

# Assessing the Quality of Economic Impact Studies

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## Introduction

The number of economic impact analyses produced seems unending. An Internet search lists over 200,000 throughout the world, and that only counted the ones in English. Some authors have substantial training in the field, but the understanding of even basic economics from others is suspect. This article will provide a few straight-forward concepts to keep in mind when evaluating an economic impact study.

Economic impact assessments exist for about anything one can imagine. These include, but are not limited to arts and cultural facilities<sup>1</sup>, concerts and other tourist events<sup>2</sup>, industries, legislation<sup>3</sup>, natural disasters<sup>4</sup>, the opening or closing of military bases<sup>5</sup>, and retail stores<sup>6</sup> and factories<sup>7</sup>, factory automation<sup>8</sup>, sports franchises<sup>9</sup>, universities<sup>10</sup>, wars<sup>11</sup>, pollution<sup>12</sup>, terrorism<sup>13</sup> and spotted owl conservation<sup>14</sup>.

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<sup>1</sup> For example, DiNoto and Merk (1993); Dziembowska-Kowalska and Funck (1999); Gretzner and Oberlercher (2003)

<sup>2</sup> Fleischer and Felsenstein (2002); Gazel and Schwer (1997)

<sup>3</sup> McNicoll and Boyle (1992)

<sup>4</sup> Baade, Baumann and Matheson (2007) for one.

<sup>5</sup> Hooker and Knetter (2001)

<sup>6</sup> Swenson (2005)

<sup>7</sup> Wundt and Martin (1993)

<sup>8</sup> Carlsson (1995)

<sup>9</sup> Lertwachara and Cochran (2007); Noll and Zimbalist (1997)

<sup>10</sup> Siegfried, Sanderson and McHenry (2007)

<sup>11</sup> Stiglitz (2006)

<sup>12</sup> Leontief (1970)

Economic impact studies generally answer one of the following questions:

- What would life be like if the facility/organization/event in question was not here?
- What would life be like if a new facility/organization/event were here?

How are these alternative scenarios estimated?

## Defining “economic impact”

### Traditional Analyses

There are several ways to estimate the value of a facility or an event. Traditional economic impact analyses look at the amount of economic activity generated by a specific event. The economic activity is generally counted as the number of jobs created or lost or the change in income because of the event. The traditional model uses an input-output analysis model, which is a complex system of equations developed in the 1930s by 1973 Nobel Prize laureate Wassily Leontief.

Essentially, the model attempts to determine the amount of inputs from other industries is required to produce the output of the subject industry. Once these interindustry linkages are determined one can estimate the multiplier for that industry in that specific region. Authors of economic impact analyses will refer to three specific effects: The *direct effect* is the initial amount of outside spending that a facility or event will bring in. The *indirect effect* measures the total increase in production of local inputs (interindustry linkages) needed to create the product. The *induced effect* is the amount of spending by employees of both the subject industry and firms producing the intermediate goods.

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<sup>13</sup> Richardson, Gordon and Moore (2007)

<sup>14</sup> Waters, Holland and Weber (1994)

Two multipliers come from these estimations. The short-run (Type I) multiplier is the sum of direct and indirect effects divided by the direct effect. A long-run multiplier adds the induced effect to the numerator. The size of the multiplier is directly related to the number of suppliers (backward linkages) in an area. Note that this type of study does not identify the importance of forward linkages (firms that markets that require a location close to inputs supplied by the subject industry).

The primary software used in input-output studies comes from three private firms: IMPLAN, REMI, REDYN. In addition, the Bureau of Economic analysis calculates industry multipliers for every county in the U.S. (RIMS II). Accurately calculating impacts is not easy, quick or inexpensive. Some Internet sites tried to provide interactive economic impact calculators for estimating the economic impact of airports, the arts, boating, sporting events (in New Zealand), tourism (Michigan), soccer stadiums, and wind plants, but few successfully provide any estimate whatever. Such calculators provide free economic estimates that are extremely easy, provide results immediately, but unless an input-output program is running in the background, these are ballpark estimates. A few of these “ballparks” rival the size of Lake Superior itself.

### **How to spot the overzealous studies**

The first red flag shows up if there is no author, if the contact person works for a lobby group, or if the estimated impact comes from an economic impact calculator. If the impact statement doesn't mention the size of the direct, indirect, and induced impacts, yet another red flag should appear. Finally, if the multiplier is not expressly stated, or if the multiplier is substantially larger than “2”, the study belongs in the “maybe-maybe not” box. The lack of an

author or the use of an interactive economic impact calculator does not guarantee the impact is overestimated. But the lack of someone to personally take ownership of a study, or the absence of documentation to facilitate replication does not inspire faith.

### **Delineate impact area**

Because of the need to determine which interindustry linkages occur within the reference area, the study must specify an impact area. Contiguous counties will generate different multipliers depending on what firms are supplying inputs. Generally, the smallest area in an impact study will be a county because that is the smallest jurisdiction in which the required data is produced. If the economic impacts are narrowed down to one city, the researcher uses the county's multiplier in calculating the effects on the city. This method is more accurate for the larger cities in the county than for smaller ones.

If the purpose of the economic impact study is to solicit tax funding, for efficiency's sake the location of taxpayers should correlate with the extent and location of the spillover benefits from the project. Governments that make use of revenue-sharing (tax money generated from outside their area) to finance projects generally spend more than otherwise<sup>15</sup>. Since part of the costs is shifted to residents of other jurisdictions the perceived cost is lower than the actual cost and a greater than optimal quantity (or larger facility) is funded.

### **Measuring impacts with a spandex ruler: over counting and double counting**

Economic impact studies are supposed to note the increased economic activity stemming from NEW funds injected into the area. A problem in estimating tourist or entertainment impacts

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<sup>15</sup> Inman (2001)

is determining how much will be spent by outsiders. Spending by residents to stay in town to attend an event should only be counted in the rare case where the residents are only in town because of that event. Generally, spending by residents is merely a transfer of spending from one venue to another: restaurants near an athletic event benefit from that event at the expense of restaurants farther away.

Visitor spending is almost always counted as new spending. Theoretically, there are only two situations in which such spending might be problematic: when the visitors are either “Time Switchers” or “Casuals” but few impact studies make this distinction. *Time switchers* are those who were planning to come to the area anyway, but because an event happened, say on June 20<sup>th</sup>, they postpone their visit until that date to attend the event. Had the event not occurred they would have still come and spent their money on something else. *Casuals* are those who chose to go to the event rather than spend time engaged in some other activity, like shopping. Casuals are visitors who would have been here anyway just changed their itinerary to include that event. If expected crowds cause residents to leave town until after the event, the decreased spending from these *event refugees* should be subtracted. To identify and survey time switchers, casuals or event refugees is costly<sup>16</sup>.

Incidences of double counting are often subtle. One may have to scour the appendices to see the subject industry included both total revenues and total spending in the same analysis. The study may not note whether the amount of payroll is subtracted from industry spending while still estimating the induced effect (spending by employees).

Less subtle clues of overzealous impacts are evident in the size of the multiplier used for events or facilities that are underwritten by government. Local tax money is not a new injection. One would have to adjust for the opportunity cost of public funds. For example, say that St.

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<sup>16</sup> Snowball (2004); Snowball and Antrobus (2002)

Cloud decided to build a sports stadium, run and maintained by local government funding as some type of “job creation program.” One method to estimate opportunity cost of tax dollars is to assume the choice is between returning the money to the taxpayers and building the stadium. If we compare the multiplier of spending by households (generally between 1.10 and 1.20) from that of the facility (about 1.005 in the St. Cloud MSA), local tax payers would create and sustain more jobs. The multiplier for our fictitious, government-run sporting arena is negative (1.005-1.10).

### **Supply constraints**

The assumptions that support input-output analysis are legion. One major assumption is the lack of supply constraints in the models. If a \$1 million injection into an industry creates 100 jobs, a \$100 million injection would create 10,000 jobs and a sufficient number of households will find adequate housing so that they can immediately migrate to St. Cloud to work. There are no problems enrolling the children in schools, no increased congestion on roads or in the stores. In addition, if the production of 500 units from Industry A requires 200 inputs from Industry B, Industry B has the capacity to do so.

Even more tenuous is the assumption that some type of tourist event will generate X number of jobs in the hospitality sector. If the hotels, motels, and restaurants would be pretty much booked anyway, the event would crowd out their regular customers in favor of new ones. Only the impact of the rooms that would have been vacant without the event should count.

### **Other ways to measure economic value**

The true value of a facility/organization/event may have little to do with job creation or the amount purchased from suppliers. A second short-run measure of social welfare is based on

the demand for a facility or an event. Consumers' surplus is the difference between what people are willing and able to pay (the demand curve) and the price that they have to pay. Prices pay for events include ticket prices, as well as the cost of travel to the event (which includes babysitters and parking fees, as well as the value of time). The demand for a public facility is based on the demand for events held within the facility. These methods are different from the traditional economic impact assessment, and the estimated values are taken as is. No multiplier is applied to these estimates.

According to Albert Einstein, "Not everything that can be counted counts and not everything that counts can be counted." In a long-run analysis, the existence value of a facility takes primacy, but it is more difficult to measure. People who never set foot in a hospital, for instance, still value its existence. Firms are not attracted to rural locations after the local hospital has closed<sup>17</sup>. Other firms require proximity to an airport. Retirees are attracted to areas with good medical centers and thriving arts areas. Skilled workers and employers who want to attract such workers locate in areas with good schools. To the extent that these draw households and firms to the area, land and housing prices increase, but assigning specific causes to land value changes in a vibrant economy is difficult even without the influence of subprime mortgages.

To measure the long-run economic value of hospitals, airports, arts facilities, or schools, the researcher needs to administer a survey that asks individuals 1) the amount of money that they are willing to pay to keep this facility in the area and 2) the amount of money they would require to be paid so that they are as well-off without the facility as with it. The estimated existence value is somewhere between these two sums. In addition to estimating the willingness-to-pay or willingness-to-accept of households and firms, one must also account for the long-term benefits. Access to good-quality medical care increases long-run employee productivity and

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<sup>17</sup> Goody (1993); Lillie-Blanton (1992); McNamara (1999); Samuels, Cunningham and Choi (1991)

decreases the number of employee sick days. Such access is a sustainable attractor of employers. Similarly, youngsters involved with arts education benefit from enhanced cognitive skills and do better on standardized tests than otherwise. To the extent this is true, current investment in arts education will increase the quality of the future labor force, also beneficial to employers<sup>18</sup>.

## **Summary and conclusions**

Many economic impact studies are done carefully and precisely. Others are done by people who use more creative methods than would pass muster in an economics course. The unacceptably tiny estimates of the former set of studies are seldom provided to the news media. Several red flags to look for when evaluating impact studies include whether it states 1) an author's name and contact information, 2) the size of the area studied, 3) the size of the multiplier, or at least the estimated amount of direct, indirect and induced spending. Projects that use government funding and claim to create jobs must adjust for the amount of jobs that would have been created if households spent the money themselves rather than give it to government to spend for them.

Even the most carefully executed studies may miss the bottlenecks or supply constraints that the input-output programs cannot adjust for. All traditional impact studies may fail to account for the more important valuations of an activity. The existence value of a facility or event may be large for people who never use it. The valuation of this group of individuals is not part of any estimated demand for the project. The estimate of a long-run impact of an amenity on productivity or quality of life most often dwarfs the estimated economic impact based on spending.

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<sup>18</sup> Seaman (2003); Snowball and Antrobus (2002)

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