

Appendix B

Economic Recovery Act Programs - Net Benefit Analysis Overview

Introduction

Governor Phil Murphy signed the New Jersey Economic Recovery Act of 2020 (ERA) into law on January 7, 2021. The ERA creates a package of tax incentive, financing, and grant programs that will address the ongoing economic impacts of the COVID-19 pandemic and build a stronger, fairer New Jersey economy. Included in the ERA is the creation of the Emerge program which will serve as the State's primary job creation incentive.

As with prior incentive programs, such as Grow NJ and ERG, a key statutory requirement within Emerge is that the Authority must ensure fiscal prudence by determining that the award of tax credits creates a net positive economic benefit to the State. Unlike prior incentive programs, Emerge requires a significantly greater economic benefit to the State to offset the award. For prior programs, the Authority relied upon a proprietary model that was developed by a third party but largely managed in-house. In the interest of greater transparency and consistency the Authority has determined the best approach for new programs for such analysis is to rely upon an external third-party model that would not need to be updated or maintained by the NJEDA.

To increase transparency and consistency, NJEDA staff determined that it would be important to utilize a third-party economic development model that is widely known, understood and utilized at the state, federal, and international levels. In addition, after evaluating several widely-known, national level models, staff determined that utilizing a tool that was more easily understood by a broader set of stakeholders would be beneficial. Based on a thorough analysis of available alternatives that would meet the Authority's requirements, staff is proposing to use the IMPLAN model to calculate the expected net economic benefit from projects awarded within the Emerge Program (and other ERA programs). This memo provides background on the fundamental theory underpinning IMPLAN's model, the history of EDA's work with the net benefit test, a brief overview of IMPLAN and its features, and an overview of the application of IMPLAN to calculate the net benefit for the Emerge program.

Overview & History of Input-Output Analysis

IMPLAN's model is built on a macroeconomic analysis known as Input-Output analysis (I-O), which estimates the interdependence between economic sectors and industries. A product of I-O is an input-output table, which is a data matrix that shows the inputs from industries and sectors of the economy necessary to create the output of a given industry. As an example, Table 1 shows the intermediate input (inputs from other firms and industries) and within-firm factors of production (calculated as income going to labor, capital, and taxes) that go into producing an industry's output.

Table 1 – I-O for US Manufacturing in 2019, millions of dollars

	Commodities/Industries	Manufacturing
A	Agriculture, forestry, fishing, and hunting	\$322,670
B	Mining	\$371,488
C	Utilities	\$55,663
D	Construction	\$14,197
E	Manufacturing	\$2,458,644
F	Wholesale trade	\$25,085
G	Retail trade	...
H	Transportation and warehousing	\$54,383
I	Information	\$22,650
J	Finance, insurance, real estate, rental, and leasing	\$108,329
K	Professional and business services	\$373,668
L	Educational services, health care, and social assistance	\$146
M	Arts, entertainment, recreation, accommodation, & food services	\$12,127
N	Other services, except government	\$21,587
O	Government	\$4,698
Sum, A-O Total Intermediate		\$3,913,382
P	Compensation of employees	\$1,131,337
Q	Other taxes on production	\$60,414
R	Gross operating surplus	\$1,125,415
Sum, P-R GDP		\$2,317,167
Total industry output (Intermediate + GDP)		\$6,230,548

This data provides two important sources of information. One is, when an industry's output is "shocked," or increased/decreased by a specified amount, an analyst can estimate the impact of that shock on all other associated industries and sectors of the economy. Another important source of information is the understanding and ability to estimate the ripple effects of any one shock through all the associated industries and sectors of the economy. These estimated impacts are known as multipliers, and they estimate the total change in output across all industries and sectors expected when a specified industry's final demand is shocked.

Moreover, these multipliers can be broken down into three categories, typically referred to as direct, indirect, and induced impacts, which are explained as follows:¹

- Direct effects -- occur directly from the focus industry's shock.
- Indirect effects – occur from impacts on other industries. They are akin to second-round impacts. For example, if we shock a pharmaceutical manufacturer, a second-round impact would be from an industry that produces an intermediate good for the pharmaceutical industry, such as a chemicals manufacturer. The economic impact of the shock on the chemicals manufacturer would be considered an indirect effect.

¹ <https://blog.implan.com/understanding-implan-effects>; <https://www.investopedia.com/terms/i/input-output-analysis.asp>

- Induced effects – occur through household spending from labor income generated by the shock. These effects are created by the spending of employees in the directly and indirectly impacted industries.

Expanding on the pharmaceutical industry shock explained above, using an economic impact model, we can estimate how this one focused shock impacts the economy through areas such as employment, consumer and industrial demand, and State tax revenues

IMPLAN

IMPLAN was created in the 1970s, when the National Forest Management Act required the United States Forest Service to prepare a plan for alternative land management strategies and potential resource outputs. IMPLAN, short for “impact analysis for planning,” estimated the economic impacts of those resource outputs on local communities.² IMPLAN’s data is based on federal data sources from the Bureau of Labor Statistics, Bureau of Economic Analysis, and the Census Bureau.³

A distinguishing feature of IMPLAN is that it estimates tax revenue impacts from events. Taxes by level of government are sourced from the Census Bureau’s Annual Survey of State and Local Government Finances, state government tax collections, Census of Government Finance, and the Bureau of Economic Analysis’s National Income and Product Accounts.⁴ The taxes are not estimated based on an analysis of what the specific company may pay, but is an estimate based on the general data. Therefore, the model does not incorporate such details about the company as individual salary or whether a company is already in the State.

IMPLAN’s methodology for tax estimates has been used by other states to evaluate their incentive programs as well as industries – examples include the following:

- Nevada Governor’s Office of Economic Development, which used IMPLAN to determine tax revenue estimates for the Tesla Gigafactory project in 2014⁵
- Oklahoma Incentive Evaluation Commission, which issued a report in 2016 on the effectiveness of several incentive programs and used IMPLAN to estimate the economic impacts of projects receiving tax credits⁶
- The Louisiana Economic Development Office & Legislative Fiscal Office has used IMPLAN to estimate the economic and fiscal impacts of entertainment-related industries in Louisiana⁷

² <https://www.implan.com/history/>

³ <https://implanhelp.zendesk.com/hc/en-us/articles/115009674448-IMPLAN-Data-Sources>

⁴ <https://implanhelp.zendesk.com/hc/en-us/articles/115009674528-Generation-and-Interpretation-of-IMPLAN-s-Tax-Impact-Report>

⁵ Economic Impact of Tesla on Washoe and Storey Counties, September 2014

⁶ State of Oklahoma Incentive Evaluation Commission, Tax Incentive Evaluation Report, 2016

⁷ BaxStarr Consulting Group LLC, Fiscal & Economic Impact Analysis of Louisiana’s Entertainment Incentives.

Prepared in conjunction with the Louisiana Economic Development Office of Entertainment Industry Development & the Legislative Fiscal office, April 2011

- Maryland’s Department of Commerce has used IMPLAN to estimate the economic impacts of incentive programs in annual reporting⁸

IMPLAN is also currently used by the California Governor’s Office of Planning and Research, the California Research Bureau, and the Washington State Department of Transportation.

IMPLAN also counts federal agencies as clients, including the Bureau of Ocean Energy Management, NASA, US Department of Agriculture, US Department of Interior, and the US Geological Survey. IMPLAN’s model outputs have been published in peer-reviewed academic journals and professional publications and have been used by economists for decades.⁹

IMPLAN & Net Benefit Test Application

IMPLAN provides flexibility to model impacts at different levels of geographic region, including at the state, county, Metropolitan Statistical Area (MSA), ZIP code, and congressional district. To align with the distinction in the allocation of the Emerge, Aspire, and Community-Anchored Development tax credits in the Economic Recovery Act of 2020 and account for distinctly different labor and housing markets within the State, **there will be two regions in which projects will be modelled – Northern and Southern New Jersey**. Southern New Jersey comprises the counties of Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Ocean and Salem , and Northern New Jersey is the counties of Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Passaic, Somerset, Sussex, Union, and Warren .

IMPLAN has several types of economic shocks that users can model, including industry output, industry employment, commodity output, and employee compensation. For the purposes of the NJEDA’s net benefit test, the Authority will be shocking **industry employment** and **industry employee compensation**, as that information will be submitted by applicants when applying for the Emerge program and most closely align with outcomes to be directly incented by an award. Specifically, the number of new and retained full-time jobs being directly incented by the award and the total payroll associated with the jobs being directly incented. Staff will also make net benefit test adjustments for small businesses that choose to grow jobs in a phased manner via a pre-determined growth plan, for example by running the model for each year of the project separately to account for the growing number of jobs. The IMPLAN model will further adjust these figures to account for expected seasonal or additional part-time workers that would be associated with the project based upon its industry. If at certification, any one of the key input factors to the model (i.e., the actual payroll, the number of full-time jobs, or the capital investment of the project) has been reduced by more than ten percent below the respective level provided by the applicant at approval, the net benefit analysis will be performed again and the award may be adjusted down accordingly.

For each applicant, two scenarios will be run: the **ongoing business activity** and any **up-front construction** associated with the business activity (for example, some projects awarded under

⁸ Fiscal Year 2017, Consolidated Incentives Performance Report, As required by the Maryland Jobs Development Act Economic Development Article 2.5-109, February 2018, Maryland Department of Commerce

⁹ <https://implanhelp.zendesk.com/hc/en-us/articles/360044985833-About-IMPLAN>

the small business portion of the Emerge Program may not have any construction as there is no minimum required capital investment). IMPLAN's model includes estimates of federal, state, county, and municipal taxes. **Only the model's estimate of state taxes will be used to estimate the benefit to New Jersey**, as the ERA requires the determination of the net benefit to the State. Additionally, the vast majority of the tax benefit to New Jersey occurs at the state level. As proposed in the Emerge rules, **for the ongoing business activity, only direct and indirect state taxes will be used. For the construction work, direct, indirect, and induced state taxes will be used.**

As stated in the Emerge statute, the net economic benefit will be calculated for the commitment period of the project. For a phased project, the requested tax credit allocation amount shall be determined for the initial phase, and on a cumulative basis each phase thereafter. The Emerge statute also allows a company to commit to a period of time beyond the commitment period and the rules propose a maximum of 20 years, which an applicant may do if the net positive economic benefit is insufficient – based on the statutorily required net economic benefit percentages – to support the total amount of the award.

The Emerge statute requires the Authority to perform this analysis in terms of net present value, i.e., the benefit in the future should be expressed in dollars today. Additionally, the statute requires the discount to reflect the uncertainty of the company's commitment after the commitment period expires. As such, the Authority will discount expected future revenues to the State accordingly. This, in practice, is a two-step process. First, given the IMPLAN model estimates a one-time (essentially, the 1st year) impact on government revenue, the Authority must estimate the growth of future annual revenues. The Authority does this by growing future revenues by an estimated rate of inflation **The inflation rate will be set based on a five-year mean of the Personal Consumption Expenditures Price Index as provided by the Survey of Professional Forecasters adjusted annually; initially this is set at an annualized rate of two percent.** Second, the Authority must then discount these future revenues. **To calculate the discount rate, staff starts with an industry accepted net present value discount rate, which currently is six percent. To account for the significant risk and uncertainty associated with revenues in the furthest years out, and as directed by the Emerge Statute specifically for years after the eligibility period, the discount rate is increased by two percent (so, currently eight percent).** Tax revenues resulting from construction expenditures and upfront costs do not need to be discounted as they would occur prior to the issuance of any tax credits awarded to a company.

In certain instances, taxes at the local level or with inherently local implications, impact the State and thus such taxes would be factored into the economic benefit analysis. The local taxes that could be considered are property taxes from new construction and local payroll taxes. As both of these local tax revenues offset State funds needed for municipal aid and/or appropriations to reduce property taxes, they may directly benefit the state thus making them appropriate to be considered in this analysis. To include such local property taxes, the business will need to provide a PILOT agreement, real estate appraisal, preliminary assessment from tax assessor, or any other relevant third-party document. Conversely, the State's Urban Enterprise Zone program affords projects located in certain geographies an exemption from a portion of the State sales tax associated with a construction project, as such where this is the case the analysis will be adjusted

accordingly to best reflect actual sales tax revenues to the State from the related construction project.

The Emerge Statute requires projects to create positive economic benefit to the State equal to between 400 and 200 percent of the award. Generally, the project must yield a benefit to of 400%; however, projects located in distressed municipalities or transit hub municipalities must yield a 300% benefit and projects located in government-restricted municipalities, or mega projects, must yield a 200% benefit.