

# What Do We Mean By Economic Output?

## Explanation of Economic Impact Terms

### Data

The data gathered for this model came from Infogroup, AFS, other industry resources, and federal and state government data. Infogroup is the leading provider of business and consumer data, which includes addresses, business titles and job totals. Since the Infogroup data are adjusted on a continual basis, staff from John Dunham & Associates scanned the data for discrepancies, verifying individual facilities using Google Maps, web searches, and any available online government documents. Each facility has its own employee count; therefore, a company with a headquarters and a manufacturing foundry would have two facilities, each with separate employment counts. This is how we arrive at our direct employment totals.

### Model

These employment totals are entered into the IMPLAN Model. The IMPLAN model is based on the input-output accounts published by the US Department of Commerce, Bureau of Economic Analysis and is one of the standard models used to calculate economic impact figures. Input-Output tables representing the economy in 2018 (the last year available) were used in this analysis. The IMPLAN model is designed to run based on the input of specific direct economic factors, like direct jobs, and generates estimates of direct wages and outputs.

### What is Meant By the Term Direct?

Direct Impacts are those jobs, wages or economic output, solely attributable to the industry defined for the study; in the case of metalcasting industry this includes manufacturing foundries, art foundries, educational foundries, military/government foundries, artists and artisans who work in cast metal, die-casting facilities, continuous casting facilities, captive foundries, and the ancillary and support services immediately related to these processes. We like to say that they are the jobs that one can count. If one goes to a manufacturing plant and counts the number of people working there, that would be the direct employment (although there may be many more people working than there are jobs since many people work only part time). JDA uses direct employment at these offices and sites that are defined to be part of the industry to calculate all of the other effects presented in the study.

### What is Meant By the Term Supplier?

Supplier is the term used in economic impact studies to define those effects that result from firms in the defined (or Direct) industry purchasing goods and services from other industries. JDA defines these as Supplier Impacts in its models. For example, when a foundry pays rent on its warehouse to their landlord, or when they hire a trucking company to deliver products, they are creating supplier effects in the real estate sector or trucking sector of the economy.

### What is Meant By the Term Induced?

Induced effects are the response by the economy that occur through re-spending of income received by payments made to employees and business owners measured in the direct and supplier parts of the economy. When people work for a foundry or for firms that supply goods and services to the industry, they receive wages

and other payments. This money is recirculated through their household spending inducing further local economic activity. Economists call these induced impacts the multiplier effect of an activity or industry.

Examples of induced effects are the jobs created in a diner located outside of a plant gate where people purchase sandwiches for lunch, or at the gas station where they purchase fuel for their commute, or even in neighborhoods, where workers purchase houses, go to restaurants or visit the movie theater.

### **What Specifically Do You Mean When You Say a Job?**

Jobs are a measure of the annual average of monthly jobs in each industry as defined by the Quarterly Census of Employment and Wages put out by the BLS. Jobs in our models are derived independently and do not match jobs reported by government entities in that we often define industries differently, and because we include more firms and facilities than are surveyed by the government. Jobs are measured in full-time equivalent units.

### **What is Meant by The Term Economic Output or Economic Impact?**

JDA uses output in its models as a general measurement of economic impact because we believe that it is the broadest and most comparative measure. In general, output represents the value of industry production for the model year calculated in terms of producer prices. Output differs depending on the industry being measured. In the case of the foundry industry, output is similar to gross sales for manufacturers. However, for retail and wholesale industries output is more similar to gross margin.