

# CVM

## Economic Impact Methodology





# Contents

- What is economic impact analysis?
- Economic impact methodology
- CVM's Impact Calculation Process
- Example



## High Level

The Economic Impact is measured by estimating the following economic activity down the supply chain:

- Wages from jobs involved in the production of goods/services in the supply chain
- Wages from jobs that are created to support the employees that are working in the businesses down the supply chain
- Revenues earned down the supply chain and in supporting businesses in the community
- Tax revenues resulting from all of these activities



## High Level

Provides an estimate of the contributions to the *overall US economy* that are driven by the results that your Supplier Diversity Program achieves

Purchases from diverse businesses are important at an individual level, to communities, and to the economy as a whole

Economic Impact Reports communicate the impact on the economy using these standard measures of economic activity:

- GDP (output):
  - Purchases from businesses support economic activity at these suppliers and creates a ripple effect of purchases through their supply chain.
- Jobs:
  - Suppliers ramp up staff to support additional sales. This supports jobs at the diverse suppliers, within their supply chain and in their communities
- Wages:
  - Employees that hold these jobs earn incomes that help support their families and create additional spending.
- Tax revenues:
  - Economic activities generate revenues for the government in the form of personal and business taxes



## High Level

For a given \$ amount spent with a supplier, here's how differences in the input variable affects the results:

Data Element for each supplier	Impact on Results example
\$ amount of spend	Required input to apply to rest of model
City, State, Zip Code	For a given job or commodity: <ul style="list-style-type: none"><li>• Cost in Iowa vs. Cost in NY</li></ul>
Commodity/Industry	# of jobs created for a given \$ amount: <ul style="list-style-type: none"><li>• \$1M spent with a manufacturer vs. \$1M spent with an advertising agency</li></ul>

# 1: What is economic impact analysis?



Economic impact analysis provides a rules-based and transparent measure of the economic importance a financial investment to an economy.

It communicates the impact using standard measures of economic activity – **GDP, jobs, wages, tax revenues.**

## Measures of economic activity



### PRODUCTION

Purchases from businesses support economic activity at these suppliers and creates a ripple effect of purchases through their supply chain.



### JOBS

Suppliers ramp up staff to support additional sales. This supports jobs at the diverse suppliers, within their supply chain and in their communities.



### INCOMES

Employees that hold these jobs earn incomes that help support their families and create additional spending.



### TAXES

Economic activities generate revenues for the government in the form of personal and business taxes.

# 1: What is economic impact analysis?



The total impact is comprised of the direct, indirect, and induced impacts.

## Economic Impact Channels



### **PURCHASES FROM SUPPLERS**

A company purchases from its suppliers triggers a ripple effect through its supply chain.

### **DIRECT IMPACT**

Direct impacts result from expenditures by the company's suppliers on labor, materials, suppliers, and capital.

### **INDIRECT IMPACT**

Indirect impacts result from lower tier suppliers that also employ labor and purchase goods to meet demand.

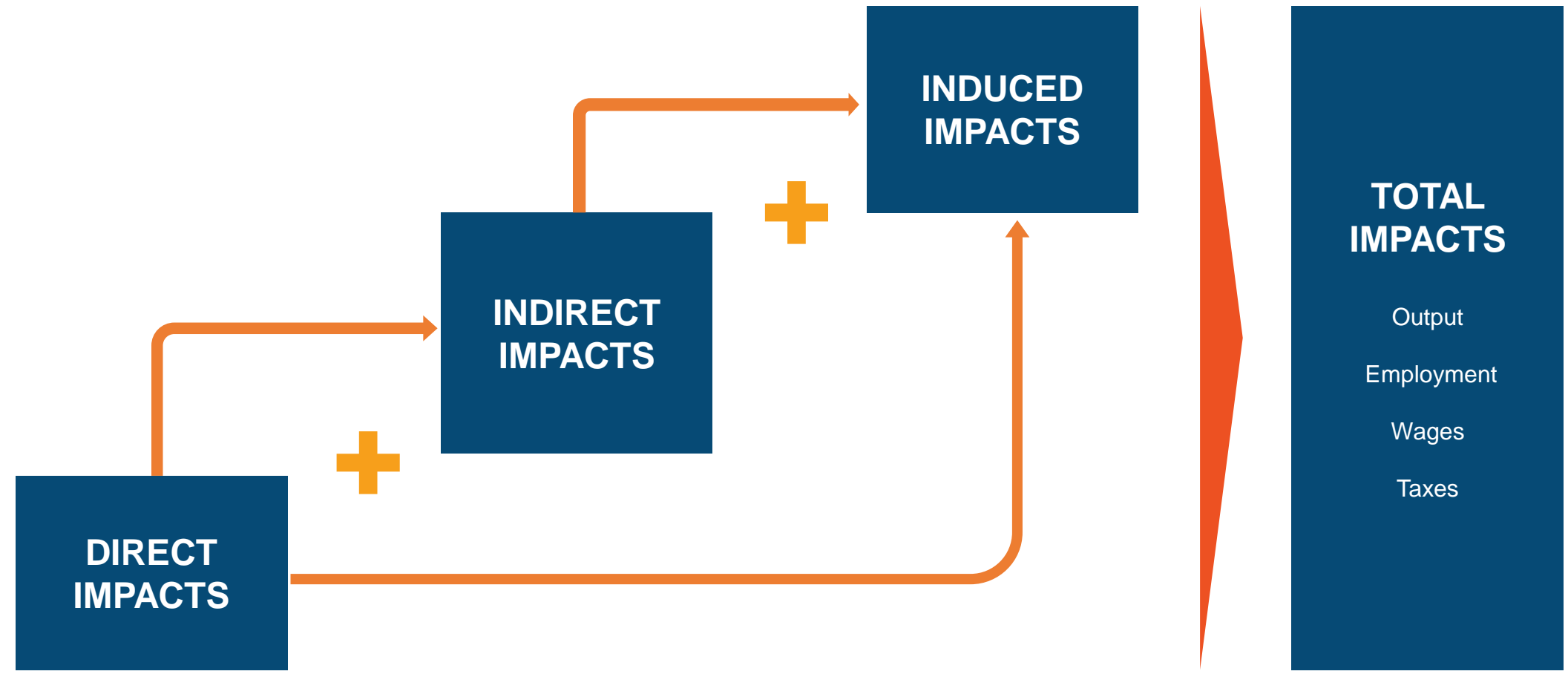
### **INDUCED IMPACT**

Induced impacts result from the employees of businesses in the supply chain purchasing goods at a household level.

# 1: What is economic impact analysis?



## Total Economic Impacts







# Economic Impact Methodology

- Introduced in 1970s
- Based on a model of the economy using an **Input-Output Model**
- Wassily Leontief won a Nobel Prize in Economics in 1973 for this approach.
- The input-output analysis estimates how the change in demand for one industry affects the entire economy.
- Economic impact analysis is based on the use of **input-output tables**.
- In US, the **Bureau of Economic Analysis (BEA)** collects data from establishments in each industry at the national level to create these tables.
- For US analysis, we utilize IMPLAN data set which facilitates the analysis.



## Input Output Model

- Input-Output tables (IOM) organizes the business sector of an economy in terms of a **matrix** of who makes what outputs and who uses what inputs.
- IOMs are useful for estimating how an increase in demand for a product of one industry could impact other industries and the economy as a whole.

**Table 2.1. National Make Table**

[Millions of dollars in producers' prices]

Industries	Commodities								Total industry output
	Agriculture, mining, and utilities	Construction	Manufacturing	Trade	Transportation and warehousing	Services	Government	Other	
Agriculture, mining, and utilities.....	1,056,504	4,274	16,925	177	377	2,733	1,429	0	1,082,419
Construction.....	0	1,091,005	0	0	0	0	0	0	1,091,005
Manufacturing.....	1,045	3,261	4,418,258	52,933	0	43,028	0	3,834	4,522,360
Trade.....	652	820	18,669	1,983,732	2,946	205,530	0	0	2,212,349
Transportation and warehousing.....	258	6,868	0	873	700,337	4,114	0	0	712,451
Services.....	73	27,560	0	39,203	27	11,956,903	0	758	12,024,524
Government.....	110,297	21,499	7,750	3,683	24,581	426,885	2,559,377	4,978	3,159,049
<b>Total commodity output.....</b>	<b>1,168,830</b>	<b>1,155,287</b>	<b>4,461,601</b>	<b>2,080,602</b>	<b>728,268</b>	<b>12,639,194</b>	<b>2,560,806</b>	<b>9,570</b>	<b>24,804,156</b>



**Outputs**



**Inputs**



### Input Output Multiplier

Three types of multipliers are used to measure the potential impact at various levels of an economy:

1. Direct
2. Indirect
3. Induced

- **Direct multipliers** measure direct impacts which are changes that occur in “front-end” businesses that would initially receive expenditures and revenue as a direct consequence of the operations and activities of a project.
- **Indirect multipliers** measure indirect impacts arising from changes in activity for suppliers of the “front-end” businesses. Indirect multipliers create the “ripple effect” in the economy
  - The impact on what the suppliers do to fulfill new incremental spending, i.e., fuel, transportation equipment and machinery.
  - Includes their actions with other suppliers and impact on increased labor demand.
- **Induced multipliers** measure induced impacts arising from shifts in spending on goods and services as a consequence of changes to the payroll of the directly and indirectly affected businesses
  - Induced effects are measures of household spending.
  - Expenditures at this level can include: food, clothes, and cars.



## Calculation of Economic Impact of Customer's Supplier Diversity Purchases



Industries	Agriculture, mining, and utilities	Construction	Manufacturing
Agriculture, mining, and utilities	1,056,504	4,274	16,5
Construction	0	1,091,005	4,418,2
Manufacturing	1,045	3,261	18,6
Trade	652	820	6,868
Transportation and warehousing	258	27,560	7,7
Services	110,297	1,155,287	4,461,6
Government			
<b>Total commodity output</b>	<b>1,168,830</b>	<b>1,155,287</b>	<b>4,461,6</b>



### CUSTOMER PROVIDES DATA

The inputs to the economic impact are Customer's purchases from the diverse businesses. Customer provided the following information to supplier:

- Supplier diversity category
- Location
- Purchased Commodity (NAICS)
- Spend

### CREATE INDUSTRY / REGION MATRIX

The impact of any purchase depends on the supplier's industry and region. Using the data provided by Customer, supplier.io creates a matrix of Customer's spend by region and supplier industry (NAICS).

### APPLY BEA INPUT-OUTPUT MODEL

supplier.io then applies BEA-based Input-Output multipliers and methodology to the region-industry matrix calculated in the previous step.

### GENERATE IMPACT NUMBERS

supplier.io then creates the final data elements and slices using output of the impact model.



## A common question.....

### **Do you survey suppliers to determine impact?**

No, we do not conduct supplier surveys as part of this exercise. Surveys have been determined to be an incomplete and inaccurate mechanism for determining impact since it relies on inconsistent assumptions by suppliers. In the absence of a proven economic model, suppliers provide anecdotal evaluations of impact. The assumptions underlying these evaluations vary across suppliers, which make aggregating these numbers and determine impact difficult.

The Input-Output multipliers model has been developed by economists and has proven to be a much more accurate methodology for calculating impact