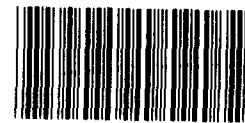


October 1990

FOREIGN
INVESTMENT

Japanese-Affiliated
Automakers' 1989 U.S.
Production's Impact on
Jobs



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**National Security and
International Affairs Division**

B-241694

October 17, 1990

The Honorable Marcy Kaptur
House of RepresentativesThe Honorable Carl Levin
United States Senate

This report responds to your request that we provide estimates of the possible effects on U.S. employment in 1989 of automobile production by Japanese-affiliated automakers in the United States. These estimates were developed using the methodology that supported similar estimates for 1987 in our report, Foreign Investment: Growing Japanese Presence in the U.S. Auto Industry (GAO/NSIAD-88-111, Mar. 7, 1988), and an estimate for 1988 in a June 1989 letter to the Chairman, Senate Committee on Finance. In addition, we developed estimates using four other scenarios which differ only in the assumption of the extent to which such production displaced other U.S. automakers' production.

Results in Brief

The production of Japanese-affiliated automakers in the United States led to about 11,000 net job losses in 1989 compared to 25,000 in 1988. The 1989 estimate is based on the assumptions that (1) 68 percent of the Japanese-affiliates' production in the United States displaced other U.S. produced autos and (2) the remaining 32 percent made up the difference between Japan's voluntary export restraint level and auto imports from Japan.

Higher auto displacement assumptions yield larger net job loss estimates. For example, at 100 percent displacement the job loss would be 46,000; at 80 percent displacement the job loss would be 24,000. At 60 percent displacement the loss estimate would decline to 2,000, and a 40 percent displacement would lead to an estimated net gain of 21,000 jobs.

A key factor in the net job loss estimates for 1989 was that the Japanese-affiliated automakers bought more parts from U.S. sources. The reported increase in the use of U.S. parts, from 38 percent in 1988 to about 50 percent in 1989, increased the estimate for U.S. parts suppliers' jobs related to Japanese-affiliated automakers' production.

Background

In response to business considerations, export restraints, and concerns over potential trade barriers, several Japanese-affiliated automakers have built assembly plants in the United States. As noted in a recent Commerce Department report, 168 Japanese companies had invested in auto parts plants in the United States by the end of 1989, and 69 of these are reportedly affiliated with a Japanese vehicle assembler.

There has been continuing Congressional interest in understanding the effect on national employment of Japanese-affiliated auto production in the United States. In general, these automakers have greater labor efficiency than General Motors, Ford, and Chrysler (the Big Three) and thus provide fewer assembly jobs. Further, they import more parts and components than do the Big Three and, therefore, support fewer jobs in U.S. auto parts supplier industries. However, whether the Japanese-affiliate operations lead to net job losses or gains is highly dependent on the extent to which their production displaces the production of other U.S. automakers instead of imports, a factor that cannot be empirically projected. Therefore, we explored the range of possible job effects under different displacement assumptions.

1989 Estimated Net Job Losses

We estimate that Japanese-affiliated automakers' production in the United States in 1989 provided 66,000 jobs but displaced 77,000 other jobs. The net effect was an 11,000 net job loss. Direct factory jobs decreased by an estimated 1,000 and upstream¹ supplier jobs were reduced by 10,000.

Our estimate of 11,000 net job losses in 1989 resulting from Japanese-affiliated automakers' production in the United States was computed assuming 68 percent of the production displaced Big Three production. The bases for this assumption were that (1) transplant production displaced imports to the extent that Japanese auto producers fell below Japan's voluntary export restraint level and (2) all other production displaced the production of General Motors, Ford, and Chrysler on a "one-for-one" basis, except for the estimated exports to Japan of these Japanese-affiliated U.S. automakers. Japanese car exports to the United States in 1989 were 1,940,000, or 360,000 below Japan's voluntary export restraint level of 2,300,000. Japanese-affiliated automakers produced 1,131,000 cars in the United States in 1989. After subtracting autos assumed to displace imports from total production, there

¹Upstream suppliers provide inputs directly or indirectly to the vehicles up to the assembly level.

remained 771,000 autos, or 68 percent of production, assumed to displace Big Three autos.

A major factor influencing the results was the significant increase reported by the Japanese affiliates for 1989 U.S.-bought parts and components. The average domestic sourcing ratio for the affiliates (on a production-weighted basis) was 50.5 percent compared to 38 percent in 1988. This led to a significant increase in estimated upstream supplier employment associated with production by the Japanese-affiliated automakers.

Job Implications Under Different Displacement Ratios

We recognize that there may be differing views as to which autos compete against each other and, therefore, which autos are displaced by the production of Japanese-affiliated automakers in the United States. To explore the range of possible effects on U.S. employment, we developed a series of estimates using different displacement assumptions, ranging from 100 percent down to 40 percent.

In each displacement scenario, the Japanese-affiliated automakers' U.S. production of 1,131,000 cars is estimated to provide 66,000 U.S. jobs, including 15,000 direct factory jobs and 51,000 upstream supplier jobs. When these autos displace autos produced by other U.S. automakers, there will be displacement of the latter's direct factory jobs as well as jobs of their upstream suppliers. The difference between the jobs provided by Japanese-affiliated automakers' production and jobs displaced due to displacement of other U.S. automakers' production is the net employment effect.

Under the scenario assuming 100 percent displacement of Big Three autos, 66,000 jobs are provided but 112,000 other jobs are lost, resulting in an estimated net job loss of 46,000. At 80 percent displacement, net job losses fell to 24,000. In the 60 percent displacement scenario, the employment impact was almost neutral, with net job losses of 2,000. When the displacement assumption was reduced to 40 percent, the estimated net employment effect was a gain of 21,000 jobs. Details of these estimates are in appendix I, table I.1.

Agency Comments

Most of the data in this report was provided by the private sector. Therefore, we did not request comments from any federal agency.

Scope and Methodology

Computation of the employment estimates was done using the same methodology used in our 1987 and 1988 estimates. The formulas and quantitative factors used to calculate estimated job losses are set forth in appendix I.

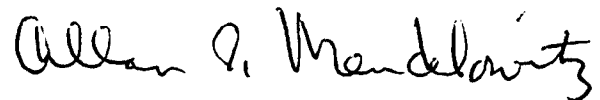
We would like to emphasize that the employment estimates are based on a number of data elements that we could not independently verify. For example, Japanese-affiliated automakers voluntarily provided us their domestic content ratios from which we developed domestic sourcing ratios. We obtained information on 1989 production from (1) officials of General Motors, Chrysler, Ford, Honda of America, New United Motor Manufacturing Inc., Nissan, Mazda, and Toyota; (2) the 1990 Ward's Automotive Yearbook; and (3) the Department of Commerce's Office of Automotive Industry Affairs. Because private industry is not required to provide us such information and because of the automakers' strong interest in maintaining the confidentiality of their production data, reflecting the intense competition within the industry, we could not verify the information.

We could not determine the extent to which parts and components included in the domestic content ratios include foreign source materials, but did note the growing number of Japanese-affiliated auto parts plants in the United States.

Our study was conducted during September and October 1990 in accordance with generally accepted government auditing standards.

Unless you publicly announce its contents earlier, no further distribution of this report will be made until 30 days from its issue date. At that time, we will provide copies to interested congressional committees, executive branch agencies, and other interested parties. Copies will also be made available to others on request.

The major contributors to this report were Curtis F. Turnbow, Assistant Director, George M. Delgado, Evaluator-in-Charge, and Jane-Yu Li, Economist. Should you have any questions, please contact me on (202) 275-4812.



Allan I. Mendelowitz, Director
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Computation of the Effects on U.S. Employment in 1989 of Japanese-Affiliated Automakers' Production in the United States

A. KEY DATA SOURCES

1. Japanese-affiliated automakers' production of cars in 1989: 1,131,000 (Data Source: Ward's 1990 Yearbook)

2. Car production displacement ratio in 1989: 68 percent

Car imports from Japan in 1989 were 1.94 million, which was 0.36 million short of the voluntary export restraint level of 2.30 million. Exports to Japan by Japanese-affiliated automakers were about 5,000. That leads to the following computation:

$$(1.13 - 0.36 - 0.005) / 1.13 = 0.68$$

3. Domestic sourcing of parts ratios

Big Three average: 87.6 percent (private industry estimate)
Japanese-affiliated automakers: 50.5 percent (weighted average of data collected from Honda, Mazda, New United Motors Manufacturing, Inc., Nissan, and Toyota)

4. Employment per plant (annual production of 200,000 cars per plant)

Big Three: 4,151
Japanese-affiliated automakers: 2,613
(Estimated from data collected for 1987, adjusted with 2 percent annual productivity gain, same annual rate used in our March 1988 report, estimated by historical data)

5. Job multiplier (number of upstream jobs per assembly job): 4.33 (computed from the labor requirement table of the Bureau of Labor Statistics).

Appendix I
Computation of the Effects on U.S.
Employment in 1989 of Japanese-Affiliated
Automakers' Production in the United States

B. COMPUTATION OF JOB IMPACT
(Results of job calculations rounded to nearest thousand)

1. U.S. jobs provided by Japanese-affiliated automakers' U.S. production, based on 5.66 plants: (1,131,000 cars produced/200,000 cars per plant = 5.66 plants)

Direct factory jobs
5.66 plants X 2,613 jobs per plant = 15,000

Upstream jobs
5.66 plants X 4.33 upstream multiplier X 4,151 jobs per plant X .505 domestic sourcing ratio = 61,000

Total jobs provided 66,000

2. U.S. jobs displaced due to reduced Big Three U.S. production, based on 3.85 plants: (5.66 Japanese-affiliated plants X .68 displacement rate = 3.85 Big Three plants displaced)

Direct factory jobs
3.85 plants X 4,151 jobs per plant = 16,000

Upstream jobs
3.85 plants X 4.33 upstream multiplier X 4,151 jobs per plant X .876 domestic sourcing ratio = 61,000

Total jobs displaced 77,000

3. Net job loss

Jobs displaced 77,000
Jobs provided 66,000
Net job loss 11,000

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C. JOB EFFECTS BASED ON VARIOUS DISPLACEMENT ASSUMPTIONS (Rounded to nearest thousand)

Table I.1: 1989 Estimated Job Effects With Varying Displacement Scenarios

	Assumed displacement of Big Three cars			
	100 percent	80 percent	60 percent	40 percent
Jobs lost to displacement of Big Three cars				
Direct factory jobs	23,000	19,000	14,000	9,000
Upstream jobs	89,000	71,000	54,000	36,000
Total	112,000	90,000	68,000	45,000
Jobs provided by Japanese-affiliated automakers	66,000	66,000	66,000	66,000
Net job loss (gain)	46,000	24,000	2,000	(21,000)

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