# U.S. Automotive Parts Industry Annual Assessment


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**Office of Aerospace and Automotive Industries**
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The big stories of 2006 were the continued economic struggle of parts suppliers hit with higher energy, plastic, and steel costs, heavy debt and overcapacity caused by production cuts at Ford, GM, and Chrysler. As a result, another eight major suppliers, including Dana Corp. and Dura Automotive Systems Inc. filed for bankruptcy in 2006. At least 36 large auto parts makers have sought Chapter 11 protection since 1999.

Industry analysts expect that the Detroit 3 (General Motors, Ford Motor Company, and DaimlerChrysler) will continue to lose U.S. market share to U.S.-affiliates of foreign-based manufacturers and imports. Many U.S. parts suppliers are trying to become suppliers to the foreign-affiliated (transplant) automakers to offset the loss of sales to the Detroit 3. However, they are finding it difficult to enter transplant automakers' supply chains, in part because transplants have established relationships with home-market (foreign) suppliers or have already established long term relationships with other U.S. suppliers.

### International

The United States exported a record $58.9 billion worth of automotive parts in 2006, up from the $55 billion in 2005. Canada, Mexico, European Union 15, and Japanese markets accounted for 89 percent of total U.S. automotive parts exports in 2006. The United States imported a record high amount of automotive parts in 2006, reaching $95.2 billion, up from $92.2 billion in 2005. The $6.9 billion worth of automotive parts imports from China in 2006 was an increase of 28 percent from 2005. Combined, Mexico, Canada, Japan, Germany, and China accounted for $76.2 billion, or 80 percent of total U.S. imports of automotive parts. The U.S. trade deficit in automotive parts decreased to $36.3 billion in 2006, a 2.1 percent decrease from 2005 levels. The $37.1 billion deficit recorded in 2005 was the largest automotive parts trade imbalance in history.

### Outlook

Most analysts predict that suppliers with significant health care and pension costs will continue to struggle to stay competitive. Because U.S.-based suppliers largely remain heavily tied to the traditional U.S. automakers, suppliers will keep struggling until they can find replacement business with foreign or transplant automakers or exit the industry to pursue other opportunities. Further restructuring and downsizing of the North American auto parts industry will likely occur. The outlook for U.S. auto suppliers remains gloomy for 2007.

## Introduction

Automotive parts consumption is derived from the demand for new vehicles, since roughly 70 percent of U.S. automotive parts production is for the OEM products. The remaining 30 percent is aftermarket sales – the so-called "repair market". If vehicle production goes down, then automotive parts production and sales follow. The year 2006 was another difficult year for the Detroit 3 (GM, Ford and Chrysler), as they lost U.S. market share once again. On the other hand, foreign transplant automakers have increased market share and those suppliers that supply these automakers are finding some success.

U.S. parts suppliers have been feeling the pinch in terms of small profit margins and price cut demands. The largest U.S.-based automotive supplier, Delphi, continued its bankruptcy protection proceedings throughout 2006, working with the courts, the UAW, and GM, to negotiate a restructuring. From the automotive parts industry perspective, 2006 was much the same as 2005. GM announced plant closings, major layoffs and production cuts in November 2005 and Ford made similar announcements in January 2006. GM's plan will be completed by 2008 and Ford's by 2012. In February 2007, DaimlerChrysler announced it would be laying off 13,000 workers between 2007 and 2009 and Daimler suggested a Chrysler spin-off or sale was possible.

Industry experts expect that domestic vehicle manufacturers will continue to lose market share to U.S. affiliates of foreign-based manufacturers and imports.[1] U.S. vehicle manufacturers have struggled the past few years to make profits on cars and trucks. They have needed to cut costs and have been forced to offer incentives to maintain sales. The automakers continue to demand price cuts on automotive parts, while at the same time reducing their volume requirements. Many U.S. parts suppliers are trying to become suppliers to the foreign-affiliated (transplant) automakers to offset those losses. However, some are finding it difficult to enter transplant automakers' supply chains, in part because transplants have established relationships with home-market (foreign) suppliers, whether through imports or through foreign suppliers' U.S.-affiliates, or have already established long term relationships with other U.S. suppliers. However, as transplant automakers increase their presence in the United States, foreign-affiliated suppliers also increase their presence to supply the automakers, creating equipment sales and jobs in the U.S. economy.

## Automotive Parts Sector Definitions

Automotive parts are defined as either Original Equipment (OE), or aftermarket parts. Original equipment parts that are used in the assembly of a new motor vehicle (automobile, light truck, or truck) or are purchased by the manufacturer for its service network are referred to as Original Equipment Service (OES) parts. Suppliers of OE parts are broken into three levels. The first level is "Tier 1" suppliers who sell finished

[1] For a list of Automotive Parts Industry Associations, visit http://www.ita.doc.gov/td/auto/links/tradeassn.html

components directly to the vehicle manufacturer. The next level is "Tier 2" suppliers who sell parts and materials for the finished components to the Tier 1 suppliers. The third level is "Tier 3" suppliers who supply raw materials to any of the above suppliers or directly to vehicle assemblers. There is often overlap between the tiers. Original equipment production accounts for an estimated two-thirds to three-fourths of the total automotive parts production.

Aftermarket parts are divided into two categories: replacement parts and accessories. Replacement parts are automotive parts built or remanufactured to replace OE parts as they become worn or damaged. Accessories are parts made for comfort, convenience, performance, safety, or customization, and are designed for add-on after the original sale of the motor vehicle.

For a more detailed and specific product definition of automotive parts, including North American Industry Classification System (NAICS) codes, see Appendix 1.

**Overview of Industry Market Conditions**

The U.S. auto industry is a key component of the nation's industrial strength. In a typical year, it accounts for 5 percent of GDP and 16 percent of all durable goods shipments. The automotive industry, including the automotive parts sector, accounted for about 1.1 million employees in 2006, a decline of 2.4 percent from 2005[2] and accounted for 7.5 percent of all manufacturing employees. The Center for Automotive Research found that automotive suppliers employed 783,100 U.S. workers and contributed to 4.5 million jobs nationwide in 2004.[3]

Many of the "transplant" OEM producers employ a business model that combines collaboration with its parts suppliers in a lean, flexible, just-in-time (JIT) assembly process. JIT is predicated upon short supply lines that deliver small batches of components to the assembly line steadily and without interruption (often hourly, and sometimes synchronized to match a particular vehicle). Because there is no built up inventory, JIT allows the firms to correct quality problems as they are discovered, and to make running changes in product specifications or volume requirements when needed. Buyers and sellers collaborate over time to drive costs down and share in the savings generated. This business model appears to successfully lower the OEMs' input and assembly costs, improve product quality, and stimulate the development of new content. [For more, see <http://www.ita.doc.gov/td/auto/domestic/SupplyChain.pdf>.]

The Detroit 3 are working to adopt JIT concepts and the collaborative, partnering approach. Until they reach that point, however, they continue to seek price concessions

[2] Bureau of Labor Statistics data using NAICS 3361, 3362, and 3363. http://data.bls.gov/PDQ/outside.jsp?survey=ce

[3] *Contribution of the Motor Vehicle Supplier Sector to the Economies of the United States and its 50 States*, by Economics and Business Group, Center for Automotive Research, January 2007. http://www.cargroup.org/documents/MEMA-Final2-08-07_000.pdf

while asking their suppliers to take on more design and manufacturing responsibilities and to absorb the higher costs for their inputs. This situation is placing the U.S. OEM supplier universe under great pressure.

Pressure is further exacerbated by global competition in the parts industry. As Japanese, German, and Korean-based vehicle manufacturers gain increasingly larger shares of the U.S. market, they maintain relationships with their traditional supplier base from their home markets. Many of those home market suppliers have been creating or expanding "transplant" capacity in the U.S. to meet their traditional OEM's production needs. At the same time those transplant suppliers are aggressively seeking business from the Detroit 3. In addition, suppliers in many lower cost markets are improving their quality and becoming capable of supplying even greater shares of U.S. demand from abroad. The Detroit 3 have also been advocating that U.S.-based suppliers move production to lower cost countries or risk losing future contracts.

The domestic parts industry is in the throes of responding to numerous new challenges. Some suppliers are willingly taking on the new responsibilities offered to them by the OEMs, transforming themselves into "Tier One-Half systems integrators," that engineer and build complete modules (for example, an entire interior, 4-corner suspension sets, or an entire rolling chassis) and assume both product design and development responsibilities and down stream supply chain management functions previously undertaken by the OEMs. These suppliers are scrambling to add to their capabilities and product lines; building additional plants to satisfy JIT requirements and minimize inventory exposure, adopting global best manufacturing practices, investing in their own development of new technologies, or buying or merging with firms that can contribute new skills, complementary products, and new technologies.

Other firms, however, are choosing not to pursue this new role, consciously deciding to remain in the less demanding tiers. Some eventually could find themselves in an exceedingly competitive environment of highly cost sensitive, commodity products – particularly if they are unable to differentiate their offerings.

The impact upon suppliers if any of the Detroit 3 sharply curtails operations can be severe. It takes many months and significant resources to win business from vehicle assemblers or from the major "Tier 1" suppliers. Most U.S. suppliers are ill-situated to withstand major disruptions. Unfortunately, dramatic growth in several Asian economies has led to high and rising costs for important raw materials. Steel prices have remained high due to strained capacity and dramatic industrial growth in the developing world. The same dramatic growth has also increased petroleum prices. The rise in petroleum costs led to increased energy costs and higher raw material costs for those companies producing petroleum based products (e.g., plastics). These higher raw material costs have pushed several industry players over the edge.

*Economic Indicators*

Historically, the automotive sector closely tracks economic indicators, in part because the automotive sector is a major component of these indicators (Charts 1 and 2). There are some worrisome conditions on the horizon, however. The record U.S. deficit, over $763 billion in 2006, is troubling because, traditionally, large deficits have resulted in higher interest rates. Unfortunately, consumers have high debt loads making them very sensitive to interest rates. Additionally, there are structural variables negatively influencing vehicle sales, including lower scrappage rates of vehicles because of increased reliability of new vehicles.

Because the automotive industry is an important link to other economic sectors, economic movements will affect the automotive industry. Trends in the automotive parts industry follow the motor vehicle industry. However, there is a perception that even in periods of downturn in the motor vehicle sector, lost OE automotive parts production and sales will be offset somewhat by aftermarket sales as demand for replacement parts for vehicles in use increases. This perception is not always correct, as consumers will also delay all but essential repairs during a recession. Additionally, the durability of parts has increased from previous decades, resulting in less need to replace many normal wear parts. Therefore, declines in OE parts production and sales may no longer be offset by increases in the demand for aftermarket parts.

According to the most recent Annual Survey of Manufacturers (with data through 2005), auto parts industry shipments of $217.1 billion accounted for 4.6 percent of total U.S. manufacturing shipments (Tables 1 and 2). This is one of the highest shares of any single U.S. industry sector. Industry employment in 2005 accounted for 5.8 percent of total manufacturing employment. The U.S. automotive parts industry was also one of the largest U.S. exporters, accounting for 5.7 percent of total U.S. merchandise exports in 2005 (Table 3). [For the complete Census report, go to < http://www.census.gov/mcd/asm-as1.html >].

The Original Equipment Suppliers Association (OESA) reported that the worldwide market for Original Equipment (OE) automotive parts decreased 7 percent from $843 billion in 2004 to $782 billion in 2005 (Table 4). The Asia Pacific region, Europe, and North America combined to account for roughly 95 percent of the global market for OE parts.

A study by the OESA and RolandBerger Consultants estimated that the world market for OE auto parts would increase at a compound average growth rate of 3.4 percent per year between 2003 and 2010, reaching $1.1 trillion. The U.S. market represented about 23 percent of total consumption in 2003, totaling about $200 billion. Although U.S. OE output will increase in absolute terms, the study predicts that the U.S. share of global OE production will decline at a 2.8 percent compound average rate, falling from a 22 percent share to 18 percent in 2010.

The global average value of parts per vehicle declined from $13,586 in 2004 to $12,304 in 2005, according to the Original Equipment Suppliers Association (OESA) (Table 4). OESA reported that this reflects a number of factors including greater global competition among parts suppliers, increased economies of scale, and cost cuts demanded by vehicle manufacturers.

*Forecast of Market Conditions*

Several industry forecasts expect that 2007 U.S. vehicle sales will fall only slightly from 2006's 16.5 million units market. Light vehicle production is expected to modestly decrease over the next two years. Total U.S. production of light vehicles was 10.8 million units in 2006, a decline of 6.4 percent from 2005. The record high production of light vehicles was in 1999 with 12.6 million units. This trend is expected to continue as the Detroit 3 downsize and attempt to manage product mix and keep inventories in balance. However, as production decreases in the United States, production in developing markets is expected to grow in 2007, accounting for 97 percent of the forecasted 1.9 million units of global market expansion.[4]

A 2005 survey of 140 senior level executives in the automotive sector by KPMG LLC revealed that expectations for future profits were falling and that automotive executives think their companies will make even less money in the next five years as competitive pressures intensify worldwide. The outlook was generally negative and 76 percent of the respondents believed that at least one automaker or another big supplier would go bankrupt in the next few years. A majority of the automotive executives also responded that they believe even more automotive business would be conducted across country borders during the next five years that consolidation will occur among Tier 1 and Tier 2 suppliers, and that there will be some consolidation among automakers.

## Production

In 2005, the value of auto parts industry shipments was $217.1 billion, according to the U.S. Census Bureau's Annual Survey of Manufacturers (Table 2). U.S. parts production capacity greatly exceeds current utilization; in part because automakers encourage suppliers to be close to auto producing plants to improve "just-in-time" delivery of parts, quality control, and flexibility. Automakers are even experimenting with putting suppliers inside the production plants.

The Detroit 3 have been examining supplier park systems. The appeal of supplier parks is that it puts parts suppliers in or next to assembly plants, significantly shortening the response time of suppliers, shortening lead time, saving money on shipping parts, and lessening the chance of disruptions. Ford established the first North American automotive supplier park in the Chicago area with 12 suppliers within half a mile of the assembly plant.

[4] *2007 Global Outlook*, PwC Automotive Institute Analyst Note, 1/18/07.

For suppliers that produce complex modules and are required to make 'just-in-time' delivery, there are potential benefits to being located in a supplier park. For other suppliers, however, it makes little sense to spend money on building a plant for just one customer to turn out parts that are easy to ship. Suppliers will need to consider the costs and benefits of being part of a supplier park to service just one customer. There may be other downsides too. In tight labor markets, suppliers would be competing for employees with the automakers, which pay higher wages. A bigger issue is what happens if the automaker does not live up to its plans. It becomes a capacity risk for suppliers at a time when many are struggling to keep existing capacity running.

## Domestic Market

*Original Equipment*

The size of the U.S. Original Equipment parts market was estimated by DesRoisers to be $184.0 billion in 2006[5] (Table 5 and Charts 3 and 4). This is a decrease of 4.7 percent from the $193.1 billion in 2005. Despite the OE parts market decreasing in the United States in 2006, it increased 2 percent to $42 billion in Canada and 42.7 percent to $38.4 billion in Mexico, resulting in a net increase of 1.2 percent to $264.4 billion in the North American OE parts market. The reason DeRoisers gave for this is that content per North American vehicle increased to $16,300 in 2006 from $16,003 in 2005.

The Original Equipment Suppliers Association (OESA) calculated total world OE parts market in 2005 to be $781.7 billion, using the total world vehicle production of 63.5 million units in 2005 with an average OE parts content per vehicle of $12,304. In North America, OESA calculated the total North American OE parts market to be $215.8 billion in 2005, using a total vehicle production of 15.7 million units with an average OE parts value of $13,739 per vehicle. Using these figures, the world OE parts market was down 7.3 percent from $843 billion in 2004 and the North American OE parts market was down 6.8 percent from $231.5 billion.[6]

Globally, the top 100 OEM suppliers recorded $501.8 billion in sales in 2005, an increase of 5.5 percent from $475.5 billion in sales in 2004 (Table 6, Charts 5 and 6). The top 10 global OEM suppliers saw a 3.9 percent increase in sales to $192.7 billion in 2005 from $185.5 billion in 2004. Robert Bosch GmbH passed Delphi Corporation in 2004 to become the world's largest supplier, measured by global sales. Bosch had worldwide OE sales of $28.4 billion, while Delphi had an estimated $22.6 billion, down 6 percent from 2004. In 2005, Denso Corp. and Magna International also overtook Delphi in terms of global OEM automotive parts sales.

In North American equipment sales in 2005, Delphi still ranks as the largest supplier, with estimated sales of $16 billion, while Bosch ranked seventh, slipping a rank from sixth in 2004 in the North American market. Within North America, the 150 largest

[5] *Size of the Parts Market in North America*, DesRosiers analysis email, 1/19/07
[6] *OE Industry Report 2006-2007*, Original Equipment Suppliers Association & J.D. Power and Associates.

suppliers had sales of $202.9 billion in 2005, up 2.7 percent from 2004 (Table 7, Charts 7 and 8). The top 10 North American suppliers accounted for 41.9 percent of the total in 2005, up slightly from 41.3 percent of the total in 2004.

DesRosiers reported that the reason that there are so many bankruptcies in the automotive parts sector in the United States is the amount of competition is growing as foreign suppliers open shop in North America. An estimated 800-1,000 suppliers from overseas built plants in North America in the past 20 years.[7] DesRosiers refers to this as mass global "Localization" of the supplier sector. Some foreign suppliers, especially European companies, that expanded businesses in North America, to supply their Detroit 3 customers, are also trying to move away from Detroit 3 business to Asian automakers. But Japanese suppliers are not immune either. Suppliers in North America all face competition, higher material costs, and demanding customers.

DesRosiers also reported that the North American parts demand that is supplied by transplant suppliers in North America has increased from about 10 percent to over 30 percent over the last 10 years. According to Automotive News[8], in 2004, foreign-affiliated suppliers produced 33.1 percent of OE parts sold in North America, up from 27.5 percent in 2001 (Table 5, Charts 3 and 4). Foreign-affiliated suppliers are making significant inroads into the U.S. market through acquisitions, sales to transplant automakers, and sales to the Detroit 3. Moreover, transplant production in the United States has grown exponentially, from only 2.6 million light vehicles in 1999 to 3.9 million light vehicles in 2006, with further growth anticipated during 2007.

The Detroit 3 are also purchasing more foreign-based supplier components. For example, Siemens, a German supplier, which had no share of audio systems in North America in 2003, had a 25 percent share in 2005. Also, Denso Corp., the fourth largest supplier in the world, reported that its sales to the Detroit 3 were rising and that they represent about 40 percent, while Toyota alone accounts for abut 40 percent of Denso's business in North America. Denso is a member of the Toyota group and expects double-digit growth over the next five years in North America.

The effect of the foreign-based suppliers' increased share of the North American market is affecting the North American content of vehicles. Some Japanese vehicles, such as the Toyota Sienna had a 90 percent U.S. and Canadian component content, while traditional American vehicles, such as the Chevrolet Suburban, Ford Mustang and Jeep Grand Cherokee have between 61-72 percent U.S. and Canadian content.

*Aftermarket*

The automotive aftermarket sector does not encounter the same price and cost cut pressures from OEMs that the OE supply chain feels, but the sector is still affected by the state of the economy. The size of the U.S. automotive aftermarket in 2005 was projected

[7] *Size of the parts market in North America*, DesRosiers, 1/19/2007.
[8] Automotive News, November 28, 2005, "Transplant Suppliers Surge in N.A." by Lindsay Chappell, pp. 1 and 35.

to have been about $195 billion, up 2.2 percent from the previous year, according to the Automotive Aftermarket Suppliers Association (AASA). AASA forecasted that the aftermarket would reach around $202 billion in 2006. The Automotive Aftermarket Industry Association (AAIA) reported that the U.S. motor vehicle aftermarket reached $267.6 billion in 2005, a 5 percent increase from 2004, and AAIA predicts it grew about 4 percent in 2006.

Factors influencing the size of the aftermarket include economic recovery, number of vehicles reaching prime aftermarket age of about 8 years, cost of gas, amount of unperformed maintenance, and the ability to get or keep used cars in circulation. In 2006, the number of registered vehicles in the United States will continue to grow and more vehicles are "coming of age" when they need more repairs. The aftermarket is also experiencing a shift from Do-It-Yourself (DIY) to Do-It-For-Me (DIFM) consumers as vehicles become more complex and baby boomers age. There were 237.2 million vehicles registered in 2004 in the United States, compared to 231.4 million vehicles in 2003. AASA reported that the proportion of vehicles between 6-10 years old decreased slightly in 2004, but this figure should increase as vehicles sold in the 1990s enter this age bracket. The larger and older fleet reflects improved overall durability, and indicates a growing market for replacement aftermarket parts such as filters, mufflers, brakes, and tires, as well as performance and styling products.

According to Aftermarket Business, replacement/aftermarket parts are no longer judged on anything other than form, fit, and function, since quality parts can and do come from every where. No longer is the "made in America" mark an automotive indication of better quality over parts from other countries. Moreover, other countries are producing quality parts at lower prices. This shift to acceptance of foreign parts has been fueled by China's and India's successes in entering the American aftermarket.[9]

Aftermarket suppliers also need to be able to keep up with new technology. A challenge to the aftermarket is getting repair information so that independent dealers and shops can compete with OE dealers and shops. With the development of more complex electronic equipment, it is difficult for the aftermarket to compete with original equipment suppliers. However, often the aftermarket has quicker product development cycles for new products in the telematics segment, giving it a chance to step in with more cost effective solutions.

*Remanufacturing*

Remanufactured automotive parts represent an estimated $85-100 billion industry worldwide. Based on estimates by the U.S. Automotive Parts Remanufacturers Association (APRA), $35-$40 billion in remanufactured auto parts, plus associated equipment and supplies, were marketed in the United States in 2006. There are roughly 150 production engine remanufacturers, and around 1,000 automotive parts remanufacturers.

[9] Aftermarket Business, by Sativa Ross, "Staring Down Commoditization," 12/05

The remanufacturing industry produces goods that are entirely or partially comprised of components recovered from end-of-life products. The process transforms these recovered components into like-new goods**.** This reuse of inputs yields important economic and environmental benefits. Remanufactured goods have the appearance, performance, and life expectancy of new goods. They meet the same performance requirements as, and enjoy warranties similar or identical to, equivalent new goods. In short, remanufactured products are intended to be identical to and indistinguishable from those products manufactured entirely from raw materials, new parts or components.

Remanufacturing reduces the volume of material entering the waste stream by re-directing retired products to the remanufacturing process. Remanufacturing thereby reduces the amount of raw materials consumed and recovers some of the energy and labor costs associated with their production. Remanufacturing saves on new raw material inputs and on energy use, because recovered goods retain the energy and inputs from their original manufacture. For instance, remanufacturing of automotive alternators requires only 12 to 14 percent of the energy that it would normally take to manufacture a new alternator. These savings result in lower product prices.

However, domestic demand for remanufactured automotive parts in the United States has begun to slow due to original equipment parts lasting longer and competition of low cost new parts imported primarily from China, so U.S. parts remanufacturers and the associated equipment and supplier industry must look outside the United States for increased sales opportunities. Many countries limit trade in remanufactured products. Such barriers include outright trade bans, higher tariffs and fees, or overly stringent regulation, certification, and inspection requirements. Many of these barriers exist because countries associate remanufactured goods with used goods and waste, or they use this as an excuse to protect their own industry. The U.S. government has been working with industry to address the barriers to trade in remanufacturing through our free trade agreement negotiations, the WTO Doha Round, and the 3Rs (Reduce, Reuse, Recycle) Initiative.

**Employment Trends**

In a report, *Contribution of the Motor Vehicle Supplier Sector to the Economies of the United States and Its 50 States*, released in January 2007 by the Center for Automotive Research, it found that automotive suppliers contribute to 4.5 million jobs nationwide and provide more jobs than any other sector in seven states- Michigan, Indiana, Kentucky, Missouri, Ohio, South Carolina and Tennessee. It was reported that automotive suppliers account for more jobs and provide more economic well-being to more Americans than any other manufacturing sector.

The OESA estimates that there were 30,000 firms in the North American automotive supply chain in 1990, but just 10,000 in 2000 and 8,000 in 2004. By 2010, their numbers may dwindle to no more than 5,000, each enjoying significantly higher sales volumes, but

likely to require significantly fewer total employees.[10] OESA/RolandBerger forecasts an 11% decline in auto parts production worker employment between 2003 and 2010, caused primarily by increased productivity paired with slowing growth in U.S. output. While some industry observers may question the precision of these estimates, none will disagree with the magnitude of the pressure the industry is experiencing.

The Bureau of Labor Statistics (BLS), U.S. Department of Labor, reported that employment in the automotive parts industry was an estimated 721,900 jobs in 2006 (Table 8 and Chart 9). This is a decline of 3 percent from the 744,000 jobs in 2005. The last time the number of jobs increased in the automotive parts industry occurred in 2000, when employment grew 0.3 percent to 920,300. However, employment fell sharply the following year to just 850,200 jobs.

The Annual Survey of Manufacturers released in November 2006 counted 661,570 employees in the automotive parts industry (NAICS 3363211 Motor Vehicle Body Manufacturing and NAICS 3363 Motor Vehicle Parts Manufacturing, which would capture most Tier 1s, some Tier 2s, but probably few Tier 3s) in 2005 (Table 9). This is a decline of 3.2 percent from the 683,097 employees in 2004.

With so many jobs being lost because of reorganizations and restructuring, the projections for U.S. automotive parts industry employment are not rosy for 2006 or beyond. Although U.S. suppliers are reducing jobs, import brands and their suppliers are increasing their employment presence in North America. Many Japanese, German, and Korean suppliers have established manufacturing facilities in the United States that employ a large number of production workers.

The shift from U.S. suppliers to transplant suppliers is demonstrated in the decline of jobs in the automotive sector in Michigan and Indiana, while Alabama is experiencing an increase in automotive sector employment. When Chrysler announced it intends to slash 13,000 jobs in 2007, 5,500 of those jobs will be in Michigan. Michigan has experienced the loss of tens of thousands of job cuts as a result of restructuring at GM, Ford, Delphi, and other automotive companies.

Meanwhile, Alabama has been experiencing gains in automotive production. Alabama produced 674,851 vehicles and accounted for 4.3 percent of the North American total in 2006, up from 479,465 units and 2.9 percent in 2005. Alabama is home to three transplant automakers and in 2006 more than 24 new supplier plants and expansions were announced, which may bring 2,250 jobs to the state. Korean suppliers are following Hyundai, which opened its first North American assembly plant in Montgomery, Alabama, in 2005. Many of the newcomers to Alabama are smaller suppliers seeking nonunion work force, proximity to new assembly plants and state and local incentives.

Less than 8 percent of the nation's private work force is unionized today. When public employees are added to the figure, 12.5 percent of all workers belong to unions, about half the amount there were 25 years ago. The UAW had fewer than 500,000 members at

[10] An Odyssey of the Auto Industry, presented before the SAE World Congress on March 8, 2004.

the end of 2006, down from 1.5 million in 1979. Part of this decline was due to greater productivity that allowed auto companies to build more cars with fewer people, but it also reflects reluctance on the part of blue-collar workers to join unions, especially in the new Southern transplants. Industry experts expect that union membership will drop another 100,000 to less than 400,000 in 2007 because of early retirements, layoffs, buyouts and possible bankruptcies. Recent actions by the UAW agreeing to let some parts companies, such as Delphi and Visteon, hire new workers at a lower pay scale than current UAW members may have a negative impact on membership.

Suppliers are negotiating and re-negotiating contracts with unions in efforts to cut back on labor costs. UAW leaders realize that prospects of even maintaining current pay and benefit levels are dim because so many large suppliers are in Chapter 11. Thus, suppliers are able to lower wages and cut back or eliminate health care, pension, and other benefits. For example, Delphi and Visteon negotiated changes with the UAW in 2006 that would lower retirees health care benefits and increase health care costs for current working UAW members.

The current Detroit 3 contracts with the UAW end September 2007. Many Delphi and Visteon hourly workers are also affected by these contracts because they remained under the same contract as GM and Ford when they were spun off from the two automakers. In addition, many traditional U.S.-owned parts manufacturers are members of the UAW, and although those contracts expire at different times, the final UAW contract with the Detroit 3 will have an affect on their wages and benefits.

**Leading Industry Stories of 2006**

*Financial Situation of Suppliers*

The big stories of 2006 were the continued economic pain of parts suppliers hit with higher energy and steel costs, heavy debt, and overcapacity caused by production cuts at Ford and GM. Visteon was near bankruptcy in 2005, but got assistance from its former parent, Ford Motor Company. Delphi continued to work to emerge from bankruptcy through 2006. In 2006, eight more large suppliers filed Chapter 11, including Dana Corp. and Dura Automotive Systems Inc. At least 36 auto parts makers and two vehicle haulers have sought Chapter 11 protection since 1999.

Many suppliers saw their bond ratings fall to "junk" status according to Standard and Poor's, the New York ratings agency. "Junk" or non-investment grade status warns investors and customers about the elevated risk of doing business with a company. Some suppliers who saw their bonds rated as junk in 2005 included Delphi, TRW, ArvinMeritor, Tenneco, and Visteon. Suppliers rated as junk see the cost of borrowing increase and sometimes they can't get credit at all. Lenders apply tougher standards and suppliers and customers become harder to deal with. S&P's outlook for the sector is grim. Fifteen of 50 suppliers tracked by S&P's have negative outlooks. Just three have positive outlooks. Twenty of the top 29 companies with public debt in last year's

*Automotive News* list of the largest OEM suppliers in North America have junk bond ratings.[11]

Despite the number of high profile bankruptcies and other industry analysis of bleak futures, market forecasting firm CSM found that only 25 percent of North American suppliers were in unstable financial condition[12], while AlixPartners, turnaround consultants, believed it was about 38 percent.[13] Among the factors CSM identified that will change the shape of the market in the next few years were: about 65 percent of growth in the U.S. automotive market will come from Toyota, Nissan, Honda, Hyundai, and Renault; vehicle and component production will continue to shift to low-cost countries; and smaller vehicles will become more prevalent as sales increase in emerging markets.

*Delphi Saga Continues*

Delphi Corporation lost $5.5 billion in 2006, compared to $2.4 billion in 2005. About $3 billion of the 2006 loss was related to the attrition of about 20,000 workers. Delphi's global sales were $26.4 billion, down from $26.9 billion in 2005. Delphi expected the losses to continue until it can address its high U.S. cost structure and complete its restructuring. Delphi is in talks with GM, the UAW union and investors about cuts and plant closures it says it needs to emerge from bankruptcy. A group of investors, including Appaloosa Management LP, Cerebus Capital Management LP, and their partners, have agreed to invest up to $3.4 billion in Delphi for a 70 percent ownership stake.

Delphi had 166 plants worldwide in 2002, including 45 in the United States and Canada, employed 185,200 people worldwide, including 147,900 hourly workers. Seventy-five percent of the hourly workers were union represented, including 25,200 by the UAW in the United States. About half of Delphi's business was with GM, which purchased $14 billion worth of parts from Delphi in 2004. In Europe, however, GM only accounted for 18 percent of Delphi European revenues.

For the past couple years, with thousands of idled workers, rising health care costs, and lower vehicle production, Delphi sought financial relief from its former parent company, GM, and from the UAW. Delphi proceeded to cut 8,500 jobs and divest poorly performing product lines and plants. Delphi was hampered by the cost of paying 4,000 to 5,000 idled workers who still received 95 percent of their wages while they're laid off. Under its separation agreement with GM laid-off Delphi workers were eligible to take vacant jobs at the automaker, but there are few openings at GM, as the automaker planed to close assembly plants and shed thousands of factory jobs over the next few years. With loses of $4.8 billion in 2004 and $2.4 billion in 2005 and no relief from the UAW, or from GM, Delphi filed for bankruptcy protection on October 8, 2005.

[11] Automotive News, by Robert Sherefkin, "Suppliers' Woes put Bond Ratings on the Junk Heap," 8/8/05
[12] "Most Suppliers Financially Healthy," Wards Automotive Reports, 3/27/2005.
[13] "Ford Production Cuts Hit Suppliers Hard," Ward's Automotive Reports, 8/25/2006.

Delphi's workers made about $27 per hour in wages. With health care and other benefits, Delphi workers' compensation amounted to about $65 per hour. This was more than 10 times, at least, greater than the compensation paid to workers doing similar jobs in Mexico and China. Delphi sought to trim wages to about $10-12 per hour and reduce benefits. The UAW found Delphi's plans to cut 24,000 U.S. factory jobs within three years and its wage offer unacceptable and threatened to strike, putting more pressure on Delphi to negotiate with the UAW on labor issues.

In 2006, more than 20,000 of Delphi's 33,000 unionized workers agreed to take GM-supported buyouts or early retirements. But the fate of the remaining workers is uncertain. Delphi also plans to close 21 of its 29 U.S. plants, pending final negotiations.

In January 2007, after a year of lengthy negotiations and court filings, U.S. Bankruptcy Judge Robert Drain approved a plan for an investor group of three private equity companies to buy 30-72 percent of Delphi Stock, injecting up to $3.4 billion into Delphi. General Motors Corp., the labor unions, and a committee of unsecured creditors supported the plan. [Note: The deal was not finalized at the time of this report.] This plan was chosen over a competing $4.7 billion offer by Highland Capital Management LP, Delphi's second largest shareholder. Highland contended that the company had no value unless it reached settlements with labor unions and GM, while Delphi countered that it could not make progress on settlements without approval of an equity deal.

*Visteon*

Visteon had been working hard to decrease the amount of business it has with its former parent company, Ford Motor Company. In 2005, Ford accounted for 48 percent of Visteon's sales. Visteon hoped this figure would drop to about 36 percent by 2008, while increasing business with Asian automakers from 26 percent in 2005 to 36 percent by 2008.

In early 2005, Visteon identified errors in its accounting, forcing it to delay regulatory filings and restate earlier results. In May 2005, Ford agreed to a $3 billion bailout of Visteon. Under the terms of the agreement, Visteon transferred 23 unprofitable plants and about 18,000 hourly employees and 5,000 salaried employees to a holding company controlled by Ford. The agreement transformed Visteon into a company with annual revenue of $11.4 billion, down from $18.7 billion in 2004. Of the $11.4 billion in sales about 40 percent are in North America (compared to 64 percent before the bailout), 40 percent in Europe (compared to 25 percent before), and 20 percent in Asia (compared to 11 percent before). The percentage of Visteon sales with Ford dropped from 64 percent to about 50 percent. After the bailout, Visteon reduced average labor costs from $37 an hour to $17. Visteon now concentrates on electronics, climate controls, and interiors.

Visteon's labor force also took on a new appearance. After the Ford bailout, Mexican workers outnumbered U.S. employees at Visteon. Hourly workers in Mexico numbered 8,638, or 56.1 percent of total hourly workers worldwide, versus 6,201 hourly workers in the United States, or 40.3 percent. Before the bailout, U.S. hourly workers numbered

26,647 and accounted for 70.2 percent of the total hourly work force. Mexico accounted for 28.3 percent with 10,754 hourly workers.

Partly in response to automakers' production cuts, Visteon planned to cut 800-900 jobs as part of its salaried reduction program announced in October 2006. Visteon expected to complete its salaried reduction program by the end of March 2007 and hoped to experience savings of about $65-75 million a year. However, while it slashes jobs in North America and Europe, Visteon plans to expand in India, China, and Eastern Europe. Its goal is to have 50 percent of its engineering work force in low-cost countries by 2008 and hopes to have 75 percent, up from 68 percent in 2006, of its hourly work force in low-wage countries.

As Visteon entered 2007, it expected 2007 to be another challenging year because of production cuts by Ford, but hoped its operational and financial results would improve in 2008. Because of the production cuts and other factors, Visteon reported that it would not meet its financial targets for the fourth quarter of 2006. Visteon estimated a net loss of $244 million for 2006 and Visteon said it expects a loss of $267-$367 million and product sales of about $11.1 billion in 2007.

*Other Suppliers- Collins & Aikman, Dana, Dura, Lear, Federal-Mogul, and Denso*

Dana Corp., a drivetrain-products maker, and Dura Automotive Systems, a components supplier, were among the biggest names in the business to seek bankruptcy protection in 2006. They joined a long list of major parts suppliers under reorganization including Delphi, Tower, Federal-Mogul, and Collins & Aikman. Collins & Aikman is selling off its business units to the highest bidders. Both Federal-Mogul and Delphi hope to come out of bankruptcy by June 2007. Federal-Mogul has a final confirmation hearing set for May 8, 2007.

The economic problems of the automakers rippled through the supply chain. Analysts continued to blame the procurement of the Detroit 3 for many of the suppliers' problems, including an end to early-pay programs which lead to cash flow problems at some suppliers, and the automakers' unwillingness to offer significant relief. "Cash flow" means having enough money to pay the bills after taking into account interest, taxes, depreciation and amortization. Suppliers' cash-flow suffers when they don't receive timely payments for parts. But the fourth quarter production cuts impacted many suppliers severely.

From the beginning of 2005, it was evident that it would be a difficult time for parts suppliers when Collins & Aikman (makers of carpet and instrument panel components) shares tumbled in February and the company declared bankruptcy in May 2005. The troubles faced by Collins & Aikman made industry analysts worry that if bankruptcies occurred in the Tier 1 level, it could be disastrous to lower levels because the receivables would be lost from the bankrupt companies and it would be harder to borrow money on their revolving lines of credit.

Collins & Aikman Corp. was one of the largest U.S. automotive parts makers, globally employing about 23,000 people at 100 technical centers, sales offices, and manufacturing sites in 17 countries. In its annual report, Collins & Aikman reported that it received about 75% of its revenue from the Detroit 3. The crisis at Collins and Aikman became accute when Standard and Poor's downgraded GM and Ford debt to junk levels in early May 2005, hurting Collins' ability to draw on lines of credit backed by its receivables.

Collins & Aikman had planned to emerge from bankruptcy as a stand-alone company. However, fourth quarter auto production cuts in 2006 lead to the decision to break up and sell the company in pieces. Five automakers- GM, Ford, DaimlerChrysler, Honda, and AutoAlliance International- agreed to help subsidize Collins & Aikman group until it can sell of its operations. The automakers also agreed not to find new suppliers to replace the work at 28 key Collins & Aikman plants.

Dana Corp.'s restructuring plan involved moving work outside the United States. Dana depended heavily on the Detroit 3 with 43 percent of its revenue coming from those automakers. In November 2006, Dana revealed its plan to restructure and reduce its size as it reorganizes. It would renegotiate its contracts with customers and recover more for higher raw material costs, hoping to save $175 million from these actions. It would close eight plants in North America, in addition to the eight plants it already planned to close; it would modify or reject certain labor contracts in bankruptcy court; and it would eliminate any company obligation to provide post-retirement health care benefits for all current and future Dana retirees. Dana expected to save between $405 million and $540 million a year from this plan.

Federal-Mogul plans to emerge from bankruptcy in 2007. A bankruptcy judge set May 8, 2007, as Federal-Mogul's last hearing date. The supplier entered Chapter 11 as a result of an asbestos liabilities claim when it acquired T&N plc. Investor Carl Icahn has agreed to buy about 43 percent of the equity in a reorganized Federal-Mogul from asbestos claimants, which will get stock for their claims when the supplier emerges from Chapter 11.

Carl Icahn also launched a $2.31 billion bid to acquire Lear Corp., an automotive seating and electronics supplier. In October 2006, as its Detroit 3 customers cut production, Lear began laying off employees. An estimated 170 engineers, managers, and others lost their jobs at Lear's headquarters and product group offices. Lear posted a loss of $707.5 million for 2006.

In July 2006, financier Wilbur Ross agreed to purchase Lear Corp's interior business in Europe and in December he agreed to joint venture with Lear's North American interior business that would transfer Lear's interiors business to Ross' company, International Automotive Components Group. Lear would retain 25 percent stake in the venture. The deal is expected to be concluded in March 2007. Seventy percent of Lear's interior sales were in North America and 29 percent were in Europe.

In February 2007, Lear agreed to be sold to New York investor Carl Icahn's American Real Estate Partners LP in a $5.3 billion, including assumption of debt, buyout offer. The Lear deal would add to Mr. Icahn's growing automotive interests with his Federal-Mogul investment, but there is no sign Mr. Icahn wishes to combine them as they have different product lines.

While U.S. suppliers are experiencing losses and difficult times, Denso International America Inc. believes it will experience an 8-10 percent growth in North America in 2007, over the $5.4 billion in 2006. Denso expects the growth will come from both its Japanese and Detroit 3 customers. Denso is a Japanese electronics supplier. Twenty-three percent of Denso's stock is owned by Toyota Motor Company. As Denso's largest customer is Toyota and Toyota's market share rose in 2006, Denso had a strong year in 2006. Denso has also found business with the Detroit 3, supplying the new Ford Edge crossover and GM's GMT 900 Truck platform. Denso is benefiting from a growth in its key technologies, including navigation systems and body control modules.

**Mergers, Acquisitions, and Bankruptcies**

The Detroit 3 shed most of their "captive" parts suppliers (and their high-rate labor contracts) as part of their continuing struggle to reduce costs. A collection of firms spun off by GM became Delphi in 1999. Ford formed Visteon in the same way and for the same reasons in 2000. This activity spawned an active business in mergers and acquisitions. Between 1995 and 2001, the industry's 23 largest publicly traded suppliers' consolidated industry sales rose from $62 billion to $112 billion. Helped by these consolidations, 16 of the world's top 50 global OEM suppliers in 2005 were U.S. corporations.

The boom left little trace of benefits for supplier operating margins and return on capital. Disappointing share returns and large debt left many suppliers in need of affordable capital. Consequently, bankruptcies and distressed credits generated $8 billion in losses to auto supplier lenders between 1999-2001. Debt levels among the top 23 suppliers tripled during the 1995 – 2001 period: five times faster than the market value of the group's common stock.

Industry consolidation has continued as many of the firms involved in those earlier transactions continued to stumble. Thompson Financial recorded 32 mergers and acquisitions (M&As) in 2005, up from 26 in 2004 (Table 10).[14] Unlike during the previous M&A boom, private equity groups are making over half the current deals.[15] Also, unlike previously, the value of deals has fallen. In 2002, industry M&As were valued at $12 billion. In 2005, the total value of deals had fallen to $790 million.

[14] Thompson Financial data presented in the "Aftermarket Factbook, 16th Edition," Automotive Aftermarket Industry Association, 2006/2007.
[15] "Analyst Note," PwC Automotive Institute, PriceWaterhouseCoopers, 08/23/2006.

Many firms have had no suitors and instead are filing for bankruptcy or exiting the market. Greg Ledford of the Carlyle Group investment firm said "there are a lot of willing sellers, but not a lot of willing buyers today."[16] He compared purchasing suppliers in this environment with trying to catch a falling knife.

Ever increasing competition, changing business models, and industry productivity gains are progressively adding to pressure for consolidation. Some industry analysts estimate that up to 90 percent of U.S. parts suppliers were acquired, merged, or left the business during the 1990s. Industry analysts speculate that of nearly 800 major suppliers in 2000, fewer than 100 will be left by 2010 as a result of bankruptcies, mergers and acquisitions, and migration to other industries.

The extreme competition has likely led to price deflation in the OEM supplier market, yet -- as a sign of the continued industry consolidation -- the top 150 North American suppliers have increased their total sales by roughly 20 percent from 2001 to 2005. Eventually every OEM may deal with no more than 300 to 350 Tier 1 firms, a considerable reduction from the 1970's, when an OEM's direct supplier list numbered several thousand.

Continued price pressure from both Tier 1s and OEMs will drive consolidation at the Tier 2 and Tier 3 levels. Indeed, smaller suppliers continue facing the largest shakeout. This is primarily true because they are much more likely to be relying on single contracts or multiple contracts from only one of the Tier 1s or OEMs. Thus, they are much more exposed to cancellation of product lines or reduced sales. They are also more prone to bankruptcy than the larger Tier 1s because they have less leverage with their bankers. While smaller companies will often be turned down by their bankers when they exceed their credit lines, larger companies can potentially "owe too much to fail."

Wilbur L. Ross Jr. is a financier noted for taking over companies in distressed industries, turning them around and then selling them. He is one of the noted private equity financiers investing in the automotive parts industry. By April 2006, Ross held shares in French stamping firm Oxford Automotive, had control of Wagon a coachbuilder based in the United Kingdom, and had established Automotive Components Group with the interior components business acquired from bankrupt Collins & Aikman. He also held a controlling stake in the auto plastics firm, Plascar, based in Brazil and acquired from Collins & Aikman. In September, he purchased Mitsuboshi Belting Kaseihin, a Japanese-based supplier of interior and exterior plastic parts. In July, Ross agreed to purchase Lear Corp's interior business in Europe and form a joint venture with Lear's North American operations.

Ross planned three giant new companies in safety systems, "metal bending" and interior trim, whose collective size could exceed $26 billion in worldwide OEM sales. Ross' first goal is an interior trim company with up to $15 billion in annual sales and virtually no debt. His interior firm, International Automotive Components Group combines the Collins & Aikman interior business with Lear's interior trim business to generate pro

[16] "On The Block: Auto Suppliers – Dirt Cheap," by Robert Sherefkin, Automotive News, 10/17/2005

forma sales of roughly $6 billion, making it among the biggest players in the $75 billion global auto sector.

Interest by suppliers in developing markets to enter the U.S. market may spur some purchases of U.S. automotive parts suppliers in the future. Chinese company, Wanxiang Group, which owns stakes in six U.S. manufacturing companies that employ about 1,000 people with an estimated 2005 sales of $400 million, expressed an interest in acquiring Delphi assets. Wanxiang manufactures universal joints, brake disks, bearings, driveshifts, and other products.

Wanxiang's Chinese operations have the same shortcomings as many Chinese suppliers--when volume goes up, they've had trouble maintaining quality. Technological innovation has been a problem. Wanxiang can deliver systems for local companies, but it has had difficulty delivering highly technical improvements. Wanxiang admitted it has some catching up to do and is looking to improve its capabilities. Purchasing assets of distressed U.S. parts suppliers may allow such firms to bypass these technical hurdles. Purchasing distressed developed world suppliers may also provide these firms with an avenue to acquire leadership and experience.

The pressures driving industry consolidation will remain for some time. Alix Partners reported that 38 percent of North American suppliers face the prospect of bankruptcy by the end of 2008.[17] Tim Leuliette, former Chairman and CEO of Metaldyne said that "we've put a for sale sign on the U.S. auto industry -- 'cheap,' 'wholesale.' The rebuilding and reconfiguring of the auto industry is one of the biggest plays ever. The time to buy hasn't passed."[18]

## Other Industry Developments

*Steel Tariffs*

In October 2006, the U.S. International Trade Commission (ITC) met to discuss ending corrosion-resistant steel tariffs or continuing them for another five years. The tariffs had been in effect since 1993. The heated debate pitted automakers against steel producers. Automakers- General Motors, Ford, Toyota, DaimlerChrysler, Honda, and Nissan- have added their voice to parts suppliers requesting an end to the tariffs on imported steel. The automakers argued that the duties artificially increase by 30 percent the price of corrosion-resistant steel from Australia, Canada, France, Germany, Japan, and Korea. Facing steel prices that have increased 68 percent over the past two years, automakers are in price negotiations with steel suppliers who oppose ending the tariffs.

In December, the U.S. ITC decided to drop import tariffs from Australia, Canada, France, and Japan, but to retain them against Germany and South Korea.

[17] "Supplier Turmoil: It Ain't Over Till It's Over," Automotive News, 06/19/2006.
[18] "Metaldyne CEO: U.S. auto industry is up for sale," Daniel Howes, Detroit News, 09/13/2006

Automotive suppliers were pleased to see the tariffs dropped on corrosion-resistant steel and expressed the need for more steel tariffs to be lifted as steel prices are often cited as one of the major causes of financial difficulties. Tariffs on hot-rolled steel will come under ITC review in 2007.

Despite some success in ending tariffs on corrosion-resistant steel tariffs, the automotive industry reported that there was no relief in sight for price hikes in steel and other commodities. Because of stiff competition, they are unable to pass the cost on to customers. Since 2004, steel prices have risen and steelmakers pushed through double-digit price increases for long-term contracts. Each year, General Motors purchases 10 million tons of steel. General Motors reported that it faced price increases as high as 11 percent for its 2007 high quality galvanized steel contracts and single-digit increases for commodity steel used for brackets and stamping. While prices are expected to stabilize, some automotive executives predicted it would be some time before they are eased and that the burden on the automotive industry would remain.

While the burden of steel prices remained stable, prices for metals like copper and aluminum also started to rise, causing additional headaches for auto suppliers. Aluminum surpassed iron as the second most used material in automotive production in 2006. The average aluminum content reached almost 280 pounds for the 2006 model year worldwide. In North America it reached 319 pounds. Among the factors that drove up aluminum usage were oil prices, legislation mandating better fuel efficiency, consumers' desire for larger vehicles with more power, expanded features, and improved performance.

*Counterfeiting*

The counterfeiting of automotive parts continues to be a major issue in the automotive parts industry. The Motor and Equipment Manufacturers Association (MEMA) estimates that counterfeit automobile parts cost the American automotive supplier industry over $12 billion annually worldwide, including $3 billion in the United States alone. In a 2007 study issued by the U.S. Chamber of Commerce, Ford estimates that counterfeit auto parts cost them $1 billion annually. MEMA also estimates that 80 percent of counterfeit parts in the United States come from Chinese companies. Counterfeiters take jobs and money away from legitimate companies, jeopardize the public's safety, destroy brand names, increase warranty claims, and require legal fees and costly investigations.

In March 2006, President Bush approved the "Stop Counterfeiting in Manufactured Goods Act," which was supported by the U.S. auto parts industry. The Act strengthens previous U.S. trademark laws by prohibiting the trafficking of counterfeit trademarks such as labels, patches and medallions, and requiring the destruction of equipment used to make counterfeit goods.

*Alternative Fuels, Hybrid, and Diesel Technology*

In President Bush's State of the Union Address in January 2007, he called for an overall 20 percent reduction in America's use of gasoline before 2017. An increase in auto fuel efficiency standards was part of this proposal. Under the plan, fuel economy standards would rise to 34 miles per gallon by 2017, up from 27.5 m.p.g. for cars and 24.0 m.p.g. for trucks for 2011 and beyond. Industry analysts suggested that this proposal would further add to the Detroit 3's competitive pressures and accelerate Toyota's and Honda's market share increase. As the United States scrambles for fuel alternatives, niche parts suppliers of hybrid, diesel, and alternative fuel vehicles scurry to gear up.

With increasing gas prices, customer demand, and encouragement from the Federal and state governments, the industry is turning its attention to creating more fuel-efficient vehicles. Positive consumer and political response to hybrid vehicles has increased the focus on hybrid technology. In 2006, hybrid sales increased 28 percent to 254,545 units above 2005. In 2005, 205,749 hybrids were sold in North America, more than double the 88,000 hybrids sold in 2004. This is not a large portion of the total sales of motor vehicles, but it does represent a large increase since Honda introduced the first hybrid to the U.S. market in 1999. Ford promised to boost production of hybrid vehicles to 250,000 cars and trucks per year by 2010. Toyota planed to sell 140,000 hybrid vehicles in the United States in 2006.

To keep up with U.S. demand for hybrid vehicles, the Detroit 3 are having to turn to foreign suppliers for batteries, electric motors and power inverters. The U.S. supply chain is immature for hybrids, according to Larry Nitz, Executive Director of GM's hybrid program.[19] Currently, Japanese suppliers are the source for most of the world's hybrid parts. Some U.S. suppliers, like Johnson Controls, are trying to enter the market, but uncertainty is keeping U.S. suppliers from committing capital to an emerging market.

Hybrid electrical components fall into three basic categories: electric motors, batteries, and invertors. Other potential sources of hybrid component business would be braking systems that produce energy, software controls, instrument panels and cooling systems. Suppliers that provide related components for conventional powertrains would have an advantage in adapting their parts to hybrid systems and some are working on it, but at the same time they are cautious and skeptical that hybrids will be as big as some studies suggest. And they might be right as hybrid sales are slowing as tax benefits expire and other alternative fuel options become available.

While GM, Ford and Japanese automakers are turning their research and development attention to hybrid technology for the U.S. market, DaimlerChrysler and Volkswagen, were pushing Washington to include diesel engines in programs that promote environmentally friendly vehicles. Diesel is dominant in Europe, but despite significant reductions in diesel emissions, it remains difficult to engineer diesel powered vehicles to meet stricter U.S. emissions regulations. The fact that only about 34 percent of filling stations in the United States sell diesel fuel also limits their attractiveness to consumers.

[19] Detroit News Autos Insider, by John D. Stoll, "Supply chain crimps hybrid output" 9/20/05

The United States introduced regulations in 2006 that will call for reducing sulfur content in motor fuels, which will make meeting emission regulations much easier. Hybrids, on the other hand, use a gasoline engine with the assistance of electric motors, reducing emissions compared to traditional gasoline engines. Analysts predict that there will be about 50 hybrid vehicle models available in the United States by 2010. J.D. Power and Associates reported that U.S. hybrid sales are expected to represent 3.5 percent of the market by 2012.

2006/2007 marks the introduction of a new electric vehicle, the Tesla roadster. Headquartered in Monterey, California, Tesla uses Taiwanese-built batteries and electric motors to give a 200 mile range with a top speed of 130 m.p.h. and a 0-60 m.p.h. time of 4 seconds. The technology is not cheap, as the Tesla roadster was priced at $89,000, but Tesla Motors expects to sell between 600-800 in a full year.

*New Technologies, Engineering, Safety, and In-Vehicle Electronics*

According to a 2004 study by Roland Berger, suppliers delivered 40 percent of the value added to vehicles in 2002. The study forecasts that by 2015 it will grow to 55 percent. Among some of the new technologies being added or becoming standard on vehicles are safety features like blind-spot detection, and side/head airbags. Other innovations being added are navigation systems, MP3 player connections, Bluetooth wireless connections, and mobile video.

Some analysts predict that electronic components of vehicles could account for 35 percent of the cost of making a car by 2010, up from 22 percent in 2005, and that the amount of software in cars would double every three years. However, these electronics add to the vehicles' complexities and accounted for about 70 percent of breakdowns in 2005. Communication, navigation, and entertainment systems in vehicles are complex computerized electronic equipment that are becoming more prevalent. Analysts predict that these electronics will be a $6 billion a year industry by 2010.

Some suppliers, like TRW Automotive, with products from seatbelts and air bags to antilock brakes and electronic stability control systems, have benefited from automakers emphasis on safety and new safety regulations. In 2006, the National Highway Traffic Safety Administration (NHTSA) proposed that electronic stability control, which automatically applies pressure to brakes to correct for skidding and swerves, become standard on all vehicles except the largest trucks by 2012. Currently, only 30 percent of new vehicles have electronic stability control. Suppliers of electronic stability controls expect to get a sales boost of more than $1 billion if the regulation passes. The North American market for electronic stability control is expected to expand from about $555 million in 2006 to $1.8 billion in 2012.

The success of airbags, which NHTSA estimates saved 18,193 lives since its inception, has lead to an increase in side-curtain airbag business. New federal side-impact regulations will increase more installation of side-curtain airbags as automakers and suppliers devise different ways to meet the standard. CSM Worldwide predicts that

North American sales of side-curtain airbags will grow to 17 million units in 2010, up from 9.2 million in 2006. The value is projected to reach $4.3 billion by 2010 from $2.8 billion in 2006.

**International Developments and Trade**

As production decreases in the United States, production in developing markets is expected to grow in 2007, accounting for 97 percent of the forecasted 1.9 million units of global market expansion.[20] Despite troubles in the United States, suppliers globally were profitable. Suppliers in developed countries faced a more difficult market, but those in developing markets experienced more growth. In its 2006 Global Automotive Supplier Study, Roland Berger Strategy Consultants found that suppliers based in Western Europe, South Korea and other parts of the world maintained steady profitability between 2000 and 2005, while Japanese suppliers posted 3.2 percent gains, and North American suppliers declined 3.6 percent between 2000 and 2005. Those most successful had a narrowly focused product portfolio, broad customer base globally, low reliance on business with the Detroit 3, and aggressive use of component sourcing from low-cost regions of the world.

Some U.S. suppliers are finding that while they are having difficulties at home, their foreign operations are profitable. Large suppliers-- Johnson Controls Inc., Lear Corp., TRW Automotive Inc., ArvinMeritor Inc., and Dupont Automotive Systems-- get at least 35 percent of their total revenue from Europe. Some suppliers are trying to reduce their dependence on the high-cost low-margin American market and shift manufacturing to lower cost countries.

According to U.S. Census data, the United States exported a record $58.9 billion worth of automotive parts in 2006. This is an increase of 6.9 percent from the $55.1 billion worth of automotive parts in 2005 (Table 11, Charts 10 and 11). Automotive parts exports to Canada ($31.9 billion) and Mexico ($12.8 billion) accounted for 76 percent of the total U.S. parts exports in 2006, down from the 77 percent they accounted for in 2005 (Chart 12). U.S. automotive parts exports to Japan and the European Union 15 accounted for $7.2 billion, or 12 percent, of the total U.S. automotive parts exports. Combined, the NAFTA, European Union 15, and Japanese markets accounted for 89 percent of total U.S. automotive parts exports in 2006.

The United States also imported a record high amount of automotive parts in 2006, reaching $95.2 billion, an increase of 3.3 percent from $92.2 billion in 2005 (Table 12, Charts 10 and 13). In 2006, Canada, accounted for $20.4 billion worth of U.S. automotive parts imports and Mexico accounted for $26.4 billion. Together, automotive parts from these two countries accounted for 49 percent of the total U.S. automotive parts imports, down from 50 percent in 2005 (Chart 14). This continues the slight decrease in the percentage of automotive imports coming from NAFTA partners in the past few years. This decline has been more than offset by the increased input from China.

[20] *2007 Global Outlook*, PwC Automotive Institute Analyst Note, 1/19/07.

Rounding out the top five supplier countries of automotive parts to the United States in 2006 were Japan ($15.4 billion), Germany ($7.1 billion), and China ($6.9 billion). Combined, Mexico, Canada, Japan, Germany, and China accounted for $76.2 billion, or 80 percent of total U.S. imports of automotive parts.

The increase of U.S. parts exports and the slowing of parts imports led to a slight reduction in the U.S. trade deficit in automotive parts to $36.3 billion in 2006, down from a record level of $37.1 billion in 2005 (Table 13, Charts 10 and 15). Although there was a slight decline in the parts deficit in 2006, it is expected to continue to climb as U.S. automotive parts production loses market share to increasingly competitive foreign production.

*China*

U.S.-China automotive parts trade grew last year, with China mainly importing high-tech automotive products, but exporting large quantities of parts such as tires, wheels, electronic components, and glass. U.S. imports of Chinese auto parts increased 28 percent from $5.4 billion in 2005 to $6.9 billion in 2006 (Charts 16 and 17). In addition, U.S. exports to China grew almost 31 percent in 2006, from $623 million in 2005 to $815 million in 2006.

China's auto production and sales each exceeded 7 million units in 2006, making it the second largest automotive market in the world. Sales grew by 25 percent, and production grew by 27 percent last year. Most of the world's largest Tier 1 suppliers already have plants and research facilities in China, and foreign auto parts suppliers continue to open and/or expand their Chinese operations. The global vehicle manufacturers with operations in China have encouraged suppliers to set up manufacturing facilities in China, since most of China's traditional domestic suppliers are not competitive. The vehicle manufacturers also expect China to become a low-cost source for their worldwide operations. Ford bought about $3 billion worth of parts in China for its assembly plants worldwide in 2006. That figure is up almost double the $1.6 billion it bought in 2005. Goldman Sachs estimates that Chinese net exports of auto parts will increase from $5.4 billion in 2005 to $21 billion in 2010. However, rising labor costs, material prices, currency exchange rates, and the slow development of qualified Chinese suppliers could hinder the growth of Chinese auto parts exports.

China is becoming a key player in global automotive electronics. While China lacks auto-electronic design experience and local suppliers lack manufacturing and technical expertise, China already has a strong consumer electronics business as a major producer of CD players, computers and other mass-market items. These skills can be adapted to automotive electronics and foreign companies are helping. China exported $1.49 billion worth of automotive electronics and electrical instruments in 2005, up 49 percent from 2004. These items include navigational radios, speedometers and the like. A majority of the automotive electronics is coming from foreign-invested firms rather than Chinese domestic firms.

The Chinese government's auto policies strongly encourage the development of the local supplier industry, as well as automotive-related R&D in China. The United States, EU, Canada, Japan, Australia, and Mexico argue that China's new auto parts tariff classification regulations result in increased tariffs that are higher than China agreed to in its WTO accession agreement, and discourage auto manufacturers in China from using imported auto parts. Although China postponed the implementation of the disputed regulations in July, the United States, the EU, and Canada are continuing to pursue a WTO case initiated last year. China's regulations impose tariffs for a vehicle on imported auto parts if the imported parts exceed a fixed percentage of the final vehicle content or vehicle price, or when specific combinations of imported auto parts are used in the final vehicle. The tariff on automobiles is typically 25 percent, and the tariff on imported parts is typically 10 percent.

When deciding whether or not to set up an operation near a specific customer in China, U.S. suppliers need to determine if economies of scale can be achieved, if energy sources are reliable, and if they will be able to source from reliable, lower-tier suppliers or be able to import subcomponents at a competitive price. In addition, suppliers need to be aware that increased competition for both parts and vehicles in China has lead to a decrease in prices and profit margins. If entering into a joint-venture arrangement, any potential partner should be carefully evaluated. Automotive-related counterfeiting in China also remains a concern for the industry, especially when sharing intellectual property with partners or suppliers. Because the transfer of knowledge would allow the Chinese to compete against the proprietors and may invite counterfeiting, many companies are reluctant to send advanced technology to China. When considering sourcing from China, U.S. companies are cautioned to not be lured by price and/or low wage rates alone, but to consider their potential suppliers' quality levels, a supplier's technical and engineering expertise to cope with design changes, as well as all of the various logistical factors, such as necessary lead time, and delivery schedules and costs.

The Chinese automotive aftermarket is expected to continue to grow as the market increases for both new and used autos, the number of outlets offering aftermarket parts and services expands, new emissions control technologies are introduced, and the Chinese economy continues to grow. Euromonitor estimates that 10 large Chinese companies control 30 percent of aftermarket parts sales in China. Delphi, Bosch, Visteon, and Denso account for another 24 percent share. The U.S. Commercial Service-Shanghai reports that Chinese consumers show strong interest in vehicle accessories such as seatback video displays, neon lights, and leather upholstery. In addition, Auto Maintexpo China anticipates great growth in auto care chemicals, such as lubricant additives, paint car accessories, tires, and electrical and electronic parts.

## Conclusion

The U.S. automotive parts industry can expect another difficult year in 2007 and beyond. Economic strains will continue to derive from Ford, GM, and DaimlerChrysler's production cuts, steel and raw materials prices, price and cost cut demands from U.S. automakers, and increased competition from foreign suppliers. The industry can expect more departures and consolidations of suppliers as profit margins are squeezed. Automakers and suppliers will experiment with innovative and alternate business models to reduce financial pressure.

Industry experts expect that domestic vehicle manufacturers will continue to lose market share to U.S.-affiliates of foreign-based manufacturers and imports. Many U.S. parts suppliers are trying to become suppliers to the foreign-affiliated (transplant) automakers to offset those losses. However, some are finding it difficult to enter transplant automakers' supply chains, in part because transplants have previously established relationships with home-market (foreign) suppliers, whether through imports or through home-market suppliers' U.S.-affiliates, or have already established long term relationships with other U.S. suppliers. However, as transplant automakers increase their presence in the United States, foreign-affiliated suppliers also increase their presence to supply the automakers, creating equipment and jobs in the U.S. economy.

The difficulties of several major suppliers have given rise to equity investors and investor groups like Ross, Icahn, Appaloosa Management, Cerebus Capital Management, and Highland Capital Management taking an interest in the restructuring of suppliers and becoming major players in the industry.

Automotive parts from China will continue to grow and account for a growing share of U.S. automotive parts imports. The U.S. automotive parts trade deficit with China will likely continue to grow the next few years as exports to China will likely not keep up with imports from China. Automotive parts companies will continue to move production to China and other low-wage countries like India, and Eastern Europe, in an effort to reduce costs and remain competitive.

# FACT SHEET

## Production

- U.S. automotive parts industry production is estimated to have declined further in 2006 compared with 2005, in part because of vehicle production cutbacks at the Detroit 3. Industry analysts predict that 2007 will be a difficult year for U.S. automotive parts suppliers and vehicle makers as the market remains relatively flat and competition remains fierce. This is especially true for suppliers that rely heavily on the Detroit 3.

- The Bureau of Labor Statistics (BLS), U.S. Department of Labor, estimated the there were 721,900 jobs in the automotive parts industry in 2006. This is a 3 percent decrease from the 744,000 jobs in the automotive parts industry in 2005. The last time that jobs increased in the automotive parts industry occurred in 2000, when jobs grew 0.3 percent to 920,300.

- Automotive suppliers directly and indirectly are reported to account for more jobs and provide more economic well-being to more Americans than any other manufacturing sector.

## Sales

- North American original equipment (OE) sales for the top 150 North American parts suppliers reached $202.9 billion in 2005. This was an increase of 2.7 percent from $197.6 billion in 2004. While sales declined in the United States, Mexico and Canada saw an increase in OE sales.

- Suppliers are preparing for declines in automotive sales and production by diversifying geographically, increasing research and development, turning to joint ventures, seeking more module (complete systems, not just components) contracts, and by leaving marginal segments.

- The U.S. automotive aftermarket (repair and add-on market) is estimated to have been $195 billion in 2005, up 2.2 percent from $190 billion in 2004. The Automotive Aftermarket Suppliers Association estimates the aftermarket reached $202 billion in 2006.

## International Trade

- The U.S. trade deficit in automotive parts decreased 2.1 percent, to $36.3 billion, down from a record $37.1 billion in 2005.

- U.S. exports of automotive parts in 2006 were $58.9 billion, an increase of 6.9 percent over 2005 levels, according to U.S. trade data.

- Exports to Canada and Mexico accounted for 76 percent of the total U.S. automotive parts exports in 2006.

- U.S. imports of automotive parts were $95.2 billion in 2006, an increase of 3.3 percent over 2005 levels.

- The United States imported $46.8 billion worth of automotive parts from Mexico and Canada in 2006. These imports accounted for 49 percent of the total U.S. automotive parts imports.

- Automotive parts trade with China has grown significantly in recent years. In 2000, the United States imported $1.6 billion worth of automotive parts from China. By 2004, the value more than doubled to $3.9 billion, and increased 39.2 percent over 2004 levels to $5.4 billion in 2005. In 2006, imports increased another 28.1 percent to $6.9 billion.

**Industry Issues**

- In 2006, many U.S. parts suppliers were hit with higher energy, plastic, and steel costs, heavy debt, cash flow problems, and overcapacity caused by production cuts at Ford, GM, and Chrysler. The result was another eight major suppliers filed for bankruptcy in 2006.

- Suppliers are trying to deal with high legacy costs, employee wages, and benefits to be competitive globally. Tough negotiations are taking place between suppliers, automakers, and labor unions.

- Industry analysts predict that, of nearly 800 major suppliers in 2000, fewer than 100 will be left by 2010 as a result of bankruptcies, mergers and acquisitions, and migration to other industries.

- There were 32 mergers and acquisitions in 2005, up from 26 in 2004. Private equity groups were responsible for 53 percent of the deals.

- Relations between the Detroit 3 and their suppliers are improving slightly, but remain poor compared with those of Japanese competitors.

**Appendix 1**

Office of Aerospace and Automotive Industries Automotive Parts Product Listings
Revised 04.04.2007

To facilitate the analysis of trade data for automotive parts on a market-based model, the Office of Aerospace and Automotive Industries (OAAI) has created six product groupings from the available, individual 10-digit product codes. The core of the codes are contained in Chapter 87, "Vehicles Other Than Railway or Tramway Rolling-Stock, and Parts and Accessories Thereof" of the internationally-agreed Harmonized Tariff System (HTS). We list these groups and their codes below. Some codes are not valid for current years, but are included to assure that data for products so coded for previous years are retrieved from the database and assigned to the appropriate OAAI group.

The OAAI groups are not "official" product subcategories, and are not listed in the Harmonized Tariff System nomenclature published by the U.S. International Trade Commission (USITC) for coding imports (Internet address: http://www.usitc.gov/taffairs.htm ), nor in the parallel "Schedule B" published by the U.S. Census Bureau for coding exports ( http://www.census.gov/foreign-trade/schedules/b/2001/sb87.htm ). The OAAI attempts to closely approximate the core automotive industry by excluding certain items for example, parts explicitly listed for motorcycles, golf-carts, snowmobiles, agricultural equipment, etc.

Readers should realize that OAAI is not the only, nor the "official," U.S. government source for trade data on the auto industry, nor are we able to produce custom data runs for the public. Persons seeking data for individual or different product codes are welcome to utilize at no charge the data retrieval system operated by the USITC to access the federal government's official trade data base. Please note, some of the data on the trade database may be restricted from the public. The ITC's retrieval system, *Trade DataWeb*, can be accessed at <http://dataweb.usitc.gov/scripts/user_set.asp>.

**HTS Codes by Product Group**

| HTS Codes for U.S. Imports of: | |
|---|---|
| **Bodies and Parts** | |
| 7007110000 | Safety Glass |
| 7007110010 | Safety Glass |
| 7007211000 | Windshields |
| 7007211010 | Windshields |
| 7007215000 | Safety Glass |
| 7009100000 | Rear-View Mirrors |
| 8301200000 | Locks |
| 8301200060 | Other Locks |
| 8302103000 | Hinges |
| 8302303000 | Other Mountings |
| 8302303010 | Pneumatic Cylinders |

| HTS Codes for U.S. Exports of: | |
|---|---|
| **Bodies and Parts** | |
| 7007110000 | Safety Glass |
| 7007211000 | Windshields |
| 7007215000 | Safety Glass |
| 7009100000 | Rear-View Mirrors |
| 8301200000 | Locks |
| 8302103000 | Hinges |
| 8302300000 | Other Mountings |
| 8707100020 | Bodies |
| 8707100040 | Bodies |
| 8707905020 | Bodies |
| 8707905040 | Bodies |

| | |
|---|---|
| 8302303060 | Other Mountings |
| 8302306000 | Other Mountings |
| 8707100020 | Bodies |
| 8707100040 | Bodies |
| 8707905020 | Bodies |
| 8707905040 | Bodies |
| 8707905060 | Bodies |
| 8707905080 | Bodies |
| 8708100010 | Stampings of Bumpers |
| 8708100050 | Bumpers and Parts |
| 8708103010 | Stampings of Bumpers |
| 8708103050 | Bumpers |
| 8708106010 | Stampings Parts of Bumpers |
| 8708106050 | Parts of Bumpers |
| 8708210000 | Seat Belts |
| 8708290010 | Stampings of Bodies |
| 8708290025 | Truck Caps |
| 8708290050 | Parts & Access. of Bodies |
| 8708290060 | Parts & Access. of Bodies |
| 8708291000 | Inflators & Modules Airbags |
| 8708291500 | Door Assemblies |
| 8708292000 | Body Stampings |
| 8708295010 | Stampings |
| 8708295025 | Truck Caps |
| 8708295060 | Other Parts |
| 8708950500 | Inflators & Modules Airbags |
| 8708952000 | Airbag Parts |
| 8708995045 | Slide in Campers |
| 8708996100 | Airbags |
| 9401200000 | Seats |
| 9401200010 | Child Safety Seats |
| 9401200090 | Seats |
| 9401901000 | Seat Parts |
| 9401901010 | Seat Parts of Leather |
| 9401901020 | Seat Parts of Textile |
| 9401901080 | Seat Parts |
| 9401901085 | Seat Parts |
| 9403406000 | Wooden Furniture for M.V. |
| 9403506000 | Wooden Furniture for M.V. |
| 9403901000 | Furniture? |
| 9403901040 | Parts of Furniture for M.V. |
| 9403901050 | Parts of Furniture for M.V. |
| 9403901080 | Parts of Furniture for M.V. |
| 9403901085 | Parts of Furniture for M.V. |

| | |
|---|---|
| 8707905060 | Bodies |
| 8707905080 | Bodies |
| 8708100010 | Stampings of Bumpers |
| 8708100050 | Bumpers and Parts |
| 8708210000 | Seat Belts |
| 8708290010 | Stampings of Bodies |
| 8708290025 | Truck Caps |
| 8708290050 | Parts & Access. of Bodies |
| 8708290060 | Parts & Access. of Bodies |
| 8708295025 | Truck Caps |
| 8708295070 | Other Pts. & Access. Bodies |
| 8708990045 | Slide-in Campers |
| 8708998030 | Slide-in Campers |
| 9401200000 | Seats |
| 9401901000 | Seat Parts |
| 9401901010 | Seat Parts of Leather |
| 9401901080 | Seat Parts |
| 9403901000 | Parts of Furnitures |

**Chassis and Drivetrain Parts**

| | |
|---|---|
| 4009120020 | Brake Hoses |
| 4009220020 | Brake Hoses |
| 4009320020 | Brake Hoses |
| 4009420020 | Brake Hoses |
| 4009500020 | Brake Hoses |
| 6813100050 | Brake Linings & Pads |
| 6813200015 | Brake Linings & Pads |
| 6813200025 | Asbestos Friction |
| 6813810050 | Brk Lngs & Pads, not asbestos |
| 6813890050 | Min Sub Friction |
| 6813900050 | Friction Materials |
| 7318160010 | Lugnuts |
| 7318160015 | Lugnuts |
| 7318160030 | Lugnuts |
| 7318160045 | Other Lugnuts |
| 7320100015 | Leaf Springs |
| 7320103000 | Leaf Springs |
| 7320106015 | Leaf Springs |
| 7320106060 | Leaf Springs |
| 7320201000 | Helical Springs |
| 8421394000 | Catalytic Converters |
| 8482101000 | Ball Bearings |
| 8482101040 | Ball Bearings |
| 8482101080 | Ball Bearings |
| 8482105044 | Radial Bearings |
| 8482105048 | Radial Bearings |
| 8482200010 | Tapered Roller Bearings |
| 8482200020 | Tapered Roller Bearings |
| 8482200030 | Tapered Roller Bearings |
| 8482200040 | Tapered Roller Bearings |
| 8482200050 | Tapered Roller Bearings |
| 8482200060 | Tapered Roller Bearings |
| 8482200070 | Tapered Roller Bearings |
| 8482200080 | Tapered Roller Bearings |
| 8482400000 | Needle Roller Bearings |
| 8482500000 | Other Cylindrical Bearings |
| 8708301090 | Brakes and Parts |
| 8708305020 | Brake Drums |
| 8708305030 | Brake Rotors (Discs) |
| 8708305040 | Mounted Brake Linings |
| 8708305090 | Brake Parts |
| 8708315000 | Mounted Brake Linings |
| 8708391000 | Brakes and Parts |
| 8708395010 | Brake Drums & Rotors |
| 8708395020 | Brake Drums |
| 8708395030 | Brake Rotors |

**Chassis and Drivetrain Parts**

| | |
|---|---|
| 4009120020 | Brake Hoses |
| 4009220020 | Brake Hoses |
| 4009320020 | Brake Hoses |
| 4009420020 | Brake Hoses |
| 4009500020 | Brake Hoses |
| 6813100000 | Brake Linings & Pads |
| 6813200000 | Friction Material |
| 6813810000 | Brake Linings |
| 6813890000 | Other Brake Materials |
| 6813900000 | Other Friction Materials |
| 7320100000 | Leaf Springs |
| 7320201000 | Helical Springs |
| 8421394000 | Catalytic Converters |
| 8482101000 | Ball Bearings |
| 8482105044 | Radial Bearings |
| 8482105048 | Radial Bearings |
| 8482200020 | Tapered Roller Bearings |
| 8482200030 | Tapered Roller Bearings |
| 8482200040 | Tapered Roller Bearings |
| 8482200060 | Tapered Roller Bearings |
| 8482200070 | Tapered Roller Bearings |
| 8482200080 | Tapered Roller Bearings |
| 8482400000 | Needle Roller Bearings |
| 8482500000 | Other Cylindrical Bearings |
| 8708310000 | Mounted Brake Linings |
| 8708390000 | Other Brakes |
| 8708401000 | Gear Boxes |
| 8708401110 | Gear Boxes |
| 8708401150 | Gear Boxes |
| 8708402000 | Gear Boxes |
| 8708406000 | Gear Boxes |
| 8708500050 | Drive Axles |
| 8708600050 | Non-Driving Axles |
| 8708700050 | Road Wheels & Pts. |
| 8708805000 | Suspension Shock Absorbers |
| 8708925000 | Radiators |
| 8708935000 | Clutches and Parts |
| 8708945000 | Steering Wheel, Column |
| 8708990070 | Wheel Hub Units |
| 8708995800 | Wheel Hub Units |
| 8708996100 | Airbags |
| 8708998015 | Wheel Hub Units |

| | |
|---|---|
| 8708395050 | Brakes & Servo-Brakes |
| 8708401000 | Gear Boxes |
| 8708401110 | Gear Boxes |
| 8708401150 | Gear Boxes |
| 8708402000 | Gear Boxes |
| 8708405000 | Gear Boxes |
| 8708407000 | Cast Iron Parts, Gear Box |
| 8708503000 | Drive Axles for Tractors |
| 8708505110 | Drive Axles for Tractors |
| 8708505000 | Drive Axles |
| 8708505110 | Drive Axles |
| 8708506100 | Drive Axles |
| 8708505150 | Non-Driving Axles |
| 8708506500 | Non-Driving Axles |
| 8708507900 | Parts of Non-Driving Axles |
| 8708508000 | Drive Axles |
| 8708508100 | Cast Iron Parts, Drive Axles |
| 8708508500 | Drive Shaft Parts |
| 8708508900 | Drive Axles Parts |
| 8708509110 | Spindles for Non-Drive Axles |
| 8708509150 | Parts of Non-Driving Axles |
| 8708509300 | Cast Iron Parts, Drive Axles |
| 8708509500 | Drive Shaft Parts |
| 8708509900 | Parts, Drive Axles |
| 8708605000 | Non-Driving Axles |
| 8708608010 | Spindles |
| 8708608050 | Non-Driving Axles |
| 8708704530 | Road Wheels |
| 8708704545 | Road Wheels |
| 8708704560 | Wheel Rims |
| 8708706030 | Wheel Covers |
| 8708706045 | Wheel Covers & Hubcaps |
| 8708708010 | Wheels |
| 8708708015 | Wheels |
| 8708708025 | Wheels |
| 8708708030 | Wheels |
| 8708708035 | Wheels |
| 8708708045 | Wheel Rims |
| 8708708050 | Parts & Access. for Wheels |
| 8708708060 | Wheel Covers & Hubcaps |
| 8708708075 | Parts & Access. for Wheels |
| 8708801300 | Suspension Shock Absorbers |
| 8708801600 | Suspension Shock Absorbers |
| 8708803000 | Suspension Shock Absorbers |
| 8708804500 | Suspension Shock Absorbers |
| 8708805000 | Suspension Shock Absorbers |
| 8708806000 | Cast Iron Parts, SS |

8708806510 Beam Hanger Brackets
8708806590 Suspension System Parts
8708925000 Radiators
8708935000 Clutches & Parts
8708936000 Clutches
8708937500 Parts of Clutches
8708945000 Steering Wheels, Columns
8708947510 Steering Shaft Assembly
8708947550 Parts
8708995010 Steering Shaft Assemblies
8708995020 Wheel Hub Units
8718995025 Wheel Hub Units
8708995030 Beam Hanger Brackets
8708995800 Wheel Hub Units
8708996400 Half Shafts & Drive Shafts
8708996700 Parts (joints?)
8708996710 Universal Joints-‘01
8708996720 Universal Joints- ‘01
8708996790 Other Joints-‘01
8708996810 Pwr Trns Univ Jnts
8708996820 Pwr Trns Univ Jnts
8708996890 Power Trans Parts
8708997030 Beam Hanger Brackets
8708997060 Suspension System Parts
8708997330 Steering Shaft Assemblies
8708997360 Parts for Steering Systems
8708998015 Wheel Hub Units
8708998115 Wheel Hub Units
8716905010 Axles & Parts for Trailers
8716905030 Wheels for Trailers

**Electrical and Electric Components**

8414308030 Compressors
8414596040 Fans
8414598040 Fans & Blowers
8415200000 Air Conditioners
8415830040 Air Conditioners
8415900040 Parts of Air Conditioners
8415908040 Parts of Air Conditioners
8415908045 Parts of Air Conditioners
8501324500 Electric Motors
8507100060 Storage Batteries
8507304000 Nickel-Cadmium Batteries
8507904000 Parts for Lead Acid Batteries
8511100000 Spark Plugs
8511200000 Magnetos, Dynamos

**Electrical and Electric Components**

8414308030 Compressors
8414596040 Fans
8414598040 Fans & Blowers
8415200000 Air Conditioners
8415830040 Air Conditioners
8507100050? Storage Batteries
8507100060 Storage Batteries
8507904000 Parts for Lead Acid Batteries
8507904050? Parts for Batteries?
8511100000 Spark Plugs
8511200000 Magnetos, Dynamos
8511300040 Distributors
8511300080 Ignition Coils
8511400000 Starter Motors

| | |
|---|---|
| 8511300040 | Distributors |
| 8511300080 | Ignition Coils |
| 8511400000 | Starter Motors |
| 8511500000 | Generators |
| 8511802000 | Voltage Regulators |
| 8511806000 | Other Engine Ignition Equip. |
| 8511902000 | Parts for Voltage Regulators |
| 8511906020 | Parts for Distributer Sets |
| 8511906040 | Other Parts Engine Ignition |
| 8512202000 | Lighting Equipment |
| 8512202040 | Lighting Equipment |
| 8512204000 | Signaling Equipment |
| 8512204040 | Signaling Equipment |
| 8512300020 | Horns |
| 8512300030 | Radar Dectectors |
| 8512300040 | Sound Signaling Equipment |
| 8512402000 | Defrosters |
| 8512404000 | Windshield Wipers |
| 8512902000 | Parts of Signaling Equipment |
| 8512906000 | Lighting Equipment Parts |
| 8512907000 | Parts of Defrosters |
| 8512909000 | Parts of Windshield Wipers |
| 8517120020 | Radio Telephones |
| 8519812000 | Cassette Tape Players |
| 8519910020 | Cassette Tape Players |
| 8519911000 | Cassette Tape Players |
| 8519934000 | Cassette Tape Players |
| 8525201500 | Radio Transceivers |
| 8525206020 | Radio Telephones |
| 8525209020 | Radio Telephones |
| 8525601010 | Radio Transceivers, CBs |
| 8527211005 | Radio-Tape Players (CDs) |
| 8527211010 | Radio-Tape Players |
| 8527211015 | Radio-Tape Players |
| 8527211020 | Radio-Tape Players |
| 8527211025 | Radio-Tape Players |
| 8527211030 | Radio-Tape Players |
| 8527214000 | Radio-Combinations |
| 8527214040 | Radio-Combinations |
| 8527214800 | Radio-Combinations |
| 8527290020 | Radio-Receivers AM |
| 8527290040 | Radio-Receivers FM/AM |
| 8527290060 | Radio-Receivers |
| 8527294000 | Radio-Receivers FM/AM |
| 8527298000 | Radio- Recievers |
| 8527298020 | Radio-Receivers AM |
| 8527298060 | Radio-Receivers |
| 8511500000 | Generators |
| 8511802000 | Voltage Regulators |
| 8511806000 | Other Engine Ignition Equip. |
| 8511906020 | Parts for Distributor Sets |
| 8511908000 | Other Elec Ignition Equip |
| 8512202000 | Lighting Equipment |
| 8512204000 | Signaling Equipment |
| 8512300000 | Sound Signaling Equip |
| 8512300030 | Radar Dectectors |
| 8512300050 | Sound Signaling Equip |
| 8512402000 | Defrosters |
| 8512404000 | Windshield Wipers |
| 8512902000 | Parts of Signaling Equip. |
| 8512905000 | Parts of Lighting Equip. |
| 8512908000 | Other Pts of Elec. Equip. |
| 8517120020 | Radio Telephones |
| 8519934000 | Cassette Tape Players |
| 8525201000 | CB Transmission Apparatus |
| 8525206000 | Other Transmission Apparat. |
| 8525209020 | Radio Telephones |
| 8525209050? | Radio Telephones? |
| 8525601010 | Radio Receivers (CB) |
| 8527210000 | Radiobroadcast Receivers |
| 8527290000 | Other Radiobroadcast Receiv |
| 8531800038 | Radar Detectors |
| 8531809038 | Radar Detectors |
| 8536410005 | Signaling Flashers |
| 8539100020 | Beam Lamp Units |
| 8539100040 | Beam Lamp Units |
| 8544300000 | Ignition Wiring Sets |
| 8708950000 | Airbags for MV |
| 9029100000 | Revolution Counters |
| 9029205000 | Other Speedometers/Tacho |
| 9029900000 | Pts & Access of Rev Counter |
| 9104000000 | Inst Panel Clocks |

8531800038 Radar Detectors
8531808038 Radar Detectors
8531809038 Radar Detectors
8536410005 Signaling Flashers
8539100010 Beam Lamp Units
8539100020 Beam Lamps
8539100040 Beam Lamps
8539100050 Beam Lamp Units
8539212040 Halogen Lamps
8544300000 Ignition Wiring Sets
8708291000 Inflators & Modules Airbags
8708950500 Inflators
9029104000 Taximeters
9029108000 Revolution Counters, Odom.
9029204080 Other Speedometers, Tach.
9029902000 Parts & Access of Taximeters
9029908040 Parts & Access of Speed/Tac
9029908080 Parts & Access of Odometers
9104002510 MVT & Cases Panel Clock
9104004000 Instrument Panel Clocks
9104004510 Movements of Inst. Clock

**Engines and Parts**

4010101020 Belts
4016931010 O-Rings
4016931020 Oil Seals
4016931050 Gaskets
4016931090 Gaskets
8407341400 Engines
8407341540 Engines
8407341580 Engines
8407341800 Engines
8407342040 Engines
8407342080 Engines
8407344400 Engines
8407344540 Engines
8407344580 Engines
8407344800 Engines
8408202000 Compression Ignition Engine
8409911040 Cast Iron Parts
8409913000 Aluminum Cylinder Heads
8409915010 Connecting Rods
8409915080 Parts
8409919110 Connecting Rods
8409919190 Parts
8409919910 Connecting Rods
8409991040 Cast-Iron parts

**Engines and Parts**

8407342000 SP-IG Piston Engine
8407342030 SP-IG Engine
8407342090 Other Engine
8408202000 Compression Ignition Engine
8409914000 Pts for Engines
8409994000 Other Pts for Engines
8413301000 Fuel Injection Pumps
8413309000 Fuel, Lub., Cooling Pumps
8413911000 Parts of Fuel Injection Pumps
8414308030 Compressor/Air Conditioners
8414593000 Turbochargers
8421230000 Oil or Fuel Filters
8421310000 Intake Air Filters
8483101020 Transmission Shafts
8483103010 Camshafts & Crankshafts

8409999110 Connecting Rods
8409999190 Parts
8413301000 Fuel Injection Pumps
8413309000 Fuel, Lub., or Cooling Pumps
8413309030 Fuel Pumps
8413309060 Lubricating Pumps
8413309090 Cooling Medium Pumps
8413911000 Parts of Fuel Injection Pumps
8414593000 Turbochargers
8421230000 Oil or Fuel Filters
8421310000 Intake Air Filters
8483101030 Camshafts and Crankshafts
8483103010 Camshafts and Crankshafts
9802004020 Combust. Engine Repair
9802005030 Value of Repairs on Engines

**Miscellaneous Parts**

3819000000 Brake Fluid
3819000010 Brake Fluid
3819000090 Other Liquids
3820000000 Anti-Freeze
4016993000 Vibration Control
4016995010 Mechanical Articles
4016995500 Vibration Control
4016996010 Mechanical Articles
8301200030 Steering Wheel Immobilizers
8425490000 Jacks
8426910000 Lifting Machinery
8431100090 Parts of Winches, Jacks
8708407550 Parts, Radiators
8708706060 Parts & Access. for Wheels
8708915000 Radiators
8708917000 Cast Iron Parts, Radiators
8708917510 Radiator Cores
8708917550 Parts, Radiators
8708927000 Cast Iron Parts, Mufflers
8708927500 Parts, Mufflers
8708993000 Cast Iron Parts
8708947000 Cast Iron Parts
8708995005 Brake Hoses
8708995060 Radiator Cores
8708995070 Cable Traction Devices
8708995080 Parts
8708995085 Parts
8708995090 Parts
8708995200 Cast Iron Parts
8708995500 Vibration Control Goods

**Miscellaneous Parts**

3819000000 Brake Fluid
3820000000 Anti-Freeze
4016995010 Mechanical Articles
8425490000 Jacks
8426910000 Lifting Machinery
8431100090 Parts of Winches, Jacks
8708915000 Radiators
8708990050 Pts & Access
8708990090 Other Pts & Access
8708990095 Pts & Access
8708998075 Other Pts & Access
8716900000 Parts of Trailers
8716905000 Parts

8708998005 Brake Hoses of Plastics
8708998045 Radiator Cores
8708998060 Cable Traction Devices
8708998080 Parts
8708998105 Brake Hoses-Plastic
8708998160 Cable Traction Devices
8708998180 Parts
8716905050 Parts for Trailers
8716905060 Parts for Trailers

**Automotive Tires and Tubes**

4011100010 Radial Tires for M.V.
4011100050 Pneumatic Tires for M.V.
4011101000 Radial Tires for M.V.
4011101010 Radial Tires-'01
4011101020 Radial Tires-'01
4011101030 Radial Tires-'01
4011101040 Radial Tires-'01
4011101050 Radial Tires-'01
4011101060 Radial Tires-'01
4011101070 Radial Tires-'01
4011105000 Pneumatic Tires for M.V.
4011200005 Radial Tires for Lt. Trucks
4011200010 Pneumatic Tires for Lt. Truck
4011200015 Radial Tires for Buses/Truck
4011200020 Pneumatic Tires for Buses/Tr
4011200025 Radial Tires for Buses off
4011200030 Pneumatic Tires for Buses off
4011200035 Radial Tires for Buses off
4011200050 Pneumatic Tires for Buses off
4011201005 Radial Tires for Lt. Trucks
4011201015 Pneumatic Tires for Buses/Tr
4011201025 Radial Tires for Buses off
4011201035 Pneumatic Tires for Buses off
4011205010 Tires, ex. Radial for Lt. Truc
4011205020 Pneumatic Tires for Buses
4011205030 Tires, ex. Radial, for Bus
4011205050 Pneumatic Tires for Bus
4012104005 Retreaded Tires for M.V.
4012104015 Retreaded Tires for Light on
4012104025 Retreaded Tires for Bus/Truc
4012104035 Retreaded Tires for Bus/Truc
4012105005 Retreaded Radial Tires M.V.
4012105009 Retreaded Tires for M.V.
4012105015 Retreaded Radial Tires Bus
4012105019 Retreaded Tires for Lt. Truck
4012105025 Retreaded Radial Tires Bus

**Automotive Tires and Tubes**

4011100010 Radial Tires for M.V.
4011100050 Pneumatic Tires for M.V.
4011101000 Radial Tires for M.V.
4011105000 Pneumatic Tires for M.V.
4011200005 Radial Tires for Lt. Trucks
4011200010 Pneumatic Tires for Lt. Truck
4011200015 Radial Tires for Buses/Truck
4011200020 Pneumatic Tires for Buses/Tr
4011200025 Radial Tires for Buses off
4011200030 Pneumatic Tires for Buses off
4011200035 Radial Tires for Buses off
4011200050 Pneumatic Tires for Buses off
4011201005 Radial Tires for Lt. Trucks
4011201015 Pneumatic Tires for Buses/Tr
4011201025 Radial Tires for Buses off
4011201035 Pneumatic Tires for Buses off
4011205010 Tires, ex Radial, for Lt. Truc
4011205020 Pneumatic Tires for Buses
4011205030 Tires, ex Radial for Bus/Tr
4011205050 Pneumatic Tire for Bus/Tr
4012105020 Retreaded Tires Bus/Truck
4012106000 Other Retreaded Tires
4012110000 Retreaded Tires
4012120000 Retreaded Tires
4012190000 Retread Tires
4012200000 Used Pneumatic Tires
4013100010 Inner Tubes
4013100020 Inner Tubes
4013900000 Other Inner Tubes

| | |
|---|---|
| 4012105029 | Retreaded Tires for Bus/Truc |
| 4012105035 | Retreaded Radial Tires Bus |
| 4012105050 | Retreaded Tires for Bus/Truc |
| 4012108009 | Retreaded Tires for M.V. |
| 4012108019 | Retreaded Tires for Lt. Truck |
| 4012108029 | Retreaded Tires for Bus/Truc |
| 4012108050 | Retreaded Tires for Bus, ex. |
| 4012114000 | Retreaded Tires for Cars |
| 4012118000 | Retreaded Tires for Cars |
| 4012124015 | Retreaded Tires for Lt. Truck |
| 4012124025 | Retreaded Tires for Bus/Truc |
| 4012124035 | Retreaded Tires for Bus/Truc |
| 4012128019 | Retread Tire for Lt. Truck |
| 4012128029 | Retread Tire for Bus/Truck |
| 4012128050 | Retread Tire for Bus |
| 4012194000 | Retreaded Tires for Bus, ex. |
| 4012198000 | Retread Tire for Bus |
| 4012205000 | Used Pneumatic Tires |
| 4012206000 | Used Pneumatic Tires |
| 4013100010 | Inner Tubes |
| 4013100020 | Inner Tubes |

**HTS Codes Numerically Ordered**

| HTS Codes for Import | |
|---|---|
| 3819000000 | Brake Fluid |
| 3819000010 | Brake Fluid |
| 3819000090 | Other Liquids |
| 3820000000 | Anti-Freeze |
| 4009120020 | Brake Hoses |
| 4009220020 | Brake Hoses |
| 4009320020 | Brake Hoses |
| 4009420020 | Brake Hoses |
| 4009500020 | Brake Hoses |
| 4010101020 | Belts |
| 4011100010 | Radial Tires for M.V. |
| 4011100050 | Pneumatic Tires for M.V. |
| 4011101000 | Radial Tires for M.V. |
| 4011101010 | Radial Tires-‘01 |
| 4011101020 | Radial Tires-‘01 |
| 4011101030 | Radial Tires-‘01 |

| Schedule B Codes for Export | |
|---|---|
| 3819000000 | Brake Fluid |
| 3820000000 | Anti-Freeze |
| 4009120020 | Brake Hoses |
| 4009220020 | Brake Hoses |
| 4009320020 | Brake Hoses |
| 4009420020 | Brake Hoses |
| 4009500020 | Brake Hoses |
| 4011100010 | Radial Tires for M.V. |
| 4011100050 | Pneumatic Tires for M.V. |
| 4011101000 | Radial Tires for M.V. |
| 4011105000 | Pneumatic Tires for M.V. |
| 4011200005 | Radial Tires for Lt. Trucks |
| 4011200010 | Pneumatic Tires for Lt. Truck |
| 4011200015 | Radial Tires for Buses/Truck |
| 4011200020 | Pneumatic Tires for Buses/Tr |
| 4011200025 | Radial Tires for Buses off |

| | |
|---|---|
| 4011101040 | Radial Tires-‘01 |
| 4011101050 | Radial Tires-‘01 |
| 4011101060 | Radial Tires-‘01 |
| 4011101070 | Radial Tires-‘01 |
| 4011105000 | Pneumatic Tires for M.V. |
| 4011200005 | Radial Tires for Lt. Trucks |
| 4011200010 | Pneumatic Tires for Lt. Truck |
| 4011200015 | Radial Tires for Buses/Truck |
| 4011200020 | Pneumatic Tires for Buses/Tr |
| 4011200025 | Radial Tires for Buses off |
| 4011200030 | Pneumatic Tires for Buses off |
| 4011200035 | Radial Tires for Buses off |
| 4011200050 | Pneumatic Tires for Buses off |
| 4011201005 | Radial Tires for Lt. Trucks |
| 4011201015 | Pneumatic Tires for Buses/Tr |
| 4011201025 | Radial Tires for Buses off |
| 4011201035 | Pneumatic Tires for Buses off |
| 4011205010 | Tires, ex. Radial for Lt. Truc |
| 4011205020 | Pneumatic Tires for Buses |
| 4011205030 | Tires, ex. Radial, for Bus |
| 4011205050 | Pneumatic Tires for Bus |
| 4012104005 | Retreaded Tires for M.V. |
| 4012104015 | Retreaded Tires for Light on |
| 4012104025 | Retreaded Tires for Bus/Truc |
| 4012104035 | Retreaded Tires for Bus/Truc |
| 4012105005 | Retreaded Radial Tires M.V. |
| 4012105009 | Retreaded Tires for M.V. |
| 4012105015 | Retreaded Radial Tires Bus |
| 4012105019 | Retreaded Tires for Lt. Truck |
| 4012105025 | Retreaded Radial Tires Bus |
| 4012105029 | Retreaded Tires for Bus/Truc |
| 4012105035 | Retreaded Radial Tires Bus |
| 4012105050 | Retreaded Tires for Bus/Truc |
| 4012108009 | Retreaded Tires for M.V. |
| 4012108019 | Retreaded Tires for Lt. Truck |
| 4012108029 | Retreaded Tires for Bus/Truc |
| 4012108050 | Retreaded Tires for Bus, ex. |
| 4012114000 | Retreaded Tires for Cars |
| 4012118000 | Retreaded Tires for Cars |
| 4012124015 | Retreaded Tires for Lt. Truck |
| 4012124025 | Retreaded Tires for Bus/Truc |
| 4012124035 | Retreaded Tires for Bus/Truc |
| 4012128019 | Retread Tire for Lt. Truck |
| 4012128029 | Retread Tire for Bus/Truck |
| 4012128050 | Retread Tire for Bus |
| 4012194000 | Retreaded Tires for Bus, ex. |
| 4012198000 | Retread Tire for Bus |
| 4012205000 | Used Pneumatic Tires |
| 4012206000 | Used Pneumatic Tires |
| 4011200030 | Pneumatic Tires for Buses off |
| 4011200035 | Radial Tires for Buses off |
| 4011200050 | Pneumatic Tires for Buses off |
| 4011201005 | Radial Tires for Lt. Trucks |
| 4011201015 | Pneumatic Tires for Buses/Tr |
| 4011201025 | Radial Tires for Buses off |
| 4011201035 | Pneumatic Tires for Buses off |
| 4011205010 | Tires, ex Radial, for Lt. Truc |
| 4011205020 | Pneumatic Tires for Buses |
| 4011205030 | Tires, ex Radial for Bus/Tr |
| 4011205050 | Pneumatic Tire for Bus/Tr |
| 4012105020 | Retreaded Tires Bus/Trucks |
| 4012106000 | Other Retreaded Tires |
| 4012110000 | Retreaded Tires |
| 4012120000 | Retreaded Tires |
| 4012190000 | Retread Tires |
| 4012200000 | Used Pneumatic Tires |
| 4013100010 | Inner Tubes |
| 4013100020 | Inner Tubes |
| 4013900000 | Other Inner Tubes |
| 4016995010 | Mechanical Articles |
| 6813100000 | Brake Linings & Pads |
| 6813200000 | Friction Materials |
| 6813810000 | Brake Linings |
| 6813890000 | Other Brake Materials |
| 6813900000 | Other Friction Materials |
| 7007110000 | Safety Glass |
| 7007211000 | Windshields |
| 7007215000 | Safety Glass |
| 7009100000 | Rear-View Mirrors |
| 7320100000 | Leaf Springs |
| 7320201000 | Helical Springs |
| 8301200000 | Locks |
| 8302103000 | Hinges |
| 8302300000 | Other Mountings |
| 8407342000 | Spark Ig Piston Engines |
| 8407342030 | Spark Ig Engine |
| 8407342090 | Other Engine |
| 8408202000 | Compression Ignition Engine |
| 8409914000 | Pts for Engines |
| 8409994000 | Other Pts for Engines |
| 8413301000 | Fuel Injection Pumps |
| 8413309000 | Fuel, Lub., Cooling Pumps |
| 8413911000 | Parts of Fuel Injection Pumps |
| 8414308030 | Compressors/Air Condition |
| 8414593000 | Turbochargers |
| 8414596040 | Fans |
| 8414598040 | Fans & Blowers |
| 8415200000 | Air Conditioners |

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|---|---|
| 4013100010 | Inner Tubes |
| 4013100020 | Inner Tubes |
| 4016931010 | O-Rings |
| 4016931020 | Oil Seals |
| 4016931050 | Gaskets |
| 4016931090 | Gaskets |
| 4016993000 | Vibration Control |
| 4016995010 | Mechanical Articles |
| 4016995500 | Vibration Control |
| 4016996010 | Mechanical Articles |
| 6813100050 | Brake Linings & Pads |
| 6813200015 | Brake Linings & Pads |
| 6813200025 | Asbestos Friction |
| 6813810050 | Brk Lngs & Pads, Not Asbest |
| 6813890050 | Min Sub Friction Materials |
| 6813900050 | Friction Materials |
| 7007110000 | Safety Glass |
| 7007110010 | Safety Glass |
| 7007211000 | Windshields |
| 7007211010 | Windshields |
| 7007215000 | Safety Glass |
| 7009100000 | Rear-View Mirrors |
| 7318160010 | Lugnuts |
| 7318160015 | Lugnuts |
| 7318160030 | Lugnuts |
| 7318160045 | Other Lugnuts |
| 7320100015 | Leaf Springs |
| 7320103000 | Leaf Springs |
| 7320106015 | Leaf Springs |
| 7320106060 | Leaf Springs |
| 7320201000 | Helical Springs |
| 8301200000 | Locks |
| 8301200030 | Steering Wheel Immobilizers |
| 8301200060 | Other Locks |
| 8302103000 | Hinges |
| 8302303000 | Other Mountings |
| 8302303010 | Pneumatic Cylinders |
| 8302303060 | Other Mountings |
| 8302306000 | Other Mountings |
| 8407341400 | Engines |
| 8407341540 | Engines |
| 8407341580 | Engines |
| 8407341800 | Engines |
| 8407342040 | Engines |
| 8407342080 | Engines |
| 8407344400 | Engines |
| 8407344540 | Engines |
| 8407344580 | Engines |
| 8407344800 | Engines |
| 8415830040 | Air Conditioners |
| 8421230000 | Oil or Fuel Filters |
| 8421310000 | Intake Air Filters |
| 8421394000 | Catalytic Converters |
| 8425490000 | Jacks |
| 8426910000 | Lifting Machinery |
| 8431100090 | Parts of Winches, Jacks |
| 8482101000 | Ball Bearings |
| 8482105044 | Radial Bearings |
| 8482105048 | Radial Bearings |
| 8482200020 | Tapered Roller Bearings |
| 8482200030 | Tapered Roller Bearings |
| 8482200040 | Tapered Roller Bearings |
| 8482200060 | Tapered Roller Bearings |
| 8482200070 | Tapered Roller Bearings |
| 8482200080 | Tapered Roller Bearings |
| 8482400000 | Needle Roller Bearings |
| 8482500000 | Other Cylindrical Bearings |
| 8483101020 | Transmission Shafts |
| 8483103010 | Camshafts & Crankshafts |
| 8507100050 | Storage Batteries |
| 8507100060 | Storage Batteries |
| 8507904000 | Parts for Lead Acid Batteries |
| 8507904050 | Parts for Batteries |
| 8511100000 | Spark Plugs |
| 8511200000 | Magnetos, Dynamos |
| 8511300040 | Distributors |
| 8511300080 | Ignition Coils |
| 8511400000 | Starter Motors |
| 8511500000 | Generators |
| 8511802000 | Voltage Regulators |
| 8511806000 | Other Engine Ignition Equip. |
| 8511906020 | Parts for Distributor Sets |
| 8511908000 | Other Elec Ignition Equip |
| 8512202000 | Lighting Equipment |
| 8512204000 | Signaling Equipment |
| 8512300000 | Sound Signaling Equipment |
| 8512300030 | Radar Detectors |
| 8512300050 | Sound Signaling Equipment |
| 8512402000 | Defrosters |
| 8512404000 | Windshield Wipers |
| 8512902000 | Parts of Signaling Equip. |
| 8512905000 | Parts of Lighting Equipment |
| 8512908000 | Other Pts of Elec Equipment |
| 8517120020 | Radio Telephones |
| 8519812000 | Cassette Tape Players |
| 8525201000 | CB Transmission Apparatus |
| 8525206000 | Other Transmission Apparat |
| 8525209020 | Radio Telephones |

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|---|---|
| 8408202000 | Compression Ignition Engine |
| 8409911040 | Cast Iron Parts |
| 8409913000 | Aluminum Cylinder Heads |
| 8409915010 | Connecting Rods |
| 8409915080 | Parts |
| 8409919110 | Connecting Rods |
| 8409919190 | Parts |
| 8409919910 | Connecting Rods |
| 8409991040 | Cast-Iron parts |
| 8409999110 | Connecting Rods |
| 8409999190 | Parts |
| 8413301000 | Fuel Injection Pumps |
| 8413309000 | Fuel, Lub., or Cooling Pumps |
| 8413309030 | Fuel Pumps |
| 8413309060 | Lubricating Pumps |
| 8413309090 | Cooling Medium Pumps |
| 8413911000 | Parts of Fuel Injection Pumps |
| 8414308030 | Compressors |
| 8414593000 | Turbochargers |
| 8414596040 | Fans |
| 8414598040 | Fans & Blowers |
| 8415200000 | Air Conditioners |
| 8415830040 | Air Conditioners |
| 8415900040 | Parts of Air Conditioners |
| 8415908040 | Parts of Air Conditioners |
| 8415908045 | Parts of Air Conditioners |
| 8421230000 | Oil or Fuel Filters |
| 8421310000 | Intake Air Filters |
| 8421394000 | Catalytic Converters |
| 8425490000 | Jacks |
| 8426910000 | Lifting Machinery |
| 8431100090 | Parts of Winches, Jacks |
| 8482101000 | Ball Bearings |
| 8482101040 | Ball Bearings |
| 8482101080 | Ball Bearings |
| 8482105044 | Radial Bearings |
| 8482105048 | Radial Bearings |
| 8482200010 | Tapered Roller Bearings |
| 8482200020 | Tapered Roller Bearings |
| 8482200030 | Tapered Roller Bearings |
| 8482200040 | Tapered Roller Bearings |
| 8482200050 | Tapered Roller Bearings |
| 8482200060 | Tapered Roller Bearings |
| 8482200070 | Tapered Roller Bearings |
| 8482200080 | Tapered Roller Bearings |
| 8482400000 | Needle Roller Bearings |
| 8482500000 | Other Cylindrical Bearings |
| 8483101030 | Camshafts and Crankshafts |
| 8483103010 | Camshafts and Crankshafts |
| 8525209050 | Radio Telephones |
| 8525601010 | Radio Transceivers (CB) |
| 8527210000 | Radiobroadcast Receivers |
| 8527290000 | Other Radiobroadcast Receiv |
| 8531800038 | Radar Detectors |
| 8531809038 | Radar Detectors |
| 8536410005 | Signaling Flashers |
| 8539100020 | Beam Lamp Units |
| 8539100040 | Beam Lamp Units |
| 8544300000 | Ignition Wiring Sets |
| 8707100020 | Bodies |
| 8707100040 | Bodies |
| 8707905020 | Bodies |
| 8707905040 | Bodies |
| 8707905060 | Bodies |
| 8707905080 | Bodies |
| 8708100010 | Stampings of Bumpers |
| 8708100050 | Bumpers and Parts |
| 8708210000 | Seat Belts |
| 8708290010 | Stampings of Bodies |
| 8708290025 | Truck Caps |
| 8708290050 | Parts & Access. of Bodies |
| 8708290060 | Parts & Access. of Bodies |
| 8708295025 | Truck Caps |
| 8708295070 | Other Pts & Access of Bodies |
| 8708310000 | Mounted Brake Linings |
| 8708390000 | Other Brakes |
| 8708401000 | Gear Boxes |
| 8708401110 | Gear Boxes |
| 8708401150 | Gear Boxes |
| 8708402000 | Gear Boxes |
| 8708406000 | Gear Boxes |
| 8708500050 | Drive Axles |
| 8708600050 | Non-Driving Axles |
| 8708700050 | Road Wheels & Pts. |
| 8708805000 | Suspension Shock Absorbers |
| 8708915000 | Radiators |
| 8708925000 | Radiators |
| 8708935000 | Clutches and Parts |
| 8708945000 | Steering Wheel, Column |
| 8708950000 | Airbags for MVs |
| 8708990045 | Slide-in Campers |
| 8708990050 | Pts & Access. |
| 8708990070 | Wheel Hub Units |
| 8708990090 | Other Pts & Access |
| 8708990095 | Pts & Access |
| 8708995800 | Wheel Hub Units |
| 8708996100 | Airbags |
| 8708998015 | Wheel Hub Units |

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|---|---|
| 8501324500 | Electric Motors |
| 8507100060 | Storage Batteries |
| 8507304000 | Nickel-Cadmium Batteries |
| 8507904000 | Parts for Lead Acid Batteries |
| 8511100000 | Spark Plugs |
| 8511200000 | Magnetos, Dynamos |
| 8511300040 | Distributors |
| 8511300080 | Ignition Coils |
| 8511400000 | Starter Motors |
| 8511500000 | Generators |
| 8511802000 | Voltage Regulators |
| 8511806000 | Other Engine Ignition Equip. |
| 8511902000 | Parts for Voltage Regulators |
| 8511906020 | Parts for Distributer Sets |
| 8511906040 | Other Parts Engine Ignition |
| 8512202000 | Lighting Equipment |
| 8512202040 | Lighting Equipment |
| 8512204000 | Signaling Equipment |
| 8512204040 | Signaling Equipment |
| 8512300020 | Horns |
| 8512300030 | Radar Dectector |
| 8512300040 | Sound Signaling Equipment |
| 8512402000 | Defrosters |
| 8512404000 | Windshield Wipers |
| 8512902000 | Parts of Signaling Equipment |
| 8512906000 | Lighting Equipment Parts |
| 8512907000 | Parts of Defrosters |
| 8512909000 | Parts of Windshield Wipers |
| 8517120020 | Radio Telephones |
| 8519812000 | Cassette Tape Players |
| 8519910020 | Cassette Tape Players |
| 8519911000 | Cassette Tape Players |
| 8519934000 | Cassette Tape Players |
| 8525201500 | Radio Transceivers |
| 8525206020 | Radio Telephones |
| 8525209020 | Radio Telephones |
| 8525601010 | Radio Transceivers, CBs |
| 8527211005 | Radio-Tape Players (CDs) |
| 8527211010 | Radio-Tape Players |
| 8527211015 | Radio-Tape Players |
| 8527211020 | Radio-Tape Players |
| 8527211025 | Radio-Tape Players |
| 8527211030 | Radio-Tape Players |
| 8527214000 | Radio-Combinations |
| 8527214040 | Radio-Combinations |
| 8527214800 | Radio-Combinations |
| 8527290020 | Radio-Receivers AM |
| 8527290040 | Radio-Receivers FM/AM |
| 8527290060 | Radio-Receivers |
| 8708998030 | Slide-In Campers |
| 8708998075 | Other Pts & Access |
| 8716900000 | Parts of Trailers |
| 8716905000 | Parts |
| 9029100000 | Revolution Counters |
| 9029205000 | Other Speedometers/Tacho |
| 9029900000 | Pts & Access of Rev Counter |
| 9104000000 | Inst Panel Clocks |
| 9401200000 | Seats |
| 9401901000 | Seat Parts |
| 9401901010 | Seat Parts of Leather |
| 9401901080 | Seat Parts |
| 9403901000 | Parts of Furnitures |

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|---|---|
| 8527294000 | Radio-Receivers FM/AM |
| 8527298000 | Radio Recievers |
| 8527298020 | Radio-Receivers AM |
| 8527298060 | Radio-Receivers |
| 8531800038 | Radar Detectors |
| 8531808038 | Radar Detectors |
| 8531809038 | Radar Detectors |
| 8536410005 | Signaling Flashers |
| 8539100010 | Beam Lamp Units |
| 8539100020 | Beam Lamp |
| 8539100040 | Beam Lamp |
| 8539100050 | Beam Lamp Units |
| 8539212040 | Halogen Lamps |
| 8544300000 | Ignition Wiring Sets |
| 8707100020 | Bodies |
| 8707100040 | Bodies |
| 8707905020 | Bodies |
| 8707905040 | Bodies |
| 8707905060 | Bodies |
| 8707905080 | Bodies |
| 8708100010 | Stampings of Bumpers |
| 8708100050 | Bumpers and Parts |
| 8708103010 | Stampings of Bumpers |
| 8708103050 | Bumpers |
| 8708106010 | Stampings Parts of Bumpers |
| 8708106050 | Parts of Bumpers |
| 8708210000 | Seat Belts |
| 8708290010 | Stampings of Bodies |
| 8708290025 | Truck Caps |
| 8708290050 | Parts & Access. of Bodies |
| 8708290060 | Parts & Access. of Bodies |
| 8708950500 | Inflators & Modules Airbags |
| 8708291000 | Inflators & Modules Airbags |
| 8708291500 | Door Assemblies |
| 8708292000 | Body Stampings |
| 8708295010 | Stampings |
| 8708295025 | Truck Caps |
| 8708295060 | Other Parts |
| 8708305020 | Brake Drums |
| 8708305030 | Brake Rotors |
| 8708315000 | Mounted Brake Linings |
| 8708391000 | Brakes & Parts |
| 8708391090 | Brakes & Parts |
| 8708395010 | Brake Drums & Rotors |
| 8708395020 | Brake Drums |
| 8708395030 | Brake Rotors |
| 8708305040 | Brake Linings |
| 8708395050 | Brakes & Servo-Brakes |
| 8708401000 | Gear Boxes |

| | |
|---|---|
| 8708401110 | Gear Boxes |
| 8708401150 | Gear Boxes |
| 8708402000 | Gear Boxes |
| 8708405000 | Gear Boxes |
| 8708407000 | Cast Iron Parts, Gear Box |
| 8708407550 | Parts, Radiators |
| 8708503000 | Drive Axles |
| 8708503110 | Drive Axles |
| 8708505000 | Drive Axles |
| 8708505110 | Drive Axles |
| 8708505150 | Non-Driving Axles |
| 8708506100 | Drive Axles |
| 8708506500 | Non-Driving Axles, NESOI |
| 8708507900 | Non-Driving Axles Parts |
| 8708508000 | Drive Axles |
| 8708508100 | Cast Iron Parts, Drive Axles |
| 8708508500 | Parts, Drive Shaft |
| 8708508900 | Parts, Drive Axles |
| 8708509110 | Spindles of Non-Driving Axle |
| 8708509150 | Non-Driving Axles Parts |
| 8708509300 | Cast Iron Parts, Drive Axles |
| 8708509500 | Parts, Drive Shaft |
| 8708509900 | Parts, Drive Axles |
| 8708605000 | Non-Driving Axles |
| 8708608010 | Spindles |
| 8708608050 | Non-Driving Axles |
| 8708704530 | Road Wheels |
| 8708704545 | Road Wheels |
| 8708704560 | Wheel Rims |
| 8708706030 | Wheel Covers |
| 8708706045 | Wheel Covers & Hubcaps |
| 8708706060 | Parts & Access. for Wheels |
| 8708708010 | Wheels |
| 8708708015 | Wheels |
| 8708708025 | Wheels |
| 8708708030 | Wheels |
| 8708708035 | Wheels |
| 8708708045 | Wheel Rims |
| 8708708050 | Parts & Access. for Wheels |
| 8708708060 | Wheel Covers & Hubcaps |
| 8708708075 | Parts & Access. for Wheels |
| 8708801300 | Suspension Shock Absorbers |
| 8708801600 | Suspension Shock Absorbers |
| 8708803000 | Suspension Shock Absorbers |
| 8708804500 | Suspension Shock Absorbers |
| 8708805000 | Suspension Shock Absorbers |
| 8708806000 | Cast Iron Parts, SS |
| 8708806510 | Beam Hanger Brackets |
| 8708806590 | Parts for Suspension System |

| | |
|---|---|
| 8708915000 | Radiators |
| 8708917000 | Cast Iron Parts, Radiators |
| 8708917510 | Radiator Cores |
| 8708917550 | Parts, Radiators |
| 8708925000 | Radiators |
| 8708927000 | Cast Iron Parts, mufflers |
| 8708927500 | Parts, Mufflers |
| 8708935000 | Clutches & Parts |
| 8708936000 | Clutches |
| 8708937500 | Parts of Clutches |
| 8708945000 | Steering Wheels, Columns |
| 8708947000 | Cast Iron Parts |
| 8708947510 | Steering Shaft Assembly |
| 8708947550 | Parts, Steering |
| 8708950500 | Inflators |
| 8708952000 | Parts, Airbags |
| 8708993000 | Cast Iron Parts |
| 8708995005 | Brake Hoses |
| 8708995010 | Steering Shaft Assemblies |
| 8708995020 | Wheel Hub Units |
| 8708995030 | Beam Hanger Brackets |
| 8708995045 | Slide in Campers |
| 8708995060 | Radiator Cores |
| 8708995070 | Cable Traction Devices |
| 8708995080 | Parts |
| 8708995085 | Parts |
| 8708995090 | Parts |
| 8708995200 | Cast Iron Parts |
| 8708995500 | Vibration Control Goods |
| 8708995800 | Wheel Hub Units |
| 8708996100 | Airbags |
| 8708996400 | Half Shafts & Drive Shafts |
| 8708996700 | Parts (joints?) |
| 8708996710 | Universal Joints-‘01 |
| 8708996720 | Universal Joints- ‘01 |
| 8708996790 | Other Joints-‘01 |
| 8708996810 | Parts Pwr Trns, Univ Jnts |
| 8708996820 | Parts Pwr Trns, Univ Jnts |
| 8708996890 | Parts Power Train |
| 8708997030 | Beam Hanger Brackets |
| 8708997060 | Suspension System Parts |
| 8708997330 | Steering Shaft Assemblies |
| 8708997360 | Parts for Steering Systems |
| 8708998005 | Brake Hoses of Plastics |
| 8708998015 | Wheel Hub Units |
| 8708998045 | Radiator Cores |
| 8708998060 | Cable Traction Devices |
| 8708998080 | Parts |
| 8708998105 | Brake Hoses- Plastic |

| | |
|---|---|
| 8708998115 | Wheel Hub Units |
| 8708998160 | Cable Traction Devices |
| 8708998180 | Parts |
| 8716905010 | Axles & Parts for Trailers |
| 8716905030 | Wheels for Trailers |
| 8716905050 | Parts for Trailers |
| 8716905060 | Parts for Trailers |
| 8718995025 | Wheel Hub Units |
| 9029104000 | Taximeters |
| 9029108000 | Revolution Counters, Odom. |
| 9029204080 | Other Speedometers, Tach. |
| 9029902000 | Parts & Access of Taximeters |
| 9029908040 | Parts & Access of Speed/Tac |
| 9029908080 | Parts & Access of Odometers |
| 9104002510 | MVT & Cases Panel Clock |
| 9104004000 | Instrument Panel Clocks |
| 9104004510 | Movements of Inst. Clock |
| 9401200000 | Seats |
| 9401200010 | Child Safety Seats |
| 9401200090 | Seats |
| 9401901000 | Seat Parts |
| 9401901010 | Seat Parts of Leather |
| 9401901020 | Seat Parts of Textile |
| 9401901080 | Seat Parts |
| 9401901085 | Seat Parts |
| 9403406000 | Wooden Furniture for M.V. |
| 9403506000 | Wooden Furniture for M.V. |
| 9403901000? | Furniture |
| 9403901040 | Parts of Furniture for M.V. |
| 9403901050 | Parts of Furniture for M.V. |
| 9403901080 | Parts of Furniture for M.V. |
| 9403901085 | Parts of Furniture for M.V. |
| 9802004020 | Combust. Engine Repair |
| 9802005030 | Value of Repairs on Engines |

**North American Industry Classification System (NAICS)**

| | |
|---|---|
| 335911 | Storage Battery Mfg |
| 336211 | Motor Vehicle Body Mfg |
| 336311 | Carburetor, Piston, Piston Ring, & Valve Mfg |
| 336312 | Gasoline Engine & Engine Parts Mfg |
| 336321 | Vehicular Lighting Equipment Mfg |
| 336322 | Other Motor Vehicle Electrical & Electronic Equipment Mfg |
| 336330 | Motor Vehicle Steering & Suspension Component |
| 336340 | Motor Vehicle Brake System Mfg |
| 336350 | Motor Vehicle Transmission & Power Train Parts Mfg |
| 336360 | Motor Vehicle Seating & Interior Trim Mfg |
| 336370 | Motor Vehicle Metal Stamping |
| 336391 | Motor Vehicle Air-Conditioning Mfg |
| 336399 | All Other Motor Vehicle Parts Mfg |

**Description of NAICS codes by HTS codes**

**335911 Storage Battery Mfg**

| HTS Codes | |
|---|---|
| 8507100030 | Lead Acid Batteries |
| 8507100060 | Lead Acid Batteries |
| 8507100090 | Lead Acid Batteries |
| 8507204000 | Lead Acid Batteries |
| 8507208030 | Lead Acid Batteries |
| 8507208040 | Lead Acid Batteries |
| 8507208060 | Lead Acid Batteries |
| 8507208090 | Lead Acid Batteries |
| 8507304000 | Nickel-Cad Batteries |
| 8507308010 | Nickel-Cad Batteries |
| 8507308090 | Nickel-Cad Batteries |
| 8507404000 | Nickel-Iron Batteries |
| 8507408000 | Nickel-Iron Batteries |
| 8507804000 | Other Batteries |
| 8507808000 | Other Batteries |
| 8507904000 | Parts for Batteries |
| 8507908000 | Parts for Batteries |

| Schedule B | |
|---|---|
| 8507100030 | Lead-Acid Batteries |
| 8507100060 | Lead-Acid Batteries |
| 8507100090 | Lead-Acid Batteries |
| 8507200030 | Lead Acid Batteries |
| 8507200040 | Lead Acid Batteries |
| 8507200060 | Lead Acid Batteries |
| 8507200090 | Lead Acid Batteries |
| 8507300000 | Nickel-Cad Batteries |
| 8507400000 | Nickel-Iron Batteries |
| 8507800000 | Other Storage Batter |
| 8507904000 | Parts Lead Acid Batt |
| 8507908000 | Parts Storage Batter |

**336211 Motor Vehicle Bodies**

| HTS Codes | | Schedule B | |
|---|---|---|---|
| 8707100020 | Bodies Pass. Autos | 8707100020 | Bodies Pass. Autos |
| 8707905020 | Bodies for Vehicles | 8707905020 | Bodies Vehicles |
| 8707905040 | Bodies for Vehicles | 8707905040 | Bodies Vehicles |
| 8707905060 | Bodies for Vehicles | 8707905060 | Bodies Vehicles |
| 8707905080 | Bodies for Vehicles | 8707905080 | Bodies Vehicles |

**336311 Carburetor, Piston, Piston Ring, & Valve Mfg**
**336312 Motor Vehicle Gasoline Engines & Engine Parts**

| HTS Codes | | Schedule B | |
|---|---|---|---|
| 8407322040 | SPK-IGN Eng Used | 8407322000 | Spark Ign Eng |
| 8407322080 | SPK-IGN Eng New | 8407332000 | Spark Ign Eng |
| 8407336040 | SPK-IGN Eng Used | 8407342030 | Spark Ign Eng |
| 8407336080 | SPK-IGN Eng New | 8407342090 | Spark Ign eng |
| 8407341400 | SPK-IGN Eng Used | 8409914000 | Parts Spark Ign Eng |
| 8407341800 | SPK-IGN Eng New | 8413309000 | Fuel, Lub, Cool Pump |
| 8407344400 | SPK-IGN Eng Used | 8413919010 | Parts Fuel, L, C Pump |
| 8407344800 | SPK-IGN Eng New | 8414596040 | Fans & Blowers |
| 8409911040 | Cast Iron Parts | 8483101020 | Cam/Crankshaft |
| 8409913000 | Alum. Cylinder Head | | |
| 8409915010 | Conn Rods | | |
| 8409915080 | Parts for SP-IG Eng | | |
| 8413309030 | Fuel Pumps | | |
| 8413309060 | Lub Pumps for Eng | | |
| 8413309090 | Cooling Med Pumps | | |
| 8413919010 | Parts, Fuel, Lub, Med | | |
| 8414596040 | Fans | | |
| 8483101030 | Cam/Crankshaft | | |
| 8483506000 | Flywheels | | |

**336321 Vehicular Lighting Equipment**

| HTS Codes | | Schedule B | |
|---|---|---|---|
| 8512102000 | Bike Lighting Equip | 8512100000 | Lgtg/Vis Sig Eq Bike |
| 8512104000 | Bike Visual Signaling | 8512202000 | Veh Lighting Equip |
| 8512202040 | Lighting Equip | 8512204000 | Veh Vis Signaling Eq |
| 8512202080 | Lightg Equip for Veh. | 8512902000 | Parts Signaling Equip |
| 8512204040 | Vis Sig Equip | 8512905000 | Parts Lgtg Equip |
| 8512204080 | Vis Sig Equip for Veh | 8536410005 | Auto Sig Flashers |
| 8512902000 | Parts of Veh Sig Eq | | |
| 8512904000 | Parts of Lightg Bikes | | |
| 8512906000 | Veh Lightg Equip Par | | |
| 8536410005 | Auto Sig Flashers | | |

**336322 Motor Vehicle Electrical & Electronic Equipment**

| HTS Codes | | Schedule B | |
|---|---|---|---|
| 8511100000 | IC Eng Spark Plugs | 8511100000 | IC Eng Spark Plugs |
| 8511200000 | IC Eng Magnetos | 8511200000 | IC Eng Magnetos |
| 8511300040 | IC Eng Distributors | 8511300040 | IC Eng Distributors |
| 8511300080 | IC Eng Ignit. Coils | 8511300080 | IC Eng Ignition Coils |
| 8511400000 | IC Eng Starter Motors | 8511400000 | IC Eng Starter Motors |
| 8511500000 | IC Eng Generators | 8511500000 | IC Eng Generators |
| 8511802000 | IC Eng Voltage Reg | 8511802000 | IC Eng Voltage Reg |
| 8511804000 | IC Eng Voltage Reg | 8511804000 | IC Eng Voltage Reg |
| 8511806000 | Other IC Eng Equip | 8511806000 | Other IC Eng Ign Eq |
| 8511902000 | Parts IC Eng Ignit | 8511906020 | Parts IC Eng Dstbr Pt |
| 8511904000 | Parts IC Eng Volt Reg | 8511908000 | Parts Electrical App |
| 8511906020 | Parts IC Eng Dstr Pts | 8512402000 | Veh Defrosters |
| 8511906040 | Other Parts for IC En | 8512404000 | Veh Windshield Wipe |
| 8512402000 | Veh. Defrosters | 8512908000 | Pts Windshield Wiper |
| 8512404000 | Veh. Windshield Wip | 8544300000 | Insulated Wiring Sets |
| 8512907000 | Parts Veh. Defrosters | 9032893000 | Voltage Regulators |
| 8512909000 | Parts Windshield Wip | | |
| 8544300000 | Insulated Wiring Veh | | |
| 9032892000 | Auto Volt Regulators | | |
| 9032902000 | Pts, Volt Regulators | | |

**336330 Motor Vehicle Steering & Suspension Components**

| HTS Codes | | Schedule B | |
|---|---|---|---|
| 8708803000 | Suspension Shock Ab | 8708805000 | Sus Shock Absorbers |
| 8708804500 | Suspension Shock Ab | 8708945000 | Steering Wheel Sys |
| 8708945000 | Steering Wh Systems | | |
| 8708997030 | Beam Hanger Brack | | |
| 8708997060 | Other Pt Susp System | | |
| 8708997330 | Steering Shaft Assem | | |
| 8708997360 | Parts NESOI | | |

**336340 Motor Vehicle Brake System**

| HTS Codes | | Schedule B | |
|---|---|---|---|
| 4009500020 | Rubber Brake Hoses | 4009500020 | Brake Hoses |
| 6813100010 | Brk Lngs & Pads | 6813100000 | Brk Lngs, Asbestos |
| 6813100050 | Brk Lngs & Pads Asb | 6813900000 | Other Frict Materials |
| 6813900010 | Asbstos BSD Friction | 8708310000 | Mounted Brk Lngs |
| 6813900050 | Asbstos Friction Mat | 8708390000 | Brks & Servo-Brks |
| 8708315000 | Mounted Brk Lngs | | |
| 8708395010 | Brk Drums | | |
| 8708395050 | Brks NESOI | | |
| 8708998005 | Brk Hoses | | |

**336350 Motor Vehicle Transmission & Power Train Parts**

| HTS Codes | | Schedule B | |
|---|---|---|---|
| 8708401000 | Gear Boxes | 8708401000 | Gear Boxes, Parts |
| 8708402000 | Gear Boxes | 8708402000 | Gear Boxes & Parts |
| 8708405000 | Gear Boxes | 8708406000 | Gear Boxes for Veh |
| 8708505000 | Drive Axles | 8708500050 | Drive Axles |
| 8708508000 | Drive Axles | 8708600050 | Non-Driving Axles |
| 8708605000 | Non-Driving Axles | 8708935000 | Clutches & Parts |
| 8708608010 | Spindles | 8708995800 | Wheel Hub Units |
| 8708608050 | Non-Drive Axles | 8708998015 | Wheel Hub Units |
| 8708936000 | Clutches | | |
| 8708937500 | Parts of Clutches | | |
| 8708995800 | Wheel Hub Units | | |
| 8708996400 | Parts of Motor Veh | | |
| 8708996700 | Parts of Motor Veh | | |
| 8708998015 | Wheel Hub Units | | |

**336360 Motor Vehicle Seating & Interior Trim**

| HTS Codes | | Schedule B | |
|---|---|---|---|
| 8708210000 | Safety Seat Belts & Pt | 8708210000 | Safety Seat Belts & Pt |
| 9401104000 | Seats Aircraft | 9401100000 | Seats Aircraft |
| 9401108000 | Seats Aircraft | 9401200000 | Seats Motor Veh |
| 9401200010 | Child Safety Seats | 9401901080 | Seat Parts Motor Veh |
| 9401200090 | Seats | | |
| 9401901080 | Seat Parts | | |

**336370 Motor Vehicle Metal Stampings**

| HTS Codes | | Schedule B | |
|---|---|---|---|
| 8708103010 | Stampings Bumpers | 8708100010 | Stampings of Bumper |
| 8708106010 | Stampings for Parts | 8708290010 | Stampings of Bodies |
| 8708292000 | Body Stampings | | |
| 8708295010 | Stampings of Other | | |

**336391 Motor Vehicle Air Conditioning**

| HTS Codes | | Schedule B | |
|---|---|---|---|
| 8414308030 | Compressors | 8414308030 | Compressors, Refri |
| 8415200000 | Auto Air Conditioners | | |
| 8415908045 | Parts of Auto Air Con | | |

**336399 Motor Vehicle Parts**

HTS Codes

| | |
|---|---|
| 8421230000 | Oil/Fuel Filters |
| 8421310000 | Intake Air Filters |
| 8421394000 | Catalytic Converters |
| 8483509040 | Grooved Pulleys |
| 8483509080 | Pulley Blocks |
| 8512300020 | Motor Veh. Horns |
| 8708103050 | Bumpers |
| 8708106050 | Pts of Bumpers |
| 8708291000 | Inflators Airbags |
| 8708291500 | Door Assemblies |
| 8708295060 | Other Pts & Access |
| 8708704530 | Road Wheels |
| 8708704545 | Road Wheels Alum |
| 8708704560 | Road Wheels ex Alu |
| 8708706030 | Wheel rims |
| 8708706045 | Wheel Covers & Hub |
| 8708706060 | Pts & Acc for Wheels |
| 8708915000 | Radiators |
| 8708925000 | Mufflers & Exhaust |
| 8708995200 | Cast Iron Pts of Veh |
| 8708995500 | Vib Ctrl Goods |
| 8708996100 | Parts Airbags |
| 8708998045 | Radiator Cores |
| 8708998060 | Cable Traction Devic |
| 8708998080 | Parts NESOI |
| 8716905010 | Axles & Parts Trailer |
| 8716905030 | Wheel Trailers |
| 8716905060 | Parts NESO Trailers |

Schedule B

| | |
|---|---|
| 8421123000 | Oil/Fuel Filters |
| 8421310000 | Intake Air Filters |
| 8421394000 | Catalytic Converters |
| 8483508030 | Grooved Pulleys |
| 8708508080 | Flywheels, Pulley Blk |
| 8708100050 | Bumpers & Parts |
| 8708295070 | Pts & Acc of Bodies |
| 8708700050 | Road Wheels & Pts |
| 8708915000 | Radiators |
| 8708925000 | Mufflers & Exhaust |
| 8708996100 | Airbags for Veh. |
| 8708998075 | Pts & Acc for Veh |
| 8716900000 | Parts NESOI Trailers |

**Standard Industry Classification Codes (SIC)**

| | |
|---|---|
| 3465 | Automotive Stampings |
| 3592 | Carburetors, Pistons, Piston Rings, and Valves |
| 3647 | Vehicular Lighting |
| 3691 | Storage Batteries |
| 3694 | Engine Electrical Equipment |
| 3714 | Other Motor Vehicle Parts |

**NAICS Codes include products from the following SIC codes**

2396 Automotive & Apparel Trimmings
2399 Fabricated Textile Products
2531 Public Building & Related Furniture
3292 Asbestos Products
3465 Automotive Stampings
3519 Internal Combustion Engines, Not Elsewhere Classified
3585 Refrigeration & Heating Equipment
3592 Carburetors, Pistons, Rings, & Valves
3647 Vehicular Lighting Equipment
3679 Electronic Components, Not Elsewhere Classified
3691 Storage Batteries
3694 Engine Electrical Equipment
3711 Motor Vehicles and Car Bodies
3713 Truck & Bus Bodies
3714 Motor Vehicle Parts and Accessories

**SITC**

6251 Tires
62510 Tires
6252 Tires
62520 Tires
6647 Glass
66471 Glass
66472 Glass
66481 Glass
69915 Mount Fittings
713 Engines
7444 Jacks for Vehicles
74443 Jacks for Vehicles
74449 Jacks for Vehicles
748 Transmission
7481 Transmission
74810 Transmission
7489 Parts, NES
74890 For Transmission
76211 Radios
76212 Radios
77313 Electric Wires
77812 Batteries
77823 Lights
7132 Internal Combustion Engines
71321 Internal Combustion Engines
71322 Engines
71323 Engines
71391 Engines
7422 Pumps
74291 Pumps
74343 Fans
74363 Oil Filters
74364 Intake Air Filters
77831 Electric lighting
77833 Parts of Ignition
77834 Signaling Devices
77835 Parts of Signal Devices
784 Parts of Vehicles
7841 Chassis
78410 Chassis
7842 Bodies
78421 Bodies
78425 Bodies
7843 Parts
78431 Bumpers
78432 Other

78433 Brakes
78434 Gear Boxes
78435 Drive Axles
78436 Non-Driving Axles
78439 Parts and Accessories
78689 Parts of Trailers
82112 Seats
87321 Taximeters
87325 Speedometers and Tachometers
87329 Parts of Revolution Counters
88571 Instrument Panels

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**HTS Six-digit level automotive parts codes used for United Nations data**

| | | | |
|---|---|---|---|
| 381900 | 841583 | 853180 | 940390 |
| 382000 | 841590 | 853641 | 980200 |
| 400950 | 842123 | 853910 | |
| 401010 | 842131 | 853921 | |
| 401110 | 842139 | 854430 | |
| 401120 | 842549 | 870710 | |
| 401210 | 842691 | 870790 | |
| 401220 | 843110 | 870810 | |
| 401310 | 848210 | 870821 | |
| 401593 | 848220 | 870829 | |
| 401693 | 848240 | 870831 | |
| 401699 | 848250 | 870839 | |
| 681310 | 848310 | 870840 | |
| 681390 | 850132 | 870850 | |
| 700711 | 850710 | 870860 | |
| 700721 | 850730 | 870870 | |
| 700910 | 850790 | 870880 | |
| 731816 | 851110 | 870891 | |
| 732010 | 851120 | 870892 | |
| 732020 | 851130 | 870893 | |
| 830120 | 851140 | 870894 | |
| 830210 | 851150 | 870899 | |
| 830230 | 851180 | 871690 | |
| 840734 | 851190 | | |
| 840820 | 851220 | 871899 | |
| 840990 | 851230 | 902910 | |
| 840991 | 851240 | 902920 | |
| 840999 | 851290 | 902990 | |
| 841330 | 851991 | 910400 | |
| 841391 | 851993 | 940120 | |
| 841430 | 852520 | 940190 | |
| 841459 | 852721 | 940340 | |
| 841520 | 852729 | 940350 | |

Table 1

| Statistics for All U.S. Manufacturing Establishments | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2001 | Chg* | 2002 | Chg* | 2003 | Chg* | 2004 | Chg* | 2005 | Chg* |
| All Employees | 15,845,612 | -4.8% | 14,664,385 | -7.5% | 13,872,958 | -5.4% | 13,394,079 | -3.5% | 13,168,822 | -1.7% |
| Empoyee Payroll ($1,000) | 591,558,514 | -4.2% | 575,165,127 | -2.8% | 567,602,408 | -1.3% | 569,703,575 | 0.4% | 579,890,961 | 1.8% |
| Production Workers | 11,212,063 | -6.1% | 10,319,528 | -8.0% | 9,796,581 | -5.1% | 9,365,130 | -4.4% | 9,230,151 | -1.4% |
| Production Worker Hours (1,000) | 22,384,101 | -6.6% | 20,431,721 | -8.7% | 19,853,892 | -2.8% | 19,283,817 | -2.9% | 19,069,641 | -1.1% |
| Production Worker Wages ($1,000) | 342,268,242 | -5.8% | 336,540,063 | -1.7% | 330,480,113 | -1.8% | 332,873,474 | 0.7% | 337,490,264 | 1.4% |
| Value of Industry Shipments ($1,000)** | 3,970,204,964 | -5.7% | 3,914,719,163 | -1.4% | 4,015,387,243 | 2.6% | 4,308,970,620 | 7.3% | 4,735,383,666 | 9.9% |

, *2005* , released November 2006 by U.S. Department of Commerce, Bureau

** = Industry Shipments are products shipped by industry establishments.

Table 2

| Statistics for U.S. Motor Vehicle Parts Manufacturing, NAICS 336211 and 3363 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2001 | Chg* | 2002 | Chg* | 2003 | Chg* | 2004 | Chg* | 2005 | Chg* |
| All Employees | 777,774 | -8.1% | 763,105 | -1.9% | 712,864 | -6.6% | 688,627 | -3.4% | 661,560 | -3.9% |
| Empoyee Payroll ($1,000) | 32,825,802 | -10.7% | 33,562,404 | 2.2% | 33,189,602 | -1.1% | 33,192,112 | 0.0% | 31,838,767 | -4.1% |
| Production Workers | 615,547 | -9.0% | 605,016 | -1.7% | 557,259 | -7.9% | 538,579 | -3.4% | 514,980 | -4.4% |
| Production Worker Hours (1,000) | 1,228,624 | -11.6% | 1,200,273 | -2.3% | 1,157,384 | -3.6% | 1,121,885 | -3.1% | 1,065,119 | -5.1% |
| Production Worker Wages ($1,000) | 23,682,724 | -13.0% | 24,593,055 | 3.8% | 24,022,454 | -2.3% | 24,011,281 | 0.0% | 22,745,000 | -5.3% |
| Value of Industry Shipments ($1,000)** | 190,711,569 | -8.4% | 212,537,954 | 11.4% | 210,941,156 | -0.8% | 212,079,070 | 0.5% | 217,138,133 | 2.4% |
| Value of Product Shipments ($1,000)*** | 188,487,002 | -8.7% | 203,595,011 | 8.0% | 202,394,646 | -0.6% | 204,813,969 | 1.2% | 208,831,306 | 2.0% |

, *2005* , released November 2006 by U.S. Department of Commerce, Bureau

hipped by industry establishments. *** = Product Shipments are all products

Table 3

**U.S. Exports of Automotive Parts ($millions)**

| | 2000 | %Chg | 2001 | %Chg | 2002 | %Chg | 2003 | %Chg | 2004 | %Chg | 2005 | %Chg | 2006 | %Chg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Parts Exports | 53,720 | 7.7% | 49,794 | -7.3% | 50,087 | 0.6% | 48,501 | -3.2% | 52,628 | 8.5% | 55,054 | 4.6% | 58,864 | 6.9% |
| All Export Commodities | 780,419 | 12.6% | 731,026 | -6.3% | 693,257 | -5.2% | 723,743 | 4.4% | 816,548 | 12.8% | 904,380 | 10.8% | 1,037,143 | 14.7% |
| % Share | 6.9% | -4.4% | 6.8% | -1.0% | 7.2% | 6.1% | 6.7% | -7.2% | 6.4% | -3.8% | 6.1% | -5.5% | 5.7% | -6.8% |

Source: U.S. Census Bureau

Table 4

**Total World Original Equipment Parts Market**

| | 2000 | % Change | 2001 | % Change | 2002 | % Change | 2003 | % Change | 2004 | % Change | 2005 | % Change |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OE Parts Market ($millions) | 759,315 | -2.1% | 711,808 | -6.3% | 729,656 | 2.5% | 802,850 | 10.0% | 842,960 | 5.0% | 781,650 | -7.3% |
| Total OE Parts per Vehicle ($) | 13,398 | -4.7% | 12,992 | -3.0% | 13,029 | 0.3% | 13,637 | 4.7% | 13,586 | -0.4% | 12,304 | -9.4% |

Source: OESA Industry Review 2006/2007

**Table 5**

## U.S. Original Equipment Parts Market

| | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006E |
|---|---|---|---|---|---|---|---|---|---|---|
| **Size of U.S OE Parts Market ($US Billions)** | 147.7 | 162.9 | 190.0 | 178.1 | 164.8 | 168.5 | 184.4 | 191.1 | 193.1 | 184.0 |
| **U.S. Vehicle Production (Units)** | 12,130,575 | 12,002,663 | 13,024,978 | 12,380,628 | 11,168,423 | 11,997,699 | 11,788,437 | 11,567,272 | 11,495,997 | 10,762,630 |
| **Content per Vehicle ($US)** | 12,085 | 13,096 | 14,136 | 13,714 | 14,103 | 13,450 | 14,935 | 15,665 | 16,003 | 16,307 |
| **OE Parts Sourced from U.S. Suppliers* ($US Billions)** | 108.4 | 121.3 | 142.4 | 126.4 | 116.5 | 113.8 | 104.4 | 95.0 | | |
| *% of Total OE Parts Market* | 73.4% | 74.5% | 74.9% | 71.0% | 70.7% | 67.5% | 56.6% | 49.7% | 0.0% | 0.0% |
| **Imports of Parts ($US Billions)** | 39.4 | 41.6 | 47.7 | 51.7 | 48.3 | 53.4 | 57.7 | 64.6 | | |
| *% of Total OE Parts Market* | 26.7% | 25.5% | 25.1% | 29.0% | 29.3% | 31.7% | 31.3% | 33.8% | 0.0% | 0.0% |
| | | | | | | | | | | |
| **Imports from Canada** | 11.4 | 12.2 | 14.3 | 14.7 | 13.1 | 14.5 | 15.7 | 17.0 | | |
| *% of Parts Imports* | 28.9% | 29.3% | 30.0% | 28.4% | 27.1% | 27.2% | 27.2% | 26.3% | #DIV/0! | #DIV/0! |
| *% of Total OE Parts Market* | 7.7% | 7.5% | 7.5% | 8.3% | 7.9% | 8.6% | 8.5% | 8.9% | 0.0% | 0.0% |
| **Imports from Mexico** | 10.2 | 10.9 | 12.5 | 13.8 | 13.2 | 15.0 | 15.8 | 17.6 | | |
| *% of Parts Imports* | 25.9% | 26.2% | 26.2% | 26.7% | 27.3% | 28.1% | 27.4% | 27.2% | #DIV/0! | #DIV/0! |
| *% of Total OE Parts Market* | 6.9% | 6.7% | 6.6% | 7.7% | 8.0% | 8.9% | 8.6% | 9.2% | 0.0% | 0.0% |
| **Imports from Japan** | 10.9 | 9.6 | 10.3 | 12.0 | 11.1 | 11.2 | 11.4 | 13.0 | | |
| *% of Parts Imports* | 27.7% | 23.1% | 21.6% | 23.2% | 23.0% | 21.0% | 19.8% | 20.1% | #DIV/0! | #DIV/0! |
| *% of Total OE Parts Market* | 7.4% | 5.9% | 5.4% | 6.7% | 6.7% | 6.6% | 6.2% | 6.8% | 0.0% | 0.0% |
| **Imports from China** | 0.3 | 0.4 | 0.6 | 0.8 | 1.0 | 1.3 | 1.7 | 2.4 | | |
| *% of Parts Imports* | 0.8% | 1.0% | 1.3% | 1.5% | 2.1% | 2.4% | 2.9% | 3.7% | #DIV/0! | #DIV/0! |
| *% of Total OE Parts Market* | 0.2% | 0.2% | 0.3% | 0.4% | 0.6% | 0.8% | 0.9% | 1.3% | 0.0% | 0.0% |
| **Imports from all other countries** | 6.5 | 8.5 | 9.9 | 10.3 | 10.0 | 11.4 | 13.1 | 14.6 | | |
| *% of Parts Imports* | 16.5% | 20.4% | 20.8% | 19.9% | 20.7% | 21.3% | 22.7% | 22.6% | #DIV/0! | #DIV/0! |
| *% of Total OE Parts Market* | 4.4% | 5.2% | 5.2% | 5.8% | 6.1% | 6.8% | 7.1% | 7.6% | 0.0% | 0.0% |

*U.S. Suppliers include U.S. Affiliates of Foreign Manufacturers.

*Source: DesRosiers and Automotive News*

**Table 6**

## Top 10 Global OEM Suppliers

| | 2001 | Global OEM Sales | 2002 | Global OEM Sales | 2003 | Global OEM Sales | 2004 | Global OEM Sales | 2005 | Global OEM Sales |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Company** | ($Millions) | **Company** | ($Millions) | **Company** | ($Millions) | **Company** | ($Millions) | **Company** | ($Millions) |
| 1 | Delphi Corp. | 24,188 | Delphi Corp. | 25,527 | Delphi Corp. | 26,200 | Robert Bosch GmbH | 26,800 | Robert Bosch Gmbh | 28,400 |
| 2 | Robert Bosch GmbH | 18,000 | Robert Bosch GmbH | 19,085 | Robert Bosch GmbH | 23,200 | Delphi Corp. | 24,104 | Denso Corp. | 22,871 |
| 3 | Visteon Corp. | 16,945 | Visteon Corp. | 16,900 | Denso Corp. | 16,856 | Magna International Inc. | 20,653 | Magna International Inc. | 22,800 |
| 4 | Denso Corp. | 16,250 | Denso Corp. | 15,348 | Visteon Corp. | 16,513 | Denso Corp. | 19,927 | Delphi Corp. | 22,588 |
| 5 | Lear Corp. | 13,625 | Lear Corp. | 14,400 | Lear Corp. | 15,747 | Johnson Controls Inc. | 19,300 | Johnson Controls Inc. | 19,400 |
| 6 | Johnson Controls In. | 13,620 | Johnson Controls In. | 13,653 | Magna Int'l Inc. | 15,345 | Visteon Corp. | 17,700 | Aisin Seiki Co. | 17,909 |
| 7 | Magna Int'l Inc. | 10,500 | Magna Int'l Inc. | 12,188 | Johnson Controls Inc. | 15,192 | Lear Corp. | 17,000 | Lear Corp. | 17,089 |
| 8 | TRW Automotive | 9,600 | Aisin Seiki Co. Ltd. | 10,716 | Aisin Seiki Co. Ltd. | 13,534 | Aisin Seiki Co. Ltd | 15,508 | Visteon Corp. | 15,876 |
| 9 | Faurecia | 8,600 | Faurecia | 10,000 | Faurecia | 12,700 | Faurecia | 13,327 | Faurecia | 14,000 |
| 10 | Aisin Seiki Co. Ltd. | 8,460 | TRW Automotive | 9,900 | TRW Automotive | 11,300 | Siemens VDO Automotive | 11,600 | TRW Automotive Inc. | 11,144 |
| Top 10 Tota | | 139,788 | | 147,717 | | 166,587 | | 185,919 | | 192,077 |
| Top 100 Tot | | 347,900 | | 353,385 | | 401,545 | | 501,807 | | 475,490 |

Source: Automotive News. *calculated estimate. **American Axle and Manufacturing Holdings Inc.

**Table 7**

## Top 10 OE Suppliers for North America

| | 2001 | NA Sales | 2002 | NA Sales | 2003 | NA Sales | 2004 | NA Sales | 2005 | NA Sales |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Company** | ($Millions) | **Company** | ($Millions) | **Company** | ($Millions) | **Company** | ($Millions) | **Company** | ($Millions) |
| 1 | Delphi Corp. | 18,867 | Delphi Corp | 19,656 | Delphi Corp | 19,450 | Delphi Corp | 17,596 | Delphi Corp. | 16,307 |
| 2 | Visteon Corp | 11,736 | Visteon Corp. | 12,168 | Visteon Corp. | 11,080 | Visteon Corp. | 11,328 | Magna International Inc. | 12,768 |
| 3 | Lear Corp | 8,858 | Lear Corp. | 9,504 | Lear Corp. | 9,448 | Magna Int'l Inc. | 10,326 | Visteon Corp. | 9,684 |
| 4 | Johnson Controls Inc | 7,353 | Johnson Controls Inc. | 7,687 | Magna Int'l Inc. | 8,736 | Johnson Controls Inc. | 9,650 | Lear Corp. | 9,228 |
| 5 | Magna Intl Inc | 7,140 | Magna Int'l Inc. | 7,650 | Johnson Controls Inc. | 8,021 | Lear Corp. | 9,350 | Johnson Controls Inc. | 8,924 |
| 6 | Dana Corp | 5,250 | Dana Corp. | 5,340 | Dana Corp. | 5,543 | Dana Corp. | 5,209 | Dana Corp. | 5,425 |
| 7 | TRW Automotive | 4,992 | TRW Automotive | 4,950 | Robert Bosch Corp. | 5,336 | Robert Bosch Corp. | 4,556 | Robert Bosch Corp. | 4,828 |
| 8 | Robert Bosch Corp. | 4,120 | Robert Bosch Corp. | 4,390 | TRW Automotive | 4,633 | Denso Int'l America Inc. | 4,384 | Denso Int'l America Inc. | 4,803 |
| 9 | Denso Intl America Inc. | 3,689 | Denso Int'l America Inc. | 3,769 | ThyssenKrupp*** | 4,401 | TRW Automotive | 4,235 | ArvinMeritor | 4,499 |
| 10 | ArvinMeritor Inc | 2,045 | American Axle & Manu.** | 3,341 | Denso Int'l America Inc. | 3,894 | ThyssenKrupp*** | 4,021 | TRW Automotive Inc. | 4,456 |
| Top 10 Tota | | 74,050 | | 78,455 | | 80,542 | | 80,655 | | 80,922 |
| Top 150 Tot | | 166,400 | | 182,100 | | 186,714 | | 197,577 | | 202,942 |

Source: Automotive News. *calculated estimate. **American Axle and Manufacturing Holdings Inc. ***ThyssenKrupp Automotive AG

**Table 8**

## Employment in the U.S. Automotive Parts Industry, Thousands

| NAICS | Description | 2001 | % Change | 2002 | % Change | 2003 | % Change | 2004 | % Change | 2005 | % Change | 2006 | % Change |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 336211 | Motor Vehicle Bodies | 75.8 | -7.3% | 68.3 | -9.9% | 61.9 | -9.4% | 64.5 | 4.2% | 65.9 | 2.2% | 67.7 | 2.7% |
| 3363 | Motor Vehicle Parts | 774.7 | -7.7% | 733.6 | -5.3% | 707.8 | -3.5% | 692.1 | -2.2% | 678.1 | -2.0% | 654.2 | -3.5% |
| 33631 | MV Gasoline Engine and Parts | 96.7 | -7.2% | 93.0 | -3.8% | 85.5 | -8.1% | 80.2 | -6.2% | 76.3 | -4.9% | 71.4 | -6.4% |
| 336311 | Carburators, Pistons, Rings, and Valves | 21.3 | -8.2% | 19.9 | -6.6% | 17.7 | -11.1% | 16.1 | -9.0% | 14.9 | -7.5% | 13.2 | -11.4% |
| 336312 | Gasoline Engine and Engine Parts | 75.5 | -6.8% | 73.1 | -3.2% | 67.8 | -7.3% | 64.1 | -5.5% | 61.5 | -4.1% | 58.2 | -5.4% |
| 33632 | MV Electric Equipment | 120.1 | -10.1% | 110.1 | -8.3% | 104.0 | -5.5% | 100.5 | -3.4% | 95.8 | -4.7% | 92.1 | -3.9% |
| 336321 | Vehicular Lighting Equipment | 17.8 | -6.8% | 17.2 | -3.4% | 17.2 | 0.0% | 16.6 | -3.5% | 16.8 | 1.2% | 16.2 | -3.6% |
| 336322 | Other MV Electric Equpment | 102.3 | -10.7% | 92.9 | -9.2% | 86.9 | -6.5% | 83.8 | -3.6% | 79.0 | -5.7% | 75.9 | -3.9% |
| 33633 | MV Steering and Suspension Parts | 51.5 | -7.5% | 47.4 | -8.0% | 44.6 | -5.9% | 43.4 | -2.7% | 43.5 | 0.2% | 42.4 | -2.5% |
| 33634 | MV Brake Systems | 46.6 | -7.0% | 45.3 | -2.8% | 45.9 | 1.3% | 45.1 | -1.7% | 42.9 | -4.9% | 41.4 | -3.5% |
| 33635 | MV Power Train Components | 95.7 | -8.2% | 91.7 | -4.2% | 91.2 | -0.5% | 85.7 | -6.0% | 85.0 | -0.8% | 81.8 | -3.8% |
| 33636 | MV Seating and Interior Trim | 64.9 | -5.8% | 62.0 | -4.5% | 62.2 | 0.3% | 66.1 | 6.3% | 64.3 | -2.7% | 62.0 | -3.6% |
| 33637 | MV Metal Stamping | 111.6 | -8.0% | 105.5 | -5.5% | 101.9 | -3.4% | 99.0 | -2.8% | 98.6 | -0.4% | 95.2 | -3.4% |
| 33639 | Other MV Parts | 187.5 | -6.9% | 178.5 | -4.8% | 172.4 | -3.4% | 172.1 | -0.2% | 171.7 | -0.2% | 167.9 | -2.2% |
| **Total** | **336211+3363** | **850.5** | **-7.7%** | **801.9** | **-5.7%** | **769.7** | **-4.0%** | **756.6** | **-1.7%** | **744.0** | **-1.7%** | **721.9** | **-3.0%** |

Source: Bureau of Labor Statistics

**Table 9**

## Employment in the U.S. Automotive Parts Industry

| NAICS | 2000 | % Change | 2001 | % Change | 2002 | % Change | 2003 | % Change | 2004 | % Change | 2005 | % Change |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bodies and Body Parts | | | | | | | | | | | | |
| 336211 | 43,844 | 1.6% | 41,771 | -4.7% | 41,450 | -0.8% | 40,874 | -1.4% | 43,779 | 7.1% | 48,342 | 10.4% |
| 336360 | 58,028 | 4.6% | 52,670 | -9.2% | 53,957 | 2.4% | 53,120 | -1.6% | 50,029 | -5.8% | 47,258 | -5.5% |
| 336370 | 117,012 | -1.4% | 112,488 | -3.9% | 126,137 | 12.1% | 109,023 | -13.6% | 107,372 | -1.5% | 99,345 | -7.5% |
| Total | 218,884 | 0.7% | 206,929 | -5.5% | 221,544 | 7.1% | 203,017 | -8.4% | 201,180 | -0.9% | 194,945 | -3.1% |
| Chassis and Drivetrain Parts | | | | | | | | | | | | |
| 336330 | 50,972 | 4.6% | 47,015 | -7.8% | 41,783 | -11.1% | 39,696 | -5.0% | 38,223 | -3.7% | 37,576 | -1.7% |
| 336340 | 44,331 | -0.7% | 38,736 | -12.6% | 42,356 | 9.3% | 41,097 | -3.0% | 39,738 | -3.3% | 38,185 | -3.9% |
| 336350 | 112,244 | 0.8% | 98,753 | -12.0% | 101,828 | 3.1% | 90,998 | -10.6% | 91,232 | 0.3% | 80,070 | -12.2% |
| Total | 207,547 | 1.4% | 184,504 | -11.1% | 185,967 | 0.8% | 171,791 | -7.6% | 169,193 | -1.5% | 155,831 | -7.9% |
| Electrical and Electronic Parts | | | | | | | | | | | | |
| 336321 | 15,055 | -12.6% | 14,665 | -2.6% | | | | | | | | |
| 336322 | 102,564 | 2.2% | 94,812 | -7.6% | | | | | | | | |
| 33632 | 117,619 | 0.0% | 109,477 | -6.9% | 97,111 | -11.3% | 90,843 | -6.5% | 77,532 | -14.7% | 81,104 | 4.6% |
| 336391 | 20,393 | -5.0% | 19,594 | -3.9% | 18,870 | -3.7% | 19,229 | 1.9% | 19,423 | 1.0% | 17,040 | -12.3% |
| Total | 138,012 | -0.8% | 129,071 | -6.5% | 115,981 | -10.1% | 110,072 | -5.1% | 96,955 | -11.9% | 98,144 | 1.2% |
| Engines and Engine Parts | | | | | | | | | | | | |
| 336311 | 17,748 | 2.3% | 16,656 | -6.2% | | | | | | | | |
| 336312 | 78,600 | -2.0% | 71,979 | -8.4% | | | | | | | | |
| 33631 | 96,348 | -1.2% | 88,635 | -8.0% | 94,092 | 6.2% | 87,729 | -6.8% | 81,341 | -7.3% | 74,159 | -8.8% |
| Total | 96,348 | -1.2% | 88,635 | -8.0% | 94,092 | 6.2% | 87,729 | -6.8% | 81,341 | -7.3% | 74,159 | -8.8% |
| Miscellaneous Automotive Parts | | | | | | | | | | | | |
| 336399 | 185,628 | 1.1% | 168,635 | -9.2% | 145,521 | -13.7% | 140,255 | -3.6% | 139,957 | -0.2% | 138,482 | -1.1% |
| Total | 185,628 | 1.1% | 168,635 | -9.2% | 145,521 | -13.7% | 140,255 | -3.6% | 139,957 | -0.2% | 138,482 | -1.1% |
| **Total** | **846,419** | **0.5%** | **777,774** | **-8.1%** | **763,105** | **-1.9%** | **712,864** | **-6.6%** | **688,626** | **-3.4%** | **661,561** | **-3.9%** |

Source: U.S. Department of Commerce, *Annual Survey of Manufacturers 2005* .

**Table 10**

## Acquisitions of U.S. Automotive Parts Companies (SIC 3714)

| | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|---|---|---|---|
| Number of all Deals* | 47 | 59 | 52 | 33 | 38 | 30 | 37 | 26 | 32 |
| Value of all Deals* ($Millions) | 3,766.4 | 11,570.7 | 18,620.0 | 6,395.3 | 1,117.5 | 12129.5 | 7516.2 | 2102.7 | 789.5 |

Source: Thomson Financial IBCM in AAIA *Aftermarket Factbook 2006/2007.*

*Includes deals with and without reported values.

## U.S. AUTOMOTIVE PARTS EXPORTS, 1999 - 2006 — Table 11

In millions of dollars

| Region/Country | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | % Chg |
|---|---|---|---|---|---|---|---|---|---|
| **WORLD** | **49,901** | **53,720** | **49,794** | **50,087** | **48,501** | **52,628** | **55,054** | **58,864** | **6.9%** |
| | | | | | | | | | |
| **ASIA and the PACIFIC** | | | | | | | | | |
| **Select ASEAN** | | | | | | | | | |
| Indonesia | 27 | 34 | 21 | 22 | 23 | 34 | 33 | 34 | 1.4% |
| Malaysia | 58 | 35 | 26 | 29 | 27 | 20 | 21 | 26 | 22.0% |
| Philippines | 55 | 53 | 29 | 59 | 88 | 71 | 110 | 116 | 5.4% |
| Singapore | 150 | 135 | 143 | 141 | 142 | 149 | 157 | 239 | 51.8% |
| Thailand | 127 | 143 | 85 | 86 | 96 | 96 | 97 | 79 | -18.5% |
| Total **ASEAN** (1) | **419** | **402** | **309** | **343** | **385** | **381** | **433** | **499** | **15.3%** |
| | | | | | | | | | |
| **Chinese Economic Area** | | | | | | | | | |
| China | 251 | 225 | 258 | 344 | 510 | 636 | 623 | 815 | 30.8% |
| Hong Kong | 114 | 91 | 82 | 75 | 75 | 88 | 82 | 103 | 25.3% |
| Taiwan | 84 | 79 | 75 | 77 | 133 | 111 | 96 | 124 | 28.8% |
| Total **Chinese Economic Area** | **449** | **395** | **415** | **495** | **718** | **835** | **802** | **1,042** | **30.0%** |
| | | | | | | | | | |
| **Select Other Asia and the Pacific** | | | | | | | | | |
| Australia | 564 | 700 | 577 | 615 | 656 | 768 | 779 | 875 | 12.3% |
| India | 46 | 41 | 38 | 39 | 42 | 65 | 73 | 96 | 32.6% |
| **Japan** | **1,893** | **2,217** | **2,008** | **2,285** | **2,051** | **1,534** | **1,449** | **1,748** | **20.6%** |
| Korea | 597 | 454 | 369 | 332 | 309 | 466 | 562 | 570 | 1.5% |
| | | | | | | | | | |
| **EUROPE** | | | | | | | | | |
| **Select European Union** | | | | | | | | | |
| Austria | 1,164 | 1,056 | 1,117 | 944 | 556 | 487 | 814 | 888 | 9.1% |
| Belgium | 348 | 385 | 348 | 393 | 383 | 347 | 297 | 395 | 32.9% |
| France | 281 | 366 | 407 | 355 | 446 | 599 | 633 | 657 | 3.8% |
| Germany | 950 | 974 | 1,116 | 941 | 1,019 | 1,256 | 1,379 | 1,591 | 15.4% |
| Italy | 112 | 135 | 158 | 122 | 140 | 132 | 130 | 139 | 7.4% |
| Netherlands | 201 | 322 | 326 | 317 | 297 | 309 | 364 | 356 | -2.0% |
| Spain | 88 | 121 | 93 | 102 | 134 | 134 | 272 | 278 | 2.0% |
| Sweden | 204 | 143 | 127 | 154 | 208 | 241 | 198 | 198 | -0.3% |
| United Kingdom | 1,191 | 1,241 | 1,236 | 1,072 | 1,061 | 994 | 844 | 872 | 3.3% |
| Total **European Union** (2) | **4,609** | **4,848** | **5,048** | **4,492** | **4,345** | **4,615** | **5,071** | **5,501** | **8.5%** |
| | | | | | | | | | |
| **Select Other Europe** | | | | | | | | | |
| Czech Republic | 20 | 14 | 8 | 11 | 9 | 8 | 18 | 21 | 15.4% |
| Hungary | 59 | 33 | 20 | 52 | 67 | 55 | 53 | 73 | 38.2% |
| Poland | 23 | 13 | 14 | 15 | 17 | 20 | 33 | 47 | 44.0% |
| Russia | 16 | 15 | 27 | 17 | 25 | 31 | 46 | 116 | 150.5% |
| Total **Other Europe** | **119** | **75** | **69** | **95** | **118** | **114** | **150** | **258** | **71.5%** |
| | | | | | | | | | |
| **WESTERN HEMISPHERE** | | | | | | | | | |
| **Select Andean Community** | | | | | | | | | |
| Colombia | 70 | 81 | 76 | 69 | 68 | 103 | 108 | 121 | 12.3% |
| Peru | 37 | 24 | 33 | 31 | 37 | 38 | 57 | 62 | 9.6% |
| Venezuela** | 390 | 537 | 595 | 310 | 168 | 392 | 622 | 763 | 22.6% |
| Total **Andean Community** (3) | **520** | **675** | **778** | **461** | **326** | **592** | **869** | **1003** | **15.4%** |
| | | | | | | | | | |
| Select Central America | | | | | | | | | |
| Total **Central America** (4) | **181** | **160** | **142** | **151** | **143** | **202** | **246** | **328** | **33.2%** |
| | | | | | | | | | |
| **Select MERCOSUR** | | | | | | | | | |
| Argentina | 188 | 225 | 112 | 37 | 93 | 132 | 154 | 189 | 22.8% |
| Brazil** | 454 | 401 | 444 | 454 | 480 | 565 | 551 | 601 | 9.2% |
| Chile | 94 | 92 | 79 | 102 | 103 | 123 | 154 | 207 | 34.3% |
| Total **MERCOSUR** (5) | **767** | **736** | **647** | **598** | **685** | **830** | **872** | **1,015** | **16.4%** |
| | | | | | | | | | |
| **NAFTA** | | | | | | | | | |
| Canada | 29,643 | 29,601 | 26,372 | 27,968 | 27,474 | 29,914 | 31,239 | 31,900 | 2.1% |
| Mexico* | 9,271 | 12,559 | 12,010 | 11,326 | 10,343 | 11,304 | 11,407 | 12,796 | 12.2% |
| Total **NAFTA** | **38,915** | **42,161** | **38,381** | **39,293** | **37,817** | **41,219** | **42,646** | **44,695** | **4.8%** |
| | | | | | | | | | |
| **ALL OTHERS** | **823** | **858** | **1,012** | **887** | **907** | **1,009** | **1,103** | **1,234** | **11.9%** |

Exports, f.a.s.
Source: U.S. Census Bureau
Prepared by: Forrest Nielsen, 202-482-1418. 15 Feb. 2007.

Notes:

**1998 and 1999 data include transshipments to Brazil and Venezuela through St. Vincent and Grenadines.
1) The ASEAN region comrpises Brunei, Burma (Myanmar), Cambodia, Indonesia, Laos, Malaysia, Philippines, Singapore, Thailand, and Vietnam
2) The selected European Union countries are Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, the United Kingdom, Austria, Finland, and Sweden.
3) The Andean Community comprises Bolivia, Colombia, Ecuador, Peru, and Venezuela
4) Central America comprises Costa Rica, El Salvador, Guatemala, Honduras, and Panama
5) The MERCOSUR countries are Argentina, Brazil, Chile, Paraguay, and Uruguay.

*1995 data revised to reflect $698 million in exports underreported by Census

## U.S. AUTOMOTIVE PARTS IMPORTS, 1999 - 2006 — Table 12

In millions of dollars

| Region/Country | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | %Chg |
|---|---|---|---|---|---|---|---|---|---|
| **WORLD** | **61,619** | **66,959** | **62,726** | **69,089** | **74,469** | **83,444** | **92,154** | **95,179** | **3.3%** |
| | | | | | | | | | |
| **ASIA and the PACIFIC** | | | | | | | | | |
| **Select ASEAN** | | | | | | | | | |
| Indonesia | 264 | 269 | 282 | 320 | 298 | 362 | 396 | 490 | 23.9% |
| Malaysia | 275 | 286 | 244 | 263 | 255 | 274 | 229 | 203 | -11.5% |
| Philippines | 324 | 408 | 360 | 349 | 386 | 399 | 441 | 517 | 17.0% |
| Singapore | 178 | 156 | 147 | 134 | 100 | 106 | 104 | 97 | -6.9% |
| Thailand | 421 | 415 | 411 | 546 | 529 | 582 | 660 | 892 | 35.3% |
| Total **ASEAN** (1) | **1,462** | **1,535** | **1,444** | **1,619** | **1,586** | **1,747** | **1,860** | **2,264** | **21.7%** |
| | | | | | | | | | |
| **Chinese Economic Area** | | | | | | | | | |
| China | 1,284 | 1,635 | 1,758 | 2,242 | 2,788 | 3,884 | 5,408 | 6,928 | 28.1% |
| Hong Kong | 61 | 57 | 41 | 51 | 80 | 89 | 102 | 121 | 18.8% |
| Taiwan | 1,062 | 1,033 | 1,085 | 1,294 | 1,366 | 1,604 | 1,731 | 1,801 | 4.1% |
| Total **Chinese Economic Area** | **2,407** | **2,725** | **2,885** | **3,587** | **4,234** | **5,577** | **7,240** | **8,850** | **22.2%** |
| | | | | | | | | | |
| **Select Other Asia and the Pacific** | | | | | | | | | |
| Australia | 248 | 251 | 186 | 198 | 205 | 220 | 227 | 192 | -15.6% |
| India | 161 | 190 | 179 | 202 | 234 | 333 | 463 | 578 | 24.9% |
| **Japan** | **12,775** | **14,535** | **13,150** | **13,498** | **13,745** | **15,494** | **16,448** | **15,377** | **-6.5%** |
| Korea | 919 | 1,082 | 1,122 | 1,383 | 1,546 | 1,866 | 2,709 | 3,736 | 37.9% |
| | | | | | | | | | |
| **EUROPE** | | | | | | | | | |
| **Select European Union** | | | | | | | | | |
| Austria | 211 | 230 | 201 | 222 | 281 | 240 | 373 | 358 | -4.1% |
| Belgium | 90 | 97 | 82 | 89 | 100 | 95 | 134 | 168 | 25.9% |
| France | 1,303 | 1,133 | 1,165 | 1,197 | 1,302 | 1,478 | 1,449 | 1,320 | -8.9% |
| Germany | 3,451 | 3,874 | 3,746 | 4,336 | 5,426 | 6,147 | 6,709 | 7,132 | 6.3% |
| Italy | 447 | 474 | 525 | 652 | 751 | 874 | 958 | 844 | -11.9% |
| Netherlands | 60 | 60 | 66 | 71 | 70 | 81 | 86 | 95 | 9.6% |
| Spain | 346 | 301 | 269 | 349 | 420 | 464 | 537 | 546 | 1.6% |
| Sweden | 292 | 241 | 188 | 212 | 229 | 345 | 446 | 551 | 23.3% |
| United Kingdom | 1,118 | 1,190 | 976 | 1,106 | 1,068 | 1,045 | 1,126 | 1,047 | -7.0% |
| Total **European Union** (2) | **7,451** | **7,716** | **7,375** | **8,425** | **9,858** | **11,009** | **12,099** | **12,339** | **2.0%** |
| | | | | | | | | | |
| **Select Other Europe** | | | | | | | | | |
| Czech Republic | 53 | 60 | 86 | 125 | 150 | 156 | 236 | 238 | 1.0% |
| Hungary | 95 | 97 | 100 | 180 | 315 | 219 | 213 | 225 | 5.4% |
| Poland | 19 | 42 | 43 | 57 | 95 | 103 | 97 | 109 | 12.3% |
| Russia | 4 | 4 | 2 | 2 | 3 | 5 | 4 | 4 | -8.6% |
| Total **Other Europe** | **172** | **203** | **230** | **364** | **564** | **483** | **550** | **576** | **4.7%** |
| | | | | | | | | | |
| **WESTERN HEMISPHERE** | | | | | | | | | |
| **Select Andean Community** | | | | | | | | | |
| Colombia | 7 | 8 | 10 | 13 | 16 | 14 | 19 | 26 | 39.0% |
| Peru | 5 | 4 | 10 | 12 | 8 | 12 | 9 | 13 | 38.7% |
| Venezuela | 207 | 235 | 159 | 172 | 191 | 190 | 211 | 196 | -6.9% |
| Total **Andean Community** (3) | **219** | **249** | **179** | **199** | **216** | **217** | **240** | **236** | **-1.8%** |
| | | | | | | | | | |
| Select Central America | | | | | | | | | |
| **Total Central America (4)** | **61** | **91** | **69** | **105** | **181** | **345** | **510** | **633** | **24.1%** |
| | | | | | | | | | |
| **Select MERCOSUR** | | | | | | | | | |
| Argentina | 131 | 177 | 233 | 223 | 185 | 178 | 168 | 187 | 11.1% |
| Brazil | 1,360 | 1,248 | 955 | 1,275 | 1,474 | 1,711 | 2,022 | 2,224 | 10.0% |
| Chile | 36 | 42 | 33 | 33 | 46 | 64 | 66 | 60 | -9.8% |
| Total **MERCOSUR** (5) | **1,529** | **1,473** | **1,225** | **1,538** | **1,708** | **1,956** | **2,261** | **2,481** | **9.8%** |
| | | | | | | | | | |
| **NAFTA** | | | | | | | | | |
| Canada | 16,934 | 17,634 | 15,787 | 17,217 | 18,569 | 20,164 | 21,581 | 20,424 | -5.4% |
| Mexico | 16,768 | 18,663 | 18,180 | 20,069 | 21,039 | 23,104 | 24,910 | 26,368 | 5.9% |
| Total **NAFTA** | **33,702** | **36,297** | **33,967** | **37,286** | **39,607** | **43,268** | **46,490** | **46,792** | **0.6%** |
| | | | | | | | | | |
| **ALL OTHERS** | **512** | **613** | **714** | **686** | **783** | **927** | **1,056** | **1,124** | **6.5%** |

Imports, customs value
Source: U.S. Census Bureau
Prepared by: Forrest Nielsen, 202-482-1418. 15 Feb. 2007.

Notes:
1) The ASEAN region comrpises Brunei, Burma (Myanmar), Cambodia, Indonesia, Laos, Malaysia, Philippines, Singapore, Thailand, and Vietnar
2) The selected European Union countries are Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, th United Kingdom, Austria, Finland, and Sweden.
3) The Andean Community comprises Bolivia, Colombia, Ecuador, Peru, and Venezuela
4) Central America comprises Costa Rica, El Salvador, Guatemala, Honduras, and Panama
5) The MERCOSUR countries are Argentina, Brazil, Chile, Paraguay, and Uruguay.

## U.S. AUTOMOTIVE PARTS TRADE BALANCE, 1999 - 2006 — Table 13

In millions of dollars

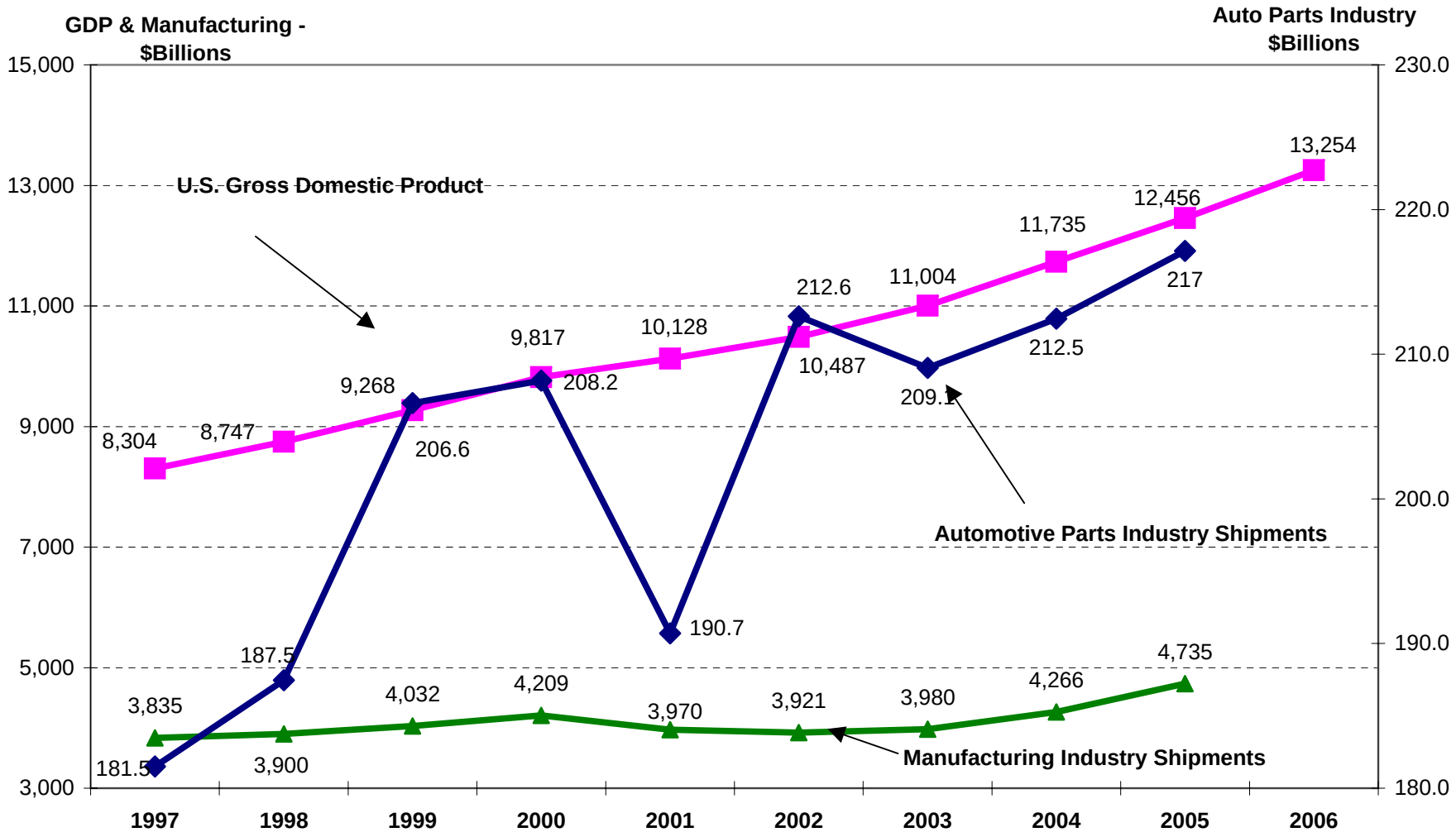
| Region/Country | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | %Chg |
|---|---|---|---|---|---|---|---|---|---|
| **WORLD** | **-11,719** | **-13,239** | **-12,932** | **-19,002** | **-25,968** | **-30,816** | **-37,100** | **-36,315** | **-2.1%** |
| | | | | | | | | | |
| **ASIA and the PACIFIC** | | | | | | | | | |
| **Select ASEAN** | | | | | | | | | |
| Indonesia | -237 | -236 | -261 | -298 | -274 | -328 | -363 | -457 | 26.0% |
| Malaysia | -218 | -251 | -218 | -234 | -229 | -254 | -208 | -177 | -15.0% |
| Philippines | -268 | -355 | -331 | -290 | -298 | -328 | -332 | -401 | 20.9% |
| Singapore | -28 | -21 | -4 | 8 | 42 | 43 | 53 | 142 | 165.5% |
| Thailand | -294 | -272 | -326 | -460 | -433 | -485 | -563 | -814 | 44.5% |
| Total **ASEAN** (1) | **-1,043** | **-1,133** | **-1,135** | **-1,276** | **-1,201** | **-1,367** | **-1,428** | **-1,766** | **23.7%** |
| | | | | | | | | | |
| **Chinese Economic Area** | | | | | | | | | |
| China | -1,033 | -1,410 | -1,501 | -1,898 | -2,278 | -3,249 | -4,784 | -6,112 | 27.8% |
| Hong Kong | 53 | 35 | 41 | 23 | -5 | 0 | -20 | -18 | -7.8% |
| Taiwan | -978 | -954 | -1,010 | -1,217 | -1,233 | -1,493 | -1,634 | -1,677 | 2.6% |
| Total **Chinese Economic Are** | **-1,958** | **-2,330** | **-2,470** | **-3,092** | **-3,516** | **-4,742** | **-6,439** | **-7,808** | **21.3%** |
| | | | | | | | | | |
| **Select Other Asia and the Pacific** | | | | | | | | | |
| Australia | 316 | 449 | 391 | 416 | 451 | 548 | 551 | 683 | 23.9% |
| India | -115 | -149 | -142 | -163 | -192 | -268 | -390 | -481 | 23.4% |
| **Japan** | **-10,883** | **-12,318** | **-11,141** | **-11,213** | **-11,695** | **-13,961** | **-14,999** | **-13,629** | **-9.1%** |
| Korea | -322 | -628 | -753 | -1,051 | -1,238 | -1,400 | -2,148 | -3,166 | 47.4% |
| | | | | | | | | | |
| **EUROPE** | | | | | | | | | |
| **Select European Union** | | | | | | | | | |
| Austria | 953 | 826 | 916 | 722 | 275 | 247 | 441 | 530 | 20.3% |
| Belgium | 258 | 288 | 266 | 304 | 283 | 252 | 163 | 226 | 38.7% |
| France | -1,022 | -767 | -759 | -843 | -856 | -879 | -815 | -663 | -18.7% |
| Germany | -2,502 | -2,900 | -2,630 | -3,395 | -4,407 | -4,891 | -5,330 | -5,541 | 4.0% |
| Italy | -336 | -338 | -367 | -530 | -611 | -741 | -828 | -704 | -14.9% |
| Netherlands | 141 | 262 | 260 | 246 | 227 | 228 | 277 | 262 | -5.6% |
| Spain | -258 | -180 | -176 | -246 | -286 | -331 | -264 | -268 | 1.3% |
| Sweden | -88 | -98 | -61 | -58 | -21 | -105 | -248 | -353 | 42.2% |
| United Kingdom | 72 | 51 | 260 | -34 | -6 | -51 | -282 | -175 | -37.7% |
| Total **European Union** (2) | **-2,843** | **-2,868** | **-2,327** | **-3,932** | **-5,513** | **-6,394** | **-7,028** | **-6,838** | **-2.7%** |
| | | | | | | | | | |
| **Select Other Europe** | | | | | | | | | |
| Czech Republic | -33 | -46 | -78 | -114 | -141 | -149 | -218 | -218 | -0.1% |
| Hungary | -36 | -64 | -80 | -128 | -249 | -164 | -160 | -152 | -5.4% |
| Poland | 4 | -29 | -29 | -42 | -78 | -82 | -64 | -62 | -4.0% |
| Russia | 12 | 11 | 25 | 15 | 22 | 26 | 43 | 113 | 165.2% |
| Total **Other Europe** | **-53** | **-128** | **-161** | **-269** | **-446** | **-369** | **-400** | **-318** | **-20.4%** |
| | | | | | | | | | |
| **WESTERN HEMISPHERE** | | | | | | | | | |
| **Select Andean Community** | | | | | | | | | |
| Colombia | 63 | 73 | 66 | 56 | 52 | 89 | 89 | 95 | 6.8% |
| Peru | 33 | 19 | 23 | 19 | 29 | 26 | 48 | 49 | 3.9% |
| Venezuela | 183 | 302 | 436 | 138 | -23 | 202 | 412 | 567 | 37.7% |
| Total **Andean Community** (3) | **300** | **426** | **598** | **262** | **109** | **375** | **629** | **767** | **21.9%** |
| | | | | | | | | | |
| Select Central America | | | | | | | | | |
| Total **Central America** (4) | **120** | **69** | **73** | **46** | **-38** | **-144** | **-264** | **-305** | **15.7%** |
| | | | | | | | | | |
| **Select MERCOSUR** | | | | | | | | | |
| Argentina | 57 | 49 | -120 | -186 | -92 | -46 | -14 | 2 | -116.1% |
| Brazil | -905 | -847 | -510 | -821 | -995 | -1,145 | -1,471 | -1,622 | 10.3% |
| Chile | 58 | 50 | 46 | 69 | 57 | 59 | 87 | 147 | 67.6% |
| Total **MERCOSUR** (5) | **-763** | **-737** | **-578** | **-939** | **-1,023** | **-1,126** | **-1,388** | **-1,466** | **5.6%** |
| | | | | | | | | | |
| **NAFTA** | | | | | | | | | |
| Canada | 12,709 | 11,967 | 10,585 | 10,751 | 8,906 | 9,751 | 9,659 | 11,475 | 18.8% |
| Mexico | -7,496 | -6,104 | -6,170 | -8,744 | -10,696 | -11,800 | -13,503 | -13,572 | 0.5% |
| Total **NAFTA** | **5,213** | **5,864** | **4,415** | **2,007** | **-1,790** | **-2,049** | **-3,844** | **-2,097** | **-45.5%** |
| | | | | | | | | | |
| **ALL OTHERS** | **311** | **244** | **298** | **202** | **124** | **82** | **47** | **110** | **132.3%** |

Source: U.S. Census Bureau
Prepared by: Forrest Nielsen, 202-482-1418 15 Feb. 2007.

Notes:
1) The ASEAN region comrpises Brunei, Burma (Myanmar), Cambodia, Indonesia, Laos, Malaysia, Philippines, Singapore, Thailand, and Vietnar
2) The selected European Union countries are Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, the Unite Kingdom, Austria, Finland, and Sweden.
3) The Andean Community comprises Bolivia, Colombia, Ecuador, Peru, and Venezuela
4) Central America comprises Costa Rica, El Salvador, Guatemala, Honduras, and Panama
5) The MERCOSUR countries are Argentina, Brazil, Chile, Paraguay, and Uruguay.

## Chart 1

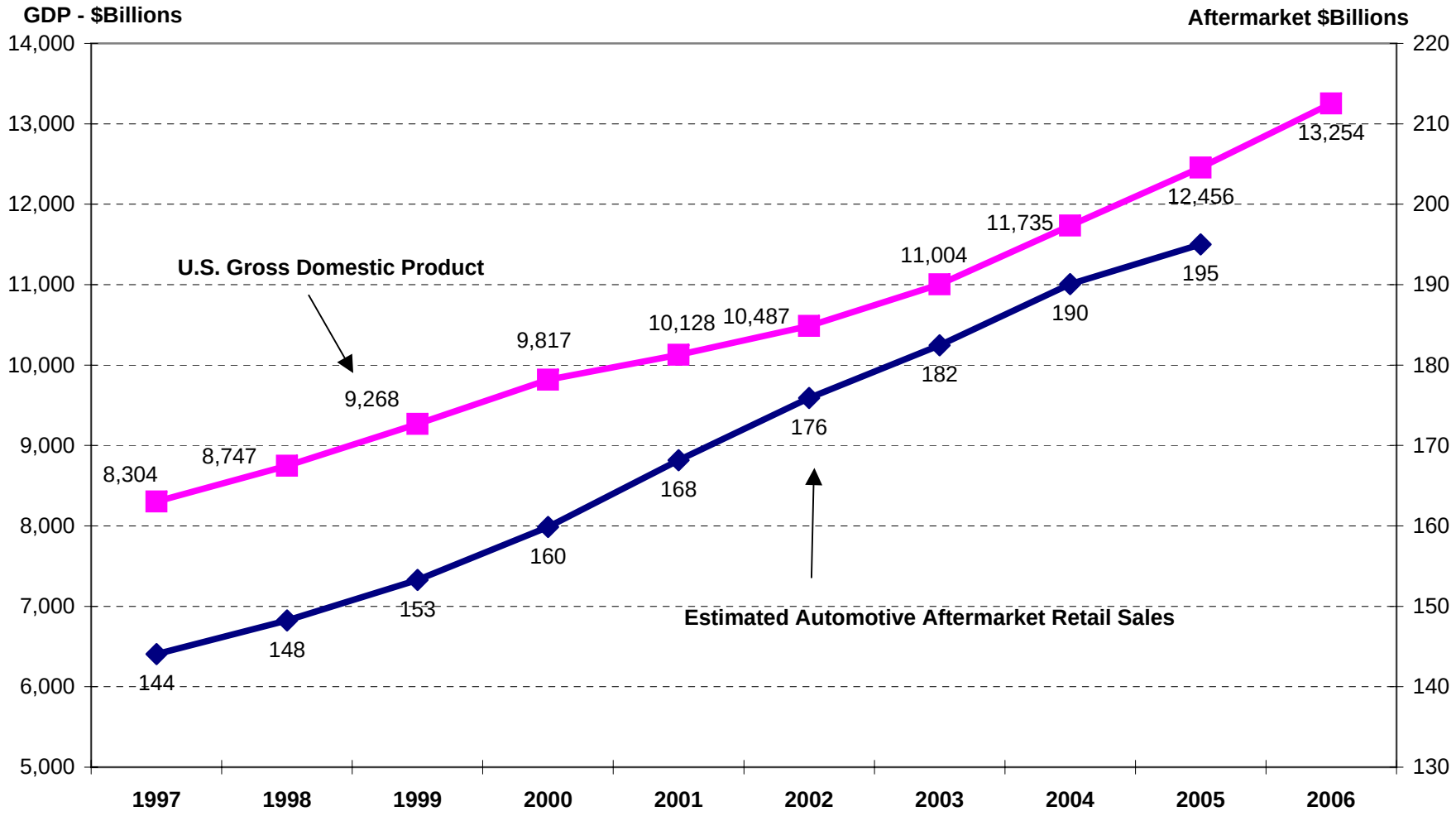
Gross Domestic Product, Manufacturing Industry Shipments, and Automotive Parts Industry Shipments, 1997-2006.




Source: U.S. Department of Commerce.

## Chart 2

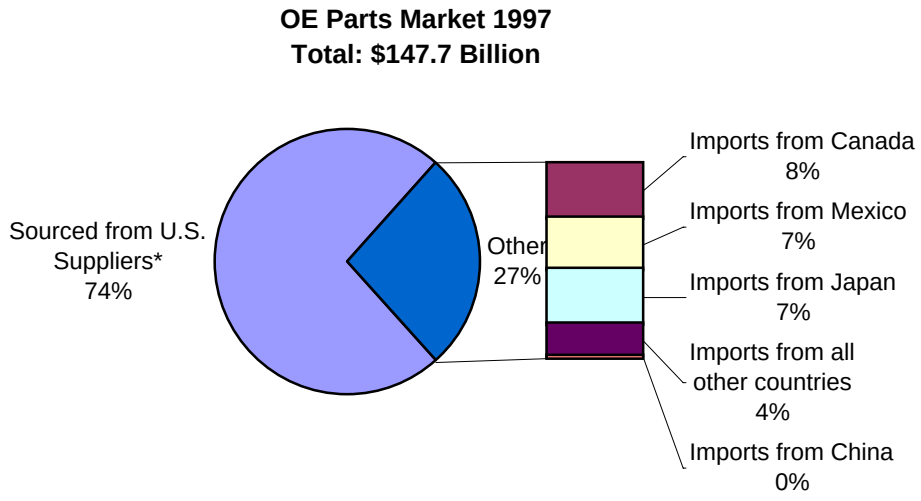
Aftermarket sales track the economy. Sales grew an estimated 32% from 1997 to 2005, compared with 41% for the nation's total GDP. The aftermarket accounted for 1.7% of the 1997 GDP and an estimated 1.6% in 2005.

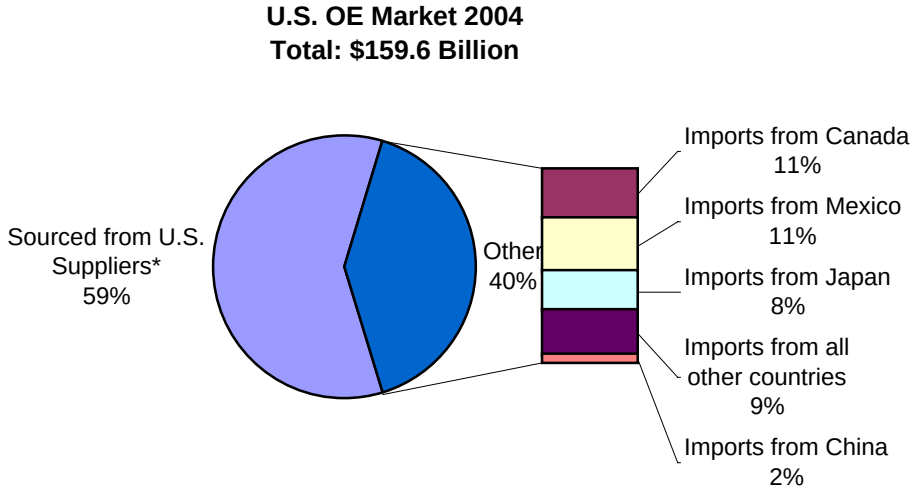



Source: U.S. Department of Commerce and Motor and Equipment Manufacturers Association aftermarket model.

# Chart 3

## U.S. Original Equipment Parts Market, 1997 and 2004

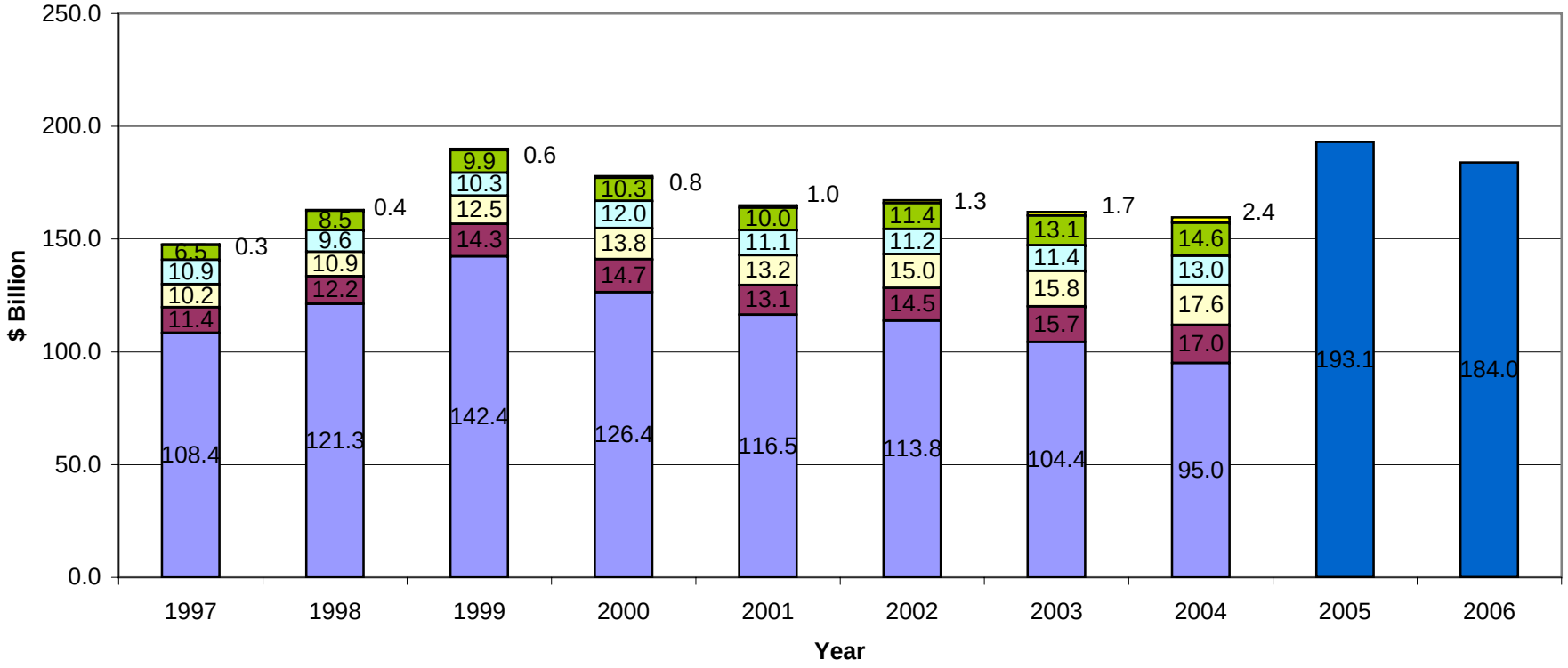



*U.S. suppliers include U.S. affiliates of foreign suppliers

Source: DesRosiers and Automotive News.

## Chart 4
## U.S. OE Parts Market, 1997-2006
## The U.S. OE Parts market high point was $193 Billion in 2005.



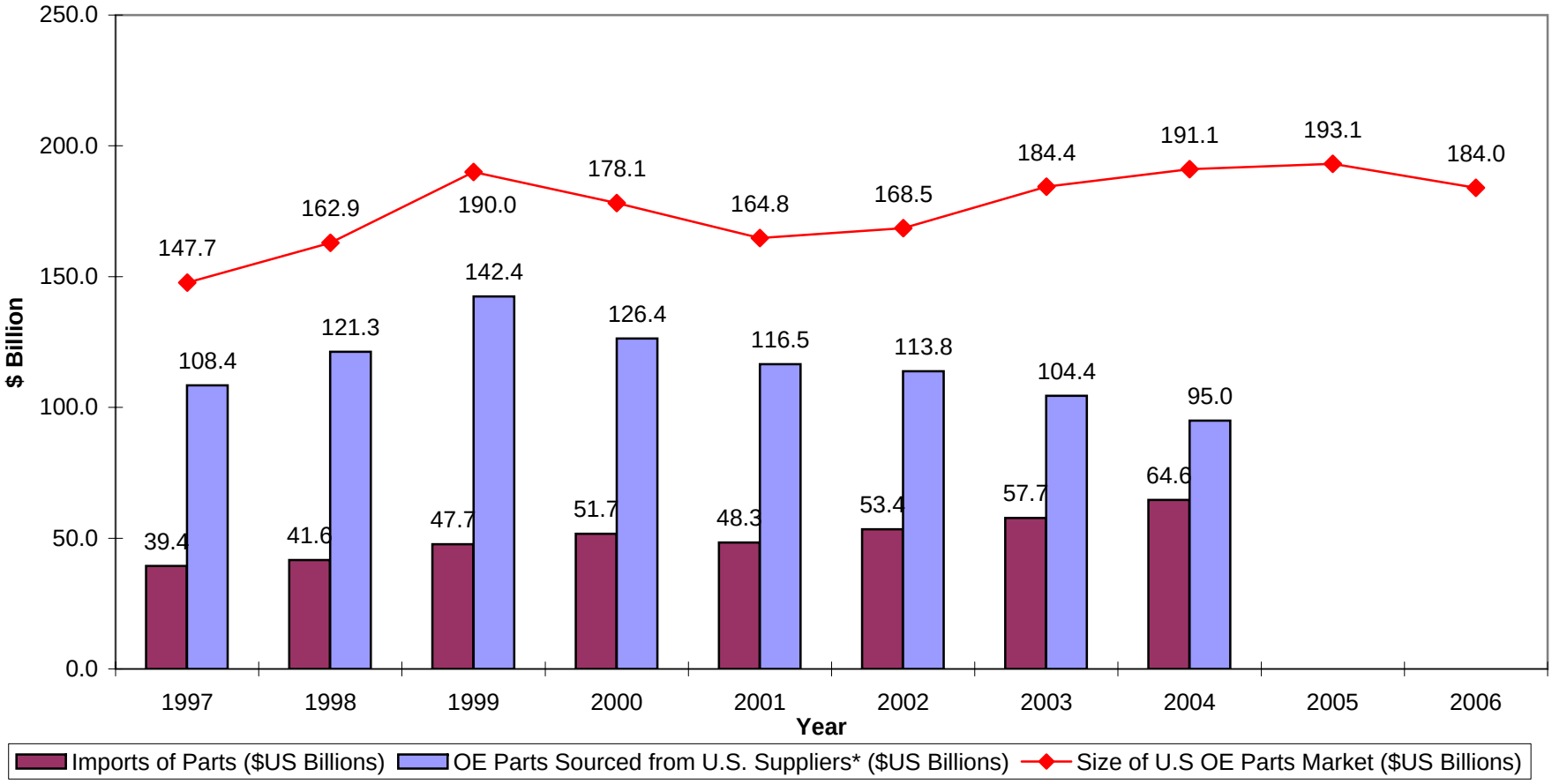

*includes U.S. Affiliates of Foreign Manufacturers

*Source: DesRosiers and Automotive News.*

**Chart 5**

**U.S. OE Parts Market, 1997-2006**

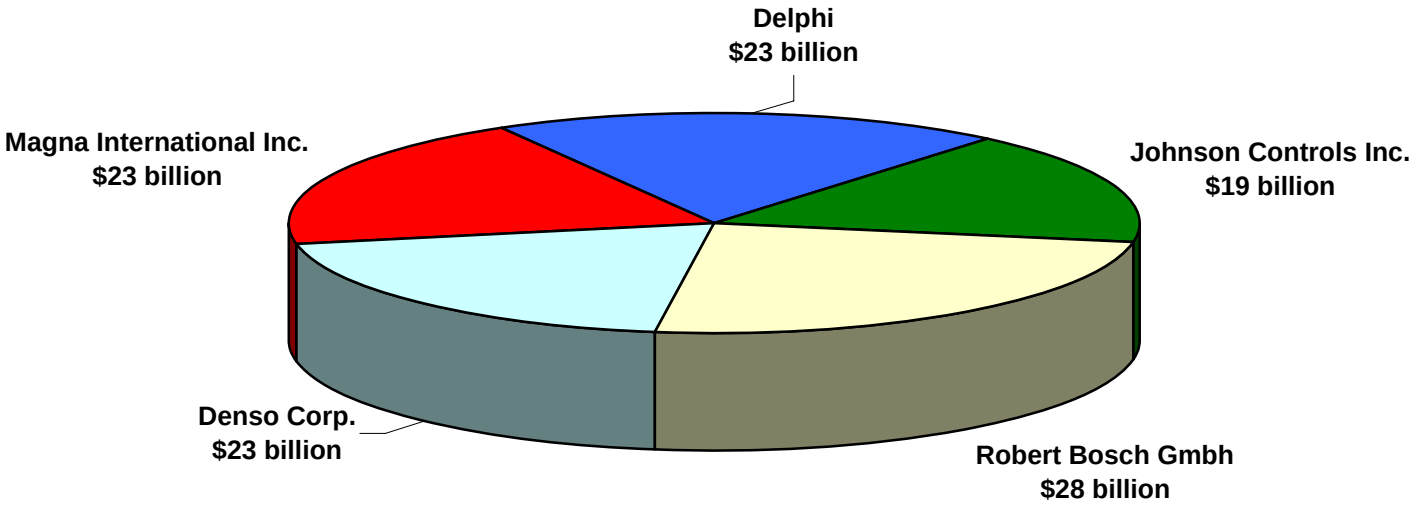
U.S. sourced* parts declined from 74 percent of the market in 1997
to 59 percent of market in 2004.




Source: DesRosiers and Automotive News. *Includes U.S. Affiliates of Foreign Manufacturers.

## Chart 6

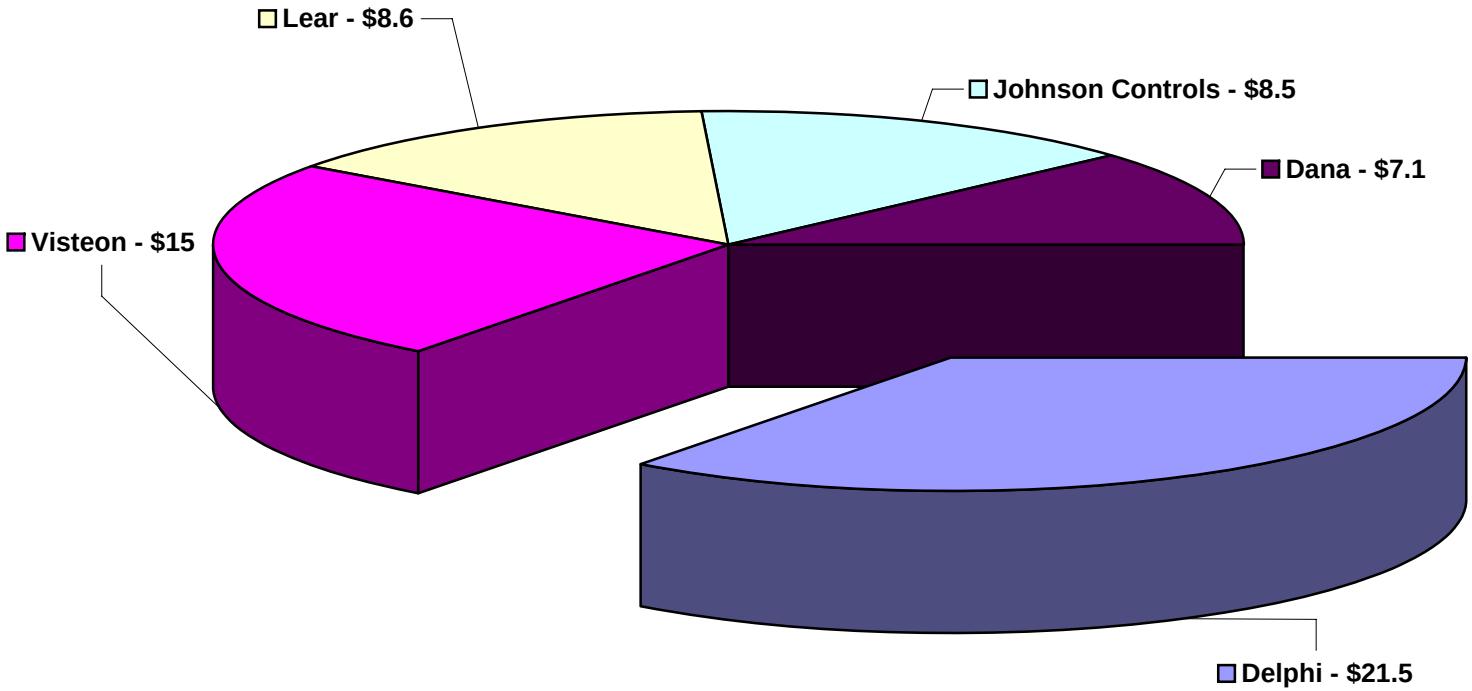
## In 2005, the top 5 global OE suppliers had $116 billon in sales. Delphi accounted for 19 % and Robert Bosch accounted for 24 %.




Source: Automotive News

# Chart 7

## In 2000, the Top 5 U.S. suppliers in the North American market had O.E. sales of $60.7 billion. Delphi accounted for 35% of that total.

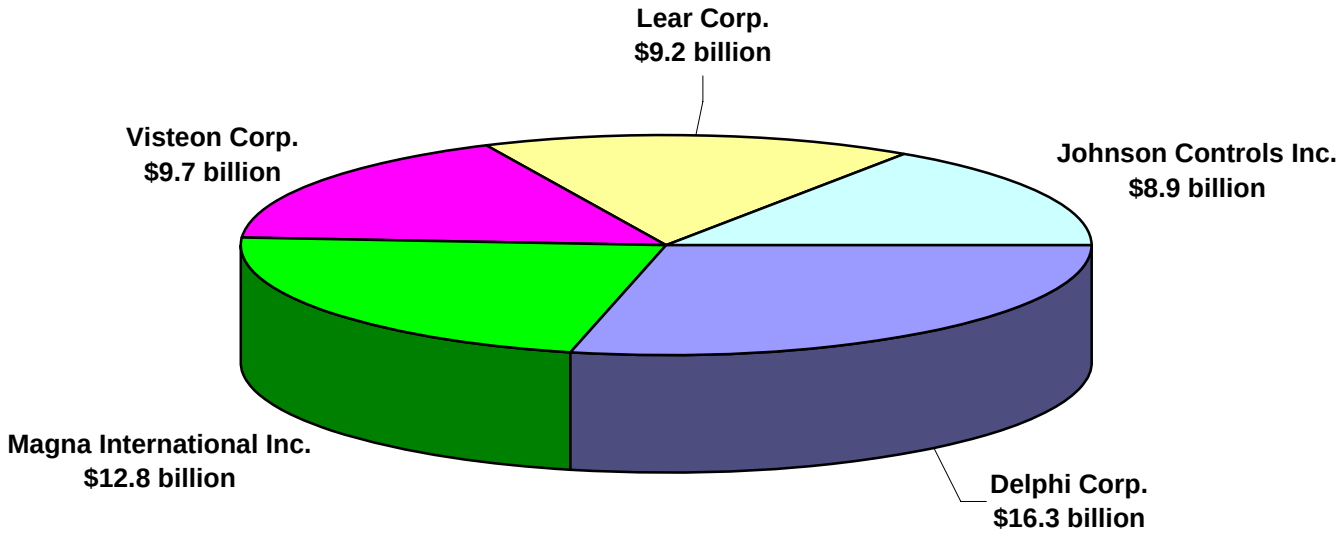



**Source: Automotive News**

Source: *Automotive News*

## Chart 8

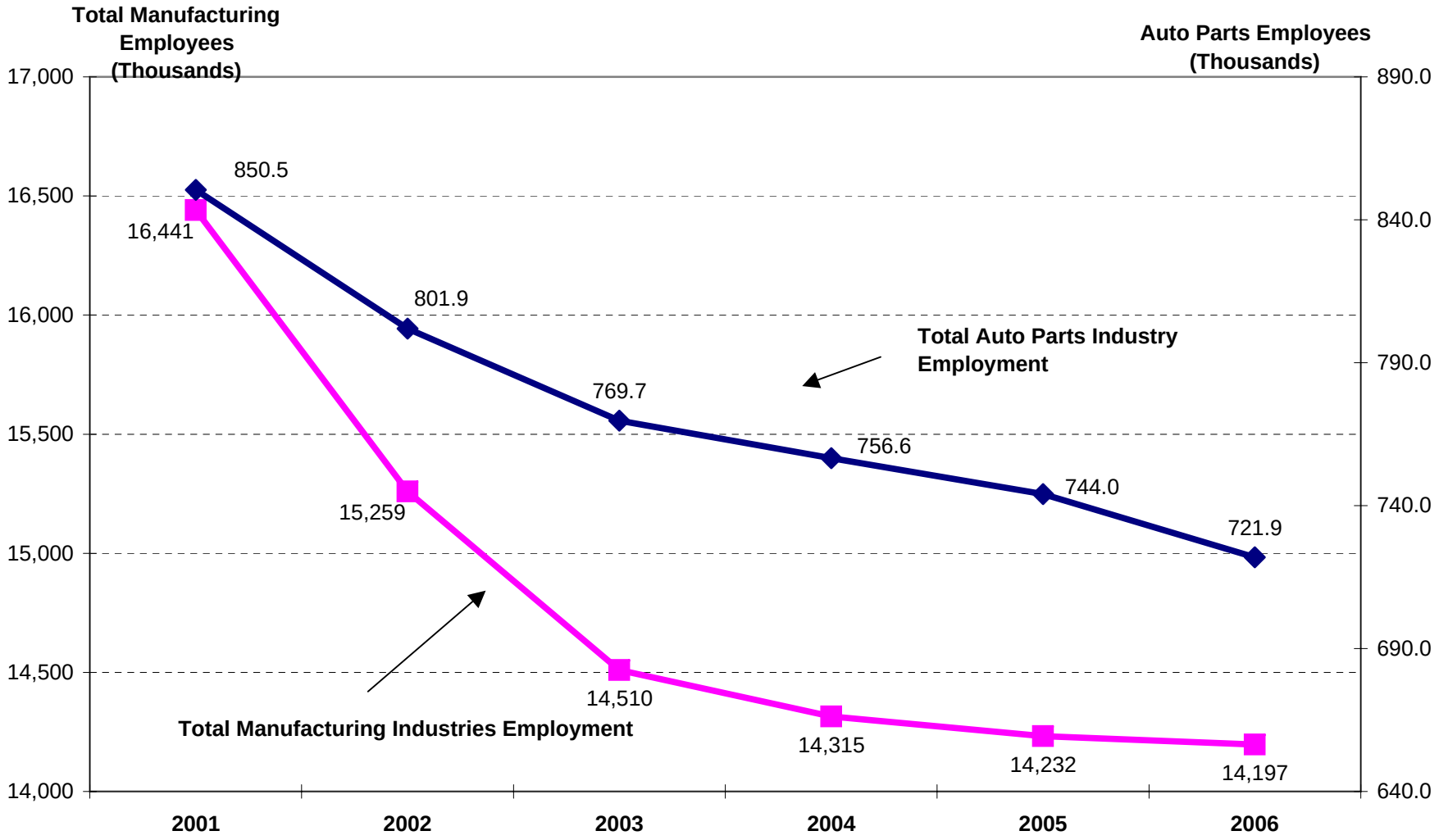
**By 2005, North American sales of the top 5 North American parts suppliers dropped to $56.9 billion. Delphi remained the largest with 29 percent share of the top 5's NA sales.**




Source: Automotive News

## Chart 9

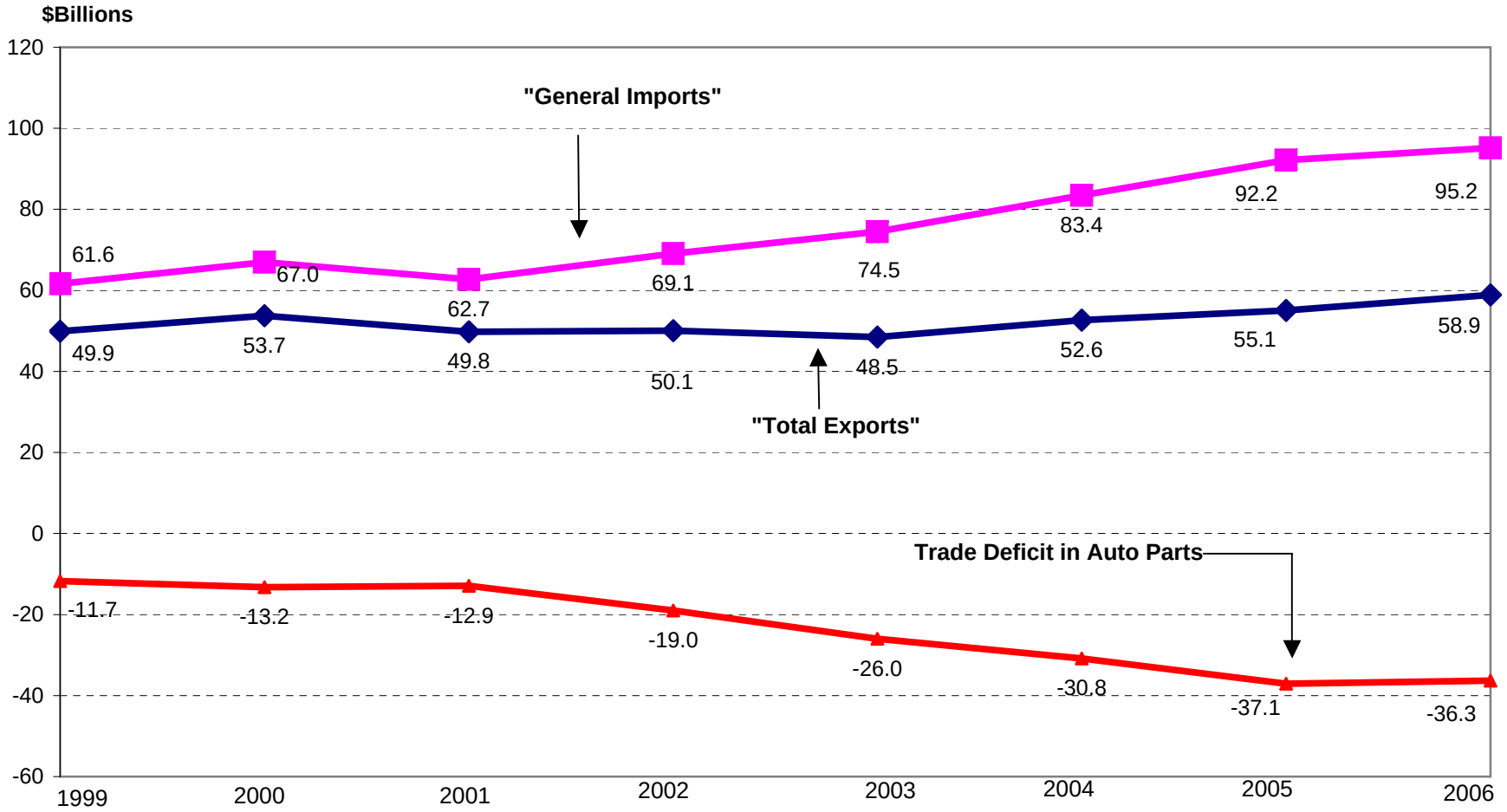
Employment in the U.S. auto parts industry has consistantly been between 5.1 percent and 5.3 percent of the total manufacturing employment.




Source: U.S. Bureau of the Census. and U.S. Bureau of Labor Statistics.

## Chart 10

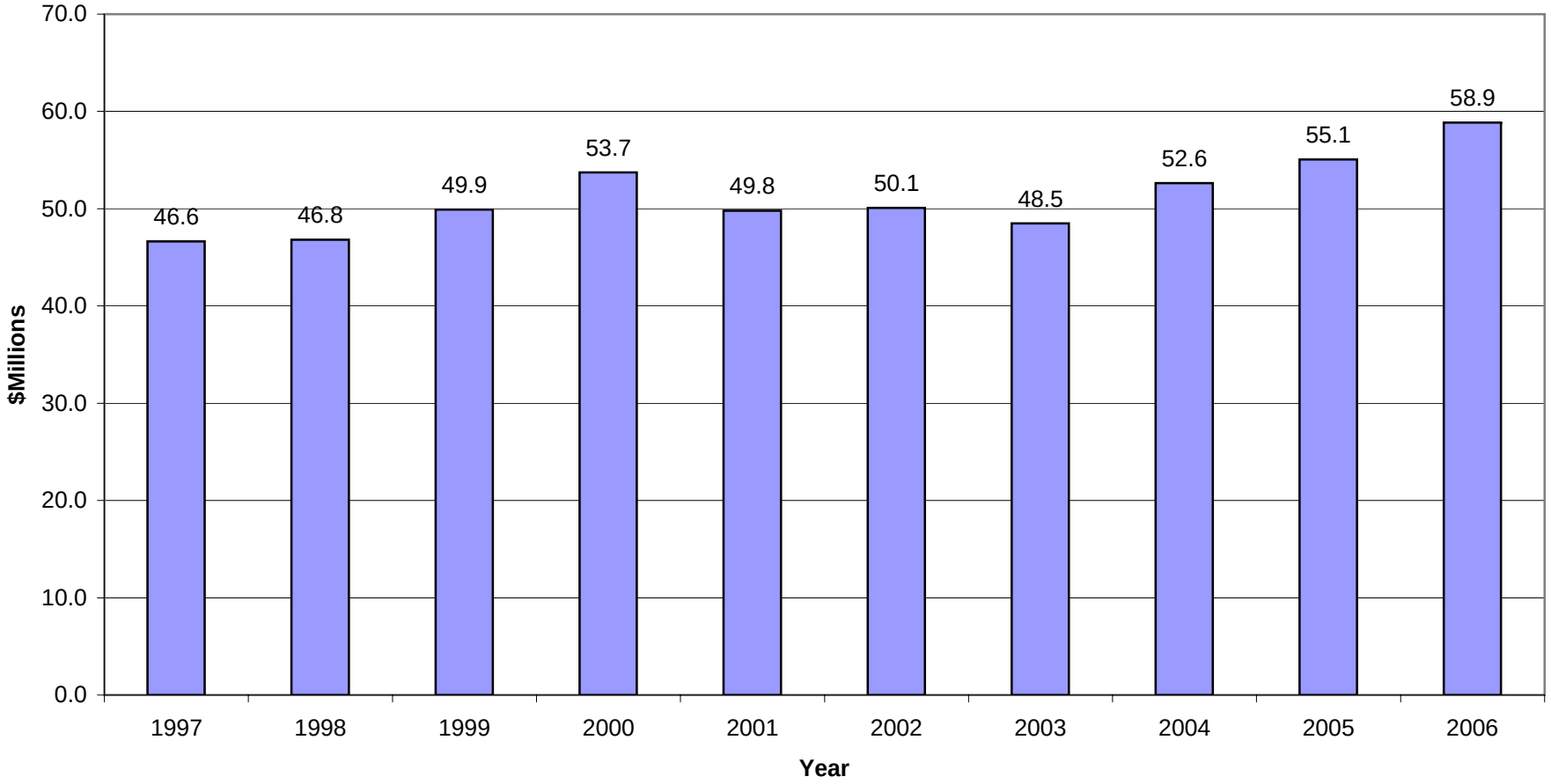
U.S. auto parts exports grew 6.9 % in 2006 and imports increased 3.3%. The result was a slight decline of the parts trade deficit with the world by 2.1percent.




Source: U.S. Bureau of the Census, U.S. Department of Commerce.

## Chart 11
## Exports increased 6.9 percent in 2006 over 2005...

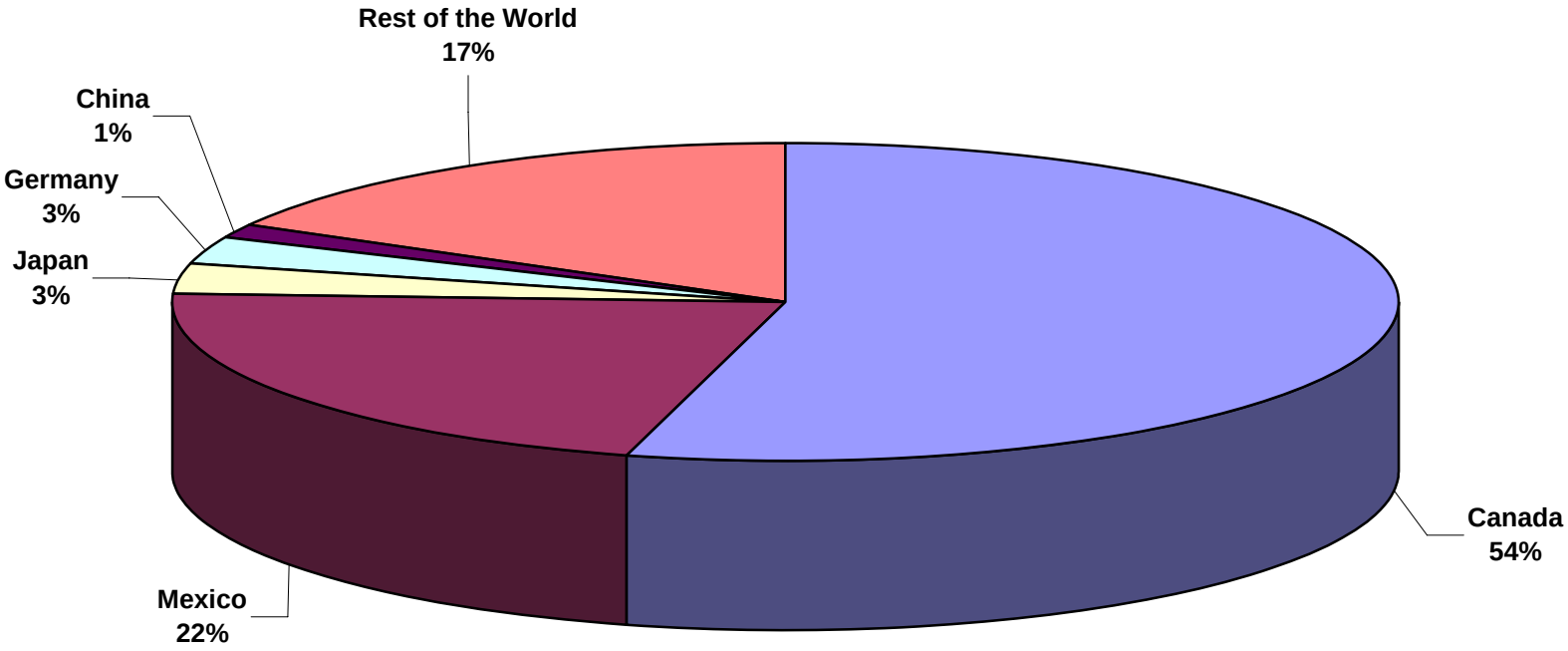
## U.S. Automotive Parts Exports, 1997-2005




Source: U.S. Department of Commerce, Bureau of the Census.

## Chart 12

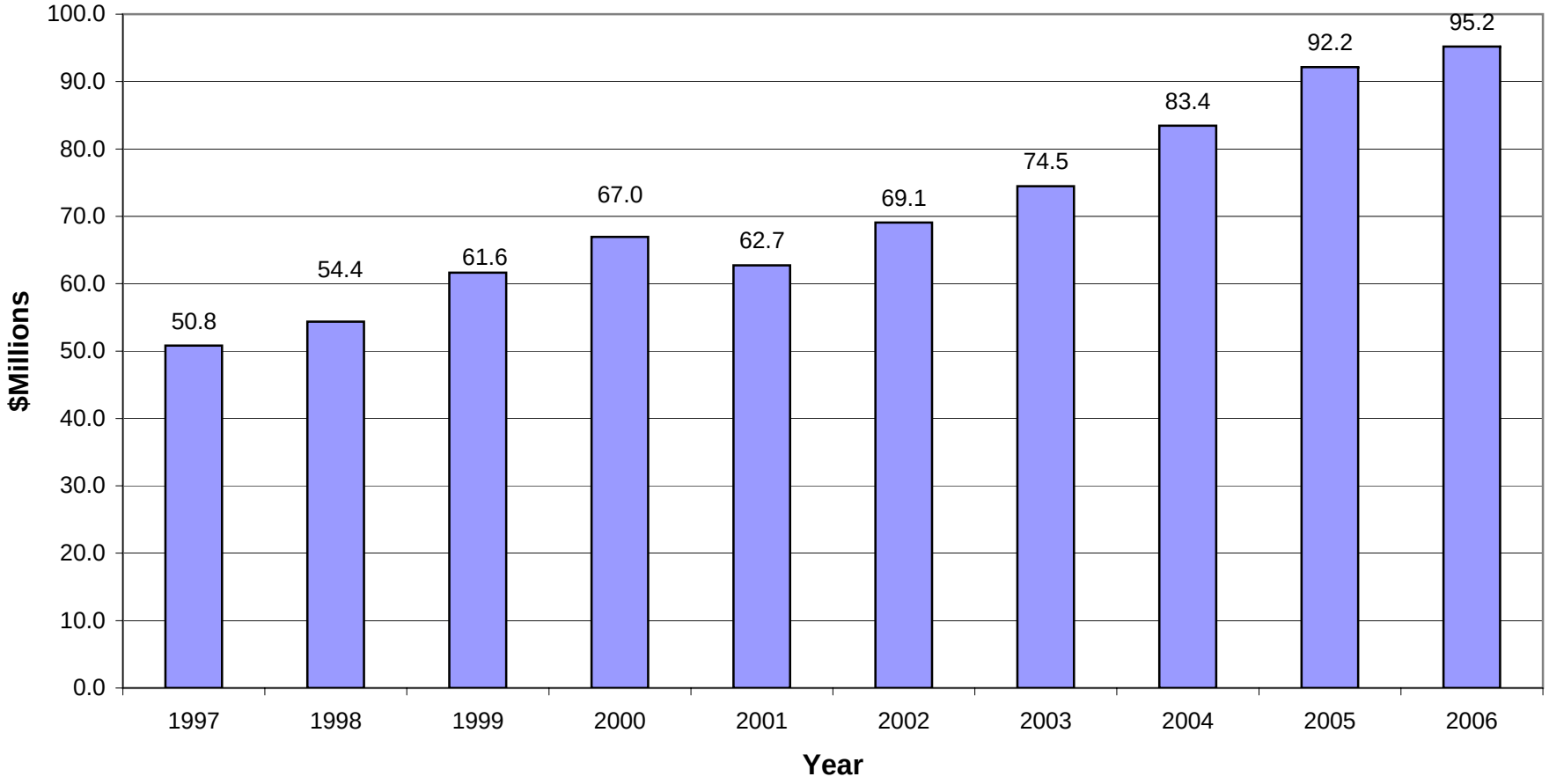
## In 2006, parts shipments to Canada accounted for 54 % of U.S. parts exports.
## Total: $59.9 billion




Source: U.S. Bureau of the Census

## Chart 13
## while Imports increased 3.3 percent in 2006,

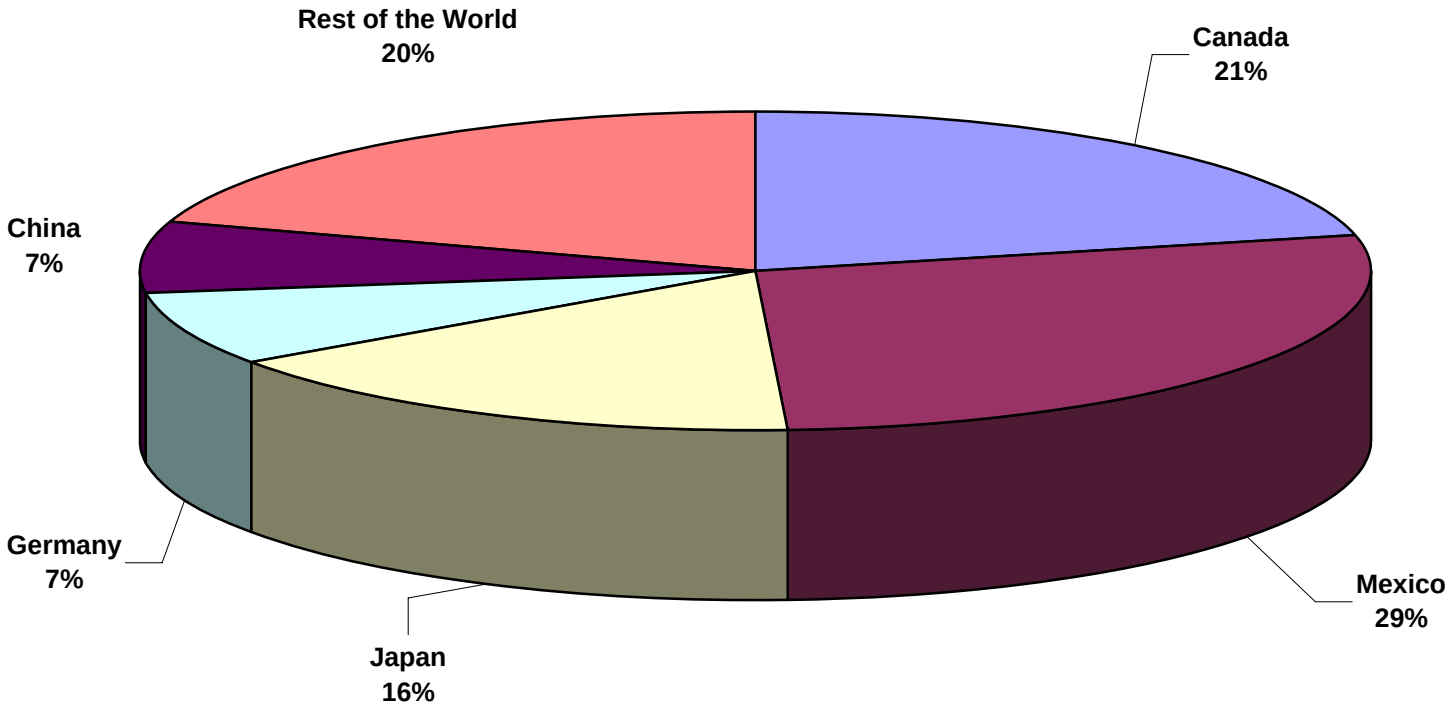
## U.S. Automotive Parts Imports, 1997-2006




Source: U.S. Department of Commerce, Bureau of the Census.

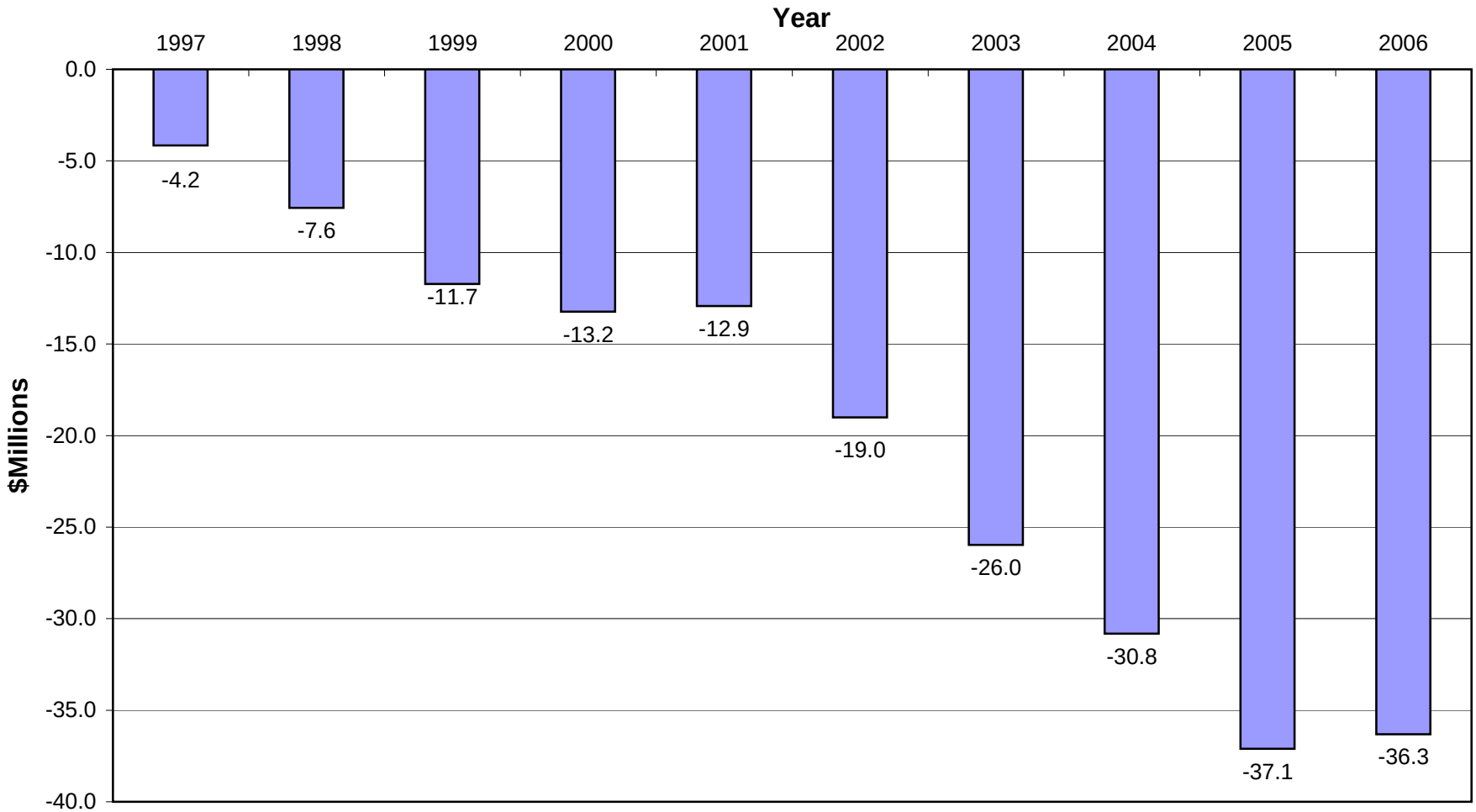
## Chart 14

## In 2006, Canada and Mexico accounted for 50 % of U.S. parts imports.



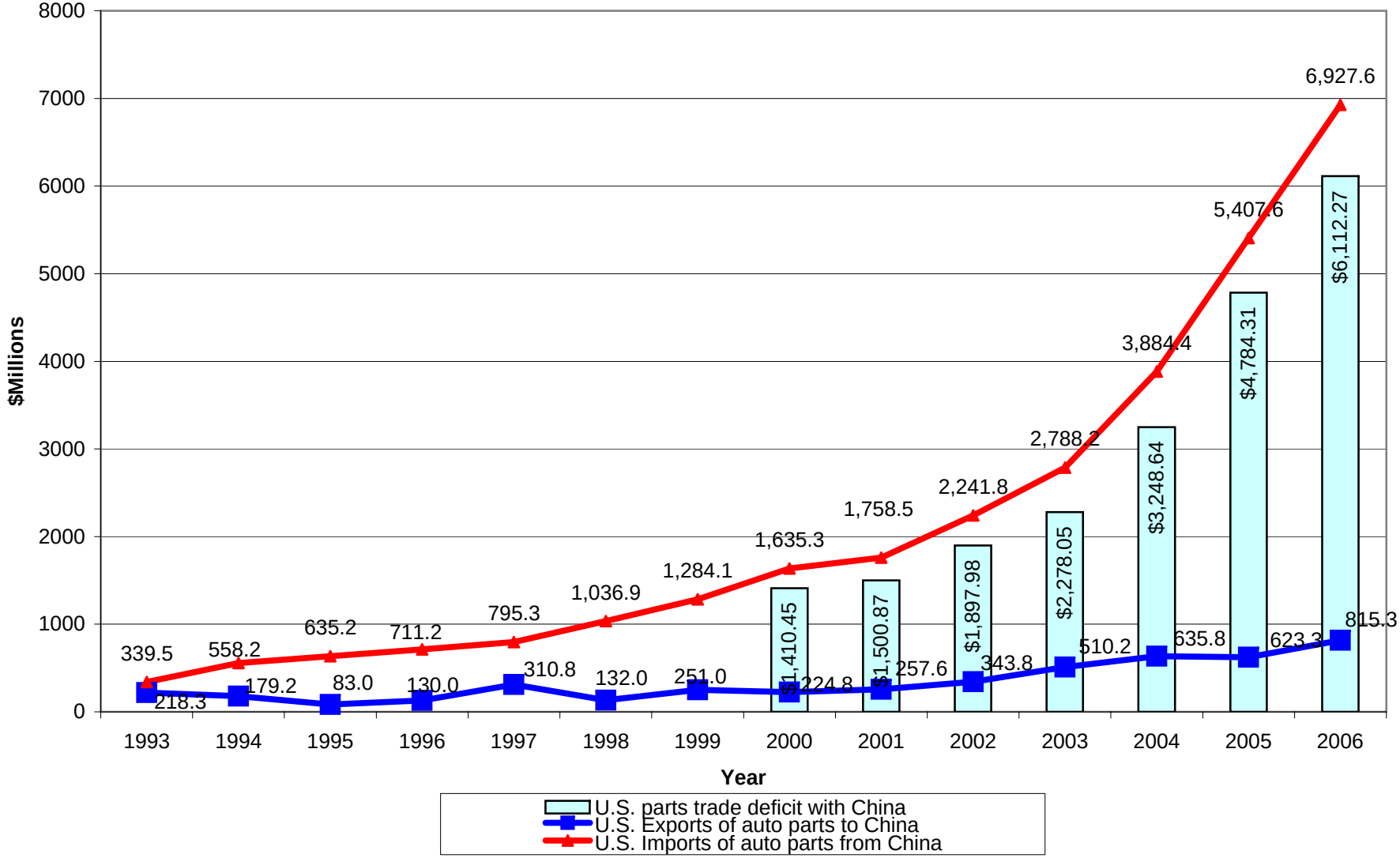

Source: U.S. Bureau of the Census

# Chart 15
## resulting in a 2.1 decrease in U.S. automotive parts trade deficit.
## U.S. Automotive Parts Trade Balance, 1997-2006



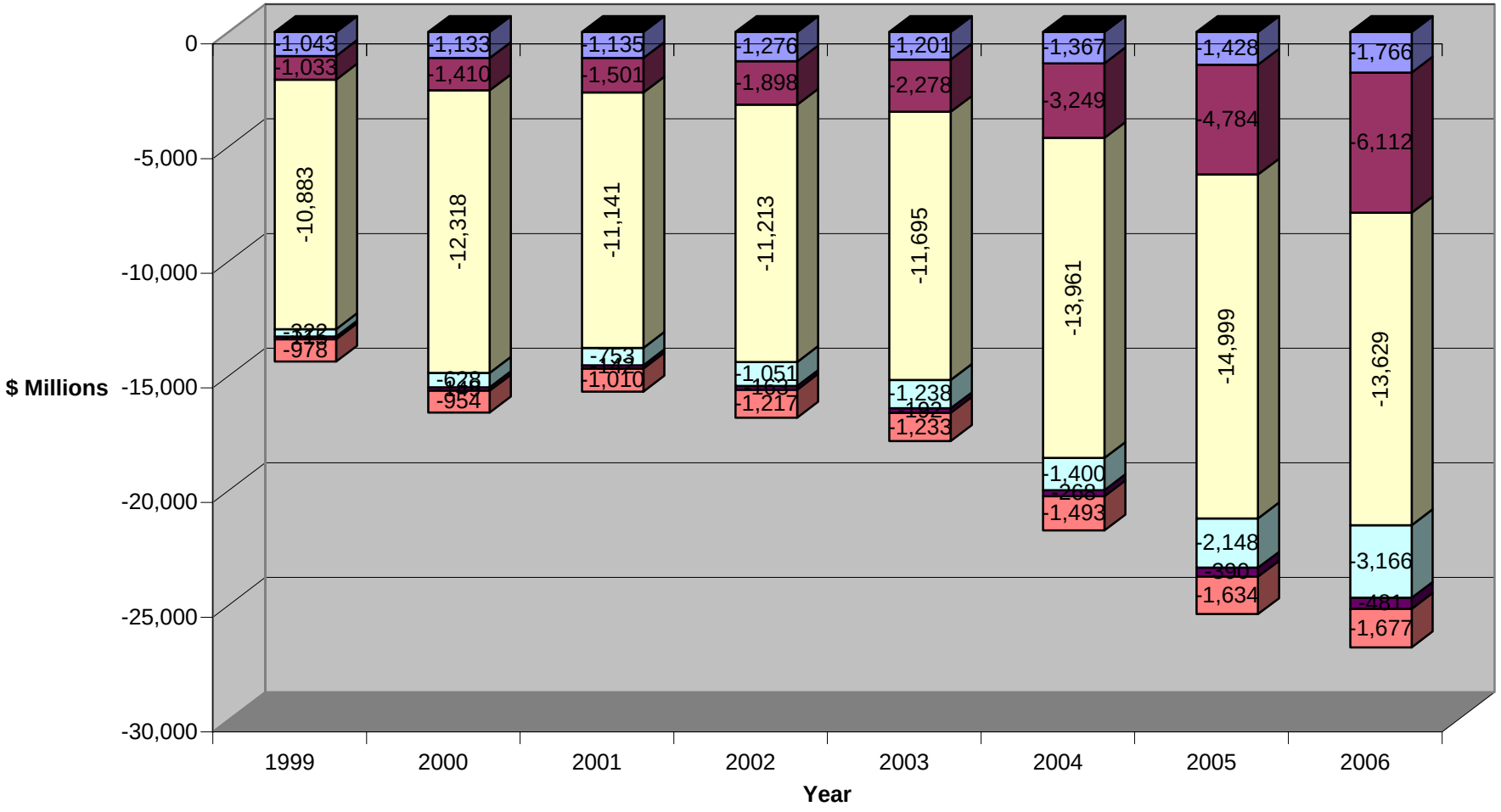

Source: U.S. Department of Commerce, Bureau of the Census.

**Chart 16**
**U.S. - China Auto Parts Trade, 1993-2006**
**In 2006, the parts trade deficit with China increased 28 percent over 2005 levels**




Source: U.S. Department of Commerce, Bureau of the Census.

**Chart 17**
**The U.S. auto parts trade deficit with Asian countries continues to increase.**




Source: U.S. Bureau of Census