

A Developing Framework for US-Japan Automotive Trade:  
Challenges, Competitive Survival, and Significance

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This testimony addresses a number of specific issues relating to the current trade negotiations between the United States and Japan in the automotive sector, the so-called "Framework Negotiations." My remarks draw on some recent analyses my colleagues and I have performed on the competitive situation of the North American automotive industry. I will limit my remarks to three issue areas. First, the importance and likely future developments in bilateral automotive trade, particularly in the light of recent competitive developments. Second, what levels of economic activity in the automotive supplier sector does vehicle assembly generate and how might it differ between Big Three and Japanese-affiliated assembly operations in the United States? Third, how might we objectively measure the U.S. supplier content of vehicles so that we can determine a baseline for assessing change?

I should say at the outset that I find the basic premise of the automotive Framework negotiations promising. As I understand it, the first step is to develop reasonable measures of the current situation, so that both Japan and the United States are addressing the issue from a common understanding, if not perspective. Such a jointly recognized measure would, I believe, permit more fruitful and beneficial negotiations as to progress in deficit reduction, methods of deficit reduction, and a common frame of reference for resolving outstanding issues. I am somewhat disheartened to note that much of the public debate has degenerated to disputes about targets, goals, and pledges, and about which country now adheres more closely to free trade principles.

I must also say that I increasingly find the comparison of the Japanese and U.S. automotive manufacturers less and less useful. We have reached the point where the achievements and strategies of the companies are so different within each industry, and the comparisons of companies across industries so variable, that it is difficult to lump them together into national industries for some purposes. I think this is especially true of the Japanese companies in North America, where the sourcing patterns—especially increased sourcing from traditional U.S. suppliers—are quite different across the companies. I believe that some of the Japanese companies are quite sincere in their efforts to increase sourcing from traditional U.S. suppliers, whether to avoid friction or to seek economic advantage. On the other hand, some still seem resistant, lacking in serious effort to consider fairly the performance and advantages these suppliers offer.

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## **The bilateral U.S.-Japan automotive trade deficit**

Let me summarize the key points and findings from a study we completed last summer:

1. The automotive trade deficit continues to have major implications for overall U.S. trade performance: at just over \$50 billion, it accounted for about 60 percent of the total U.S. merchandise deficit in 1992, some 11 percent more than it accounted for in 1990, although it fell some \$9 billion compared to 1990.
2. The composition of the total automotive deficit has altered significantly, with the parts' share growing from 7 percent in 1985 to 19 percent in 1992, in spite of a substantial decline from 1989, when part share was 27 percent.
3. In spite of the yen nearly doubling in strength from 1985 to 1992, the current dollar automotive trade deficit with Japan increased 30 percent over that period and now accounts for about 62 percent of the total automotive deficit. The deficit of \$31.5 billion in 1992 has been essentially stable for three years.
4. The growth in the bilateral deficit since 1985 has been almost entirely due to trade in parts. The parts share of the bilateral deficit increased from 19 percent to 35 percent, and, at \$10.9 billion, offsets an 1992 automotive parts surplus of some \$1.2 billion with the rest of the world. The bilateral parts deficit now reflects Japanese parts imports to the United States of \$11.86 billion, and U.S. parts exports to Japan of \$930 million. Those 1992 U.S. parts exports of \$930 million represent almost a quadrupling since 1985.
5. Our scenario method for projecting the 1996 bilateral vehicle deficit results in four forecasts, all assuming that Japanese vehicle sales are sourced 55 percent in North America and 45 percent from Japan. Our 16 million market, stable Japanese share case calls for unit imports from Japan to rise 7 percent, while the increase in U.S. vehicle exports to 100,000 units (an increase of some 145 percent) results in a deficit that rises just over 19 percent, to about \$24.38 billion constant 1992 dollars. Our 15 million market and Japanese share falling 3.4 points case sees Japanese unit imports down some 12 percent, U.S. exports tripling to 120,000 units, and the constant dollar deficit falling to \$19.2 billion, down just over 6 percent. The value and units of Japanese vehicle imports do not move in lockstep because the Japanese industry is exporting more expensive vehicles to the United States as they enter more lucrative segments of the market.
6. Increased transplant production will drive the parts trade deficit, but we still expect that deficit to fall by 1996, after increasing in 1993 through 1995. In our strong market, stable Japanese share scenario, parts imports for 1996 will reach \$12 billion 1992 dollars. This is up 1 percent from 1992 levels, although the market and total Japanese sales in the United States are each 24 percent larger. In our average market, shrinking Japanese share scenario, parts imports in 1996 will reach just over \$11 billion 1992 dollars, down 6.5 percent from 1992, although the market is 16 percent larger, and Japanese sales rise 1 percent.
7. Our combined forecast for vehicle and parts bilateral deficits for 1996 yield a constant dollar deficit ranging from \$34.95 billion, up 11 percent from 1992, to \$27.97 billion, down about 11 percent. The parts share of the total deficit accounts for 30 to 31 percent of the total.

The news for the traditional domestic industry has indeed been good of late. The Big Three regained about 2 points of production share in 1993, are enjoying improved profit performance, appear to have substantially reduced the quality advantages of Japanese nameplates, and now enjoy a price advantage over comparable Japanese vehicles. The market continues to shift to light trucks, a segment where Big Three share is over 86 percent, and away from cars, where their share is a more modest 60 percent. For the nation, there is the added good news of a continued increase in the share of Japanese nameplate sales that are sourced here in the United States or in Canada, rather than Japan.

However, the return of better times to Detroit in and of itself will not eliminate the national problem of that troublesome deficit. Our trade projections assume a growing light truck share, and we developed scenarios that set Japanese share loss at over three points. In spite of these favorable developments for the Big Three, our scenarios forecast a continuing, although perhaps slightly easing bilateral trade deficit through 1996. Nor will increased sourcing of Japanese sales from U.S. operations substantially reduce that deficit in the next few years.

Moreover, the continuing economic difficulties of Japan and some very real challenges faced by the Japanese industry make it unlikely that the changed economics of automotive production, now tilted in favor of the United States, will result in a smooth transition to a more open Japanese market in parts and vehicles. In particular, the Japanese manufacturers' understandable preference for supporting their traditional suppliers in Japan and affiliated operations in the United States will continue to pose immense access problems for fully competitive traditional U.S. suppliers. We also expect to see a reduction in the number of new models and an extension of the product life cycle in Japan, thus slowing any natural increase new models might spur in the sourcing of parts and components to traditional U.S. suppliers.

### **Suppliers of Parts and Components**

A knotty aspect of the bilateral automotive deficit is the role of the Japanese-affiliated operations of the Japanese manufacturers and their traditional suppliers, drawn here in large numbers in the late 1980s to serve their customers. Some see these activities as an important part of the eventual solution—reduction of the trade imbalance, as they essentially replace imported automotive goods from Japan. Others see them as an enduring part of the problem because of their high Japanese import content and low U.S.—especially traditional U.S.—supplier content. Whatever their eventual role may be, there is little question that they contribute to the problem today, and will continue to do so for some years to come.

These operations, by all reports, rely upon substantially lower U.S. part and component content, and substantially higher Japanese import content than do the Big Three and traditional U.S. suppliers. However, it is difficult to estimate exactly what these levels may be, especially since anecdotal evidence suggests that they are changing rapidly, at least for some of the Japanese manufacturers' affiliated U.S. operations.

This “domestic content” is important because it determines the “multiplier” effect for the basic operations of vehicle assembly. There is no question in my mind that the U.S. economic activity generated by the Big Three at traditional suppliers exceeds that generated by Japanese-affiliated U.S. manufacturers to a substantial degree. Moreover, the sourcing patterns determine the kind of supplier work performed, and I believe it is critical that the United States maintain a technically sophisticated automotive supplier industry. We are too

large an economy, and auto suppliers play too important a role in our economy, to be simply another industry's source of less expensive labor.

In 1991 we performed a case analysis of Honda's sourcing, basing this work on publicly available and OSAT collected information. I must stress that we selected Honda, not to hold them up for particular criticism, but because we felt that Honda probably had the highest level of domestic sourcing, and their lead in U.S. production might suggest how other Japanese-affiliated manufacturers would source production parts and components as they increased volumes and gained U.S. experience. Our analysis confirmed Honda's high levels of domestic content, but at 62 percent, rather than the near 75 percent often reported in the press at that time. We estimated that some 16 percent of the total value of the vehicle was sourced from traditional U.S. suppliers, while Japanese-affiliated suppliers accounted for 26 percent and Honda's own U.S. operations for another 20 percent. The balance, or 38 percent, was imported. If we examine only the sourceable content—purchased parts and components—20 percent come from traditional U.S. parts suppliers, 33 percent from transplant suppliers, and 48 percent from offshore sources.

Our statistical analysis associated \$3,345 of imported Japanese auto parts with each vehicle assembled at Japanese-affiliated operations in the United States during 1992. This represents an increase of more than \$300 in parts imports compared with our 1990 result—a 5 percent increase, compounded annually. If we assume a 3 percent inflation rate over the last two years and corresponding indexed wages, then there was virtually no change in transplant import content from 1990 to 1992. Moreover, the average value of Japanese-affiliated production increased over the same period, as intermediate passenger cars rose from 43 percent to 64 percent of the production mix. These data, then, suggest that there probably has been some replacement of imported parts by domestic U.S. parts production. However, the level of import content is still extremely high, especially since Big Three production was not reliably related to Japanese parts imports in 1992.

We will soon publish a series of forecasts through the year 2003, based on expert opinion of members of the U.S. industry, including both traditional and Japanese-affiliated manufacturers and suppliers. While our respondents are certainly not always correct in their forecasts, their forecasts do reveal their planning assumptions. These participants estimate the U.S. sourcing of Japanese-affiliated manufacturers at about 20% currently, and rising just to 21% by 2003, as most of the increased North American sourcing goes to Mexico. By contrast, they estimate that the Big Three currently source 60% in the United States, falling to 44% by 2003, but still more than twice the level of the Japanese-affiliated assemblers.

We also performed an analysis of the change in composition of U.S.-Japan automotive parts trade. These results suggested that fast-growing Japanese exports through 1991 could be characterized as high-value, while fast growing U.S. exports could be characterized as low value. Similarly, our case study results suggested that U.S. suppliers to Honda were underrepresented in high value subsystems like the engine and transmission, and overrepresented in lower value systems, like hardware and interior trim.

The engineering work required for automotive production is sophisticated and well-paying, and therefore engineering activity should be considered an important economic benefit of an automotive industry. Our forthcoming forecasts series estimates that the Big Three currently perform 90% of their engineering for North American production in North America, probably falling to 80% by 2003. Japanese-affiliated manufacturers are estimated to perform about 10% here currently, rising to 25% by 2003.

Finally, the traditional U.S. supplier still finds it extremely difficult to penetrate the Japanese original equipment parts market, the largest single-nation parts market in the

world since 1981. While parts exports from the United States to Japan have grown rapidly, they still totaled less than \$1 billion in 1992. Our surplus with the rest of the automotive world makes it as difficult to believe that this reflects a free economic market as it is to believe that less than 1% vehicle share in Japan simply reflects consumer preference.

### **Measurement of U.S. content**

Analysts and companies report a variety of numbers that intuitively appear related to the bilateral automotive trade deficit. Thus, a manufacturer may label the "U.S. content" of a particular vehicle, based on its material and part (but not assembly) content; or report that it is a "domestic" vehicle (75 percent U.S. and Canadian content) under Corporate Average Fuel Economy (CAFE) standards, which covers most costs. The manufacturers may also claim tariff-free crossing of the U.S.-Canadian-Mexican borders under NAFTA, with its specific content tracing requirements, or report the total volume of "auto parts and materials" purchased for export to Japan. While all of these trade numbers do relate to the bilateral automotive trade deficit, they do so in different, and often complicated, ways. Even trade data has its pitfalls, as the U.S. government relies on two different sources, and the U.S. and Japanese governments use different methods for valuing imports.

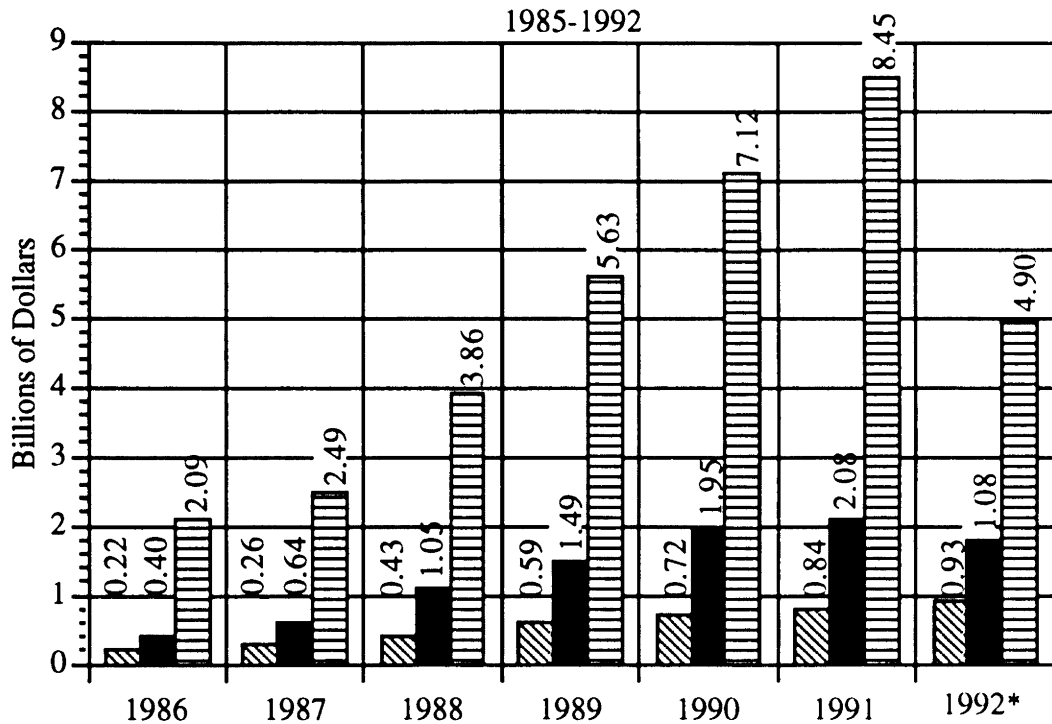
It is not surprising that U.S. government numbers typically suggest lower exports of U.S. automotive parts and components to Japan than do the numbers often cited by Japanese companies and trade associations to demonstrate their commitment to higher levels of sourcing in the United States. JAMA and MITI release figures on the purchase of U.S.-made parts by Japanese automotive firms on a regular basis that are sometimes referred to as part of the "MOSS Data Collection." Figure 1 displays the published reports of these purchases on a Japanese fiscal year basis for 1986-1991 and the first half of 1992, as well as U.S. government totals for the full calendar years 1986-1992.

Figure 1 shows the JAMA/MITI totals of Japanese manufacturer's total purchases of U.S.-made parts rising from a level of \$2.5 billion in FY1986 to a level of \$10.5 billion in FY1991, with an encouraging \$6.7 billion for the first half of FY1992. We estimate, based on these figures, that automotive part and component exports to Japan from the United States rose from \$400 million in FY1986 to a total of \$2.1 billion in 1991, or a five-fold gain. However, the U.S. ITC reports that exports of automotive parts to Japan rose four-fold, but from a lower base of \$203 million in 1986 to \$835 million in 1991. These two 1991 estimates are just about \$1.25 billion apart, and undoubtedly bear on the different evaluations the two countries—and industry members—make about the rate and level of progress in opening the Japanese parts market to U.S. sales.

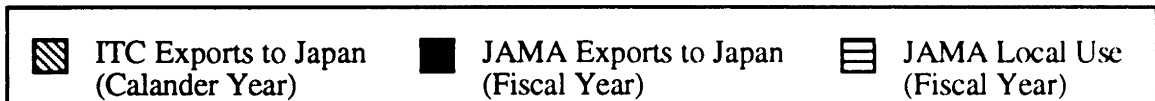
We think most of the difference in these estimated exports to Japan is due to different definitions of automotive parts and components. The definitions used by the ITC to report automotive parts trade target discrete products, generally used in the final assembly of major automotive components or the vehicle itself. On the other hand, the JAMA/MITI—and Japanese manufacturer—definition of automotive parts appears to incorporate purchases of other goods and products by automotive companies. These include both raw materials (such as aluminum ingots), paint, plastic resins, and other products (such as textiles for carpeting and leather for seat covers) that have many non-automotive uses. To be sure, these non automotive purchases and exports are recorded by the ITC, but in other product categories. Thus, such purchases count as U.S. exports in determining the overall bilateral trade balance, but they are not counted in the calculation of the specific automotive trade balance.

These differences in definition reflect differing concerns and information. From the view of a Japanese company, it makes perfect sense to record as an automotive purchase and export those materials and products that they buy for use in automotive production in Japan. From the view of the U.S. government, it is more efficient and accurate to simply record the product and categorize it by general use, rather than to make its categorization dependent on determining its final specific use.

Figure 1  
Japanese Purchases of U.S. Automotive Parts



\* 1992 data: ITC figures are for entire year, JAMA figures are for 1st half.



Source: Japanese Automobile Manufacturing Association, U.S.  
International Trade Commision

However, these numbers do suggest a problematic pattern in the development of U.S. automotive-related exports. First, the ITC's more restrictive definition of automotive parts suggests that automotive exports to Japan have increased, reaching a level of over \$800 million by 1991. Second, since we assume that the JAMA/MITI numbers typically include the trade flows reported by the ITC, we can recover an estimate of trade developments for automotive-related, but non automotive goods. Subtracting the ITC numbers from the JAMA/MITI numbers suggests that the exports of automotive-related goods have grown from some \$200 million to \$1.25 billion, or over 600 percent, from FY1986 to FY1991. Thus exports of ITC-defined automotive goods fell from 51 percent of the JAMA/MITI FY1986 total to 40 percent of the FY1991 total.

These non automotive goods are typically both lower value and lower value-added than automotive goods as defined by the ITC. Moreover, they are often produced by companies less reliant on their automotive business than those that produce automotive goods as defined by the ITC. Therefore, the economic and industry implications of increased exports to Japan are quite different for the ITC and JAMA/MITI estimates.

While we think that most of the disagreement between ITC and JAMA/MITI export estimates is rooted in these differing definitions, we do think it is possible that JAMA/MITI numbers occasionally *double-count* purchases. For example, the purchase of steel in the United States that is used to fabricate a part or stamping in a U.S. facility may be properly counted as a domestic-use purchase. However, the full value of the exported part or stamping—including the value of the steel—may also be counted as an export. Such double-counts are difficult to avoid, and thus would not be especially surprising if they in fact occur.

JAMA and MITI also report Japanese manufacturers' total purchases of U.S. automotive parts for use at their facilities in the United States. These purchases reached \$8.45 billion in FY1991, up four-fold compared with FY1986 purchases. This estimate raises an immediate question: why has such an increase in purchases, culminating in such a high level, seemingly not affected the parts trade deficit? While these purchases are not exports, one might expect that to some extent they substitute for imported parts.

There are many reasons why these JAMA/MITI domestic-use numbers might be so at odds with U.S. government reports of the bilateral deficit. First, the production of Japanese vehicles in the United States more than doubled from 1986 to 1991, increasing the total U.S. purchases. Second, these probably include purchases that would be treated as "automotive" in an input/output analysis of the economy, while U.S. trade data include only discrete automotive parts. If we apply the same percentage figure that we calculated for exports in 1991, we would expect about \$3.4 billion of this total to represent automotive parts and components as defined for trade purposes and general economic analysis.

Third, at least some of the Japanese companies include purchases from U.S. companies that originate outside the United States in their estimates of U.S. purchases. Thus, if the Japanese manufacturer sources parts from a GM plant for use in Japan, those are counted as U.S. exports to Japan—even if they come from GM facilities in Canada, Mexico, Europe, or Asia. This may be an important source of the differences in export numbers reported by JAMA and the U.S. ITC.

Fourth, in line with CAFE content calculations, U.S. assembly plants typically count as "U.S." content the full value of parts and components shipped from U.S.-sited plants, without determining the actual U.S. content of such shipments. Thus an air conditioner shipped from a component facility in the United States would be treated as 100 percent U.S. content by the automaker, even if most of its value is composed of an imported Japanese component, such as a compressor. Import content, as measured for CAFE purposes, is often lower than import content measured in trade terms.

Fifth, there may be some double-counting of purchases for strictly domestic use. If aluminum is purchased for the production of engine blocks or heads at a Japanese affiliated engine foundry, its value as a raw material is properly included. But that value may be counted again if the engine is sold to the assembly plant and also counted, at full value, as a domestic use purchase. Again, such double-counting would not be surprising.

Our estimate above assumed that the ratio of automotive parts to total purchases is the same for export and domestic consumption. However, we suspect that the sourcing of more restrictively defined automotive goods may in fact be somewhat higher for U.S. assemblies than for export to Japan. Such sourcing differences would make sense for bulky, heavy, and low-value parts: they would not be candidates for export from either country to the other. Can we estimate the proportion of these purchases that are automotive in the more restrictive sense?

We estimate the current dollar capacity of Japanese-owned, U.S.-sited supplier facilities at about \$4 billion, based on estimated employment of 56,000 in 1991, and automotive supplier industry average output per worker of over \$70,000. Of course, these facilities also sell to the Big Three, and many are experiencing severe problems of under-capacity. If we assume that as much as 80 percent of this capacity supplied Japanese-owned, U.S.-sited facilities, then these facilities might account for about \$3.2 billion in U.S. purchases of automotive parts and components. Perhaps a more realistic estimate of 60 percent of capacity would suggest \$2.4 billion in purchases.

We estimated that traditional domestic suppliers accounted for just under \$1,600 in value per unit at Honda. While we recognize that the Japanese manufacturers have undoubtedly increased their sourcing of automotive parts from traditional U.S. suppliers, we doubt that this source had reached \$1,600 on average by 1991, since Honda produces a more expensive vehicle. U.S. produced Honda cars are generally thought to have higher levels of U.S. content than the average of all new entrant assembly plants. However, if the average level of traditional U.S. supplier content is as high as \$1,300 per unit, then 1991's Japanese-controlled production in the United States of 1.55 million vehicles would have yielded just over \$2 billion in U.S. content. If traditional supplier content was still as low as \$1,000 per unit, that would yield \$1.5 billion in 1991 U.S. content.

The combined low and high estimates for Japanese-affiliated and traditional suppliers suggest that \$4 to \$5 billion in U.S. purchases of restrictively defined automotive parts and components is reasonable, while \$8.45 billion is highly unlikely.

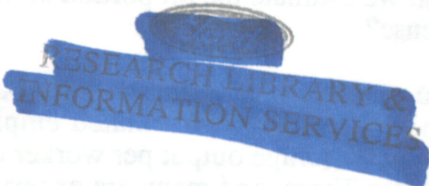
We prefer the broader definitions and categories of automotive trade used by JAMA, especially if combined with a tracing requirement as is the case for NAFTA duty-free movement. They more closely approximate the approach of input-output analysis for measuring the relationship, linkages, and importance of an industry to the total economy than do the discrete part definitions used by the U.S. government. Common, consistent, and accurate measurement would make these data useful for cost-benefit analyses, and would facilitate agreement between the two governments on the nature, extent, and perhaps even seriousness of the trade problems they face.

I would like to close this testimony by repeating a policy recommendation that we included in our most recent trade analysis, one that supports the purpose and spirit of the Framework negotiations: *The U.S. and Japanese governments should establish a shared and standardized definition of automotive and automotive-related goods and services, and ensure that automotive trade flows are measured accurately, reliably, and consistently.*

It seems to me that this would be a useful and effective first step in bringing about eventual resolution of bilateral trade friction. Until the two governments use the same baseline, it is difficult to see how they can move forward in negotiations.



The estimate of the amount that the rate of exchange has to rise to meet the demand for more for export and domestic consumption. However, we expect that the amount of more private goods than public goods will be less than what is needed to meet the demand for export. Such a situation would be different from that of the other countries, which have been able to supply more than enough public goods to meet the demand for export. In the more developed countries, the amount of public goods is usually less than the amount of private goods.



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