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The Community-Level Impacts of Economic Development: The Role of Local Labor Market Adjustments

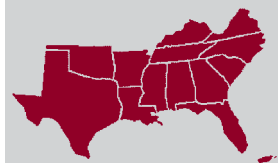
David L. Barkley, Mark S. Henry, and Mellie Warner
*Regional Economic Development Research Laboratory
Clemson University*

Introduction

Communities recruit manufacturing plants and other economic activities (e.g., tourism and retirement developments) with the goal that such activities will provide income and employment opportunities for local residents. These communities also hope that the new businesses will enhance the local tax base and provide revenue sources to support additional public goods and services. The potential benefits associated with attracting a new employer (jobs and income for local residents and tax revenues for the public sector) have contributed to intense competition among communities for new businesses. Much of this competition takes the form of incentives such as tax abatements and infrastructure investments, inducements that may significantly increase public expenditures and/or reduce the tax revenues associated with attracting a new firm. Communities that offer incentives must carefully estimate the community-level impacts associated with new economic activity to ensure that the anticipated increase in tax revenues is sufficient to cover the expected additional government expenditures.

An important determinant of the local impacts of industrial development is the source of employees for the new business. If, for example, employees come from the local pool of unemployed, the new employer and its workforce add little to the cost of local public services (costs may even go down), but local tax revenues increase. Alternatively, if all new employees are immigrants, local costs may increase significantly to provide the required additional public goods and services.

The purpose of this report is to review the short and long-run labor market adjustments associated with employment change for counties. An appreciation of the source of employees for new jobs enables community leaders to better select the appropriate level of industrial incentives and to better plan for changes in demand for public goods and services. The discussion of labor market adjustments is organized as follows. First, we provide an overview of the components of a local labor force and the implications of component change on local income and expenditures for public goods and services. Second, we summarize the results of the Clemson University Community Policy Analysis Network (CPAN) Model for South Carolina county labor markets. This model estimates the allocation of new jobs in a county among the



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Figure 1. Allocation of New Jobs Among Components of the Local Labor Force



components of a county’s labor force (e.g., unemployed, in-commuters, in-migrants, second jobs). Third, we introduce the concepts of “job chains” and “leakages” and discuss the relationship between these concepts and community-level impacts. Finally, we conclude the paper with a discussion of how insights into labor market adjustments may be used to improve public policy in community planning and industrial development.

Labor Force Components

New jobs in a community offer the promise of higher income for community residents. The amount that community income increases, however, is determined by who takes the new jobs. Workers to fill these jobs may come from seven sources or components of the local labor force (Figure 1). Local residents not in the labor force (A) or residents in the labor force but not working (B) may take jobs. Local residents currently working at local or non-local jobs (i.e., out-commuters) may take a second job (C), or they may quit their old jobs to take new ones (D, E). Finally, non-local residents may in-commute (F) or move (in-migrate) to the community (G) to take one of the new local jobs.

Table 1 summarizes the principal local income and public services impacts for the seven labor force components. The reader should note that the principal income effect of interest to the residents of a community is the change in income of individuals who resided in the community before the arrival of the new firm. For this analysis, the residents of the community do not benefit directly if the new jobs are taken by in-commuters or in-migrants.

The local income effect of a new employer is greatest if the jobs are taken by residents who previously were unemployed or not in the labor force (e.g., students, retired individuals, stay-at-home spouses, welfare recipients). In this case, the direct income effect is the income from the new job less any transfer payments lost. Similarly, if an employed local resident takes one of the new jobs as a second job, the direct income effect is the income from the new job. Alternatively, community income will increase relatively little if the new jobs are filled by individuals who previously out-commuted to non-local jobs or by residents who quit a local job (that subsequently was not filled). The change in income in these situations is the difference between the resident’s new and old incomes. Finally, no change in local residents’ income will be realized if the new jobs are filled by in-commuters or in-migrants.

Additional costs for public goods and services also are sensitive to the component of the labor force that benefits from the employment opportunities. If the jobs are taken by current residents of the community (A, B, C, D, E) there will be little or no increase in public expenditures because community size is not affected. Local public expenditures (e.g., social services) may even be reduced when the jobs are taken by the unemployed or welfare recipients. A small increase in local public expenditures may be associated with an increase in in-commuters (F) if the local government now must provide services (roads, water, sewer, police protection, etc.) for the in-commuters as well as permanent residents. A significant increase in public expenditures should be anticipated if new jobs are filled by in-migrants (G). New residents result in additional homes on local water and sewer systems, additional students in local schools, additional participants in local recreational programs, and additional traffic on area roads.

Table 1. Principal Direct Local Income and Public Services Expenditure Impacts Associated with a New Job, Based on Who Fills the Job

<i>Component of Local Labor Force</i>	<i>Direct Local Income Effect</i>	<i>Principal Public Services and Goods Expenditures</i>
A. Local resident not in labor force (e.g., retiree, student, welfare recipient, stay-at-home spouse) takes job	Income from new job	Insignificant unless expenditures for social services are reduced
B. Unemployed local resident takes job	Income from new job above any transfer payments (e.g., unemployment compensation, welfare) the unemployed in individual received	Reduced expenditures for local social services
C. Employed local resident takes second job	Income from new (second job)	Insignificant
D. Employed local resident quits one local job to take new local job	Income from new job above income from previous job	Insignificant
E. Previous out-commuter to non-local job takes local job	Income from local job above income from previous non-local job	Insignificant
F. Non-local resident in-commutes to take local job	No local income effect	Insignificant unless the number of in-commuters is large
G. Individual moves to the community to take job	No direct local income effect	Increased spending required to serve larger population

Local labor markets vary significantly with respect to the sources of workers for local jobs and sources of jobs for local residents. Core counties in metropolitan areas generally rely on in-commuters for much of their work force. In Charleston County, SC, for example, approximately one-fourth (54,000) of the jobs are filled by in-commuters. Alternatively, in suburban counties out-commuters are an important source of local income. Calhoun County (a fringe county in the Columbia, SC MSA) had 3,492 out-commuters in 1990 but only 2,002 individuals who both resided and worked in the county. Another 1,059 were in-commuters. Finally, some rural counties are relatively self-sufficient with respect to labor needs. Union County, SC, reported 12,374 jobs in 1990, 11,201 of which were taken as first or second jobs by county residents.

Distribution of New Jobs

A methodology for estimating the distribution of an employment shock among the components of a local labor market was developed by the Community Policy Analysis Network (CPAN), a multi-state, interdisciplinary team of community development researchers and extension specialists [7,8]. To demonstrate how the program works, short-run and long-run CPAN models were estimated for South Carolina, where the short-run model limits local population change while the long-run model permits population to adjust in response to the

Table 2. Components of Local Labor Force, Relationships Between Labor Force Components and Data Sources

<i>Component</i>	<i>Definition, Data Source</i>
1. Employment, jobs ^a	Number of full- and part-time jobs in the county (U.S. Bureau of Economic Analysis: Regional Economic Information System)
2. Resident workers	Number of people who both reside and work in the county (U.S. Census: Journey to Work)
3. In-commuters	Number of people who work in the county but reside outside the county (U.S. Census: Journey to Work)
4. Out-commuters (OUTCOM)	Number of people who reside in the county but work outside the county (U.S. Census: Journey to Work)
5. Employment, people	(resident workers) + (in-commuters)
6. Unemployed	Residents of the county in the labor force but not employed inside or outside the county (U.S. Census: Journey to Work)
7. Labor force	(employment, people) + (out-commuters) - (in-commuters) + (unemployed)
8. Working age population	County population aged 16-65
9. Second job	(employment, jobs) - (employment, people)

^aAbbreviation for the component that may be used in later tables.

new employment opportunities. An overview of the Clemson University CPAN models is provided in Barkley, Henry, and Warner [2].

The results of the CPAN models were used to estimate county level changes in labor force components resulting from a simulated increase in a county’s jobs by 1,000, where the 1,000 includes the jobs at a new employer plus additional employment opportunities at related businesses (multiplier effects). The simulations provided estimates of changes in labor force components (unemployed, second jobs, in-commuters, out-commuters, new labor force members) for each of the 46 South Carolina counties. Definitions of the labor force components are presented in Table 2, and Table 3 provides the means of the estimates for the state’s 46 counties for the short-run and long-run simulations.

Short-Run Changes. The Clemson University CPAN model predicts that, on average, a “shock” of 1,000 new jobs in a county will result in a short-run net increase of approximately 790 jobs. The short-run increase in jobs (including the multiplier effects) is less than the 1,000 jobs created at the new and related businesses. This difference (790 vs. 1000) reflects jobs left unfilled when workers moved to new jobs and those jobs eliminated because local wages increased as a result of new business activity.

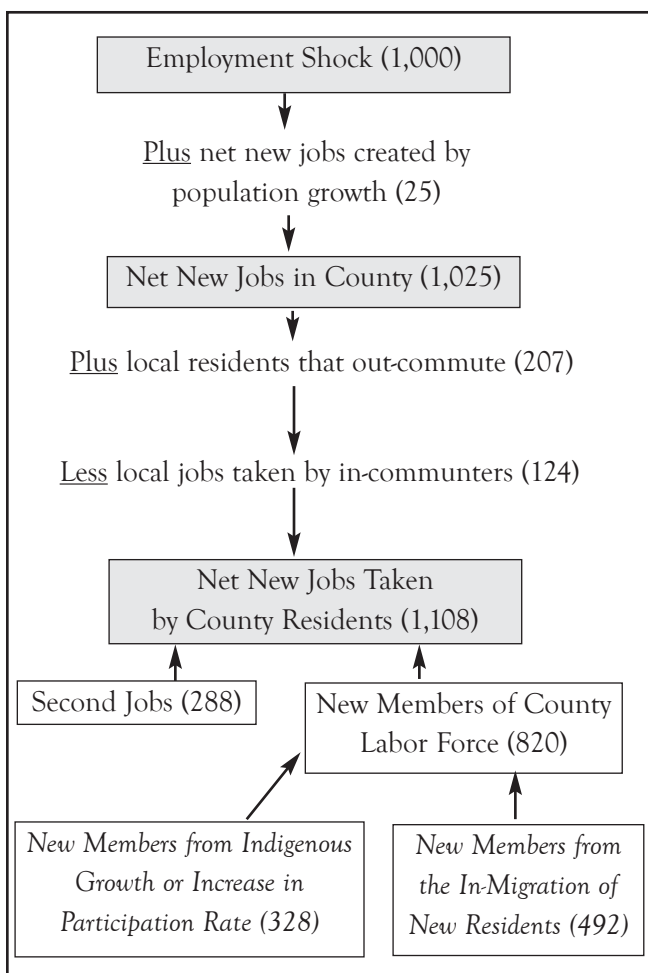
The 790 net increase in jobs was filled primarily from two sources: 350 residents took local jobs instead of out-commuting to work, and 301 residents took second jobs. Of the remaining 139 jobs, three were taken by the previously unemployed, five by in-commuters from outside the county, and 131 by new members to the labor force (in-migrants or residents not previously actively seeking work). Since the short-run impact was limited primarily to reduced out-commuting and more second jobs, county population increased little, and there was minimal additional demand for public goods and services.

Table 3. Simulation Results for an Employment Shock of 1,000 Jobs, South Carolina Counties

Change in County Labor Market Component	County Averages	
	Short-Run Model	Long Run Model
Out-commuters	-350	207
In-Commuters	5	124
Labor Force	131	870
Second Jobs	301	288
Unemployed	-3	50
Jobs in County	790	1,025
Working Age Population	----	1,141

Long-Run Changes. A “shock” of 1,000 new jobs resulted in an average of 1,025 net new jobs in the long run, the additional 25 jobs reflecting new employment opportunities created by population growth. The principal component of long-run employment change was the increase in the local labor force (county average for the state equaled 870). Additional individuals in the county labor force resulted primarily from the in-migration of new workers and their families and the growth of the indigenous population. The increase in the number of residents who out-commuted (207) or who were unemployed (50) also was attributed to the population growth stimulated by the job “shock.” Labor force growth was a significant component of long-run county employment change; thus, counties should anticipate higher public service expenditures to accommodate the new residents.

Figure 2. Average Long-Run Effect of Employment Shock on County Labor Market, South Carolina



Who Benefits? Figure 2 summarizes the average long-run county-level impacts associated with attracting a new business with 1,000 jobs. The shock of 1,000 new jobs resulted in a net increase of a little over 1,000 jobs; however, of greater importance from a local economic development perspective is the net increase in jobs held by county residents (regardless of where the jobs are located). Net new jobs for county residents were estimated as net new jobs in the county less the increase of in-commuters plus the increase of out-commuters. In this scenario, net new jobs for county residents were approximately 1,100, indicating a relatively large increase in the number of residents that out-commuted to work. Many (820) of the net new jobs for county residents were filled by individuals new to the county labor force (in-migrants, individuals previously out of the labor force, or additions from indigenous population growth). If most of the new labor force members were in-migrants, then county residents benefited relatively little from the new activity. That is, the income benefits from attracting a new business were realized primarily by “outsiders.” If so, high reported numbers for jobs at new businesses (1,000), job growth in the county (1,025), and growth in county residents with jobs (1,108) disguised the fact that few of these jobs were filled by the original local residents.

How many of the new members of the labor force will be in-migrants? The share of jobs taken by current residents versus in-migrants will vary depending on characteristics of the new employer and county.

For example, if the employer required job skills not available locally, then much of the increase in the labor force will be through in-migration. Similarly, the larger the employment “shock” and the more rapid the rate of employment growth at the new activity, the more likely the jobs will be filled by in-migrants.

An estimate of the “average” allocation of potential new labor force members between in-migrants and county residents is provided by the Census components of population change (natural increase versus net migration). From 1990 to 2000, South Carolina counties reported population growth of 525,702; 210,785 (40%) from natural increase and 314,917 (60%) from net in-migration. Thus, on average, approximately 60 percent of county-level population growth in South Carolina was attributable to the attraction of new residents. Using the 60 percent average, the 820 jobs taken by new members of the labor force were allocated as 492 to in-migrants and 328 to local residents previously not in the labor force.

Job Chains and Leakages

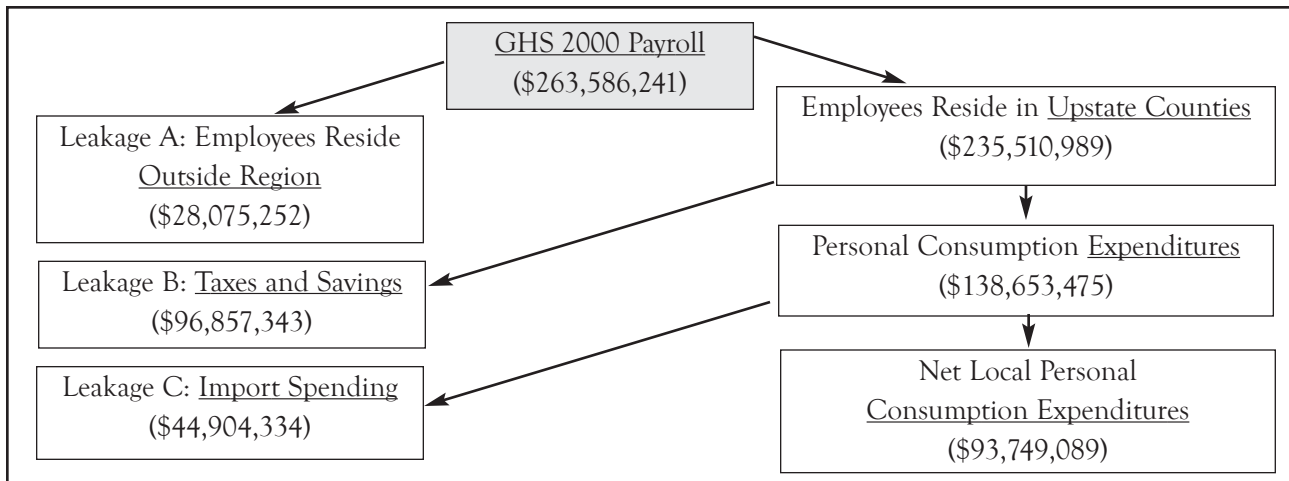
The CPAN model demonstrates that a simple accounting of jobs anticipated at the new firms (plus those at linked businesses) will likely: (1) underestimate the long-run increase in jobs held by county residents and (2) overestimate the number of original county residents that benefited from the new jobs. Similarly, a simple accounting of wages and salaries paid at new jobs will significantly overestimate the change in county income attributable to the new employer. A more accurate estimate of the “income effect” of an employment shock requires that wages and salaries be adjusted for job chains and leakages.

Job Chains. The net income effect of an additional job depends on the characteristics of the individual taking the new job (e.g., employed locally, unemployed, in-migrant) and what happened to the job previously held by the individual [5]. The concept of job chains suggests that the welfare gain to the community from a new job is the change in income realized by a resident who takes the job plus the increase in the income of the individual who filled the job vacated by the new employee at the new business, and so on down the chain. The job chain stops (in terms of measuring welfare gain for a specific community) when a job in the chain is taken by an in-commuter or in-migrant. Examples of three chains for a new job (salary = \$40,000 per year) are provided in Figure 3. In example 1, all links of the chain are filled by county residents, and the sum of individual income gains (\$5,000 + \$10,000 + \$25,000) equals the salary of the new job (\$40,000). In this situation, the welfare gain to the county from the new job equals the salary of the new position. Example 2 also starts with a local

Figure 3. Job Chains in the Local Labor Market: Implications for Local Benefit from Economic Development

Examples	Net Change in Income of Local Residents
<i>Example 1. New Job Pays \$40,000/year</i>	
New job taken by local resident A, A leaves job paying \$35,000/year	→ \$5,000
Resident A’s old job is taken by resident B, B leaves job paying \$25,000/year	→ \$10,000
Resident B’s old job is taken by resident C, C was previously unemployed or not in the job market	→ \$25,000
Total increase in income of community residents (\$5,000+\$10,000+\$25,000)	→ \$40,000
<i>Example 2. New Job Pays \$40,000/year</i>	
New job is taken by local resident A, A leaves job paying \$35,000/year	→ \$5,000
Resident A’s old job is taken by in-commuter or new resident to community	→ \$0
Total increase in income of community residents \$5,000	→ \$5,000
<i>Example 3. New Job Pays \$40,000/year</i>	
New job is taken by an in-commuter or new resident to the community (in-migrant)	→ \$0
Total increase in income of community residents	→ \$0

Figure 4. Derivation of Net Local Personal Consumption Expenditures: Greenville Hospital System (GHS) and the Six Upstate Counties



resident taking the new job and realizing a \$5,000 increase in income. However, the resident’s old job is filled by an “outsider” and the chain stops with a welfare gain to the community of only \$5,000. Finally, in example 3, an outsider takes the new job, so no local job chain exists and no community welfare gain is realized. An exact accounting of welfare gain requires the tracing of the job chain associated with each position at the new firm. However, in the absence of such information, Felsenstein and Persky suggest that “. . . the estimate of welfare gains should be set at about 47 percent of total new wages” [5].

Leakages. A second consideration regarding the income benefits of a new business is the leakages of income and spending outside the community. In the case of cities, counties or metropolitan areas, these leakages can be significant. For example, Figure 4 summarizes the derivation of net local personal consumption expenditures for Greenville Hospital System (GHS) employees for the six county Greenville-Anderson-Spartanburg, SC MSA [1]. The 2000 GHS payroll was approximately \$264 million, of which \$28 million was earned by nonresidents and \$97 million was withheld for taxes and savings (e.g., retirement accounts). Of the remaining \$139 million of personal consumption expenditures, \$45 million was allocated for import spending. In sum, only \$94 million, or about 35 percent of GHS payroll, was used for local consumption expenditures. An even smaller share of payroll would be allocated for local spending if the analysis were restricted to the home county of GHS instead of the six county MSA.

Summary and Conclusions

Industrial development and the resulting residential growth create positive and negative impacts for the host community. An accurate estimate of these impacts is crucial to designing the appropriate incentives programs and preparing for the likely effects on public goods and services.

One scenario of the consequences of attracting a new business is that all new jobs are taken by local residents who previously were unemployed or not in the labor force. Under this scenario, economic development provides significant positive net gains to the community; gains equal the value of new payroll (including multiplier effects), and public costs remain fixed or may even go down. This best case situation often is used to justify large financial incentives or expensive public works projects in the name of economic development.

The CPAN model for South Carolina counties indicates that the average long-run net gains associated with an employment shock are smaller than the best case scenario. First, a “shock” of 1,000 jobs was estimated to provide only 616 net new jobs for individuals who were residents of the county before the “shock” (288 second jobs plus 328 jobs for residents previously not in the labor force). The remaining jobs were filled by “outsiders” (in-commuters and in-migrants).

Second, the long-run impact on industrial development is an increase in community size. The CPAN model predicts that 1,000 new jobs will lead to the in-migration of approximately 490 workers and their families. Therefore, communities should anticipate significant new expenditures for public goods and services associated with new residential development.

In sum, the findings of this study indicate that evaluations of local industrial development efforts must go beyond simply counting jobs and payroll. Our analysis of South Carolina counties demonstrates that the income effects will be exaggerated and public costs underestimated if local labor market considerations are not

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included in the evaluations. Inaccuracies in measuring local costs and benefits may result in the promotion of economic development programs that reduce the overall welfare of community residents.

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David L. Barkley and Mark S. Henry are professors in the Regional Economic Development Research Laboratory at Clemson University. Mellie Warner is a research associate in the Regional Economic Development Research Laboratory at Clemson University. For more information about this topic, contact Barkley at 864-656-5797 or DBRKLY@clemson.edu.

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Box 9656
Mississippi State, MS 39762
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For more information, contact:
Lionel J. Beaulieu, Director
(ljb@srdc.msstate.edu) or
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