

U.S. Semiconductor Industry Employment

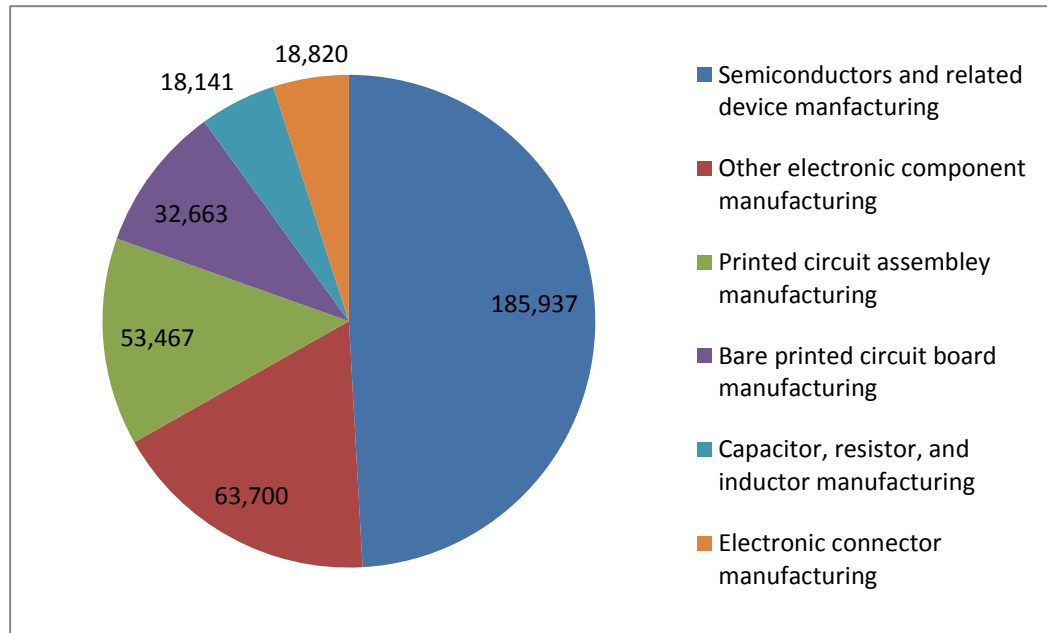
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U.S. Semiconductor Industry Employs Nearly 250,000 Workers

Total direct U.S. semiconductor employment is estimated at 242,337.² This total – based on official U.S. government statistics reported by the U.S. Bureau of Labor Statistics (BLS) – comprises workers in all major occupations in the U.S. semiconductor industry. The total includes BLS’s reported total for semiconductor employees in the U.S. manufacturing sector, plus an estimate for the number of semiconductor workers employed by semiconductor “fabless” firms, which BLS counts in the wholesale trade sector, not the manufacturing sector.³

Compared to all other electronic component industries in the United States, the U.S. semiconductor industry by far employs the greatest number of U.S. workers. In 2013, total employment for all U.S. electronic component manufacturing industries, including semiconductors, was 372,727.⁴ Of this total, semiconductor manufacturing employment totaled 185,937, or 50 percent, by far the largest share of all U.S. electronic component manufacturing industries (Figure 1). This total does not include employees of fabless semiconductor firms, which design semiconductors but do not manufacture them.

Figure 1: Employment in the U.S. Electronic Component Industry, by Subgroups, 2013



Source: BLS, 2015.

U.S. Semiconductor Industry Supports More Than 1 Million American Jobs

The U.S. semiconductor industry is responsible for creating more than 1 million jobs in other sectors of the U.S. economy. It does this by creating indirect jobs through three main channels: 1) indirect employment in supplier industries to the semiconductor industry, 2) employment created through re-spending effects of industry workers, and 3) government employment created by industry taxes. Employment in the U.S. semiconductor industry through these three channels collectively accounts for 4.89 indirect jobs for each semiconductor job in the manufacturing sector.⁵

The employment multiplier for the U.S. semiconductor industry is relatively high compared to multipliers in other industries. This means that the U.S. semiconductor industry has an outsized positive effect on job creation in other sectors throughout the economy compared to many other industries. For example, for the construction industry the employment multiplier is 1.90, for the automobile industry it is 4.64, for the communications industry it is 2.52, and for the overall manufacturing sector it is 2.91.⁶

ENDNOTES

¹ Director, Industry Statistics and Economic Policy, Semiconductor Industry Association (SIA).

² United States Department of Labor, Bureau of Labor Statistics, State and County Employment and Wages Database, <http://data.bls.gov/cgi-bin/dsrv> (accessed January 5, 2015).

³ Fabless semiconductor firms design semiconductors while contracting the fabrication of their products to third party foundries or integrated device manufacturers. The U.S. Government is currently in the process of migrating data on fabless semiconductor firms, including employment data, into the manufacturing sector of the North American Industry Classification System (NAICS) which it uses to categorize data by industries. This initiative is called the Factoryless Goods Producer (FGP) initiative and is scheduled for full implementation by the 2017 Economic Census. For more background on the Federal Government's FGP initiative, please see: <https://www.federalregister.gov/articles/2011/08/17/2011-20997/north-american-industry-classification-system-revision-for-2012>.

In the interim, SIA has created an estimate for total fabless employment captured outside of the manufacturing NAICS codes and included it with the manufacturing NAICS employment data to arrive at the total of 242,337. SIA estimates that approximately 56,400 fabless semiconductor jobs are counted outside of the manufacturing NAICS codes. This number is added to the approximately 185,937 semiconductor jobs in the NAICS industry code to arrive at the total of 242,337 U.S. semiconductor jobs in 2013.

⁴ The number is based on total employment for 2013 reported under NAICS code 3344, described as "Semiconductor and other electronic component manufacturing." United States Department of Labor, Bureau of Labor Statistics, State and County Employment and Wages Database, <http://data.bls.gov/cgi-bin/dsrv> (accessed January 5, 2015).

⁵ The following is a brief description of how the total for indirect employment is arrived at for the U.S. semiconductor industry. Applying the multiplier of 4.89 to the total number of reported semiconductor jobs in the manufacturing sector for 2013 (185,937) yields 909,232 indirect jobs. Recalling that total semiconductor employment includes an estimate for fabless semiconductor jobs that are not included in the U.S. government's measure of U.S. semiconductor jobs in the manufacturing sector, an additional 56,414 direct jobs must be factored in. These jobs have a slightly lower multiplier; since they are theoretically "fabless" jobs they do not account for any significant indirect supplier employment. Hence, the multiplier used for these jobs is 3.01. 56,414 multiplied by 3.01 yields 169,806 indirect jobs. When combined with the 909,232 indirect jobs from the manufacturing sector, the total number of indirect jobs created by the U.S. semiconductor industry in 2011 is 1,079,038.

⁶ Dr. Josh Bivens, *Updated Employment Multipliers for the U.S. Economy*, Economic Policy Institute, Working Paper No. 268, August 2003.