignments that are too short, not clear, and/or do not demonstrate an understanding of the readings will not receive any points.

Class Participation: Participation in class is an essential element of this class to ensure comprehensive of the required readings and the ability to apply course concepts. Students are expected to attend class regularly and will also be graded on their participation in class. Participation will be evaluated by a variety of metrics including peer evaluation for group discussions. In order to receive a good participation grade it is necessary to do more than show up to class. This is why this portion of the grade is called class participation rather than attendance.

Mid-Term Exam: The mid-term exam will in class on the date designated in the Course Outline portion of this syllabus. This is exam is closed book and closed notes.

Final Exam: There is no final exam for this class.

Paper and Presentation: Students will be asked to complete a term paper for this class. The paper will be an in-depth discussion of one of the topics covered in class. Papers should be 20 pages in length, double-spaced. The content of this paper will be presented to your classmates in a presentation the last few weeks of class as noted in the Course Outline portion of the syllabus. More information, including a rubric for the paper and presentation are posted on Blackboard.

Extra Credit
No extra credit will be offered in this class.
Grades: The final grade is based on the number of points accumulated over the semester. There are a total of 500 points in this course. The distribution of points for the required elements of the course is as follows:

- Reading Responses (25%) 125
- Class Participation (25%) 125
- Mid-Term Exam (25%) 125
- Paper and Presentation (25%) 125
- Total 500

Final Grades will be assigned using the following breakdown:

- A 460 - 500
- A- 450 - 459
- B+ 440 - 449
- B 410 - 439
- B- 400 - 409
- C+ 390 - 399
- C 360 - 389
- C- 350 - 359
- D+ 340 - 349
- D 310 - 339
- D- 300 - 309
- F 299 or below

COURSE OUTLINE

(Please note: date, topics, and assignments listed are estimates; they may be adjusted with advance notice as deemed necessary).

Week 1

1/08/2013 Course Introduction
Introduction to Economic Development

1/10/2013 Introduction to Economic Development

Chapter 1: Blakely & Green Leigh: The Enduring Argument for Local Economic Development Planning

Chapter 4: Blakely & Green Leigh: The Local Economic Development Profession and Professionals

Week 2

1/15/2013 Definition & Concepts

Chapter 2: Malizia and Feser: Definitions and Concepts of Development
   (including Appendix 2.1)

Chapter 3: Blakely & Green Leigh: Concepts and Theories of Local Economic Development


1/17/2013 Urban Economic Development: Why Bother?


Chapter 1: An introduction to state and local economic development policy
Chapter 3: Justifying economic development

Week 3

1/17/2013 State and National Economic Development Policy


Chapter 2: Blakely & Green Leigh: The Influence of National and State Policies on Local Economic Development

1/24/2013 Analytical Tools for Economic Development Planning

Chapter 6: Blakely & Green Leigh: Introduction to Analytical Methods for Local Economic Development Planning

*Topic for Class Paper and Presentation Due*
Week 4

1/29/2013 Economic Development Planning and Strategy Formulation

Chapter 5: Blakely & Green Leigh: The Local Economic Development Planning Process

Chapter 7: Blakely & Green Leigh: Local Economic Development Strategy

1/31/2013 Locality Development

Chapter 8: Blakely & Green Leigh: Locality Development


Week 5

2/05/2013 Locality Development


2/07/2013 Business Development and Enterprise Zones

Chapter 9: Blakely & Green Leigh: Business Development


Week 6

2/12/2013  Business Development and Entrepreneurship

Malizia and Feser Chapter 9: Theories of Entrepreneurship


2/14/2013  Business Development and Incubators


Week 7

2/19/2013  Human Resource Development

Blakely & Green Leigh: Chapter 10: Human Resource Development


2/21/2013  Human Resource Development


Week 8

2/26/2013 WRSA No class

Work on Class Paper and Presentation

2/28/2013 The Creative Class Debate


Outline of Class Paper Due in Class

Week 9

3/05/2013 Universities and Economic Development


3/07/2013 Mid-Term Exam In Class

Week 10

3/12/2013 Spring Break

3/14/2013 Spring Break
Week 11

3/19/2013 Technology-Based Economic Development


*Reading response 1 due in class*

3/21/2013 Quality of Life and Amenities in Economic Development


*Reading response 2 due in class*

Week 12

3/26/2013 Financing Local Development


3/28/2013  Financing Local Development


*Reading response 3 due in class*

**Week 13**  

4/02/2013  Community Development

Blakely & Green Leigh: Chapter 11: Community Economic Development


4/04/2013  Community Development


http://www.brookings.edu/global/assets06/20corderoguzman.pdf.

*Reading response 4 due in class*

**Week 14**

4/09/2013  Institutional Approaches to Local Economic Development

Blakely & Green Leigh: Chapter 13: Institutional Approaches to Local Economic Development


4/11/2013  AAG No Class

*Work on Class Paper and Presentation*

**Week 15**

4/16/2013  Future Challenges in Economic Development

Perry, M. (2010). Controversies in Local Economic Development

Chapter 14: Blakely & Green Leigh: Local Economic Development Planning’s Response to the Flatter and Climate-Challenged World


*Reading response 5 due in class*

4/18/2013  Student Paper Presentations

*Paper due in class*

**Week 16**

4/23/2013  Student Paper Presentations

4/25/2013  Student Paper Presentations
Important Course Policies

Students are expected to adhere to Arizona State University’s Student Academic Integrity Policy https://provost.asu.edu/files/AcademicIntegrityPolicyPDF.pdf. Students are encouraged to obtain copies of this policy and become familiar with all regulations that pertain to conduct and academic integrity. For your convenience, this policy is posted on the Blackboard website for this course. It is expected that students will be familiar with the materials in this policy.

1. **Assignments**: Students may wish to study together and to discuss assignments with others. Assignments that are submitted, however, must be the student’s own work. Each submitted assignment should provide evidence that the student understands the concepts that the assignment seeks to develop. Violation of this expectation may lead to disciplinary action.

2. **Own Work**: Assignments, exams, and papers written in this class should be the student’s own work. This means that the student understands the course material and the content of their written work. Although students are encouraged to work together, the written content of assignments must be their own work and should in no way duplicate another student’s work. In the cases of definitions or exact quotes used from course or other readings, this information should be placed in quotes and cited accordingly.

3. **Exams**: Exams are in-class and closed notes. No assistance may be used on the exams including study guides or crib sheets.

4. **Review Sheets**: Review sheets for course materials may be provided at times to help students synthesize information but this should not be expected. This is an upper division course and students are expected to be able to pull out key concepts from the readings without the help of a review sheet.

5. **Plagiarism** is not allowed and is sufficient basis for awarding a failing grade in for an assignment. Plagiarism is defined as intentionally or knowingly representing the words or ideas of another as one’s own without citing them.

6. **Fabrication** is not allowed and is sufficient basis for disciplinary action. Fabrication is defined as the intentional falsification or invention of any information or citation.

7. **Citation of Sources**: Paraphrased sentences or exact quotes should always be cited. Facts and pieces of information that are not considered common knowledge (i.e. vegetables are nutritious) should be cited. The APA citation style is the appropriate citation format for this class. If you have questions about citing sources please ask the instructor.
8. **Disciplinary Action:** Cases will be dealt with on an individual basis, but this may include a failing grade for an assignment, failing grade for the course, failing grade of XE for the course, or dismissal from the program depending on the gravity of the offense.

9. The Professor will evaluate students on the basis of their own work and thought, which means that all work presented must be the student’s own, done specifically for this course. Students should be able to identify their sources of information such as web sites, books, journals and reports, to defend the logic of the arguments and conclusions, and to express ideas in various forms as their own property. Submissions of papers or assignments written for another course or by a person other than the student submitting the work may lead to disciplinary action.

10. If you are absent for an exam, a make-up will be offered only if (1) you contact Elizabeth Mack by phone (812-679-8620), email, or in person before the exam or in the 24 hours immediately following the end of the exam period, and (2) you provide a written doctor’s note stating that you were incapacitated and unable to attend the exam. There are no exceptions.

11. **Late Work:** Late papers and exercises are not acceptable. DO NOT send written assignments via email, place them under a door, or in a mailbox without permission. **If you do this without permission you will not receive credit for the assignment.**

12. **Students with Disabilities:** Every effort possible will be made to accommodate your special needs. Please see the course instructor at the beginning of the semester to discuss any needs that will enhance your learning experience.

13. Students are expected to attend all classes and actively take notes. Students who do not attend class on a regular basis will not do well in this course. Furthermore, those who do not read the assigned material carefully will also do poorly. All assigned readings and lecture material are examinable. If you miss class it is not the instructor’s responsibility to supply you with class notes. Please obtain these from a fellow classmate.

14. If you are having problems with the course material or with the assignments, or if you just seem to be falling behind, please see the course instructor or associate instructor as soon as possible.

15. Office hours are your opportunity to discuss course material outside of the class. Office hours also represent an opportunity to get to know your instructors (and for them to get to know you). Feel free to use office hours to find out more about the discipline of geography as well.

16. **Class conduct:** This course is designed to be discussion oriented and question friendly. Please use good judgment in class discussion and treat it like a work environment. This includes restricting conversations to course relevant material and not dominating class time. Class must also finish on time so please do not start new discussion threads near the end of class. If discussion has not helped make course concepts clear then please come to office hours. If a student is consistently disruptive and/or rude to the instructor and/or their classmates they
will be asked to leave the classroom. Participation will not be given for days students are asked to leave class.

17. *Email Communication*: The content of emails is a professional exchange and thus the content should be professional in nature. Email should be used to verify meeting times and other kinds of short communications. Extensive questions about course material should be reserved for office hours. **I will also not discuss grades over email due to privacy concerns.** This should be done after class or in office hours.

18. If you are unclear about any content of this syllabus, information in class, or readings, it is the student's responsibility to speak with the instructor. The instructor will try and communicate clearly with students through rubrics, assignment instructions, and announcements. If the communication is not clear please ask about any doubts you may have.

DISCLAIMER: All information contained in this syllabus (other than the grade and absence policy portions) may be subject to change with advance notice as deemed appropriate by the instructor.
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The Future of Local Economic Development Planning 25
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\checkmark Chapter 2. The Influence of National and State Policies
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Trade Policy 36
Welfare to Workfare Policy 38
Health-Care Policy 39
Employment Policy 39
National Policy Targeting Local Economic Development 40
Coordination of Local and National Development Efforts 55
State Economic Development Approaches 56
Challenges and Opportunities Inherent in Economic Development Policy Making 62
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The Economic Profile
Building on Comparisons
Gathering Available Descriptive Data
Examining Analytical Techniques
Principles of Economic Projections
Conclusion
Putting It All Together: Creating a Local Economic Development Strategy (Part II)
Note
References and Suggested Readings

Chapter 7. Local Economic Development Strategy

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Prerequisites for Successful Strategy Formulation
Selecting Strategic Options
Economic Development Plans Within the Context of Comprehensive Plans
Common Traps in Strategy Formulation
Assembling the Elements of a Strategy
Projects From Strategies
Plan Financing and Implementation
Conclusion
References and Suggested Readings

Chapter 8. Locality Development

Landbanking and Community Land Trusts
Physical Infrastructure Development on Industrial and Commercial Land
Speculative Buildings
Zoning Regulations
Business Improvement Districts
Regulatory Improvement Through Simplification
Townscaping
Shopsteading
Housing and Neighborhood Improvement
Household Services
Chapter 9. Business Development

Creating a Good Business Climate
Entrepreneur Development and Economic Gardening
One-Stop Business Assistance Centers
Start-Up and Venture Financing Companies
and Development Banks
Small Business Development Centers
Micro-Enterprise
Women's Enterprises
Promotion and Tourism Programs
Research and Development
Enterprise Zones
The Use of Financial Incentives for Business Development
Conclusion
Notes
References and Suggested Readings

Chapter 10. Human Resource Development

Workforce Development
Realities of an Undertrained Workforce
Public Role in Workforce Development
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Education as the Foundation of Human Resource Development
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Chapter 11. Community Economic Development

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Community Cooperatives
Local Enterprise Agencies
Employee/Worker Ownership
Targeting and Marketing Neighborhood/Community Assets
Conclusion
References and Suggested Readings
Successful economic development planning is based on a solid analytical framework that accurately describes the local economic context, including the identification of groups that have special needs; the local resources available to address these needs; and the place of the community in the larger regional, state, national, and global context. The national economy is a composite of all the local economies within it, whether they are urban or rural, large or small, growing or declining. As we noted in Chapter 3, economic development occurs when a community's standard of living can be preserved and increased through a process of human physical development that is based on principles of equity and sustainability. The economic development planning process begins by analyzing the current economic conditions and capacities of the community.

INFORMATION AND ANALYTICAL REQUIREMENTS FOR LOCAL ECONOMIC DEVELOPMENT PLANNING

Economic development planning and implementation requires analyses across a wide range of categories that make up the local economy. These analyses can
be descriptive, predictive, or evaluative. From descriptive analyses, the community can determine how its economy is faring relative to its position in the past, or to its current position as measured against development goals that may have been set, or measured against other referent economies (for example, the nation or a similar-sized country for which it competes for resources). Descriptive analyses are also often used for marketing purposes—that is, to provide information that can aid in attracting firms, major development projects, employers, employees, and residents.

Predictive analyses in economic development often take the form of impact or causal analysis. This type of analysis seeks to assess what the impacts of growth or development will be on the local economy, but can be extended to a wider set of community concerns. For example, Edwards (2007) outlines a Development Impact Analysis that identifies anticipated economic, fiscal, environmental, social, and transportation-related impacts from specific development projects. Within this grouping, fiscal and socioeconomic impact analyses are most commonly used for economic development. Fiscal impact analysis estimates the impact of a particular development project on the costs and revenues of the local government units that will provide services to the development. Socioeconomic impact analysis assesses how development changes community demographics, demands for housing, retail and other services, levels of employment and income, as well as the aesthetic quality of the community (Edwards, 2007).

Much of what is labeled “impact analysis” specifically focuses on building and land development associated with new economic development activities. It is only over the last three decades or so that fiscal impact analysis has been practiced. A longer-term focus of causal economic development analysis (particularly as it intersects urban and regional analysis) has specifically been on forces affecting change in employment, since these in turn can create changes in population, migration, regional income, and a host of related phenomena (Isard et al., 1998).

Evaluative analysis seeks to determine how well specific goals of economic development planning efforts are being met, as well as to gauge shifts in economic development conditions. For example, have recent employment and business additions lessened or widened existing inequality in earnings? Have they significantly altered the cost of living? Did public investments in a specific industry-cluster strategy lead to the creation of new firms and jobs, create more high-skilled jobs and higher average wages, or increase tax revenues? Of the three areas of economic development analyses, it is performed the least. In part, this is because rigorous evaluations require a control or comparison group to demonstrate that the economic development strategy or program implemented actually created results that would not have occurred on their own. It is difficult and expensive to create such comparison groups. Other

reasons for lack of economic development evaluation have also been cited, including the fact that those paying for the evaluations are typically not the beneficiaries of the economic development program, and the suggestion that program administrators can be fearful of the consequences of a negative evaluation (Bartik and Bingham, 1993).

Each of the three areas of economic development analyses warrants substantial study on its own. Scholars in a wide range of academic disciplines engage in research that contributes to and advances these analytical areas, including (but not limited to) city and regional planning, demography, economics, geography, political science, and regional science. Serious students of local economic development planning will go on to take coursework specifically in methods of economic development analysis. Much of the remainder of this chapter will be devoted to providing an overview of descriptive analyses, which are the first step in preparing a strategic economic development plan as well as in gaining any true understanding of how the local economy works. These descriptive analyses cover a range of substantive areas that can reveal a community's strengths and weaknesses for advancing its local economic development, such as demographics, economics, land use, infrastructure, real estate, and finance. Following our examination of these analyses, the chapter discusses four key methods of local economic development analysis: economic base, shift-share, input-output, and cluster.

**UNDERSTANDING AN ECONOMY'S STRENGTHS AND WEAKNESSES**

Economic development intervention requires a detailed analytical understanding of the strengths and weaknesses of the local economy, as well as the forces that are constraining or driving it. Local matters must also be placed in the context of external economic forces from around the globe. New technology, changing availability of natural resources, and trade and monetary policy, for example, all strongly influence local economic needs and opportunities. The first step in understanding the strengths and weaknesses of the local economy involves creating a descriptive profile. To begin, the economic development analyst must determine the appropriate unit of analysis—that is, what are the geographic boundaries of the local economy? Is it a legally defined city or county, or a subarea such as a neighborhood planning unit? At times, the geographic focus of economic development planning does not coincide perfectly with the legal or administrative unit for which data are available. Further, as McLean and Voytek (1992) observe: "The range of impact of economic activity almost never coincides with the jurisdictional boundaries of political units. Spillovers occur in
both directions; the policy decisions of one jurisdiction may affect economic activity in adjacent areas, even as economic activity flows easily across jurisdictional lines (p. 10).

The economic analyst must also choose the time period of analysis, understanding that determining whether the local economy is better or worse off compared to the same time period in the past is important. The key is recognizing that the national economy is made up of all subnational and local economies. Since the national economy is made up of all subnational and local economies, many smaller economic units such as cities will be affected by a slowdown or surge in the national economy. This is not to say, however, that all subnational economies are simply smaller but complete versions of the national economy. Indeed, the smaller the economy, the more limited and specialized it is compared with the national economy. The degree to which the subnational economy will experience the effects of the business cycle depends on the proportion of industry sectors that are affected by the cycle. Due to increasing globalization, we now see evidence of local economies and national economies being impacted by slowdowns and surges in the international economy.

This also holds true for the second cyclical phenomenon, which is long term and sustained, and is often called long wave. In this phenomenon, significant and permanent shifts in economic activity occur. These can be sectoral—such as the shift from manufacturing to services industries that has occurred since the 1970s or, within manufacturing, the shift over the last century from steam to coal to electricity to microelectronics-based production processes. Structural shifts towards nanotechnology-based manufacturing activity are now occurring so, if efforts to advance sustainability are successful, we can expect major structural shifts away from carbon-based manufacturing processes and products and perhaps a true industrial revolution.

Structural shifts can also be perceived as geographical. For example, a regional or local economy in which economic activity was largely associated with one particular sector may decline if the new sector originates in another region. The region of origin may in turn experience exceptional growth. Further, increasing internationalization has led to shifts of economic activity in both manufacturing and services out of local economies across the United States and into rising economies such as China, Korea, and India. In the next section, we discuss the major categories of analysis that will help economic developers understand how their local economies are situated within the larger economic, industrial, and international systems.

**THE ECONOMIC PROFILE**

We begin by presenting in Table 6.1 the major categories of descriptive statistics that should be included in a local area's economic profile, providing examples of the specific data that can be incorporated under each category. These statistics are the minimum amount of information that should be gathered for the economic profile. How much more information should be included will depend in part on the specific needs of the community, as well as on the availability of information for the size of community under consideration. In general, the smaller the community or the less its geographic boundaries coincide with administrative or political boundaries, the more difficult it becomes to obtain detailed economic information from secondary sources.

**Table 6.1 Components of the Economic Profile**

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Demographics</td>
<td>Population by age group, Population by ethnicity, Households, Net migration last five years, Workforce education attainment</td>
</tr>
<tr>
<td>2. Quality of Life</td>
<td>Climate (average temperature, snowfall, sunny days), Housing supply and prices, Workforce housing supply, Education (spending per student, student-teacher ratios, achievement test results, high school graduation rate, percentage going on to college, higher education (vocational and university), Health care (hospitals, outpatient clinics, physicians, dentists)</td>
</tr>
</tbody>
</table>

(Continued)
## Table 6.1 (Continued)

<table>
<thead>
<tr>
<th>Crime rate</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Culture</td>
<td></td>
</tr>
<tr>
<td>• Museums, performing arts, sports teams, and events</td>
<td></td>
</tr>
<tr>
<td>• Green space and recreational outlets</td>
<td></td>
</tr>
</tbody>
</table>

3. Income and Wages

<table>
<thead>
<tr>
<th>Median earnings and income level</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Distribution by quintile</td>
<td></td>
</tr>
<tr>
<td>Working poor</td>
<td></td>
</tr>
<tr>
<td>Proportion of jobs with health and retirement benefits</td>
<td></td>
</tr>
</tbody>
</table>

4. Labor Force Characteristics

<table>
<thead>
<tr>
<th>A. Civilian labor force</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployment rate</td>
<td></td>
</tr>
<tr>
<td>Participation rate</td>
<td></td>
</tr>
<tr>
<td>• Male</td>
<td></td>
</tr>
<tr>
<td>• Female</td>
<td></td>
</tr>
<tr>
<td>• Ethnicity</td>
<td></td>
</tr>
<tr>
<td>• Total</td>
<td></td>
</tr>
<tr>
<td>Working outside county of residence</td>
<td></td>
</tr>
<tr>
<td>Median commute time</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>B. Industry</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Goods-producing</td>
<td></td>
</tr>
<tr>
<td>• Natural resources and mining</td>
<td></td>
</tr>
<tr>
<td>• Construction</td>
<td></td>
</tr>
<tr>
<td>• Manufacturing</td>
<td></td>
</tr>
<tr>
<td>Service-providing</td>
<td></td>
</tr>
<tr>
<td>• Trade, transportation, and utilities</td>
<td></td>
</tr>
<tr>
<td>• Information</td>
<td></td>
</tr>
<tr>
<td>• Financial activities</td>
<td></td>
</tr>
<tr>
<td>• Professional and business services</td>
<td></td>
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<tr>
<td>• Education and health services</td>
<td></td>
</tr>
<tr>
<td>• Leisure and hospitality</td>
<td></td>
</tr>
<tr>
<td>• Other services</td>
<td></td>
</tr>
<tr>
<td>• Public administration</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>C. Occupation</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Management occupations</td>
<td></td>
</tr>
<tr>
<td>Business and financial operations occupations</td>
<td></td>
</tr>
</tbody>
</table>

5. Business Establishments by Industry Sector and Employment Size

<table>
<thead>
<tr>
<th>By industry and function (headquarters, back office, branch plant, R&amp;D)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>New to the area</td>
<td></td>
</tr>
<tr>
<td>Expansions/new facilities</td>
<td></td>
</tr>
<tr>
<td>Downsizing/closing/layoff</td>
<td></td>
</tr>
</tbody>
</table>

6. International Linkages

<table>
<thead>
<tr>
<th>Foreign-owned companies</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. companies with foreign branches</td>
<td></td>
</tr>
<tr>
<td>Foreign bank branches</td>
<td></td>
</tr>
<tr>
<td>U.S. banks with international departments</td>
<td></td>
</tr>
<tr>
<td>Foreign consulates</td>
<td></td>
</tr>
<tr>
<td>Import/export brokers</td>
<td></td>
</tr>
<tr>
<td>International education programs</td>
<td></td>
</tr>
</tbody>
</table>

(Continued)
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Demographics

A community's demographic characteristics tell whether it is large or small, growing or declining (when gathered for two or more periods of time), and whether its population is homogenous or diverse. The age profile (usually analyzed in five-year segments, or three broad segments of less than working age, working age—16 to 64 years, or retirement age—65 years and older) indicates whether the community has a good distribution of all age groups or one that is weighted more toward a young labor force or a retirement community. The implications for economic development goals and strategies will differ depending on the age profile. The education attainment levels of the workforce can provide an indication of how advanced the economic development strategy can be.

Knowing the age profile of the local population also helps an economic developer understand what is likely to happen if elderly people retire. For instance, in several large cities, analysts have noted that skilled machinists or tool and die makers were all largely the same age, having been trained just after World War II. Because the industry in these communities remained stable, today there are no trained apprentices ready to replace these very skilled workers as they retire. Such trades are often pivotal to the success of other firms, and communities need to be attentive to finding replacement workers for critical occupations that require years of training.

It is also important to be able to answer questions such as how much mobility is in the workforce. For example, are young people working locally or leaving to work elsewhere? After high school, are they going to nearby cities to work or to attend college? Or, as is the case with many rural areas, do they never return to their local area because there are few job opportunities for them there?

Local community economic development often utilizes annual or semiannual population estimates that include the number of people in an area between census periods. Births are recorded and added to the population. Births, deaths, and migration factors (e.g., new houses, change of address, utility services, school enrollment, licenses) are added or subtracted from census data to give an estimate of current population in an area. Small areas are summed and balanced with larger county and state estimates.

Because few localities have any basis on which to estimate future migration patterns, either into or out of their area, trend data are used instead. In many cases, 5- and 10-year migration trends, such as those estimated from housing and school data, are extrapolated for the next 20 to 50 years. Consequently, the short-term trends typically distort future patterns and result in projections that are misleading. Economic developers need to be

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Table 6.1 (Continued)

<table>
<thead>
<tr>
<th>7. Research Base</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate, nonprofit, university, government</td>
</tr>
<tr>
<td>8. Higher Education Resources</td>
</tr>
<tr>
<td>9. Transportation</td>
</tr>
<tr>
<td>Commercial airport</td>
</tr>
<tr>
<td>• Hub status, carriers, daily nonstop, largest cities served</td>
</tr>
<tr>
<td>Railroads</td>
</tr>
<tr>
<td>Motor carriers/trucks</td>
</tr>
<tr>
<td>Ports</td>
</tr>
<tr>
<td>Foreign Trade Zone designation</td>
</tr>
<tr>
<td>Overnight express services</td>
</tr>
<tr>
<td>Mass transit</td>
</tr>
<tr>
<td>10. Utilities</td>
</tr>
<tr>
<td>Water and sewage, electric power, natural gas, telecommunications</td>
</tr>
<tr>
<td>11. Taxes</td>
</tr>
<tr>
<td>Corporate</td>
</tr>
<tr>
<td>Personal income</td>
</tr>
<tr>
<td>Sales/use</td>
</tr>
<tr>
<td>Machinery and equipment</td>
</tr>
<tr>
<td>Property</td>
</tr>
<tr>
<td>12. Land/Building Availability</td>
</tr>
<tr>
<td>Business parks (industrial, office, research, mixed use)</td>
</tr>
<tr>
<td>Commercially zoned land and buildings</td>
</tr>
<tr>
<td>Vacancy rates and average rents (warehouse, industrial, office class A–C)</td>
</tr>
<tr>
<td>Approval length and type of local permits</td>
</tr>
<tr>
<td>13. Environmental Regulations</td>
</tr>
<tr>
<td>Attainment status for federal air pollution regulations</td>
</tr>
<tr>
<td>Average permit approval time (air, water, hazardous waste)</td>
</tr>
<tr>
<td>Landfills</td>
</tr>
<tr>
<td>Recycling regulations and programs</td>
</tr>
</tbody>
</table>

cautious using these projections, validating information with knowledgeable city planners and officials who have independent information by which to evaluate population trends.

Demographics also include knowing more about the changing ethnic mix in an area. A strong influx of specific ethnic groups can bring new opportunities and challenges to the economic development professional. For example, in spite of initial location around the nation, Hmong refugees (from Cambodia and Laos), displaced by the Vietnam War have tended to concentrate in a relatively few places, such as in California's central valley and in New York, and Russian immigrants have found their way in largest numbers to Brooklyn, New York, and West Los Angeles, California. In the San Gabriel Valley, east of Los Angeles, large numbers of migrants from Hong Kong and Korea have created a vibrant international community.

Finally, retirement complexes have been particularly attractive to rural communities. A retiree coming into a rural community after selling a house in an urban area not only brings considerable money to buy a new house but also brings social security and pension income. Often, this income greatly exceeds what would be brought into the community by good factory jobs. In short, the demographics of a community shape the local workforce and economy.

Quality of Life

Quality of life indicators are an important consideration in economic development because they influence the ability to retain and attract firms and employees. In general, firms in more advanced industry sectors and workers in more advanced occupations have higher quality of life expectations. Opportunities for quality housing, education, health care, and cultural opportunities are important factors in a firm's or worker's location decisions. Increasingly, the supply of workforce housing is being recognized as a factor in quality of life. Because housing price increases have outpaced those of earnings in most urban areas for several decades, there is a shortage of decent and affordable housing for many workers. This is particularly acute in five vital occupations that receive low to moderate wages: janitors, elementary school teachers, police officers, licensed practical nurses, and retail salespersons (Bell, 2002). As a result, police officers and nurses cannot live within the community and respond rapidly to emergencies, local schools have trouble staffing and maintaining adequate student-teacher ratios, and the level of service in retail businesses is compromised. All of these reflect negatively on the local economy and its prospects for advancing.

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Income and Wages

The income and wage subcategory is key to understanding what the standard of living is in the local economy. And, as previously discussed in Chapter 3, improving standard of living is one of the three objectives of local economic development planning. Earnings and income levels are examined separately because not all households in the economy have earnings, or earnings are not the sole source of income. The distribution of income and wages by quintile is a key indicator of the level of inequality in the local economy, the reduction of which is also one of the three objectives of local economic development planning. The working poor indicator is computed by determining the number of workers in the local economy with year-round, full-time employment whose annual wages do not bring them above the poverty line. This represents a failure in economic development that should receive priority attention. Lastly, "good" jobs are often defined as those that provide health and retirement benefits along with adequate earnings. The cost of health and retirement benefits is typically 25% or more above the worker's wages. If employees must pay for these out of their earnings, then their overall standard of living is reduced. Further, in the case of low-wage workers for whom it is a struggle simply to provide housing and basic goods, the inability to self-fund health insurance can lead to financial disaster when they experience serious health incidents.

Labor Force Characteristics

A key activity in local economic development planning is job creation. Earnings from employment remain the primary source of income for individuals to support themselves and their families, and earnings define the standard of living for the vast majority of individuals. As we shall discuss subsequently, the income generated from earnings is a key factor in determining the economic base of a local economy. Thus, characteristics of the labor force of a local economy are vital for determining its future, and strengthening them is an important economic development goal.

The labor force characteristics section of Table 6.1 is the most detailed because of the importance of this aspect of the local economy. We start with a basic understanding of the civilian labor force. While some local economies have a sizeable portion of their labor force employed by the government and the military, the reality is that local economic development planning efforts can do little, if anything, to shape these sectors, and thus they focus on the civilian labor force.
A low unemployment rate suggests a tight labor market that cannot accommodate new firms unless there is growth in the local labor market. Conversely, a high unemployment rate suggests there is hardship in the local economy and active economic development efforts are needed. It is important to determine whether the unemployment is associated with specific industry sectors and occupations. It is also important to determine whether the unemployment is associated with a national downturn in the business cycle or is specific to the local economic composition to which specific planning efforts can be directed.

A low labor force participation rate for a specific gender or ethnic group may suggest a lack of opportunity, systematic discrimination, and the presence of discouraged workers. The latter are those who have given up on finding employment and, since they are no longer looking for work, they are no longer counted as being part of the labor force.

Statistics on the proportion of the labor force that works outside the county of residence can be indicative of a lack of local job opportunities. The extent to which this is a valid issue will depend, in part, on the size of the county. For example, California, with a land mass of nearly 156,000 square miles, has only 58 counties. These counties can encompass many localities and local labor markets. On the other hand, Georgia, with a land mass of almost 58,000 square miles, has 156 counties. The small size of Georgia's counties suggests that many local labor markets will cross county lines. A more revealing indicator is "median commute time." Excessive commute times suggest a jobs-housing imbalance whereby there are either not enough jobs in the worker's home community or there is a mismatch between local jobs and local residents' occupations that should be a focus of economic development planning. The excessive commute times associated with jobs-housing imbalances not only lessen the quality of life of workers, but contribute to road congestion, air pollution, and deterioration in the community's quality of life.

The next subcategory under labor force characteristics is industry. All economic activity is classified into an industry sector. Industry composition varies across local economies, and these create different dynamics. Officially, an industry is defined as a group of establishments primarily engaged in producing or handling the same product or group of products or in rendering the same services. The industry listing in Table 6.1 is the official North American Industrial Classification System (NAICS) at its most aggregated level of 20 sectors. NAICS uses a six-digit hierarchical coding system to classify all economic activity into these 20 industry sectors, of which 5 sectors are mainly goods-producing sectors, and 15 are entirely services-producing sectors (U.S. Bureau of Labor Statistics [BLS], 2007a). All employment is classified into an industry sector.

Likewise, all employment is classified into an occupation sector, the next subcategory, and there is also an official Standard Occupational Classification System (SOC) produced by the Bureau of Labor Statistics. Listed in Table 6.1 are the 23 major occupation groups. These 23 groups are an aggregation of 96 minor groups, and 449 broad occupations. Further, for each of the 449 broad occupations, the SOC includes detailed occupation(s) requiring similar job duties, skills, education, or experience (BLS, 2007b). Occupation data within each industry group are also published.

Periodically, the official industry and occupation classification systems are revised to reflect the emergence of new types of jobs and business activity. This can complicate trend analyses when economic activity is moved between categories from one system's revision to the next, or when the classification system reflects the addition of entirely new forms of economic activity or removal of obsolete activity. Official "crosstab" tables are available that guide the analyst in comparing and combining data from various and the latest classification systems. The NAICS was last revised in 2007, when changes were made to 7 of its 20 sectors. NAICS is actually a replacement for the previously used Standard Industrial Classification (SIC) system that was used from the 1930s to 1997.

The renaming and revamping of the system occurred to allow standardized collection and analysis of economic activity for Canada, Mexico, and the United States as part of growing recognition of the increasing globalization and integration of these three economies. The SOC was last revised in 2000. The U.S. Department of Labor conducts on-going studies to determine what new and emerging occupations will be taken into account in the next occupational classification system revision that is being considered for 2010. These occupations involve significantly different work than that which is found in current occupations. Some of the occupations being tracked are advanced practice nurses and bioinformatics scientists and technicians, as well as geospatial information systems scientists and technicians (National Center for O*NET Development, 2006).

Business Establishments

The fifth subcategory focuses on the characteristics of the business establishment found in the local economy. How many there are within a specific industry sector indicates whether the sector is competitively organized. The function of the business establishment provides clues as to its role in the overall economy. Those with research and development functions may be the sources of new innovation and companies. Those with headquarters functions may be longer lasting in the local economy than those with back office and branch plant functions.
International Linkages

Due to ongoing economic globalization, economic development planners should be familiar with, and may want to encourage, international linkages and support for export-oriented businesses within their local economies. Section 6 of Table 6.1 provides some key categories for consideration, but the analyst may want to go further, such as determining the extent to which locally produced goods and services are sold in international markets.

Research Base and Higher Education Resources

Sections 7 and 8 identify research activity that can become a source of innovation and new business creation. Beyond training the labor force, for which higher education was listed in the “Quality of Life” section, higher education institutions can also be a source of support for local economic development by contributing activities such as manufacturing extension partnerships, small business development centers, and business incubators.

Transportation, Utilities, Taxes, Land/Building Availability, and Environmental Regulations

The remaining five sections of the economic profile highlight traditional requirements and costs of doing business in a local economy. The transportation data indicate how connected the local economy is to other economic centers and how efficiently products and people can travel to and from the local economy. How influential the local cost of utility provision and the availability of specific utilities is to any business location decision is dependent on the production requirements of the business. For example, is it a business that uses large quantities of water in its production process, or does it rely on sophisticated telecommunications infrastructure to deliver an information-intensive service or product?

The subsection on taxes illustrates there are a range of taxes to which businesses and their employees can be subject. Taxation levels have traditionally been viewed as an issue of competitiveness in local economic development, though research results on how important they really are to business location decisions are mixed. The flipside to the issue is that too low levels of taxation may indicate the locality is not investing sufficiently in physical and social infrastructure and this can undermine long-term economic development.

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The availability of land and buildings to house new and expanding businesses is a critical factor in local economic development. Communities that are built out (all land has been developed) or that have excess land but will not zone for commercial and industrial uses create disincentives for expanding existing businesses to stay or new businesses to locate in the community. In the business world, “time is money” such that lengthy building permit processes can raise the cost of doing business and serve as a barrier to economic development.

This issue is also pertinent in considering data for the last subsection on environmental regulations, which lists the kinds of environmental permits that businesses may have to secure, depending on their production processes. Difficulties in meeting the attainment status for federal air pollution regulations can become a major barrier to further economic development.

Landfills can be a significant issue in local economic development because some industries generate more waste byproducts than others, and those with hazardous waste byproducts are subject to rigorous (and costly) waste disposal regulations. Though there are some states and localities that consider operating landfills as an economic development activity, and they actually import waste from other localities to receive the revenue from disposal, the prevailing view is that landfills are costly to maintain safely, generate negative externalities for development surrounding them, and are to be minimized. One way in which disposal of industry waste can be minimized is through recycling regulations and programs. The most forward-thinking localities are promoting recycling as a way to minimize environmental pollution impacts as well as to promote economic development via the business and jobs that are created to reuse and recycle, as well as to create new products from waste (e.g., see Leigh and Patterson, 2006).

BUILDING ON COMPARISONS

Data for economic development analysis build on comparisons that look at a community in relation to somewhere else that is a valid referent. Typically, planners compare the strengths and weaknesses of their zone of action (local, county, or multicounty) with a much larger area (a state, multistate region, or nation), depending on the size of the units. California and Texas, for example, are good references for communities within their states, but a community in Rhode Island or Vermont would better be compared with the New England region or the nation as a whole. As a result of comparison, planners may find that the local area has a higher proportion of electronics companies, or that its hospital and medical firms, while seemingly highly represented, in fact are actually below the number expected in ratio to areas like the state or region. In
addition, local areas may discover that their unemployment rate is consistently above or below the same rate of the state or region, or that it changes differently over time. For example, some areas have rates that swing higher and lower than national cycles of unemployment, whereas other areas lag the national cycle, with unemployment peaking later and recovering more slowly.

Comparisons of a local area to its larger reference area must do more than simply count the employees or firms in each, because larger places would obviously have more firms or employees. The analytical task is to standardize the data with analytical tools that can account for the different sizes and scales of the various areas being compared. For example, economic developers use standard measures to compare areas in terms of average or per capita incomes (instead of total income), the unemployment rate (percentage of labor force not employed), the rate of small business formation (firms created as a ratio of all firms), or the number of doctors per thousand persons. In each of these cases, the economic factor of interest is standardized relative to the size of the place.

Data comparing local areas also need to be dynamic and show how change has occurred from one time period to another. This trend analysis describes how the local economy arrived at its present condition and projects what it may look like in the future, with and without intervention. Typically, economic development analysts look at change over periods from 5 to 10 years—long enough to show some dynamics, but short enough to capture local developments that are manageable by planning policy. The time period used is often dictated by the frequency of data publication of the relevant secondary sources of data such as the U.S. Census Bureau’s Economic Censuses or American Community Survey. The selection of time schedules also seeks to take into account the effects of the business cycle. Data from several points of time show, for example, employment growth in certain industries, increases in unemployment rates, greater rates of female participation in the labor force, and the impact of inflation on real earning power.

Local economic planners need to combine professional statistical and quantitative analysis with an appreciation of the uniqueness of the local community. They should prepare for an analysis by first understanding gaps in a local area’s analytical sophistication, need for data, or ability to use it. However, the analysis process frequently needs rethinking as patterns emerge—analysts learn more about the local economy and the community understands more about itself. Smaller communities often cannot support full-time economic development planning staff and thus seek the assistance of specialists who can assemble and help the community understand relevant information as well as to develop an appropriate economic development planning process. Private economic development consulting firms, state and regional planning agencies, and university outreach centers may all be sources of economic development specialist assistance.

GATHERING AVAILABLE DESCRIPTIVE DATA

Data for local communities come from individual, government, and private sources, and each source has its strengths and weaknesses. The availability of this information is rapidly expanding, especially through Internet sources. Table 6.2 lists potential sources for the 13 categories of data suggested for the economic profile described earlier.

Local Agencies and Individuals

Already available in many communities is a vast array of existing data held by local planning or service agencies. There are also persons who have experienced the place in every conceivable way and from every conceivable angle—often over lengthy periods of time. People who live, work, and play in the community can be involved in contributing their knowledge and ideas to the local economic development planning process through community fact-finding techniques such as:

- personal interviews
- public hearings
- neighborhood meetings
- church, fraternal, and trade organizations
- press, radio, and television outlets
- existing reports, case studies, and feasibility studies

Beyond this, special efforts should be made to invite community leaders, as well as other interested and knowledgeable citizens, to participate in advisory committees and other formalized groups associated with the planning process. These people often reflect the collective thinking and awareness of many other citizens who have valuable perspectives or expertise but cannot actively participate.

Industrial Classifications

As referenced earlier, we use the North American Industrial Classification System (NAICS) to help us understand the multiplicity of parts in the economy.
Table 6.2 Data Sources for Economic Profile

1. Demographic Characteristics
   - U.S. Bureau of the Census
     - Decennial Survey
     - American Community Survey
     - Local/Regional Planning Agency

2. Quality of Life
   - National Climatic Data Center
   - U.S. Bureau of the Census
   - National or Local Association of Realtors
   - State Department of Education or Public Instruction
   - Local School District
   - University System Office of the President
   - Federal Bureau of Investigation (FBI) Uniform Crime Report for Locality
   - Local Business Directories
   - Local Medical Association
   - Chamber of Commerce
   - Visitor Bureau

3. Income and Wages
   - U.S. Bureau of the Census
   - U.S. Bureau of Labor Statistics, National and Regional Offices
   - State Employment Security or Labor Departments

4. Labor Force Characteristics
   - BLS Local Area Unemployment Statistics
   - State Employment Security or Labor Departments
   - U.S. Bureau of the Census
     - County Business Patterns
     - Economic Census Geographic Area Series
     - Decennial Census
     - Annual Survey of Manufacturers

5. Business Establishments by Industry Sector and Employment Size
   - Statistics of U.S. Businesses (U.S. Bureau of the Census)
   - Local Business Journals

6. International Linkages
   - USA Trade Online (U.S. Census Bureau)
   - Industry Trade Associations
   - Federal Reserve Board

7. Research Base
   - U.S. Patent and Trademark Office
   - Trade Associations
   - University Research Offices

8. Higher Education Resources
   - State University System Office of the President
   - Local Offices of University and Community College Presidents
   - Private College/University Offices of the President

9. Transportation
   - State Department of Transportation
   - U.S. Department of Transportation
   - Local Department of Transportation or Public Works

10. Utilities
    - State Utility Commission
    - Local Knowledge

11. Taxation
    - State Department of Finance or Revenue or Taxation
    - Local Office of Property Assessor

12. Land/Building Availability
    - National and Local Associations of Realtors
    - Commercial Real Estate Vendors
    - U.S. Census Bureau Residential Building Permits

13. Environmental Regulations
    - U.S. Environmental Protection Agency Envirofacts
    - State Environmental Agency
    - Local Government Environmental Departments
This system is the replacement for the Standard Industrial Classification (SIC) system that served for more than 60 years as the structure for the collection, aggregation, presentation, and analysis of the U.S. economy. An industry consists of a group of establishments primarily engaged in producing or handling the same product or group of products or in rendering the same services. NAICS uses a production-oriented conceptual framework, grouping establishments into industries based on the activity in which they are primarily engaged. Establishments using similar raw material inputs, similar capital equipment, and similar labor are classified in the same industry. In the switch from SICs to NAICS, a new information sector was created that combined communications, publishing, motion picture and sound recording, and online services, in recognition of the information-based economy. Manufacturing was restructured to account for new high-tech industries. A new subsector was created for computers and electronics, which includes reproduction of software. Eating and drinking places were transferred from the retail sector to a new Accommodation and Food Services sector. The distinction between the Retail and Wholesale sectors was changed to reflect the way each store conducted its business.

A key criticism of the SIC system was that it did not reflect the growth in the economy of the service sector. The NAICS revision added nine new service sectors and 350 new service industries. NAICS has already been revised since its 2002 introduction in an effort to keep up with the nation's changing economy. Though the Census Bureau provides "crosswalks" to facilitate time series analysis when classification systems are revised, it is important to understand that the revisions from SIC to NAICS were so major as to hamper time series analyses for specific sectors.

**Occupational Data**

Revisions to the occupational classification system, like the industrial classification system, require the use of crosswalks to do time series analyses. However, unlike NAICS, the Standard Occupation Classification System (SOCs) is intended only for analyzing U.S. data.

SOCs data can be found in a number of public information sources. The U.S. Occupational Employment Statistics (OES) Program provides occupational employment and wage estimates by industry and across industries. State- and area-level data are provided by state Employment Security Agencies.

The Census Bureau publishes data on detailed occupations from the decennial censuses. Only aggregated data are published in paper form. Standard and customized tabulations of SOC data can be obtained through the Census Bureau's Web-based American Fact Finder site.


**Census of the Population**

Perhaps the most well-known source of economic data is the U.S. Census, which collects data every 10 years. The census obtains from every household a small amount of data, such as age, race/ethnicity, gender, family, and a few housing items. Historically, about one in 20 households filled out a longer form that supplemented the personal data with an extensive bank of questions about many topics of interest to economic developers. The longer form reported on types of industry and occupation, income, education level, disabilities, and many other factors. The sample data were extrapolated to the entire population, but in areas with small populations, answers were aggregated to protect the confidentiality of respondents. Information from the long form guides the administration of federal programs and the distribution of federal dollars.

A new survey, the American Community Survey (ACS), is in the process of being implemented and will replace the decennial long form. Because long form data collection occurs only once every 10 years, they soon become out of date. Planners and other data users are reluctant to rely on them for decisions that are expensive and affect the quality of life of thousands of people. The intent of the ACS is to provide the data communities need every year, instead of once in 10 years. Full implementation of the American Community Survey is planned in every county of the United States and should cover around 3 million households.

Included in the ACS will be annual estimates of demographic, housing, social, and economic characteristics for all states, as well as for all cities, counties, metropolitan areas, and population groups of 65,000 people or more. Smaller areas will also be covered in the ACS, but it will take several years to accumulate sufficient data.

Census data have many advantages. First, the census has had a fairly standard set of questions and categories as well as a consistent methodology over many decades, which allows good long-term perspectives, often valid for 50 or more years. Although the analyst must be attentive to changes in industry and occupational classifications, census data are still the best source for long-term trend analysis. Second, census data reflect a hierarchy of geography, with smaller areas accumulated into larger areas. The nation, states, regions, counties, cities, towns, places, census tracts, and census blocks are some of the most important
categories. In addition, data are provided for metropolitan areas, divisions, and other intermediary urban geographical sectors. Third, the widespread electronic availability of census data is permitting additional formats and estimated patterns. Thus, the census allows the widest geographical perspective.

However, the use of census data has certain limitations. First, census reports are based on where people live, not where they work. Although the census does ask about commuting, these data are not directly comparable to data on place of employment, especially if a large number of people work outside the area under study. Second, the census is collected only every 10 years, and is thus often out of date. Furthermore, it usually takes two years from the time the census is taken until data are available on items of interest to economic developers. Third, economic data from the census are from a sample, and confidentiality limits the availability of important data in small geographical areas. Finally, and most important, census data are less complete in poor neighborhoods, among ethnically diverse communities, and where the population is in flux. Many challenges have been made to use the census counts in these areas, in small rural communities, and in places where there are many undocumented immigrants. Homeless people, for example, are substantially undercounted. In spite of the fact that census data are the best we have, it is important to recognize potential gaps in coverage.

The census also makes periodic specialized censuses of importance to economic developers. Every five years, the census surveys manufacturing businesses, agriculture, and government businesses. These specialized reports provide detailed information within their topic. Even though this special census shows where manufacturing businesses are located, it does not include data on individual employees in each firm.

Employer Reports

Employers provide accurate, inclusive, and recurring reports as they get licenses and pay fees and taxes as part of their overall activities. These reports turn into data, which are collected by government agencies. Economic development planners are especially interested in two reports that all employers must make: quarterly payments for unemployment insurance to their state and social security deductions to the federal government. Thus, in the payment of these taxes, employers provide current and accurate data that can track the economy by specific industry SIC code in local areas.

As part of their unemployment insurance tax payments, all firms must report employment, payroll, and location, and their NAICS code is regularly checked. These detailed data are the backbone of the Employment and Earnings Reports produced by each state's employment security agency. These firm-level sources are reported not by where employees live, but by where they work. Such data are excellent for coverage and are often available promptly to allow analysis of quarterly trends. In addition, many states are able to generate special reports, based on particular geographical information (such as zip code), or showing detailed industrial categories (such as the fourth-digit level of the NAICS).

County Business Patterns data are collected from employer surveys as well as being obtained through administrative records on employers from the Social Security Administration, the Internal Revenue Service, and the U.S. Department of Labor. Like Employment and Earnings reports, they are based on where people work, not where they live. As the name implies, County Business Patterns data provide data for the county level. More recently, however, these annually collected data have started to be published at the zip code level.

Government data series also rely on other specialized sources. For example, most states publish a report based on sales tax collections, which gives the dollars spent on taxable sales in counties or cities by type of establishment. Depending on state laws, taxable sales data may not include large parts of the retail sector (e.g., food or services that are not taxed, and most sales to businesses), but much retail analysis can rely on these data.

State income tax records are often analyzed both for business taxes and for individual income tax payments to provide information on earnings. Agricultural data are derived from crops planted, sales, and other information collected through marketing boards and reporting as part of inspections. Traffic monitoring leads to highway data on commuting and trucking. The purpose here is not to identify all the sources of data for economic development but to encourage planners to look for the data they need by identifying who might collect it for another purpose, and then finding it.

Private Data

There has been a significant increase in private data sets that economic development analysts find useful. In some cases, these data sets are from public sources but are repackaged by private firms in a manner that makes them more useful for analysis. An example is the Business & Company Resource Center produced by the Gale Group. This is a subscription database that can usually be accessed at larger public and academic libraries. In other cases, a private data provider may be collecting data from businesses that it then processes and sells to customers. For example, Dun & Bradstreet provides privately generated data that are compiled and updated as part of its ongoing need to supply business credit information, such as the number of employees, sales, and the location of the firm. It provides data on privately held as well as small companies, unlike many other databases.
Private data have several advantages. First, confidentiality is less an issue with privately gathered data than with state or federal information. Several companies sell detailed data files on selected firms. Second, detailed geographical locations are available—even street addresses if needed. Third, special reports can be generated from the extensive data bank collected for sale to analysts and marketing firms who can pay the fee.

The limitations to private data sources are that the coverage is neither uniform nor exhaustive. For example, the only way a firm is listed in Dun & Bradstreet is if it requires a rating for credit. How serious a problem this is has been debated in the literature. Another limitation is that updates do not occur simultaneously. Dun & Bradstreet tries to make sure that every firm is updated every three years, but otherwise a firm's data are updated only when a new credit report is needed. And while publicly held firms that must report to the U.S. Securities and Exchange Commission can legally be liable for misrepresentation, there is no penalty for those that report to D&B.

There are other types of private data that can be useful for local economic development analysis, such as data on commercial or industrial real estate markets, or trade association data that can help the analyst discern what kinds of challenges a locality's key businesses may be encountering or what potential exists for fostering greater clustering of a key industry.

**EXAMINING ANALYTICAL TECHNIQUES**

There are at least five areas of analysis that the local economic development planner needs to understand:

1. What parts of the local economy are most valued by local residents and political leaders? How do the citizens see themselves compared with other communities?
2. What parts of the economy form the local economic base, accounting for the most substantial number of jobs and growth in wealth?
3. What parts of the local economy are growing most rapidly, forming jobs and generating opportunity? What can local leaders do about other parts that are declining?
4. How do changes multiply through the local economy? How does growth or decline in one part of the economy alter the other parts to which it sells or from which it buys?
5. What are the parts of the local economy that are most important because they are embedded in a strong and growing interdependent cluster of firms and related industries?

The answers to Questions 2-5 provide substantial insight into the economic system associated with every community. A version of this economic system is depicted in Figure 6.1. Healthy economies, as shown in the figure, export jobs, retain substantial income, and build internal linkages. Determining the size and performance of these economic relationships, as well as the community's ability to alter its relationship to other areas in the region, is the focus of the analytical techniques discussed in this chapter (Landis, 1985; Rochin, 1986).

![Figure 6.1 Model of Local Economy](source)

**Figure 6.1** Model of Local Economy

*Source: Adapted from Agajanian (1987).*

The answers to Question 1 must come from primary data collection such as surveys, interviews, and focus groups. From our descriptive analyses using secondary data, we can gain insight into Questions 2 and 3. Further insight into Question 3, as well as into Questions 4 and 5, can be gained through additional analytical techniques. The remainder of this chapter will focus on the most commonly employed techniques.

**Economic Base Analysis as a Foundation for Economic Development Planning**

Solid economic development planning hinges on an understanding of the factors that affect the level and growth of the local economy. How local firms
meet the needs of people in their community, and how these firms are shaped by external forces, such as markets for the export of local goods, imports, tourism, and even major changes in international trade (e.g., the rise or fall of the dollar relative to foreign currency). Every firm is part of an industry sector, and a local economy’s industrial structure is the most fundamental factor that affects its growth. As McLean and Voytek (1992) have observed:

The industries that are most crucial to local economic growth are those that produce goods and services sold outside the local economy, generating an inflow of income. These industries are known as an area’s “economic base” or “export base.” They generate the income that sustains the “local-serving” or “non-basic” sector of the economy—firms such as restaurants, grocery stores, automobile repair shops, laundries, and so on.

In addition to exporting, local economies import goods and services that are demanded by local consumers and businesses but produced elsewhere. The extent and nature of a local economy’s imports are also of interest for the analysis, since there may be opportunities to substitute locally produced goods and services for those being purchased from outside the area. (p. 60)

A simple economic base model can be depicted as:

\[ \text{Basic employment} + \text{Nonbasic employment} = \text{Total employment}. \]

The principle of traditional economic base theory is that businesses that generate wealth should be targeted for attraction and nurtured with a higher priority than other firms. As Malizia and Pever (1999) have observed, the most common economic development strategy—industrial recruitment—is justified by economic base theory since the attraction of outside firms, which today can be manufacturing or service firms that export, will lead to increased demand for local firms. The interconnections between local serving and exporting firms of an economy, and just how much export-based growth stimulates local-serving growth is most robustly analyzed via input-output analysis, a technique that is included in economic development methods courses, and that we briefly discuss in this chapter. It is from input-output analysis that the most accurate estimates of multipliers are created. The concept of the multiplier is a much focused upon indicator in local economic development that is used to estimate how much change (for example, income, taxes, or jobs) will occur in the total local economy from an exogenous change in activity in the basic industries.

While economic base analysis has traditionally focused on industries as its unit of analysis, there has been something of a turn in local economic development analysis to focus on occupations as a driver of the economic base. This is particularly the case for occupations that are perceived to generate new forms of economic activity or fuel entrepreneurship. The Creative Class concept is one example of an occupation-centered economic base analysis.

Chapter 6 • Analytical Methods for Local Economic Development Planning

In the next section, we discuss a simple technique for analyzing the economic base that can be used to examine industrial or occupational structure. For simplicity of presentation we use industry to describe the technique.

Location Quotients for Base Analysis

The location quotient is a technique used to identify the concentration of an industry sector in a local economy relative to a larger reference economy. Stated simply, an industry's share of the local economy is compared with the share that industry has in the reference economy. The location quotient—sometimes called the concentration factor—is a static measure, picturing the economy at only one point in time. It does not say anything about whether an industry is growing or declining in importance relative to the local economy.

The location quotient is shown as a ratio between the percentage of employment in an industry locally to the percentage of employment in the same industry found in the state or nation being used as a reference. If the ratio of the local to the reference economy is greater than one, it means that the industry has a greater representation in the local area compared with the reference economy. If the ratio is less than one, however, the industry has a smaller representation. A location quotient (LQ) of 1.0 means that the local area and the reference economy have the same percentage of that industry in their respective economies. In economic base analysis, an LQ of 1 is interpreted as the local economy just meeting its needs for the products of that industry. An LQ less than 1 means the economy does not meet its needs internally. It is therefore considered local serving, and the locality may need to import the industry's products or services to fully meet its needs. On the other hand, an industry with a location quotient greater than 1 produces more than is needed locally and the portion of the employment that leads to the LQ being greater than 1 is assigned to the locality's economic base that supports the economy as a whole. McLean and Voytek (1992) suggest that the analyst focus on industries with LQs greater than 1.25 or less than 0.75. Those with LQs of 1.25 or more are most clearly the export base industries whose further growth will stimulate the overall economy. Those with LQs less than 0.75 could also warrant focusing on because they offer opportunities for import substitution development strategies.

The standardized formula for depicting the location quotient is as follows:

\[ LQ = \frac{E_L}{E_T} \times \frac{E_T}{E_R} \]
where
\[ e_i = \text{local employment in industry } i \]
\[ e = \text{total local employment} \]
\[ E_i = \text{national employment in industry } i \]
\[ E = \text{total national employment} \]

In essence, the LQ is an index of specialization. For example, if a rural locality has 10% of its local employment in the dairy industry and the state (the reference economy) has only 5% of its employment in dairy, the location quotient is the ratio of the first to the second, or 2.0 (i.e., divide the local percentage (10) by the reference percentage (5), to get the answer of a LQ of 2.0). But if an urban area only has 1% of its employment in dairy, the location quotient will be 0.2 (i.e., divide 1 by 5 to get 0.2). In the first case, the LQ of 2.0 indicates that the dairy industry constituted twice its expected share of the local economy, whereas in the second, the LQ of 0.2 indicates that the local share was only 20% of what would be expected if the local area was like the reference economy.

Analysts typically calculate location quotients for detailed industry classifications at the two-digit or greater levels. The danger in using one-digit industry data, such as for agriculture, is that either all or none of a sector’s employment could be erroneously assigned to the economic base.

In Table 6.3, location quotients are presented for three metropolitan areas in the United States: Atlanta, Indianapolis, and Seattle. We will look for industry sectors with location quotients over 1.5 to get a sense of what are the greatest industry specializations in these three metro areas. Beginning with Atlanta, we can see that its greatest specialization is in air transportation (NAICS 481), with a very large LQ of 4.19. This correlates with the fact that the region’s Hartsfield-Jackson Airport is a major hub for both passenger and cargo transport. However, Atlanta also ranks high for what can now more specifically be called the information economy. It has location quotients of 1.95 in NAICS 518—Internet Search Providers, search portals, and data processing, as well as a 2.07 in NAICS 517—Telecommunications. Additionally, it has a large LQ for NAICS 515—Broadcasting, except Internet. While Atlanta is the well-known home of CNN, if that were its only firm in this NAICS sector, we would not be able to calculate an LQ due to data disclosure rules. However, there are also a number of other broadcast firms in the metro area.

Three different areas of specialization are revealed in the Indianapolis metropolitan area. First, its economy is more specialized in what is often called traditional industry, with large LQs for chemical manufacturing (NAICS 325) and transportation equipment manufacturing (NAICS 336). Indianapolis is also specialized in three sectors that suggest it is a significant distribution hub:

(Continued on page 179)
<table>
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<th>Industry</th>
<th>U.S. TOTAL</th>
<th>Atlanta-Sandy Springs-Marietta, GA</th>
<th>MSA</th>
<th>Indianapolis, IN</th>
<th>MSA</th>
<th>Kalamazoo-Battle Creek, MI</th>
<th>MSA</th>
<th>Seattle-Tacoma-Bellevue, WA</th>
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<td>1.08</td>
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<td>107</td>
<td>65,546</td>
<td>1.08</td>
<td>7,686</td>
<td>0.97</td>
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NAICS 484—Truck transportation; NAICS 492—Couriers and messengers; and NAICS 493—Warehousing and storage. Finally, a location quotient analysis for Indianapolis reveals it specializes in arts and entertainment (NAICS 711—Performing arts and spectator sports; and NAICS 712—Museums, historical sites, zoos, and parks).

Analysis of Seattle reveals it is narrowly specialized in three industry areas relative to the nation that are representative of three key phases of industrialization. First, it has a very high LQ of over 12 for NAICS 114—Fishing, hunting, and trapping. Next, its LQ for NAICS 536—Transportation equipment manufacturing is more than double that of Indianapolis, largely driven by the fact that Boeing has a major facility in the area. Third, the Seattle metropolitan area has high LQs for NAICS 511—Publishing industries, except Internet, and NAICS 516—Internet publishing and broadcasting. The first includes software—and, of course, the Seattle metro region is the home of Microsoft. Finally, Seattle has a high LQ for one of the lowest-paying industry sectors, NAICS 814—Private households.

It is important to understand that the location quotient analysis is an index of specialization relative to a reference economy. It does not necessarily indicate that an industry sector with a high LQ has a large number of employees in the local economy. For example, in the case of Seattle, while the LQ for the Private household industry sector was 2.91, this sector's number of employees represents only 1.3% of all employment (19,106 employees of 1,467,193 total). What this high LQ may suggest is that household help is more affordable in the Seattle metro area, or a greater proportion of higher-income households can afford to hire private domestic workers. Further, the LQ of 1.26 for the Fishing, hunting, and trapping sector represents less than one thousandth of total employment for the metro area. It is high because of Seattle's location on the Pacific coast, where a lot more of this activity naturally takes place.

Beyond indicating how specialized a local economy is relative to the larger economy of which it is a part, the location quotient is essential to determining the economic base of a local economy.

**Data Requirements for Location Quotients**

The basic data needed for calculating location quotients can come from any reliable statistical series for which the same categories of data are available for the local area and for the reference economy. The usual data series are employment by industry from the Employment and Earnings series or from County Business Patterns. Many analysts compare their local area to national data, while others choose to compare their local area to their state or multistate.
region. To some extent, the decision about which reference area to use depends on the size of the state and its applicability as a good reference. For example, because they are large, California, New York, and Texas are good references for calculating location quotients for the cities and counties in those states, whereas Vermont is not large enough to be a reference economy for its townships and counties. Vermont analysts may want to develop a New England (multistate) reference to facilitate their analysis.

While the location quotient is most often used with employment data, the same type of ratios can be calculated if the analyst has data on the industry sales, payroll, or any other related data series where the industry share of the whole economy can be calculated. Indeed, only using employment as a base can send the wrong signal. For example, as efficiency and capital investment work through an industry, often employment falls. In some industries, falling employment may be one of the first signs not of weakness but of strength. Thus, in industries such as construction or farming where efficiencies in employment are dramatic, a case can be made that analysts should use sales or other economic measures instead of employment.

The Growing Parts of a Local Economy: Understanding Where Jobs Will Be in the Future

Just as it is important to know the current base of a local economy, the analyst must also assess (a) where the economy is going and (b) where the jobs will be. The process of making assessments of the projected future of local economies is very difficult—and extremely risky for the analyst, who could well be wrong. Local economic development agencies often contract with consultants for these analyses since the consultants have more experience and skills. However, to be a competent consumer of the projections of the consultants, every economic developer needs to understand the core issues.

In this section, we will help planners understand two components of the complex nature of assessing a changing local economy. First, we will describe the concepts and tools to go beyond the location quotient. This involves a dynamic analysis that shows what is growing and what is declining at more than one point in time. Then we will summarize economic projections and some of the principles of taking a trajectory of change into the future.

Rationale for a Dynamic Analysis

Analysts will want to know what is changing in the economy for several reasons. First, they will be able to invest public resources wisely and to allocate public infrastructure for appropriate industrial needs. In addition, knowing which industries are likely to grow most rapidly will allow economic developers to understand which jobs and skills are likely to increase, requiring allocation of job training efforts. The latter objective is central to the strategies of the new Workforce Training Act, which has replaced the Job Training Partnership Act. In fact, local areas are now mandated to project future job needs.

The data needed for a dynamic analysis of the changes in the local economy are the same as for a static analysis, but they need to be collected at two or more points in time. When choosing the points in time, ideally the analyst will consider where they fall in the business cycle. For example, the analyst should avoid creating a distorted picture by comparing economic conditions of an economy at its peak or highest output level to the trough or lowest level of the business cycle. Some industries (appliance manufacturing is an historic example) will suffer temporary economic declines in a trough from which they subsequently fully recover. The changes the analyst would record from observing the data at the trough would inaccurately suggest a structural change had occurred in the economy.

A major tool for the analysis of the dynamic changes in a local economy is a set of tools that has been called shift-share analysis. Although few analysts actually use the entire shift-share approach, parts of it are essential to helping us understand answers to the key question: How is our area changing, and is it becoming more competitive?

Analysis Tool: Shift-Share Analysis

Shift-share analysis is a powerful technique for analyzing changes in the structure of the local economy in reference to the state or nation. Unlike the location quotient, shift-share deals with the changing economy, not just the way it is at one period of time. As with location quotients, the community under study can be as small as an incorporated town or as large as a metropolitan region. At the same time, the reference economy can be as small as a county or as large as the nation. As the reader might anticipate, this type of analytical technique is not useful at the neighborhood level.

The purpose of shift-share analysis is to disaggregate the growth of an industry into its three contributing parts. Again, shift-share can be calculated with employment or other economic data, but employment is usually used. According to the shift-share approach, economic growth or decline in a local area is a combination of three interrelated but distinct parts:

1. Economic growth in a local community benefits from or suffers from the changes in the overall national, state, or regional economy. Regardless of what industry it is, the overall growth or decline has an impact on the locality, and part of the change in employment (or sales, etc.) of a local industry has to do with what is happening in the broader economy. During economic expansion or recession, all
industries are affected to some degree, and the overall direction of the economy is a context for all local firms and industries. The key here is the notion that the “rising or falling tide raises or lowers all boats.” This is called the share.

2. The second factor is the relative change of an industry to the total of all industries. In shift-share language, this is called the proportional shift or industrial shift, which simply means the relative advantage or disadvantage that an industry has relative to the overall economic growth. If communications and health care, for example, are growing faster than the overall economy, they are proportionally more likely to contribute to the growth of the local area. On the other hand, if an industry is declining, such as forestry or agriculture employment, the local area will be shaped by these changes regardless of whether the economy is in expansion or recession. Thus, the second factor shaping the fate of a local community is how well the mix of industries in its area is doing relative to the overall mix of industries in the larger economy. The proportional shift allows one to identify industries that are contributing to growth and decline.

3. The differential shift is what most people use when they use shift-share. The differential shift, sometimes called the competitive advantage, is the difference in the rate of growth or decline in a local industry relative to the rate of growth or decline in that same industry nationally. Thus, in industries where the proportional shift is flat (i.e., the industry as a whole is growing or declining at the same rate as the overall economy), local growth or decline shows that the local industry is doing better or worse than would be expected if the local area were just like the region. However, if the industry in the state or nation is rapidly growing, the differential shift is positive only if the local area is growing faster than the industry as a whole. Similarly, if an industry such as agriculture is losing employment overall in the economy, but the local area is losing employment at a lower rate, then it is advantaged. In short, local areas can be advantaged if they are declining less rapidly in declining industries, but they must be growing faster than expected in growing industries to have a positive differential shift. The differential shift is dynamic in that it looks not at how fast the industry is growing or declining, but whether it is growing or declining relative to the industry overall. To grow more rapidly, one can assume that if the differential shift of a particular industry is positive, then it is more competitive than the reference economy in the same area.

Shift-share analysis can be expressed as:

\[
\text{Employment changes in local industry, 1990–2000} = \\
\left(\frac{\text{ref}00}{\text{ref}90} - 1.0\right) + \frac{\text{emp}00/\text{emp}90 - \text{ref}00/\text{ref}90}{\text{economic growth}} + \\
\left(\frac{\text{loc}00}{\text{loc}90} - \frac{\text{emp}00}{\text{emp}90}\right) \times \text{proportion shift} + \\
\left(\frac{\text{emp}00/\text{emp}90 - \text{ref}00/\text{ref}90}{\text{differential shift}}\right)
\]

where:

- \text{ref}90 = 1990 employment in reference economy
- \text{ref}00 = 2000 employment in reference economy

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\text{emp}90 = 1990 employment in industry i in reference economy
\text{emp}00 = 2000 employment in industry i in the reference economy
\text{loc}90 = 1990 employment in industry i in the local economy
\text{loc}00 = 2000 employment in industry i in the local economy.

A shift-share analysis for Cincinnati is presented in Table 6.4. Data are shown for both 2000 and 2006. Note that the first calculation is the rate of change of each industry, not the share of the total as in location quotients. Two calculations of the rate of growth are required for each industry—one for the metro area county and one for the nation. Some will be found to be positive and some negative. More industries will show positive growth if employment is growing, and most may be negative if employment is declining. It is expected that there will be differences in growth between the local area and the nation, because no local area’s economic structure is identical to the nation’s. Further, it is precisely the local economy’s performance relative to the larger reference economy that shift-share analysis is designed to detect.

Shift-share can be useful to identify the industries in which a local area has a competitive advantage and that are growing faster than would be expected if they were performing just like the national economy. Shift-share analysis can also reveal a local economy’s weaknesses. In the case of Cincinnati, we see that the metropolitan area’s overall growth between 2000 and 2006 was less than one third of the nation’s growth (0.9% versus 3.3%). The differential shift shows which national industries’ employment exceeded or lagged what would have occurred if they had experienced the same rate as the national overall average. The differential shift reflects the difference between the growth rate of a particular industry in Cincinnati and its national growth rate. In interpreting the analysis in Table 6.4, it is important to note the actual employment numbers that are generating the shifts. Many of Cincinnati’s industries grew at lower rates than their national counterparts. The larger the industry, the greater the concern this should generate. At the same time, those industries with larger employment levels in 2000 that also grew at a higher rate than the national industry warrant attention as they suggest a competitive advantage for Cincinnati. Note, for example, the strong differential shifts for “Management of Companies and Enterprises” (9.3%) and “Wholesale Trade” (4.9%).

**PRINCIPLES OF ECONOMIC PROJECTIONS**

In an effort to plan for future changes in the local economy, economic development analysts make projections into the future based on changes that can be determined from present conditions. These can require sophisticated econometric and other analytical strategies for which local economic development
<table>
<thead>
<tr>
<th>United States</th>
<th>Shift Share</th>
<th>Shift Share</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>Agriculture, Forestry, Fishing and Hunting</td>
<td>3,019</td>
<td>423</td>
</tr>
<tr>
<td>Mining</td>
<td>6,068</td>
<td>2,984</td>
</tr>
<tr>
<td>Construction</td>
<td>14,757</td>
<td>1,362</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>51,773</td>
<td>6,630</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>51,669</td>
<td>6,691</td>
</tr>
<tr>
<td>Retail Trade and Transportation and Warehousing</td>
<td>45,342</td>
<td>6,470</td>
</tr>
<tr>
<td>Information</td>
<td>20,314</td>
<td>6,247</td>
</tr>
</tbody>
</table>

**Table 6.4: Calculation of Shift Share, Cincinnati, Ohio, Metropolitan Area**
planners often rely on outside consultants. However, the key to many economic projections is that they build on trajectories from the recent past. To start, economic developers can examine what would happen if the trends observed in the economy over the past decade were to continue into the future. Since the future is never exactly like the past, the recent past is best used as a starting point for analyzing the types of forces likely to change the direction things will take in the future. For example, in an area coming through a downturn in military spending and base closure, it would not be expected that the problems of military cutbacks will be as difficult for this community in the future as they were just after the base was closed. Similarly, communities that benefited from the dotcom boom and bust of the early 2000s knew that these changes were unlikely to repeat themselves in the next decade. On the other hand, communities seeing a steady growth in their tourism or medical industry may well expect that these trends will continue to dominate the future. Looking at previous trends and then examining the extent to which they will not continue into the future is a good reality check for all economic development analysts.

Economic development analysts also can make use of national or larger area projections to plan for changes in the economy. For example, the U.S. Bureau of Labor Statistics publishes five-year projections of which occupations and industries will grow or decline. The analyst can use this to examine the local economy and determine where there may be a need for new training programs and economic adjustment assistance.

Another aspect of economic projections is to consider how a change in the present or near future can be expected to have longer-term effects. This will be addressed in the next section.

### How Do Changes Multiply Through the Economy?

#### The Concept of Cumulative Change

The dynamic quality of the local economy is not demonstrated by a lot of independent industries acting in isolation from each other. Instead, it is a highly interconnected network of economic exchanges, of which consumption or export is only the last step. When one buys a computer, for example, the company that produces it purchases parts from many other companies. The supply companies may not be in the same state or even nation as the company making the computer, but when the computer maker increases sales, so do the supply companies.

For instance, computer makers often buy memory chips from companies specializing in memory, and these companies in turn buy the many things they need to make the chips from yet other companies—silicon, metal contacts, chemicals, plastics, fabricating machinery, energy, packaging, and so forth.

### Table 6.4 (Continued)

<table>
<thead>
<tr>
<th>United States</th>
<th>2006</th>
<th>Percentage Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>108,102</td>
<td>10.05</td>
<td>12.6%</td>
</tr>
<tr>
<td>2,071,818</td>
<td>17,306</td>
<td>10.3%</td>
</tr>
<tr>
<td>111,195,512</td>
<td>113,353,856</td>
<td>9.9%</td>
</tr>
</tbody>
</table>

| Education and Social Services | 73,761 | 86,155 | 14.8% |
| Public Administration | 30,975 | 24,214 | 10.5% |
| Other Services | 33,027 | 36,857 | 11.4% |
| Total | 10,911,319 | 11,051,319 | 0.3% |

#### Notes:

a. Data of growth or decline for each industry is 2006 employment divided by 2000 employment, minus 1 (i.e., 1 or 0 = 0). 0.

b. Proportional shift calculated by applying the rate of change for other industries to the original employment in each industry.

c. Differential shift calculated by subtracting the rate of change for each industry at the national level from the rate of growth of the same industry in the local level (B - C).
Hard disk drive suppliers also supply computer manufacturers, and an increase in purchases of hard disks will also lead to an increase in purchases from a different set of suppliers. Thus, with an increase in computer purchases, all these suppliers and the suppliers of the suppliers will see an increase in their business as well. And, of course, a decline in computer purchases will lead to a decline in the sales of the suppliers.

The fourth question a local economic developer needs to ask, then, is how any particular changes in this interconnected economy will affect the entire economic base. For this, they use the concept of a multiplier to summarize the cumulative change that takes place when one part of the economy either grows or declines. The multiplier is the sum of all the economic activity that results from any part. The multiplier for a local area is the sum of all the economic activity within the local area, with the balance being leakage outside the area. Thus, the local multiplier for a computer industry that has obtained (or lost) an order for an additional $1,000 of computers is as follows: $1,000 plus all the sales that would have been directly and indirectly stimulated by the additional $1,000.

In general, local multipliers are highest in areas where a large proportion of inputs are made locally and in industries in which there are many economic transactions along the way. For example, if the computer manufacturer is located in an area where no parts are made and all parts are purchased from another region, then the additional $1,000 sales will have little additional impact locally. On the other hand, if the computer manufacturer is in Silicon Valley, the local multiplier will be high. As another example, labor-intensive businesses such as dry cleaners have few outside purchases when their business increases—they may need a bit more cleaning fluid (which is reused by the newest machines) and energy, but most of their cost is labor. Their multiplier will be small regardless of where their suppliers are located.

Clearly, economic developers want to understand how changes will multiply through the local economy.

Analysis Tool: Input–Output Analysis

The 1973 Nobel Laureate in Economics was awarded to Wassily Leontief for developing input–output analysis. His first major treatise on the topic in *The Structure of American Economy 1919–1939*, was published in 1941. Leontief viewed the economy as a large system that had industries trading with each other. Given widespread computer and programming availability, a number of software programs are able to calculate local input–output analyses. IMPLAN is one of the best-known programs, and it runs on a personal computer. Although it is complicated and this text does not pretend to explain it, the program is in widespread use by economic development consultants and large economic development agencies.

The framework for an input–output analysis lists the industries in a region along both the horizontal and vertical axes of a table. The industries on the vertical plane are suppliers, and the industries on the horizontal plane are buyers.

To develop a national input–output table, a lot of firms were interviewed to find out what was needed to produce a dollar’s worth of product. Because a typical firm buys from a limited number of industries, these were all identified. A firm also buys labor, which was estimated. Similarly, firms sell to a relatively limited number of buyers, which are other industries, and these were identified. Producers also sell to people who are consumers—what is called final demand. The national tables also estimate on average what people will buy when they get additional income. Adding imports and exports, the tables were balanced to represent the total dollar transactions for the entire economy. Then the inputs and outputs were standardized as ratios between zero and one, which can be summarized to provide multipliers.

Input–output analysis starts with a national model and can be adapted to fit local areas. A number of alternative strategies can fit the national data to a local area, but they all work in roughly the same way. Taking the national coefficients, for example, IMPLAN adjusts production levels to fit states and counties based on what is known about the total output by industry in each state and county. IMPLAN balances local economic activity with other areas to total state and national totals, tracing the flow of goods as production increases or decreases. This is done statistically and gives a local area an idea of purchases and sales characteristic of its particular industrial mix.

Input–output analysis generates three types of multipliers that are of great interest to economic development professionals. The first type of multiplier includes just the first-order transactions of what an industry must buy to increase production by $1.00. For example, a pen manufacturer will need to buy certain amounts of plastic, metal, ink, and other materials to make a pen and will also buy some energy, buildings, and machinery. The firm will also hire a certain amount of labor, lawyers, and other business services. The first-order multiplier traces these direct expenditures by the pen manufacturer, and it is the smallest of the three types of multiplier.

The second type of multiplier looks at the input–output consequences of these direct purchases. The firms that sell to the pen manufacturer will themselves have to buy more things unique to their industry in order to manufacture the goods or services they sell to the pen manufacturer. Thus, metal producers will need to buy ore, machinery, energy, and other things. The ink producer will have to buy the graphite, oil, and other chemicals that go into ink. The cascade of purchases goes on in that the ore producers, ink chemical makers, machinery manufacturers, and so on will also have to buy steel, energy,
and other items. In fact, this cycle is nearly infinite, though the indirect purchases quickly become trivial. From a local perspective, this second-order multiplier is reduced to the extent that purchases are made by firms outside the region, and to the extent that outside firms do not buy things made locally.

There is also a third-level multiplier that takes into account another layer of impact. That is, at each step, the dollar increase in sales of pens goes to some part of a dollar in wages to employees, who earn wages with which to buy products and services. When they are purchased, they increase sales as well—of housing, cars, clothing, food, electronics, and so forth. (An average market basket of consumer items purchased by workers in each industry has been developed.) And each of these products or services a worker buys has its own cascade of production inputs.

The construction of the input-output tables did not entail tracking of the dollars spent by all these people who had indirect impacts on the economy due to the increase in sales of pens. Once the input-output table determines how much is spent in each transaction, mathematical models allow efficient calculations of all the millions of transactions until the impact becomes so small as to be uninteresting. The result produces estimates based on the average expenditure for each industry and individual.

**Using Input-Output Analysis in Local Economic Development**

While input-output analysis has many uses in economic development, it can be misinterpreted and lead to unreasonable claims such as overpredicting the final impact of a subsidy to a specific industry. In interpreting results, the analyst should consider the following:

- **Input-output analyses and the multipliers derived from them are based on national models and not on local information.** If a local area has unique industries, this may not be picked up by the national averages used in input-output analysis. For example, a local area specializing in making custom-designed furniture for wealthy clients will not have the same coefficients as the overall furniture industry, which largely grows from imports. This difference is not reflected in local tables.

- **Multipliers at the local level are usually quite low.** For example, many advocates for local industry claim that if a business comes to the local area, it will have a multiplier of three times or more. Therefore, they argue, offering local incentives to attract the firm will result in three times as much local economic activity as is now generated. In fact, rarely are multipliers for a local area above 2.0, and usually these are in the 1.5 to 1.75 range.

- **Multipliers in rural areas are lower than in large metropolitan areas.** In rural areas, few of the inputs that are needed by most other producers are available in the same county or region, so they must be imported from outside, "leaking" dollars out of the local economy. This large amount of leakage means that the multiplier will be very low. In some agricultural areas with seed, fertilizer, and processing facilities in the county, the multiplier for agriculture can be high, but the suppliers usually serve many other rural counties where the multipliers will thus be low. In large metropolitan areas such as Los Angeles, in contrast, a diversity of suppliers will be able to meet most local needs and the multipliers will be closer to 2.0 in many industries.

- **Input-output analysis is available only on a subset of industries, depending on the source and the size of the local area being examined.** The smaller set of industries does not necessarily have the level of detail that a full three- or four-digit analysis would provide, leaving much of the interesting detail unable to be studied.

- **Input-output analysis and multipliers are simply starting points for an economic development analysis, and they need to be supported by interviews and extensive additional analysis.**

Overall, the complex portrait provided by an input-output analysis of the local economy can enhance the economic development profession's understanding of the consequences of different development scenarios.

**Identifying Industrial Clusters: The Most Important Parts of the Local Economy**

**Local Networks of Buying and Selling**

The final analytical strategy for economic development we discuss in this chapter addresses the question of what are the most important parts of the local economy in terms of growth and strength. The typical local economy has a number of highly concentrated industries, several of which may be growing. In addition, many of these may be linked together into a strong local network of buying and selling. Local economic developers have recognized that not all businesses are the same: In terms of their contribution to the growth of the local economy and their potential to create jobs and improve local wellbeing.

Economic developers have adopted the concept of industrial clusters to help them explain and nurture growing economies. A cluster is more than just the largest firms in a local area—it is the network of interrelated firms that buy and sell from the same suppliers, share markets, and are supported by a common specialized infrastructure.

The prototypical cluster is the electronics industry in Silicon Valley. There, a network of electronics firms have a global advantage because they have a critical mass of firms in related fields, they are in proximity to firms and labs developing new technologies so they can learn about and adopt those advances before they become available elsewhere, they benefit from social infrastructure (e.g., universities, research centers, venture capital, and industry associations located nearby), and they have direct access to advantageous marketing channels (Bradshaw, 2000).
Other areas also have strong industrial clusters, but not all clusters are high technology. For example, California's Napa and Sonoma valleys are centers for the wine cluster; agricultural technology is located in the central valley; the apparel cluster is in Los Angeles around the fashion mart; and Sacramento is host to an expanding information technology cluster. Autos are clustered in Detroit; finance is in New York; plastics and rubber are in Akron. Many cities and regions have well-identified and highly visible clusters, but the promise of cluster analysis is to help identify clusters in places where they are not so visible and to help any place become aware of potential sets of industries that can be nurtured as a cluster. The proximity of multiple industries (or what economists call agglomeration) means that they gain benefit from their common location in addition to whatever each firm might be able to do by itself (Bradshaw, King, and Wahltrom, 1999).

Analysis Tool: Cluster Analysis

Economic developers need to (a) understand the clusters in their region and (b) adapt programs to support the diverse needs of the firms in the cluster. To do these two things, clusters need to be identified. For purposes of analysis, industrial clusters can be defined as firms in related industries that:

- are geographically concentrated in a particular region,
- gain a competitive advantage because of their proximity to each other in the region,
- share specialized supplier and buyer (marketing) advantages because of their location, and
- are supported by advantageous infrastructure in the region, such as physical resources (e.g., a port or access to minerals), educational and research advantages (e.g., universities), financial institutions (e.g., venture capital), or labor advantages (e.g., training programs).

These four criteria are common to most definitions of clusters, though there is no agreed-upon methodology or formula for defining a cluster. Indeed, there are some economic developers who favor identification of local clusters by consensus of business and community leaders, not through a statistical analysis. On the other hand, some cluster identification techniques involve complex data analysis and statistical techniques that obscure the relationships that seem central to the concept.

The objective of a cluster analysis is to identify a set of interrelated industries composed of firms that have competitive advantages because they are jointly located in a geographic area. The purpose is not to simply reclassify the NAICS organization of industries so that industries with similar input-output relations are merged. A cluster is thus a set of firms that has a competitive advantage, and it may include firms in just a single two- or three-digit industry, in several industries with similar NAICS codes, or in a wide assortment of industries that cut across many different parts of the NAICS code. The objective of a cluster analysis for local economic development is also to identify emerging clusters of firms that may not yet have enough size to show up strongly in a quantitative analysis. For this reason, if locally available data show that firms form a competitive cluster, but these firms are buried in NAICS codes that do not fully describe their output, the case still can be made for thinking of them as a cluster. For example, locally based arts and crafts production is often classified with individual firms in jewelry, art, tableware, and so forth, and would consequently be buried. On the other hand, artisan crafts may go hand in hand with a tourism industry and be a major economic force. In short, cluster techniques are no better than the data available, and the analyst must think creatively about the network of firms in the local area if the results are to be useful.

Four steps can guide a first-cut cluster analysis:

Step 1. Highly concentrated and competitive industries are the building blocks of a cluster. To construct a preliminary cluster analysis, data from the location quotient and the local differential from shift-share should be calculated for all industries in the local area at the two- and three-digit levels, if possible. As shown above, industries with a location quotient greater than one are concentrated in the local area and probably export their production to the wider area. Also, we showed above that industries with a local differential greater than zero had a competitive advantage of growing more rapidly. These two descriptions of industries, which show strength in the local economy, can be combined to form a four-quadrant table (see Figure 6.2).

![Four-Quadrant Table](image-url)

Figure 6.2 Four-Quadrant Table
which collectively illustrates the findings of a location quotient and shift-share analysis.

Step 2. From candidate industries found in the upper-right quadrant of the fourfold table, clusters can initially be located. It is important at this point to note that concentrated and competitive industries are not necessarily also clusters and that all parts of a cluster are not necessarily in the upper quadrant. The best strategy is to construct the four-quadrant table for both two- and three-digit industries. The key to cluster analysis is to start with industries that are both concentrated and competitive in the local area and then to refine this categorization—for example:

A. Local industries that are concentrated, but known not to export, should be eliminated. The typical concentrated industry that should be eliminated for this reason is construction, which may be concentrated and growing only in response to local population or economic growth. In growing areas, construction may generate a lot of jobs, but it sells nothing for outside the local area.

B. Industries like transportation and utilities that are supportive of all industries in the area are usually not parts of a cluster, but constitute specialized infrastructure that benefits a wide array of firms.

C. Single firms that dominate an industry are often insulated from other businesses and do not constitute a cluster of firms in related industry. This is most common in rural areas.

After removing obviously inappropriate industries from the top-right category, the analyst should look for related industries that can be combined. Usually by the end of Step 2, a number of candidate clusters will have been identified. These need to be refined further and the top candidates selected. The issue in cluster analysis is not that a set of firms either is a cluster or is not a cluster. Clearly, there are different degrees to which a set of firms gains competitive advantage because of its common location. The economic developer is interested in strengthening these competitive advantages.

Step 3. After the analyst has narrowed the list of concentrated and competitive industries, the next step is to determine whether the candidate clusters do the following: (1) share advantages of having local supplier and marketing chains and (2) have an advantage of specialized infrastructure in the local area. The presence of local supplier linkages can be determined from the input-output table. First, the analyst will determine which suppliers are strongest for a given industry—both locally and in relation to whether local suppliers are more important than external suppliers. These data can be obtained from input-output tables. Identification of suppliers and markets can be understood as an hourglass-shaped set of linkages, with the core of the cluster (identified by Step 2) at the narrow middle point.

The linkage of suppliers needs to be supplemented by an understanding of marketing channels for the products. Marketing drives the concentration of some industries. For example, Scott (1988) showed that the Fashion Mart in Los Angeles was such a major outlet for designer dresses that designers needed to be nearby, as well as sewing shops for top-line fashion. In addition, fabric suppliers, accessory suppliers, and other companies found it to their advantage to be near the top design shops. This specialization continued to stimulate even mass production fashion firms, which needed to be near the designers. Thus, the market gave the local area its advantage. Specialized marketing firms and outlets in other industries play similar marketing roles.

Step 4. Finally, to complete the cluster analysis, one must examine the nature and presence of specialized local infrastructure that can assist in the development of the main cluster industries and their suppliers. The nature and strength of these relationships is unlikely to be determined by quantitative measures; rather, they will be ascertained by examining the type of industry and its business patterns. Around the country, different local infrastructure advantages help shape clusters. Military markets drove the advantages that defense and aerospace companies had in Los Angeles and that shipbuilding companies had around Virginia. Proximity to minerals shapes the location of iron-producing regions, as national parks influence tourism. Transportation routes also are important for some industries including ports and airports, favoring cities on either the Pacific or Atlantic coast. As well, telecommunications lines (e.g., fiber optic cable and access to main hubs of the Internet) give certain areas advantages over places without this infrastructure. Although it is possible for a cluster to develop without an identifiable specialized infrastructure, it is typical that the infrastructure can quickly be determined.

Clusters are important because they form the core of regional economies, and they define the jobs that will be created as the economy grows and changes. Clusters in an area include firms that account for a disproportionate part of their industry in the state, and thus these are a core part of the existing economic base in a region. Furthermore, firms in a cluster are more likely to grow along with the core.

Cluster Case Study: Cincinnati, Ohio, Metropolitan Area

In 2004, the Cincinnati USA Partnership, the economic development arm of the Cincinnati USA Regional Chamber, worked with the University of Cincinnati's Economics Center for Education and Research (2004) to develop an industry cluster identification report. The May 2004 Identification of Industry Clusters for Guiding Economic Development Efforts in Cincinnati USA report used available data, new analysis, and the findings of six prior studies to determine the clusters on which the Partnership should focus its economic development work.

The following summarizes the primary analytical techniques the Economics Center used to identify clusters in the Cincinnati region.
Part 1. The analysis began with a calculation of regional location quotients (LQ) for each two-digit level NAICS business sector code. These data were used to determine in which sectors the Cincinnati region has an apparent specialization, as measured by those with a LQ over 1.0.

The analysis found that the region no longer has its historic economic dependence on manufacturing, with management of companies and enterprises, transportation and warehousing, and wholesale trade each having a higher LQ than manufacturing. A brief county-by-county analysis of jobs distribution was also conducted to garner a better sense of subregional economic patterns.

Part 2. The next step was an analysis of occupational location quotients in 22 classification groups. The occupational analysis is beneficial because it is the best means of assessing the skills base of the current workforce, which impacts the types of jobs that can be attracted or grown, at least in the short term.

The initial occupational analysis found that the Cincinnati region had proportionately more jobs in production and transportation and material-moving occupations.

Further analysis was done of 34 more specific occupational groupings in which the region was found to have a high occupational LQ. This analysis also divided occupations by average wages to focus on jobs with higher earnings potential.

This additional occupational analysis found the region had a high number of jobs in management, marketing, promotions, advertising, and sales professions. Less specialized but also found to be noteworthy were occupations in the fields of finance, insurance, computer programming and science, architecture, engineering, and health care.

Part 3. The next phase of the analysis was to measure job growth rates by sector compared with national trends (from 1990 to 2000). The U.S. Bureau of Labor Statistics' national projected job growth rates (from 2002 to 2012) were also analyzed to determine what areas of the national economy appeared to be healthier than others. The primary finding was that service-based sectors were generally healthier than production-based sectors.

In a similar historic and projected growth analysis of occupations, the report found that the Cincinnati region had enjoyed strong growth in service, executive, professional, and technical occupations. Nationally, future growth was expected to be strongest in management, business, financial, professional, and service jobs. The report highlighted the fact that a number of these required at least a four-year degree for employment.

Part 4. The next phase of the analysis looked at more qualitative factors in its consideration of how sectors related to each other in terms of supply-chain or competitive relationships. The research used the U.S. Department of Commerce Bureau of Economic Analysis's 1997 report, Input-Output Transactions Between NAICS Sectors, and its own factor analysis to identify 29 national clusters.

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Those 29 clusters were analyzed using six measures that the Economics Center determined were a good basis for evaluating the health of a national cluster within the Cincinnati region (based on 2001 data):

- average wage higher than $35,000
- represents at least 1% of total jobs in the region
- exporter (primary customer base extends beyond the region)
- location quotient analysis (comparatively high percentage of total)
- healthy sector nationally, measured by job growth rate
- shift-share analysis (local growth outpaces national growth)

Based on that analysis, the report identified the following clusters for the Cincinnati region:

- Advanced Design Services
- Advanced Manufacturing (metalworking, industrial machinery, and primary nonferrous metals)
- Aerospace
- Biotechnology
- Business Management
- Chemicals and Plastics
- Digital Equipment and Telecommunications
- Financial Services
- Motor Vehicle Manufacturing
- Software and Data Processing

The identified targets were analyzed within the context of occupational groupings to determine whether the existing labor force could support them. The measure of analysis used was the number of "critical occupations," or those that were most difficult to fill because they either required a high-skill level or represented a large proportion of the industry's total jobs. The Advanced Design Services' cluster definition was refined somewhat based on these findings, but otherwise this analysis did not impact the identified clusters.

Part 5. To validate and further refine the cluster definitions, the list of identified clusters was compared with the findings of six previous studies conducted between 1999 and 2003. The scope of these ranged from Cincinnati's home county of Hamilton to the states of Ohio and Kentucky. The Economics Center's analysis determined that all but one of the clusters identified (Advanced Design Services) were included in at least two of the previous studies.

The Hamilton County analysis—the April 2004 Hamilton County Regional Planning Commission report, Hamilton County's Comparative and Competitive Advantages (Hamilton County Regional Planning Commission Community Compass, 2004)—used the four-quadrant concept to illustrate the findings of its location quotient and shift-share analysis (see Figure 6.3).
knowledge expands or new local or national economic realities take hold. While some consistency must be maintained for local target development activities to be effective, local economic development professionals must also be aware of the constant change that is inherent in a regional economic climate.

Using Clusters in Local Economic Analysis

The term clusters has become a common buzzword in economic development analysis and, as such, tends to be overused. Taking this fact into account, the economic developer can use the concept of clusters in several ways:

- **Specialized infrastructure strategies.** In this first strategy, the policy issue is to build the infrastructure that supports the core firms, their suppliers, and marketing. Many economic development programs focus on infrastructure, which looks at transportation, ports, telecommunications, industrial parks, redevelopment, natural resource extraction and availability, and other “hard” resources needed by industry. In addition, finance, legal specialization, regulatory environments, and other “soft” infrastructure may be needed. The most often noted and perhaps the largest contributors to many leading clusters are education and research facilities, such as university labs, technology transfer programs, and higher education degree programs. Specialized research, such as the University of California, Davis’s research on wine, is often credited with being the core around which leading clusters build. Likewise, research programs at the University of California, Berkeley, and at Stanford are often credited with supporting the electronics and biotechnology clusters in California, though others suggest the university role is overstated.

- **Missing link strategies.** The second way policymakers can expand the strength of a cluster or rescue a threatened one is to identify gaps in supply and marketing linkages. If a cluster is not achieving its potential national or global advantage because a key supplier or buyer is missing, steps may be taken to fill the gap. Because it is not the public’s role to establish a firm to fill the open slot, economic development programs often target certain industries using cluster analysis to identify challenges and solutions. In the new economy, economic developers see their role as one of generating the information so that businesses fitting into the supplier or buyer linkages of a cluster are made aware of the advantage of locating in the local area.

- **Human resource strategies.** A third way to expand clusters is to increase the skill and training available to workers. By having a competent workforce, clusters have what they often consider the core resource for being more competitive. Communities can take advantage, for example, of Workforce Investment Act and school—higher education programs, as well as lifelong learning and retraining programs. In addition, human resource skills can be focused on likely growth industries that make every firm more successful. Occupations associated with these growth industries are good targets for training programs.

- **Marketing strategies.** Clusters are most successful when they are well-known. If a cluster does not have market identification, it is most unlikely that it will grow and expand. The public role is to find ways to help identify and promote clusters. Public policies, from government procurement policy to public equivalents of marketing boards, can strongly influence the market for products. Public assistance in marketing ranges from proclamations of leadership.
These four significant policy arenas cut across all types of clusters and provide strategies to address policy opportunities and needs that must be met.

**CONCLUSION**

As we noted at the outset of this chapter, successful economic development is based on a solid analytical framework that accurately describes the local economic context, including the identification of groups that have special needs, the local resources available to address these needs, and the place of the community in the larger regional, state, national, and global context. However, analytical techniques alone can neither fully identify development problems nor help to select the means of solving them. Every local problem presents unique dimensions requiring insight and innovative strategies. The standard techniques presented here can prove useful to planners in suggesting both the point of intervention and ideal steps to be taken. Standard measuring systems help us assess the degree to which the community needs to improve with respect to its goals. After implementing new strategies, we ideally will perform economic development evaluations to determine the effectiveness of the strategies.

**PUTTING IT ALL TOGETHER: CREATING A LOCAL ECONOMIC DEVELOPMENT STRATEGY (PART II)**

**Case Study, Part II**

Now that you have more knowledge about strategies used by development analysts, you may be able to refine your suggestions for West Central Georgia’s economic development plans (see the case study at the end of Chapter 5). First, study Tables 6.5 and 6.6 to get updated job data for different sectors in West Central Georgia compared with the nation, and then answer the following questions:

1. What are the existing sectors in West Central Georgia that are highly concentrated? To what extent are these sectors an outgrowth of the special history and character of the place?
2. Which of these sectors, if any, would West Central Georgia want to protect in an economic development plan? Explain.
3. What sectors in West Central Georgia might be the basis for a cluster? Construct a four-quadrant table.

(Text continued on page 208)