



IMPACT OF ECONOMIC DEVELOPMENT:
A COMMUNITY'S GUIDE TO UNDERSTANDING THE
IMPACT OF A NEWLY LOCATED BUSINESS

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South Carolina Department of Commerce | Division of Research

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INTRODUCTION

The location of a new facility in a community produces a number of impacts on that community, resulting in additional employment, increased tax revenues, growth of support industries, and increased monetary flows in the economy due to increased spending. Growth can also result in increased needs for government services and infrastructure to support the growth. Understanding these changes and accounting for them is one primary step in evaluating the appropriateness of development decisions for a community.

New development spurs new transactions, not only among producers but also among suppliers and, ultimately, the final consumer. These effects of new development are described according to the type of impact they have—direct, indirect, or induced.

- **Direct:** Effects attributable solely to the production of the initial product or service.
- **Indirect:** Effects not directly attributable, but supporting the production of an initial product or service through materials and supplies, spanning across industry sectors.
- **Induced:** Effects caused by the stimulation of activity as a result of changes in local income that come as a result of the direct and indirect impacts.

The attempt to quantify the totality of these effects is achieved through a metric known as a multiplier. For instance, if an industry has an employment multiplier of 1.7, then a new facility that directly employs 100 people will spur the creation of a total of 170 new jobs—100 directly at the facility and 70 at suppliers, vendors, and service providers.

Understanding the effects of development is essential to analyzing projects and making wise development decisions. The process of evaluating the effect development projects will have on state and local communities is called impact analysis. Two types of impact analysis exist—fiscal and economic.

- **Fiscal Impact Analysis:** Impact of economic development projects on the state and local governments' revenues and costs.
- **Economic Impact Analysis:** Impact of economic development projects on the economy (incomes and employment).

This paper will explain fiscal and economic impact analyses, including the differences between the two. It will then outline considerations to be used in employing each of the methods to gauge new economic development. Most importantly, it will stress the need to utilize each as a single tool among many in making informed, comprehensive development decisions.

FISCAL IMPACT ANALYSIS

The location of a new business in a community brings with it both associated benefits and costs. Fiscal benefits are the increased revenues to the local government in the form of taxes and fees. Fiscal costs are the expenditures the government incurs due to increased services provided to support the new business and subsequent activities. A fiscal impact analysis evaluates the government's benefits and costs associated with new development.

The results of a fiscal impact analysis could be either positive or negative. If the analysis is positive, the new development will generate more revenues for the state and/or local government than it will incur in costs. The community can subsequently improve services or reduce taxes. A negative fiscal impact indicates the new development project will incur costs greater than the revenue it generates, causing the community to choose between increasing taxes, cutting services, or finding additional funding sources.

Fiscal impact analyses can account for direct revenues and costs alone or they can account for multiplier effects as well, that is the added effect of indirect and induced employment and income on government revenues and costs.

FISCAL BENEFITS

In South Carolina, government revenues (fiscal benefits) from economic development are generated through two means—the new business and the employees of the new business—through the following:

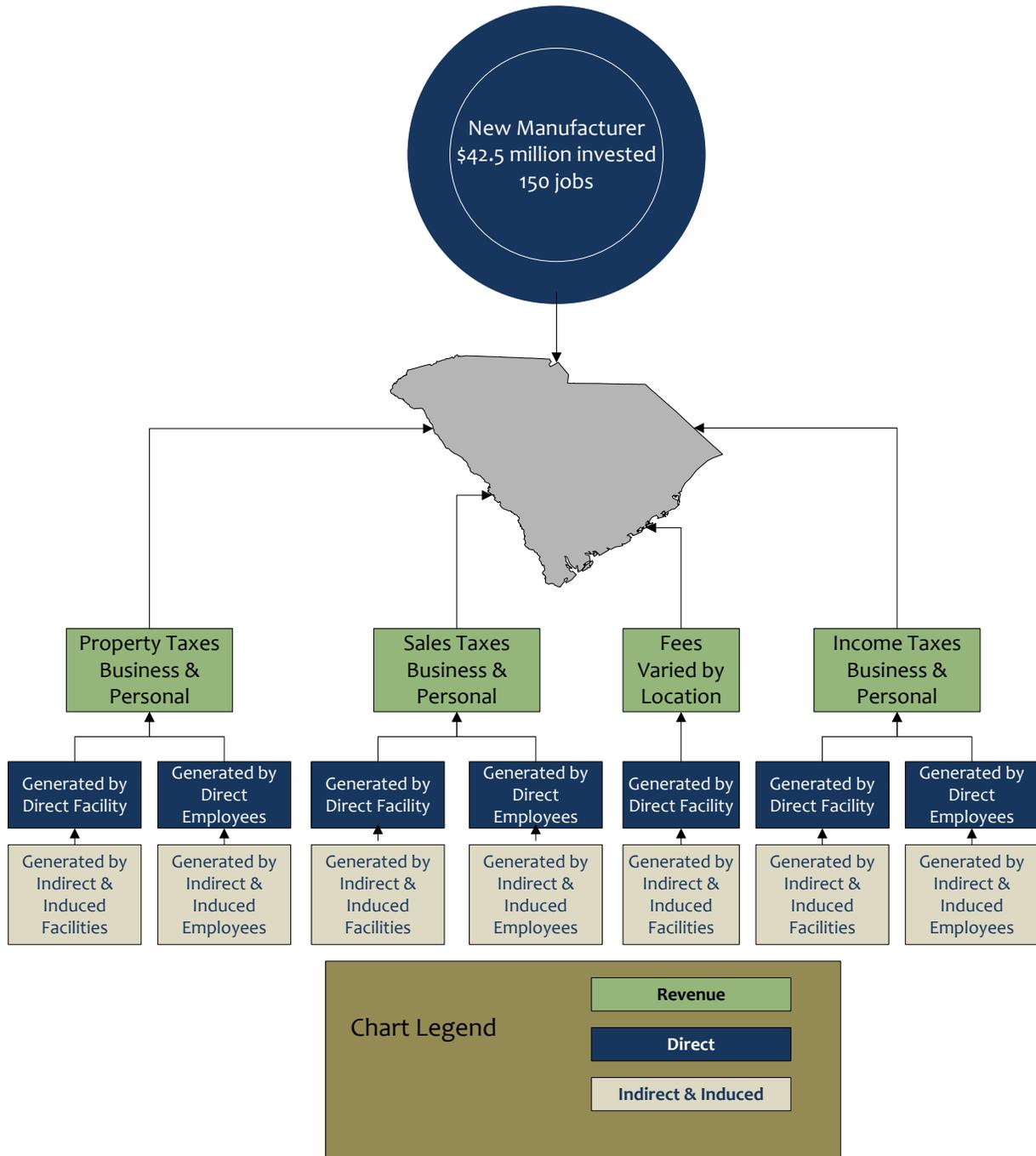
- *Income Tax (Corporate and Individual)*: collected at the state level only,
- *License Fees*: collected at the state level and at the local level depending on the county,
- *Sales Tax*: 6% collected at the state level,
- *Local Option Sales Tax*: between 1 and 2% if collected at the local level, and
- *Property Tax (Commercial and Residential)*: collected at the local level only.

In addition to the direct impact, for every business that locates within a community, indirect and induced business activity results to support the primary business. These indirect businesses and their employees will also pay taxes in the same manner as described above, creating a domino effect of additional revenue to the state and community.

Figure 1 illustrates the source of revenues generated from a business locating in South Carolina. Direct activities of the business as well as indirect and induced revenues are shown.

The capital investment and job assumption represents a hypothetical scenario created to illustrate fiscal benefit. The revenue categories outlined in the diagram provide general information on sources of revenue and do not make assumptions on amounts of revenue that each category provides.

Figure 1: Sources of Fiscal Revenues from New Development



FISCAL COSTS

In most states and municipalities, the primary government expenditures (fiscal costs) of new economic development are incurred from the following categories:

- *Education costs for new residents migrating into the community:* Estimation for education costs varies based on the type of new household being created. A new retirement community obviously would create households not requiring education in the public school system. However, a corporate headquarters with various professional and technical jobs may bring new households comprised of families with children, putting an increased demand for educational services.

The National Resources Defense Council cautions local developers to consider these factors when making estimates for education costs. If the current pupil per household average were applied to the retirement example above, the education costs would be overestimated for that particular development. The average also may be lower than needed for a corporate headquarters scenario, underestimating the cost to educate the new children in the community.¹

- *Utilities and infrastructure costs to support new business and residents:* Utilities and infrastructure services can be a complex cost to measure for the local economic developer. Complexity in estimating these costs occurs when trying to determine if the service will be a capital expense for the entire community or whether the cost is project-specific. In order to avoid over or under estimation of utility and infrastructure costs, local economic developers need to have the following information at their disposal:
 - The amount of capacity that exists prior to the project locating in the community.
 - The financing method of the current infrastructure by the community. If the infrastructure is paid for, then no accounting for infrastructure cost will be needed in the new project. However, if infrastructure is still an expense for the county, the portion that the new business will use will need to be charged to the project in order to get a more realistic impact analysis from the project. The community must determine both past and projected growth patterns to determine how to charge for the existing capacity.
- *Government services at the state and local level to support new residents:* Services include Government Administration, Public Safety, Health Services, Social Welfare, Court Systems, and Recreation/Libraries.
- *State incentives – statutory and discretionary - to benefit the new business (subject to negotiation).*

¹ Natural Resources Defense Council, *Developments and Dollars: An Introduction to Fiscal Impact Analysis in Land Use Planning*.

- *Local incentives – statutory and discretionary - to benefit the new business (subject to negotiation).*
- *Employment training incentives (i.e.-readySC™) to benefit the new business (subject to negotiation).*

As with benefits, these services are needed not only by the businesses, but also by the employees of the business as well as residents of the community. Subsequently, for every business that locates within a community, indirect and induced business needs result to demand services from the community.

Figure 2 illustrates the source of expenditures required as a result of a business locating in South Carolina. Direct as well as indirect and induced services are illustrated. As before, the capital investment and job assumption is a hypothetical scenario.

FISCAL IMPACT METHODOLOGY & MODELING TOOLS

Methodology

A fiscal impact analysis essentially evaluates the budget of the municipality and attempts to estimate the effect of new development on it. Several different methods exist to estimate changes to the fiscal costs and revenues. The four most common methods are defined below.² Each has strengths and weaknesses, and each could provide varying values based on identical input parameters.

Average Per Capita Method: Divides the existing total budget (or individual budget categories) by the existing population (or housing units) in the jurisdiction to determine an average per capita or per household cost for the jurisdiction. This is the simplest method, but can be the least reliable method.

Adjusted Per Capita Method: A variation on the Average Per Capita Method that allows the local developer or analyst performing the impact analysis to estimate how the new development may affect per capita or per household costs. This method should be used with caution because it is based heavily on subjective judgment of the local official.

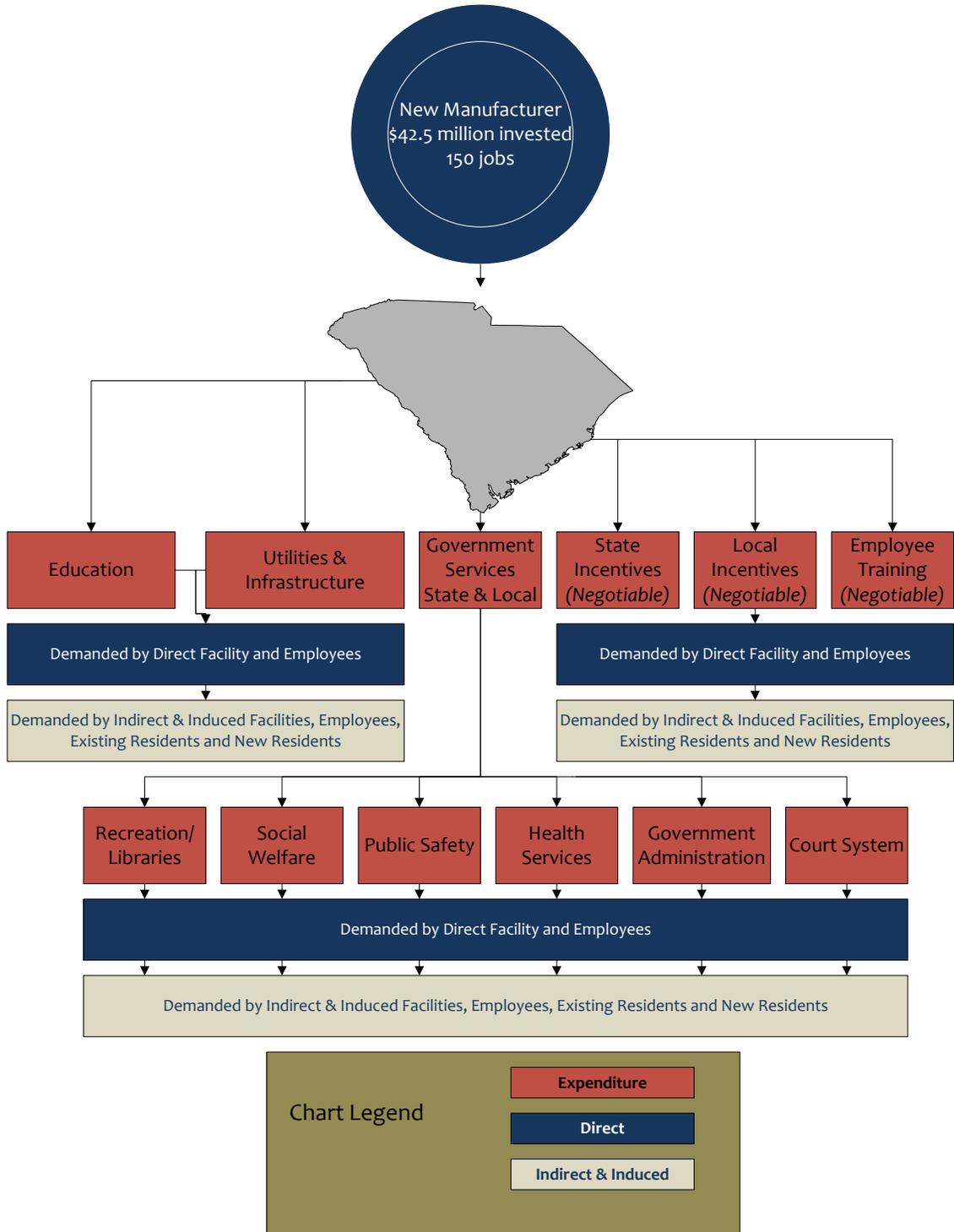
Disaggregated Per Capita Method: “Unbundles” a local budget by estimating the costs and revenues separately for each of the jurisdiction’s major land use sectors. This method can provide good estimates if the proper weights and distribution for residential and non-residential revenues and expenditures are known.

Dynamic Method: Applies statistical techniques to time-series data from the jurisdiction and estimates how much of “this” (such as sales tax revenue per capita) a jurisdiction can expect to get from “that” (such as per capita personal income) generated from new development.

² Ibid.

This method requires more time and expertise than the other methods and is more data-intensive.

Figure 2: Sources of Fiscal Expenditures due to New Development



Modeling Tools

A number of entities have developed automated fiscal impact analysis tools that calculate estimated fiscal impacts based on user-entered inputs. Three such modeling tools are described.

- The South Carolina Economic Developer's Association (SCEDA) Cost/Benefit model was designed by a committee of state and local economic development professionals. The group's intent was to design a model intricate enough to assist state and local officials with decisions regarding the value of economic development projects yet simple and easy to use. The Excel-based model allows local economic developers the ability to see costs and benefits of a project with and without state and local benefits, providing a way to run various scenarios. It provides both fiscal and economic impacts for a project.
- WebLOCI™ is a web-based local government fiscal impact tool developed by the Georgia Tech Enterprise Innovation Institute. The tool provides estimates of annual net revenues accruing to local governments as a result of a new business locating within jurisdictions. WebLOCI™ estimates both net fiscal and economic impacts.³
- The Federal Reserve Board's Fiscal Impact Tool (FIT) is Excel-based tool that estimates the effects of proposed development projects local government sales and property tax revenues as well as costs.⁴

³ www.webloci.innovate.gatech.edu

⁴ www.federalreserve.com/forms/fiscalimpactrequest.cfm

ECONOMIC IMPACT ANALYSIS

An economic impact analysis attempts to quantify the effect of new development projects on the state or local economy, specifically the incomes and employment of residents. By nature, economic impact studies show positive results because they enumerate the effects that job and income increases have on the local economy but do not account for either monetary or non-monetary costs incurred by the community .

Unlike many fiscal impact analyses which often estimate direct effects alone, economic impact analyses typically estimate the total (direct, indirect, and induced) effects of the new development on the economy. More and more, however, fiscal impact studies are including indirect and induced effects in their analyses, borrowing multipliers from economic impact tools.

ECONOMIC IMPACT MODELING TOOLS

Several tools and programs exist that can more accurately predict economic impact of a facility locating in a community.

The SCEDA model provides a high-level economic impact estimate through multiplier employment and dollar amount estimates to the local economy.

IMPLAN is a software package and database for estimating local economic impacts, available from Minnesota IMPLAN Group, Inc. In conducting the latest economic impact study of BMW to the South Carolina economy, Woodward and Guimaraes at the University of South Carolina, Moore School of Business utilized IMPLAN to determine the economic impact BMW has had on the state.⁵

IMPLAN offers detailed data on 508 sectors and provides a model that calculates accurate employment, income, output and value added multipliers based on specific capital investment, job creation and sales data. Many state and local governments and universities purchase the IMPLAN products to give accurate pictures of economic impact.

Other models and data sets are available for purchase from the Bureau of Economic Analysis (RIMS II) and Regional Economic Models, Inc. (REMI).

⁵ Woodward, Douglas P. and Paulo Guimarães. (2008) “BMW in South Carolina: The Economic Impact of a Leading Sustainable Enterprise.” University of South Carolina, Moore School of Business, Division of Research.

DECONSTRUCTING MULTIPLIERS

New development spurs new transactions, not only among producers but also among suppliers and, ultimately, the final consumer. These effects of new development are described according to the type of impact they have—direct, indirect, or induced. The attempt to quantify the totality of these effects is achieved through a metric known as a multiplier.

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DEFINING MULTIPLIERS

Employment Multipliers

A direct increase of jobs at a facility can encourage an increase of jobs in supporting facilities as well as create jobs within the economy in the service and government sectors. A new facility not only needs the materials to supply their business, but they also need services to support their workers and operations, including food, clothing, utilities, training, shipping and transportation support.

A general way to examine the impact on the economy of the new jobs is through the use of employment multipliers. Bivens⁶ updates a previous 1993 Economic Policy Institute study by Baker and Lee⁷ to describe three effects that produce indirect and induced jobs:

1. **Supplier Effects:** This indirect multiplier predicts the number of jobs created in the industries that supply the primary industry as a result of the primary industry adding jobs. Supplier effects fall into two categories:
 - Supplier jobs that provide materials and components to the primary industry.
 - Supplier jobs that construct and maintain a facility and any equipment within the facility.

⁶ Bivens, Josh. (2003) “Updated Employment Multipliers for the U.S. Economy (2003).” Working Paper, Economic Policy Institute.

⁷ Baker, Dean and Thea Lee (1993) “Employment Multipliers in the U.S. Economy.” Working Paper, Economic Policy Institute.

2. **Responding Effects:** This induced multiplier predicts the number of jobs created in the industries where workers may spend their paychecks as well as general services in the community. Examples of responding jobs include:
 - Jobs created in education to support the community.
 - Jobs created in retail trade to provide food, clothing and materials of residents.
 - Jobs created that support transportation, shipping and logistical needs of all companies in the community.
3. **Government Effects:** This induced multiplier predicts the number of jobs created in state and local government that support community services. By increasing the tax base, the need for government services also increases.

Employment Multipliers by Industry

Bivens provides employment multipliers across various industries, finding manufacturing industries to have generally higher employment multipliers. National employment multipliers are parsed into their various categories for four industries. Each assumes the creation of 100 direct jobs in the primary industry.

Major Employment Multipliers: By sector	
2.91	Manufacturing (direct, supplier, and responding effects)
1.18	Health Services (direct, supplier, and responding effects)
0.88	Retail (direct, supplier, and responding effects)
1.54	Personal Business (direct, supplier, and responding effects)

Manufacturing Employment Multipliers: By subsector	
2.81	All Textiles (direct, supplier, and responding effects)
2.34	Aircraft (direct, supplier, and responding effects)
3.30	Steel (direct, supplier, and responding effects)
1.34	Misc. Industrial Machinery (direct, supplier, and responding effects)

Bivens is quick to point out that the multipliers presented in the report are not perfect forecasts of employment changes for various reasons including the fact that these numbers are static and give a relative level of productivity between industries, not taking into account the impact of innovation in the particular industry.⁸

⁸ Ibid.

Other Multipliers

Bivens defines other types of multipliers within the report in the following ways:⁹

Income Multiplier: Demonstrates the benefits of increased incomes for not only the direct study industry but also other industries in the area. The income multiplier measures the total increase in income in the local economy resulting from a one dollar increase in income received by workers in the exporting industry.

Value Added Multiplier: Provides an estimate of the additional value added to the product as a result of the initial economic activity. This multiplier shows how much value increase suppliers can see in their material as they contribute to the final product.

Output Multiplier: Estimates the total change in local sales, including the initial \$1 of sales outside the area, resulting from a \$1 increase in sales outside of the study area (final demand). This multiplier demonstrates how increased demand from outside the community can be especially beneficial and add economic impact to a community.

Below are examples of various output multipliers for South Carolina from the Minnesota IMPLAN Group:

Various Output Multipliers: By sector

1.68	State and Local Government (direct, indirect, and induced effects)
1.72	Highway Maintenance (direct, indirect, and induced effects)
1.73	Management of Companies (direct, indirect, and induced effects)
1.81	Agriculture and Forestry Support (direct, indirect, and induced effects)
1.82	Colleges and Universities (direct, indirect, and induced effects)
1.86	Sawmills (direct, indirect, and induced effects)
1.87	Electron Tube Manufacturing (direct, indirect, and induced effects)
1.99	Veneer and Plywood Manufacturing (direct, indirect, and induced effects)

CAUTIONS ABOUT MULTIPLIERS

While multipliers provide a valuable means of evaluating the full effect of a change in economic development, their use should be approached cautiously. Multipliers are one of the most abused mechanisms of impact analysis—both purposely and inadvertently—for a number of reasons.

State and regional multipliers are often applied to local level. Supply chains, vendors, employees, and consumers live throughout the region, state, nation, and globe. Thus, the

⁹ Ibid.

portion of the multiplier that can be applied to the local level is typically only a fraction of the larger multiplier.

Multipliers are often applied to benefits but not costs. This omission is particularly important in fiscal impact analyses, which are specifically designed to compare revenues to costs.

Benefits can easily be double-counted. For instance, the impact of a new manufacturing facility on one side of town would account for additional residents, retail, and commercial activity generated as a result. A new mixed-use residential and retail development on the other side of town may develop a similar impact analysis, not considering the fact that some of its activity is a result of the manufacturing facility.

Leakages of wages, salaries, and jobs occur. A tendency exists to assume all jobs will be filled by local residents and all income will be spent locally. This situation is not always the case, as many employees commute from other areas, and many local residents spend money outside of the jurisdiction.

Multipliers assume existing full capacity. Multipliers are calculated based on the assumption that the economy is operating at full capacity. That is, the local hardware shop or fast food restaurant would be unable to absorb any additional customers with their current staff. Instead, they would be forced to hire additional labor to fill additional demand.

Opportunity costs are not considered. Fiscal and economic impact analyses do not evaluate or compare the benefit of spending public dollars on different projects.

IMPACT ANALYSIS CONSIDERATIONS

LABOR SHED CONSIDERATIONS

Sources of Local Labor

A critical consideration of economic developers in recruiting new business to an area is the availability of workforce to staff the new facility. Barkley, Henry, and Warner¹⁰ identify seven potential categories within a local labor market from which new jobs can be filled.

- A.** Local residents not currently in the labor force.
- B.** Local residents who are unemployed.
- C.** Local residents who are currently employed and take second jobs.
- D.** Local residents who quit local jobs to fill new jobs.
- E.** Previous out-commuters to non-local jobs who now fill local jobs.
- F.** Non-local residents who commute into the community to fill local jobs.
- G.** Individuals who move in (in-migrate) to the community to fill local jobs.

The fiscal and/or economic impact will be affected by the source of employees to fill the new jobs. The study points out that jobs filled from categories A, B, C, D and E require little or no increase to government costs (expenditures). In fact, employment from these groups could potentially reduce the amount spent in social welfare.¹¹ Jobs filled from these categories will also provide income that will benefit the local community.

New jobs filled from category F will also cost little to the community. However, they will likewise provide little to no local income effect since the income made by non-local residents will primarily be spent in the communities in which they live.¹²

Category G would be potentially be the most costly to the community, as the resulting in-migration would require increased public spending to support the new households created.¹³

¹⁰ Barkley, David L., Mark S. Henry, and Mellie Warner. (2002) "The Community-Level Impacts of Economic Development: The Role of Local Labor Market Adjustments." *The Southern Rural Development Center*, October 2002.

¹¹ Ibid.

¹² Ibid.

¹³ Ibid.

Job Chains and Leakages

Stakeholders have a universal tendency to assume that all new jobs will be filled from within the community's existing workforce and that all wages will be spent within the same community. This assumption allows the potential for fiscal and economic benefits of new jobs to be grossly overestimated. In order to obtain a more realistic picture of economic and fiscal benefit, job chains and leakages must be considered.

First, a job chain should be examined to see how much wages and salaries benefit a community. When a position is filled at the new facility, another job may be vacated in the community. Another individual may fill this job, vacating another, and so on creating a job chain. The job chain ends once a vacated position is filled by an in-commuter or immigrant.¹⁴ If all new jobs were filled from within the county, the potential for a long, beneficial job chain exists. However, in reality not all the direct jobs will be filled from within the county, which means that at least those jobs and probably others will have a non-existent job chain.

Second, the amount of leakage of wages and salaries should be examined. Leakage demonstrates at least some spending will occur outside the county and add to other local economies. Leakage typically occurs to a greater extent in metropolitan areas where there are more in-commuters.¹⁵ Economic developers will need to objectively examine the new jobs to determine what percentage of in-commuters will be required to fill the jobs.

Changes in Local Labor Market Due to a New Facility

Short Run

Any new jobs created within a community cause what Barkley, et. al.¹⁶ refer to as a “job shock,” providing the community and the local labor market with additional sources of employment and income. Barkley, et. al. modified a Community Policy Analysis Network (CPAN) Model for all 46 South Carolina counties to analyze short-run and long-run responses to a “job shock” of a facility designed to hire 1,000 new employees in a community.

The short-run changes indicated the county would experience a net increase of 790 jobs due to the new facility. The short-run employment was limited primarily to a reduction in out-commuting by residents as well as an increase in residents obtaining second jobs. The county experienced little population growth and little increase in public service costs. The difference between the estimated 1,000 new hires and the 790 actual jobs is a result of unfilled positions (due to individuals switching to the new jobs) as well as eliminated positions (due to increased local wages resulting from new economic activity).

¹⁴ Ibid.

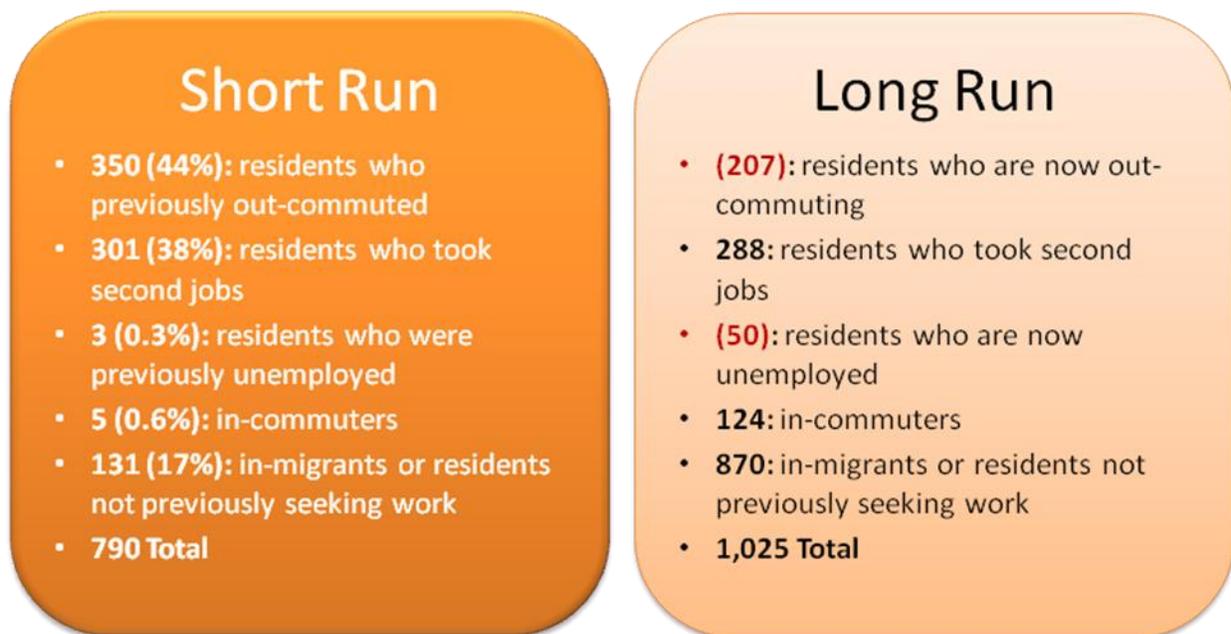
¹⁵ Ibid.

¹⁶ Ibid.

Long-Run

The results of the long-run changes provided a different view of market and population changes. For the “job shock” brought on by a new facility requiring 1,000 jobs, a total of 1,025 net new jobs were created in the county. The results showed that many non-residents benefited from the job increases. The long-run changes also generated 870 new members of the labor force, 60% of them a result of new residents from in-migration and the remaining 40% from increased labor force participation or indigenous population increase. To accompany the increase in labor force, the long run results also show an increase in out-commuters (207) as well as unemployed residents (50). Figure 3 summarizes the short and long-term employment changes.

Figure 3: Community’s Response to a 1,000-Employee “Job Shock”



Source: Barkley, David L., Mark S. Henry, and Mellie Warner. (2002) “The Community-Level Impacts of Economic Development: The Role of Local Labor Market Adjustments.” *The Southern Rural Development Center*, October 2002.

OTHER CONSIDERATIONS

Overlapping Jurisdictions

Many jurisdictions overlap each other, including cities, school districts, counties, and states. Each level provides collects different revenues and provides different services. Impact analyses at each level must not neglect their impact on other levels of government. For instance, the fiscal impact of a city may, individually, be positive. Yet, the impact on the school district may be negative. Both should be considered in totality to obtain a true assessment.

Cumulative Versus Incremental Impacts

Fiscal impact analyses can be performed for single-entity new development projects, larger mixed-use commercial and residential development projects, as well as jurisdiction-wide development planning. For the latter two, development is usually phased and over time. While a single-facility development project may be analyzed from a cumulative standpoint, the phased implementation should be estimated in incremental changes, in which the full benefits may not be achieved for many years. Additionally, pragmatic assumptions regarding the reality of completing and selling all planned units within multi-use developments should be critically evaluated.

Community Characteristics

Each community will experience a different fiscal response to new development dependent upon the characteristics of the community and its stage of growth. Some smaller communities will witness declining per-capita government costs as population increases and economies of scale are met. Larger, fully-built communities may witness the opposite. More rural communities will experience different issues, including infrastructure, as development is typically more spread out than urban communities.

CONCLUSION

Economic Developers must consider multiple factors when determining the benefits of an economic development project to their community. Although capital investment and jobs can easily be quantified, many other costs and expenditures are involved in sealing the deal and supporting it in the future.

Fiscal and economic impact analyses can assist the economic developer in assessing how beneficial the project is for the community, including what level of incentives to offer to win the project or what type of growth in households to expect.

Strengths of Impact Analysis

With consistent methodology and realistic assumptions, an impact analysis can be a valuable tool to assist local economic developers in planning and decision making.

- Impact analysis can bring a level of objectivity into the development decision making process.
- Impact analysis can be used as a tool by economic developers to educate local officials regarding how development actually affects their particular jurisdiction.
- By nature of the data needs of an impact analysis, developers can become more involved in managing data and making decisions for their community.

Weaknesses of Impact Analysis

Based on the methodology used different outcomes may result even when using the same project parameters.

- At best, a particular analysis can be only as good as the information used in performing it. Decisions should be influenced but not controlled by impact analysis.
- Consistent standards for fiscal and economic impact analyses do not exist, either locally, statewide, or nationally. Many jurisdictions may use one methodology for one project and then a different analysis method for another project. Also, laws requiring a fiscal impact analysis vary by location.

Ultimately, impact analyses should be used as one tool in an arsenal of decision-making factors to assist reaching objective conclusions about the development and growth strategies for local communities.