Coping with Growth

What Does the Impact Statement Say About Economic Impacts?

Mining, industrial expansion, and energy facility construction affect the private sector of a community's economy. Such projects require new investment in plant facilities and lead to increased local employment, income, and sales. In addition, the new economic activity often stimulates local business. Commercial activities and residential housing expand to serve the new population.

Local public officials and concerned citizens must carefully evaluate the economic impact information presented to them regarding a proposed development.

Private sector economic impacts should be estimated in any impact assessment. Examples of economic information often found in impact statements are presented here, along with some questions that might be asked of the impact analyst. Tools used by economists to assess private sector economic impacts are also introduced, followed by some criteria for evaluating the information presented in economic impact studies.

Private sector economic impacts are of interest to various groups of people—and may benefit some more than others. New job opportunities are welcomed by workers, but may cause concern for existing employers because of higher wage levels. The purchasing power of the new industry and its employees is attractive to local business people and outside investors. Increased housing demand means more business for local realtors, building contractors, and property owners. But it also means higher rents for people in the community—including those on fixed incomes.

New investment generates increased property and sales tax revenue. This is of interest to local public officials concerned about meeting increased demands for services.

Promoters of a particular economic development will strongly emphasize the new jobs, increased payrolls, expanded sales, and new investments. These factors form a very persuasive argument when public officials are asked to make a zoning change, grant a variance, or allow a tax concession.

Many people are affected by the private sector economic impacts of a new mining or industrial activity, and careful assessment of these impacts is essential. Accurate information about changes in

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employment, income, and sales is needed to anticip- 
ate related changes—in population, housing, school 
employment, capacity of public facilities, and demand 
for public services. And social stress related to 
community growth is even more difficult to quantify 
than economic or financial stress.

Data on private sector employment, income, sales, 
and new construction is often a necessary phase for 
estimating related changes so that entrepreneurs, 
public officials, and concerned citizens can respond 
to this growth in a timely and informed manner.

Public officials need to consider such economic 
impacts when evaluating an environmental impact 
statement (EIS). The EIS is a formal process that 
requires official action relating to a proposed de- 
velopment. The EIS may contain some information 
about the economic impacts of the proposed project, 
although sometimes economic impacts are not 
even mentioned in the EIS. Rarely will all categories 
of economic impacts—employment, income, sales, 
and new investment—be addressed in the EIS.

Examples of Economic Impact Data

The quality of information given in an EIS can be 
variable. The following examples were extracted from 
actual impact reports.

Example: Valley Resort Expansion

The assessed valuation of property in the county can be 
depicted in terms considerably as a result of the Valley 
Resort Expansion, though the amount of the increase 
is impossible to estimate at this time. The county may 
benefit from increased sales tax revenues. Employment 
projections are necessarily sketchy, but it can be expected 
that the jobs available will increase in the same 
occupational categories that now exist in the area.

The resort area is particularly vague in its 
estimates of increased investment (reflected by as-

essed valuation) and increased sales (indicated by sales 
tax revenues). No basis is given for the em-
ployment estimates, nor does the report indicate 
whether the numbers cited represent people em-
ployed directly by the resort or the total employment 
in the area.

Example: Subdivision Project

Jobs related to the project will be derived from construc-
tion activity for subdivision improvements and residen-
tial dwellings. Over the two-year construction period 
projected, it is estimated that the project will provide 
the equivalent of 15 full-time job years and an annual payroll of $375,000.

A precise estimate of employment and payroll 
associated with this subdivision project is provided in 
this EIS. However, the report does not mention the 
assumptions on which these estimates were based, 
not whether these are direct impacts or total impacts.

Some Key Questions

Listed below are questions that should be consid-
ered when evaluating information about private 
sector impacts of a new development. If the proposed 
new economic activity is being justified on the basis 
of economic benefits—new jobs, payrolls, sales, 
and investment—local officials need reasonable an-
swers to these questions to make informed public 
decisions concerning the development.

Employment

How many people will be directly employed by the 
new export activity during the construction phase? 
....How many of these workers will be hired 
...What kinds of workers will be needed? 
...How many of each kind? 
...Will these be full-time employees or seasonal 
...When will they begin work? 
...How long will they be employed? 
...How many will be directly employed by the 
plant during the operations phase? 
...What kinds of workers will be needed? 
...How many of each kind of worker? 
...When will they begin work? 
...If the new workers will be employed, will the 
timetable compliment or compete with existing 
local area employment? 
...How many of these export workers will be 
laid off from the local community? 
...Will these be people currently employed or 
employees drawn away from other jobs? Will such 
vacancies be filled by new employees, or will 
workforce be consolidated? 
...How many new export workers are likely to 
commute from other communities? 
...How many are likely to migrate into the 
community and become new residents? 
...How many people might migrate into the 
community in hopes of obtaining a job, and 
possibly add to the community's unemployment 
rolls? 
...How many new workers are likely to be hired 
from within the local community? 
...Will these be people currently unemployed, 
or employees drawn away from existing jobs? 
...How many new export workers are likely to 
commute from neighboring communities? 
...How many are likely to migrate into the 
local area and become new residents?

Income and Payrolls

What is the anticipated annual payroll of the 
new export activity during the construction phase 
and during the plant operations phase? 
...How will the payroll be distributed (by type of 
worker)? 
...How much is likely to go to workers hired 
from within the local community? 
...How much is the income loss from previous 
jobs not filled in the community? 
...How much of the new payroll will go to 
commuters living outside the local community 
(who tend to spend their income where they live)? 
...How much of the new payroll will be spent 
locally—rather than by the community in 
neighboring trade centers?

Sales and Output

What types of sales are expected by the new export activity? 
...What is the expected annual volume of each 
type of sales? 

What are predicted types of purchases from local 
support businesses by the new export activity? 
...What is the expected annual volume of each 
type of purchase from the local business sector? 

What are predicted types of purchases from local 
support businesses by the new export workers at the 
event? 
...What is the expected annual volume of each 
type of purchase from the local business sector? 

Will these local purchases by the new export activity 
and its employees be made from existing businesses 
and not new businesses (opened perhaps by outside 
investors)?

New Investment

How much new capital investment is planned by the 
new export activity? 

How much new investment in expanded commercial 
facilities can be expected by service businesses? 

How much new housing investment is likely by new 
employees or existing residents with increased in-
comes? 

In some cases, the State Environmental Policy Act (SEPA) does not require an economic 
impact analysis in the statement of findings. Why, then, should these kinds of questions be considered in the analysis of 
a new project proposal?

Usually, a new export activity directly employs 
new workers. It may also stimulate increased indi-
rect employment in service/retail/service businesses. In 
order to predict how much new population will be 
drawn in by the project, it is necessary to estimate 
how many of these new workers will be new heads 
of households migrating into the community.

Informed estimates of new population are impor-
tant for determining school enrollment. Demand for new housing also depends on popu-
lation, as well as on the increased income of exist-
ing residents.
Methodology

How do economists assess the private sector economic impacts of a new development? The multiplier technique is often used. Multipliers are based on the interdependency between two types of business sectors in the local economy—those that provide goods and services (or nonbasic sectors) and those that buy goods and services (basic sectors). Goods and services purchased from outside the local economy are called exports; goods and services produced locally and sold to outside sectors are called imports. The economic impact of new development can be determined by the following equation:

\[
\text{Economic Impact} = \text{Exports} + \text{Imports} - \text{Imports}\times(1 - \text{Multiplier})
\]

The economic impact is equal to the number of local jobs and earnings that are created as a result of the new development. The multiplier is the amount that the economic impact exceeds the amount of new spending. The multiplier is a measure of the economic impact of a new development.

Kinds of Multipliers

As described above, the multiplier is the numerical relationship between an original change in economic activity and the ultimate change in activity that results as the money is spent and recycled through various sectors of the economy. There are several kinds of multipliers used to assess private sector economic impacts of new export activity, including employment multipliers, income multipliers, and output multipliers.

An employment multiplier is the total change in full-time equivalent employment (F.T.E.) generated in the local economy for each one F.T.E. in an export sector of the local economy. The multiplier for an employment multiplier can be calculated as follows:

\[
\text{Multiplier} = \frac{1}{1 - \text{Import}}
\]

where \( \text{Import} \) is the fraction of the total economic impact that is imported.

Leakage and Local Consumption

Leakage is a drain on the local economy as household spending is made up of a combination of local employment, taxes, and consumption. Other things being equal, the propensity to consume locally is expected to be relatively higher (and leakage relatively lower):

- in a larger community that has a more diverse economy;
- in a community that is located a substantial distance from competitive shopping centers; and
- in a community where financial institutions are local-economy-oriented.
Population size and economic diversity can influence multiplier size. A larger, more diverse area generally has more businesses; thus, room of a given dollar is apt to be spent locally before leaking than would be the case in a smaller area. A much larger multiplier would result from a smaller one for the same reason than for that of a multiactivity area, which, in turn, will be smaller than that of a single-activity area.

A multiplier is also affected by the local economy's geographic location and accessibility of major trade centers. Some areas, where only one major center is accessible by a new export activity could be reduced drastically if a large proportion of the new payroll is being spent outside the local area. This would be the case for residents for purchases in stores outside the local community is leakage because it is not likely to get circulated back into the local economy. This is true for near trade centers (with the trade center located outside the local economy) have smaller multipliers due to lack of similar areas that contain their own major trade centers. The latter situation keeps more of each dollar in the local economy for more rounds of spending.

Another form of leakage is the importing of raw materials for local processing or manufacturing. Con- tinental shipping costs to local manufacturers plants; where one can buy raw materials locally, the other must import those materials. If a community is able to provide the goods and services required by both the workers and the plant, the multiplier will be much greater than if most, if not all of those goods and services were purchased from outside the local economy.

Structure of the Local Economy

The amount of income generated in the local economy per actual dollar spent locally will vary with the structure of the local economy.

Different sectors of the local economy, for example, have different backward linkages to other sectors of the local economy. Backward linkages refer to the inputs purchased, if one new plant purchases primarily labor, then its impact is likely different from that of another new development which makes relatively large purchases of utilities, transportation, etc., along with labor. In some cases, a particular new manufacturing industry may cause a greatly expanded demand for specific locally produced goods and services.

A multiplier for a particular sector, such as mining, might also vary from one community to another due to differences in excess capacity in the local economic structure. Since retail businesses in the local structure and retail businesses operating with excess capacity could absorb considerable new income before requiring to add more salespersons or expand their facilities. In such cases, the income multiplier would likely be higher than that of a manufacturing business. On the other hand, if such businesses were already operating at full capacity, increased sales would likely create new jobs and result in growth of the local business activity and in construction of expanded facilities to handle the increased sales, thus contributing to higher employment and income multipliers.

Another case where the income multiplier could be higher than the associated employment multiplier is where a labor market with excess capacity can provide a large portion of the needed work force. If the labor market with excess capacity included unemployed or underemployed workers to meet the needs of a new mining operation, for example, then few new workers would be drawn into the community. This would reduce the size of the multiplier, but perhaps it might be greater, since additional residents for purchases in stores outside the local community is leakage because it is not likely to get circulated back into the local economy. Thus, areas near trade centers (with the trade center located outside the local economy) have smaller multipliers due to lack of similar areas that contain their own major trade centers. The latter situation keeps more of each dollar in the local economy for more rounds of spending.

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Some Precautions

Estimates of income and employment multipliers are sometimes greatly exaggerated. Gordon and Mullery argue that an aggregate community income multiplier of 2.7 is impossible for three reasons. First, multipliers should not be accepted for impact analyses without a complete understanding of why it is so large. Individual sector income multipliers, such as agriculture and manufacturing, may be larger than 2.5, however. The relative size of the multiplier should not be the sole criterion used in evaluating a new economic activity. For example, a hot dog stand may have a high multiplier, and pulp mill a much lower one. One should also consider the amount of initial employment, income, etc. brought in by the new activity, which along with the multiplier effect, influences the total economic impact within the local economy. One hundred new workers in a sector with a multiplier of 1.1 will have a total impact of 1. Like the impact of 50 new workers in another sector with a multiplier of 5.5. An aggregate multiplier may not apply equally to individual industries in the local economy. It should be noted that some types of service businesses may experience higher income impacts from each $100 of new construction payroll than other business sectors do. Similarly, within a given sector—retail business, for example—the income impact may be different, depending upon the type of local business that might go to existing business establishments or to a possible new shopping center opened up outside the local area.

Multipliers indicate nothing about the profitability of the proposed export enterprise. Decisions for or against a particular development must take into account the financial viability of the enterprises comprising it—and economic multipliers cannot provide this kind of prediction.

Summary

Employment, income, and output multipliers are tools for estimating private sector economic impacts of a new development within a local economy. These tools are not perfect and in fact may generate more questions than answers. However, local public officials may be confronted with the use of economic multipliers and asked to react to project proposals, to environmental impact statements, or to other studies containing economic impact analyses. The data presented in this paper will help in determining which economic impacts are actually analyzed, and to question and evaluate the assumptions on which the study's projections are based.

For Further Information


Lewis, Osu et al. "Economic Multipliers: Can A Rural Community Use Them?" Rural Western Development Center, Oregon State University, Corvallis, OR 97331, WRFP 24, Copied with Growth series, October 1979.


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