

**The Contribution of the Japanese-Brand
Automotive Industry to the United States Economy:**

2015 Update

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** All statements, findings, and conclusions in this report are those of the author and do not necessarily reflect those of the Japan Automobile Manufacturers Association.

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Executive Summary

For more than a quarter of a century, the Japanese-brand automotive industry has been a major contributor in shaping the U.S. economy and has generated and supported millions of U.S. jobs. As of late 2015, Japanese automakers in the U.S. motor vehicle manufacturing industry employed nearly 88,000 workers and their dealer network employed more than 375,000 workers. The consistent *growth* of Japanese automakers' U.S.-based employment is even more notable. In *every* year since our original 2011 study, direct and indirect employment supported by Japanese-brand automobile producers and dealers has grown. For instance, since 2011 Japanese-brand automobile producers and dealers increased their direct employment by 20.8% and 18.9%, respectively. The total number of jobs generated by Japanese-brand automobile companies and their dealership networks has grown by more than 17% since 2011. Today more than 1.5 million U.S. jobs are supported by the Japanese-brand automobile companies' U.S. production facilities, R&D centers, headquarters, and dealer networks – an increase of more than 225,000 jobs since our original study in 2011. The industry generates over \$106 billion in worker compensation, which in turn results in more than \$16 billion in personal income taxes to the federal government.

The key findings of this report are as follows:

- **Automobile Production-Driven Employment**
 - Japanese-brand automobile companies directly employ nearly 88,000 U.S. manufacturing, R&D/design, and other (e.g. headquarters, sales, etc.) workers.
 - Another 231,000 U.S. workers are employed in intermediate goods and parts industries that supply the Japanese-brand automakers' U.S. vehicle production and other facilities.
 - An additional 409,000 U.S. jobs are supported by direct and intermediate employment (often referred to as "spin-off" employment).
 - All told, **nearly 728,000 U.S. jobs are generated by the Japanese-brand automobile companies' U.S. production facilities, R&D centers and headquarters.**

- **Dealer Network-Driven Employment**
 - Approximately 375,000 U.S. workers are directly employed in the Japanese-brand automobile companies' dealer network.
 - Another 122,000 U.S. workers are employed in intermediate goods industries associated with the Japanese-brand automakers' dealer network.
 - An additional 281,000 U.S. spin-off jobs are supported by direct and intermediate dealership employment.
 - All told, **more than 778,000 U.S. jobs are generated by the Japanese-brand automobile companies' dealer network.**

- In total, the **Japanese-brand automobile companies' U.S. facilities and dealer networks contribute to more than 1.5 million private sector U.S. jobs.** The Japanese-brand automobile companies remain among the largest job creators in the United States.

- **Total annual compensation via the jobs created by Japanese-brand automobile companies in the United States exceeds \$106 billion.**

- Personal income taxes from these jobs are estimated to be nearly \$16 billion.

I. Introduction

This study updates previous reports on the economic contribution of the Japanese-brand automotive industry to the U.S. economy. Earlier studies estimated the employment and economic impact using 2011, 2012, 2013, and 2014 data; this report revises those estimates using updated 2015 data.

The analysis shows the continued growth and significance of the Japanese-brand automotive industry in the United States. This report affirms the findings of the previous studies – namely, that the Japanese-brand automotive companies are an important source of U.S. jobs and job growth. In 2015 more than 1.5 million American jobs were rooted either directly or indirectly in the Japanese-brand automotive companies' U.S. operations. These jobs are estimated to have contributed more than \$106 billion in labor compensation in 2015.

II. Value of the Japanese-Brand Automotive Industry to the U.S. Economy

The economic performance of the automotive industry, as well as manufacturing more broadly, is important for the continued development and growth of both the national economy and also regional economies. Manufacturing and automotive industry trends have long been important indicators of the state of the economy, with periods of growth in automotive manufacturing closely linked to periods of growth in the U.S. economy as a whole. Given the size of the Japanese-brand automobile producers, their performance and growth are important indicators for the overall U.S. economy.

Using modeling techniques described in prior work, estimates are derived from the economic contributions associated with the Japanese-brand automotive industry in

the United States.¹ The estimates include both direct employment and payroll, intermediate jobs at parts suppliers and other upstream firms, and spin-off jobs and compensation that result from the industry's direct and intermediate activity. The results are presented in three parts: the contributions of Japanese-brand automotive manufacturing, those associated with Japanese-brand new vehicle retail activities, and a combination of the two to represent the total impact of the Japanese-brand automotive industry in the United States.

A) Vehicle Manufacturer Activities

Summary estimates of the employment and income contributions of Japanese-brand automotive manufacturing to the private sector of the U.S. economy for 2015 are shown in Table 1.² Both blue-collar and white-collar workers employed by the manufacturing firms are included in direct employment. The direct employees of automakers include researchers, engineers, managers and administrative support, as well as workers on the assembly lines. According to data collected by the Japan Automobile Manufacturers Association, 87,788 workers were employed in Japanese-brand U.S. automotive manufacturing and related operations (Table 1).^{3,4}

Beyond those direct employees working in assembly, body, engine, and parts plants, R&D centers and headquarters, there are many more workers in intermediate and spin-off jobs that are supported through automotive production activities. The intermediate employment category captures the jobs necessary to satisfy demands

¹ Thomas J. Prusa, "The Contribution of the Japanese-Brand Automotive Industry to the United States Economy," May 6, 2013; Kim Hill, Debra Maranger Menk, Joshua Cregger, and Michael Schultz, "Contribution of the Automotive Industry to the Economies of All Fifty States and the United States," Center for Automotive Research, January 2015.

² Employment represents the total number of private sector jobs, including the self-employed. Compensation in the private sector consists of wage and salary disbursements, fringe benefits, and net incomes of owners of unincorporated businesses.

³ Automakers' contribution employment data to this study included Hino, Honda, Isuzu, Mazda, Mitsubishi, Nissan, Subaru, and Toyota.

⁴ As of December 31, 2015.

for the materials and services needed to design, produce, distribute, and sell motor vehicles and is sometimes referred to as the “automotive supplier network.”

Intermediate employment (suppliers of goods and services) from these automotive manufacturing activities is estimated to be 231,000 jobs, primarily in the industries necessary to produce automobiles – parts manufacturing, primary metal manufacturing, fabricated metal products manufacturing, and plastics and rubber products manufacturing.⁵ The sum of direct and intermediate jobs equals 318,788 private sector jobs.

Table 1 also reports the total spin-off jobs effect, also known as the expenditure-induced effect (spending from the people who work in the direct and intermediate jobs). The estimate of the expenditure-induced effect is 409,000 jobs which, when added to the 318,788 direct plus intermediate jobs, equals 727,788 total jobs.

⁵ Estimates of intermediate and spin-off employment are rounded to the nearest thousand; income and tax receipt numbers are also rounded. Sub-totals may not sum to total due to rounding.

Table 1: Private Sector Contributions of Japanese-Brand Automobile Manufacturing in the United States, 2015

| | | 2011-2015 | |
|----------------------------------------------------------------|---------|---------------|-------------------|
| | | <u>Change</u> | <u>Pct Change</u> |
| Employment | | | |
| Total (Direct + Intermediate) | 318,788 | +44,765 | 16.3% |
| <i>Direct</i> | 87,788 | +15,115 | 20.8% |
| <i>Intermediate</i> | 231,000 | +29,650 | 14.7% |
| Spin-off | 409,000 | +57,684 | 16.4% |
| Grand Total (Direct + Intermediate + Spin-off) | 727,788 | +102,449 | 16.4% |
| Compensation (\$ billions nominal) | | | |
| Compensation | \$51.0 | +\$10.05 | 24.5% |
| Less: transfer payments & social insurance contributions | (\$6.6) | (\$1.59) | 31.7% |
| Less: personal income taxes | (\$7.0) | (\$1.20) | 20.7% |
| Equals private disposable personal income | \$37.4 | +\$7.26 | 24.1% |

Compensation in the private sector associated with the total jobs (direct plus intermediate plus spin-off) amounts to \$51 billion. This estimate of compensation is prior to deductions for personal income taxes and contributions to social insurance programs and does not subtract transfer payments. Transfer payments and social insurance contributions amount to \$6.6 billion and personal income tax revenues amount to \$7 billion. Disposable personal income, or personal income after taxes and subtraction of transfers and contributions, is estimated to be \$37.4 billion.

B) Automobile Dealerships

Table 2 reports the estimated employment contributions by Japanese-brand new vehicle dealer operations for 2015. Employment estimates are broken out by direct employment (people employed directly by dealerships); intermediate employment (people employed by those who provide goods and services, excepting inventory, to dealerships); and spin-off employment (expenditure-induced employment resulting from spending by direct and intermediate employees).

Japanese-brand automotive dealerships directly employed (for new vehicle sales) 375,143 workers. As can be seen in Table 2 there are 122,000 intermediate jobs that support direct employment in the industry (suppliers of goods and services, not including motor vehicle inventory). Thus, the total employment (direct and intermediate) generated by Japanese-brand automotive dealerships is 497,143 workers.

The spin-off employment associated with spending by the people who work in the direct and intermediate jobs adds another 281,000 jobs, bringing the total jobs associated with Japanese-brand new motor vehicle retail operations in the United States (direct plus intermediate plus spin-off) to more than 778,000 jobs.

Table 2: Private Sector Contributions of Japanese-Brand New Vehicle Dealers (Retail) in the United States, 2015

| | | 2011-2015 | |
|----------------------------------------------------------------|---------|----------------------|--------------------------|
| | | <u>Change</u> | <u>Pct Change</u> |
| Employment | | | |
| Total (Direct + Intermediate) | 497,143 | +79,061 | 18.9% |
| <i>Direct</i> | 375,143 | +59,560 | 18.9% |
| <i>Intermediate</i> | 122,000 | +19,501 | 19.0% |
| Spin-off | 281,000 | +44,469 | 18.8% |
| Grand Total (Direct + Intermediate + Spin-off) | 778,143 | +123,531 | 18.9% |
| Compensation (\$ billions nominal) | | | |
| Compensation | \$55.8 | +\$17.00 | 43.8% |
| Less: transfer payments & social insurance contributions | (\$7.6) | (\$3.44) | 82.7% |
| Less: personal income taxes | (\$9.3) | (\$3.54) | 61.6% |
| Equals private disposable personal income | \$38.8 | +\$9.92 | 34.3% |

The bottom panel of Table 2 reports the estimates for compensation in the private sector associated with total jobs (direct plus intermediate plus spin-off), which amounts to nearly \$56 billion. The estimate of compensation is prior to deductions for personal income taxes and contributions to social insurance programs, and does not include transfer payments. As shown, a reduction in transfer payments and social insurance contributions of \$7.6 billion is associated with new Japanese-brand vehicle dealer activity, and personal income tax revenues are increased by \$9.3 billion. The implication for disposable personal income, or personal income after taxes and subtraction of transfers and contributions, is an increase of \$38.8 billion in the domestic economy.

C) Total Contribution

Combining the estimates for Japanese-brand automotive production with the estimates for Japanese-brand vehicle dealer operations yields the “bottom line” for the Japanese-brand automotive industry as a whole. These results for the total U.S. private sector contributions from Japanese-brand automotive industry activities are shown in Table 3.

The Japanese-brand automobile manufacturers and their dealer networks directly employ nearly 463,000 employees – nearly 88,000 in the production and distribution of their U.S.-built automobiles and over 375,000 in their new dealer vehicle networks. In turn, these nearly 463,000 direct jobs support another 353,000 intermediate jobs (such as auto parts, raw and fabricated steel, etc.). All told, over 815,000 direct and intermediate jobs are rooted in the Japanese-brand automobile companies’ U.S. production and sales.

Table 3 also reports the total spin-off jobs effect, which includes the expenditure-induced effect (spending from the people who work in the direct and intermediate jobs). The estimate of the expenditure-induced effect is 690,000 jobs. By combining this figure with the direct plus intermediate jobs, this study estimates the Japanese-brand automobile companies have a total employment effect of 1,505,931 jobs.

Compensation in the private sector associated with total jobs (direct plus intermediate plus spin-off) amounts to almost \$107 billion. As mentioned earlier, the estimate of compensation is prior to deductions for personal income taxes and contributions to social insurance programs, and does not include transfer payments. As shown in the bottom panel of Table 3, a reduction in transfer payments of more than \$14 billion is associated with automotive manufacturing activity, and personal income tax revenues are increased by more than \$16 billion. On net, disposable

personal income, or personal income after taxes and including transfers, is increased by more than \$76 billion in the domestic economy.

Table 3: Private Sector Contributions of Japanese-Brand Automobile Activity, 2015

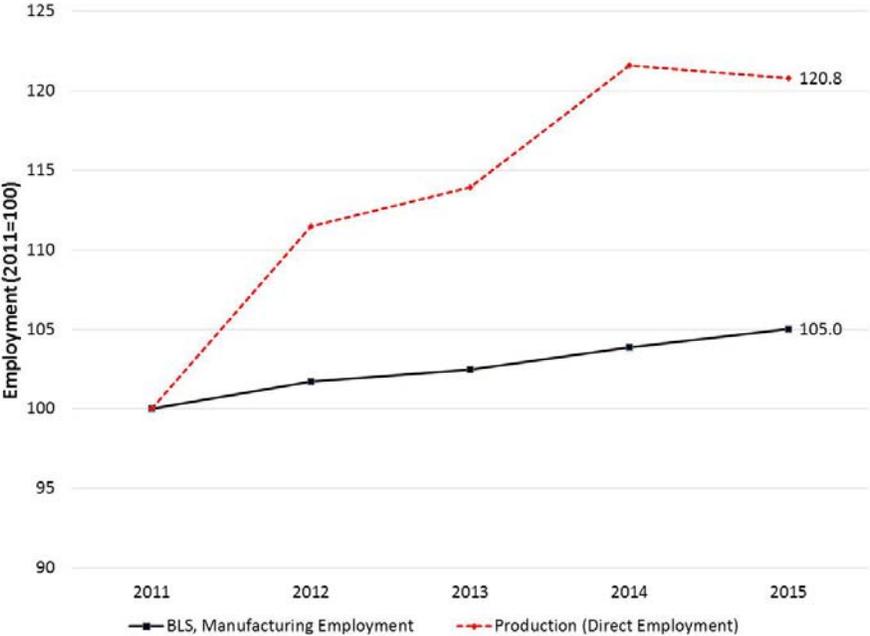
| | <u>Production</u> | <u>New Vehicle Dealers</u> | <u>Total</u> |
|-------------------------------------------------------------|-------------------|------------------------------------|--------------|
| Employment | | | |
| Total (Direct + Intermediate) | 318,788 | +497,143 | 815,931 |
| <i>Direct</i> | 87,788 | +375,143 | 462,931 |
| <i>Intermediate</i> | 231,000 | +122,000 | 353,000 |
| Spin-off | 409,000 | +281,000 | 690,000 |
| Grand Total (Direct + Intermediate + Spin-off) | 727,788 | +778,143 | 1,505,931 |
| Compensation (\$ billions nominal) | | | |
| Compensation | \$51.0 | +\$55.8 | \$106.8 |
| Less: transfer payments & social insurance contributions | (\$6.6) | (\$7.6) | (\$14.2) |
| Less: personal income taxes | (\$7.0) | (\$9.3) | (\$16.3) |
| Equals private disposable personal income | \$37.4 | +\$38.8 | \$76.2 |

III. Concluding Comments

This study highlights the continued economic importance of the Japanese-brand automakers' U.S.-based production. Consistent with the findings of our previous studies, we again find that Japanese-brand automakers' economic contributions grew in 2015: today more than 1.5 million U.S. jobs are tied to Japanese-brand automakers.

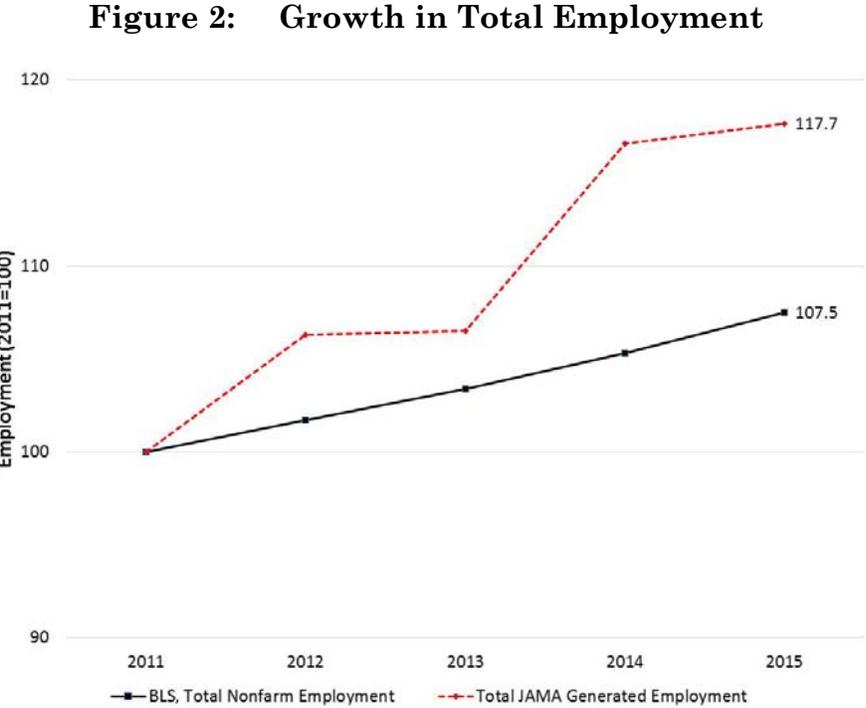
The steady and robust job growth by JAMA member companies – both direct employment and also the overall employment tied to JAMA members’ activity – is quite remarkable, especially when compared with broad job trends in the overall economy. In Figure 1 we plot the production workers directly employed by Japanese-brand automobile companies in the U.S. (e.g., manufacturing, R&D/design, headquarters, sales, etc.). For comparison, we also plot total manufacturing employment (as reported by the U.S. Government).⁶ We normalize both data series so the value for 2011 is 100. As seen, direct employment by Japanese-brand automobile companies has grown by more than 20.8% since 2011. By contrast, overall U.S. manufacturing employment has only increased 5% over the same period. The old saying “a picture is worth 1,000 words” has never been more true – in this case, JAMA companies are leading the U.S. manufacturing recovery.

Figure 1: Growth in Direct Production Employment



⁶ All Manufacturing employees, Bureau of Labor Statistics, <http://data.bls.gov/>.

An important lesson from this series of “contributions” studies is that Japanese-brand automobile companies’ activity in the U.S. goes far beyond the factory floor. Most obviously, there is the direct employment in automobile dealerships. As described above, there are also thousands of intermediate and spin-off jobs generated by Japanese-brand automobile companies’ activities in the U.S. In Figure 2 we plot total employment and compare it with the trend in overall U.S. employment.⁷ We again normalize both data series so the value for 2011 is 100. As seen, we see that the growth in overall jobs related to JAMA member company activity exceeds the growth in overall U.S. employment. Since 2011 total employment generated by Japanese-brand automobile companies’ activities has grown by more than 17% whereas overall U.S. employment has grown by about 7%.



Employment is not the only reflection of the growing impact of Japanese-brand automobile companies’ activity in the U.S. For instance, I estimate total

⁷ Total nonfarm employees, Bureau of Labor Statistics, <http://data.bls.gov/>.

compensation in 2015 was over \$106 billion. This represents a 33.9% increase in compensation since 2011. This is more than twice the growth in compensation for all U.S. workers.⁸

In every respect the last five years have been a very strong period for both the Japanese-brand automobile companies and also the overall U.S. economy. As the comparison with the BLS official employment statistics has shown, Japanese-brand automobile companies are playing a leading role in recovery and growth of the U.S. economy.

⁸ Bureau of Economic Analysis, Compensation of Employees by Industry, <http://www.bea.gov> .