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Session 3: Conducting breakeven analysis

Shane Benz
November 16, 2021

Methodology: Breakeven analysis



- How to use breakeven analysis in evaluations
- Main discussion: Randy Bauer, PFM
- Oklahoma Quality Jobs incentive evaluations
- Please ask questions during the session

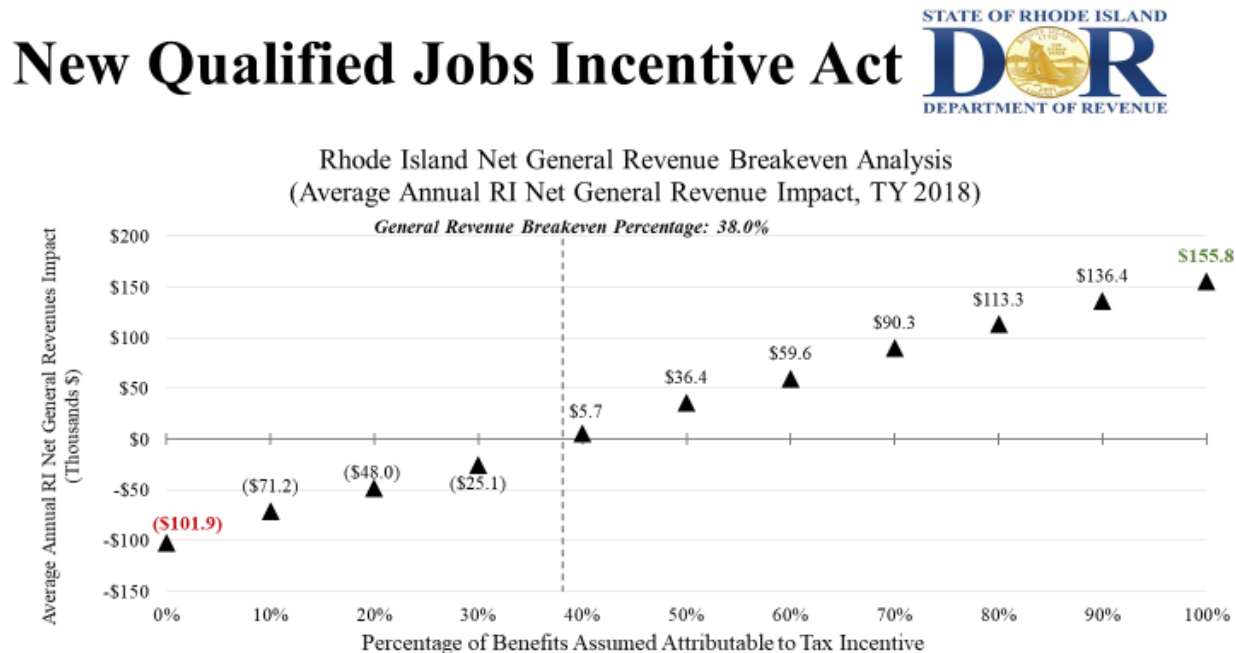
Breakeven analysis: A brief overview



- Assessing incentive's true impact is challenging.
- A **breakeven analysis** is one way to estimate likelihood that activity is due to the incentive.
- Requires information on direct, indirect, induced effects.
- **Breakeven point** determines how much activity must be due to the incentive for benefits to cover costs.

Rhode Island

Motion picture production tax credit



Washington's Investment Projects in High Unemployment Counties and CEZs



Exhibit 4.1: Net gain or loss in employment depends on how many new jobs were created as a direct result of the preference

	Number of new jobs assumed to be a direct result of the preference*	Net employment change statewide **
Scenario 1	If none (0 jobs)	Then net loss of 29 jobs
Scenario 2	If all (131 jobs)	Then net gain of 429 jobs
Scenario 3	If break-even point (8.5 jobs)	Then net change is 0 jobs. Net gain is offset by net loss.

Source: JLARC staff analysis of Department of Revenue high unemployment county application and 2016 annual report data. JLARC staff estimated impact on job loss or creation using REMI economic modeling tool.

*Beneficiaries reported 131 new jobs as of 2016. This column indicates an assumption about how many of those jobs exist solely because of the preference.

** Net employment change is the assumed number of jobs that are a direct result of the preference less the number of job losses due to the loss in state revenue when beneficiaries claim the tax deferral.

Next speaker: Randall Bauer



Randall Bauer
Director
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NCSL Roundtable on Evaluating Economic Development Incentives

Conducting Breakeven Analysis: Oklahoma's Quality Jobs Programs

November 16, 2021

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Oklahoma Incentives Review Process Background

- HB 2182: Incentive Evaluation Act (2015)
 - Created a 5-member Incentive Evaluation Commission to review and make recommendations to the Governor and State Legislature
 - Commission is to both set criteria for evaluation and make recommendations to the Governor/Legislature
 - It may also choose to not evaluate incentives that do not have significant impact
 - Commission may hire a consulting firm to assist them in the evaluations
 - Commission hired PFM in May 2016 to deliver written evaluations on 12 identified incentives and has rehired PFM in each successive year

- Evaluation Requirements
 - Estimate both the economic and fiscal impact (both direct and indirect impacts)
 - Assess whether adequate State financial protections are in place (future incentive growth)
 - Evaluate whether the incentive is being administered effectively
 - Assess whether the incentive is achieving its goals
 - Recommend whether incentive should be retained, reconfigured or repealed
 - Recommendations for changes to allow the incentive to be more easily or conclusively evaluated in the future



Oklahoma Evaluation Background

- Oklahoma evaluation components
 - State economic and fiscal impact has been estimated based on utilization (for fiscal impact) and use of an Input/Output model for economic impact
 - Specific incentive evaluation criteria has generally required an ROI analysis for nearly all incentives
 - ROI for these evaluations has weighed the economic impact translated into additional state revenue versus the cost of the incentive, using the IMPLAN input/output model
 - We have not (to date) monetized qualitative benefits – it is under consideration as our next improvement in the evaluation process
 - The statute also suggests analyzing alternative methods for achieving results.
 - To date, most of this has been modifications to the existing incentive
 - However, the 2021 evaluations did include one method of getting at the ‘opportunity cost’ of an existing incentive and weighing its economic impact versus an alternative



Evaluations General Work Plan

- Data/information gathering
 - Statutory authority, legislative intent, state financial information (credits claimed/taken, state and local tax revenue generated/forgone, impact on state appropriations)
 - Internal/external stakeholder interviews and data gathering
 - Benchmarking peer states
 - Review of similar incentive evaluations
 - Iterative, 'back and forth' discussions with stakeholders
- Analysis – how does it perform on criteria established in HB2182
 - Performance related to the criteria for evaluation one key consideration Is it meeting its goals?
 - Is it administered effectively?
 - Is the economic and fiscal impact providing a positive ROI?
 - Are there sufficient fiscal controls?
- Findings and recommendations
 - Provide rough drafts (not public) to Commission members in mid-August
 - Draft evaluations (public documents) to Commission around October 1st
 - Public hearing(s) in October
 - Commission acts on recommendations by November 30th



Input/Output Modeling Overview

- Mathematical representations of an economy
 - Captures all monetary market transactions between industries and final consumers for a specific period of time
 - In matrix form, each economic activity is represented as both a purchaser of industrial outputs and the seller of its output
 - A double-entry accounting model of regional activity where industries are linked by their buying and spending patterns
 - The linkages (inter-industry transactions) represent the dollar flows necessary to produce goods and services
 - Frequently aggregated (as for our evaluations) but have been developed and linked for hundreds of industry sectors

- Use of the IMPLAN I/O model to estimate economic impact
 - One of the 'industry standard' models (along with REMI, RIMS II, others)
 - Input/output models examine relationships within an economy, both between businesses and between businesses and final consumers
 - They provide dollar-value representations of direct, indirect, and induced economic impacts of changes in sectors and how they ripple through the state economy
 - IMPLAN has been used throughout the six-year evaluation process, and it is also used by the State of Oklahoma's Department of Commerce
 - Greater confidence in latest version of IMPLAN in capturing state revenue impacts of economic activity



Oklahoma Quality Jobs Program Overview

- Provides qualifying companies quarterly cash rebates of up to five percent of newly created payroll, for 10 years.

- To qualify, certain requirements must be met:
 - The activities and functions of new direct jobs **must be within a qualified basic industry** (currently 33 basic industries – awards have primarily been in the manufacturing and oil and gas industries in recent years);
 - Payroll threshold of **\$2.5 million in new annualized payroll** for new full-time employees, during any four consecutive quarters in its first 12 quarters in the program;
 - Offer **basic health insurance coverage** to new employees where employees pay no more than 50 percent of the premium cost;
 - Must meet **average wage requirements quarter by quarter**, which are 110 percent of the average county wage, including health insurance premiums paid by the company or 100 percent of the average county wage excluding health insurance premiums. There is also a state threshold wage (\$35,376 in 2021) where a company can qualify regardless of the county average wage calculation.



2017 Quality Jobs Findings and Discussion

- 2017 Findings:
 - Program is a net benefit to the state, based on IMPLAN modeling
 - Effective cost controls are in place (application-based incentive)
 - The program's average cost per job is around \$13,000 (although layered with other incentives)
 - Industries targeted by the program grew more slowly than the state as a whole

- Discussion
 - 2017 version of IMPLAN was less 'robust' for measuring state tax revenue associated with economic activity (used an aggregated percent of GDP to calculate)
 - Analysis of the extent of layering was limited by both the Oklahoma statute and lack of data
 - The 'but for' question was raised (for this and other evaluated incentives) in interviews and surveys, but the results were predictable and open to question (from a statistical confidence perspective)
 - As a result, we looked to approach the 'but for' question from a slightly different perspective in 2021



Break-even Analysis: What's the Value?

- An approach to the 'but for' question
 - It takes the mathematical economic impact/revenue impact calculation and expresses it as a percentage of foregone revenue
 - For the Quality Jobs Program, the economic impact was 85 percent greater than the lost revenue to the State
 - In other words, even if 85 percent of the economic activity (think of it as the pledged jobs and capital investment to create final output) would have occurred without the incentive, the State would have still 'broken even.'
 - Was also applied to the Quality Jobs Program for Small Employers – in this case, the break even point was 50 percent.
 - A different way of communicating degrees of confidence.

- Other factors may be as/more important
 - Qualitative factors that have not been (but could be) built into the calculations
 - Other policy or political ramifications
 - In Oklahoma, the Quality Jobs has mostly been used in its two most populated counties
 - The Quality Jobs program for Small Businesses is more diffused and provides assistance to a broader segment of the population



Break-even Analysis: Process Steps

- Data Needs for IMPLAN modeling
 - Corporate data on industry type (required for application), business location (as impacts will vary by county and location within a county)
 - If an expansion, must be able to isolate only the new jobs/economic activity associated with the incentive
 - General standard is what is what is reasonably appropriate and may rationally be viewed as the basis for the economic activity
 - Must be able to gauge level of economic output – in some instances it must be adjusted (up or down), and this creates some limitations in terms of forecast certainty
 - Some incentives are targeted at individuals (Vermont remote worker incentives), and these primarily impact household incomes.
 - In that case, additional income leads to spending portions of household income
 - Spending categories can be calculated individually based on average spending profiles
 - Data limitations then include accurately identifying household profiles (for example, one individual versus multiple individuals with earned income). This will also be impacted by other factors, such as age, dependents, etc.



Input/Output Modeling: not ‘the voice of God’

- A useful tool with important limitations
 - **Lack of supply-side constraints**, meaning the industries in the supply chain will be able to seamlessly meet the change in demand for their outputs within the relevant time frame. Final demand shocks may reduce economic impact.
 - **Prices are fixed**, meaning there is no price adjustment of the inputs (and supply constraints are one of the reasons price increases may happen). **Lack of supply of skilled labor**, for example, will affect the price of inputs and the economic impact
 - **Fixed ratios for intermediate inputs and production**, meaning that this is a ‘point in time’ snapshot and isn’t readily adjustable (at least in IMPLAN) for changes in structure or the ratios of production
 - **No budget constraints** means that the induced effects assume that household budget or government consumption is not subject to budget constraints (or a disinclination to spend, for that matter)

- Instances where economic impact cannot be calculated
 - **Attenuated connection**. Local infrastructure incentive program isn’t directed to specific businesses or activities.
 - **Lack of necessary information**. Excise tax exemption for aircraft sales requires no reporting on economic activity associated with the aircraft sales; for example, whether jobs are created or retained or the purpose and use of the aircraft itself. Likewise, several tax credit programs do not collect all of the information necessary to accurately estimate economic impact.



Another related issue: opportunity cost

- Oklahoma statute suggests weighing alternatives
 - Nearly all incentives involve expenditures and foregone revenue – are there more effective uses?
 - Most of the OK incentive evaluation alternatives have been tweaking (major or minor) of the existing incentive
 - This year the project team took its first stab at a sort of generic alternative – economic impact generated by aggregated state and local government spending

- A general spending alternative to the Oklahoma capital gains exemption
 - State capital gains exempt from income tax when certain types of gains are from a business continuously in operation in Oklahoma for 3-5 years
 - These gains can be from the sale of business land/assets (tangible and intangible) as well as the business itself – also shares in Oklahoma-based companies
 - Sufficient data from tax returns to use IMPLAN and found a very large negative ROI
 - Project team then ran the same amount of spending through the state and local government sector and found a much better ROI
 - While the comparison is a bit crude, it's a reasonable counter-argument



Summary

- Economic impact analysis can be an important component of an ROI calculation
- There are model limitations that should be identified/analyzed
- There are incentives that do not lend themselves to I/O economic impact analysis
 - Nature of the incentive
 - Lack of data (may be poor incentive design)
- Economic impact analysis translated into revenue gain/loss can provide another method of looking at the 'but for' question
- This analysis may also provide a method for examining opportunity costs of incentives – such as comparing foregone revenue to general state and local government spending



For More Information

- Oklahoma Incentives Evaluation Commission Website: <http://iec.ok.gov/>
 - 2016-2021 evaluations
 - Four-year schedule for incentives to be evaluated by year
 - 2016-2021 incentives criteria for evaluation
 - Commission agendas, minutes, presentations, and other documents

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