On the Road: U.S. Automotive Parts Industry Annual Assessment

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There has been a rebound in the automotive industry since 2010. However, the U.S. economy remains weak. Automotive parts suppliers had experienced heavy debt and overcapacity aggravated by production cuts by automakers, especially the Detroit 3 (Ford Motor Company [Ford], General Motors [GM], and Chrysler). Industry analysts reported that over 50 suppliers filed for Chapter 11 protection in 2009 and up to 200 suppliers were liquidated. The number of bankruptcies in the automotive parts industry leveled off in 2010, but the next couple years will remain difficult for some suppliers. Suppliers managed to survive 2009 and 2010 by rationalizing capacity and production. In previous years, the industry breakeven point was typically estimated to be 10.5 million units in North America, but given their resourcefulness in times of duress, suppliers were able to get the breakeven point down to 9.5 million units toward the end of 2009. In fact, some leaner, more efficient suppliers actually saw a small profit in 2009. However, as vehicle sales rebounded in 2010 to 11.5 million units, the pressure on suppliers from automakers for price cuts also returned just as suppliers started to become profitable again.

The entire automotive industry suffered as a result of the global economic recession in 2009. As vehicle production and sales declined, parts production and sales concurrently decreased because most parts are destined for new vehicle production. The value of automotive parts production declined deeper than total vehicle sales because consumers also shifted from high-content trucks and SUVs to lower-content passenger cars. Still, automotive parts suppliers and automakers face another couple difficult years and most analysts don't see the automotive market improving significantly until 2012.

International

U.S. automotive parts exports increased 36.2 percent to $58.1 billion in 2010 compared to $42.7 billion in 2009. Most of the exports (84 percent) went to Canada, Mexico, European Union 15[1] (EU-15), and Japan in 2010. Automotive parts imports were $90.9 billion in 2010, up 44.3 percent from $63 billion in 2009. Mexico, Canada, Japan, Germany, and China combined accounted for $71 billion, or 78 percent of total U.S. imports of automotive parts. Specifically, imports from China increased 35 percent from 2009 to $10 billion in 2010. The overall U.S. automotive parts trade deficit in 2010 was $32.8 billion, up 61.3 percent from 2009 levels.

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[1] The European Union 15 countries are Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, the United Kingdom, Austria, Finland, and Sweden.

Introduction

Automotive parts consumption is linked to the demand for new vehicles, since roughly 70 percent of U.S. automotive parts production is for Original Equipment (OE) products. The remaining 30 percent is for repair and modification (aftermarket). If vehicle production goes down, automotive parts production and sales follow. For those suppliers that were able to survive the downturn in 2009 and lower their break-even point, 2010 was a better year than expected. Suppliers were able to increase efficiency and lower their break-even point based on U.S. sales of passenger cars and light trucks to between 9.5 and 11 million passenger cars and light trucks. U.S. sales were 11.5 million units in 2010, allowing many suppliers to see some profit.

The year 2009 was a difficult year for U.S.-based automakers, as the economy struggled to emerge from a recession and consumers reduced their spending on vehicles. General Motors, Ford, and Chrysler continued to lose U.S. market share to other automakers, but even foreign transplant automakers had a difficult year due to the falling market. Suppliers faced added hardships of reduced orders as vehicle production was cut by automakers starting roughly in September 2008. Industry analysts estimated that suppliers were running at only about 55 percent capacity in 2009, which was about the breakeven point for many.

The impact of the recession and decreased automotive sales that began in late 2008 had vehicle makers making drastic cutbacks, job reductions, and restructuring. Automakers delayed payments to suppliers, while suppliers, struggling to meet their own financial obligations, found little help from the credit markets. Chrysler and GM requested billions from the Federal Government to stay afloat. The loss of one of these automakers would have hurt the U.S. economy further and would have been disastrous to automakers and the automotive supply chain. The supply chain is interwoven with many suppliers serving several automakers and OE suppliers. For example, over 51 percent of Ford’s suppliers also supply GM.

The automotive market did improve in 2010, but it will be years, if ever, before the automotive industry returns to levels of the past decade. Industry analysts forecast that the retail market for vehicles will go up about one million units and we are seeing signs that more credit has been made available during 2011.

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 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 assembly of the motor vehicle.

Overview of Industry Market Conditions

The U.S. auto industry is a key component of the nation's manufacturing base. In a typical year, it accounts for about five percent of GDP and 16 percent of all durable goods shipments. The automotive industry, including the automakers and automotive parts sectors, accounted for about 674,000 U.S. employees in 2010, a slight increase of 1.5 percent from 664,200 in 2009,[2] and accounted for 5.8 percent of all U.S. manufacturing employees.

While trying to work more collaboratively with suppliers, automakers put pressure on them by seeking price concessions and tasking their suppliers to take on more research, design and manufacturing responsibilities, and by absorbing the higher costs for their inputs. Suppliers that survived 2009 slashed costs by cutting capacity, laying off workers, and restructuring financially. The Original Equipment Suppliers Association (OESA) reported that the automotive supply sector was operating at about 55 percent capacity utilization. This is an improvement over the 45 percent capacity utilization in early 2009, but far from the 80 percent historically needed for profitability.[3]

As vehicle sales rebounded and suppliers started to realize some profit from their cost cutting efforts, the auto makers have started to pressure suppliers to cut prices. Industry analysts forecast "severe" pricing pressure and shrinking margins globally for suppliers in 2011.[4] Those suppliers that remained financially healthy during the downturn are likely to face increased pressure, while those suppliers that struggled may experience less pressure to cut prices. In 2010, the market for original equipment in the United States was $141.5 billion, up 36.5 percent from 2009, with the increase in vehicle production.

Pressure was further exacerbated by global competition in the parts industry. As Japanese, German, and Korean-based vehicle manufacturers gained shares of the U.S. market, they maintained relationships with their traditional supplier base. Many of those home market suppliers created or expanded "transplant" capacity in the United States to meet their traditional automaker's production needs. At the same time those transplant suppliers aggressively sought business from the Detroit 3. In addition, suppliers in many

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[2] Bureau of Labor Statistics data using NAICS 3361, 3362, and 3363. http://data.bls.gov/PDQ/outside.jsp?survey=ce
[3] *Ward's Automotive Reports*, 1/25/10, p. 3.
[4] Walsh, Dustin, "Suppliers Back in Price Vise," *Automotive News*, 12/6/10.

lower cost markets improved their quality and became capable of supplying even greater shares of U.S. demand from abroad. The Detroit 3 also advocated that U.S.-based suppliers move production to lower cost countries or risk losing future contracts.

To survive, many domestic parts manufacturers had to adapt to these numerous challenges. Some suppliers willingly took on the new responsibilities offered to them by automakers. Some transformed 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 assumed both product design and development responsibilities, and down stream supply chain management functions previously undertaken by the automakers.

Most U.S. suppliers are ill-situated to withstand major disruptions to their sales and the impact upon suppliers when an automaker 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.

A survey of suppliers taken in September 2010, revealed suppliers' profit margins, before interest and taxes, would be around 6 percent in 2010. The increase was credited to strong auto markets in China, Brazil, and India, and a 'partial recovery' in North America, Europe, and Asia. Still there was skepticism about whether the demand was going to be sustained, resulting in reluctance of suppliers to expand production and investment and hire back workers.[5] The result has been some temporary supply shortages, for example microchips and some plastic resins, as vehicle production increased. Supply shortage is still a possibility as vehicle production increases. This situation to fulfill demand could drive further consolidation and acquisitions to improve suppliers' competitive positions. The parts shortage is most acute among Tier 2 and Tier 3 suppliers that were forced to downsize and were unable or unwilling to secure financing for expansion.

Dramatic growth in China, India, and other Asian economies, has also led to increased costs for critical raw materials. Demand in the developing world, primarily China, has been a major driver behind increasing raw materials and energy commodity prices.

Financial pressures from higher raw material prices have been affecting ties between suppliers and automakers, and between higher tier suppliers and their lower tier suppliers. Automakers are increasingly allowing material cost pass-throughs from suppliers, usually on a case-by-case basis, if the supplier can prove extraordinary pressures because of raw material costs and demonstrate efforts to keep costs down. Suppliers are concerned as the market rebounds that prices for raw materials will also increase. An example is the price of thermoplastic used in automotive manufacturing which increased 16 percent from January 2010 to December 2010.

Steel makers are seeking to insulate themselves from fluctuating costs of their own raw materials. Iron ore prices went from $60 a ton in 2009 to $180 a ton in April 2010,

[5] Automotive News, "Surveys of Suppliers find Hefty Profits, Rosy Outlook," by Mike Colias, p. 20.

settling at $140 a ton in August. Steel makers seek more flexibility to set prices based on inputs or seek shorter term contracts with the auto industry, offering an adjustable-rate contract with relatively low prices or a fixed-rate contract with higher prices. North American auto makers tend to buy most of their steel from five companies: ArcelorMittal, United States Steel Corp., OAO Severstal, AK Steel, and ThyssenKrupp AG.

Rare earth materials are also a growing concern of the automotive industry. For example, China controls the supply of many rare earth metals. Demand is increasing in the automotive industry in part because of the increase in hybrid and advanced technology vehicles that use rare earth materials in batteries and electronics. China has been controlling the mining, cutting back on exports, and increasing export fees of many of these critical rare earth materials. This is encouraging competitors to seek alternatives to rare earth materials and will be an area to watch over the coming years.

Many analysts and industry members expect the North American industry restructuring to continue during 2011 and into 2012, so the pressures driving industry consolidation will remain for some time. Industry analysts predict that at least 500 of the remaining 5,000 or so U.S. automotive suppliers will fail in the next few years.[6] The continued pressure is forcing automotive suppliers to seek work in alternative fields including military, space and wind energy. While many have not been able to find sufficient work to keep their doors open, the increasing diversification of those successful combined with an improving automotive market, lower or steady raw materials costs and improved fundamentals at GM, Ford, and Chrysler should help to slow market share loss. It is an industry consolidation that has cut the number of U.S. automotive suppliers by roughly one-half since 2000 and about five-sixths since 1990. Some automakers are slashing their suppliers to only 300-600 per vehicle, down from what had been typically 1,000 per vehicle.

As a result, the global supplier segment saw almost 300 mergers and acquisitions in 2010;[7] the previous high was 275 in 2007. Access to capital has improved and larger suppliers and private equity firms are seeking to increase and strengthen their core areas as auto makers demand greater scale globally. Also, prospective sellers want to unload their non-core or low-margin businesses while improving their position by divesting assets. U.S. and Japanese suppliers that are not part of the Toyota Group will be the most vulnerable to acquisition and Chinese and Indian suppliers will also be acquiring businesses for their technical know-how.[8]

The pressure for consolidation may decline, but it will not end. Improving production efficiency alone will continue to require fewer producers for the same level of industrial output. Unit sales will have to continually rise to accept the added output or the pressure to combine or reduce suppliers will increase. Chinese and Indian-based automotive

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[6] "Auto Parts Makers Change Tack, Seek Fair Winds: Firms Struggling On Clean Energy, Defense Contracts," by Dana Hedgpeth, Washington Post, August 13, 2009
[7] Colias, Mike, "Report: Global Suppliers are poised for M&A Binge," Automotive News, 10/18/10, p. 16.
[8] Ibid.

manufacturers will also compete for U.S. market share as will parts makers from these markets. Any share they gain will come at the expense of current market participants. The pressure for consolidation will be particularly acute for companies competing in commodity markets without technical advantages or intellectual property to provide them with pricing relief against their peers.

Several suppliers noticed an increase in access to capital with the rebound in auto sales in 2010. Many suppliers took advantage of low interest rates to cut debt servicing costs, improving their cash positions and giving them more time on their debt deadlines. A new federal small-business lending law created a $30 billion government fund that will be available to community banks to lend to small businesses. Smaller suppliers have longer production schedules than other small enterprises and need working capital as they try to get production lines ready for programs that will be launched 12 or 18 months from now.[9]

Economic Indicators

Historically, the automotive sector closely tracks general economic indicators, in part because the automotive sector is a major component of these indicators (Charts 1 and 2). There was some rebound of the automotive industry in 2010 following a recession in 2009. Although the recession officially ended in July/August 2009, the U.S. economy remained weak.

Total U.S. production of light vehicles was 7.6 million units in 2010, an increase of 36 percent from the reduced levels of 2009. The record high production of light vehicles was in 1999 with 12.6 million units. Production increased slightly at the end of 2009, following the government's Cash-for-Clunkers program. The slight production increase boded well for 2010. Sales of passenger cars and light trucks in 2010 increased 11.1 percent to 11.5 million units, up from 10.4 million in 2009.

Trends in the automotive parts industry follow the motor vehicle industry. There is a perception that 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 increases. On the other hand, some industry analysts suggest that this relationship is not always correct, as consumers will also tend to delay all but essential repairs during a recession; particularly deep recessions like this past year. The aftermarket was fairly flat in 2009, but fared better than the OE market. However, the aftermarket remained fairly flat in 2010, while the OE market saw significant growth with the increase in vehicle production. The durability of parts has increased over time which results in less need for repairs. This trend has been heightened by increased imports of aftermarket parts including many counterfeits from low cost countries further eroding the aftermarket for U.S.-based OE producers. Therefore, declines in OE parts production and sales may no longer be substantially offset by increases in the demand for aftermarket parts.

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[9] Automotive News, "Cheaper Financing Helps Suppliers Fortify Balance Sheets," by Mike Colias, October 11, 2010.

According to the most recent Annual Survey of Manufacturers (with the latest data available through 2009), auto parts industry shipments were $140 billion, accounting for about 3 percent of the total U.S. manufacturing shipments (Tables 1 and 2). This is one of the highest shares of any single U.S. industrial sector. Industry employment in 2009 accounted for 4.0 percent of total manufacturing employment. The U.S. automotive parts industry was also one of the largest U.S. exporters, accounting for 4.6 percent of total U.S. goods exports in 2010 (Table 3).

OESA estimated that the worldwide market for OE automotive parts decreased to $695 billion in 2009 (Table 4). The North American market accounted for $119 billion, or 17 percent of the global demand. The North American parts content of vehicles was estimated to be $13,900[10]. OESA also estimated that in 2009 Europe accounted for $204 billion worth of OE parts; China $123 billion; and Japan and Korea $136 billion.

Automotive Parts Market

Original Equipment (OE) Sector

DesRosiers, an automotive consulting firm, reported that the U.S. market for OE parts improved 36.5 percent in 2010 to $141.5 billion, from $103.7 billion in 2009 (Table 5, Charts 3 and 4). The OE parts market also increased 26.4 percent in Canada in 2010 to $37.4 billion, and increased 48.1 percent in Mexico to $42.8 billion. The North American OE parts market was up 36.7 percent from $162.1 billion in 2009 to $221.6 billion in 2010.[11]

Globally, the top 100 OE suppliers recorded $474.8 billion in sales in 2009, a decrease of 19.3 percent from $588 billion in sales they had in 2008 (Table 7, Charts 8 and 9). The top 10 global OE suppliers saw a 20.8 percent decrease in sales to $173.4 billion in 2009 down from their sales of $218.9 billion in 2008. Denso edged out Robert Bosch Gmbh as the leading global OE supplier with $28.7 billion in OE sales over Bosch's $25.6 billion. Only two U.S. suppliers were among the top 10 global OE suppliers in 2009: Johnson Controls and Delphi. Johnson Control's global OE sales were down 33 percent in 2009 to $12.8 billion and Delphi was down 34.9 percent from 2008, with $11.8 billion in OE sales. Most suppliers saw sales drop in 2009 with the global recession and decrease in vehicle production and sales. The global recovery from the recession and increase in vehicle production and sales in 2010 should result in an increase in global OE sales for suppliers, especially large suppliers with close ties to auto makers.

Growth for the majority of suppliers dependent mainly upon mature markets has stalled according to an analysis by PriceWaterhouseCoopers.[12] The analysis observed that suppliers "strategically entering emerging markets to improve both their cost position and diversify away from traditional customers have tended to generate above average operating income growth despite strong home market headwinds."

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[10] Merrill Lynch estimate via OESA.
[11] "Year in Review: Parts Market in North America," DesRosiers analysis email, 2/23/11.
[12] PWC Automotive Institute's Analyst Note, PriceWaterhouseCoopers, 8/1/07.

Because of the 36 percent increase in vehicle production in the United States, OE parts experienced a similar increase in sales volume in 2010. OE sales by value are more affected when there is a shift from higher-content value SUVs to lower-content value small passenger cars. OE parts demand in 2009 was down to lows not seen since 1993 ($164 billion) in current dollars, or if the market demand is adjusted for inflation in constant dollars not seen since the 1950's.[13]

Competition was also growing as foreign suppliers opened shop in North America. An estimated 800-1,000 suppliers from overseas built plants in North America in the past 20 years, creating a mass global "localization" of the supplier sector.[14] 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. However, Japanese suppliers are not immune either. Suppliers in North America all face competition, historically high material costs, and demanding customers, although the foreign suppliers face fewer legacy costs and so tend to operate more efficiently than their U.S. counterparts.

Automakers, such as Ford, are attempting to design global platforms allowing the vehicle to be made in Asia, Europe and North America using the same platform. Global platforms reduce engineering costs, simplify manufacturing processes, and improve quality by reducing variability. Other efficiencies gained by the volume of the shared platform include working closer with suppliers from the design of parts to the production of the car which will cut component cost and retail price. For example, the Ford Focus will use 80 percent common parts and 75 percent of the same supply base. Large regional suppliers are a shrinking part of the market.

Foreign-affiliated suppliers have made significant inroads into the U.S. market through acquisitions, sales to transplant automakers, and sales to the Detroit 3. Moreover, transplant vehicle production in the United States grew significantly, from only 2.6 million light vehicles in 1999 to just over 4 million units in 2007, and to 3.4 million units in 2010.

The Detroit 3 have continued to purchase more foreign-based supplier components. For example, Siemens, a German supplier, which had no share of audio systems in North America in 2003, had grown to 25 percent share by 2005. Also, Denso Corporation, now the largest supplier in the world, reported that its sales to the Detroit 3 were rising and that the North America market represented about 40 percent of its total sales, while Toyota accounted for another 40 percent of Denso's business in North America.[15] In August 2008, Chrysler named Denso Corporation as its first "Supplier of Choice." This means Denso is the default supplier with whom other suppliers must compete to win contracts, and Denso will not have to compete to keep current orders.

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[13] "*NA* Outlook for Sales and Production and OE Parts Demand," DesRosiers analysis email, 1/23/09..
[14] "Size of the parts market in North America," DesRosiers analysis email, 1/19/2007.
[15] Denso is a member of the Toyota group with Toyota owning 22.9 percent of Denso. Denso expected double-digit growth between 2007-2012 in North America.

The effect of the foreign-based suppliers' increased production within the North American market is also affecting the North American content of vehicles. In fact, 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 independent aftermarket experienced a sales boom after 1,160 dealerships closed in 2009. It was estimated that more than $7 billion in 2009 parts and services would be redirected to independent service outlets and auto parts stores and non-OE auto parts distributors as dealers closed shop.[16] Independent garages employed an estimated 332,262 individuals. It is estimated that 70 percent (176 million) of out-of-warranty vehicles are repaired at independent shops.

The perception that a weak economy favors the aftermarket appears to be holding for the short-term. Cost-awareness amongst automobile consumers has led many to invest in servicing and repairs of their vehicles rather than purchasing a new one because of the effect of the weakened global economy. The aftermarket (parts and services) is estimated to be a nearly $200 billion industry and has benefited as consumers defer new vehicle purchases because of uncertainty about their jobs, housing market, and availability of disposable income. Still, even the aftermarket is not immune to the state of the economy.

While the recession boosted the aftermarket's financial viability in the short-term, not all long-term indicators are promising. Mergers and acquisition activity in the aftermarket was down in 2008 because of tight credit markets and diminishment in earnings and revenue in the industry. Recent merger and acquisition activity was centered on "distressed deals," where companies sell or merge because of desperation rather than growth potential.

The size of the U.S. automotive aftermarket, including the service sector, is estimated to be about $190 billion in 2010 and forecasted to reach $196 billion in 2011. It was $187.9 billion in 2009, up slightly (0.8%) from 2008 (Table 6).

Focusing solely on the parts portion of the market, the North American aftermarket parts sector was worth $72.7 billion in 2010 in wholesale dollars at manufacturers' level, down slightly (-1.0 percent) from 2009.[17] The aftermarket parts market in North America slowly, but steadily increased from 2000, when the market was $62.4 billion, to $74.6 billion in 2007. Between 2008-2010, the North American aftermarket parts market has been flat at about $73 billion each year. DesRosiers wrote that the aftermarket parts

[16] Lang Marketing, Globe Newswire, 3/17/09.
[17] DesRosiers, Dennis. "Year in Review – Part 33 – OE and Aftermarket Parts Market to 2010," Analysis email, 2/23/11. Wholesale Dollars are what wholesaler pay for parts, not the consumer and excludes the service labor in a job.

market does not have the "cyclical ups and downs of the OE parts market, but it is also not growing very rapidly."[18]

The automotive aftermarket sector does not encounter the same price and cost cut pressures from automakers that the OE supply chain faces, but the sector is still affected by the overall state of the economy. Factors influencing the health of the aftermarket sector industry include: the number of vehicles reaching prime aftermarket age (about eight years); the cost of fuel; the amount of unperformed maintenance; and the ability to get or keep used cars in circulation. In 1996, there were a total of 198 million vehicles in operation in the United States. By 2009, that number had grown to over 239 and more vehicles "came of age" needing more repairs. In the longer term, the number of cars sold was only 11.5 million in 2010, down from 17 million a few years ago. This means that in the aftermarket's sweet spot of 5-7 years, after the warranty expires, there will eventually be fewer cars needing service. 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, however this has little effect on the parts sold.

The average vehicle age of light vehicles held steady at 9.2 years in 2009.[19] In 2009, the percentage of cars 11 years old or older was 40.5 percent compared with 41.6 percent in 2008.[20] The percentage of vehicles between 6-10 years rose from 29 percent in 2008 to 31.5 percent in 2009. This increase may be because of the high sales rates seen in the earlier part of the decade. The older fleet reflects improved overall vehicle durability. Despite improved durability per unit, increased vehicle lifespan provides a market for replacement aftermarket parts such as struts, exhaust systems, water pumps and alternators, as well as performance and styling products. This increased fleet age offers increased aftermarket sales which offsets to some degree the lower parts replacement rate due to increasing new vehicle quality and reliability. Other factors tend to counteract this effect.

Sustained periods of gasoline costs over $4 per gallon could result in uncertainty for the consumer, reduced miles driven, and prolonged periods of deferrals of automotive services. The fewer miles driven also reduce wear, leading to less maintenance. The U.S. Department of Transportation, Federal Highway Administration, found Americans drove 6.6 billion miles more in 2009 than in 2008, an increase of 0.2 percent.
In addition, according to *Aftermarket Business*, many consumers no longer judge replacement/aftermarket parts on anything other than form, fit, and function, since quality parts can and do come from everywhere. No longer is the "Made in America" mark considered an indication of better quality over parts from other countries. Moreover, other countries are producing quality parts at lower prices. This shift in acceptance of foreign parts has been fueled by general U.S. consumer acceptance of foreign-made items and has led to China and India's success in entering the American aftermarket.[21] A

[18] DesRosiers, Dennis. "Year in Review – Part 33 – OE and Aftermarket Parts Market to 2010," Analysis email, 2/23/11.
[19] AASA *Automotive Aftermarket Status Report 2011-2012*, p. 18, citing R.L. Polk & Co. data.
[20] AASA *Automotive Aftermarket Status Report 2011-2012*, p. 17, citing R.L. Polk & Co. data.
[21] Ross, Sativa, "Staring Down Commoditization," *Aftermarket Business*, 12/05.

potential challenge to the independent aftermarket is getting repair information so that shops can compete with OE dealers and shops. Aftermarket participants have complained that several vehicle manufacturers unduly restrict the ability of independent service channels to repair their vehicles by limited access to needed repair information. They complain that key information is restricted to the vehicle manufacturer's dealership networks. The automakers contend that some of this technical information is intellectual property that needs to be protected from competition.

Aftermarket suppliers do need to be able to keep up with new technology. Some industry consultants speculated that higher fuel prices could be an opportunity for aftermarket suppliers by providing incentive to purchase fuel-efficiency technologies, and keeping vehicles maintained for better fuel efficiency. The specialty equipment segment of the aftermarket (products that are not purchased out of necessity, but rather out of choice) has been a traditional bright spot in the automotive parts industry. The specialty-equipment industry grew to $28.8 billion in 2010. This is a 2 percent growth from 2009 and the first increase since the start of the recession. This segment saw growth rates averaging nearly 8 percent annually for the 10 years leading up to 2008, while the total automotive aftermarket grew at an average rate of 4.1 percent, according to the Specialty Equipment Market Association (SEMA).[22] The specialty equipment market includes products used to modify the performance, appearance, and/or handling of vehicles. However, as consumers feel an economic pinch they are likely to focus on necessary replacements over specialty equipment.

As hybrids become more popular, industry analysts predict growth in styling and accessory products (specialty equipment) that will make hybrids look, function and perform better. Analysts believe consumers will also want more environmentally friendly equipment. The key will be to provide a benefit without compromising fuel economy.

Remanufacturing

The remanufactured automotive parts industry is estimated to be roughly an $85-100 billion industry worldwide. Based on estimates by the Automotive Parts Remanufacturers Association (APRA), the value of remanufactured parts was about $40 billion in the United States in 2010. Around 2,000-3,000 remanufactured automotive parts companies operate in the United States, including approximately 150 light vehicle engine remanufacturers, ranging from large assembly line operations to very small companies with two or three employees. Many heavy duty engine remanufacturers are owned by the OE companies.

The remanufacturing industry produces goods that are partially comprised of components recovered from end-of-life products combined with new components in place of certain worn or damaged parts that are no longer useable. The process transforms the recovered and new components into "like-new" goods**.** This reuse of inputs yields important economic and environmental benefits. Remanufactured goods generally have the

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[22] *SEMA NEWS*, June 2007, p. 47 and *SEMA News*, June 2008, p. 31.

appearance, performance, and life expectancy of new goods. They often meet the same performance requirements as, and enjoy warranties similar or identical to, equivalent new goods (original equipment parts). In short, remanufactured products are intended to be identical to and indistinguishable from products manufactured entirely from raw materials, new parts or components. Some remanufactured parts are actually better than the OE parts because they may incorporate improvements beyond the original part.

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**,** uses less energy and reduces harmful emissions when compared to manufacturing a new part. Remanufacturing saves on new raw material inputs and on energy use because the parts of the recovered goods that are reused 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, contributing to the sustainability of the manufacturing process. These savings can result in lower product prices for consumers and higher margins for producers and retailers.

During most of 2000-2008, domestic demand for remanufactured automotive parts in the United States began to slow due to original equipment parts lasting longer and competition from low cost new parts imported primarily from China. However, the APRA believes (total data is not available) the U.S. remanufacturing industry grew somewhat in 2009 due to the drop in new vehicle sales, when consumers kept their vehicles longer and these vehicles needed additional repairs. In 2010, even though the new vehicle market began to recover, the average age of vehicles continued upward, likely causing a small growth in the remanufactured industry.

U.S. parts remanufacturers continue to increase their presence overseas. Several have completed purchases of foreign remanufacturers, especially in the European Union. Cardone, based in Philadelphia and the largest privately owned parts remanufacturer in the world, recently acquired three Remy Automotive Europe plants in the United Kingdom. Caterpillar, the largest remanufacturer in the world, continues its growth, especially in the Far East.

However, many countries limit trade in remanufactured products. Such barriers include outright trade bans, higher tariffs and fees, or stringent regulation, certification, and inspection requirements. Many of these barriers exist because countries associate remanufactured goods with used goods and waste. These barriers can also be an excuse to protect inefficient domestic firms, which is more often the case. The U.S. government has been working with industry to address the barriers to trade in remanufacturing through individual country agreements specifically addressing limits on remanufactured parts, our free trade agreement negotiations, and the WTO Doha Round.

Two countries of particular interest are China and India; both prohibit imports of remanufactured auto parts. Although China allows some used parts into the country for remanufacturing, the newly remanufactured part must be re-exported and cannot be sold in China. India basically allows no cores (a product at the end of its life or lease cycle) for remanufacturing to be imported. The U.S. Government is currently negotiating with both countries to attempt to change their policies and allow both cores and fully remanufactured parts into the two countries.

Employment Trends

In its January 2007, report, *Contribution of the Motor Vehicle Supplier Sector to the Economies of the United States and Its 50 States*, the Center for Automotive Research (CAR), 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.

OESA estimated 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. There are now roughly 5,000, each enjoying significantly higher sales volumes, but likely to require significantly fewer total employees.[23] The global economic slump in 2009 hastened and expanded these declines.

The Bureau of Labor Statistics (BLS), U.S. Department of Labor, reported that employment in the automotive parts industry was at 462,300 jobs in 2010 (Table 10 and Chart 10). This is a decline of 0.5 percent from the 464,400 jobs in 2009. However, the job loss has leveled off from a decline of 23.1 percent in 2009 compared to 2008. The last time the number of jobs increased in the automotive parts industry occurred in 2000, when employment grew 0.3 percent to 921,300.

U.S. auto parts makers have cut more than four times as many manufacturing jobs as the automakers during the past six years and that trend is expected to continue. Many Japanese, German, and Korean suppliers have established manufacturing facilities in the United States that employ a large number of production workers. Still, for each employee added to these foreign transplants over the past 14 years, U.S. automotive companies have let go 6.1 employees.[24]

According to the U.S. Bureau of Labor Statistics, less than eight percent of the nation's private work force was unionized at the end of 2009. 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 United Auto Workers (UAW) had approximately 355,000 active members at the end of 2010, 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,

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[23] *An Odyssey of the Auto Industry*, presented before the SAE World Congress on March 8, 2004 and McCracken, Jeffery, "Battered Auto-Parts Makers Could Face More Pain," *Wall Street Journal*, 8/13/07, p. A3 and "Auto Parts Makers Change Tack, Seek Fair Winds: Firms Struggling On Clean Energy, Defense Contracts," by Dana Hedgpeth, Washington Post, August 13, 2009.
[24] "Import Brands Add As Detroit 3 Subtract," *Automotive News*, 11/26/07, p. 34.

but it also reflects reluctance on the part of blue-collar workers to vote for union representation, especially in the new Southern auto transplants and U.S.-owned parts companies. More than 50,000 UAW workers have accepted early retirement since 2007. Industry experts expect that union membership will stabilize or even increase somewhat as the auto parts and assembly industry begins hiring again due to the recovery of the U.S. market.

Many suppliers have negotiated or re-negotiated contracts with unions (primarily the UAW) in efforts to cut back on health care, pension, and labor costs. UAW leaders realized that prospects of even maintaining current pay and benefit levels were dim because so many large suppliers were in Chapter 11 or had recently emerged from Chapter 11. Thus, suppliers were able to lower wages and cut back or eliminate other union costs. For example, Delphi and Visteon negotiated changes with the UAW that lowered retirees' health care benefits and increased health care costs for working UAW members.

Late in 2007, GM, Ford, and Chrysler negotiated new contracts with the UAW, decreasing benefits for current and future employees and also lowering retiree benefits. On March 9, 2009, Ford UAW members approved additional changes to the 2007 contract. The changes include fewer holidays, eliminating the jobs bank, and most importantly, changes to the Voluntary Employees Beneficiary Association (VEBA). Similar changes were approved by GM and Chrysler UAW workers during bankruptcy proceedings. Also included in the new GM and Chrysler agreements were a no strike clause until 2015, one less holiday, and fewer job classifications.

In March 2009, Delphi eliminated health care for salaried retired workers, and its decision was upheld by the court. In December 2009, a bankruptcy judge ruled Visteon had permission to eliminate health care benefits for most of its retirees. In addition, Visteon received permission to cut company-paid medical, prescription and life insurance coverage to 6,550 current and future employees, as well as their spouses and dependents. In July 2009, Dana, one of the largest U.S.-owned parts companies, entered into an agreement with the UAW and the United Steel Workers to set up a Voluntary Employees Beneficiary Association (VEBA); similar to those agreed upon with the Detroit 3 in 2007.

In June 2010, the UAW elected a new president to replace the retiring Ron Gettelfinger. Bob King, former head of UAW bargaining at Ford, will serve one term since he has to retire after his first term when he will have reached 65. Mr. King will head final negotiations in 2011 when all of the Detroit 3 contracts expire and also participate in any UAW contracts with the U.S. parts companies.

In March 2011, members of the UAW working for auto parts manufacturer Dana approved a three year contract covering 2,500 workers in 13 plants. Under the terms of the new contract the workers will receive an increase in pay and participate in a profit-sharing plan. The Dana contract may have set a precedent for future contracts for UAW auto parts workers in other U.S. plants, reversing the trends of 2009-2010.

Leading Industry Stories of 2010

Visteon Bankruptcy Comes to an End

After 16 months in bankruptcy, Visteon was able to exit in October 2010. Once the 2nd largest U.S. supplier, Visteon was created when it was spun off from Ford in 2000. In 2005, Visteon returned 23 plants and offices to Ford in an effort to reduce high labor costs by shedding responsibility for 18,000 UAW workers. Visteon's legacy costs of high labor costs hurt the company. It was able to lower its average hourly wage to $18 from $38. Between 2006 and 2008, Visteon divested or closed 30 factories or units and decreased its reliance on Ford to 28 percent in 2009. In 2000, Ford accounted for 88 percent of Visteon's revenue.

Visteon filed for Chapter 11 in May 2009, citing the faltering economy and poor auto sales. A couple groups of shareholders representing about 12 percent of the company's stocks sought to revise Visteon's restructuring plan, arguing that the company was far more valuable, especially its foreign assets, than it acknowledged. Visteon proposed giving unsecured creditors 20-50 percent of what they owed and allowing bondholders to buy $1.25 billion in stock which would be used to pay secured lenders. The court sided with Visteon, giving Visteon the exclusive right to negotiate an exit strategy and denying shareholders the right to propose their own plan which would leave the company with more debt after bankruptcy.

Johnson Controls also expressed an interest in acquiring Visteon. It offered $1.25 billion, but Visteon rejected the bid, preferring to stick to its own plan for emerging from bankruptcy.

Visteon tried to cut health benefits to thousands of retirees, saying the benefits cost $30 million annually. However, the court ordered Visteon to reinstate the benefits and put emergence from bankruptcy at risk. Visteon was able to reduce its debt by about $2.1 billon, to $600 million when Visteon exited bankruptcy. Ford agreed to waive $160 million in claims against its former parts unit, including obligations to pay certain pension and retiree benefits costs, committed to contracts worth $600 million with Visteon through 2013, and will pay Visteon $29 million for restructuring costs. Additionally, more than 40 bondholders agreed to invest $300 million in Visteon and buy $950 million of new shares.

Visteon makes heating and air-conditioning systems, door panels, and engine-cooling systems. It had sales of $6.69 billion in 2009, down 66 percent from its peak year of 2000. It has one remaining factory in the United States – a climate parts plant in Shorter, Alabama with 300 workers. Its headquarters in Michigan has 1,200 employees. Visteon also has a plant in Canada and six in Mexico. It now has 62 factories in 27 countries and employs about 26,000, compared with 82,000 in 1998.

Many suppliers have gone through Chapter 11 bankruptcy, including Delphi, Lear, Federal-Mogul, and Dana. There has been a more tolerant view of bankruptcy in the automotive industry. But, there is no guarantee that a post-bankruptcy company will regain its stature after reorganization. Bankruptcy is not advisable to firms that want to just reduce debt. Companies are putting their future in the hands of a bankruptcy judge, risking healthy assets that can be sold to new companies, encountering high fees, and disclosing proprietary information. Several suppliers have come through bankruptcy successfully, including Delphi, Lear, and Dana, while other suppliers, such as Diamond Glass and Noble International, ended up liquidated.

Other Industry Developments

Counterfeiting

Counterfeiting continues to be a major issue for the automotive parts industry, particularly for the aftermarket sector. The U.S. Federal Trade Commission in 1997 estimated that counterfeit automobile parts cost the American automotive supplier industry $12 billion annually worldwide, including $3 billion in the United States alone. Despite ongoing anti-counterfeiting efforts worldwide, the problem has significantly grown, with Frost & Sullivan estimating that auto suppliers will lose an estimated $45 billion worldwide in 2011 to counterfeiting. The parts that tend to be counterfeited the most are frequently replaced parts, such as brake pads and various types of filters. China is often cited as the major source of counterfeit auto parts. Taiwan, Thailand, India, Japan, and Malaysia are additional problem areas. Automotive-related counterfeiting takes jobs and money away from legitimate companies, jeopardizes public safety, tarnishes brand names, and increases costs related to warranty claims, investigations, legal fees, and preventative measures.

The U.S. auto parts companies support efforts to address counterfeiting and intellectual property-related issues in the United States. In March 2006, the U.S. government enacted the “Stop Counterfeiting in Manufactured Goods Act,” which strengthens previous U.S. trademark laws by prohibiting the trafficking of counterfeit labels, packaging, patches and medallions, and requiring the destruction of equipment used to make counterfeit goods. In October 2008, the “PRO-IP Act of 2007” increased both civil and criminal penalties for trademark and copyright infringement.

The auto parts industry is also supportive of the Anti-Counterfeiting Trade Agreement (ACTA) to address global counterfeiting and piracy issues and improve enforcement of intellectual property rights. The parties to the ACTA negotiations include the United States, Australia, Canada, the European Union, Japan, Korea, Mexico, Morocco, New Zealand, Singapore, and Switzerland. The text of the agreement was finalized by participants in November 2010, and is currently open for signature by the participants.

Advanced and Alternative Fuel Technologies

Over the past five years, the U.S. Federal Government has created mandates and incentives to help address energy security and environmental issues deriving from reliance on petroleum-based fuels. Some of these changes offer opportunities to automotive parts firms selling to the U.S. market.

Companies such as Bosch and Borg Warner, who offer advanced engine technologies including fuel injection pumps and nozzles or turbochargers, are benefiting from the rising CAFE requirements. BorgWarner expects to net $2.3 billion of new business through 2013. The firm projects that 77 percent of its new business will come from advanced engine technologies such as turbochargers, fuel injection units and variable timing systems. Ford has committed to roll out its direct injection, turbo, variable valve "Ecoboost" engines to 90 percent of its vehicle lineup by 2013. Volkswagen, BMW, and Mercedes are fortifying their U.S. product lineups by making advanced diesels available on more models and working to dispel negative consumer perceptions of these vehicles in the United States. Firms who offer technologies for these advanced engines are benefiting.

The same types of market opportunities exist for firms making efficient accessories such as electric power steering or high efficiency air conditioners. Electrification of hydraulic or mechanically driven systems enables use of variable speed electric motors to reduce energy losses. These types of accessories are also needed for hybrid vehicles which shut off their engines. Electrically driven water, oil and transmission pumps enable those devices to function with the engine off. This ability is even more important for plug-in vehicles where energy storage is a problem and there is no engine to power these mechanical systems. Firms such as Delphi, Denso, and Halla are offering high efficiency accessories. Even traditionally unpowered components could end up providing extra energy. Levant Power is trying to commercialize electricity generating shocks. The shocks can improve fuel economy by up to 6 percent on rough roads. Given the high priority being given to increased economy, the company may find interested buyers.

Vehicle manufacturers are also spending a lot of money on improving their transmissions. Many of the new transmissions have six or more gears or are infinitely variable over a certain range. Doing so allows the engine to run in its most efficient range over longer periods of operation - greatly increasing efficiency. Companies like Getrag, Borg Warner, and ZF are seeing increased sales of their dual clutch automated transmissions. These transmissions increase efficiency by substituting two clutches for the torque converter in a regular automatic. Borg Warner expects over $525 million in new business from its advanced transmissions over the next 2 years.

All firms are making significant investments in engineering their vehicles for reduced weight. Reducing vehicle weight enables lower power levels to achieve the same performance. The amount of energy needed to move the vehicles is lowered, allowing smaller engines or fewer batteries, and thereby helping to reduce costs. Firms such as U.S. Steel are selling high strength metals that allow automakers to reduce component size and therefore weight. These materials are making gains in automobile content while the proportion of traditional steel is declining. Aluminum with its high strength and low weight is also increasingly being used. Firms specializing in advanced composites are seeing increased sales. BMW and the SGL Group are building a carbon fiber manufacturing plant in Moses Lake, Washington to supply parts for the pending BMW Megacity electric vehicle. The search for weight reduction includes all parts of the vehicle. Lear has developed “The Evolution Seat,” a new seat system that includes seven patented technologies. While maintaining comparable strength and safety, the new system reduces weight by up to 25 pounds versus a conventional seat.

GM is strengthening its product lineup by reintroducing the “electric vehicle” with its plug-in hybrid Volt. Nissan is also introducing an electric vehicle to enhance its vehicle mix with its fully electric Leaf. Toyota continues to follow through on plans to make hybrids available across its fleet by introducing a complete Prius lineup. Competition in the hybrid realm continues to heat up as Korean-based firms Hyundai and Kia have their hybrids entering the fray. All of these technologies require significant production of batteries, motors and controls. Sanyo, the maker of batteries for Ford and Honda hybrids, is targeting a tenfold increase in advanced battery production over the next five years and intends to halve its production costs.

U.S. firms have been leading the development of advanced battery technologies for decades. U.S. firms such as Envia Systems, in Newark, California or ActaCell of Austin, Texas, and A123 Systems of Waltham, Massachusetts are among the many firms currently commercializing advanced battery technology developed in the United States. Despite the strong U.S. research and development presence, until recently, the production of these technologies has occurred in Asia. Now, increasing demand for plug-in and hybrid vehicles combined with Federal and State level incentives is leading to significant investments in U.S. advanced battery production.

For instance, A123 Systems used a $249 million grant from the U.S. Department of Energy’s (DOE) Electric Drive Vehicle Battery and Component Manufacturing Initiative combined with incentives from the State of Michigan to help fund its new plant in Livonia, Michigan. It is aiming its new production capacity at the burgeoning plug-in and hybrid vehicle market. It isn't just U.S. firms that are adding capacity in the U.S. market. Johnson Controls with its French partner Saft, as well as Korean-based firm LG Chem, have added or are in the process of adding U.S. production capacity.

The same types of investments are occurring with electric motor and controls. Firms such as Remy, Delphi, and UQM Technologies are either increasing current production capacity or adding new capacity to service the hybrid and plug-in vehicle market. Many of these firms are also taking advantage of similar, if not the same, Federal and State incentives available to battery producers. All of these investments will have large impacts on future production since they create a domestic supply chain for future U.S. production of these vehicles.

Among the many mandates and incentives, U.S. biofuel mandates have had little impact on the automotive parts industry. While the Detroit 3 remain committed to have 50 percent of their vehicles as flex fuel capable in 2012, modern engines tend to require few changes to make them capable of accepting and burning alternative fuels. The engine management control and fuel system are altered to allow the engine to accept, recognize and burn multiple fuels with the total added costs below $200. The primary opportunities for parts suppliers in flex fuel engines are in corrosion and alcohol resistant fuel supply products such as hoses, pumps, lines and fuel tanks. Third generation biofuels have the same chemical properties as the base hydrocarbons in gasoline or diesel fuel and will likely need even fewer changes.

Technological advances, federal fuel economy mandates, and advanced technology investment incentives made significant impacts on the U.S. and global automotive parts industry in 2010. The fuel economy improvements made possible through most of the above technologies do eventually pay for themselves in lower fuel costs. In doing so, they eventually lead to greater macroeconomic purchasing power making higher eventual sales possible. Nonetheless, many of the technologies require higher purchase prices offsetting financially many of the economic benefits of lower operating costs to consumers. In addition, some of the impacts reduce the total potential market for parts suppliers.

U.S. vehicle producers are making new efforts to market small cars to help meet declining fleet emissions and rising fuel economy requirements. Doing so reduces the amount of material used in vehicle production. In addition, smaller engines are dominating vehicle sales. The 4-cylinder engines are taking shares from 6-cylinder engines, and 8-cylinder engines are being displaced by 6-cylinder engines. This process reduces the number of pistons, spark plugs, valves, rings, etc., per vehicle. Parts suppliers relying on supplying these products are seeing a shrinking total market, while numerous advanced technologies, on the other hand, are seeing significant growth opportunities. Firms selling to regions with high energy efficiency requirements have a competitive advantage in marketing many of these advanced technologies.

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

According to the Specialty Equipment Manufacturers Association (SEMA) Vice President John Waraniak, “Automobile technology is way beyond the vehicle itself. Vehicles are a collection of interdependent systems within systems, connecting body, chassis, interior, and powertrain systems through more than 150 controllers and 10 million lines of code and embedded software.” By 2017, more than 13 million vehicles will be sold globally with connected-vehicle platforms. Therefore, the industry needs a system of open innovation, collaboration, flexibility and responsiveness to customer demands. Technology and affordability should be intertwined to provide access to a larger number of consumers looking for fuel efficiency, safety and connectivity. 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. In addition, the Global Positioning System (GPS) and telematics packages that connect cars to home computers will become standard within the next few years. Even more opportunities are evolving in telematics as more manufacturers are developing electric vehicles. Energy management and navigation will become more essential in terms of determining vehicle range and finding locations for recharging/battery swap stations, as well as showing elevation topography, given how battery-powered vehicles have greater variability in range based on these features (while they use a higher percentage of their energy and therefore range going uphill, they reclaim most of that energy going downhill.)

According to Business Monitor International (BMI), the global telematics industry was valued at nearly $5 billion in 2010, with over 75 percent occupied by original equipment manufacturers (OEMs). By 2012, OEMs and aftermarket suppliers are expected to create a $2.4 billion telematics market in the United States, and a global market of $9.3 billion. Accessories available in upcoming vehicle models will include cameras and sensors that not only help the driver see danger coming, but react accordingly to avoid potential collisions. Demand for retrofitting such innovations into the existing car fleet will concurrently generate immense opportunities in the telematics aftermarket sector.

In recent years, manufacturers have placed increasing emphasis on "green" technology, which promotes alternative energy sources as well as reduced hydro-carbon-based fuel usage. Despite the current recession, overall energy demand is expected to increase 50 percent globally and 70 percent in the developing world by 2030, barring major increases of efficiency. This theme was carried over from last year's SEMA show as well, reiterating the importance of emerging and efficient technologies for the automotive industry. According to Waraniak, there are four "megatrends" that will be the focus of technological advancement in the auto industry: green technologies; connectivity between multiple systems; safety features; and, temperature-levels and efficiencies gained by cooling vehicles. Each of these trends is discussed below.

Green technologies, as noted above, include new powertrain options making their way to the market such as gasoline-electric hybrid technology (e.g., Prius, Fusion), plug-in hybrid, (e.g., Volt), and cleaner diesel technology (such as the urea injection system Mercedes-Benz' calls BlueTEC). The BlueTEC system lowers nitrogen oxide emissions, allowing diesel engines to run cleaner, though it adds cost and lowers the fuel efficiency advantage of diesels. Advancement in diesel technology and hybrid diesel/electric hybrid vehicles may provide better fuel economy than is obtained from gas/electric hybrids. Dean Tomazik of FEV Inc. states that future diesel engines might feature four-way catalysts, variable valve timing and variable compression ratios.

For the past several years, the challenge has been in making horsepower and green power co-exist. Consumers still want good vehicle performance, but also want fuel efficiency. According to Michael Seuffert of Aftermarket Business, "keeping up with these megatrends represents challenges for the aftermarket, but even greater opportunities for those developing products and services in aerodynamics, brakes, suspension, electronics, mass reduction, fuel efficiency, start-stop technology and personalization applications."

The market has shifted from a concentration on sound systems to one that is about navigation and entertainment systems. AM radios were first installed in vehicles in 1930, FM radios in 1952, tape decks were introduced in 1964, and CD players in 1982. In the last 10 years, DVD players, satellite radios, high-definition radios, navigation devices, and MP3 adaptors have been introduced into vehicles. Analysts expect many more devices and interfaces in the years to come. In 1999, navigation and entertainment systems accounted for fewer than 12 percent of total mobile electronics retail sales. By 2006, the market share nearly doubled to 23.5 percent. In fact, the Electro to Auto (E_2A) Forum believes that electronics will account for 40 percent of production costs in vehicles by 2015.

Therefore, it is not surprising that, according to SEMA, the ten most sought after "new-products" are all electronic equipment. Connectivity is key and convergence is the watchword in mobile electronics. This means one device can integrate multiple tasks. For example, Ego Look, a Bluetooth device, can be paired with a person's cell phone to do other things such as call by voice, check messages by voice, download address book, and with iPod integration. In addition, the Dual HXD7714 head unit for the dash has built-in Bluetooth and HD radio, but will also control an iPod. Next Base is a dual-screen DVD system that straps onto backs of the headrests in a vehicle.

A 2010 survey by TechnoMetrica found that one in ten owners have navigation or safety/security services installed in their vehicles; about one out of five consumers were planning to install navigation systems within the next 12 months, while 13 percent were planning to install safety/security services. DVD players were moderately important to consumers. More than 58 percent of 2009 models offered portable media player interfaces, especially for MP3 players such as the iPod, up from 39 percent in 2008. In addition, 82 percent of the 2009 models offered Bluetooth wireless connection, up from 70 percent in 2008. The increasing size and demand of data for infotainment systems, digital maps, 3D images, and information about the surrounding area are requiring large data storage devices such as embedded hard disks, which were found on 90 models in 2009. Embedded computer hard drives were about a third of 2009 models and USB interfaces were installed on a third of the models, up from 16 percent in 2008.

Subscription telematic services are also becoming more prevalent. The industry leader, OnStar was available on 90 percent of GM vehicles in 2009. OnStar has been providing service for 13 years and has over 5 million subscribers. Ford's Sync system is serviced by Continental and ATX provides service to BMW and Lexus in the United States. In November 2009, Mercedes Benz USA (MBUSA) and Hughes Telematics, Inc. (HTI) launched "mbrace," a new telematics offering that they say brings an unprecedented level of connectivity to customers. This will replace "Teleaid," the previous system of the last ten years. HTI provides service to the Chrysler and Daimler 2010 models. Toyota also announced a proprietary Safety Connect that was offered in its brands in 2009. In addition to these services providing navigation, collision notification, traffic alerts, automatic toll pay, wireless bluetooth connection, and remote door unlock, these services will include informing drivers of weather conditions, allowing drivers to access entertainment, allow manufacturers to remotely update software, allow remote emissions and safety testing, allow "teen" tracking, give re-routing suggestions to avoid congestion, provide in-vehicle satellite television, automatically slow down a stolen vehicle, and enable mileage-based insurance.

All of this in-vehicle electronic equipment has many experts concerned about safety. An estimated 20 percent of car accidents or near accidents involve non-driving distractions. Automakers and parts suppliers are trying to use the in-vehicle electronics to improve safety. By improving center stack configurations, tactile controls on the steering wheel and better versions of heads-up LED windshield displays they hope to reduce distractions. Automakers and suppliers are also using the technology to develop lane departure notification systems, collision avoidance systems, and inattentive driver alert systems/driver drowsiness detection.

Advanced adaptive cruise control began entering the market on European luxury cars in 2006. Adaptive cruise control (ACC) maintains a certain distance from the car in front, down to a crawl. Advanced ACC would bring the car to a stop and could resume its cruise control functions from a stop. Such technology raises legal and liability questions involving equipment that functions independently of the driver. The technology is also expensive, with costs about $1,500 to $2,500, mostly because of the radar or infrared emitters and sensors used to track other cars. Suppliers are working on ways to reduce the price, including using camera-based systems and less expensive radar equipment.

In addition to consumer demand and competition, legislation is also driving innovation. Safety features used only in luxury cars may one day become standard. The National Highway Traffic Safety Administration (NHTSA) is considering mandating systems that automatically slow vehicles down when an impending collision is detected as well as sensors that watch for other vehicles during lane changes. The technology is currently offered in some luxury vehicles and often relies on the radars and sensors in adaptive cruise control systems as outlined above. Doing so currently could add close to $3,000 to the price of a new car. Waraniak believes that it may take until 2030 to have a critical mass of vehicles talking to each other to prevent crashes.

Having vehicles communicating with each other and capable of taking control to prevent accidents would enable other technologies as well. For instance, cars could talk to traffic lights as they approached. If no other vehicles were approaching the lights could turn green to allow them to pass without stopping. This would reduce time, vehicle wear and tear, and energy. Vehicles could also communicate with other vehicles on highways and, using the split second reactions available in their safety systems, enable vehicles to take control and slipstream the air with other automobiles thereby saving energy and freeing the driver from controlling the vehicle.

The Obama administration's decision to raise CAFE standards to 35 miles per gallon by 2016 has also influenced the way manufacturers are looking at new technology. For example, one of the top new technologies is an aftermarket part in automobiles that indicates to drivers whether they are driving at optimal efficiency. Electronic tools connect to the on-board diagnostics (OBD-II) port and provide instantaneous and average fuel economy readings. Tire makers such as Goodyear and Michelin have also developed new tread compounds and tread designs which increase fuel efficiency by five percent and stop the vehicle about 25 feet sooner than the baseline tire at 50 mph on wet pavement.

Suppliers with products such as air bags, antilock brakes and electronic stability control (ESC) systems, have benefited from automakers' emphasis on safety and new safety regulations. In 2007, NHTSA passed its final rule on ESC. ESC systems use automatic computer-controlled braking of individual wheels to assist the driver in maintaining control in critical driving situations. The law ensures that ESC will become standard on all vehicles except the largest trucks by 2012. Currently, only 30 percent of new vehicles have ESC. ESC suppliers expect to get a sales boost of more than $1 billion from the new regulation. In fact, the North American market for ESC systems is expected to expand from about $555 million in 2006 to $1.8 billion by 2012.

The success of airbags, which NHTSA estimates saved over 18,000 lives since their inception, has led to an increase in side-curtain airbag business. Like the ESC rules, new federal side-impact regulations will increase installation of side-curtain airbags as automakers and suppliers devise different ways to meet the standard.

Various technologies for keeping the car cool offer another opportunity for manufacturers to increase vehicle energy efficiency. Energy-efficient auto air conditioners are finally making their way in North America, after years of popularity in Europe. Electronically controlled variable compressors are only used in 20 percent of North American vehicles at the present time. However, according to a senior director at Visteon Corporation's global climate-control business, usage will increase to 60 percent within five years. The inclusion of air conditioners in EPA's carbon emissions regulations has made improving air conditioning efficiency an important variable for auto manufacturers in meeting U.S. vehicle efficiency standards. Variable compressors save fuel by drawing enough power from the engine to cool the cabin, rather than a fixed-mode compressor, which can only be turned on or off. This can drain four to six horsepower from an engine.

Some of the issues surrounding telematics that must be assessed involve privacy, cost, and legal issues concerning collaboration, control, and accountability. With multiple databases storing information about consumers' driving habits, insurance companies have become interested in tracking information on everything that happens to the car on the road, thus allowing them to calculate whether to raise or lower premiums based on driver's risk. This raises privacy concerns. In addition, with all of the information stored in electronic databases, another issue is control of the information. After Mercedes cancelled its contract with ATX, the two companies became locked in a court battle over ownership of the Tele Aid database, raising questions over the rights to customer information and crucial web tools. Costs of new technology will also always be a concern, particularly for a government-mandated safety option that is expensive. However, as technology is developed and mass-produced, costs will decrease accordingly.

The industry must also address increasing vehicle complexity and use of application-parts tailored for unique functions. One of the key issues today, which was brought to light by the recent devastating earthquake and tsunami in Japan, is the difficulty of supply chain disruptions to the functioning of the industry as a whole. The events in Japan clearly illustrated the interdependence of auto suppliers to OEMs. According to Automotive News, parts such as diodes, microprocessors, circuit boards, voltage regulators, and copper foils (not easily recognizable as auto parts) were particularly affected by the disruptions. Chipmaking is especially sensitive to disruptions such as power outages. It can take up to three days to recalibrate machines and often the process must be restarted from scratch. Finding alternative sources for these microchips is difficult because the auto suppliers have become so specialized. Ford had to suspend certain black and red vehicles because the supplier in Japan can no longer produce a metallic paint pigment called Xirallic.

Lastly, as convergence of functions increase, it is unclear which manufacturer or supplier should be held accountable if something goes wrong. Many of the vehicles that are recalled today involve malfunctions of the vehicle electronics systems. Indeed, as the level of telematics are incorporated into a vehicle, the more electronic interfaces occur, which can present a whole new host of unforeseen and unexpected problems, as noted in the cruise control discussion above. It may be a long time before drivers trust vehicles to drive themselves.

International Developments and Trade

Global automotive industry production and sales are expected to remain depressed over the next few years, with only gradual improvement.   Despite weakening in the U.S. market in previous years, suppliers globally managed to eke out profitability. Suppliers in developed country markets faced more difficulty, while those in developing markets generally experienced 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. During the same period, North American suppliers declined 3.6 percent. Those most successful had a narrowly focused product portfolio, broad customer base globally, low reliance on business with the Detroit 3, and aggressively used component sourcing from low-cost regions of the world.

Going forward, the BRIC (Brazil, Russia, India, and China) countries are expected to experience growth in the automotive sector while developed countries are likely to see static sales or declines. Some U.S. suppliers found that while they are having difficulties in home markets, their foreign operations were profitable.   Large suppliers, such as Johnson Controls Inc., Lear Corporation, TRW Automotive Inc., ArvinMeritor Inc., and Dupont Automotive Systems, received at least 35 percent of their total revenue from Europe in 2007. Some suppliers tried to reduce their dependence on the high-cost, low-margin American market and shift manufacturing to lower cost countries. Suppliers, often with the encouragement of automakers, are exploring growth opportunities in the BRIC developing countries. These countries are seeing more growth in the automotive industry than North America, Japan, and Western Europe. Still the growth in the developing world was moderate in 2009 and expected to remain moderate another year or two as the automotive sector gradually improves.

The U.S. trade deficit in automotive parts increased 61.3 percent in 2010 to $32.8 billion, up from $20.3 billion in 2009 (Table 13, Charts 11 and 12). The parts deficit increased the past few years because U.S.-made automotive parts manufacturers lost market share to increasingly competitive foreign production. In 2009, the reduction of the automotive parts trade deficit was a combination of the global reduction in demand for automotive parts and the weak dollar, which made U.S. exports more competitive while restraining U.S. imports. In 2010, with a growing recovery of the automotive slump, both automotive parts exports and imports increased, though imports increased at a greater rate than exports.

According to U.S. Census data, the United States exported $58.1 billion worth of automotive parts in 2010. This is an increase of 36.2 percent from the $42.7 billion exported in 2009 (Table 14, Charts 11 and 13). Automotive parts exports to Canada ($25.8 billion) and Mexico ($17.4 billion) accounted for 74.3 percent of the total U.S. parts exports in 2010 (Chart 14). U.S. automotive parts exports to Japan and the EU-15 accounted for $5.8 billion, or 10 percent, of the total U.S. automotive parts exports.

In 2010, automotive parts exports to China rose 36.4 percent to $1.3 million and exports to Brazil increased 69.8 percent to $938 million. Exports to Russia increased 78.6 percent ($94 million) and 62.6 percent ($213 million) to India in 2010.

Automotive parts imports to the United States from almost every country increased in 2010. U.S. automotive parts imports increased 44.3 percent to $90.9 billion in 2010 from $63 billion in 2009 (Table 15, Charts 11 and 15), returning to 2008 levels ($90.6 billion). In 2010, Canada accounted for $14.5 billion worth of U.S. automotive parts imports and Mexico accounted for $28.1 billion. Together, automotive parts from these two countries accounted for 46.8 percent of the total U.S. automotive parts imports (Chart 16). Rounding out the top five supplier countries of automotive parts to the United States in 2010 were Japan ($12.1 billion), China ($10 billion), and Germany ($6.3 billion).

Japanese auto parts shipments to the United States were up 37.9 percent in 2010 from 2009 levels. A large portion of these imports are components for assembly at the Japanese transplant facilities. The Japanese produced roughly 2.7 million vehicles in the United States in 2010. Japanese-based firms' U.S. auto plants are now sourcing more of their components in the United States, Canada, and Mexico due at least in part to the higher Yen exchange rate.

Automotive parts imports from China increased 35 percent in 2010 (Charts 17 and 18). Imports from China had been steadily increasing the past several years (despite the decrease in 2009), including a 4.8 percent increase in 2008 to $9 billion, from $8.6 billion in 2007. China passed Germany as the United States' fourth largest source of auto parts after Mexico, Canada, and Japan. Parts imports from the other BRIC countries also increased across the board. Parts imports increased 34.2 percent ($1.3 billion) from Brazil, 60 percent ($798 million) from India, and 114.1 percent ($35 million) from Russia.

China

Auto parts sales and production for both original equipment and the aftermarket in China have grown along with the country's auto market and production. China remained the largest auto market in the world for the second year in a row, with vehicle sales increasing 32.4 percent in 2010, reaching 18.06 million units. Vehicle production in China grew 32.4 percent, reaching 18.26 million vehicles. China's Ministry of Public Security reported in 2010 that the country now has 85 million vehicles on the road.

The top global auto suppliers have operations in China, and there continues to be expansion-related announcements. With increased foreign investment and the gradual consolidation of domestic companies, parts manufacturers in China are becoming more competitive. However, there are still many small, domestic suppliers remaining in China that lack the resources, quality, and R&D capabilities that would allow them to become more competitive and sell on a larger scale. The majority of auto and auto parts production in China is still devoted to the growing domestic market. Automotive exports from China will inevitably increase as the auto sales growth rate moderates and Chinese vehicles and parts become more globally competitive. Total exports of Chinese auto parts have already grown from $16.7 billion in 2005 to $31 billion in 2009. However, the degree to which China becomes a low-cost source of original equipment auto parts for automakers worldwide remains to be seen. Factors that can affect China's ability to supply more globally in the future include: rising material, labor, and energy costs in China; potential currency, quality and logistics-related issues; and, the increased cost competitiveness of other global suppliers.

The Chinese government's interest in seeing China develop electric vehicles and the government's related policies to promote the industry could be an impetus for the automotive industry in China to be a major player in developing, producing and selling advanced technology vehicles. The new technology could present opportunities for capable suppliers who are willing to cooperate with Chinese automakers in developing these advanced vehicles.

China's 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, and new technologies and electronics are introduced. In addition, Chinese consumers' interest in vehicle customization is expected to increase. In 2008, the Chinese government approved an amendment to the National Road Traffic Safety Law, allowing the sale and installation of more than 500 accessory and performance product categories for consumers to legally accessorize their vehicles. Currently, 4S stores, which are similar to dealerships that sell and service vehicles, are where most Chinese auto owners have their cars serviced and repaired. As the Chinese aftermarket grows and consumers become more educated about car care, franchised service and repair outlets that are less expensive and are more convenient are likely to increase in China.

As Chinese automotive companies are looking to enter new markets, top global suppliers are assisting them with engineering, technical and managerial expertise. Companies are also buying factory equipment from leading international suppliers, as well as acquiring or investing in suppliers located in overseas markets, including the United States. Not only do these investments help them to establish a presence in a market and gain new customers, but they also gain technology and R&D resources, improve their manufacturing techniques, and learn more about marketing, branding, and distribution. In 2010, China's Pacific Century Motors purchased GM's Nexteer power steering subsidiary unit for approximately $450 million, the largest global auto parts investment made by a Chinese supplier so far. The acquisition provided Pacific Century with global customers, U.S. manufacturing and engineering operations, and advanced technology.

In 2010, U.S. auto parts exports to China reached almost $1.3 billion, and U.S. auto parts imports from China rose to $10 billion. The U.S.-China auto parts deficit has increased from $4.8 billion in 2005 to $8.8 billion in 2010. The deficit with China is expected to continue to grow as exports to China will not likely keep up with imports. Many U.S. auto parts companies will continue to produce in China, particularly since it has become the world's largest auto market.

Since China joined the WTO, there have been some U.S.-China automotive parts trade issues, including a tariff dispute that resulted in a July 2008 ruling by the WTO that China must bring its import tariffs for foreign auto parts into compliance with international trade rules. In December 2010, a WTO panel upheld the U.S. decision in September 2009 to place tariffs on $1.8 billion of tires from China under a safeguard provision aimed at protecting U.S. producers and workers from an import surge. China had complained that the tariffs violate global trade rules. There are press reports that China may appeal the WTO's ruling. In addition, widespread automotive parts counterfeiting in China remains an ongoing issue, as noted above.

Japan

Based on statistics from the Japanese Government, Japanese production of parts in 2010 amounted to about $97.7 billion. Japan exported $65.7 billion, or almost one third of its total automotive parts production.

Japan imported $16.7 billion in automotive parts in 2010 and exported $65.7 billion. Japan's leading source of imports in 2010 was China, accounting for $5.4 billion. Thailand was next with $1.6 billion, and the United States ranked third with $1.3 billion. Although no actual data is available for U.S.-made parts assembled into Japanese vehicles and then exported back to the United States, it is believed to be a relatively high percentage of the total parts imported from the United States.

In 2010, Japan exported $13.8 billion in automotive parts to the United States; or almost 25 percent of its total parts exports. China was the next largest export market, accounting for $12.3 billion, and Thailand was the third largest market, at $5.8 billion. Rounding out the top ten were: Indonesia, the United Kingdom, Mexico, South Korea, Germany, Canada, and the Netherlands.

Japan has posted a consistent trade surplus in auto parts with the United States. In 1986, the U.S. deficit was $6 billion, and it reached a peak of $15 billion in 2005. The deficit decreased to $10.8 billion in 2010. The deficit declined mainly because Japanese manufacturers began building vehicles in the United States and while, at first, it sourced most of it parts from Japan, it slowly began sourcing parts from North American parts plants. Also, Japanese transplants' U.S. production peaked in 2005 and declined substantially in 2009, with a slight increase in 2010.

As Japanese transplants increased U.S. production, their purchases of U.S.-made parts also increased. The Japanese Automobile Manufacturers Association (JAMA) publishes an annual report listing parts purchases from U.S. companies. In 1992, the Japanese producers purchased $13.6 billion U.S.-made parts and by 2007, this peaked at $50 billion. Due to the worldwide economic decline in 2009-10, this figure shrunk to $38.3 billion.

On March 11, 2011, northern Japan experienced a devastating earthquake followed by a very large tsunami. This caused two nuclear plants to cease operations. These two complexes provided about 15 percent of Japan's electricity. Between the earthquake and tsunami immediate damage and the power plant shutdowns, many automotive parts supply companies ceased operations. In addition, a number of assembly plants also had to either stop building vehicles or ration parts until the parts could be replenished.

This problem did not only affect vehicles built in Japan, but vehicle manufacturers around the world. Two U.S. plants discontinued operations for a period of time, most South Korean plants stopped, and the EU was also affected. As of the end of March, many parts makers, or their suppliers, had not resumed operations. Because most vehicle makers use the just-in-time method of operating, that is, operating with a minimal amount of inventory, it is difficult to estimate how the industry will function in the near future.

South Korea

South Korea is a major producer of motor vehicles, ranking number five in 2009. In 2010, manufacturers in Korea produced 4.3 million vehicles, with sales of 1.5 million vehicles and exports of 2.8 million vehicles. As would be expected, Korea has a correspondingly large auto parts sector, with domestic sales estimated at $36 billion in 2009. Accounting for approximately 94 percent of demand, the OE segment dominates the auto parts market in Korea. Korea's largest auto parts firm, Hyundai Mobis, was ranked at number 12 globally in 2009, with total sales of $11.2 billion.

Korea's largest vehicle manufacturer, Hyundai/Kia, has set up operations in the United States. Hyundai has a production facility in Montgomery, Alabama which started production in 2005. Kia opened its plant in Georgia a few years later in 2009, and began full scale operations in 2010. To support operations at these plants, Hyundai/Kia encouraged many of the company's traditional suppliers to open U.S. manufacturing operations. Firms such as Pyongsan America (manufactures air conditioning and heater core pipe assemblies), Daeil USA (manufacturers struts and other parts), SaeHaeSung (performs stamping and welding operations) and many others have now joined Hyundai/Kia in the Alabama/Georgia region.

Many U.S. auto parts suppliers have established a presence in Korea to directly enter that country's supply chain. Major companies such as Delphi, Visteon, TRW, and Johnson Controls all have manufacturing operations to supply Korea's motor vehicle production.

In 2010, the United States accrued a $4.4 billion trade deficit in automotive parts trade with Korea. This deficit was up 91 percent from 2009's deficit. However, trade was at extremely low levels in 2009 given the depressed state of U.S. motor vehicle sales and production that year. When compared to 2008, the deficit was up 28 percent. In 2010, U.S. parts manufacturers exported $491 million in goods to Korea. During the same period, the United States imported $4.9 billion worth of automotive parts.

The United States and South Korea have a long history of negotiations on automotive trade, primarily focused on increased market access for U.S. motor vehicle manufacturers. These negotiations resulted in two Memoranda of Understanding – one in 1995 and one in 1998 – and a Trade Agreement. While the focus of these negotiations was on motor vehicle trade, there are also many provisions specifically applicable to automotive parts trade. For example, the Trade Agreement has provisions to insure that remanufactured auto parts will have access to the Korean market.

It should be noted that the Trade Agreement is not yet in force as it has not been ratified by either country's legislatures. In 2010, the Obama Administration engaged the Korean government to renegotiate the automotive terms of the agreement to provide improved market access for U.S. auto companies. The new text focuses on safety and environmental standards, regulatory transparency and tariff changes. The full text of the Agreement can be found on-line at:

http://www.ustr.gov/Trade_Agreements/Bilateral/Republic_of_Korea_FTA/Final_Text/Section_Index.html

Conclusion

The automotive parts industry will continue to consolidate and restructure in order to survive and compete in the increasingly competitive world automotive market. With some of the accomplishments made so far, such as the drastic reduction in capacity and dramatically lower breakeven points, it is clear many suppliers are, in fact, "on the road" to recovery. Further consolidation will continue, but for many the worst has probably passed.

FACT SHEET

Production

- U.S. automotive parts industry production improved in 2010 compared with 2009, in large part because of the rebound of the global vehicle market. Industry analysts predict that 2011 will continue to see slight improvement, but will still be a very difficult year for U.S. automotive parts suppliers and vehicle. The suppliers that survived tended to experience profits in 2010 because of cutbacks that reduced the break-even point.

- The Bureau of Labor Statistics (BLS), U.S. Department of Labor, reported that employment in the automotive parts industry was an estimated 462,300 jobs in 2010. This is a decline of 0.5 percent from the 464,600 jobs in 2009. 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.

- Regardless of production and employment declines, automotive manufacturers and suppliers directly and indirectly account for more jobs than any other manufacturing sector.

- According to the most recent Annual Survey of Manufacturers (with data through 2009), auto parts industry shipments were $140.1 billion, accounting for about 3.3 percent of the total U.S. manufacturing shipments. This is one of the highest shares of any single U.S. industrial sector.

Sales

- The U.S. original equipment parts market was up 36.5 percent from $103.7 billion in 2009 to $141.5 billion in 2010.

- The 150 largest OE suppliers to the North American market had sales of $117.9 billion in 2009, down 27.3 percent from 2008. The top 10 suppliers to North America accounted for 32.3 percent of the total in 2009, down slightly from 33.8 percent of the total in 2008. The Canadian supplier, Magna International, maintained its position as the largest OE supplier to the North American market.

- The U.S. aftermarket parts market, according to industry sources, ranged from $62.0 - $78.1 billion in wholesale dollars at manufacturers' level in 2010.

International Trade

- The 2010 U.S. trade deficit in automotive parts significantly increased 61.3 percent to $32.8 billion, from $ 20.3 billion in 2009.

- U.S. exports of automotive parts in 2010 were $58.1 billion, an increase of 36.2 percent from 2009 levels.

- Exports to Canada and Mexico accounted for 74.3 percent of the total U.S. automotive parts exports in 2010, reaffirming the importance of the NAFTA.

- U.S. exports to China increased 36.4 percent in 2010, from $937 million in 2009, to $1.5 billion in 2010.

- U.S. imports of automotive parts were $90.9 billion in 2010, an increase of 44.3 percent from 2009 levels.

- The United States imported $42.6 billion worth of automotive parts from Mexico and Canada in 2010. These imports accounted for 46.8 percent of total U.S. automotive parts imports.

- Automotive parts imports from China have grown significantly in recent years. In 2000, the United States imported $1.6 billion in automotive parts. By 2007, these imports grew to $8.6 billion, passing Germany as the fourth largest supplier of auto parts to the United States. Imports from China reached $10 billion in 2010.

- The U.S.-China auto parts trade deficit had grown six-fold from only $1.5 billion in 2001 to almost $8.8 billion in 2010. The 2009 global recession allowed the U.S. trade deficit with China to drop 20.3 percent in 2009 to $6.5 billion.

Industry Issues

- Suppliers that survived the 2009 downturn in vehicle production managed to realize a roughly 6 percent profit margin by reducing their break-even point. The auto makers are again pushing some of those suppliers for price cuts in their products.

- Previously, the industry breakeven point was estimated to be 10.5 million unit sales in North America, but suppliers were able to get the breakeven point down to 9.5 million units toward the end of 2009. The 2010 vehicle sales were about 11.5 million units.

Appendix 1

Office of Transportation and Machinery Automotive Parts Product Listings

Revised 12.05.2007

To facilitate the analysis of trade data for automotive parts on a market-based model, the Office of Transportation and Machinery (OTM) has created six product groupings from the available, individual 10-digit product codes. The core of the codes is 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 OTM group.

The OTM 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 OTM 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 OTM 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
8708295170	Parts & Access of Bodies
8708990045	Slide-in Campers
8708998030	Slide-in Campers
8708998130	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
8708395010	Brake Drums & Rotors
8708395020	Brake Drums
8708395030	Brake Rotors
8708395050	Brakes & Servo-Brakes

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
8708300010	Mounted Brake Linings
8708300050	Brakes & Servo-Brakes
8708310000	Mounted Brake Linings
8708390000	Other Brakes
8708401000	Gear Boxes
8708401110	Gear Boxes
8708401150	Gear Boxes
8708402000	Gear Boxes
8708403500	Gear Boxes
8708406000	Gear Boxes
8708408000	Gear Box Parts & Access.
8708500050	Drive Axles
8708504110	Drive Axles
8708504150	Non-Driving Axles
8708507200	Drive Axle Parts & Access
8708600050	Non-Driving Axles
8708700050	Road Wheels & Pts.
8708800050	Suspension Shock Absorbers
8708805000	Suspension Shock Absorbers
8708807000	Suspension Systems Parts
8708918000	Radiator Parts & Access.
8708925000	Radiators

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
8708928000	Muffler Parts & Access.
8708935000	Clutches and Parts
8708945000	Steering Wheel, Column
8708948000	Steering Wheel Parts & Acces
8708990070	Wheel Hub Units
8708995800	Wheel Hub Units
8708996100	Airbags
8708998015	Wheel Hub Units
8708998115	Wheel Hub Units

8708806590	Suspension System Parts
8708925000	Mufflers
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

<u>Electrical and Electric Components</u>

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
8511300040	Distributors

<u>Electrical and Electric Components</u>

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
8511500000	Generators

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
8531800038	Radar Detectors

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

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
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
8409999110	Connecting Rods
8409999190	Parts
8413301000	Fuel Injection Pumps

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

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
8708998005	Brake Hoses of Plastics
8708998045	Radiator Cores
8708998060	Cable Traction Devices

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
8708998175	Parts & Access NESOI
8716900000	Parts of Trailers
8716905000	Parts

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
4012105029	Retreaded Tires for Bus/Truc
4012105035	Retreaded Radial Tires Bus
4012105050	Retreaded Tires for Bus/Truc

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

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
4011101040	Radial Tires->01
4011101050	Radial Tires->01
4011101060	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
4011200030	Pneumatic Tires for Buses off
4011200035	Radial Tires for Buses off
4011200050	Pneumatic Tires for Buses off

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
4013100010	Inner Tubes
4013100020	Inner Tubes
4016931010	O-Rings
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
8415830040	Air Conditioners
8421230000	Oil or Fuel Filters
8421310000	Intake Air Filters

4016931020	Oil Seals	8421394000	Catalytic Converters
4016931050	Gaskets	8425490000	Jacks
4016931090	Gaskets	8426910000	Lifting Machinery
4016993000	Vibration Control	8431100090	Parts of Winches, Jacks
4016995010	Mechanical Articles	8482101000	Ball Bearings
4016995500	Vibration Control	8482105044	Radial Bearings
4016996010	Mechanical Articles	8482105048	Radial Bearings
6813100050	Brake Linings & Pads	8482200020	Tapered Roller Bearings
6813200015	Brake Linings & Pads	8482200030	Tapered Roller Bearings
6813200025	Asbestos Friction	8482200040	Tapered Roller Bearings
6813810050	Brk Lngs & Pads, Not Asbest	8482200060	Tapered Roller Bearings
6813890050	Min Sub Friction Materials	8482200070	Tapered Roller Bearings
6813900050	Friction Materials	8482200080	Tapered Roller Bearings
7007110000	Safety Glass	8482400000	Needle Roller Bearings
7007110010	Safety Glass	8482500000	Other Cylindrical Bearings
7007211000	Windshields	8483101020	Transmission Shafts
7007211010	Windshields	8483103010	Camshafts & Crankshafts
7007215000	Safety Glass	8507100050	Storage Batteries
7009100000	Rear-View Mirrors	8507100060	Storage Batteries
7318160010	Lugnuts	8507904000	Parts for Lead Acid Batteries
7318160015	Lugnuts	8507904050	Parts for Batteries
7318160030	Lugnuts	8511100000	Spark Plugs
7318160045	Other Lugnuts	8511200000	Magnetos, Dynamos
7320100015	Leaf Springs	8511300040	Distributors
7320103000	Leaf Springs	8511300080	Ignition Coils
7320106015	Leaf Springs	8511400000	Starter Motors
7320106060	Leaf Springs	8511500000	Generators
7320201000	Helical Springs	8511802000	Voltage Regulators
8301200000	Locks	8511806000	Other Engine Ignition Equip.
8301200030	Steering Wheel Immobilizers	8511906020	Parts for Distributor Sets
8301200060	Other Locks	8511908000	Other Elec Ignition Equip
8302103000	Hinges	8512202000	Lighting Equipment
8302303000	Other Mountings	8512204000	Signaling Equipment
8302303010	Pneumatic Cylinders	8512300000	Sound Signaling Equipment
8302303060	Other Mountings	8512300030	Radar Detectors
8302306000	Other Mountings	8512300050	Sound Signaling Equipment
8407341400	Engines	8512402000	Defrosters
8407341540	Engines	8512404000	Windshield Wipers
8407341580	Engines	8512902000	Parts of Signaling Equip.
8407341800	Engines	8512905000	Parts of Lighting Equipment
8407342040	Engines	8512908000	Other Pts of Elec Equipment
8407342080	Engines	8517120020	Radio Telephones
8407344400	Engines	8519812000	Cassette Tape Players
8407344540	Engines	8525201000	CB Transmission Apparatus
8407344580	Engines	8525206000	Other Transmission Apparat
8407344800	Engines	8525209020	Radio Telephones
8408202000	Compression Ignition Engine	8525209050	Radio Telephones
8409911040	Cast Iron Parts	8525601010	Radio Transceivers (CB)
8409913000	Aluminum Cylinder Heads	8527210000	Radiobroadcast Receivers

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
8501324500	Electric Motors
8507100060	Storage Batteries
8507304000	Nickel-Cadmium Batteries
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
8708295170	Parts & Access of Bodies
8708300010	Mounted Brake Linings
8708300050	Brakes & Servo-Brakes
8708310000	Mounted Brake Linings
8708390000	Other Brakes
8708401000	Gear Boxes
8708401110	Gear Boxes
8708401150	Gear Boxes
8708402000	Gear Boxes
8708403500	Gear Boxes
8708406000	Gear Boxes
8708408000	Gear Box Parts & Access.
8708500050	Drive Axles
8708504110	Drive Axles
8708504150	Non-Driving Axles
8708507200	Drive Axles Parts & Access.
8708600050	Non-Driving Axles
8708700050	Road Wheels & Pts.
8708800050	Suspension Shock Absorbers
8708805000	Suspension Shock Absorbers
8708807000	Suspension System Parts
8708915000	Radiators
8708918000	Radiator Parts & Access.
8708925000	Radiators
8708928000	Muffler Parts & Access.
8708935000	Clutches and Parts
8708945000	Steering Wheel, Column

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
8527294000	Radio-Receivers FM/AM
8527298000	Radio Recievers
8527298020	Radio-Receivers AM
8708948000	Steering Wheel Parts & Acces
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
8708998030	Slide-In Campers
8708998075	Other Pts & Access
8708998115	Wheel Hub Units
8708998130	Slide-in Campers
8708998175	Parts & Access NESOI
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

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
8708291000	Inflators & Modules Airbags
8708291500	Door Assemblies
8708292000	Body Stampings
8708295010	Stampings
8708295025	Truck Caps
8708295060	Other Parts
8708301090	Brakes and Parts
8708305020	Brake Drums
8708305030	Brake Rotors
8708305040	Brake Linings
8708305090	Brake Parts
8708315000	Mounted Brake Linings
8708391090	Brakes & Parts
8708395010	Brake Drums & Rotors
8708395020	Brake Drums
8708395030	Brake Rotors
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
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	Mufflers
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

Table 1

Statistics for All U.S. Manufacturing Establishments (NAICS 31-33)

	2005	Chg*	2006	Chg*	2007	Chg*	2008	Chg*	2009	Chg*
All Employees	13,161,880	-1.7%	12,990,344	-1.3%	13,330,780	2.6%	12,748,361	-4.4%	11,051,342	-13.3%
Empoyee Payroll ($1,000)	580,358,985	1.9%	592,342,060	2.1%	608,806,166	2.8%	605,557,693	-0.5%	534,261,874	-11.8%
Production Workers	9,235,635	-1.4%	9,179,071	-0.6%	9,328,991	1.6%	8,863,950	-5.0%	7,571,032	-14.6%
Production Worker Hours (1,000)	19,055,800	-1.2%	18,786,191	-1.4%	18,803,820	0.1%	17,780,810	-5.4%	14,842,902	-16.5%
Production Worker Wages ($1,000)	337,980,878	1.5%	344,285,109	1.9%	350,395,122	1.8%	343,480,037	-2.0%	293,250,500	-14.6%
Value of Industry Shipments ($1,000)**	4,742,076,879	10.1%	5,019,963,474	5.9%	5,298,309,698	5.5%	5,157,732,557	-2.7%	4,186,666,423	-18.8%

Source: *Annual Survey of Manufacturers and Census of Manufacturers,* U.S. Department of Commerce, Bureau of the Census. * = From Previous Year

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

Table 2

Statistics for U.S. Motor Vehicle Parts Manufacturing, NAICS 336211 and 3363

	2005	Chg*	2006	Chg*	2007	Chg*	2008	Chg*	2009	Chg*
All Employees	661,268	-4.0%	628,430	-5.0%	623,895	-0.7%	572,674	-8.2%	441,221	-23.0%
Empoyee Payroll ($1,000)	31,847,957	-4.0%	30,632,238	-3.8%	29,735,431	-2.9%	26,575,258	-10.6%	20,124,793	-24.3%
Production Workers	515,023	-4.4%	489,027	-5.0%	475,019	-2.9%	427,072	-10.1%	324,407	-24.0%
Production Worker Hours (1,000)	1,060,590	-5.5%	1,012,752	-4.5%	964,036	-4.8%	824,354	-14.5%	629,211	-23.7%
Production Worker Wages ($1,000)	22,751,447	-5.2%	21,991,146	-3.3%	20,500,431	-6.8%	17,638,237	-14.0%	12,912,975	-26.8%
Value of Industry Shipments ($1,000)**	216,902,592	2.3%	214,023,641	-1.3%	213,074,185	-0.4%	186,888,156	-12.3%	140,092,011	-25.0%
Value of Product Shipments ($1,000)***	208,448,296	1.8%	206,000,093	-1.2%	207,345,704	0.7%	178,259,559	-14.0%	134,219,432	-24.7%

Source: *Annual Survey of Manufacturers and Census of Manufacturers,* U.S. Department of Commerce, Bureau of the Census. * = From Previous Year

** = Industry Shipments are products shipped by industry establishments. *** = Product Shipments are all products regardless of industry establishment.

U.S. Exports of All Export Commodities and of Automotive Parts ($millions)

	2002	%Chg	2003	%Chg	2004	%Chg	2005	%Chg	2006	%Chg	2007	%Chg	2008	%Chg	2009	%Chg
Parts Exports	50,087	0.6%	48,501	-3.2%	52,628	8.5%	55,054	4.6%	58,864	6.9%	61,954	5.2%	57,476	-7.2%	42,692	-25.7%
All Export Commodities	693,257		723,743	4.4%	816,548	12.8%	904,380	10.8%	1,037,143	14.7%	1,162,708	12.1%	1,300,136	11.8%	1,056,932	-18.7%
% Share	7.2%		6.7%	-7.2%	6.4%	-3.8%	6.1%	-5.5%	5.7%	-6.8%	5.3%	-6.1%	4.4%	-17.0%	4.0%	-8.6%

Source: U.S. Census Bureau

Total World Original Equipment Parts Market

					2004	% Change	2005	% Change	2006	% Change	2007	% Change	2008	% Change	2009	% Change
OE Parts Market ($millions)					810,965		845,026	4.2%	910,825	7.8%	960,283	5.4%	911,643	-5.1%	789,478	-13.4%
Global Aftermarket ($millions)*					336,936		352,772	4.7%	366,032	3.8%	380,234	3.9%	373,450	-1.8%	375656	0.6%

Source: Motor and Equipment Manufacturers Association *Includes Services

Table 5

U.S. Original Equipment and Aftermarket Parts Market

	2000	2001	2002	2003	2004	2005	2006	2007	2008	% Change	2009	% Change	2010^	% Change
Size of U.S OE and Aftermarket Parts Market ($US Billions)	232.1	219.3	224.7	248.5	252.2	255.4	259.8	250.5	221.5	-11.6%	165.6	-25.2%	203.5	22.8%
Size of U.S OE Parts Market ($US Billions)	178.1	164.8	168.5	191.1	193.1	194.4	196.0	185.8	158.2	-14.9%	103.7	-34.5%	141.5	36.5%
Size of U.S. Aftermarket Parts Market ($US Billions)^^	54.0	54.5	56.1	57.5	59.1	61.0	63.8	64.7	63.3	-2.2%	62.0	-2.1%	62.0	0.0%
U.S. Light Vehicle Production (Units)**	12,380,628	11,168,423	11,997,699	11,788,437	11,567,272	11,495,997	10,782,814	10,459,563	8,449,402	-19.2%	5,562,000	-34.2%	7,588,000	36.4%
Content per Vehicle ($US)	13,714	14,103	13,450	15,456	15,912	16,281	17,276	16,558.0	16,371.0	-1.1%				
OE & Aftermarket Parts Sourced from U.S. located Suppliers ($US Billions)	183.6	173.6	172.6	191.9	189.1	186.3	189.3	177.1	155.9	-12.0%	118.8	-23.8%	137.8	16.0%
% of Total Parts Market	79.1%	79.2%	76.8%	77.2%	75.0%	72.9%	72.9%	70.7%	70.4%	103.5%	71.7%	1.9%	67.7%	-5.6%
OE & Aftermarket Parts Sourced from imports ($US Billions)	48.5	45.7	52.1	56.7	63.1	69.1	70.5	73.4	65.6	-10.6%	46.8	-28.7%	65.6	40.2%
% of Total Parts Market	20.9%	20.8%	23.2%	22.8%	25.0%	27.1%	27.1%	29.3%	29.6%	91.9%	28.3%	-4.6%	32.2%	14.1%

**U.S. Suppliers include U.S. Affiliates of Foreign Manufacturers. **Source: Wards Automotive ^Forecast ^^in Wholesale dollars*

Source: DesRosiers, Dennis. "Parts Market in North America - OE vs Aftermarket," in DesRosiers Year in Review - Part 33 email report, 2/23/2011.

Table 6

U.S. Light Vehicle Aftermarket Dollar Volume ($Millions)														
	2004	2005	2006	2007	2008	% Change	2009	% Change	2010f	% Change	2011f	% Change	2012f	% Change
U.S. Aftermarket*	175,798	184,706	189,898	191,120	187,290	-2.0%	189,788	1.3%	190,176	0.2%	196,018	3.1%	202,384	3.2%

Source: *Motor and Equipment Manufacturers Association* f=Forecast

**includes automotive aftermarket service sector*

Table 7

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	2006	Global OEM Sales	2007	Global OEM Sales	2008	Global OEM Sales	2009	Global OEM Sales
	Company	($Millions)	**Company**	($Millions)	**Company**	($Millions)	**Company**	($Millions)	**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	28,418	Robert Bosch Gmbh	29,687	Robert Bosch Gmbh	36,160	Robert Bosch Gmbh	33,901	Denso Corp.	28,731
2	Robert Bosch GmbH	18,000	Robert Bosch GmbH	19,085	Robert Bosch GmbH	23,200	Delphi Corp.	24,104	Delphi Corp.	26,900	Denso Corp.	28,530	Denso Corp.	35,700	Denso Corp.	27,762	Robert Bosch GmbH	25,617
3	Visteon Corp.	16,945	Visteon Corp.	16,900	Denso Corp.	16,856	Magna International Inc.	20,653	Denso Corp.	22,871	Magna International Inc.	23,883	Magna International Inc.	25,645	Continental AG	25,008	Aisin Seiki Co	20,585
4	Denso Corp.	16,250	Denso Corp.	15,348	Visteon Corp.	16,513	Denso Corp.	19,927	Magna International Inc.	22,800	Delphi Corp.	22,737	Continental AG	25,000	Magna International Inc.	23,295	Continental AG	18,744
5	Lear Corp.	13,625	Lear Corp.	14,400	Lear Corp.	15,747	Johnson Controls Inc.	19,300	Johnson Controls Inc.	19,400	Johnson Controls Inc.	19,500	Delphi Corp.	22,283	Aisin Seiki Co.	22,224	Magna International Inc.	17,367
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	Aisin Seiki Co.	19,367	Aisin Seiki Co.	21,705	Johnson Controls Inc.	19,100	LG Chem Ltd	13,080
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	Lear Corp.	17,839	Johnson Controls Inc.	18,500	Delphi Corp.	18,060	Faurecia	13,000
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	Faurecia	15,000	Faurecia	17,400	Faurecia	17,656	Johnson Controls	12,800
9	Faurecia	8,600	Faurecia	10,000	Faurecia	12,700	Faurecia	13,327	Faurecia	14,000	Valeo SA	12,700	Lear Corp.	15,995	ZF Friedrichshafen AG	16,891	Delphi Holding LLP	11,755
10	Aisin Seiki Co. Ltd.	8,460	TRW Automotive	9,900	TRW Automotive	11,300	Siemens VDO Automotive	11,600	TRW Automotive Inc.	11,726	TRW Automotive Inc.	12,162	ZF Friedrichshafen AG	15,100	TRW Automotive	15,000	ZF Friedrichshafen AG	11,748
Top 10 Total		139,788		147,717		166,587		185,919		196,989		201,405		233,488		218,897		173,427
Top 100 Total		347,900		353,385		401,545		501,807		475,490		533,000		611,923		588,043		474,814

Source: Automotive News, *Top 100 Global suppliers* , June 14, 2010. *calculated estimate. **American Axle and Manufacturing Holdings Inc.

Table 8

Top 10 OE Suppliers for North America

	2001	NA Sales	2002	NA Sales	2003	NA Sales	2004	NA Sales	2005	NA Sales	2006	NA Sales	2007	NA Sales	2008	NA Sales	2009	NA Sales
	Company	($Millions)	**Company**	($Millions)	**Company**	($Millions)	**Company**	($Millions)	**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.	18,292	Delphi Corp.	13,870	Magna International Inc.	13,592	Magna International Inc.	11,415	Magna International	8,162
2	Visteon Corp	11,736	Visteon Corp.	12,168	Visteon Corp.	11,080	Visteon Corp.	11,328	Magna International Inc.	12,768	Magna International Inc.	12,897	Delphi Corp.	11,810	Delphi Corp.	7,585	Johnson Controls Inc.	4,992
3	Lear Corp	8,858	Lear Corp.	9,504	Lear Corp.	9,448	Magna Int'l Inc.	10,326	Visteon Corp.	9,684	Lear Corp.	9,811	Johnson Controls Inc.	7,585	Johnson Controls Inc.	7,067	Delphi Corp	3,762
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	Johnson Controls Inc.	8,580	Lear Corp.	7,198	Continental AG	5,077	Denso International Amer	3,448
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	Dana Corp.	5,187	Robert Bosch Corp.	6,460	Lear Corp.	4,896	Continental AG	3,374
6	Dana Corp	5,250	Dana Corp.	5,340	Dana Corp.	5,543	Dana Corp.	5,209	Dana Corp.	5,425	Denso Int'l America Inc.	4,558	Denso Int'l America Inc.	5,805	TRW Automotive Inc.	4,515	Robert Bosch LLC	3,330
7	TRW Automotive	4,992	TRW Automotive	4,950	Robert Bosch Corp.	5,336	Robert Bosch Corp.	4,556	Robert Bosch Corp.	4,831	Robert Bosch Corp.	4,453	Continental AG	5,250	Robert Bosch Corp.	4,407	TRW Automotive Inc.	2,970
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	TRW Automotive Inc.	4,135	Dana Corp.	4,797	Dana Corp.	3,886	Lear Corp.	2,910
9	Denso Intl America Inc.	3,689	Denso Int'l America Inc.	3,769	ThyssenKrupp***	4,401	TRW Automotive	4,235	ArvinMeritor	4,499	ArvinMeritor	4,598	TRW Automotive Inc.	4,067	ThyssenKrupp USA Inc.	3,508	Dana Holding Corp.	2,666
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	Visteon Corp.	4,068	ThyssenKrupp USA Inc.	3,876	Denso Int'l America Inc.	3,331	Aisin World Corp of Amer	2,532
Top 10 Total		74,050		78,455		80,542		80,655		82,910		72,157		70,440		55,687		38,146
Top 150 Total		166,400		182,100		186,714		197,577		203,106		195,987		198,668		162,208		117,941

Source: Automotive News, *Top 150 Suppliers to North America* , May 24, 2010. *calculated estimate. **American Axle and Manufacturing Holdings Inc. ***ThyssenKrupp Automotive AG

Table 9

World Shipments of the 20 Largest Exporters of Auto Parts ($US Millions)

Reporting Country	$US Millions						% Share					
	2005	2006	2007	2008	2009	2010*	2005	2006	2007	2008	2009	2010
Reporting Total	**490,633**	**538,872**	**628,288**	**656,740**	**487,755**	**330,860**	**100**	**100**	**100**	**100**	**100**	**100**
Germany	73,972	81,603	97,190	101,160	72,825		15.08%	15.14%	15.47%	15.40%	14.93%	0.00%
USA	60,526	64,466	67,404	63,409	47,368	63,921	12.34%	11.96%	10.73%	9.66%	9.71%	19.32%
Japan	48,679	49,354	54,111	57,931	47,210	65,684	9.92%	9.16%	8.61%	8.82%	9.68%	19.85%
China	16,719	22,784	30,973	38,384	31,105	43,855	3.41%	4.23%	4.93%	5.84%	6.38%	13.25%
France	31,671	34,199	40,006	40,951	30,159	34,430	6.46%	6.35%	6.37%	6.24%	6.18%	10.41%
Mexico	28,320	30,465	31,939	30,137	22,328		5.77%	5.65%	5.08%	4.59%	4.58%	0.00%
Italy	21,889	23,608	28,164	29,853	19,737		4.46%	4.38%	4.48%	4.55%	4.05%	0.00%
South Korea	12,972	15,364	18,298	20,758	17,866	27,238	2.64%	2.85%	2.91%	3.16%	3.66%	8.23%
Czech Republic	12,525	14,468	18,425	21,475	16,522	19,782	2.55%	2.68%	2.93%	3.27%	3.39%	5.98%
Spain	18,001	19,631	22,346	22,144	16,233		3.67%	3.64%	3.56%	3.37%	3.33%	0.00%
Poland	11,959	14,641	19,232	21,287	15,915		2.44%	2.72%	3.06%	3.24%	3.26%	0.00%
United Kingdom	16,022	17,235	18,959	18,385	12,841		3.27%	3.20%	3.02%	2.80%	2.63%	0.00%
Canada	23,691	23,246	23,524	19,328	12,821	17,734	4.83%	4.31%	3.74%	2.94%	2.63%	5.36%
Hungary	10,161	12,994	15,169	16,061	11,571		2.07%	2.41%	2.41%	2.45%	2.37%	0.00%
Belgium	12,116	12,871	15,709	16,196	11,453		2.47%	2.39%	2.50%	2.47%	2.35%	0.00%
Austria	9,992	10,444	12,809	13,529	10,168		2.04%	1.94%	2.04%	2.06%	2.08%	0.00%
Thailand	5,359	6,798	9,485	10,684	8,103	11,899	1.09%	1.26%	1.51%	1.63%	1.66%	3.60%
Netherlands	6,735	7,582	9,310	10,500	7,805		1.37%	1.41%	1.48%	1.60%	1.60%	0.00%
Brazil	7,248	8,555	9,099	9,881	6,257	9,100	1.48%	1.59%	1.45%	1.50%	1.28%	2.75%
Slovakia	3,750	4,107	5,979	7,536	6,040		0.76%	0.76%	0.95%	1.15%	1.24%	0.00%

*Source: Global Trade Atlas, using OTM HTS-6 product list. Sorted by 2009 ranking. *Not all exports have been reported 2010 totals by all countries.*

Table 10

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

NAICS	Description	2005	% Change	2006	% Change	2007	% Change	2008	% Change	2009	% Change	2010	% Change
336211	Motor Vehicle Bodies	65.9	2.2%	67.9	3.0%	64.8	-4.6%	60.1	-7.3%	50.9	-15.3%	47.2	-7.3%
3363	Motor Vehicle Parts	678.1	-2.0%	654.7	-3.5%	607.9	-7.1%	543.7	-10.6%	413.7	-23.9%	415.1	0.3%
33631	MV Gasoline Engine and Parts	76.3	-4.9%	73.2	-4.1%	68.0	-7.1%	61.7	-9.3%	46.6	-24.5%	48.3	3.6%
336311	Carburators, Pistons, Rings, and Valves	14.9	-7.5%	13.2	-11.4%								
336312	Gasoline Engine and Engine Parts	61.5	-4.1%	58.2	-5.4%								
33632	MV Electric Equipment	95.8	-4.7%	90.8	-5.2%	79.9	-12.0%	70.8	-11.4%	54.4	-23.2%	51.3	-5.7%
336321	Vehicular Lighting Equipment	16.8	1.2%	16.2	-3.6%	13.5	-16.7%	12.7	-5.9%	11.1	-12.6%	11.0	-0.9%
336322	Other MV Electric Equpment	79.0	-5.7%	74.6	-5.6%	66.3	-11.1%	58.1	-12.4%	43.4	-25.3%	40.3	-7.1%
33633	MV Steering and Suspension Parts	43.5	0.2%	42.4	-2.5%	38.0	-10.4%	33.8	-11.1%	26.8	-20.7%	26.1	-2.6%
33634	MV Brake Systems	42.9	-4.9%	40.3	-6.1%	36.1	-10.4%	31.3	-13.3%	23.9	-23.6%	23.9	0.0%
33635	MV Power Train Components	85.0	-0.8%	81.2	-4.5%	76.3	-6.0%	69.9	-8.4%	52.6	-24.7%	53.7	2.1%
33636	MV Seating and Interior Trim	64.3	-2.7%	62.7	-2.5%	61.4	-2.1%	56.5	-8.0%	42.0	-25.7%	41.7	-0.7%
33637	MV Metal Stamping	98.6	-0.4%	95.6	-3.0%	89.8	-6.1%	77.9	-13.3%	54.1	-30.6%	55.8	3.1%
33639	Other MV Parts	171.7	-0.2%	168.5	-1.9%	158.4	-6.0%	141.8	-10.5%	113.3	-20.1%	114.3	0.9%
Total	**336211+3363**	**744.0**	**-1.7%**	**722.6**	**-2.9%**	**672.7**	**-6.9%**	**603.8**	**-10.2%**	**464.6**	**-23.1%**	**462.3**	**-0.5%**

Source: Bureau of Labor Statistics

Table 11

Employment in the U.S. Automotive Parts Industry

NAICS		2004	% Change	2005	% Change	2006	% Change	2007	% Change	2008	% Change	2009	% Change
Bodies and Body Parts													
336211	MV Body Manufacturing	43,779	7.1%	48,396	10.5%	50,702	4.8%	48,217	-4.9%	46,002	-4.6%	37,561	-18.3%
336360	MV Seating and Interior	50,029	-5.8%	47,106	-5.8%	47,321	0.5%	52,866	11.7%	47,037	-11.0%	37,555	-20.2%
336370	MV Metal Stamping	107,372	-1.5%	99,365	-7.5%	95,398	-4.0%	98,546	3.3%	87,057	-11.7%	65,146	-25.2%
Total		201,180	-0.9%	194,867	-3.1%	193,421	-0.7%	199,629	3.2%	180,096	-9.8%	140,262	-22.1%
Chassis and Drivetrain Parts													
336330	MV Steering and Suspension	38,223	-3.7%	37,399	-2.2%	35,341	-5.5%	35,511	0.5%	34,129	-3.9%	33,338	-2.3%
336340	MV Brake System	39,738	-3.3%	37,198	-6.4%	32,923	-11.5%	29,145	-11.5%	26,435	-9.3%	20,021	-24.3%
336350	MV Transmission	91,232	0.3%	80,494	-11.8%	76,874	-4.5%	73,045	-5.0%	67,564	-7.5%	46,946	-30.5%
Total		169,193	-1.5%	155,091	-8.3%	145,138	-6.4%	137,701	-5.1%	128,128	-7.0%	100,305	-21.7%
Electrical and Electronic Parts													
336321	Vehicle Lighting							13,659					
336322	Other Electric Equipment							58,922					
33632	MV Electrical Equipment	77,532	-14.7%	80,892	4.3%	72,620	-10.2%	72,581	-0.1%	66,582	-8.3%	51,816	-22.2%
336391	MV Air-Conditioning	19,423	1.0%	17,011	-12.4%	15,825	-7.0%	17,509	10.6%	14,910	-14.8%	11,201	-24.9%
Total		96,955	-11.9%	97,903	1.0%	88,445	-9.7%	90,090	1.9%	81,492	-9.5%	63,017	-22.7%
Engines and Engine Parts													
336311	Carburetor, piston, Piston Ring							9,693					
336312	Gasoline Engine and Parts							54,460					
33631	Engines and Parts	81,341	-7.3%	73,016	-10.2%	69,087	-5.4%	64,153	-7.1%	55,748	-13.1%	43,338	-22.3%
Total		81,341	-7.3%	73,016	-10.2%	69,087	-5.4%	64,153	-7.1%	55,748	-13.1%	43,338	-22.3%
Miscellaneous Automotive Parts													
336399		139,957	-0.2%	140,392	0.3%	132,339	-5.7%	132,282	0.0%	127,212	-3.8%	94,300	-25.9%
Total		139,957	-0.2%	140,392	0.3%	132,339	-5.7%	132,282	0.0%	127,212	-3.8%	94,300	-25.9%
Total		**688,626**	**-3.4%**	**661,269**	**-4.0%**	**628,430**	**-5.0%**	**623,855**	**-0.7%**	**572,676**	**-8.2%**	**441,222**	**-23.0%**

Source: U.S. Department of Commerce, Census of Manufacturers and *Annual Survey of Manufacturers*. http://www.census.gov/mcd/asmhome.htm

Table 12

2010 Aftermarket Deals by Quarter

	Q1	Q2	Q3	Q4	Total
Number of Deals	25	22	15	46	108

Source: BB&T Automotive Aftermarket M&A Update, Winter 2011

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

	1997	Chg*	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
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.

Automotive Aftermarket Mergers and Acquisitions

	1997	Chg*	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Number of all Deals			85	82	52	50	43	50	35	59	62	50	44	
Value of all Deals ($Billions)			12.7	19.1	7.1	2.0	12.1	8.2	2.2	1.2	3.4	2.6	3.3	

Source: Thomson Financial IBCM in Aftermarket Business, 9/2009, p. 12

U.S. AUTOMOTIVE PARTS EXPORTS, 2000 - 2010

In millions of dollars

Region/Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	% Chg
WORLD	**53,720**	**49,794**	**50,087**	**48,501**	**52,628**	**55,054**	**58,864**	**61,954**	**57,476**	**42,692**	**58,136**	**36.2%**
FT900 World*	**54,229**	**50,133**	**49,882**	**48,383**	**52,649**	**54,662**	**58,214**	**61,221**	**57,129**	**42,834**	**58,552**	**36.7%**
ASIA and the PACIFIC												
Select ASEAN												
Indonesia	34	21	22	23	34	33	34	45	35	41	68	64.8%
Philippines	53	29	59	88	71	110	116	117	62	59	72	21.4%
Singapore	135	143	141	142	149	157	239	256	355	252	345	36.7%
Thailand	143	85	86	96	96	97	79	110	116	88	127	44.6%
Total **ASEAN** (1)	**402**	**309**	**343**	**385**	**381**	**433**	**499**	**568**	**611**	**478**	**656**	**37.1%**
Chinese Economic Area												
China	225	258	344	510	636	623	815	1,130	893	937	1,278	36.4%
Hong Kong	91	82	75	75	88	82	103	100	117	121	147	21.1%
Taiwan	79	75	77	133	111	96	124	119	78	54	68	26.7%
Total **Chinese Economic Are**	**395**	**415**	**495**	**718**	**835**	**802**	**1,042**	**1,350**	**1,088**	**1,112**	**1,493**	**34.3%**
Select Other Asia and the Pacific												
Australia	700	577	615	656	768	779	875	926	923	686	1,078	57.2%
India	41	38	39	42	65	73	96	131	196	131	213	62.6%
Japan	**2,217**	**2,008**	**2,285**	**2,051**	**1,534**	**1,449**	**1,748**	**1,740**	**1,546**	**832**	**1,310**	**57.5%**
Korea	454	369	332	309	466	562	570	593	416	303	491	62.2%
EUROPE												
Select European Union												
Austria	1,056	1,117	944	556	487	814	888	623	333	114	114	-0.6%
Belgium	385	348	393	383	347	297	395	411	407	318	447	40.7%
France	366	407	355	446	599	633	657	750	718	462	586	26.7%
Germany	974	1,116	941	1,019	1,256	1,379	1,591	1,586	1,711	1,244	1,545	24.2%
Italy	135	158	122	140	132	130	139	157	169	139	193	38.4%
Netherlands	322	326	317	297	309	364	356	349	277	195	230	18.1%
Spain	121	93	102	134	134	272	278	266	219	113	152	34.3%
Sweden	143	127	154	208	241	198	198	223	225	111	182	64.8%
United Kingdom	1,241	1,236	1,072	1,061	994	844	872	999	1,024	597	924	54.8%
Total **European Union** (2)	**4,848**	**5,048**	**4,492**	**4,345**	**4,615**	**5,071**	**5,501**	**5,517**	**5,324**	**3,393**	**4,484**	**32.2%**
Select Other Europe												
Czech Republic	14	8	11	9	8	18	21	25	31	23	40	75.2%
Hungary	33	20	52	67	55	53	73	75	83	44	54	21.1%
Poland	13	14	15	17	20	33	47	61	86	56	72	28.6%
Russia	15	27	17	25	31	46	116	125	245	53	94	78.6%
Total **Other Europe**	**75**	**69**	**95**	**118**	**114**	**150**	**258**	**287**	**445**	**176**	**260**	**47.7%**
WESTERN HEMISPHERE												
Select Andean Community												
Colombia	81	76	69	68	103	108	121	130	169	160	225	40.1%
Peru	24	33	31	37	38	57	62	88	111	96	114	18.4%
Venezuela**	537	595	310	168	392	622	763	746	882	672	651	-3.0%
Total **Andean Community** (3)	**675**	**778**	**461**	**326**	**592**	**869**	**1,003**	**1,023**	**1,247**	**1,013**	**1,087**	**7.4%**
Select Central America												
Total **Central America** (4)	**160**	**142**	**151**	**143**	**202**	**246**	**328**	**399**	**346**	**259**	**289**	**11.8%**
Select MERCOSUR												
Argentina	225	112	37	93	132	154	189	228	248	173	171	-1.4%
Brazil**	401	444	454	480	565	551	601	722	842	553	938	69.8%
Chile	92	79	102	103	123	154	207	259	334	287	407	41.7%
Total **MERCOSUR** (5)	**736**	**647**	**598**	**685**	**830**	**872**	**1,015**	**1,234**	**1,470**	**1,042**	**1,548**	**48.6%**
NAFTA												
Canada	29,601	26,372	27,968	27,474	29,914	31,239	31,900	32,665	28,003	19,434	25,754	32.5%
Mexico*	12,559	12,010	11,326	10,343	11,304	11,407	12,796	13,896	13,890	12,064	17,438	44.5%
Total **NAFTA**	**42,161**	**38,381**	**39,293**	**37,817**	**41,219**	**42,646**	**44,695**	**46,561**	**41,893**	**31,498**	**43,192**	**37.1%**
ALL OTHERS	**858**	**1,012**	**887**	**907**	**1,009**	**1,103**	**1,234**	**1,627**	**1,972**	**1,772**	**2,036**	**14.9%**

Exports, f.a.s.
Source: U.S. Census Bureau
Prepared by: Office of Transportation and Machinery, U.S. Department of Commerce, 202-482-1418. 02-16-201

Notes:
*Foreign Trade Statistics, FT900: U.S. International Trade In Goods and Services, Exhibit 18: Motor Vehicles and Parts, U.S. Census Bure
**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 Vietn
2) The selected European Union countries are Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, the Un
Kingdom, Austria, Finland, and Sweden
3) The Andean Community comprises Bolivia, Colombia, Ecuador, Peru, and Venezue
4) Central America comprises Costa Rica, El Salvador, Guatemala, Honduras, and Panam
5) The MERCOSUR countries are Argentina, Brazil, Chile, Paraguay, and Uruguay

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

U.S. AUTOMOTIVE PARTS IMPORTS, 2000 - 2010

In millions of dollars

Region/Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
WORLD	**66,959**	**62,726**	**69,089**	**74,469**	**83,444**	**92,154**	**95,179**	**100,231**	**90,618**	**63,008**
FT900 World	**69,309**	**64,852**	**69,998**	**74,087**	**82,694**	**90,831**	**94,002**	**88,607**	**91,329**	**65,757**
ASIA and the PACIFIC										
Select ASEAN										
Indonesia	269	282	320	298	362	396	490	570	518	473
Philippines	408	360	349	386	399	441	517	588	568	388
Singapore	156	147	134	100	106	104	97	92	60	39
Thailand	415	411	546	529	582	660	892	1,140	1,192	914
Total **ASEAN** (1)	**1,535**	**1,444**	**1,619**	**1,586**	**1,747**	**1,860**	**2,264**	**2,821**	**2,811**	**2,174**
Chinese Economic Area										
China	1,635	1,758	2,242	2,788	3,884	5,408	6,928	8,628	9,042	7,433
Hong Kong	57	41	51	80	89	102	121	78	67	59
Taiwan	1,033	1,085	1,294	1,366	1,604	1,731	1,801	2,003	1,966	1,647
Total **Chinese Economic Area**	**2,725**	**2,885**	**3,587**	**4,234**	**5,577**	**7,240**	**8,850**	**10,709**	**11,075**	**9,139**
Select Other Asia and the Pacific										
Australia	251	186	198	205	220	227	192	201	150	92
India	190	179	202	234	333	463	578	663	738	498
Japan	**14,535**	**13,150**	**13,498**	**13,745**	**15,494**	**16,448**	**15,377**	**14,757**	**13,486**	**8,774**
Korea	1,082	1,122	1,383	1,546	1,866	2,713	3,740	3,965	3,891	2,621
EUROPE										
Select European Union										
Austria	230	201	222	281	240	373	358	542	404	469
Belgium	97	82	89	100	95	134	168	168	160	78
France	1,133	1,165	1,197	1,302	1,478	1,449	1,320	1,263	1,160	820
Germany	3,874	3,746	4,336	5,426	6,147	6,709	7,132	8,352	7,426	4,793
Italy	474	525	652	751	874	958	844	961	973	543
Netherlands	60	66	71	70	81	86	95	111	131	112
Spain	301	269	349	420	464	537	546	478	359	232
Sweden	241	188	212	229	345	446	551	256	259	164
United Kingdom	1,190	976	1,106	1,068	1,045	1,126	1,047	994	884	580
Total **European Union** (2)	**7,716**	**7,375**	**8,425**	**9,858**	**11,009**	**12,099**	**12,339**	**13,357**	**12,008**	**7,957**
Select Other Europe										
Czech Republic	60	86	125	150	156	236	238	333	387	280
Hungary	97	100	180	315	219	213	225	202	214	157
Poland	42	43	57	95	103	97	109	138	124	81
Russia	4	2	2	3	5	4	4	11	18	17
Total **Other Europe**	**203**	**230**	**364**	**564**	**483**	**550**	**576**	**684**	**742**	**535**
WESTERN HEMISPHERE										
Select Andean Community										
Colombia	8	10	13	16	14	19	26	27	25	19
Peru	4	10	12	8	12	9	13	9	10	5
Venezuela	235	159	172	191	190	211	196	86	35	9
Total **Andean Community** (3)	**249**	**179**	**199**	**216**	**217**	**240**	**236**	**124**	**72**	**34**
Select Central America										
Total Central America (4)	**91**	**69**	**105**	**181**	**345**	**510**	**633**	**704**	**665**	**550**
Select MERCOSUR										
Argentina	177	233	223	185	178	168	187	187	146	84
Brazil	1,248	955	1,275	1,474	1,711	2,022	2,224	1,767	1,735	953
Chile	42	33	33	46	64	66	60	65	49	9
Total **MERCOSUR** (5)	**1,473**	**1,225**	**1,538**	**1,708**	**1,956**	**2,261**	**2,481**	**2,029**	**1,933**	**1,047**
NAFTA										
Canada	17,634	15,787	17,217	18,569	20,164	21,581	20,424	20,539	16,524	10,458
Mexico	18,663	18,180	20,069	21,039	23,104	24,910	26,368	28,416	25,281	18,294
Total **NAFTA**	**36,297**	**33,967**	**37,286**	**39,607**	**43,268**	**46,490**	**46,792**	**48,955**	**41,805**	**28,752**
ALL OTHERS	**613**	**714**	**686**	**783**	**927**	**1,051**	**1,120**	**1,262**	**1,242**	**836**

Imports, customs value
Source: U.S. Census Bureau
Prepared by: Office of Transportation and Machinery, U.S. Department of Commerce, 202-482-1418. 02-16-201

Notes:
*Foreign Trade Statistics, FT900: U.S. International Trade In Goods and Services, Exhibit 18: Motor Vehicles and Parts, U.S. Census Bure
1) The ASEAN region comrpises Brunei, Burma (Myanmar), Cambodia, Indonesia, Laos, Malaysia, Philippines, Singapore, Thailand, and Vietn
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U.S. AUTOMOTIVE PARTS TRADE BALANCE, 2000 - 2010

In millions of dollars

2010	%Chg	Region/Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	%Chg
90,899	**44.3%**	**WORLD**	**-13,239**	**-12,932**	**-19,002**	**-25,968**	**-30,816**	**-37,100**	**-36,315**	**-38,277**	**-33,142**	**-20,316**	**-32,762**	**61.3%**
95,544	**45.3%**	**FT900 World**	**-15,080**	**-14,719**	**-20,116**	**-25,704**	**-30,045**	**-36,169**	**-35,788**	**-27,386**	**-34,200**	**-22,923**	**-36,992**	**61.4%**
		ASIA and the PACIFIC												
		Select ASEAN												
714	50.9%	Indonesia	-236	-261	-298	-274	-328	-363	-457	-525	-484	-432	-646	49.6%
505	30.2%	Philippines	-355	-331	-290	-298	-328	-332	-401	-471	-506	-329	-433	31.8%
40	2.5%	Singapore	-21	-4	8	42	43	53	142	164	295	214	306	42.9%
1,684	84.4%	Thailand	-272	-326	-460	-433	-485	-563	-814	-1,030	-1,077	-826	-1,557	88.6%
3,460	**59.2%**	Total **ASEAN** (1)	**-1,133**	**-1,135**	**-1,276**	**-1,201**	**-1,367**	**-1,428**	**-1,766**	**-2,253**	**-2,200**	**-1,695**	**-2,804**	**65.4%**
		Chinese Economic Area												
10,037	35.0%	China	-1,410	-1,501	-1,898	-2,278	-3,249	-4,784	-6,112	-7,498	-8,150	-6,496	-8,760	34.8%
60	1.1%	Hong Kong	35	41	23	-5	0	-20	-18	22	50	62	87	40.1%
2,042	24.0%	Taiwan	-954	-1,010	-1,217	-1,233	-1,493	-1,634	-1,677	-1,884	-1,887	-1,593	-1,974	23.9%
12,139	**32.8%**	Total **Chinese Economic Are**	**-2,330**	**-2,470**	**-3,092**	**-3,516**	**-4,742**	**-6,439**	**-7,808**	**-9,360**	**-9,987**	**-8,028**	**-10,646**	**32.6%**
		Select Other Asia and the Pacific												
138	50.9%	Australia	449	391	416	451	548	551	683	725	773	594	940	58.2%
798	60.0%	India	-149	-142	-163	-192	-268	-390	-481	-533	-542	-368	-585	59.1%
12,103	**37.9%**	**Japan**	**-12,318**	**-11,141**	**-11,213**	**-11,695**	**-13,961**	**-14,999**	**-13,629**	**-13,017**	**-11,940**	**-7,942**	**-10,793**	**35.9%**
4,929	88.1%	Korea	-628	-753	-1,051	-1,238	-1,400	-2,152	-3,170	-3,371	-3,474	-2,318	-4,438	91.4%
		EUROPE												
		Select European Union												
806	71.7%	Austria	826	916	722	275	247	441	530	81	-71	-355	-692	95.0%
93	19.2%	Belgium	288	266	304	283	252	163	226	242	246	240	354	47.7%
904	10.2%	France	-767	-759	-843	-856	-879	-815	-663	-512	-442	-358	-318	-11.2%
6,278	31.0%	Germany	-2,900	-2,630	-3,395	-4,407	-4,891	-5,330	-5,541	-6,766	-5,715	-3,548	-4,734	33.4%
681	25.5%	Italy	-338	-367	-530	-611	-741	-828	-704	-805	-804	-403	-488	21.0%
183	63.3%	Netherlands	262	260	246	227	228	277	262	238	146	83	48	-42.8%
261	12.6%	Spain	-180	-176	-246	-286	-331	-264	-268	-211	-141	-118	-109	-8.3%
261	59.2%	Sweden	-98	-61	-58	-21	-105	-248	-353	-34	-35	-53	-79	47.8%
751	29.5%	United Kingdom	51	260	-34	-6	-51	-282	-175	5	140	17	173	933.8%
10,414	**30.9%**	Total **European Union** (2)	**-2,868**	**-2,327**	**-3,932**	**-5,513**	**-6,394**	**-7,028**	**-6,838**	**-7,840**	**-6,684**	**-4,565**	**-5,930**	**29.9%**
		Select Other Europe												
440	57.3%	Czech Republic	-46	-78	-114	-141	-149	-218	-218	-308	-356	-257	-401	55.8%
195	24.4%	Hungary	-64	-80	-128	-249	-164	-160	-152	-127	-131	-113	-142	25.7%
141	73.7%	Poland	-29	-29	-42	-78	-82	-64	-62	-78	-38	-25	-69	174.6%
35	114.1%	Russia	11	25	15	22	26	43	113	115	227	36	59	62.4%
812	**51.9%**	Total **Other Europe**	**-128**	**-161**	**-269**	**-446**	**-369**	**-400**	**-318**	**-398**	**-297**	**-359**	**-552**	**54.0%**
		WESTERN HEMISPHERE												
		Select Andean Community												
34	77.2%	Colombia	73	66	56	52	89	89	95	104	144	141	190	35.1%
7	37.3%	Peru	19	23	19	29	26	48	49	79	101	91	107	17.3%
11	24.3%	Venezuela	302	436	138	-23	202	412	567	660	847	663	641	-3.4%
53	**53.3%**	Total **Andean Community** (3)	**426**	**598**	**262**	**109**	**375**	**629**	**767**	**899**	**1,175**	**978**	**1,034**	**5.8%**
		Select Central America												
853	**55.3%**	Total **Central America** (4)	**69**	**73**	**46**	**-38**	**-144**	**-264**	**-305**	**-306**	**-319**	**-291**	**-564**	**93.9%**
		Select MERCOSUR												
97	16.1%	Argentina	49	-120	-186	-92	-46	-14	2	40	102	90	74	-17.7%
1,279	34.2%	Brazil	-847	-510	-821	-995	-1,145	-1,471	-1,622	-1,045	-893	-401	-341	-15.0%
80	798.2%	Chile	50	46	69	57	59	87	147	193	286	278	327	17.6%
1,456	**39.1%**	Total **MERCOSUR** (5)	**-737**	**-578**	**-939**	**-1,023**	**-1,126**	**-1,388**	**-1,466**	**-795**	**-463**	**-5**	**92**	**-1865.1%**
		NAFTA												
14,469	38.3%	Canada	11,967	10,585	10,751	8,906	9,751	9,659	11,475	12,125	11,479	8,976	11,285	25.7%
28,113	53.7%	Mexico	-6,104	-6,170	-8,744	-10,696	-11,800	-13,503	-13,572	-14,520	-11,391	-6,229	-10,674	71.4%
42,581	**48.1%**	Total **NAFTA**	**5,864**	**4,415**	**2,007**	**-1,790**	**-2,049**	**-3,844**	**-2,097**	**-2,394**	**88**	**2,746**	**611**	**-77.8%**
1,162	**39.0%**	**ALL OTHERS**	**244**	**298**	**202**	**124**	**82**	**51**	**113**	**365**	**730**	**936**	**874**	**-6.6%**

Source: U.S. Census Bureau
Prepared by: Office of Transportation and Machinery, U.S. Department of Commerce, 202-482-1418. 02-16-201

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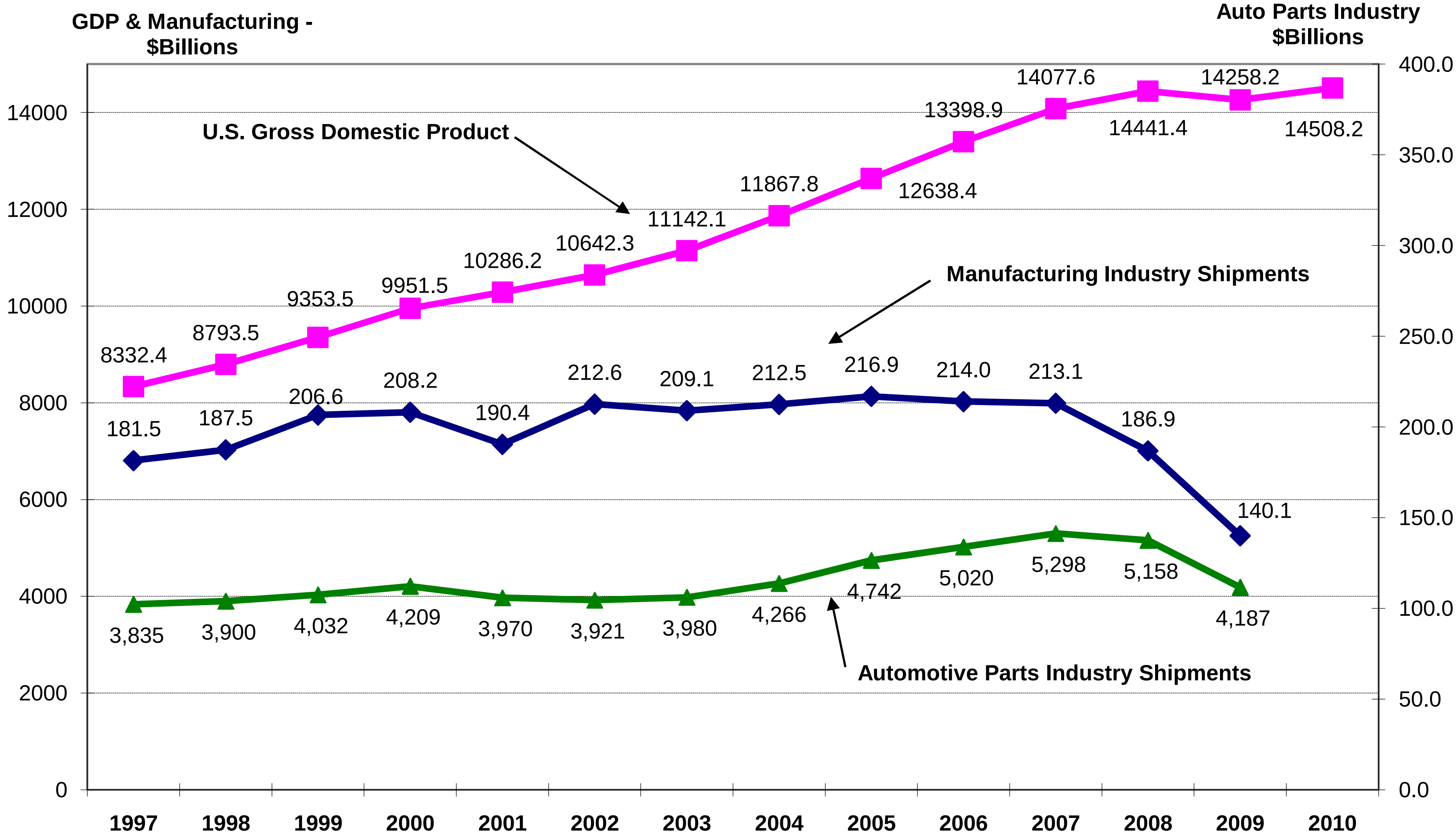
Chart 1

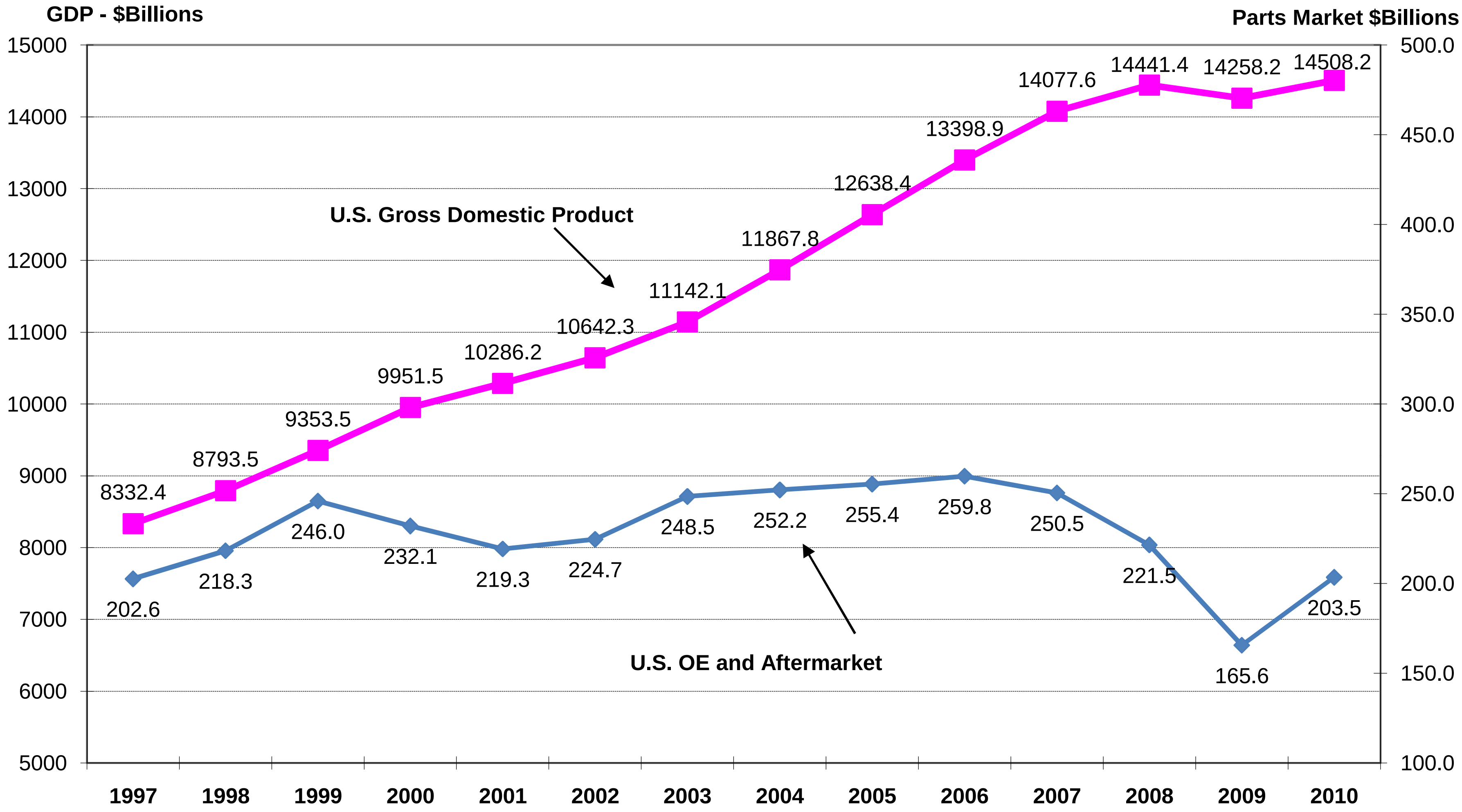
Gross Domestic Product, Manufacturing Industry Shipments, and Automotive Parts Industry Shipments, 1997-2010.



Source: U.S. Department of Commerce.

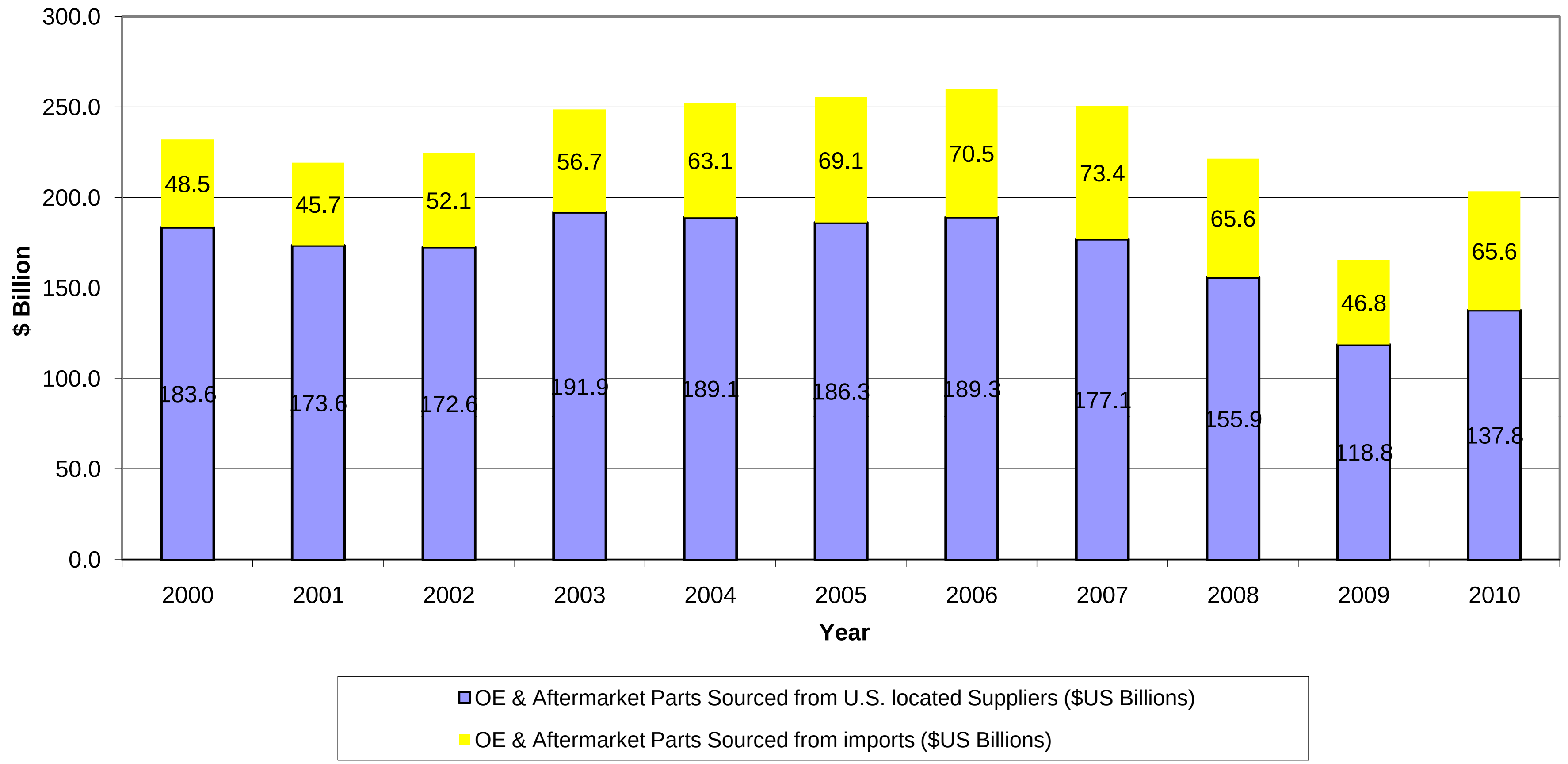
Chart 2

The automotive parts market accounted for 2.4% of the 1997 GDP and an estimated 1.4% in 2010.



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

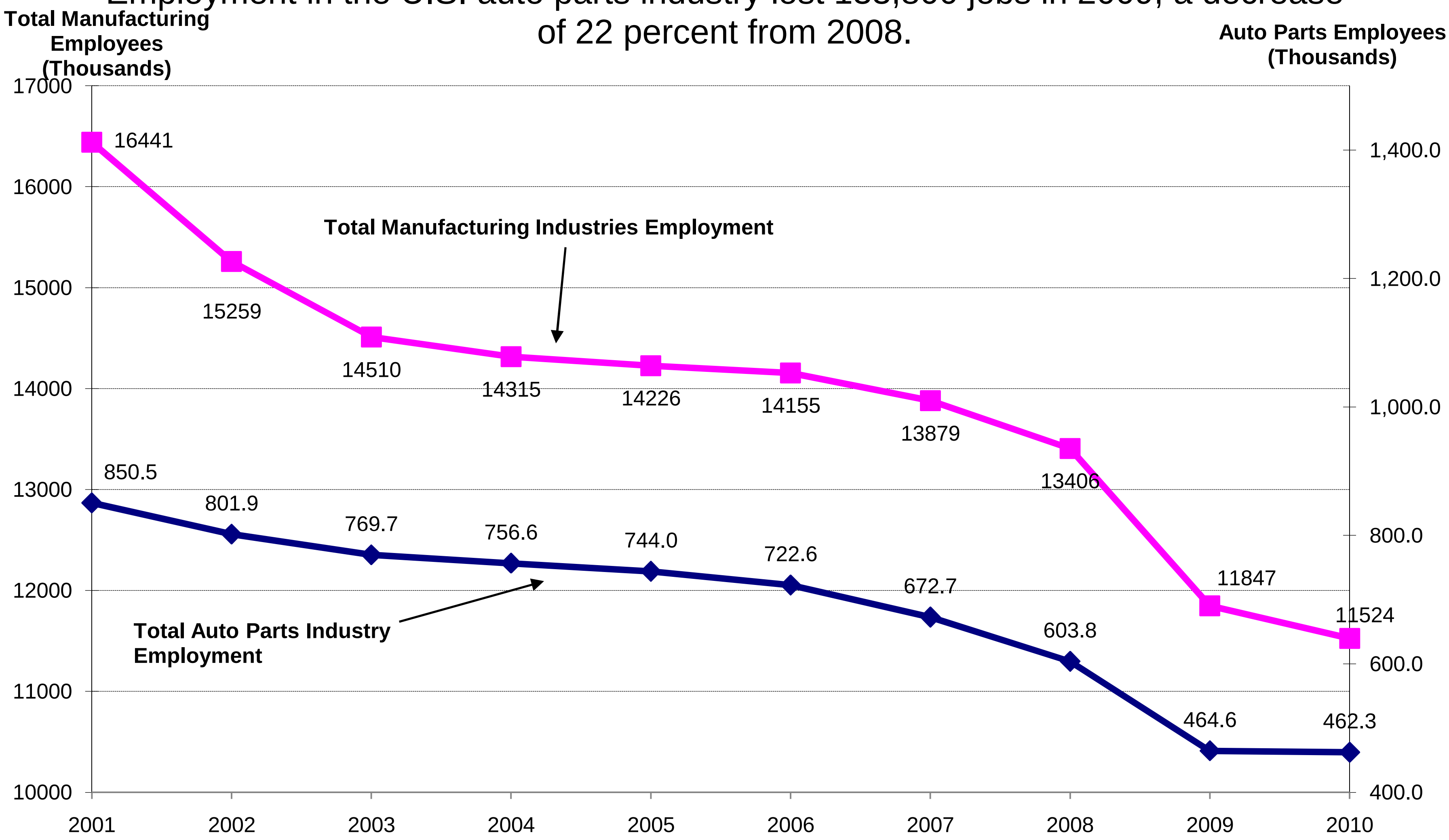
Chart 3
U.S. OE and Aftermarket Parts Market, 2000-2010
The U.S. Supplier Share has been declining since 2003 (with exception of a 1.4% increase in 2009).



Source: DesRosiers

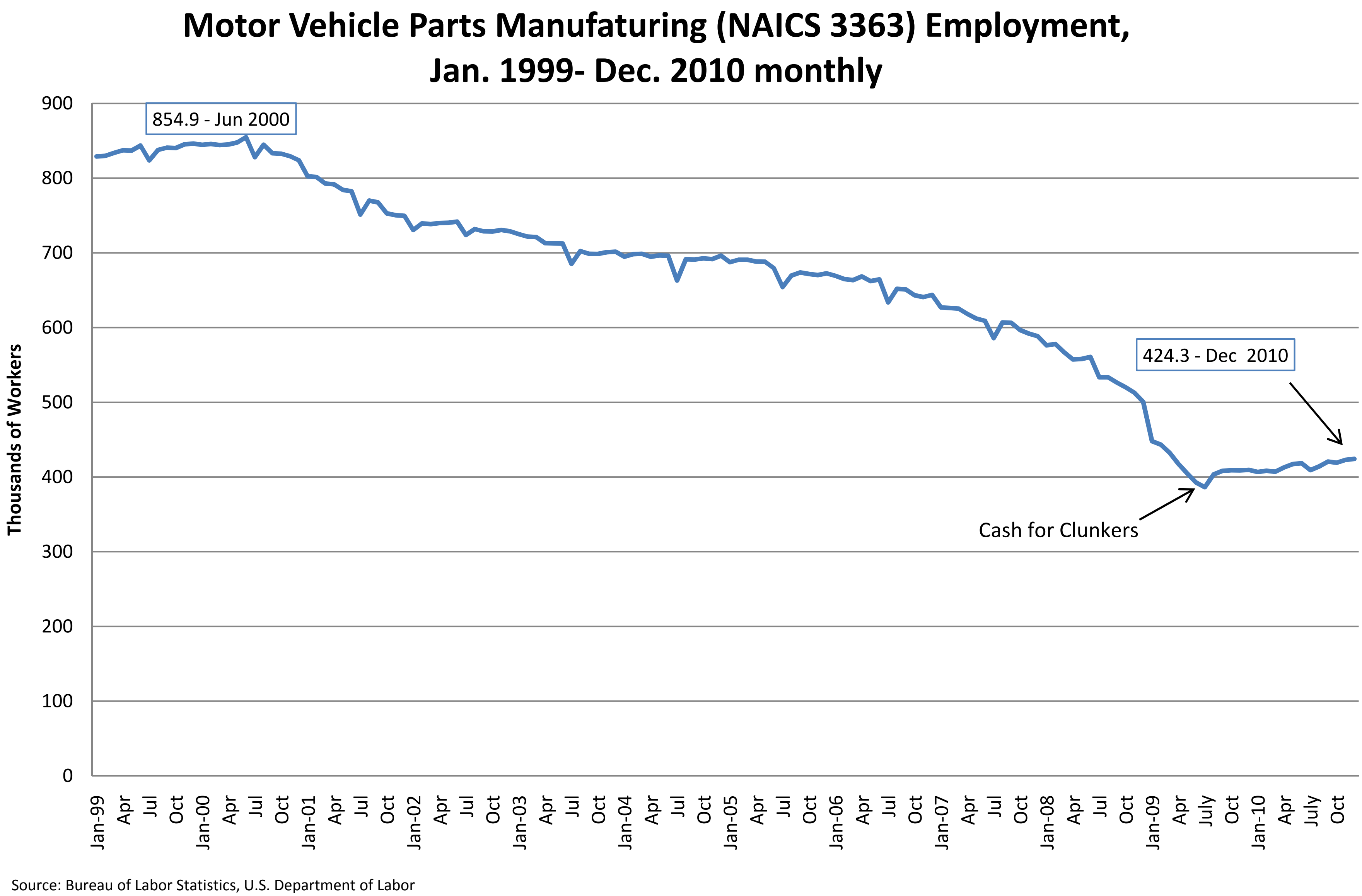
Chart 5

Employment in the U.S. auto parts industry lost 133,800 jobs in 2009, a decrease of 22 percent from 2008.



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

Chart 6



Motor Vehicle Parts Manufaturing (NAICS 3363) Employment,
Jan. 1999- Dec. 2010 monthly
Thousands of Workers
900
800
700
600
500
400
300
200
100
0
854.9 - Jun 2000
424.3 - Dec 2010
Cash for Clunkers
Jan-99
Apr
Jul
Oct
Jan-00
Apr
Jul
Oct
Jan-01
Apr
Jul
Oct
Jan-02
Apr
Jul
Oct
Jan-03
Apr
Jul
Oct
Jan-04
Apr
Jul
Oct
Jan-05
Apr
Jul
Oct
Jan-06
Apr
Jul
Oct
Jan-07
Apr
Jul
Oct
Jan-08
Apr
Jul
Oct
Jan-09
Apr
July
Oct
Jan-10
Apr
July
Oct
Source: Bureau of Labor Statistics, U.S. Department of Labor

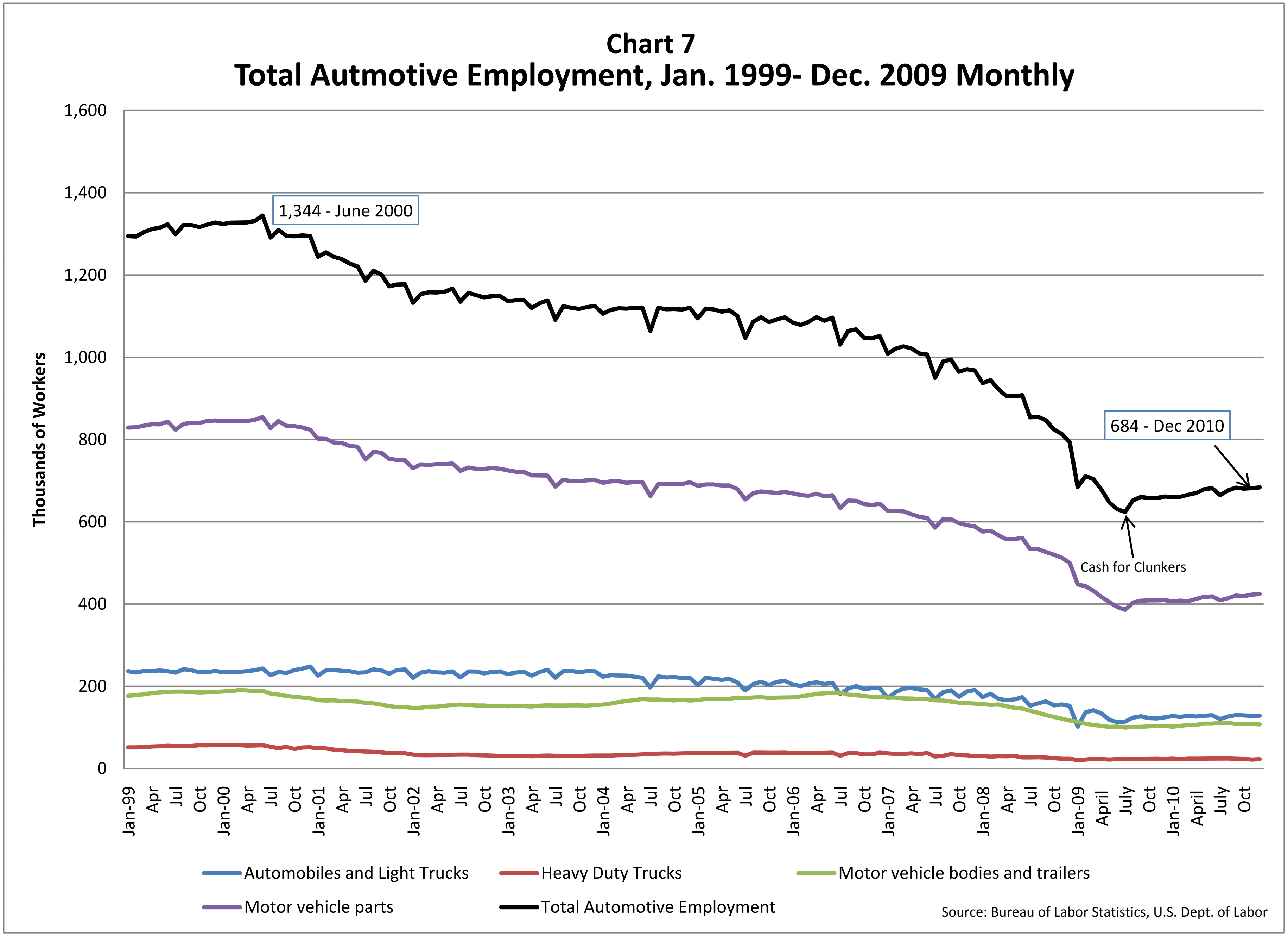
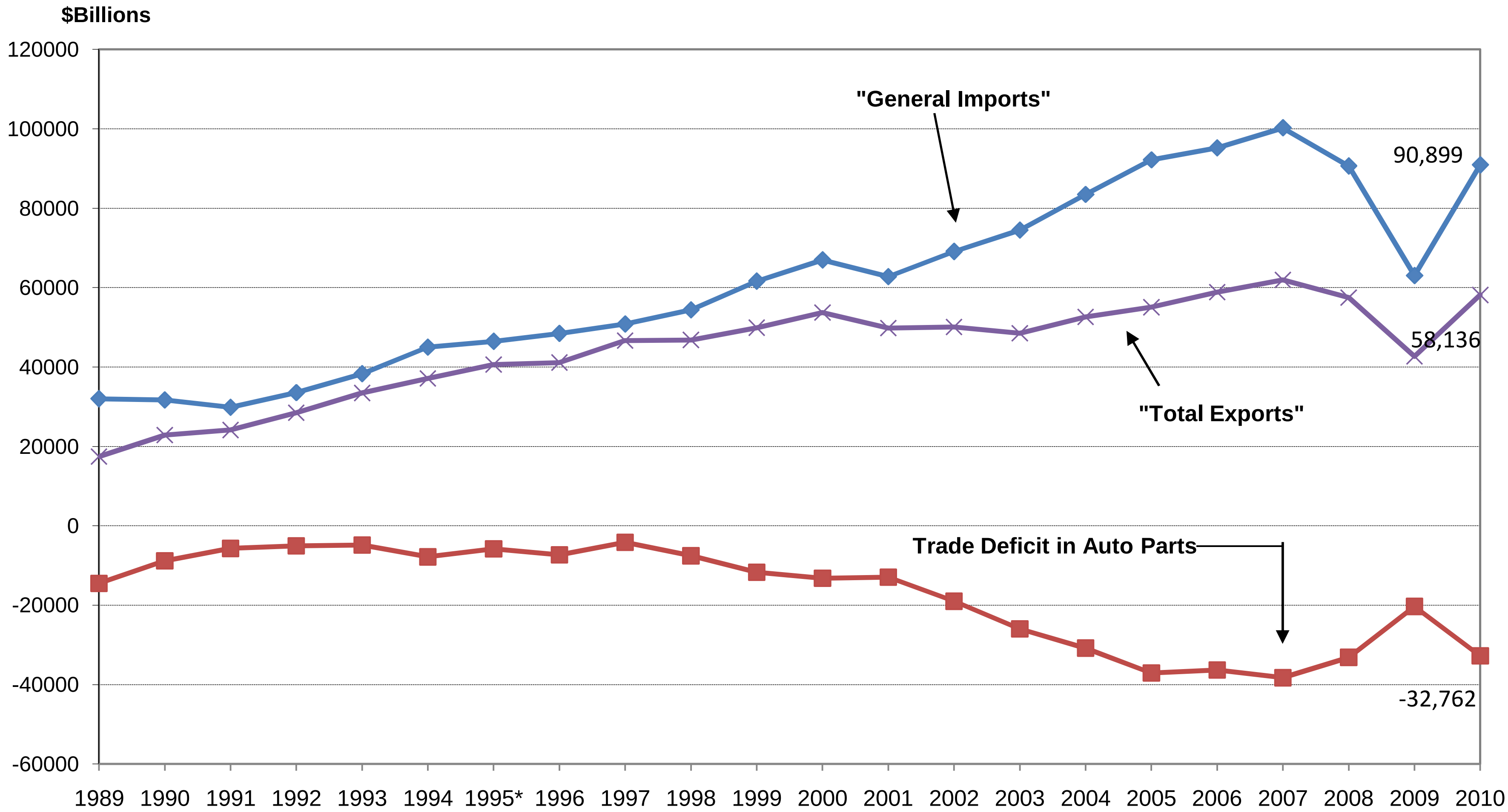


Chart 7
Total Autmotive Employment, Jan. 1999- Dec. 2009 Monthly
Thousands of Workers
1,600
1,400
1,200
1,000
800
600
400
200
0
1,344 - June 2000
684 - Dec 2010
Cash for Clunkers
Jan-99
Apr
Jul
Oct
Jan-00
Apr
Jul
Oct
Jan-01
Apr
Jul
Oct
Jan-02
Apr
Jul
Oct
Jan-03
Apr
Jul
Oct
Jan-04
Apr
Jul
Oct
Jan-05
Apr
Jul
Oct
Jan-06
Apr
Jul
Oct
Jan-07
Apr
Jul
Oct
Jan-08
Apr
Jul
Oct
Jan-09
April
July
Oct
Jan-10
April
July
Oct
Automobiles and Light Trucks
Heavy Duty Trucks
Motor vehicle bodies and trailers
Motor vehicle parts
Total Automotive Employment
Source: Bureau of Labor Statistics, U.S. Dept. of Labor

Chart 8

U.S. auto parts exports increased 36% in 2010 and imports increased 44%.

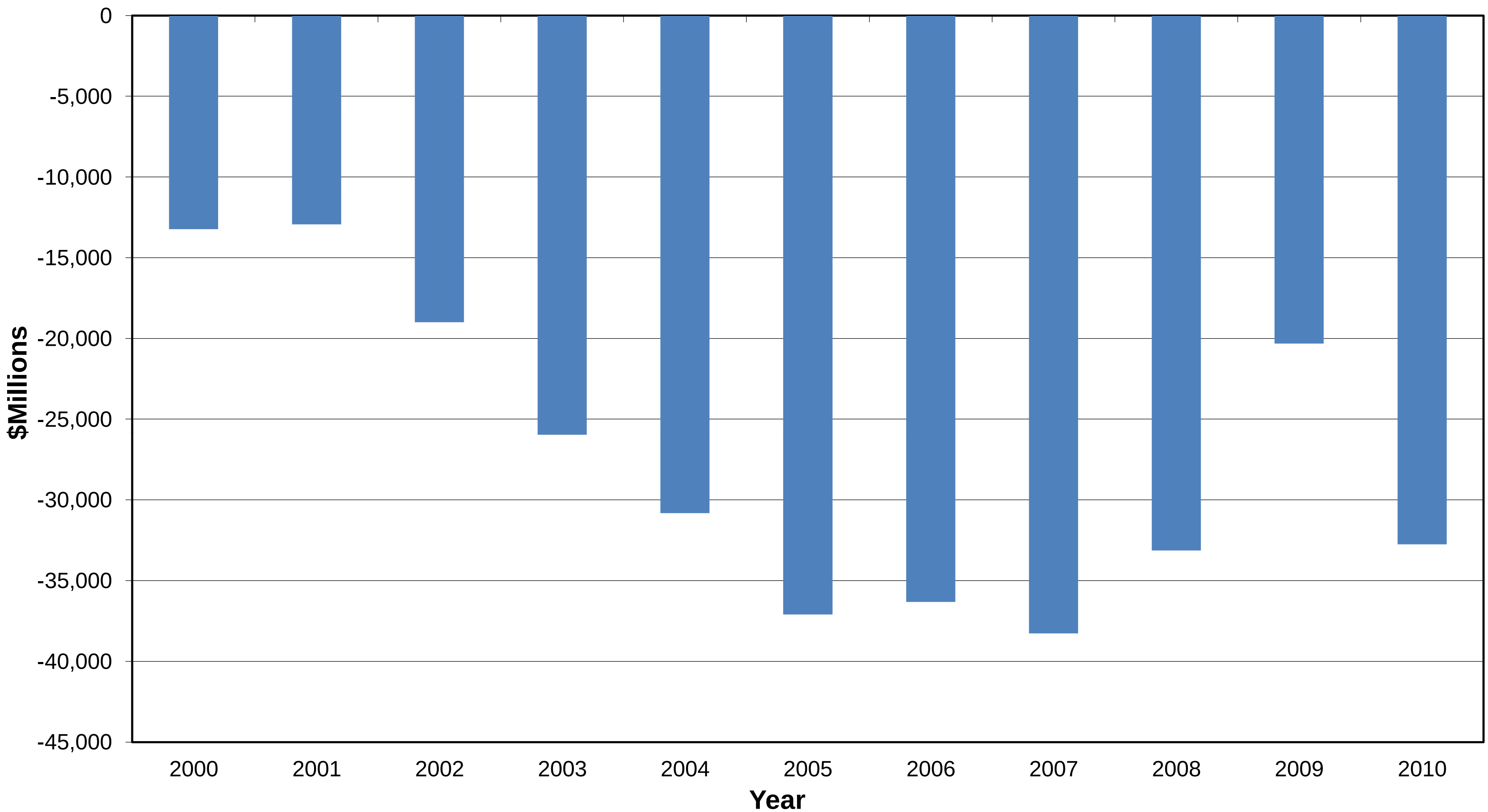


Source: U.S. Bureau of the Census, U.S. Department of Commerce.

Chart 9

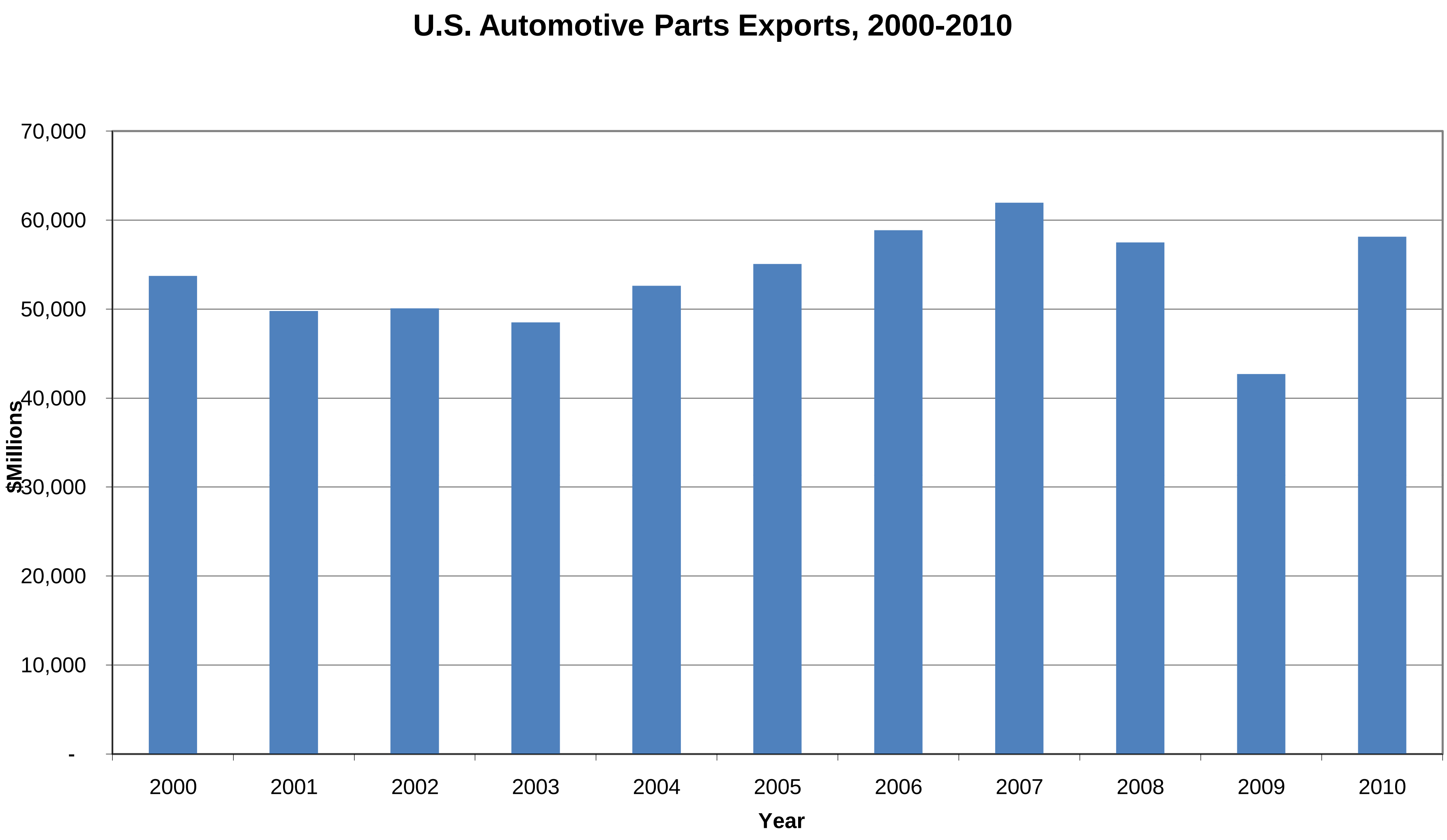
A 61.3 % increase in U.S. automotive parts trade deficit in 2010 was the result of ...

U.S. Automotive Parts Trade Balance, 2000-2010



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

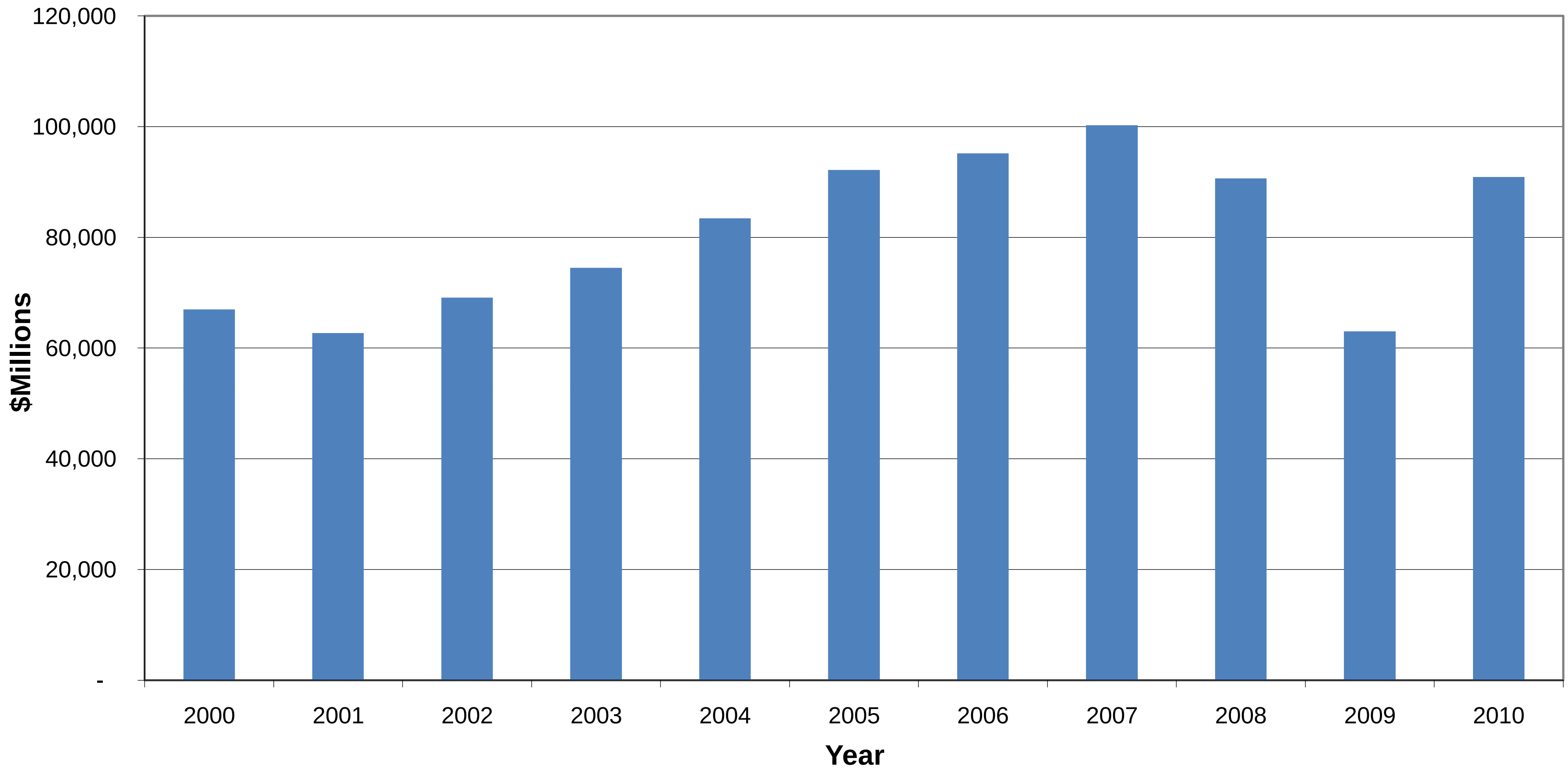
Chart 10
Exports increased 36.2 percent in 2010 ...



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

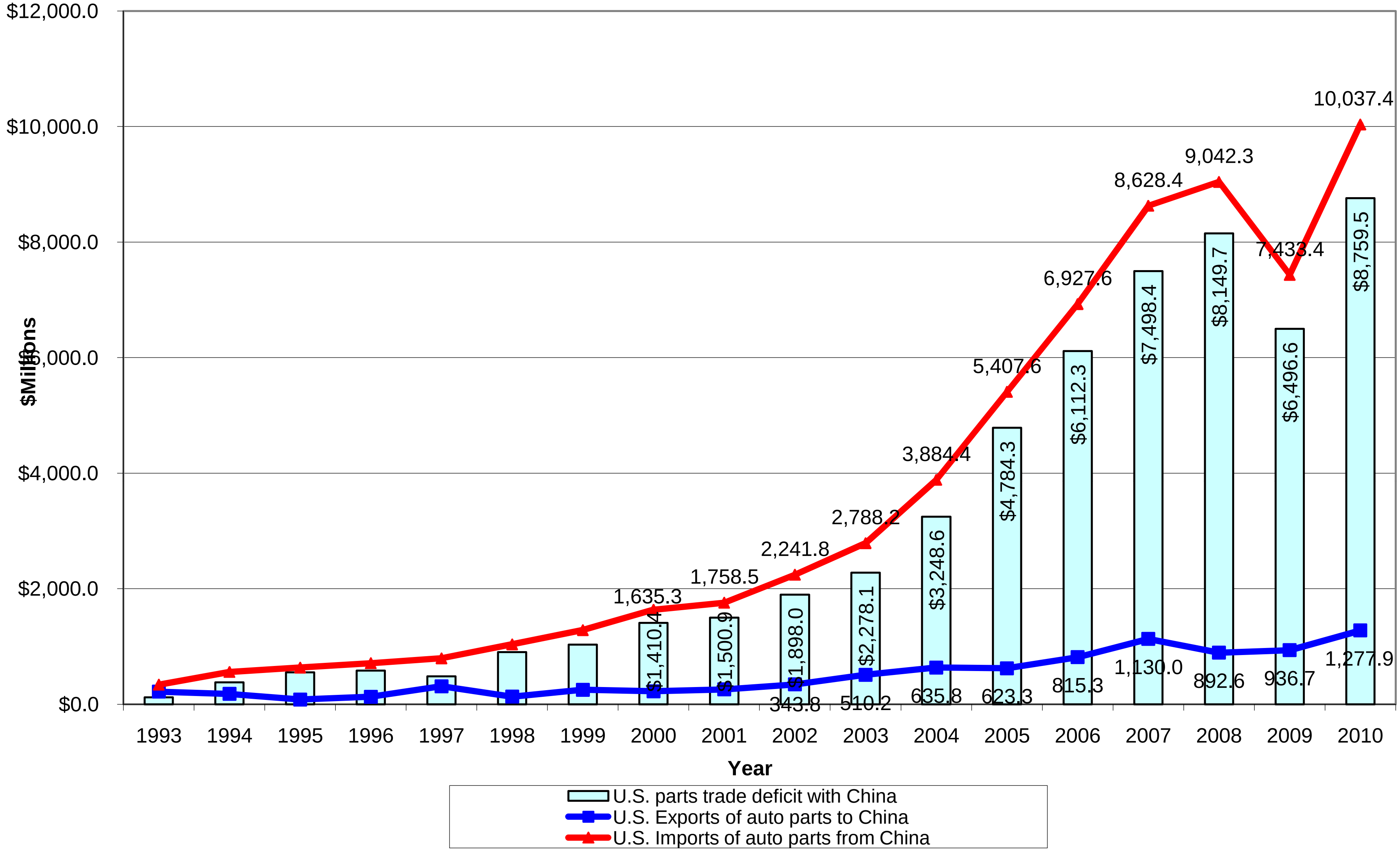
Chart 11
while Imports increased 44.3 percent in 2010.

U.S. Automotive Parts Imports, 2000-2010



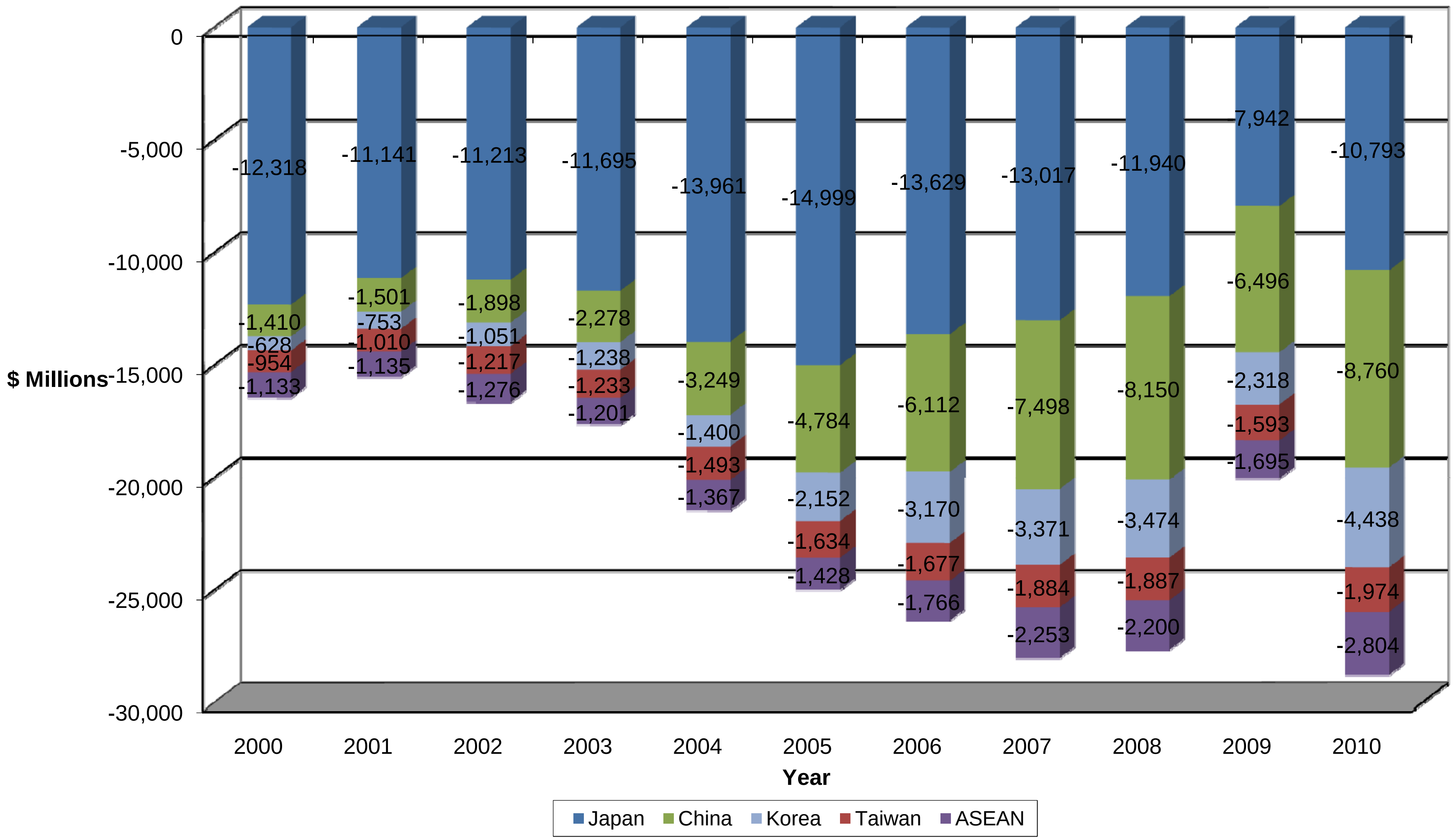
Source: U.S. Department of Commerce, Bureau of the Census.

Chart 12
U.S. - China Auto Parts Trade, 1993-2010
In 2010, the parts trade deficit with China increased 34.8 percent over 2009 levels



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

Chart 13
The U.S. auto parts trade deficit with Asian countries continues to increase.



Source: U.S. Bureau of Census