

# *The Road Ahead for the U.S. Auto Market*



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## **Executive Summary**

### **Domestic Trends**

The U.S. market for cars and light trucks declined slightly to almost 16.5 million vehicles in 2006, but overall sales remained strong, marking the seventh consecutive year with sales above 16 million units. Although light trucks still accounted for over half of the U.S. passenger vehicle market in 2006, sales declined for the second straight year. Conversely, passenger car sales grew for the second year in a row. Sales of sport utility vehicles (SUVs) continued to decline, but the popularity of cross utility vehicles (CUVs) continued to grow. Sales of hybrid vehicles, which tend to be dependent on gas prices, also grew to reach approximately a quarter of a million units in 2006.

With increased competition, the combined market share of the Detroit 3 (GM, Ford, and the Chrysler unit of DaimlerChrysler) continues to fall, decreasing from 73 percent in 1996 to 53.5 percent in 2006. The loss of North American profitability and the need to control legacy costs led GM and Ford to announce massive restructuring plans in late 2005 and during 2006. Chrysler also announced restructuring plans in February 2007. Meanwhile foreign competitors continue to invest in U.S. auto assembly plants and their U.S. market share continues to grow. Japanese brands had a 35 percent market share, and German brands had 5.6 percent in 2006. The Korean manufacturers, in particular, continue to make inroads in the U.S. marketplace with their market share growing from 2 percent in 2000 to 4.6 percent in 2006.

### **International Trends**

The U.S. auto trade deficit remained the highest in the world, increasing 7 percent to \$108 billion in 2006. U.S. light vehicle exports increased 13.6 percent to reach \$40.2 billion, and imports increased 9 percent to reach \$148.4 billion, with a substantial portion of U.S. auto trade being intra-NAFTA. During 2006, imports from Japan increased substantially, imports from Korea remained relatively flat, and imports from Germany decreased.

### **Capacity Utilization**

U.S. light vehicle manufacturing capacity has increased over the last decade, up from 13 million units in 1995 to 13.2 million units in 2005. In 2005, the Harbour Reports showed that average capacity utilization was 86.6 percent. However, there are large differences among individual plants. Reductions in the Detroit 3's production will only be partially offset by new investments from foreign-affiliated firms.

### **Outlook**

Market analysts are forecasting U.S. vehicle sales volume in 2007 to be slightly lower than in 2006. GM, Ford, and Chrysler will continue to implement their restructuring plans and battle for market share. Their turnaround requires the cooperation of the United Automobile Workers (UAW) and lessening the burden of rising healthcare and pension costs, issues that will inevitably be discussed at this summer's labor contract negotiations between the UAW and the Detroit 3. With oil prices continuing to be in flux, consumers' growing interest in fuel-efficient cars versus light trucks will also likely

continue, which impact the Detroit 3's bottom line. Some analysts are speculating that 2007 could be the year when the Detroit 3's combined market share drops to below 50 percent.

# The Road Ahead for the U.S. Auto Industry 2007

## Introduction

Despite gas prices climbing to \$3 a gallon last summer, and a slight reduction in incentives, 2006 was another good year in terms of overall light vehicle sales. However, it was a difficult year for some of the individual automakers, particularly the Detroit 3. The domestic automakers are currently restructuring their North American operations to face challenges such as a continued loss of U.S. market share to foreign competitors, and high legacy and commodities costs.

In 2006, U.S. light vehicle sales totaled almost 16.5 million units, down 2.6 percent compared to 16.9 million units in 2005.<sup>1</sup> With consumers becoming more interested in fuel-efficient cars and crossovers, sales of SUVs declined 14 percent. Although light trucks still accounted for 52.8 percent of the U.S. passenger vehicle market in 2006, sales fell to 8.7 million units, a decrease of six percent from 2005. Meanwhile, passenger cars' sales grew for the second year in a row. Sales reached almost 7.8 million units, a 1.5 percent increase compared to 2005.

According to the Department of Commerce's Bureau of Economic Analysis (BEA), consumer expenditures on new vehicles have shifted over the past two years. (Chart 1) Spending on new trucks dropped for the second year in a row, decreasing almost 10 percent from 2005 to \$137.5 billion. Expenditures on new cars, however, grew for the second straight year to reach \$105.2 billion, an increase of 1.5 percent compared to 2005. (Table 1)

U.S. production of light vehicles declined in 2006, falling by 6.4 percent for a total of 10.8 million units. (Table 2) Sales of vehicles produced outside the NAFTA region continued to rise in 2006, and their share of the market grew almost 2.3 percent to 22.3 percent of total sales.<sup>2</sup> The share of U.S. sales of vehicles produced in Japan reached 12.7 percent of the U.S. market in 2006, an increase of 2.7 percent; the share of imported German vehicles sold in the United States grew slightly to 3.6 percent of the market, a 0.2 percent increase; and, the share of imported Korean vehicles fell 0.6 percent to 4.0 percent.

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<sup>1</sup> Automobiles, station wagons, vans with not more than 15 passenger capacity, sport and cross utility vehicles, and pickups. All rated at not more than 10,000 pounds of gross vehicle weight.

<sup>2</sup> The industry includes sales of vehicles made within the North American Free Trade Area [NAFTA] as 'domestic' vehicles. Everything else in industry sales data is an 'import.' The industry defines an 'import brand,' as any line other than those of GM, Ford, or the Chrysler Group. Import brands include vehicles their parents produce in the United States. Note, however, that U.S. government trade data counts all vehicles made in Canada and Mexico (including those of GM, Ford, Chrysler, Honda, Nissan, Toyota, and VW) in its import tally ('true imports') for determining the balance of trade with other countries.

## Crystal Ball Shows Lower Sales Volume in 2007

According to twelve market analysts consulted by Automotive News, U.S. vehicle sales in 2007 could be the lowest in nine years, with an average forecast of 16.4 million units. Analysts cited the slowing U.S. economy, falling home prices, and volatile crude oil prices as factors influencing their forecasts.

Many economic indicators for the coming year are mixed, as they were last year. Income is up, but so are debt levels. The average interest rate for last year was lower, mainly due to a low third quarter, but rates averaged 5.62 percent for both the second and fourth quarters in 2006. Disposable personal income (DPI) was up 5.5 percent to \$9.5 billion in 2006. Per capita DPI reached \$31,849 in 2006, up 4.6 percent in current dollars, and up 1.8 percent in constant dollars.<sup>3</sup> The national unemployment rate ended the year at 4.5 percent, slightly lower than the year's average rate of 4.6 percent, and below December 2005's rate of 4.9 percent. The last peak rate was 6.3 percent in June 2003. Data from the Federal Reserve Board shows that total consumer non-revolving debt, which includes automotive loans, was projected to reach \$1.52 billion dollars in 2006, up 3.8 percent from 2005's level of \$1.47 billion.<sup>4</sup> Interest rates on consumer motor vehicle loans at auto finance companies were in flux last year, and were projected to average 4.96 for the year. For the fourth quarter of 2006, they were projected to average 5.62 percent, down from fourth quarter 2005's level of 5.97 percent. Consumers appear to be taking longer-term loans to finance their vehicles, and Edmunds.com reports that auto leasing grew 21 percent in 2006. According to BEA, personal outlays for all non-mortgage interest payments reached almost \$230 billion for 2006, up significantly from \$209 billion in 2005.

While the Labor Department's consumer price index (CPI) for new cars increased almost 1 percent in 2006 to \$136.4, the index for trucks fell to \$142.9, down 1.7 percent for the year.<sup>5</sup> Population projections favor increased auto sales. According to the U.S. Census bureau, the U.S. population over 16 years of age is expected to grow by approximately 2.5 million people in 2007.<sup>6</sup>

Participants at the December 2006 Federal Reserve Bank of Chicago's Economic Outlook Symposium expected economic growth to soften slightly in 2007, with GDP forecast to grow by 2.8 percent. Short-term interest rates are expected to fall 22 basis points, while long-term interest rates are predicted to increase 20 basis points, and oil

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<sup>3</sup> Current BEA data is available at: <http://www.bea.gov/bea/dn/nipaweb/SelectTable.asp?Selected=N> . Scroll to Section 2 and select Table 2.1 for Personal Income; Scroll to Section 7 and select Table 7.2.5B for "Motor Vehicle Output."

<sup>4</sup> See the Federal Reserve Board's monthly consumer credit report at: <http://www.federalreserve.gov/releases/g19> .

<sup>5</sup> Enter the BLS web site for access to the latest adjusted CPI numbers: <http://www.bls.gov/cpi/home.htm> . Select "Get Detailed CPI Statistics." Under "Create Customized Tables," select "Consumer Price Index – All Urban Consumers (Current Series)."

<sup>6</sup> Census Bureau population projections may be viewed at <http://www.census.gov/population/www/projections/natsum-T3.html>

prices were expected to remain just under \$60 in 2007.<sup>7</sup> Consumers' confidence of current-day conditions was slightly up in January 2007, but consumers' outlook for the next six months was slightly less optimistic compared with December 2006.<sup>8</sup>

### **Restructuring of the Detroit 3**

After experiencing losses in both market share and profitability, the Detroit 3 and their workforce have had to take drastic measures to cut costs and increase revenue. All three domestic automakers are currently in various stages of implementing restructuring plans to help them compete. A recent Harbour-Felax Group study discusses the discrepancy between the Detroit 3 and the Japanese automakers. The study reports that Japan's Toyota, Honda, and Nissan earn an average of \$2,400 more on each vehicle they sell in North America compared to the Detroit 3, due to lower labor costs, higher revenue per vehicle, and more efficient design and engineering processes.

In November 2006, the Detroit 3's CEOs met with President Bush to discuss some of their competitiveness concerns. The manufacturers' main issues were: improving access to alternative fuels such as ethanol E85 and bio-diesel, and calling for more research and development incentives; health care costs; foreign market access and exchange rates; and, the rising cost of production materials, such as steel.

#### General Motors

After suffering a \$10.6 billion loss in 2005, GM spent 2006 aggressively implementing a North American turnaround plan announced in November 2005 and reduced its costs in North America by \$6.8 billion.

As part of its plan to reduce its U.S. salaried workforce by 7 percent, GM announced in January 2006 it would lay off approximately 500 contract employees at its Warren, Michigan technical center. GM announced a second round of U.S. salaried employee cuts in March 2006, only saying it would affect less than 500 employees.

In February 2006, GM announced additional actions to support their turnaround: revised health-care benefit plan for salaried retirees in the United States that is expected to reduce the liability by about \$4.8 billion and its annual health care expense by almost \$900 million before tax; planned restructuring of the U.S. salaried pension benefit plan; a 50 percent reduction in the cash dividend paid to stockholders; significant reduction in salary for GM's chairman and senior leadership team; and, a 50 percent reduction in compensation for outside board members.

In March 2006, the UAW and GM agreed to terms permitting GM to reduce health care benefits for 400,000 retirees, which helped GM cut \$1 billion. GM also announced extensive changes to salaried employees' retirement plans that would reduce pension costs by \$1.6 billion in 2006. Effective January 1, 2007, GM froze the accrued pension

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<sup>7</sup> [http://www.chicagofed.org/economic\\_research\\_and\\_data/index.cfm](http://www.chicagofed.org/economic_research_and_data/index.cfm)

<sup>8</sup> <http://www.conference-board.org/economics/consumerconfidence.cfm>

benefits for U.S. salaried employees under GM's defined benefit plan formula and began shifting toward a broader reliance on defined contribution plans in the future.

To generate cash, GM sold a 17.4 percent stake in Suzuki in March 2006 for an estimated \$2 billion, leaving it with 3 percent of the company, and, in April 2006, sold its 7.9 percent stake in Isuzu Motors for approximately \$300 million. In addition, GM sold 51 percent of its financing subsidiary, General Motors Acceptance Corporation for approximately \$14 billion at the end of November.

One of last year's biggest restructuring measures took place in June 2006 when 34,000, or almost a third of GM's hourly workforce, accepted a package to take buyouts or early retirement offers.

To help consumers focus on their vehicles' value and quality, GM announced in September 2006 that it would provide a five year or 100,000 mile powertrain warranty on its entire 2007 model year lineup in the United States and Canada. The automaker also repositioned the prices on 75 percent of its models in 2006, lowered its incentives, and introduced 13 new products into the U.S. market. GM's total fleet sales declined by 150,000 units in 2006, which included a reduction of almost 75,000 units in daily rental sales. Although reduced fleet sales contributed to GM's U.S. sales falling 9 percent, GM's transaction prices increased by approximately 2 percent and the automaker also is hoping reduced fleet sales will lead to greater residual values for its brands and increased profitability long-term.

In October 2006, GM ended negotiations that began in July regarding GM forming an international auto alliance with Renault SA and Nissan Motor Co. Talks ended when the two sides could not agree on the value generated by the alliance, and GM's board voted to terminate discussions. GM also was concerned that the merger would distract the automaker from its turnaround and potentially prevent GM from entering other alliance opportunities if Renault and Nissan made a significant investment in GM. The idea of an alliance was conceived by Kirk Kerkorian, GM's largest individual shareholder at the time. Following the collapse of these talks, Jerome York, a key Kerkorian advisor, resigned from GM's Board of Directors in October. Kerkorian ended up selling his 9.9 percent holding in GM.

In March 2007, GM announced it lost \$2 billion in 2006, but had record revenues of \$207 billion. Its North American operations lost \$779 million. For the fourth quarter, the automaker earned \$950 million worldwide, its first quarterly profit since 2004. GM's U.S. sales declined almost 9 percent in 2006, and its U.S. market share has declined from 28.1 percent in 2000 to a historic low of 24.5 percent in 2006. Also in March 2007, GM completed an accounting review and announced revisions to its net income from 2002 forward, with revised net income increasing for 2002, but falling from 2003 through the first three quarters of 2006.

Furthermore, GM remained in talks with Delphi and its unions over agreements necessary to complete Delphi's \$3.4 billion plan to emerge from bankruptcy. Delphi

spun off from GM in 1999. Delphi's restructuring plan includes cutting thousands of U.S. hourly and salaried employees, closing or selling 21 of 29 U.S. plants, and dropping several business lines.

### Ford

For 2006, Ford reported the largest annual loss in company history, \$12.7 billion. Ford reported it had after-tax charges of \$9.9 billion due to restructuring costs such as buyouts and plant closings in its North American markets. North American employment fell from 42,500 salaried employees in 2005 to 37,700 at the end of 2006, and a decline of about 8,000 hourly employees to 77,900 during the same period. Ford also announced an additional 38,000 hourly positions and 10,000 salaried positions will be cut by the end of 2007. Ford's U.S. market share continued to decline for the tenth straight year, ending with 16.4% in 2006, down from 22.8% in 2000. Ford forecasts its U.S. market share will probably drop to 14-15 percent in 2007. Part of the market share loss can be attributed to exiting the minivan market and drastically cutting sales to fleet buyers.

On January 23, 2006, Ford announced the framework for a 6-year restructuring plan for its North American automotive operations, naming it the Way Forward, in order to restore profitability by 2008. To realign Ford's North American production capacity to match expected demand and reduce fixed costs, the company announced it would idle 14 manufacturing facilities, including seven assembly plants by 2012. Idling these plants will reduce production by 1.2 million vehicles, or by 27 percent. At the time of the January announcement, Ford predicted between 25,000 and 30,000 manufacturing jobs would be cut in addition to 4,000 salaried employees, reducing Ford's 122,000 North American workforce by 28 percent. The automaker also planned to reduce its 53 corporate officers by 12 percent by the end of the first quarter of 2006. Ford named three assembly plants and two parts plants that would be idled by 2008, and named an additional plant that would be reduced to a single shift.

Other elements of the original Way Forward plan included: reducing parts and material costs by \$6 billion by 2010; building a new low-cost manufacturing site in North America; strengthening the identity of the Ford, Mercury and Lincoln brands; using straightforward pricing on cars and trucks to avoid the need for discounts; stabilizing market share; leverage the company's global product-development resources and flexible manufacturing systems to bring new models to market faster; and, no longer giving investors earnings estimates, so the company could remain focused on long-term profitability.

On September 5, 2006, Ford elected Alan Mullaly as President and CEO, and also gave him a seat on the Board of Directors. The former President and CEO, Bill Ford and great grandson of founder Henry Ford, received the title of Executive Chairman. Mr. Mullaly led the turnaround of Boeing's commercial aircraft operations during the late 1990's and early 2000's. In addition, Ford hired former Goldman Sachs banker Kenneth Leet as a strategic advisor to report directly to Bill Ford regarding the restructuring of Ford.

Ford announced a plan September 15, 2006 to accelerate the Way Forward program that began in January 2006. Basically, it will introduce new models sooner than planned, eliminate more salaried and hourly employees, and increase material cost savings. Ford also changed the next year it will post a profit, from 2008 to 2009.

On the product side, it will not only accelerate plans to introduce previously planned new models, it will also introduce additional new models. For example, by the end of 2008, 70 percent of its Ford, Mercury, and Lincoln models will be all-new or significantly changed. The best selling Ford product, the F-150, will introduce a new model a year earlier than was expected. It will introduce new variations of the Mustang each year for a number of years. Redesigned versions of the gas and hybrid Ford Escape and Mercury Mariner will be introduced in early 2007. Also new safety equipment and more fuel efficient vehicles will be brought to the market sooner than previously announced.

On the employment side, Ford will reduce its salaried workforce by an additional 10,000 or by one third by the first quarter of 2007. This will be accomplished by early retirements, voluntary separations, and layoffs. For hourly workers, Ford will offer buyouts and early retirements supplemented by lump sums. Thus, Ford will achieve its current goal of reducing total North American employment by almost 50,000 employees four years earlier than previously planned.

As of December 2006, Ford received applications from 38,000 hourly employees for early retirement, lump sum payments, or educational assistance that will lead to leaving Ford upon graduation. They began leaving the company January 1, 2007 and all separations must be completed by September 2007. The final date for salaried employees to make a decision was February 19, 2007. Ford received about 10,000 applications for early retirement, but some departments had too many and some had too few. Ford said it will not accept early retirement requests if the total for that office would leave too few workers. Also, if not enough workers from an office submit early retirement requests, some workers will need to be cut.

Various plants will be closed earlier than planned, more plants will be closed than mentioned in the January 2006 plan, and all manufacturing facilities taken back from Visteon will be sold or closed by the end of 2008.

In early November 2006, Ford reported it was reducing some salaried benefits. Current employees would be required to pay 30 percent more for health care premiums, retirees and spouses would lose Ford-sponsored health insurance at the age of 65, and dependent children of salaried retirees over 64 would lose health insurance. In order to conserve additional funds, Ford announced it would close all Ford-sponsored child care facilities. Ford also will not give current employees merit pay increases in 2007. Salaried employees will only receive pay increases when they are promoted.

For the first time in Ford's history, Ford has used virtually all of its North American plants, trademarks, patents, and even some intra-company debt as collateral to secure \$18 billion in loans to help fund restructuring. It is estimated Ford will use \$8 billion of this

cash in 2007 and up to another \$8 billion in 2008. Without these loans, the cost of Ford's restructuring plan most likely would have sent it into bankruptcy-court protection in a few years. To help fund the turnaround plan, Ford announced in March 2007 it sold its controlling stake in Aston Martin to a group of investors for \$848 million. Ford will still maintain a \$77 million investment in the company.

### DaimlerChrysler

Like Ford and GM, the Chrysler Group performed poorly in 2006, losing \$1.2 billion, compared to a profit of \$1.8 billion in 2005. Chrysler's sales fell from almost 2.3 million in 2005 to 2.1 million in 2006, with its market share declining to 13 percent. As a result, DaimlerChrysler fell to fourth in the U.S. auto market, with Toyota moving into the third place position.

In November 2006, DaimlerChrysler entered into a joint venture with Chery Automobile Co. of China to produce mini-cars for the U.S. market.

On February 14, 2007, DaimlerChrysler announced a new restructuring plan called "Project X" which details additional plant closings and a further reduction in jobs by at least 10,000 hourly employees, plus 7 percent of DaimlerChrysler's 14,180 U.S. salaried workers, or about 1,000 positions. Over the past three years, DaimlerChrysler reduced its workforce by 40,000 employees.

The automaker continues to implement steps that will better leverage the DaimlerChrysler merger, which took place in 1998. To meet this goal, in addition to cutting jobs, Project X plans to increase the integration of Chrysler and Mercedes by jointly developing vehicle architecture and parts for future Chrysler and Mercedes vehicles. In addition, this turnaround plan cuts 400,000 units of production and \$1.5 billion in material costs that led to inventory management problems where approximately 100,000 vehicles were in a "sales bank."

DaimlerChrysler is also now open to other strategic options for the company, including the sale of Chrysler.

### **Motor Vehicle Employment**

Direct employment in the domestic motor vehicle assembly industry (NAICS 33611) was down 5 percent in 2006 to a yearly average of 199,500 employees. (Table 3) This number has slipped considerably from its most recent high-water mark of 251,300 persons in 1995. While American vehicle assemblers restructure and reduce their workforces to reflect their declining share of the domestic market, foreign automakers continue to add to their U.S. employment rosters as their U.S. production increases, but their additions will not offset the Detroit 3's reductions.

Motor vehicle production employment has declined in the last ten years by 30 percent from 232,200 workers in 1996 to 162,000 in 2006, while overall motor vehicle

employment decreased 17.5 percent. Improved worker efficiency and productivity can be contributing factors to the decline in production employment, but most losses are a result of GM's and Ford's decreased U.S. production. New jobs created by the foreign-affiliated auto companies' new U.S.-based auto plants provide only partial replacement for jobs lost by GM and Ford. University of Michigan economists forecast that seven out of every ten manufacturing job losses in Michigan over the next two years will be in the auto industry.

As mentioned above, the Detroit 3's restructuring plans call for further cuts in North America, with almost 80,000 salary and hourly jobs being eliminated, mostly in the United States. The Detroit Free Press reports that these buyouts and early retirements have reduced Detroit 3's job banks to an estimated 5,000 employees (almost one-third its size from early 2006), which will greatly reduce the automakers' costs. The Detroit 3 are not the only automakers in the United States whose employees are affected by shifts within the marketplace. In February 2007, Nissan North America offered buyouts to 6,200 workers at two manufacturing plants in Tennessee due to decreased demand for trucks and sport utility vehicles. Nissan announced in March 2007 that 775 of its employees accepted buyouts.

While the number of employees in the industry shrinks, the remaining jobs continue to pay well. (Table 4) According to the U.S. Census Bureau's 2005 Annual Survey of Manufacturers, wages alone were worth \$12.6 billion in 2005, while fringe benefits added an additional \$5.6 billion to the total earned by all employees in the car and light truck assembly industry. The Department of Labor's Bureau of Labor Statistics data also indicate that motor vehicle production workers (NAICS 33611) remain among the highest paid in the U.S. economy. Their average hourly rate (excluding benefits) was \$30.02 in 2006, 79 percent higher than the average wage for all manufacturing workers.

To compete with the foreign automakers, the Detroit 3 continue to look for ways to reduce their labor costs. The Detroit News reported that GM's total North American labor cost was \$3,289 per vehicle, which includes \$2,329 for wages and health care for active workers and \$950 for retiree health care. Ford's total labor cost in North America was \$3,227 per vehicle. The Center for Automotive Research estimates that most UAW hourly workers are paid an average of \$28 an hour, compared to \$26 an hour or less for nonunion workers at U.S. plants owned by foreign automakers. With the union's four-year contracts set to expire on September 14, the UAW and the Detroit 3 will hold contract negotiations in August 2007. Benefits, particularly health care costs and pensions, are expected to be top topics for discussion. To help them be more competitive on both a cost and quality basis, Ford and GM already are already holding local discussions with plants and union officials on making work rules more flexible.

## Healthcare

Rising health care costs has been repeatedly cited as one of the primary reasons hurting the Detroit 3's competitiveness. The root of the healthcare burden for the Detroit 3 lies in two parts – the rapidly rising costs and the heavy burden of legacy costs for retirees. The health care benefits provided to the Detroit 3's workers, their families, and the retirees are the result of negotiated contracts with the UAW. Generous health care benefit packages were negotiated by both sides when times were better for the Detroit 3 and foreign-brand competition was less fierce in the U.S. market. Long-term benefit payouts and advances in modern medicine have left companies like GM paying for more retirees than active employees.

GM spent an estimated \$4.8 billion in 2006 on healthcare (up from \$3.1 billion in 1997), and anticipates spending \$7.4 billion by 2011. Ford's health care expenses were over \$3 billion in 2006 (up from \$2 billion in 1997), and DaimlerChrysler spent an estimated \$2.2 billion (up from \$1.2 billion in 1997). The Centers for Medicare and Medicaid Services reported that the overall cost of U.S. health care doubled from 1993 to 2004. During 2005 and 2006, the UAW negotiated landmark mid-contract health care deals with GM and Ford, agreeing to concessions to reduce the automakers' health care obligations. The UAW is currently considering negotiating a deal with Chrysler as well. In addition, health care coverage for salaried workers and retirees at the Detroit 3 has been greatly reduced. However, the credit-rating firm Fitch Inc. believes these concessions will not offset inflation-related increases in health care costs, production cuts and the flow-back of workers from Delphi and Visteon. Fitch expects GM to be hit harder than Ford because of GM's older workforce and its recent buyout targeted hourly workers eligible for retirement who could leave with health care benefits rather than convincing younger employees to leave without future health care obligations. In addition, Fitch estimates that GM's health care costs will rise at least \$300 million in 2007 due to the automaker assuming retiree obligations for thousands of former Delphi employees as part of GM's bailout deal with Delphi. Ford, on the other hand, estimates that approximately half of the employees accepting their buyout packages chose a package that did not offer lifetime health care benefits. Fitch also expects health care will be the number one issue for the upcoming labor talks.

The foreign manufacturers do not face the same health care costs as the Detroit 3, giving them a large cost advantage. A 2006 Harbour-Felax study reported that Toyota's competitive health care advantage is as high as \$1,400 per vehicle compared to the Detroit 3. Nearly all competitors are based in countries that have national health care systems, giving these companies the benefit of a large number of workers for whom health care is already provided. In addition, the foreign manufacturers with U.S. production plants generally have a younger workforce and have far fewer retirees on the books. Nonetheless, as the number of their U.S. employees and retirees grows, international automakers with U.S. operations are concerned about rising costs. Toyota's health care costs have doubled over the past five years to more than \$11,000 a year per U.S. plant worker. In addition, in February 2006, Nissan announced it was dropping company-sponsored health care coverage for its retired U.S. manufacturing employees

over the age of 65 and instead pay them an annual stipend of \$2,500 to supplement Medicare coverage and out-of-pocket medical expenses.

National health care expenditures, \$2.1 trillion in 2006, are expected to more than double by 2016. The Detroit 3 agree that some sort of federal government solution is needed, and would particularly like to see a greater focus on improving the quality of care for the one percent of the population that have serious illnesses or chronic diseases that make up 30 percent of the nation's overall health care bill. The UAW is interested in the United States having a comprehensive national health insurance program.

## **Pensions**

Pension funds are another cost burden for the Detroit 3, particularly compared to their foreign competitors. The New York Times reported that Toyota, as of May 2006, only had 258 U.S. retired production workers, but in 2011 and 2012, the number of eligible employees will increase to 1,700 workers or 6 percent of its current workforce. Toyota was expected to pay approximately \$700 million in pension benefits in fiscal year 2006, less than a tenth of what GM expected to pay in 2006. Toyota's pension includes an investment account in which the automaker deposits 5 percent of a worker's earnings each year, approximately \$3,000 to \$3,500. Employees can supplement the account with a 401(k) plan, with Toyota matching contributions up to a maximum of 4 percent of the employee's income. Nissan reported it had approximately 500 U.S. retirees and expected the number to increase by 3,500 by 2015. The automaker discontinued its company pension plan, and instead offers a plan similar to the 401(k) investment strategy. Some analysts say that having to support a much larger number of retirees account for most of the difference in the Detroit 3's production costs relative to their competitors. In addition, in other markets, an automakers' responsibility for health insurance and pensions stops when an employee reaches retirement age. To help reduce costs and attract younger employees who prefer their retirement money to be portable, the Detroit 3 have replaced pensions with retirement saving accounts for salaried workers. The buyout packages accepted by its hourly workers should also lessen the Detroit 3's pension burden.

## **Steel**

2006 marked the first time the Ford, GM, and DaimlerChrysler joined forces with Honda, Nissan and Toyota on a trade issue. The six automakers sought to end the 13-year old U.S. tariffs on imports of a high-grade steel, saying the tariffs increased prices and limited supplies, making it difficult for them to compete. The average vehicle uses about 1,000 pounds of corrosion resistant steel. Since 2001, the price of corrosion-resistant steel increased from under \$400 a ton to more than \$700. U.S. steel manufacturers claimed the tariffs were necessary to help them survive and prevented dumping by foreign competitors. In December 2006, the U.S. International Trade Commission (ITC) ruled that tariffs and countervailing duties on flat-rolled corrosion-resistant steel from

Australia, Canada, France, and Japan should be revoked, while duties on imports from South Korea and Germany should remain in effect through 2011.

### **Decrease in U.S. Light Vehicle Production**

Eleven manufacturers produced cars and light trucks in the United States in 2006 - - BMW, DaimlerChrysler, Ford, General Motors, Honda, Hyundai, Mazda, Mitsubishi, Nissan, Subaru, and Toyota. In 1999, production reached an all time high of 12.6 million vehicles. Volume dipped to 12.4 million vehicles in 2000, before skidding to 11.2 million units in 2001 on the heels of the terrorist strike and industry efforts to control inventory. In 2002, production gains were sufficient to generate the third highest volume on record - - 12 million units, an increase of over 7 percent for the year. However, 2003-2006 saw declines. Production for 2006 declined by 6.4 percent to 10.8 million units. (Table 2)

In 2003, the Detroit 3's share of U.S. passenger car production fell below 60 percent for the first time, accounting for only 57 percent. By 2006 it dropped to 53.5 percent. Conversely, in 2003 the Japanese automakers broke 40 percent for the first time, accounting for 41.8 percent of the total car production market. In 2006, Japanese producers claimed 48.7 percent of the U.S. car production. (In 1986, Japanese producers accounted for only 4.1 percent of the car market.) Moreover, while the Detroit 3 remained dominant in light truck production, their share slid from nearly 84 percent in 2003 to 75 percent in 2006. The Japanese manufacturers, however, continue to make steady inroads into the truck segment, reaching 20.4 percent of production in 2006 (up from a 10.6 percent share of production in 2000). (Chart 2)

### **U.S. Light Vehicle Sales Decline Slightly**

Total light vehicle sales declined slightly last year to almost 16.5 million vehicles, a 2.6 percent decrease from 2005. (Table 5) 2006 marked the seventh consecutive year with sales above 16 million units, but it was a difficult year for the Detroit 3 with their market share dropping to 53.5 percent. (Table 6) Their sales fell 8.3 percent, while the Japanese and German automakers' sales each increased above 5 percent, and the Korean brands increased 2.6 percent. (Chart 3) With sales increasing 12.5 percent last year, Toyota became the third largest in U.S. auto sales for the first time, displacing Chrysler. Not only is the foreign automakers' market share versus the Detroit 3's market share approaching the 50-50 mark, but the share of the total light vehicle market for cars and trucks is almost split in half as well.

As the U.S. market has become increasingly competitive, Detroit 3 sales have been on a long-term downward trend, likely pushing them below half the market in the near future. The combined market share of the Detroit 3 was fairly stable from 1986 to 1995, averaging 72.4 percent for the period. Of course, this is far below the over 95 percent share they controlled in 1965 when they truly dominated the U.S. market. Their share in

1995 reached 73 percent, but then began a long and steady decline. A loss of a single point in market share is significant, as it is equivalent to approximately 165,000 fewer unit sales or one assembly plant's output.

Although Americans still bought 913,593 more light trucks than cars in 2006, light trucks lost share to passenger cars in 2006 for the second year in a row, reversing a long-standing trend. (Table 7) Overall, sales of light trucks in 2006 declined six percent with a volume of 8.7 million vehicles, while sales of passenger vehicles grew 1.5 percent to reach 7.8 million vehicles. (Chart 4) In 2006, light trucks accounted for 52.8 percent of the U.S. light vehicle market (a decrease from 2005's share of 54.7 percent), and passenger cars accounted for 47.2 percent (an increase from 2005's share of 45.3 percent).

This new shift could further disadvantage the Detroit 3, where the light truck segment, particularly the full-size pickup truck, has greatly contributed to their revenues. During 2006, it appears gas prices influenced consumer choices throughout the year resulting in sales fluxuations for the different segments. Sales of light trucks fell when gas prices hit \$3 a gallon during the summer, but when prices eased last fall, sales of big pickup trucks and SUVs rose.

The past two years' decrease in the Detroit 3's light truck sales (955,268 units fewer than 2004) must be of concern. In 2006, sales of light trucks made up 61 percent of total sales for GM, 62 percent for Ford and 76 percent for Chrysler. While manufacturers can earn \$10,000 or more on the most popular light trucks, they often earn \$1,000 or less on passenger cars. In 2006, the Detroit 3 sold 5.7 million light trucks, up from 5.6 million in 1996, accounting for 65 percent of their total sales volume (1996 volume: 51 percent). Despite the volume increases over the years, the Detroit 3's market share of the segment has fallen from 86.2 percent in 1996 to 65.7 percent in 2006, as new competitors, mainly the Japanese automakers, entered the market and expanded their lineups. The Japanese market share of the light truck segment has increased from 13.3 percent in 1996 to 28.2 percent in 2006.

SUV sales have been falling since 2001, and they dropped almost 14 percent to 2.1 million units in 2006, their lowest level since 1995. The Detroit 3's brands, which have a 76 percent share of the SUV segment, were especially hard-hit, selling 14.5 percent fewer units compared to 2005. Sales of pickup trucks and vans took big hits last year as well, with sales falling almost 11 percent each. For the Detroit 3, who dominate these segments, pickup and van sales dropped 13 percent and 15 percent, respectively. GM and Ford have announced their intentions to leave the minivan segment in the near future.

While the overall sales of SUV's are declining, cross utility vehicles' (CUV) popularity and the number of models offered continue to grow. CUVs are built on car platforms, rather than truck platforms, so they are generally lighter, more fuel efficient, and more comfortable. Sales increased 34 percent in 2003, 16 percent in 2004, almost 12 percent in 2005, and more than 12 percent in 2006, reaching almost 2.5 million units, and

accounting for almost 15 percent of the U.S. light vehicle market. The Japanese brands have close to 48 percent of the CUV market, and the Detroit 3 have 38 percent.

The Detroit 3's biggest losses have been in passenger car sales. (Table 8) For this segment, their share has been declining in a fairly steady fashion for the last twenty years. In 1986, their share of the passenger car market was an impressive 71.1 percent. When competition in the passenger car market heated up and consumers became more interested in light trucks, the American brands focused their attention more sharply on the more profitable truck market. However, passenger cars have seen a slight increase in popularity the past two years. In 2006, total sales of large cars grew 3.2 percent, mid-size cars grew 2.1 percent, and the small car segment grew 2.8 percent. Luxury cars were the only segment to experience a decline, falling 3.4 percent. Overall, Detroit 3's share of the passenger car market fell from 42.6 percent in 2004 to 39.9 percent last year.

As mentioned above, the increase in gas prices last year led to more consumers considering and/or buying fuel-efficient vehicles. It remains to be seen if consumers will continue to pay a premium to buy hybrids, or if they will consider other fuel-efficient options, such as compact cars, that are less expensive. Sales of hybrid models grew from less than 10,000 vehicles in 2000 to approximately a quarter million in 2006. So far, their sales have been driven by gas prices, and the unpredictability of gas prices makes it hard to determine future sales. CNW Marketing Research expects hybrid sales to rise to 330,000 in 2007, while Global Insight forecasts sales to be 450,000.

### **Rebates/Incentives Slightly Decline**

In 2001, shortly after the September 11 attacks, the U.S. auto industry, particularly the Detroit 3, began offering consumers high cash incentives and low to zero interest rate loans to prop up sales and market share. While in 2005 the market continued to be incentive-driven, especially with the popular employee pricing programs, Edmunds.com estimates that factory incentives in 2006 declined slightly to an average of \$2,469 per vehicle, a 2.6 percent decrease, largely due to GM's efforts to move away from incentives as part of its restructuring effort. Most automakers offered substantial incentives on SUV's, trucks, and models due to be refreshed. GM was the only automaker to decrease its average incentive last year, instead focusing on its vehicles' value and quality by offering longer factory warranties. GM's incentive-related cost was \$2,982 per vehicle sold, (down 17.3 percent); Ford's spent \$3,437 (an increase of 9.1 percent), and, Chrysler spent \$3,812 (an increase of 7.1 percent). Nissan had the largest increase in 2006, with its average up 30.3 percent at \$2,314 per vehicle sold; Toyota spent \$1,055 (an increase of 8.4 percent); and, Honda spent \$720 (an increase of 11.8 percent).

## **Energy & Environmental Issues: A Growing Concern**

As consumers and federal and state governments become increasingly concerned about U.S. oil consumption and protecting the environment, the automotive industry will be pressured to take steps to make vehicles cleaner and more fuel-efficient. In addition, other countries have already implemented or will implement stricter emissions and fuel economy standards. The costs associated with meeting actual and proposed requirements could have a huge impact on the automotive industry. For example, the Detroit 3 estimate that meeting new U.S. light truck standards issued in March 2006 requiring fuel efficiency improvements of 1.2 percent per year will cost them an estimated \$6.2 billion.

Last year, the Environmental Protection Agency (EPA) announced its first major revision of fuel economy testing procedures since 1986, seeking to create more realistic mileage comparisons among vehicles and accounting for today's driving behavior. The new system, which may lower fuel economy estimates by as much as 30 percent, begins in the 2008 model year. The largest declines in fuel economy ratings are expected to hit hybrid vehicles, which could impact their popularity.

On November 30, the U.S. Supreme Court accepted a case between the EPA and the state of Massachusetts regarding whether or not the EPA must regulate carbon dioxide emissions from vehicles under the federal Clean Air Act. The EPA claims the Clean Air Act does not govern carbon dioxide from vehicles. The state of Massachusetts believes automakers could reduce emissions 40 percent, which they believe would eventually reduce global emissions by 2.5 percent. The state says it has a legal right to sue because it could lose much of its coastline if global warming leads to ocean levels that put parts of the state underwater. The automakers agree with the EPA, and say mandated reductions could add \$3,000 to the cost of every vehicle and prevent them from selling larger, less-efficient vehicles. Eleven other states, the District of Columbia, and environmental groups are supportive of Massachusetts. On April 3, the Supreme Court ruled that the EPA revisit its 2003 decision to reject requests by several states to limit carbon dioxide emissions.

In 2004, the auto industry sued the state of California to block implementation of its regulations requiring the average vehicle sold in California to release 30 percent fewer greenhouse gases by 2016 (and, therefore, requiring them to sell vehicles that burn 30 percent less fuel). California said the plan was a clean-air program not a fuel economy program (since only the federal government can be responsible for fuel economy programs). Ten other states have copied the rules. In September 2006, a federal judge turned down California's request to throw out the case, saying the issues should be decided in a trial. The trial has been postponed, pending the outcome of the Supreme Court case mentioned above. The state of California also filed a lawsuit in September 2006 against GM, Ford, Chrysler, Toyota, Honda, and Nissan alleging vehicle emissions are causing global warming, injuring the state's environment and economy and endangering public health. The automakers have submitted a request to dismiss the suit.

In his State of the Union address, President Bush proposed reducing gas consumption 20 percent by 2017, which includes improving fuel economy. He also proposed that automakers increase fuel economy an average of 4 percent yearly, beginning in September 2009 for passenger cars and 2011 for light trucks. President Bush also wants to increase the use of alternative fuels seven-fold by 2017.

Congressional hearings on global warming and alternative fuels are expected to continue this year. Certainly, automakers and their product planners will be challenged to satisfy any new U.S. or foreign government mandates in addition to the marketplace's desires for both horsepower and fuel efficiency.

### **Product Changes & New Investments**

In addition to GM and Ford's cutbacks and announced closings, they are making product changes, and continue to make investments in their U.S.-based assembly and component plants. The Japanese, German and Korean manufacturers are also planning product changes and expansions to their U.S. facilities.

#### General Motors

GM announced in February 2006 that it planned to spend \$163 million to retool its truck assembly plant in Pontiac for the production of the next generation Chevrolet Silverado and GMC Sierra full-size trucks later in 2006; \$138 million in its Lansing Grand River assembly plant to expand the body shop for future vehicle production; \$60 million in its Romulus engine facility for various future engine upgrades; and, \$32 million in its metal stamping plant in Pontiac for innovative sheet hydrofoaming equipment for the Pontiac Solstice, Saturn Sky and future Opel roadster. GM also announced it would invest up to \$118 million to upgrade its GM Powertrain Baltimore Transmission facility in White Marsh, Maryland for building its new, rear-wheel drive two-mode hybrid vehicle transmission, and will create up to 87 new jobs. This transmission will go into production in 2007 and is the first light-duty integrated hybrid transmission to be designed and built in the United States. It will be used initially in GM's full-size SUVs, the Chevrolet Tahoe and GMC Yukon. The hybrid-powered vehicles will be assembled at GM's Arlington, Texas plant.

In May 2006, GM's Saturn announced that the new 2007 Vue Green Line hybrid SUV would carry a starting price of \$22,995 (including destination charge), making it the lowest-priced hybrid SUV on the market. In addition to its value price, Vue Green Line has an EPA fuel economy rating of 27 mpg in the city and 32 mpg on the highway – the best highway fuel economy of any SUV currently available. That equates to a 20 percent improvement in fuel economy compared to a non-hybrid Vue, depending on driving conditions.

During May-June 2006, GM made several announcements regarding 6-speed transmission investments. In June 2006, GM announced its \$48 million investment to produce 6-speed transmission castings at its GM Powertrain plant in Bedford, Indiana.

This will accommodate growing market demand for 6-speed transmissions, which help save fuel and can help improve acceleration performance. The investment covers partial facility renovation, including more energy-efficient melting furnaces; as well as new machinery, equipment and tooling to support the additional volume. The Bedford Foundry, an aluminum melting, die-casting and permanent mold facility, produces transmission cases and converter housings for GM Powertrain six-speed transmission facilities in Ypsilanti and Warren, Mich., and in Toledo Ohio, which are ramping up six-speed transmission production. Bedford also produces transmission castings, pistons and engine blocks for other GM Powertrain facilities. GM will also invest an additional \$332 million to support production of its new family of six-speed transmissions at its Warren, Michigan transmission plant. These investments brought GM's total spending on fuel-saving six-speed automatics to \$1.7 billion in its U.S. operations since 2003. The investments support the company's plans to build three million units of these transmissions annually by 2010. GM will invest \$125 million in its Powertrain Ypsilanti Transmission Operations (YTO) facility in Michigan for additional capacity to produce a family of Hydra-Matic six-speed rear-, and all-wheel drive automatic transmissions for GM's cars, trucks and SUVs. GM will invest another \$45 million for vendor tooling, containers and investment at other locations necessary to support the expanded Ypsilanti operations.

Reaffirming its commitment to the North American market, GM announced in August 2006, that the Chevrolet Camaro will be "Made in Canada", bringing GM's recent Canadian investments to over \$3 billion. The Oshawa car plant was selected to manufacture one of GM's most celebrated new vehicles, with early production versions at the end of 2008, with start of sales in the first quarter of 2009. This new product program and conversion of the Oshawa plant to a state of the art flexible manufacturing facility represents a C\$740 million investment.

In September 2006, GM Flint South began production of the 3.6L V-6 with variable valve timing (VVT), which is used in the 2007 Cadillac CTS, SRX and STS; Saturn Outlook; GMC Acadia and slated for the 2008 Buick Enclave. The 3.6L V-6 VVT is an all-aluminum, dual overhead camshaft engine that improves power, fuel economy, and emissions performance. With this, GM delivered on its 2004 promise to invest approximately \$300 million in this manufacturing plant, further strengthening a key GM manufacturing center and contributing to the state and local economy.

Also in September 2006, GM announced in San Diego its commitment to building the world's largest fuel cell vehicle fleet with its next-generation fuel cell vehicle – the Chevrolet Equinox Fuel Cell. GM will build more than 100 Chevrolet Equinox Fuel Cell vehicles and will begin placing them with customers in the fall of 2007, as part of a comprehensive deployment plan dubbed "Project Driveway." Designed to gain knowledge of the customer experience, Project Driveway constitutes the first meaningful market test of fuel cell vehicles anywhere. A variety of drivers – in differing driving environments – will operate these vehicles and refuel with hydrogen in three geographic areas: California, the New York metropolitan area and Washington D.C.

In December 2006, GM announced a \$208 million investment in its Fairfax Assembly plant in Kansas City, Kansas, to prepare the facility for production of the all-new 2008 Chevrolet Malibu. The investment covers expansion of the plant's body shop and the purchase of equipment needed to make the new Malibu. The plant currently builds the Malibu, Malibu MAXX and Saturn Aura, with a Hybrid Saturn Aura scheduled for release in early 2007. The all-new Malibu, which made its debut in January at the North American International Auto Show in Detroit, will go on sale in the fourth quarter of 2007.

GM also announced in December that it plans to invest approximately \$225 million in its Spring Hill, Tennessee, Saturn Corporation manufacturing complex to renovate the plant's paint shop in preparation for future vehicle production. The investment is contingent on GM securing incentives from the state of Tennessee.

GM also opened a \$10 million state-of-the-art rollover crash facility in Milford, Michigan, in December 2006, becoming the first North American automaker to integrate in-house testing to study ways to reduce injuries and deaths by developing sensors for air bags that can help protect occupants in a rollover and help to keep occupants from being ejected.

In January 2007, GM announced a \$300 million investment in its GM Powertrain Tonawanda (GMPT) engine plant to manufacture an all-new, technically advanced dual overhead cam (DOHC) V-8 engine, slated to begin production in Buffalo, New York in 2009. This investment includes renovation to part of the plant, new machinery and tooling to support the new engine production. Renovations are expected to begin this fall. As a result of this new work, Tonawanda will retain 150 jobs, and will bring GM's total investment in the GMPT Tonawanda plant to \$1.5 billion over the last ten years. The GM Powertrain Tonawanda engine plant has produced nearly 67 million engines since its opening in 1938.

GM also produces the only other U.S.-designed and built hybrid transmission: a heavy-duty two-mode transmission for urban transport buses, which began production in 2003. GM has provided nearly 400 hybrid propulsion systems, designed and built in Indianapolis, Indiana, for transit systems in 29 cities in North America and Yosemite National Park. GM begins 2006 with orders for an additional 216 hybrid bus systems to six U.S. cities. At the 2006 Washington DC Auto Show, GM announced that the first of 50 GM hybrid-powered buses manufactured by New Flyer Industries are beginning to roll into the Washington Metro Area Transit Authority fleet. GM's hybrid technology offers greater fuel economy and reduced emissions than conventional diesel buses. In January 2006, GM also launched an ethanol image campaign to build awareness and market acceptance for ethanol/gasoline blended fuel (E85) vehicles. In 2006, GM will offer nine E85 flexfuel models, bringing an additional 400,000 E85 flexfuel vehicles into its fleet.

## Ford

In July 2006, Ford announced the development of its own in-house all-wheel-drive (AWD) system for several upcoming sedans and CUVs, rather than rely on the technology from Sweden's Haldex AB. The new system will be offered in V-6 Ford Fusion, Mercury Milan and Lincoln MKZ (formerly Zephyr) midsize sedans and Ford Edge and Lincoln MKX CUVs. This decision enables Ford to provide the system in greater quantities to multiple vehicles.

In September 2006, on the eve of the State Fair of Texas in Dallas, Ford's F-Series Super Duty, the industry's leading heavy-duty work truck, was launched. The new line of 2008 Ford Super Duty pickups go on sale in early 2007; approximately 40 percent of Ford F-Series sales are Super-Duty models. In addition, the new F-450 pickup model joined the line-up, and both vehicles are powered by the new 6.4 liter Power Stroke Diesel, Ford's cleanest and quietest diesel engine in a pickup ever sold in America.

Reaffirming its commitment to flexible manufacturing, Ford also unveiled in October 2006 the completion of a \$1 billion transformation of its Oakville, Canada plant to Ford's first flexible plant in Canada. Ford's new Lincoln MKX is the first volume Lincoln to be built in Canada. The 2007 Ford Edge is also produced here, and will be exported to more than 40 countries. The MKX and Edge went on sale in November 2006, joining the Ford Freestar as models currently built in Oakville. The facility upgrades included a state-of-the-art body assembly facility. As a flexible plant, OAC will be able to build multiple models on unique architectures enabling the plant to change the mix, volume and options of products more quickly in response to consumer demand, representing a new level of market agility. The new 3.5 liter V-6 engines that go into these two vehicles are manufactured at the Dearborn, Michigan plant.

During January 2007, Ford announced investments totaling \$866 million in six Southeastern Michigan plants. Ford hopes that the investments in flexible manufacturing and advanced powertrain production will help it grow its small-car line-up, produce more fuel-efficient transmissions, and fortify its worldwide truck leadership position. Specifically, the investments are as follows: 1) Wayne Stamping and Assembly Plant received \$130 million for tooling and equipment to build the all-new 2008 Ford Focus; 2) Van Dyke Transmission Plant received \$320 million to install a flexible machining line to assemble a fuel-efficient, high performance 6-speed, front wheel drive transmission for the next generation Ford Escape; 3) Livonia Transmission Plant received \$88 million to install flexible tooling to increase its production of a fuel-efficient, high performance 6-speed, rear-wheel drive transmission for the 2009 Ford F-150; 4) Woodhaven Stamping Plant received \$89 million for new dies and subassembly equipment to stamp parts for the 2009 Ford F-150; and, 5) Dearborn Stamping Plant received \$31 million for new dies and subassembly equipment to stamp doors and hoods for the 2009 Ford F-150. Dearborn Truck Plant received \$208 million to install additional tooling and equipment to build the 2009 Ford F-150.

Also in January 2007, Ford launched the all-new 2008 Ford Escape and Mercury Mariner at its Kansas City, Missouri, assembly plant. The vehicles go on sale during the first

quarter of 2007. Ford invested approximately \$100 million in equipment, tooling and training at this plant for production of the redesigned vehicles. The plant upgrades also included new hood and lift-gate subassembly systems as well as advanced materials and processes to reduce wind and road noise.

In terms of new products and advanced technologies, during the January 2007 Washington Auto Show, Ford unveiled the world's first drivable fuel cell hybrid plug-in that combines an onboard hydrogen fuel cell generator with lithium-ion batteries to deliver more than 41 miles per gallon with zero emissions. The vehicle is built on a flexible powertrain architecture that will enable Ford to use new fuel and propulsion technologies as they develop without redesigning the vehicle. During the show, Ford also displayed the first Ford Escape Hybrid E85 scheduled for delivery this spring. This hybrid combines two petroleum-saving technologies: hybrid electric power with flexible fuel capability. It is the world's first hybrid vehicle capable of operating on blends of fuel containing as much as 85 percent ethanol. Ford is producing 20 demonstration Escape Hybrid E-85 vehicles for use in fleets in six different states. Deliveries will begin in the Spring 2007. Ford now has two full hybrid electric vehicles on the road today: the Ford Escape Hybrid and the Mercury Mariner Hybrid. It has announced 3 additional hybrids: the Mazda Tribute, the Ford Fusion, and the Mercury Milan. During 2006, Ford produced 250,000 ethanol-capable vehicles, including the Ford F-150 pickup truck, as well as the Ford Crown Victoria, Mercury Grand Marquis and Lincoln Town Car large sedans.

Ford has also stated that it would be the first to build hybrids in Canada when the Oakville Assembly Complex (OAC) adds hybrid versions of the Ford Edge and Lincoln MKX to its assembly line later this decade. Ford also received the "2006 Green Car of the Year" award for its Mercury Mariner Hybrid by the Green Car Journal. Ford hopes to increase its global hybrid production capacity 10-fold to approximately 250,000 vehicles by 2010. Ford was also the first company in the industry to issue a report addressing the business implications of climate change in December 2005. The report addresses how concerns about greenhouse gases, including CO<sub>2</sub> are linked to other factors affecting business.

### Toyota

Toyota currently operates 13 vehicle manufacturing, powertrain, and components facilities in North America, with plans for more. In order to keep pace with growing demand, Toyota intends to continue further plant investments in North America, and has many prospects and locations under review. Several states are queuing-up to compete for these possible future sites and investments. In fact, Toyota annual production capacity in North America is expected to reach 2.02 million vehicles (current capacity is 1.75 million vehicles) by 2008 as a result of the increased production capacity at several existing and potential new North American production sites.

Toyota announced in February 2007 that it will build a \$1.3 billion manufacturing plant near Tupelo, Mississippi, where it will produce 150,000 Highlander SUVs annually beginning in 2010. The plant will create 2,000 new jobs and increase Toyota's U.S. manufacturing capacity to 2.2 million vehicles.

Toyota's commitment to the North American market was reaffirmed in February 2006 when Toyota announced that it would raise its production capacity at its second Canadian plant. Specifically, Toyota will increase the annual production capacity of its under-construction plant in Woodstock, Ontario to 150,000 units. Although the plant was scheduled to begin operation in 2008 with an annual production capacity of 100,000 units for the RAV4 compact sport utility vehicle (SUV), the announced expansion is aimed at allowing a flexible response to future market demand in North America. The total investment now planned for the plant in Woodstock is approximately 1.1 billion Canadian dollars (approx. 950 million U.S. dollars), with total employment coming to approximately 2,000. It will be the sole worldwide production location for the RAV4 sport utility vehicle.

In addition, Toyota opened a \$140 million Mexican plant near Tijuana in 2004 to build 30,000 Tacoma pickups primarily for the United States. In January 2006, Toyota announced it would expand the plant to produce 50,000 Tacoma pickups and 200,000 truck beds (from a current 30,000 and 180,000, respectively) within 2007. The planned expansion will represent an additional investment \$37 million.

In February 2006, Toyota's newly established North American Production Support Center (NAPSC) officially opened during a ceremony held at the facility in Georgetown, Kentucky. The NAPSC is a branch of Toyota's Global Production Center (GPC), which was established in July 2003 with strong recognition of the need to improve the efficiency of support from Toyota Motor Corporation (TMC) and to promote the self-reliance of local manufacturing companies. The GPC presents explicit production know-how, namely through a series of "best method" practices for each required skill. Additionally, as a hub for production and production engineering, the center focuses on nurturing global professionals and helping plants learn how to prepare for the production of redesigned and/or different vehicle models. Since its establishment, the center has trained about 5,900 people from all around the world. The newly established NAPSC is the result of the expansion and renovation of the former Toyota Training Center at Toyota Motor Manufacturing, Kentucky, Inc.

On March 13, 2006, Indiana Governor Mitch Daniels announced that the Toyota Camry would be built at Subaru of Indiana Automotive, Inc. (SIA), directly creating about 1,000 jobs. The news is part of a collaborative agreement announced between SIA parent Fuji Heavy Industries Ltd. (FHI) and TMC, a FHI stakeholder. Approximately \$230 million will be invested to install Camry manufacturing processes in an existing SIA line capable of producing about 100,000 vehicles annually. Toyota also reportedly plans to add robotic welding technology to SIA plant called the Global Body Line, which allows it to produce various types of vehicles on the same assembly line; however, Toyota declined to identify other candidate vehicles. Camry production at SIA begins in Spring 2007. Camry production in Indiana replaces imports of the car. Toyota Motor Manufacturing, Kentucky, which builds the Camry, will support SIA by providing training on Camry processes. Parts and materials for the Indiana-built Camry will be sourced and procured by Toyota.

In April 2006, Toyota launched the consolidated R&D and manufacturing North American operations. By strengthening the link between Toyota's North American R&D and production activities, Toyota Motor Engineering and Manufacturing North America (TEMA) is expected to increase operation efficiency and flexibility by reducing lead times for all related processes. Set up with an aim toward allowing a flexible response to changes in the marketplace, Toyota expects TEMA to open the door for greater localization. In launching TEMA, the functions previously handled by Toyota Motor Manufacturing North America, Inc. (TMMNA), the headquarters for Toyota's manufacturing activities in North America, and its R&D unit, Toyota Technical Center U.S.A. Inc. (TTC), are integrated.

In September 2006, Toyota held a groundbreaking ceremony in Yorktown, Michigan, to mark the expansion of TTC, a division of TEMA. To promote localization of research and development aimed at strengthening Toyota's North American line-up, TCC-Yorktown will supplement the Ann Arbor, Michigan, campus. TCC-Yorktown is expected to be completed by mid-2008, and will feature an engineering design facility and a safety test facility, at an investment of \$187 million, with a total of 400 new jobs to be added in scheduled phases by 2010.

In October 2006, Toyota began its first hybrid vehicle production in North America with the Camry at its Georgetown, Kentucky plant. Toyota invested approximately \$10 million towards production of this vehicle, and capacity currently stands at 48,000 units. Given demand, this will reportedly increase to 60,000 vehicles a year.

In November 2006, Toyota began production of its Tundra full-size pickup truck at its San Antonio, Texas plant. Total plant investment is approximately \$1.28 billion, and it has a capacity of 200,000 vehicles, and employs 2,000 workers. Toyota will also reportedly begin selling a 5.7L V-8 Tundra capable of running on a mixture of 15% gasoline and 85% ethanol in late 2008 as a '09 model.

Toyota also continues to localize parts production. For example, during 2006, Toyota began gear production (which was previously only done at a Toyota facility in Japan) at its Buffalo, West Virginia engine plant. This required a plant expansion for the fifth time, and added 150 positions through a \$120 million investment. The engine and transmission plant will build an additional 240,000 automatic transmissions a year starting in 2007. Total automatic transmission capacity will rise to 600,000 annually. With the additional investment, Toyota will have spent \$920 million at the Buffalo plant, which produces 4-cylinder engines for the Toyota Corolla and Matrix; V-6 engines for the Toyota Sienna and Lexus RX 330; and automatic transmissions for the Toyota Camry, Solara, Sienna and Lexus RX 330. Toyota also expanded its Huntsville, Alabama engine plant to boost V-8 output, bringing total engine capacity to 400,000 units. Employment is more than 500 workers, and the expansion created more than 300 additional jobs.

The Alabama plant supplies engines to Toyota's California and Mexico-built Tacoma compact pickup trucks, as well as the next generation Tundra full-size pickup, built in Princeton, Indiana and San Antonio, Texas. This plant already produces the V-8s for the current generation Tundra and Sequoia full-size SUV, both built in Princeton. It has the capacity to produce 130,000 V-6s annually, as well as 120,000 V-8s.

Toyota continues to collaborate extensively with other manufacturers. For example, the Toyota and General Motors joint venture factory, New United Motor Manufacturing Inc. (NUMMI), will receive a \$143 million upgrade, focusing on improvements in its paint and assembly lines.

### DaimlerChrysler

In March 2006, Chrysler announced it would add a second shift to its assembly plant in Belvidere, Illinois. The 1,000 additional workers who will work the second shift will be current Chrysler workers, many of whom were working at plants where Chrysler slowed its production. The Belvidere plant produces the Dodge Caliber, and began building the Jeep Compass in May 2006. Chrysler also announced a \$650 million investment in its Windsor, Ontario plant. Chrysler announced in March that it would also boost capacity of its minivan line by 20,000 and add a paint shop.

In June 2006, the prestigious Harbour industry-consulting group, named the Chrysler Group as the most improved local automaker in manufacturing efficiency. Specifically, Chrysler was selected as the most improved in its overall manufacturing productivity by an industry-leading 24 percent over the last four years, according to The Harbour Report North America 2006. The company improved its overall hours per vehicle (HPV) time by 6 percent to 33.71, from 35.85 a year ago: the most improved in the industry. The annual Harbour Report is a broadly accepted measure of productivity in the automotive industry. Nearly all the major manufacturers participate in the survey. Among the highlights for the Chrysler Group, the company's St. Louis (MO) South Assembly Plant, producers of the Chrysler Town & Country and Dodge Grand Caravan, was recognized as North America's top minivan plant. Transmission manufacturing productivity was the best in the industry and the company's engine productivity was most improved. Company plants were the leaders in five segments. They are: 1) the South minivan assembly plant; 2) the front-wheel drive Kokomo (Ind.) transmission plant; 3) the Kokomo rear-wheel drive transmission plant; 4) the OHC (4.7L) Mack Detroit engine plant; and, 5) the Saltillo (Mexico) 8-Cylinder OHV (HEMI®) plant.

In October 2006, one year after the launch of the first World Engine Plant, the Global Engine Manufacturing Alliance (GEMA) celebrated the grand opening of a second plant in Dundee, Michigan. These two state-of-the-art plants (GEMA North and GEMA South) are part of a five-factory global venture building a family of 1.8-liter, 2.0-liter and 2.4-liter 4-cylinder engines jointly developed by DaimlerChrysler, Hyundai Motor Company and Mitsubishi Motors Corporation. When all five plants are fully operational, the combined project will be the largest engine manufacturing operation in the world. Annual production will reach 1.8 million units, including production sites in Asan and Hwasung, South Korea, and Shiga, Japan.

GEMA represents a whole new business model for engine development -- one that leverages the combined capabilities of its partners and economies of scale in order to generate breakthrough improvements. The World Engine was co-developed under a joint venture between DaimlerChrysler, Hyundai Motor Company and Mitsubishi Motors for the Global Engine Manufacturing Alliance. While Hyundai had the lead design responsibility for the base engine, the Chrysler Group and Mitsubishi made significant engineering contributions to the design. Additionally, partners have shared best practices and lessons learned from past and current experiences, resulting in improved refinement, quality and durability.

Chrysler Group engineering led the development of key technologies that will give its customers high-value benefits in cost-efficient engines. These technologies include intake manifold control valves and Dual Variable Valve Timing (VVT), both launching in the United States first in Chrysler Group versions of the World Engine.

In October 2006, to coincide with the conversion of up to 76,000 U.S. filling stations to clean diesel fuel with sulphur content below 15 ppm, Mercedes Benz began sales of the E 320 BLUETEC in the United States and Canada. Ultra Low Sulphur Diesel (ULSD) allows the use of BLUETEC technology, making the E 320 BLUETEC the world's cleanest diesel car. The E 320 BLUETEC is the first and only diesel vehicle worldwide able to better the U.S. BIN 8 exhaust emissions standard, which is extremely stringent -- particularly in terms of nitrogen oxide emissions. The E 320 BLUETEC will be available for sale in the United States (45 states) and Canada, and uses up to 30 percent less fuel than comparable petrol-engine vehicles in North America. The latest J.D. Power study "Global Outlook For Diesel" forecasts that Diesels will account for more than 15 percent of new registrations in North America by 2015. In the light of this, Mercedes-Benz plans to systematically expand its BLUETEC range. The company has announced that it intends to offer three further BLUETEC models in the R, ML and GL-Class - meeting the even more stringent BIN 5 standard - in all 50 US states as early as 2008.

In November 2006, Ulrich Walker, president of smart, and Roger Penske, chairman of UnitedAuto Group (UAG), agreed on terms and conditions for bringing the smart fortwo to the United States. Both parties signed a General Distributor Agreement (GDA) just four months after it was announced smart would be coming to the United States. The GDA will regulate all future U.S.-based smart activities. After evaluating and defining all stages for distributing smart in the United States, the GDA was established to determine the detailed market introduction strategy. The GDA outlines the allocation of functions, market launch, sales activities, after sales, service and communications. The launch of the successor to the current smart fortwo in the U.S. market follows the success of the smart fortwo in Europe where more than 750,000 vehicles have been sold. Since October 1998, the smart fortwo has attracted more than 750,000 customers in 36 countries. As a brand of DaimlerChrysler, smart benefits from the parent corporation's technical expertise and extensive experience in the automotive business. The successor to the smart fortwo will be launched in Europe during 2007 and will be available in the United States for the first time during 2008.

Hybrid-electric technology is expected to make it into the Chrysler Groups' minivan lineup, although the company has not committed to a timetable. During the Detroit North American International Auto Show, Chrysler displayed the innovative features in its new minivans, which include "Swivel and Go" seating configurations that enable second-row passengers to turn their seats 180 degrees to face third-row passengers. A removable table can also be set up between the two rows.

### Honda

Honda began sales operations in the United States in 1959 with the establishment of American Honda Motor Co., Inc., Honda's first overseas subsidiary. Honda began U.S. production operations in 1979. Since that time, Honda has invested more than \$8.5 billion in its North American operations with 14 major manufacturing plants, employment of more than 33,000 associates and the annual purchase of more than \$16 billion in parts and materials from suppliers in North America. According to Honda, nearly 8 of 10 Honda and Acura cars and light trucks sold in America are produced in North America.

During May 2006, Honda unveiled its "2010 Vision" for its North American automobile operations. In addition to the new auto plant in Indiana (see below), Honda's North American plan also includes the following corporate initiatives: 1) construction of a new engine plant in Canada to begin production of 4-cylinder engines in 2008 with an investment of \$140 million and employment of 340 associates; 2) expansion of U.S. engine, transmission and powertrain component production in Ohio and Georgia (see below), with additional investment of \$125 million and additional employment of 80 associates; 3) introduction in the United States and Canada in 2009 of a new, more affordable, dedicated hybrid car; 4) introduction in the United States and Canada within the next three years of new 4-cylinder diesel engine technology that meets U.S. EPA Tier 2 Bin 5 emissions standards; and, 5) establishment of a voluntary goal to improve American Honda's Corporate Average Fuel Economy (CAFE) by five percent over 2005 levels by the year 2010.

In May 2006, Honda began mass production of 5-speed transmissions at its Georgia Precision Parts plant. Honda also announced plans to expand production facilities at its west Georgia facility, which will increase investment to \$150 million and employment to 440 associates (up 40). The increased investment of \$50 million will add aluminum die-casting and machining and other in-house production capabilities. The investment will also increase the facility by 100,000 square feet to a total of 350,000 square feet.

In June 2006, Honda announced it would build a new \$550 million automobile manufacturing plant in Greensburg, Indiana. The plant will begin mass production of fuel-efficient 4-cylinder vehicles in fall 2008, with an annual production capacity of 200,000 vehicles and employment of 2,000 associates. This new plant will help boost Honda's total North American auto production capacity from 1.4 million units to more than 1.6 million units in 2008, grow Honda's employment in North America to more than 37,000 and increase North American capital investment to more than \$9 billion. The new

plant will have the same type of flexible New Manufacturing System that is found in Honda's other auto plants in the United States and Canada, with advanced technologies that provide the flexibility to produce different models more quickly and efficiently. Major processes performed at the Indiana plant will include stamping, welding, painting, plastic injection molding and assembly operations.

In October 2006, Honda announced that it intended to raise production of Civics in North America. With this move, Honda will enhance its ability to match flexible manufacturing capacity with market demand and make it possible to increase North American production of fuel-efficient 4-cylinder Civic models in early 2007 by up to 60,000 units on an annual basis. Honda is attempting to meet demand for its popular 4-cylinder passenger cars in a timely fashion, since higher fuel prices rekindled consumer interest in fuel economy. Key components of the plan include: 1) from February 2007, production of Pilot sport utility vehicles in Canada will be gradually shifted to Honda's Lincoln, Alabama plant. This will return the Alabama plant's production to a full annual capacity of 300,000 vehicles and engines and will make it the sole source for both Pilot and Odyssey models after the shift; and, 2) from April 2007, production of Civic Sedan models will be added for the first time to Honda's Plant 2 in Alliston, Ontario, Canada, which has produced only light truck models since opening in fall 1998. Plant 1 in Canada already builds Civic Sedans and Coupes. The added Civic production will not impact the plant's current production capacity of 390,000 units.

Honda also added production of two light truck models at its Ohio auto plants during 2006. Honda's East Liberty Plant in Ohio began production of the all-new 2007 Honda CR-V in September, and the Marysville Auto Plant began producing the all-new Acura RDX in July, after building only passenger cars since opening in 1982. (Honda decided to move CR-V production from the United Kingdom to the United States in order to meet increasing U.S. demand. CRV production will also continue in the U.K. to meet European demand.) Honda is reportedly considering expanding its presence in Mexico by building a small SUV at its Guadalajara plant, which currently focuses on Accord assembly from kits shipped from Marysville, Ohio. If the Mexican plant also takes on CR-V production, it would reportedly also use kits shipped from Ohio.

In addition, Honda announced plans in June 2006 to increase its North American capacity to by an additional 200,000 units with the construction of an auto plant near Greensburg, Indiana for the production of 4-cylinder vehicles and a 200,000-unit engine plant in Canada to build 4-cylinder engines. These plants are scheduled to begin operation in 2008.

During 2006, Honda also expanded its research and development in North America by opening a new advanced design studio in Pasadena, California. The new studio will focus on advanced design concepts and the creation of concept vehicles for future Honda and Acura products. In March 2006, Honda broke ground on its second major California design center - the Acura Design Center in Torrance, located adjacent to its existing Los Angeles Center and the company's U.S. sales headquarters. The new Acura Design Center, opening in the summer of 2007, will focus exclusively on market research and

styling design activities for the Acura brand, while the existing Los Angeles Center will be responsible for market research, concept development and styling design for the Honda brand. Honda's new advanced design studio will work closely with other Honda advance design studios around the world - specifically in Germany, Italy and Japan - to provide future product and brand direction to Acura and Honda product design stylists. In addition, the new U.S. studio will undertake special projects such as concept cars for American auto shows and school projects with the Art Center College of Design.

Honda announced during the 2007 Detroit North American International Auto Show that it plans to provide a more powerful V-6 in its next Accord sedan (eighth-generation). The current generation Accord offers a 3L V-6, while competitors (e.g., Toyota Camry), have moved up to a 3.5L V-6 engine. The new engine will also reportedly produce even less harmful emissions, as it will incorporate Honda's Variable Cylinder Management Technology.

### Nissan

In a move to consolidate its North American operations, Nissan moved its headquarters from Southern California to Nashville, Tennessee. Construction of the \$70 million Franklin headquarters will be completed by 2008.

In December 2006, Nissan announced its new mid-term environmental action plan called the Nissan Green Program 2010 (NGP 2010). This plan is designed to fulfill Nissan's environmental philosophy of "symbiosis of people, vehicles and nature" and contribute to a sustainable mobile society. Highlights of Nissan Green Program 2010 include: 1) incorporating CO2 reduction as one of the key management performance indicators; 2) launch a "three-liter car" with a target of 2010 (a gasoline-fueled car that runs 100km on three liters of fuel [approximately 80 mpg]); 3) expand availability of Flexible Fuel Vehicles (FFV) within the next three years; 4) launch a Nissan electric vehicle early in the next decade; 5) develop Nissan's original hybrid vehicle targeted for launch in FY2010; 6) accelerate development of plug-in hybrid technology; and, 7) reduce CO2 emissions from global manufacturing plants by 7% compared to 2005 by 2010.

Nissan previewed two new vehicles at the 2007 North American International Auto Show in Detroit in early January – the Nissan Rogue crossover sport utility vehicle and an advanced design study called the Nissan Bevel. The all-new Rogue is Nissan's first entry into the small crossover segment. It is scheduled to go on sale in fall 2007 as a 2008 model and joins Nissan's lineup of advanced crossover and sport utility vehicles that includes Armada, Pathfinder, Xterra and Murano. Also making its world debut was the Nissan Bevel Concept, a smaller multi-purpose vehicle with a "command central" cockpit and high-utility interior. The Bevel Concept was created at Nissan Design America, La Jolla, Calif.

### BMW

With the three brands, BMW, MINI and Rolls-Royce Motor Cars, the BMW Group has focused on the premium sector of the international automobile market. BMW is committed to the United States and North American market for future further growth.

Indeed, during 2005 and 2006, BMW sold more vehicles in the United States than in its German home-market.

The BMW plant near Spartanburg in South Carolina began producing BMW automobiles for the world market in 1994. This plant is the sole source of the X5 Sports Activity Vehicle, Z4 Roadster, M Roadster, Z4 Coupe and M Coupe. Due to the success of these automobiles, the Spartanburg plant has had to be substantially enlarged. Its output has been expanded by adding additional shifts, introducing flexible working hour models, and hiring new employees. Today, the Spartanburg plant is open six days a week, producing automobiles approximately 110 hours a week. It currently employs 4,700 workers, and can manufacture over 500 vehicles daily.

During 2006, BMW demolished the two-line assembly system and converted it to a single-line system, which allows for additional flexibility to handle seasonal fluctuation of models, as well as the introduction of new models to markets in a shorter lead-time, and constructed a new high-speed manufacturing testing facility. By March 2006, BMW had produced its 1 millionth vehicle at the Spartanburg facility.

In May 2006, BMW announced that it would use recycled methane gas generated by the Palmetto Landfill near Spartanburg to provide energy to its paint shop. BMW is working with long-standing partner, Durr Systems of Plymouth, Michigan, to modify and upgrade equipment so landfill gas can be used to fuel the paint shop. Durr Systems specializes in developing and implementing energy performance projects in industrial facilities and is a partner in the Environmental Protection Agency's (EPA) Landfill Methane Outreach Program, which helps businesses lower operating costs, protect the environment and build a sustainable future. BMW is the first automotive paint shop to integrate the use of landfill gas in its process equipment.

In August 2006, BMW announced it would invest about \$50 million in the LSP Automotive Systems sheet metal stamping facility located in Commerce Park in Union, South Carolina. LSP will manufacture the molds of a new vehicle that will be produced at BMW Manufacturing beginning in 2008. The molds will be used to produce sheet metal stampings for the exterior of the vehicle. The \$50 million will be used to buy the molds, which will be owned by BMW. LSP will invest \$96 million in its equipment and facility. The LSP investment is expected to generate 130 new jobs in Union County and will make BMW and LSP the county's largest taxpayer, paying an estimated \$2 million per year beginning in 2008, according to county officials.

BMW also announced in January 2007, that the company is considering migrating its next generation X-3 CUV, currently built in Graz, Austria and its Z-4 sports car line to the new 3-series platform. Since Magna's contract to build the X-3 runs out in 2010-11, the company is considering new locations to build the next generation vehicle, with the Spartanburg plant as a frontrunner, given BMW's flexible platform strategy.

### Hyundai-Kia

In January 2007, Hyundai announced that it was another record-setting year, as its worldwide sales reached 2,663,998 units, a 5.1 percent increase over 2005. Its overseas sales (comprised of exports from Hyundai's three Korean plants and output of overseas manufacturing subsidiaries) rose by 6.1 percent to 2,082,906 units while domestic sales rose 1.8 percent to 581,092 units. The Elantra once again claimed the title of Hyundai's best-selling car worldwide, followed by the Sonata, Tucson and Verna. Hyundai has set its 2007 target worldwide sales as 2.735 million units.

In March 2006, Korean manufacturer Kia, (Hyundai has controlling interest in Kia) announced it would invest \$1.2 billion in its first U.S. production plant, which will be located in West Point, Georgia, on the border with Alabama. It is reportedly considering both fullsize pickups and sporty convertible segments for production. Looking for ways to brand differentiate, Hyundai will reportedly focus more on unibody frames while Kia will focus more on body-on-frame vehicles. The plant, which is to open in 2009, will employ 2,5000 workers, and be capable of producing 300,000 vehicles a year. Kia said it has invested more than \$300 million in the United States over the last four years. During 2006, Automotive News ranked the Hyundai-Kia Automotive Group as the 6<sup>th</sup> largest automotive manufacturer in the world, registering an 11.6 percent jump in global sales. It was the largest percentage gain of any carmarker in the million-plus sales category. With it, Hyundai and Kia climbed up one spot in the global rankings, unseating Nissan.

Hyundai's Montgomery, Alabama plant opened in mid-2005 and its total investment to-date is \$1.1 billion. This plant initially produced the Sonata sedan and added-on the Santa Fe CUV during 2006.

The co-located Hyundai Mobis plant supplies an array of parts and modules needed in producing the vehicles, to include: front and rear chassis modules; cockpit modules; airbag systems; bumper systems; and, door-trim packages. Beyond this, Hyundai is reportedly considering a full-size pickup for the U.S. market. In addition, Hyundai has confirmed that it will introduce a hybrid model for the U.S. market before the end of the decade.

Hyundai's Ann Arbor, Michigan Tech Center opened during 2005 and represents a \$117 million investment over two phases, \$56 million of which is dedicated towards construction. Officials say that it provided 85 new job positions during the first year, and potentially 750 more down the road. This facility replaced an older facility built in 1986 that was dedicated to emissions work on U.S. products.

Finally, Hyundai is also exploring fuel-efficient vehicles for the U.S. market, and will offer its first 6-speed automatic transmissions during 2007. It is also reportedly working on a diesel engine for the United States, but has some work to accomplish in order to meet the strict U.S. emissions standards. The first application of a 6-speed automatic transmission is in Hyundai's new large cross utility vehicle called the Veracruz, which was unveiled at the Detroit North American International Auto Show in January 2007,

and is set to go be released to dealerships in March. Hyundai is taking a wait-and-see approach on flex-fuel, E-85 vehicles, given the current lack of fueling stations and high cost of the fuel.

### **Innovation Offers Consumers More Choices and New Products**

Increased global competition has led to more innovation by the automakers and additional choices for consumers. Global Insight Inc. estimates the number of car models being offered in the United States will increase to 330 by 2008, up from 250 in 1999. With more competitors in the market and increased competition, there are now a variety of small-volume, niche vehicles attempting to meet the diverse needs of consumers and families. The average annual sales per nameplate decreased from 106,819 in 1985 to 48,626 in 2005.

In addition to more choices of models, there are now more features as well. New advanced active safety features and electronics, such as intelligent cruise control, electronic stability controls, and crash avoidance systems, continue to be introduced. McKinsey & Co. predicts electronics will jump from 20 percent of the cost of building a car today to 40 percent by 2015.

Automakers continue to invest billions in developing fuel-efficient vehicles with cutting edge technologies. It is clear that a significant market is emerging for vehicles with reduced environmental impact, so long as they do not compromise operating economy, comfort and performance, driving range, or price. Helping to foster their demand are rising gas prices, technological breakthroughs, and state (especially California, as mentioned earlier) and federal government efforts to improve both emissions and fuel economy. New federal tax credits that began on January 1, 2006 are aimed at encouraging consumers to buy advanced technology vehicles.

The U.S. Department of Transportation (DOT), administrators of the federal corporate average fuel economy (CAFE) regulations, raised the bar for light trucks from 20.7 mpg for model year 2004, to 21.0 mpg in 2005, and an additional 0.6 mpg in 2006 and in 2007. In March 2006, DOT announced new fuel economy standards for light trucks in the 2008-2011 model years, and for the first time the regulations include light trucks exceeding 8,500 pounds. The standard will be 24 mpg by 2011. After a three-year transition period beginning in 2008, all new light trucks will be required to meet miles per gallon targets based on six vehicle size categories. DOT has also announced a preliminary regulation requiring electronic stability control technology on all new vehicles. Experts are asserting that this technology is the most important breakthrough since the development of seatbelts. Stability control uses electronic sensors linked with onboard computers to detect steering problems.

Hybrid vehicles have become the first advanced technology of significant interest to American consumers. J.D. Power estimates hybrid sales will increase to 780,000 by 2012 with 52 models being offered. Hybrid power systems combine small gasoline or

diesel engines with battery packs and electric motors. The Detroit 3 have been working hard to catch up to Honda and Toyota in this category. The U.S. automakers initially expressed doubts about recouping the high cost of development, and chose to focus more attention (and R&D budgeting) on longer-term advanced technology such as hydrogen fuel cell engines. These same high costs make it difficult for the smaller automakers to enter this market.

Toyota offers five hybrids - - the Camry, the Toyota Prius, the Highlander, Lexus GS, and Lexus RX400h sport utility vehicles, and is developing an additional ten hybrid models. The automaker expects to sell one million hybrid vehicles annually in the United States early in the next decade.

In 2004, GM introduced two “light” hybrids, the Silverado and Sierra pickup trucks. GM’s first hybrid vehicle, the Saturn Vue Green Line SUV, entered the market in the 2006. In February 2006, GM announced it is investing \$118 million to make a gas-electric hybrid system for two of its full-size SUVs, Chevrolet Tahoe and GMC Yukon. GM will be the first automaker to build and design mass-market hybrid transmissions in the United States. Production will begin in 2007. The hybrid system is the collaboration with BMW and DaimlerChrysler. Chrysler will use the technology in its 2008 Dodge Durango full-sized SUV. The system, which is expected to add 25 percent fuel efficiency to the trucks, will use two electric motors – one to power the vehicle at low speeds with light loads and the other to assist during highway speeds and while towing or on steep hills. GM is also looking into pollution-free technology with zero emissions and sustainable energy sources that could enter the market by 2020.

In 2004, Ford began sales of a hybrid version of its ‘Escape’ Cross Utility Vehicle. A Mercury Mariner hybrid was introduced in 2005. Ford expects to offer hybrid versions of more than half of its vehicles by 2010.

DaimlerChrysler, an advocate of biodiesel, would like to see more government incentives for biofuels and electric-drive vehicle technology. DaimlerChrysler has placed 1.5 million flexible fuel vehicles that use an 85 percent blend of ethanol on the road since 1998.

Another technology that promises to revolutionize the motor vehicle industry is ‘fuel cell’ power systems. Similar in concept to the technology employed by NASA to provide electric power on the space shuttle, fuel cells produce electricity through a chemical reaction involving hydrogen and oxygen. The electricity energizes motors that turn the vehicle’s road wheels. The concept is so promising that an earlier joint project (the Partnership for a New Generation of Vehicles, PNGV), begun in 1994 between the American industry and the U.S. government to develop a five passenger, low environmental impact, 80 mpg motor vehicle, was replaced in January 2004 with the five-year \$500 million ‘Freedom CAR’ (CAR = Co-operative Automotive Research) project and the companion five-year \$1.2 billion Hydrogen Fuel Initiative. For more information, please see: <http://www.eere.energy.gov/vehiclesandfuels/> and <http://www.eere.energy.gov/hydrogenandfuels/>

FreedomCAR is focusing on perfecting fuel cell technology, attempting to drive down the 3-to-1 cost advantage now enjoyed by the conventional gasoline engine-transmission powertrain. The target is a power package no more expensive to produce, no more complicated to service and refuel, and no less powerful – but with significantly better fuel economy (perhaps, 100 miles per gallon equivalent) and much lower emissions. In fact, if pure hydrogen is used the only byproduct is harmless, potable water vapor. Because fuel cells involve no moving parts, and their companion electric motors just a few – compared with hundreds of components in a conventional engine and transmission – fuel cell vehicles (FCVs) promise both greater reliability and longevity, as well as greatly reduced manufacturing complexity. Heavy foundry work (as well as their emissions) and complex machining operations will be greatly reduced, and the industry’s consumption of steel and cast iron should contract significantly.

Proof-of-concept FCVs already have been assembled not only in America, but also in Europe and Japan. A small number are now on public roads, being used for validation and demonstration purposes. GM aims to have a commercial fuel cell system by 2010. The automaker has already spent \$1 billion in its development. In March 2005, GM and the Department of Energy signed a five-year, \$88 million agreement to build a 40-vehicle fuel cell fleet and further develop the technology. DaimlerChrysler manages a fleet of over 100 fuel cell vehicles around the world.

Even assuming all the technical issues in fuel cell engines are resolved (including limited range, extremely high costs, remaining difficulties in starting in cold weather), there are other problems waiting in the wings. One of the major obstacles for GM, along with every other manufacturer working on fuel cell driven vehicles is the development of a hydrogen infrastructure. There are many independent, and sometimes overlapping projects underway to help with this development. Both Florida and California have publicly stated goals to be leaders in the development of infrastructure, with both states working with Chevron to break ground on hydrogen refueling stations. GM is working with Shell to create an “East Coast Hydrogen Corridor,” setting up refueling stations in Washington, D.C. (already open), New York and a location to be named between the two. Still, costs of a national system are daunting, with estimates as high as \$40 billion. GM estimates it would cost \$12 billion for the 12,000 hydrogen stations in the United States to make it possible for customers in the 100 largest metro areas to have to drive no more than 2 kilometers to fill up.

All vehicles have the ability to use a blend of up to 10 percent ethanol with gasoline. Engines can be built to use up to 85 percent ethanol and 15 percent gasoline (E85). Ethanol is a high octane, liquid fuel that allows E85 to provide more horsepower and torque than standard gasoline. Aside from improved performance, it provides cleaner emissions. Ethanol is typically produced in the United States from corn and other grain products, though ethanol can be derived from other biomass resources and forestry wastes.

The Detroit 3, in particular, are working to raise awareness of E85 ethanol fuel use and other alternative fuels. In June 2006, GM, DaimlerChrysler and Ford announced that they intend to double their production of vehicles capable of running on renewable fuels by 2010. That would amount to more than two million E85 and biodiesel-capable vehicles a year by the end of the decade. In November, the Detroit 3 announced that the domestic auto companies were prepared to make half of their annual vehicle production bio-fuel capable by 2012, provided there is ample availability and distribution of E85.

Other initiatives are taking place to try to increase fuel efficiency. In May 2005, the U.S. Department of Energy and the U.S. Council for Automotive Research (USCAR) announced a \$70 million, five-year agreement to develop lightweight, high-strength materials aimed at improving fuel efficiency by reducing a vehicle's weight, without sacrificing safety. This agreement was followed up by additional agreements in July 2005 with investments of an additional \$125 million for continued research and development in lightweight materials and advanced vehicle battery technologies.

Proponents for diesel engines claim this technology is more widely available, and can reduce oil consumption more quickly and cost effectively than hybrids and ethanol. While diesel engines account for approximately half of the European market, they have not been popular in the United States, accounting for less than 1 percent of cars and light trucks. Some of the reasons for this discrepancy are U.S. fuel's higher sulfur content compared to Europe's fuel, strict U.S. air pollution regulations, and tax advantages making diesel fuel cheaper versus gasoline in Europe. Five states, including California, do not even allow sales of new light vehicle diesels. In addition, U.S. consumers have not been interested because they remember the noisy, smoky, unreliable diesel engines of the 1980's. However, new federal rules require low-sulfur diesel fuel to be sold in the United States by the fall of 2006. This change, combined with improvements in diesel technology, could allow diesels to meet the new restrictions requiring diesel and gasoline engines to meet the same tough emission standards that will begin to be phased in by the 2007 model year.

Because diesel engines can now provide 25 percent more fuel-efficiency and more torque at lower rpm than gasoline engines, automakers are betting that U.S. consumers, weary of higher gas prices, will give them another chance. In fact, five automakers announced plans at the North American International Auto Show to introduce diesel engines in their vehicles. J.D. Power and Associates' research predicts more than twice the amount of diesel powered vehicles will be sold in the United States by 2012. The Environmental Protection Agency estimates that if one-third of U.S. light vehicles had diesel engines, it would save 1.4 million barrels of oil per day in the United States, the amount of oil the United States currently imports from Saudi Arabia. Some of the challenges of future diesel sales include: the additional costs associated with developing the technology to comply with state and federal emission standards long-term, the availability of low-sulfite fuel, and overcoming diesels' reputation with consumers. To help offset the added costs to consumers, Congress' 2005 energy legislation included tax credits of up to \$3,400 for buyers of clean diesel vehicles. However, none of the light-duty diesels currently on the market qualify for the credits because of their emissions.

## **Plant Capacity Stable, Utilization Rates Down**

Industry data show that U.S. light vehicle manufacturing capacity – the number of units that can be built annually – increased over the last decade, up from 13 million units in 1995 to 13.2 million units in 2005, reflecting expansion by the Japanese affiliates that is slated to continue. Capacity in 2005 was down 1.5 percent from 2004. As the Detroit 3 announced plant closures come into affect, net national capacity will likely continue to decline. However, declines from the Detroit 3 will be at least partially offset by new investments from foreign-affiliated firms. For example, Toyota began production at a new facility in Texas in 2006. Hyundai opened a new plant in Alabama in 2006. Kia is building a new plant in Georgia, subject to begin production in 2009.

Industry data show that average straight time vehicle assembly plant capacity utilization rates in the United States have routinely exceeded 80 percent, and are often closer to 90 percent. Some plants routinely run at over 100 percent of capacity (through the use of overtime, extra shifts, etc.). Data in the annual Harbour Reports show that as light vehicle production was peaking in 1999, the average car plant utilization rate exceeded 87 percent and light truck plants approached a rate of 105 percent. In 2005, capacity utilization was up two percentage points compared to 2004, rising to 86.6 percent. Car plant utilization rates increased from 76 percent to 83 percent and light truck plant utilization rates declined from 91 percent to 89 percent. (Chart 5)

These mathematical averages hide large differences among individual plants. Some facilities are grossly underutilized, while others run at herculean rates that are neither sustainable, nor conducive to maintaining product quality or employee morale. Harbour reports significant variances among productivity levels in the American, Japanese, and German manufacturers' car and light truck plants in the United States.

The Federal Reserve Board (FRB) also measures plant capacity utilization. By FRB measures, plant capacity utilization (for autos and light trucks [NAICS 33611]) ranged from 66 percent to a high of 76.1 percent in 2006. By December 2006 the rate was 72.5 percent, the average for the year. For the entire industry including automotive parts (NAICS 3361-3) the FRB measured capacity as slightly higher than for the light vehicle segment alone, ending the year at 76.9 percent.<sup>9</sup>

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<sup>9</sup> The Federal Reserve Board constructs estimates of capacity and capacity utilization for industries in manufacturing, mining, and electric and gas utilities. For a given industry, the capacity utilization rate is equal to an output index (seasonally adjusted) divided by a capacity index. The Federal Reserve Board's capacity indexes attempt to capture the concept of *sustainable maximum output* – the greatest level of output a plant can maintain within the framework of a realistic work schedule, after factoring in normal downtime and assuming sufficient availability of inputs to operate the capital in place. For details see: [http://www.federalreserve.gov/releases/G17/cap\\_notes.htm](http://www.federalreserve.gov/releases/G17/cap_notes.htm)

## Trade Overview

International trade and globalization continues to impact the U.S. automotive industry, as production grows in low-cost countries and foreign competition increases. In addition, the automotive industry's biggest growth in the future is expected to take place outside of North America. U.S. motor vehicle trade continues to grow, with both U.S. exports and imports increasing last year. (Chart 6) The United States still has the world's largest vehicle deficit, and it grew to \$108 billion in 2006, an increase of 7 percent from 2005. (Chart 7)

There are several reasons to explain these statistics. As the world's largest single market, the United States naturally attracts attention. The United States serves as a magnet for shippers from approximately 50 countries that face no non-tariff barriers in the United States, and duty rates that have only a limited impact. In addition, a number of foreign governments have created and promoted export-oriented economies. Thus, U.S. imports won't be dramatically decreasing in the near future.

In addition to attracting imports, the United States has attracted investment. German, Japanese and Korean auto manufacturers have increasingly relied on their U.S. manufacturing facilities to supply the U.S. market. The result was a substitution of local production over imports. A dramatic example of this is the case of Hyundai. After increasing by 17 percent in 2003 and 27 percent in 2004, the value of imports from Korea fell by almost 13 percent in 2005 and 1 percent in 2006 as a result of a new Hyundai manufacturing facility in the United States beginning production during 2005. U.S. consumers are increasing their purchases of "import brands" that are made in the United States.

### Exports

On the export side of the trade equation, light vehicle unit exports were up 7.8 percent over 2005. (Table 9) In 2006, the United States exported 2,074,904 units to the world compared to 1,925,391 in 2005. U.S. light vehicle exports reached over 200 countries in 2006, producing a value of \$40.2 billion, a 13.6 percent increase over 2005. The top five export markets continue to be: Canada, Germany, Mexico, Saudi Arabia, and the UK.

Canada remains the top destination for U.S. light vehicle exports. Exports to Canada increased by almost 12 percent last year to reach \$18 billion. Germany became the second largest export market, with U.S. exports increasing over 41 percent to almost \$5.2 billion in 2006. Mexico was in third position with exports decreasing 6 percent to \$4.2 billion. Mexico has become a key auto-trading partner compared to pre-NAFTA when it was not even in the top 15 export destinations.

U.S. light vehicle exports to other key markets were mixed in 2006. Exports to Japan continued to decline and decreased by 14.5 percent to 19,235 units, and exports to Saudi Arabia also decreased slightly by 5.7 percent to 119,833 units. However, exports to the UK increased almost 20 percent to 30,907 units, and exports to China increased by 34 percent to 19,384 units. Although still small compared to other export markets, light

vehicle exports to Korea have grown in the last two years, increasing by 32 percent in 2006 to reach \$150 million. This represents unit sales increasing from 4,577 in 2005 to 5,732 in 2006.

### Imports

Passenger vehicles and light truck imports reached \$148 billion in 2006, increasing by almost 9 percent over 2005. (Table 10) The United States still imports more vehicles by volume and value than any other country. This is largely explained by shipments from plants in Mexico and Canada. Our NAFTA partners accounted for 47.9 percent of U.S. light vehicle imports. This is up from 46 percent in 2005. Along with Germany, Japan, and Korea, these five countries account for over 94 percent of all U.S. light vehicle imports. (Chart 8)

Germany was the primary source of U.S. light vehicle imports in 1965, while Canada was a distant third behind the UK. Canada rose to the top in 1970 because of the Big Three investment in production facilities in Canada. In 1976, Japan, aided by the first oil shock in 1974, quickly rose to the top source for U.S. imports. Canada has since regained its top U.S. supplier status aided by Japanese investment in new production facilities there.

The import statistics of our primary import suppliers were mixed in 2006. Imports from Canada were down 2.2 percent to \$43 billion while imports from Mexico grew by 28 percent to almost \$22 billion. (Chart 9) Imports from Japan increased by almost 25 percent to \$43 billion while imports from Korea decreased by 1.1 percent. Imports from Germany were down 5 percent, falling to \$19 billion.

### **China**

China continues to be the envy of the world, expanding total vehicle sales of 6.8 million units. China is now the second largest vehicle market in the world after the United States, knocking Japan down to third place. While sales grew, profit margins could not keep pace and declined. Experts predict Chinese sales to reach 8.5 million units in 2007 and maintain over 10 percent growth with the launch of new models and price reduction driving sales. Chinese national brands have also recovered from their past slump, now holding 26.3 percent of domestic market share.

U.S. auto manufacturers continue to do very well in the Chinese market. In 2006, Ford brand sales increased 87 percent to 167,000 vehicles. Ford's luxury brands, Lincoln, Jaguar, Land Rover, and Volvo continue to be very popular. Ford attributes this sales increase to new products, an expanded dealer network and the launching of its financial arm in China. To date, Ford has invested more than \$1 billion in China.

The Chinese market continues to be General Motors shining star. In 2005, General Motors gained the top sales position, knocking off VW, which held the top spot for years. GM sales in China rose 31.8 percent to 876,747 units in 2006. Nearly all of GM cars sold in China are also made there. China remains GM's second largest global market in

2006, following the United States. Over a three year period, 2004-2007, GM will invest 3 billion dollars into their manufacturing facilities, engine plant, auto financing as well as the quickly expanding dealerships.

In spite of increased local capacity in China, U.S. exports are currently expanding, due to the market liberalizing provisions required of China as the price of its admission to the WTO. Import duty rates that were as high as 220 percent have fallen to 25 percent on July 1, 2006. Quota restrictions were eliminated on January 1, 2005. Prior to WTO accession, China had some of the world's highest car prices. However, due to falling tariffs and greater competition, prices have radically dropped, creating a more affordable market for mass consumption.

The Geely Automotive Holding Company from China made a big splash at the 2006 Detroit Auto Show when it was the first Chinese company to display a car at the show. Geely intends to begin exporting to the United States in late 2008. Currently Geely exports to over 30 countries, mainly in the Middle East and Latin America, but clearly has its sight set on the U.S. market. Geely has come a long way since it began as a refrigerator parts manufacturer. Geely made its first car in 1998, but by 2005, sold 120,000 vehicles in China, and has plans to increase capacity to 750,000 units by 2010 with half for export. Geely will face a number of hurdles entering the U.S. market -- safety, emissions, dealer network and name recognition to name a few.

## **Korea**

Throughout 2006 the United States and Korea engaged in Free Trade Agreement (FTA) negotiations. The office of the United States Trade Representative has billed this FTA as "the largest in 15 years," the largest since NAFTA. For the automotive sector, trade with South Korea is already a multi-billion dollar a year undertaking, though one that is decidedly weighted towards U.S. imports. Given this deficit and the long history of automotive trade disputes with Korea, this sector became one of the primary challenges in the negotiations (at the time of this writing, the negotiation is not completed). In line with U.S. manufacturers' history in Korea, the U.S. government focused on a few major areas in the FTA including: tariffs, automotive taxes, consumer perception/anti-import bias, and standards/regulatory issues.

The South Korean automotive industry is world class, and exports from South Korea's automakers go to all of the key world markets, including the United States. For example, Hyundai (including Hyundai controlled Kia) is the 6th largest vehicle manufacturer in the world, with 2005 sales of 3.7 million vehicles (up from 3.2 million in 2004). Hyundai is the largest vehicle manufacturer in Korea, with 2006 sales of 648,000 units (427,000 Hyundai and 221,000 Kia). The Hyundai group controlled 69 percent of the Korean Market in 2006. While Hyundai is based in Korea, the company is heavily reliant on export sales. In 2006, Hyundai exported 69 percent of the passenger cars it produced in Korea.

The United States and South Korea already have a history of negotiations on automotive trade, having reached agreement on two Memoranda of Understanding to improve access to the Korean market – one in 1995 and one in 1998. These MOUs were negotiated because U.S. vehicle manufacturers were greatly discouraged from selling into the Korean market due to a variety of measures.

In 1994, before the first MOU was signed, import sales in the Korean auto market totaled 3,810 vehicles (0.3 percent of the market), with Ford, Chrysler and General Motors accounting for slightly over half that total. By 1997, total import share had only climbed to only 0.7 percent, with U.S. manufacturers accounting for approximately half (or 0.35 percent of the Korean market). Also during that time, the U.S. automotive trade deficit with Korea rose dramatically, up 30 percent to reach \$1.8 billion. As a result of unsatisfactory progress under the 1995 MOU, a second more comprehensive agreement was negotiated and put into place in 1998 (for more detailed information on the 1998 MOU see the report “World Motor Vehicle Import Requirements,” also on the Office of Aerospace and Automotive Industries web page: [www.ita.doc.gov/auto](http://www.ita.doc.gov/auto)). While import sales in Korea have improved slowly, they are still low representing only slightly over four percent of the total market in 2006. Meanwhile, the U.S. automotive trade deficit with Korea has continued to climb. Between 1996 and 2006 this deficit increased from \$1.7 billion to \$10.8 billion (annualized from 11 month data).

The Korean manufacturers have been enjoying a long string of success in the U.S. passenger vehicle market. Every year since 1993 they have either maintained or increased their share of the U.S. market, rising from 0.8 percent with sales of 109,000 vehicles in 1993 to 4.6 percent of the market with sales of 750,000 vehicles in 2006.

Korean automakers have a long history in the United States – one that, contrary to current trends, has not always been successful. The first Korean automaker to enter the United States was Hyundai in 1986. Kia followed much later in 1994 and Daewoo started sales in 1998 (only to leave the U.S. market in 2003 after declaring bankruptcy and to re-enter the U.S. market badged as Chevrolet and Suzuki products after GM purchased Daewoo assets and created a new company).

In 1986 Hyundai introduced the Excel, a small sedan, priced well below competitors’ brands. Sales of the Excel reached 264,000 units by 1988. To build on the brands growing popularity, in late 1988 Hyundai opened a plant in Canada, producing the Sonata (primarily for the Canadian market, with some exports to the United States). However, after only a few years of success, the Excel developed a reputation for poor quality, and sales plummeted. By 1992, Excel sales were down to only 42,000 and total Hyundai sales reached only 109,000 units. After only three years of production, the Hyundai Canada plant closed. It wasn’t until the year 2000 that Hyundai sales began to approach the peak year of 1988, with sales reaching past that peak in 2001.

After a long period of supplying the U.S. market entirely through exports, Hyundai has now invested over \$1 billion in its first U.S. manufacturing plant in Montgomery, Alabama. The plant began assembly of Hyundai’s Sonata sedan in April of 2005. These

cars are now being sold from Hyundai's dealer lots nationwide. Hyundai produces the Sonata and its Santa Fe SUV at the Montgomery plant. The company is rapidly making use of its new facility. In 2005, 14 percent of Hyundai's U.S. sales were produced in Alabama. In 2006 that percentage rose to 43 percent. By 2007, the plant is expected to reach full capacity with production of 300,000 vehicles a year, employing 2,000 people. In March 2006, Kia announced its first U.S. production plant in West Point, Georgia. The plan calls for an investment of \$1.2 billion. The plant will begin production in 2009, eventually reaching full capacity of 300,000 units and employing 2,500 workers.

## **Japan**

The United States has sustained automotive trade imbalances with Japan for over three decades. This imbalance has had significant economic and political impacts, and has dominated our trade relationship with Japan over much of this period. U.S. automotive companies' sales in Japan have not improved, while Japanese companies have continued to gain market share in the United States.

The automotive trade deficit with Japan is the largest U.S. sectoral bilateral imbalance. It has grown from the \$30 billion dollar level in the early 80's to \$56.8 billion in 2006 (\$43.2 billion deficit in autos and \$13.6 billion deficit in auto parts). Meanwhile, overall sales of North American-made vehicles and parts in Japan remain low. According to the most recent import statistics available from Japan Automobile Importers Association (JAIA), sales of U.S. produced motor vehicles in Japan decreased by 17.7 percent in 2005 to 19,130. U.S. automakers currently sell 44.4 percent as many U.S.-made vehicles in Japan as they did in 2000.

Over the last eleven years, the Detroit 3 have lost 19.6 points of U.S. market share, declining from 73.1 percent of the market in 1995 to only 53.5 percent of the market in 2006. Japanese brands have made strong headway during this period, climbing from 22.9 percent to 35 percent, a gain of 12.1 points of market share. (According to Ward's Automotive Reports, analyzed by Office of Aerospace and Automotive Industries.)

The Japanese auto companies have supplied their increased U.S. market share through both export and investment in U.S. manufacturing facilities. Imports from Japan were up 34 percent in 2006 to 2,193,554 units compared to 1,630,186 units in 2005. Prior to 2006, imports from Japan ranged between 1.5 to 1.8 million units since 2000.

The cumulative Japanese investment in the U.S. stands at \$28 billion. By 2008, Japanese investment in U.S. auto and auto parts manufacturing plants is projected to total \$30.09 billion. Japanese manufacturers produced nearly 3.5 million cars in the United States in 2005, an increase of 10% over 2004.

The largest Japanese investor, Toyota, has invested over \$14,148 million in twelve U.S. manufacturing facilities that produced 1,291,465 vehicles in 2005. Toyota employed 25,709 workers in the United States in 2004. In February 2007, Toyota announced that it

would build a new vehicle assembly plant in Tupelo, Mississippi. The new plant will have the capacity to build 150,000 Highlander sport utility vehicles annually. Production is scheduled to begin by 2010. Toyota will invest \$1.3 billion in the facility and create approximately 2,000 new jobs for the region and indirectly create work for many more. Operations at the plant will include stamping, body weld, plastics, paint, and assembly.

Other Japanese manufacturers are similarly increasing their presence in the United States. Honda of America has invested over \$6.8 billion in six U.S. manufacturing facilities that produced 870,046 vehicles in 2005. Nissan has invested over \$4.2 billion in three U.S. manufacturing facilities that produced 836,011 vehicles in 2005. Mazda, in a joint venture with Ford, has invested nearly \$2 billion in one manufacturing facility that produced 272,632 vehicles in 2005.

### **NAFTA and Beyond – Integration Continues**

Implementation of the NAFTA has had a tremendous impact on automotive trade in North America. Shipments of new passenger vehicles and light trucks between the United States and its two partners have grown tremendously. In 2006, cross-border trade hit a new record high, reaching \$84.9 billion. In 1994, the year before NAFTA, two-way shipments were \$36.5 billion - - far less than half the 2006 total. Most of the growth during this period was the result of increased imports by the United States, which rose from \$28.4 billion in 1993 to 2000's peak of \$61.7 billion. Most of the increase in 2006 can be attributed to increased exports to Canada, up \$1.3 billion (an 8 percent increase) and increased imports from Mexico up \$4.6 billion (a 27% increase).

In 2006 imports from Canada and Mexico reached \$64.3 billion – more than double the size of 1993's sum. U.S. exports also have more than doubled, growing from \$8 billion in 1993 to \$21 billion last year. The United States continues to experience deficits with both countries. However, their combined share of the U.S. global deficit in these products has declined steadily, dropping from a high of 54 percent in 1996 to 39.2 percent in 2006 (down slightly from 2005).

Most trade in automotive products between Canada and the United States was liberalized by two bilateral agreements enacted well before the NAFTA agreement was implemented. Therefore, little of the growth in trade between the two countries can be attributed directly to the NAFTA agreement. Bilateral trade with Canada in these products, \$32.8 billion in 1993, reached \$64.3 billion in 2006. U.S. exports have increased by 115 percent to \$17.1 billion, while imports from Canada grew 72 percent above 1993's total to \$42.8 billion.

Before NAFTA was enacted, exports to Mexico from the USA were artificially constrained by a host of measures enacted by the Mexican government to force firms to produce in Mexico, if they wished to export there. In 1993, our shipments of new passenger vehicles and light trucks totaled less than \$95 million. They jumped 500 percent in 1994, the first year of the agreement, reaching \$580 million. By the end of

2006, U.S. exports to Mexico totaled \$3.5 billion. Mexico is our third largest export market, after Canada and Germany. Those increases came about because U.S. firms were able to rationalize and relocate some of their Mexican production to U.S. plants, and because they could export more models to Mexico from the United States without being subject to artificial import and local production constraints.

Imports from Mexico have grown rapidly since the agreement was signed, climbing from \$4.5 billion in 1993 to a total of \$21.5 billion in 2006. Because the U.S. border was already largely open to Mexican imports before the trade pact was signed, it would be a mistake to attribute this surge entirely to the NAFTA agreement. The exception is the increase in U.S. imports of those trucks that have an MFN duty rate of 25 percent (those primarily designed for cargo, such as two-door pickup trucks and certain medium/heavy duty trucks). Imports of these trucks has increased 1300 percent since 1993. This increase represents 40 percent of the total increase in motor vehicle imports from Mexico during that time.

However, the growth in U.S. exports can be directly credited to the agreement, since there were significant changes in cross border market access for goods heading to Mexico, with the removal of Mexican restrictions that constrained U.S. shippers. For example, a Mexican requirement that producers assemble vehicles in Mexico and export a certain percentage of them in order to import vehicles into Mexico, was immediately phased out for commercial vehicles and reduced for passenger vehicles. On January 1, 2004, the remaining restrictions were entirely eliminated. Strict quotas, high tariffs, and minuscule import market share allocations that applied to motor vehicle imports from the United States have been eliminated. Mexican content requirements were substantially curtailed and were eliminated entirely by January 1, 2004. Import duty rates for U.S. products, which reached as high as 20%, were voluntarily eliminated by Mexico on January 1, 2003, one year ahead of schedule.

Before the accord was signed, many observers expressed reservations, believing that the lower wage rates in Mexico would result in the immediate and significant relocation of U.S. light vehicle manufacturing capacity to sites south of the border. Instead, data produced by Harbour and Associates<sup>10</sup> indicates that light vehicle assembly capacity has increased in all three countries since 1993, rising from a total of 16.7 million units to 17.7 million vehicles in 2005. (Chart 10) Capacity has grown the fastest in Mexico, and was 25.1 percent higher in 2005 than in 1993. However, the increase has been from a relatively smaller base. U.S. capacity in 2005 was 5.5 percent greater than in 1993, but the absolute increase of 696,000 additional units, is roughly double Mexico's 361,000-unit increase.

Largely as a result of Detroit 3 plant closures and capacity adjustments, overall capacity in North America was down 1.3 percent in 2004 compared to 2003. This followed a 1.6 percent decline in 2003. The United States and Mexico were stable with U.S. capacity up 0.1 percent and Mexico up one percent. Canadian capacity was down nine percent.

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<sup>10</sup> In some circumstances Harbour fails to report data on key plants (e.g. Hyundai's Alabama plant). In those circumstances other sources were used to supplement Harbour's data.

Plant capacity is not static, however, and its measure depends upon a combination of factors that can change from year to year, and even from day to day. Variables include the level of investment in physical plant, the efficiency of the processes employed, complexity of the vehicles being assembled, the number of employees on the assembly line, and the number of hours of operation. Measured capacity in all three countries actually declined in the first year of the NAFTA, dropping the most in Mexico – 1%. (Chart 11) By the end of the second year, capacity had increased the most in Mexico – 15% – despite the economic crisis that the country was then experiencing.

Plant capacity utilization – dividing the number of units actually produced in a year by estimated annual production capability – is another useful tool for measuring changes in the industry. Harbour's data shows that in 1993, Mexico produced one million vehicles in plants with a capacity to assemble 1.4 million, yielding a 72 percent utilization rate. During Mexico's 1995 'peso crash,' light vehicle production in the country's plants dropped 16 percent to 925,000 units, while capacity had risen that year by nearly 15 percent to 1.6 million units. The net result was a 27 percent decline in utilization for the year to a rate of 58 percent. (Chart 12) By the end of 2000, Mexico's utilization rate had hit 100 percent, the highest of any of the three countries. It fell the next four years, dropping to 82 percent in 2004. The U.S. rate, 84 percent in 1993, was 85 percent in 2004. Although capacity was down nine percent in Canada in 2004, utilization rates were up over ten points, to reach 96 percent. Actual production in Canada was up three percent. Between 1993 and 2003, the overall utilization rate averaged 90 percent in U.S. plants, 88 percent in Canadian plants, and 82 percent in Mexican plants.

## **The Road Ahead**

In the future, analysts may look back upon 2006 as a crossroads year for the industry: cars are gaining in popularity relative to light trucks; consumers and governments are becoming more interested in fuel efficiency and the environment; the foreign automakers are closing in on the Detroit 3's hold on over half of the U.S. light vehicle market; the Detroit 3's restructuring plans are reshaping the companies and its workforce; and, automakers are beginning to show signs of increased collaboration on select trade and environmental issues. There are, however, many unknown factors that will impact automakers' future and direction, such as: fuel prices, low-cost production in emerging markets, state and federal regulations, international standards and trade policies, and, as always, consumers' tastes. For the Detroit 3, its 2007 labor contract negotiations with the UAW will be especially critical to their turnaround, perhaps defining a new relationship between the UAW and the companies.

Globalization and foreign competition continues to impact U.S. industry, particularly the automotive industry. Last year's U.S. automotive trade deficit increased 7.7 percent to reach \$109 billion. Auto parts sourcing, engineering decisions, plant operations, and quality will be increasingly based on global benchmarks. In addition to the unknown factors mentioned above, international trade patterns and the industry will also inevitably

be influenced by foreign currency values, new investments in the United States and abroad, service and delivery costs, and the strengths of individual markets.

Finally, looking forward, there are two emerging markets looming that will eventually impact the U.S. automotive industry's dynamics, China and India. Both countries are becoming low-cost sources for vehicle production, automotive parts, and engineering services. At the same time, both have growing domestic auto markets that have been developed with the help of foreign direct investment by the global automakers. China- and India-based automakers have initially focused on their respective markets, but automakers in each market have expressed an interest in selling in the United States. It's just a matter of how soon these automakers will be able to comply with U.S. standards and safety requirements, meet U.S. consumers' quality expectations, and develop a distribution network. It will be interesting to see how the joint venture companies, in particular, determine which products and how many vehicles will be imported into the United States, and how U.S. consumers perceive these vehicles. Undoubtedly, these new players will only increase the relentless competition that already exists for the industry, both within the United States and worldwide.

## **FACT SHEET**

### **Domestic Market**

- The U.S. market for cars and light trucks decreased to almost 16.5 million units in 2006 – down 2.6 percent.
- Gas prices reaching \$3 a gallon last summer contributed to sales of light trucks declining 6 percent, while sales of passenger cars grew 1.5 percent.
- Cross utility vehicles' (CUV) popularity continued to grow, with sales increasing from 1 million units in 2001 to 2.5 million units in 2006.
- With sales volume down, consumer expenditures for new vehicles also decreased from \$256.3 billion in 2005 to \$243.1 billion in 2006.
- Forecasters predict the 2007 market will be the lowest in nine years, with estimates averaging 16.4 million vehicles for 2007.
- Market share for the Detroit 3 has fallen again to a new low, 53.5 percent of the 2006 market. Their volume dropped 8.3 percent.
- Market share for Japanese brands reached a new high, 35 percent. Volume increased 5.4 percent.
- After declining for the past three years, German brands' sales volume was up 5.8 percent. Market share also increased to 5.6 percent.
- Sales volume of Korean brands increased 2.6 percent, and market share climbed to 4.6 percent.

### **Production**

- U.S. production of light vehicles decreased by 6.4 percent in 2006 to 10.8 million units. 1999 was the record high, 12.6 million units.

Detroit 3 production decreased 10.4 percent to 6.8 million units.

- U.S. production by Japanese affiliates decreased 3.3 percent to 3.4 million vehicles.
- U.S. production by the German affiliates was up 15.4 percent to 254,000 units.
- 2006 was the first full production year for Korean manufacturer, Hyundai, in the United States. In 2006, the automaker produced 237,000 automobiles, up from 91,218 in 2005.

- Some analysts expect Detroit 3 production to contract further in 2007, their volume replaced by that of the local Japanese, Korean, and German affiliates, and by imports.

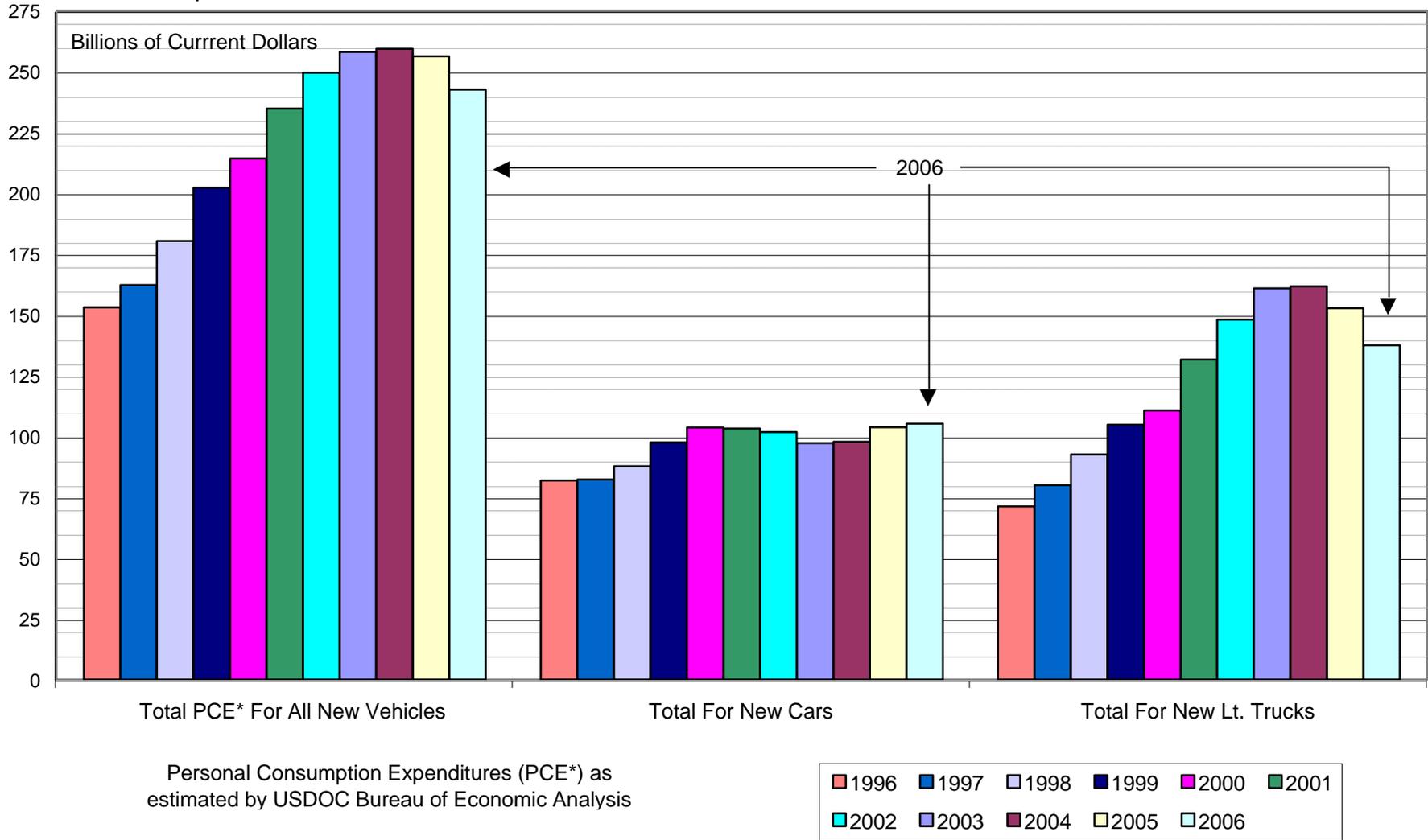
### **Employment**

- Domestic employment in the auto industry (light vehicle manufacturing) was down in 2006 to an average of 199,500 individuals, a decrease of 5 percent from 2005.
- Auto manufacturing remains one of the economy's best paying industries. Production workers' average hourly earnings were projected to reach \$30.02 (excluding benefits) in 2006. Wages were 79 percent greater than the national average for all manufacturing industries.

### **International Trade**

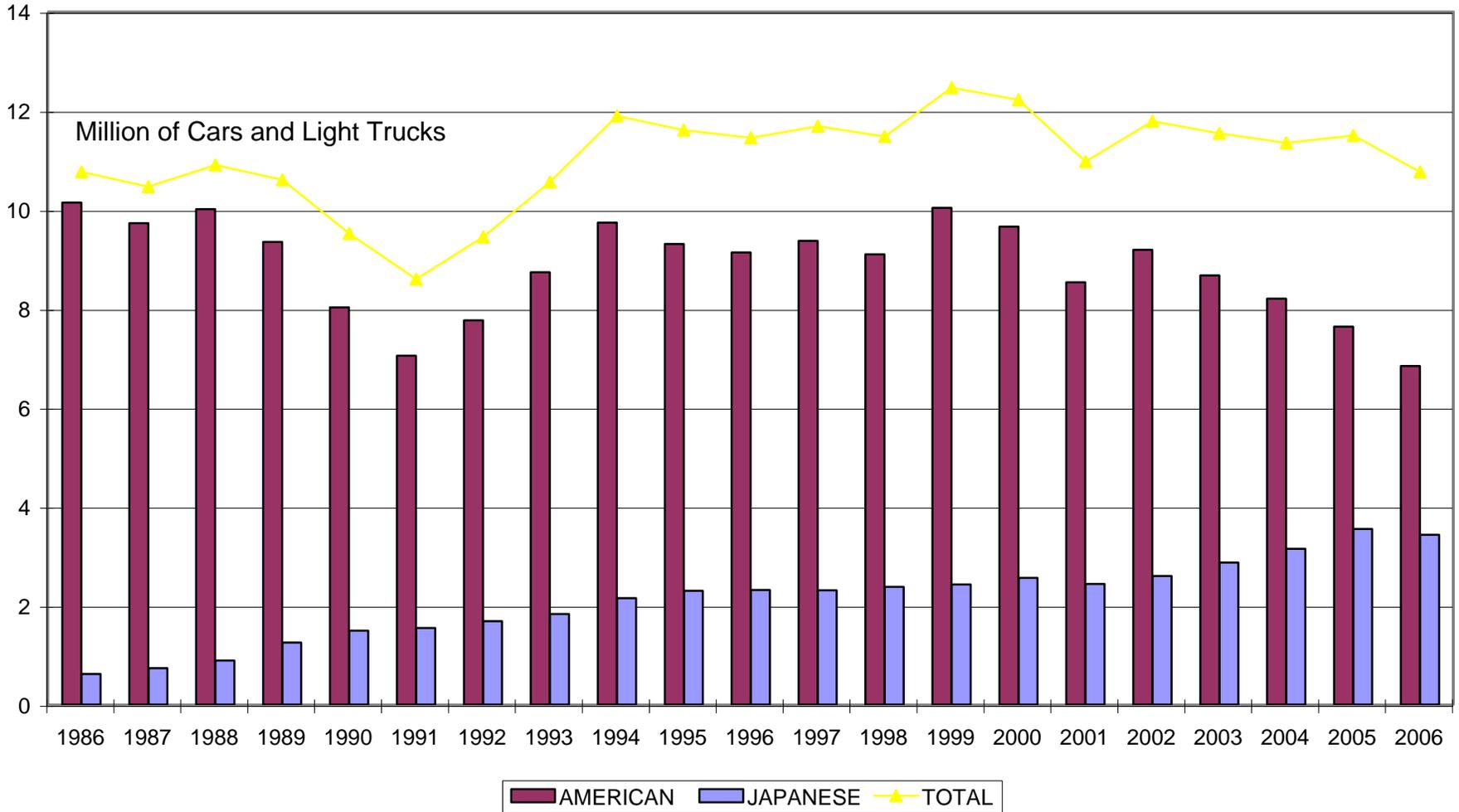
- The light vehicle trade deficit increased 7 percent in 2006 to \$108 billion.
- Imports increased almost 9 percent to a total of \$148.4 billion.
- Exports grew for the fifth year in a row, climbing 13.6 percent to \$40.2 billion.
- Imports from Canada were down 2.2 percent to \$43.1 billion, but Canada remains the largest source. Imports from Mexico grew 28.1 percent to \$21.7 billion. Japan's exports to the United States increased by almost 25 percent to \$43 billion.
- Most U.S. exports continued to go to Canada and those shipments increased by 11.7 percent to \$18.1 billion. Exports to Japan decreased by almost 12 percent to \$472 million. Shipments to Mexico decreased by 6.3 percent to \$4.2 billion. Exports to Korea increased for the second year in a row to \$150 million, an increase of almost 32 percent.
- Most analysts do not expect the light vehicle trade deficit will decline in the near term.

**Spending on new vehicles declined from \$256.3 billion in 2005 to \$242.6 billion in 2006. Spending on light trucks decreased again from a high of \$161.7 billion in 2004 to \$137.5 billion in 2006.**

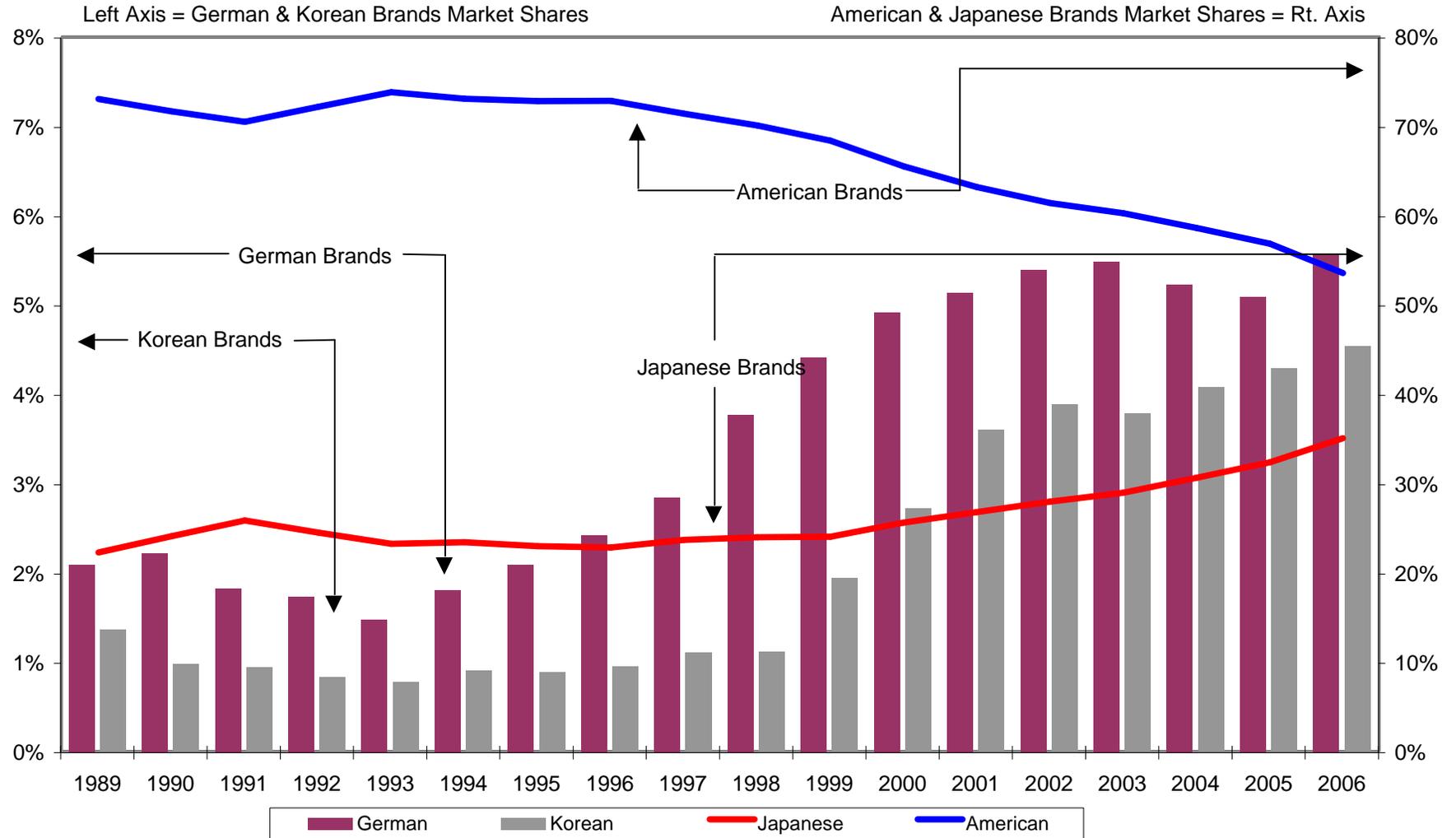


**While Detroit 3 production has on average trended downward, Japanese transplant production has increased 49 percent since 1995.**

Chart 2



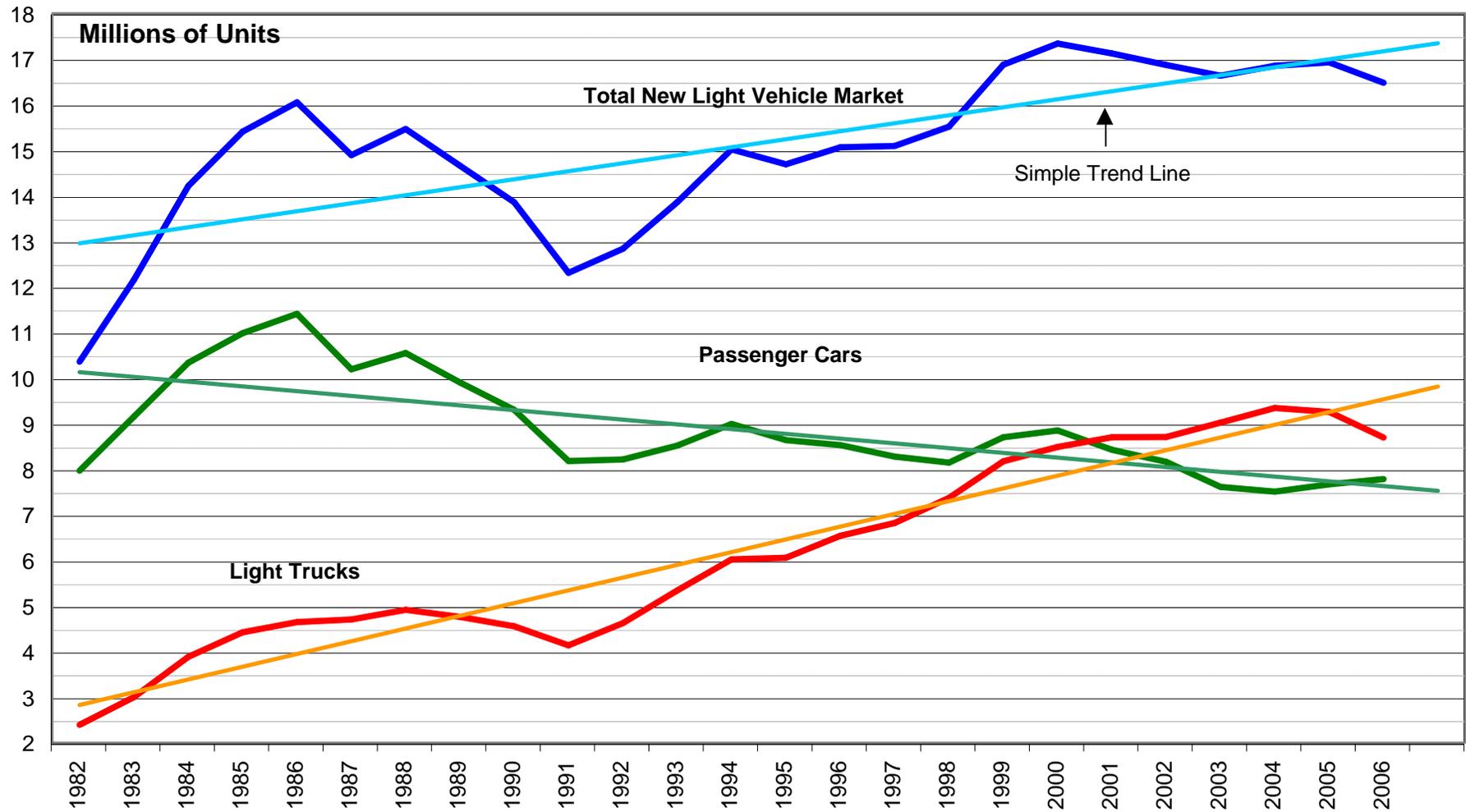
**The American brands' share of the domestic market continues to slip, while Japanese, Korean and German brands continue to gain market share.**



Source: Ward's AutoInfoBank, Adjusted by USDOC OAAI

**U.S. sales of light trucks at 9.3 million units in 2004 captured 55.4 percent of the total market. Light truck sales were 52.8 percent of the U.S. light vehicle market in 2006.**

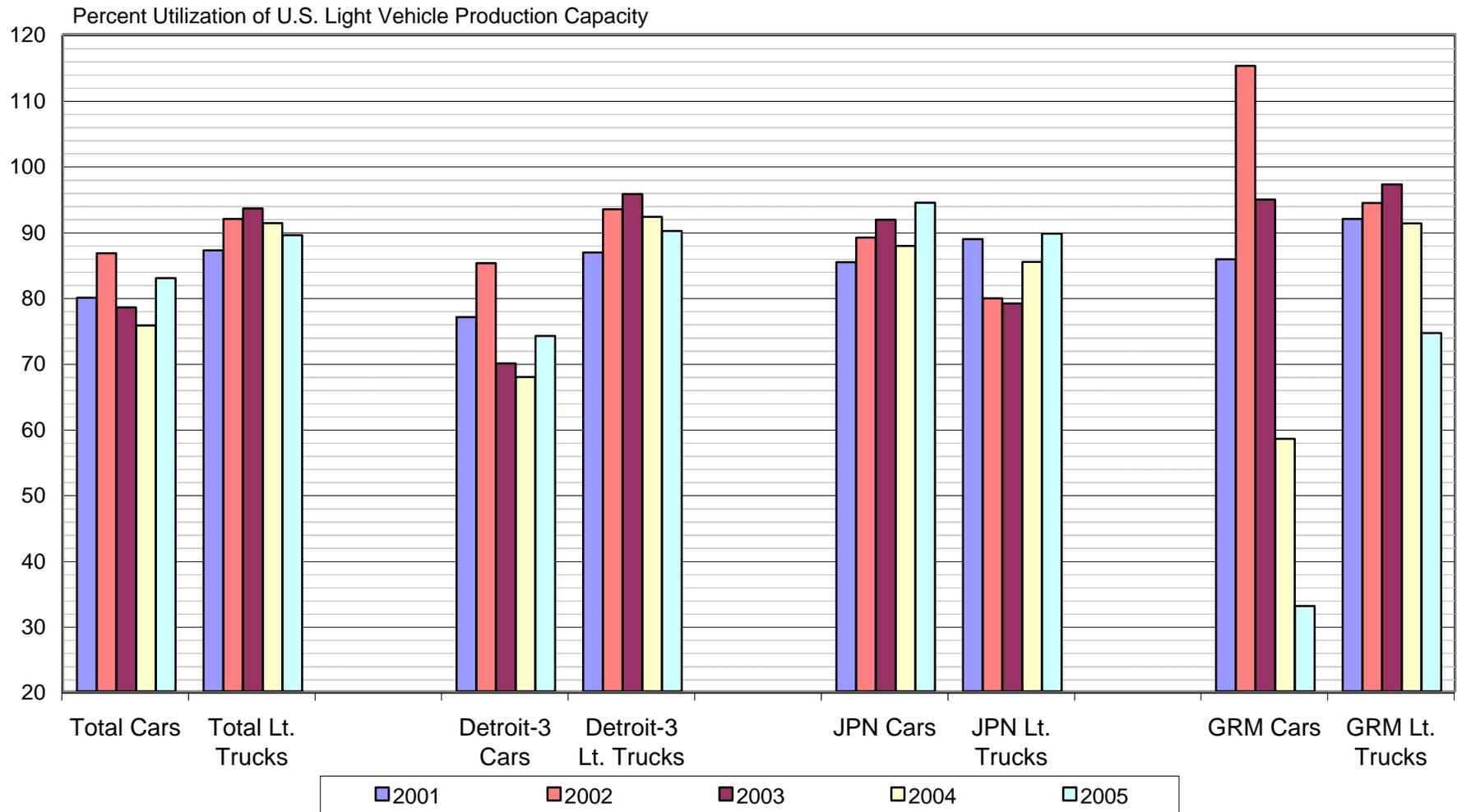
Chart 4



Source: Derived from the Automotive News 100-Year Almanac, 1996 ; and Ward's AutoInfoBank by USDOD/Office of Automotive Affairs

**Capacity utilization at light truck plants continues to outpace utilization for passenger car production.**

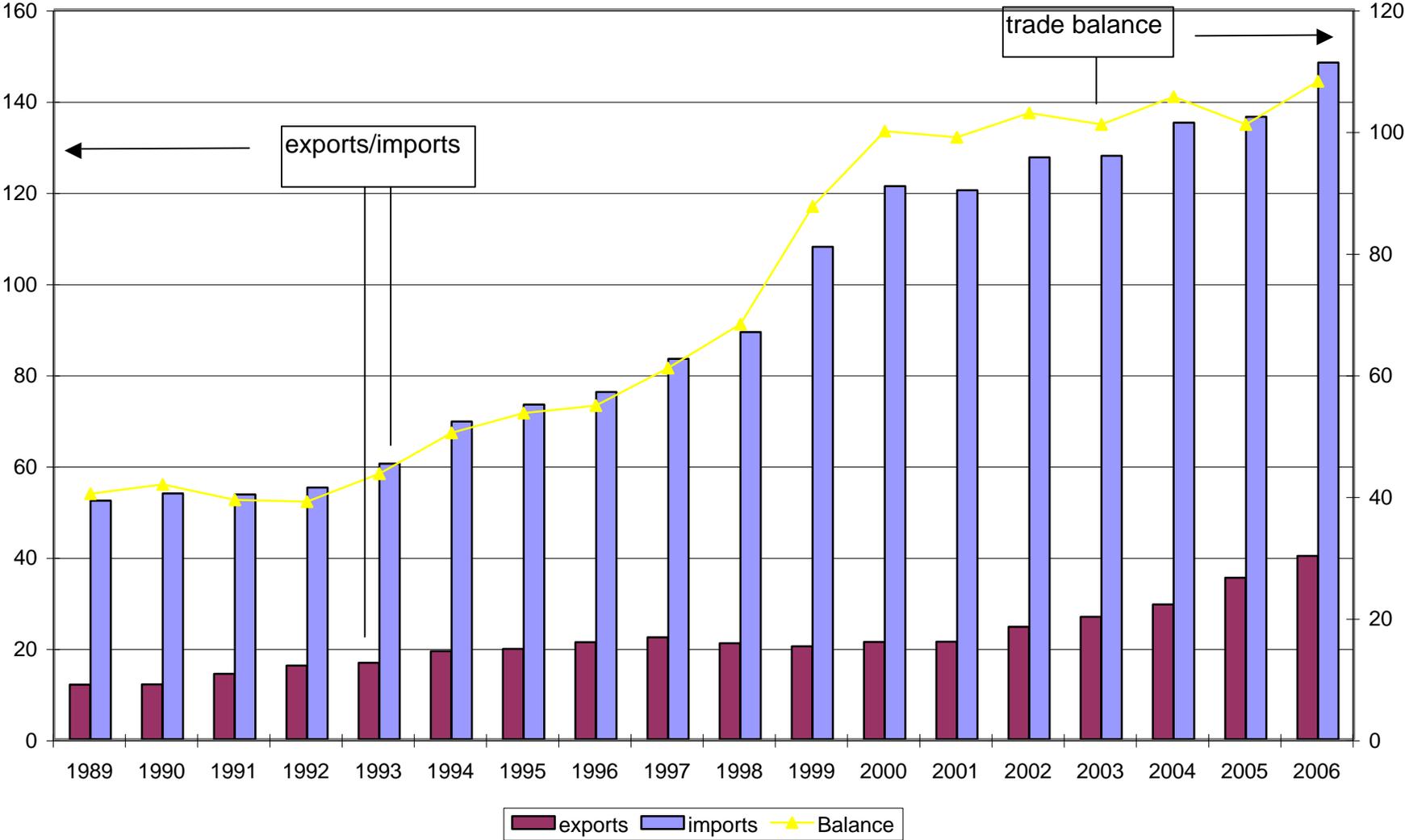
Chart 5



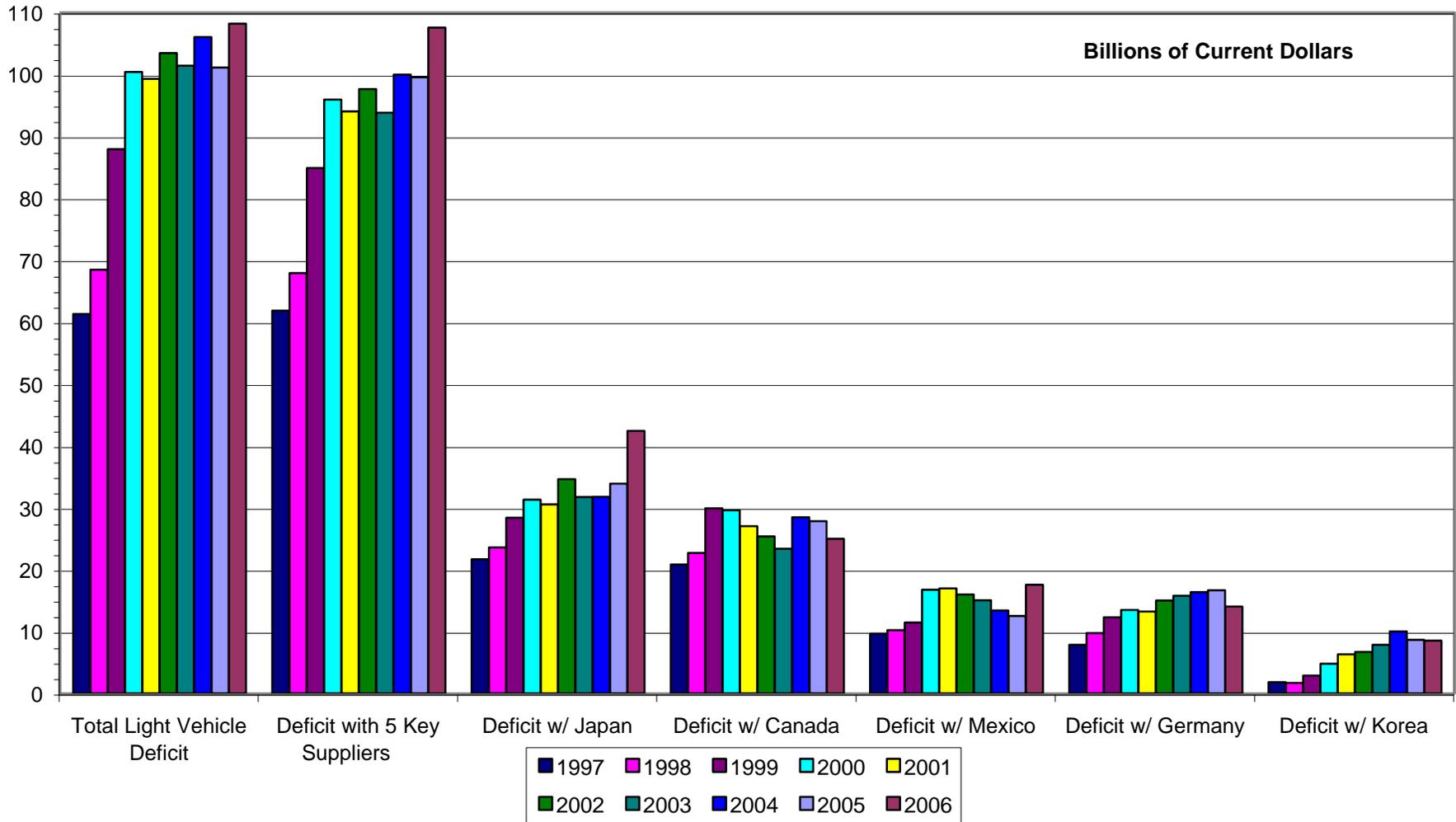
Source: Derived from The Harbour Report Annuals, 2000-2005 by USDOC Office of Aerospace & Automotive Industries

**In 2006, U.S. imports outpaced export growth, resulting in a 7% increase in the motor vehicle trade deficit.**

Chart 6



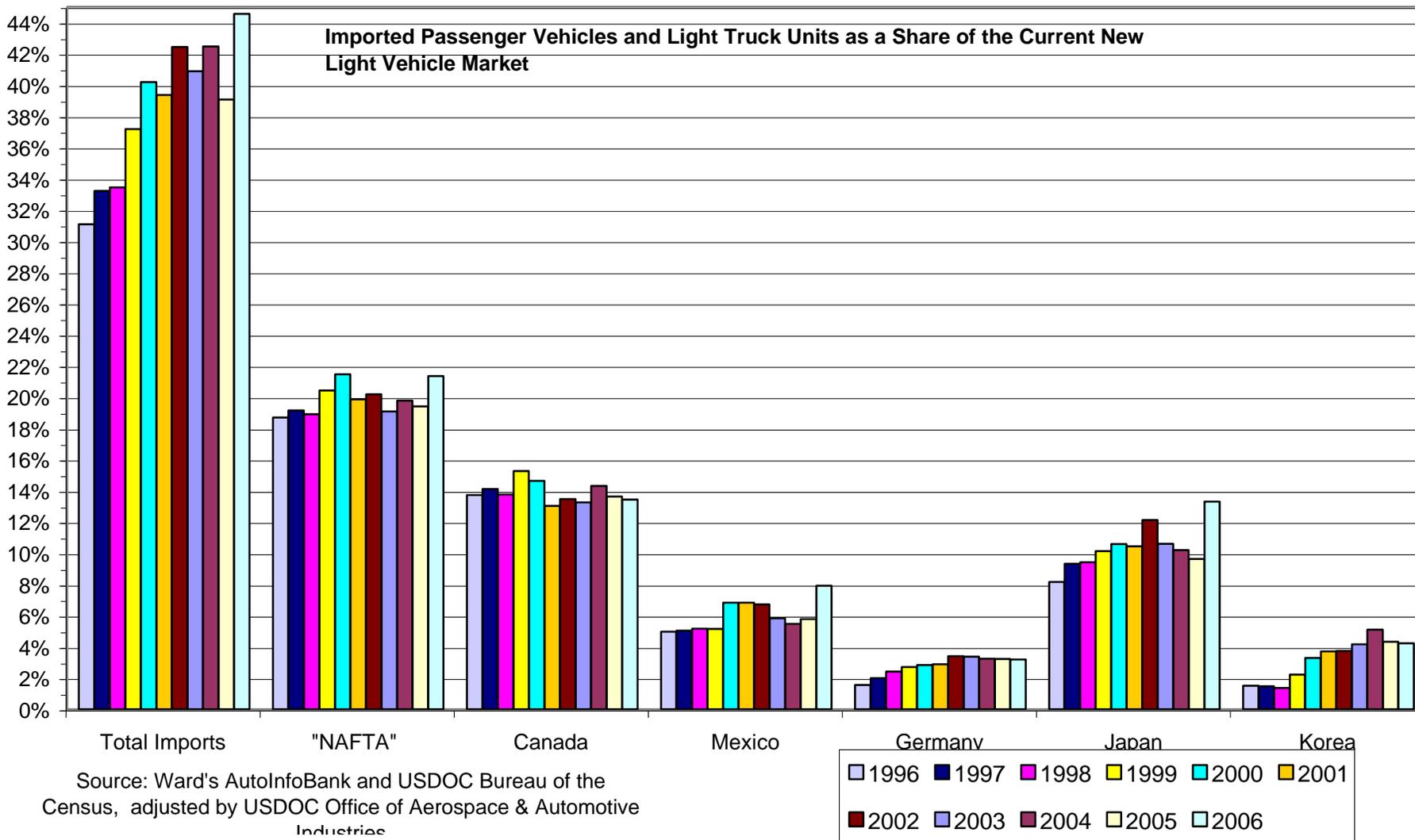
**In 2006, the overall U.S. light vehicle trade deficit increased 7%. Most of the increase was attributable to the deficit with Japan which increased 25%.**



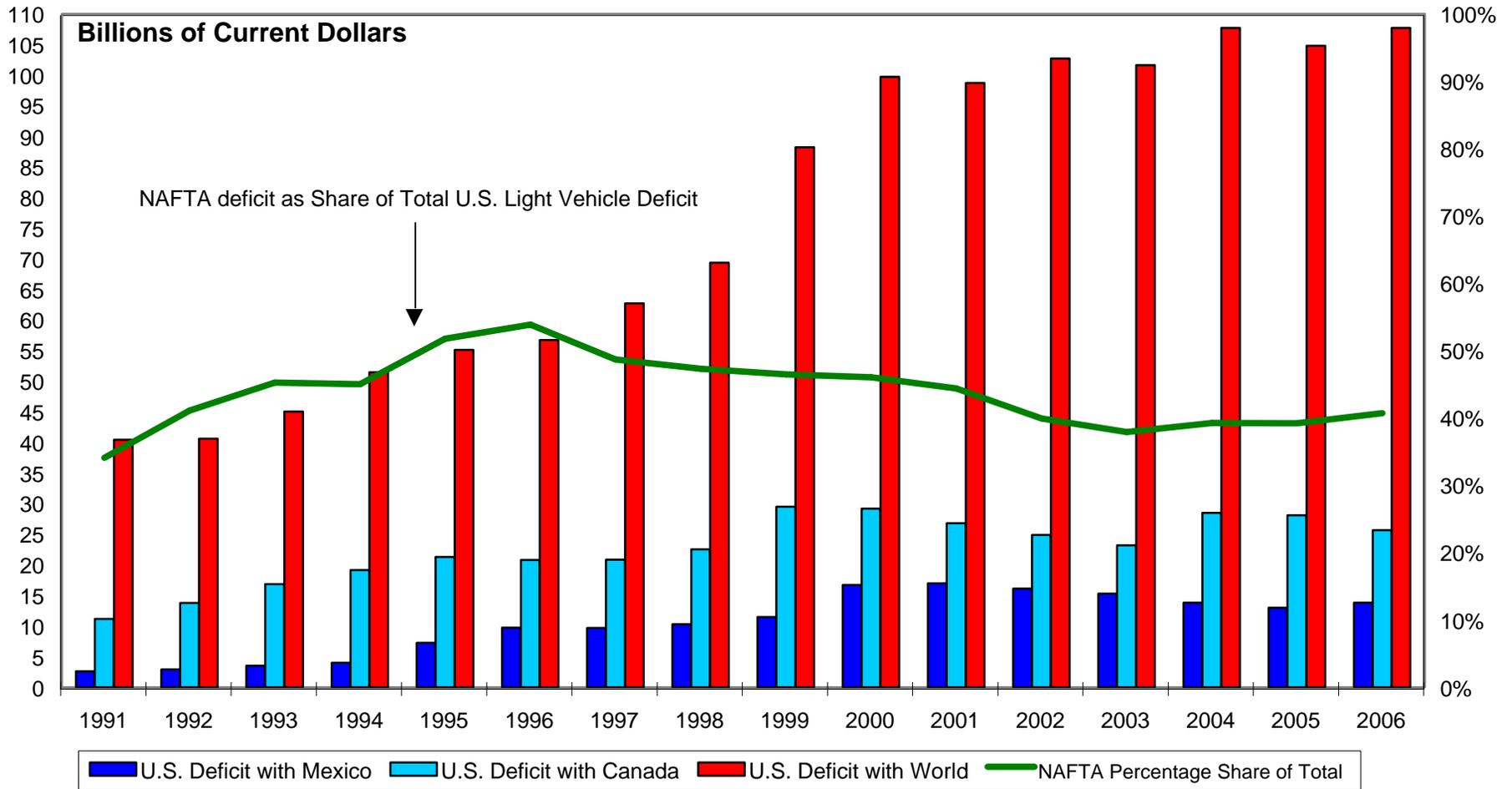
Source: US Census Bureau using USDOC OAAI Product Selections

In 2006, total import sales (i.e., including those from Canada and Mexico) equaled 44.5% of the U.S. light vehicle market.

Chart 8

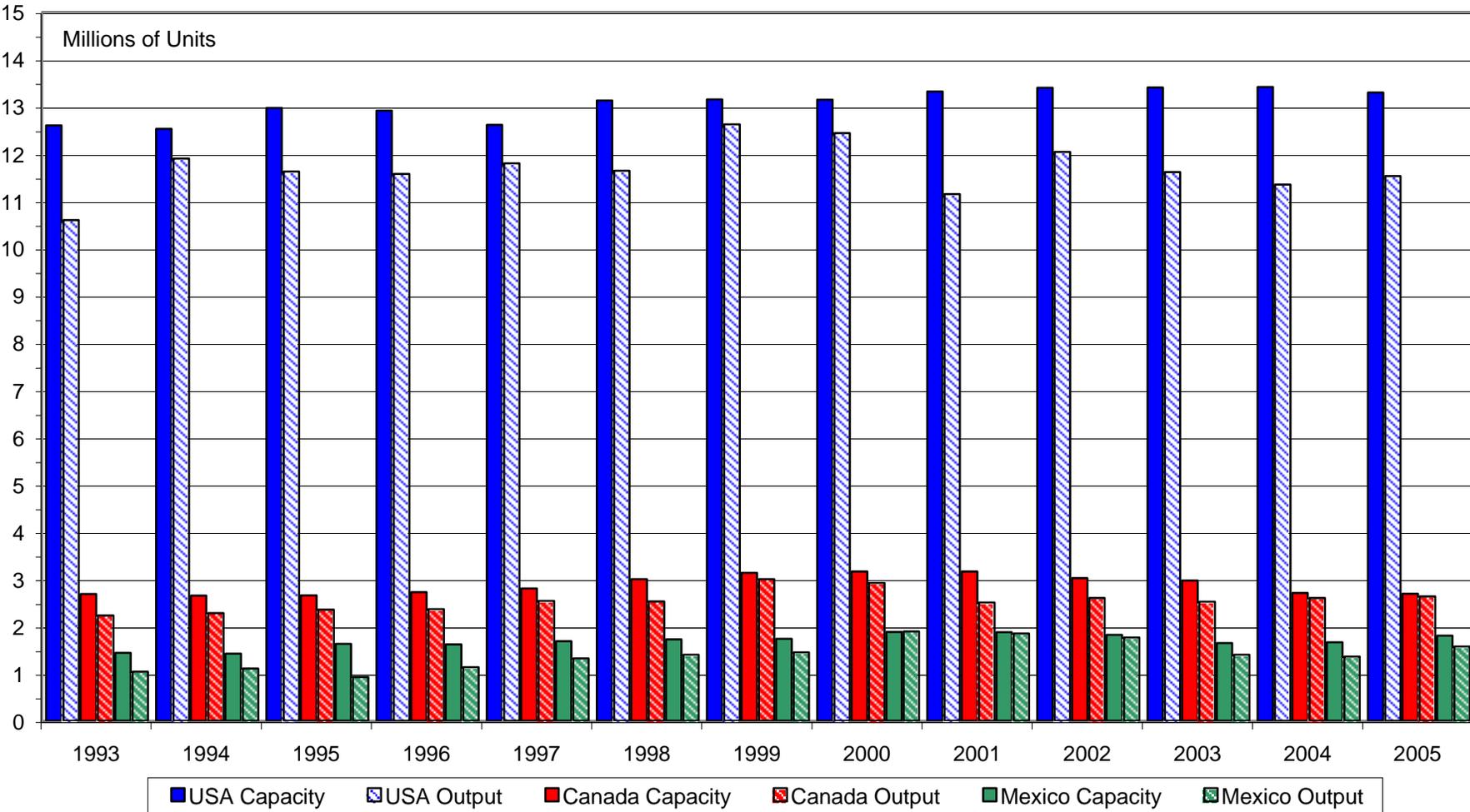


The U.S. auto trade deficit with both NAFTA and the world increased in 2006. The increase in the deficit with NAFTA was primarily due to imports from Mexico which climbed 28%.



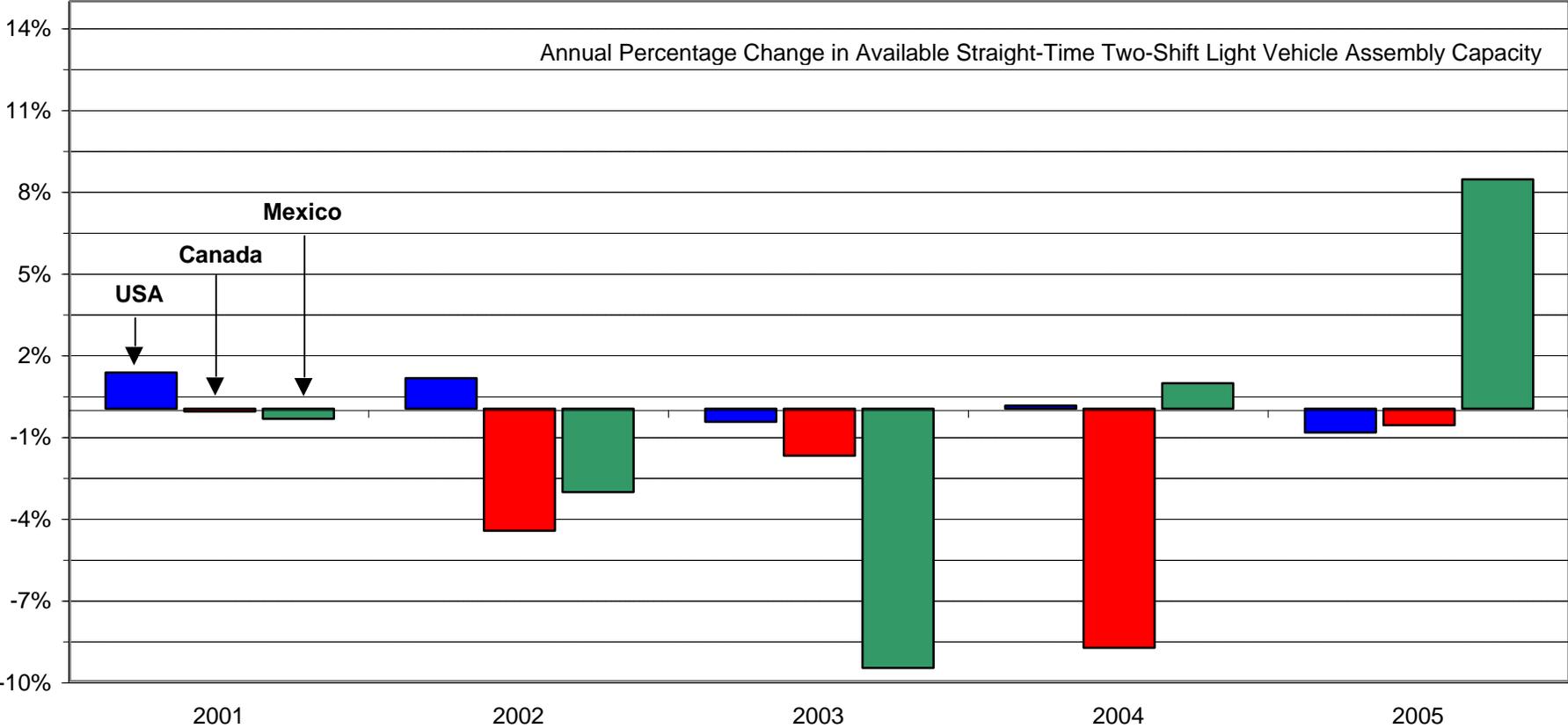
Source: US Census Bureau using USDOC Office of Aerospace & Automotive Industries'

**Light vehicle assembly capacity has increased in all NAFTA countries since 1993, growing the fastest in Mexico (25%). The absolute U.S. capacity increase (695,000 units) was twice as large as Mexico's (320,000 units).**



Source: Derived from 1995-2006 Annual Issues of "The Harbour Report" by USDOC Office of Aerospace & Automotive

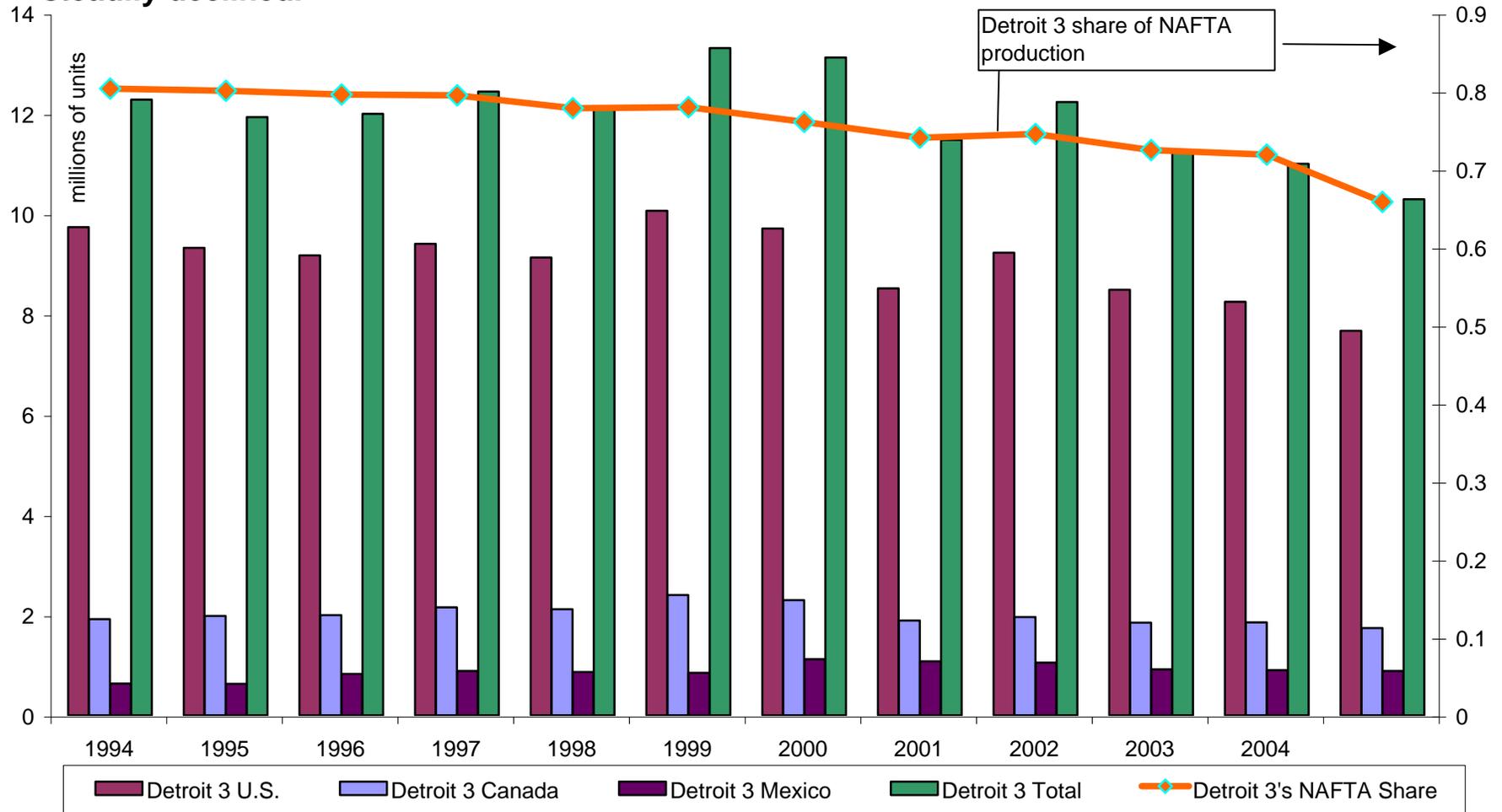
**Annual available vehicle assembly capacity is a factor of new plants added, old plants closed, crews added, crews eliminated, extra hours, reduced hours, vehicle complexity, plus increases and decreases in assembly line efficiency.**



Source: Derived from 2001-2006 Annual Issues of "The Harbour Report" by USDOC Office of Aerospace & Automotive Industries

Chart 12

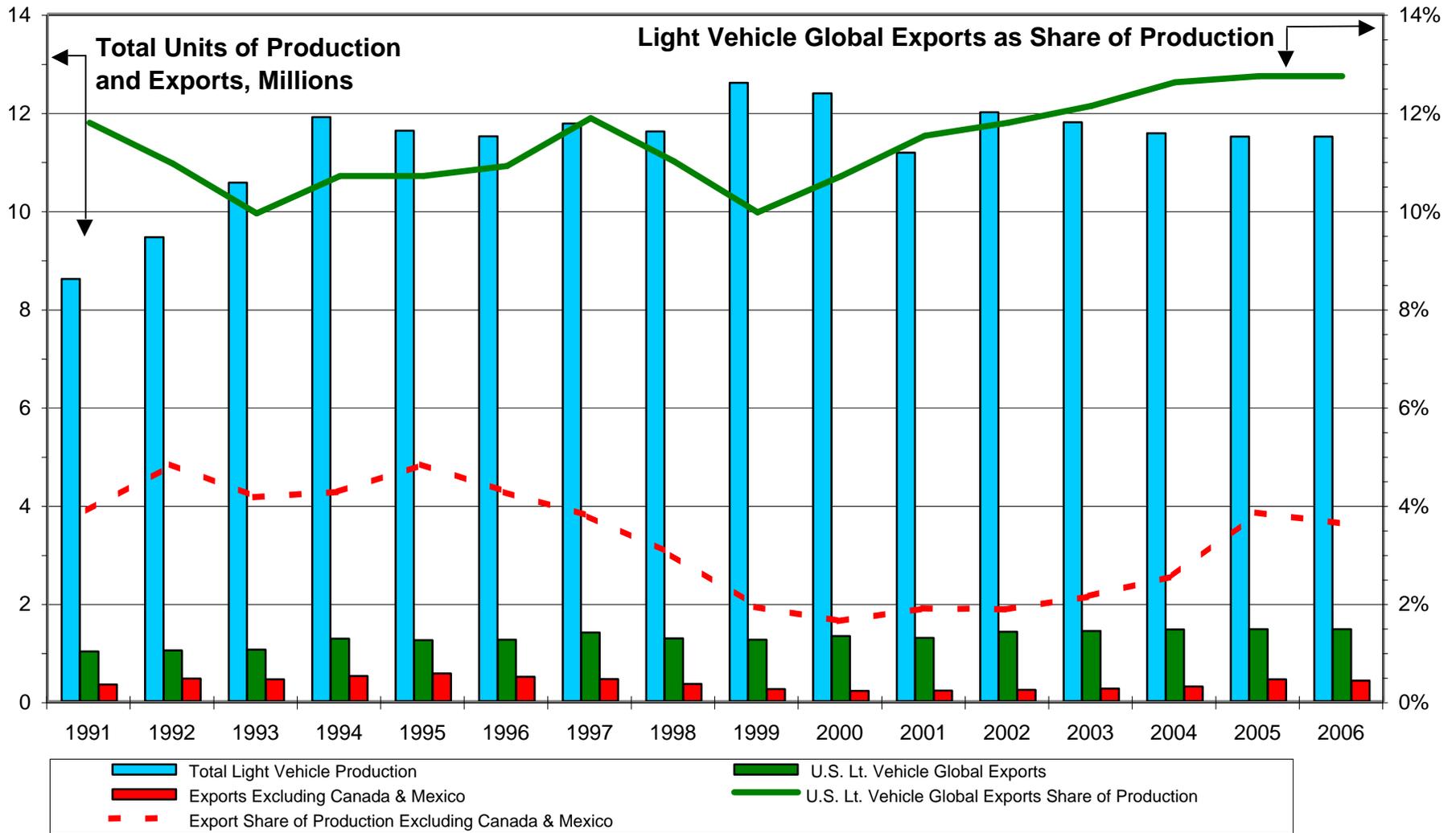
**U.S. and Canadian production for the Detroit 3 is down since NAFTA was signed. While Mexico production is up for the group, their share of NAFTA production has steadily declined.**



Source: Derived from 2001-2006 Annual Issues of "The Harbour Report" by USDOC Office of Aerospace & Automotive Industries

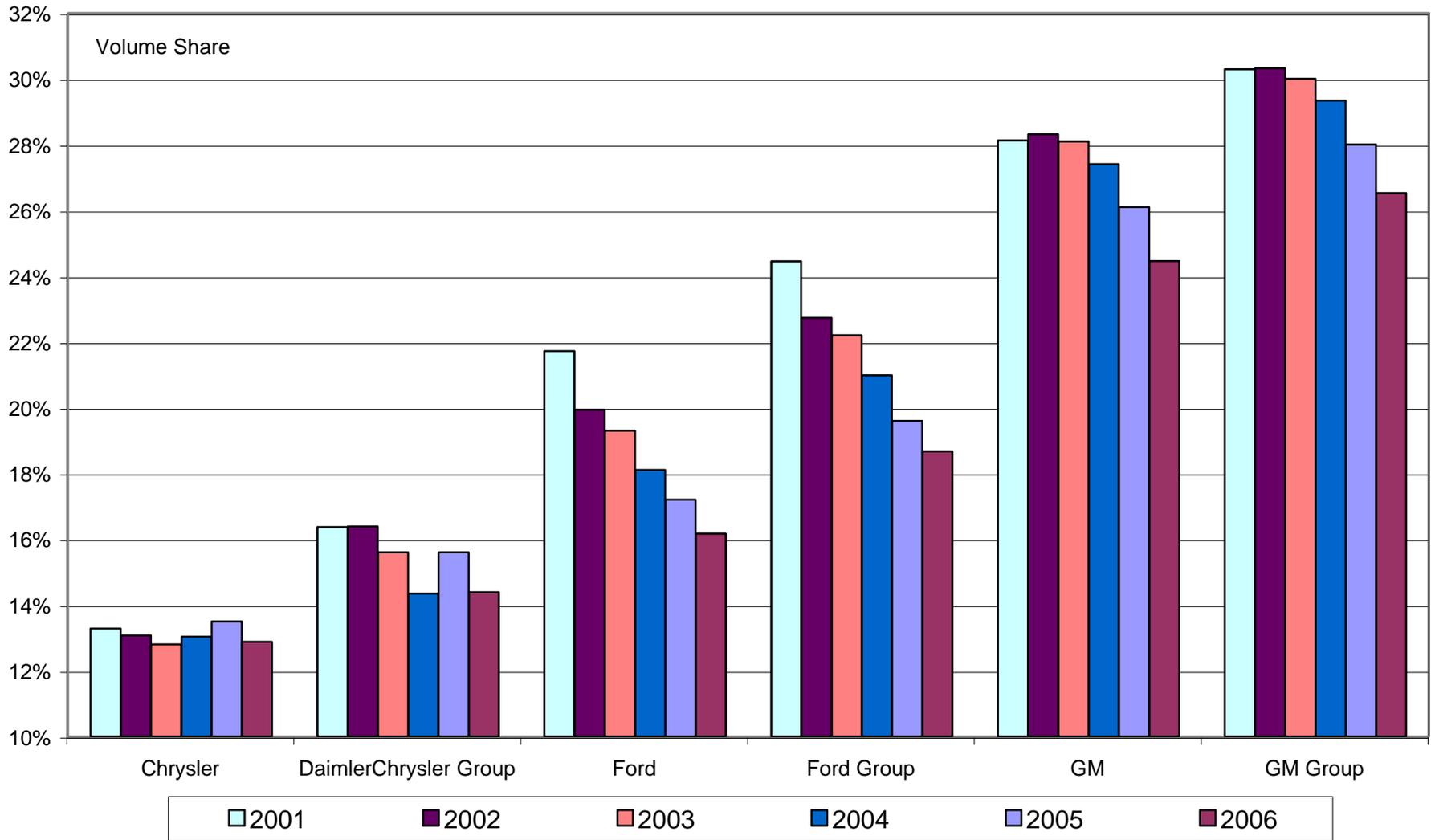
**Total U.S. light vehicle exports are approaching a 13% share of domestic production. When shipments to Canada and Mexico are excluded, however, their share is 4%.**

Chart 13



Source: Ward's AutoInfoBank & U.S. Census Bureau, both adjusted by USDOC Office of Aerospace & Automotive Industries

**Corporate alliances have helped to prop up effective U.S. market shares.**



Source: Derived from Ward's AutoInfoBank by USDOC/OAAI

– INDUSTRY TABLES –

**Table 1**

| Consumers' Expenditures (PCE) (Billions of Current Dollars) |              |              |              |              |              |              |              |
|---|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|   | 2000         | 2001         | 2002         | 2003         | 2004         | 2005         | 2006         |
| Cars, New   | 105.5        | 105.9        | 103.2        | 97.3         | 97.1         | 102.1        | 105.2        |
| Light Trucks, New   | 102.6        | 121.8        | 137.8        | 168.7        | 172.8        | 164.6        | 137.5        |
| <b>Total, New</b>   | <b>208.1</b> | <b>227.7</b> | <b>241.0</b> | <b>266.0</b> | <b>269.0</b> | <b>266.7</b> | <b>242.7</b> |
| Net, Used Autos   | 111.2        | 112.7        | 117          | 108.2        | 109.5        | 116.9        | 124.3        |
| <b>Total</b>  | <b>325.5</b> | <b>347.5</b> | <b>366.7</b> | <b>366.2</b> | <b>368.9</b> | <b>373.3</b> | <b>366.9</b> |
| Source: U.S. Bureau of Economic Analysis                    |              |              |              |              |              |              |              |

**Table 2**

| U.S. Motor Vehicle Production (Millions) |             |             |             |             |             |             |             |
|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|  | 2000        | 2001        | 2002        | 2003        | 2004        | 2005        | 2006        |
| Cars                                     | 5.5         | 4.8         | 5.0         | 4.5         | 4.2         | 4.3         | 4.4         |
| Light Trucks                             | 6.8         | 6.3         | 7.0         | 7.3         | 7.3         | 7.2         | 6.4         |
| <b>Total LV</b>                          | <b>12.4</b> | <b>11.2</b> | <b>12.0</b> | <b>11.8</b> | <b>11.6</b> | <b>11.5</b> | <b>10.8</b> |
| Med/Heavy Trucks                         | 0.391       | 0.256       | 0.258       | 0.251       | 0.358       | 0.424       | .462        |
| <b>Total All</b>                         | <b>12.8</b> | <b>11.4</b> | <b>12.3</b> | <b>12.1</b> | <b>12.0</b> | <b>11.9</b> | <b>11.3</b> |
| Source: Ward's Automotive Reports        |             |             |             |             |             |             |             |

**Table 3**

| <b>U.S. Automotive Industry Average Annual Employment<br/>(1,000s)</b> |               |              |              |
|--|---------------|--------------|--------------|
| (NAICS Based)  | 2004          | 2005         | 2006         |
| Automobiles (336111)   | 146.3         | 139.8        | 134.8        |
| Light Trucks and utility vehicles (336112)                             | 74.8          | 70.2         | 64.7         |
| <b>Total Light Vehicles</b>  | <b>221.1</b>  | <b>210</b>   | <b>199.5</b> |
| Heavy Duty Trucks (33612)  | 34.8          | 37.7         | 36.1         |
| Total vehicles   | 255.9         | 247.7        | 235.6        |
| Motor Vehicle Parts (3363)<br>and Motor Vehicle Bodies<br>(336211)     | 756.6         | 744          | 721.9        |
| <b>TOTAL</b>   | <b>1012.5</b> | <b>991.7</b> | <b>957.5</b> |
| Source: U.S. Department of Labor/Bureau of Labor Statistics            |               |              |              |

**Table 4**

| <b>Total Payroll &amp; Fringe Benefits (Billions of Dollars)</b>          |             |             |             |             |             |
|---|-------------|-------------|-------------|-------------|-------------|
|   | <b>2001</b> | <b>2002</b> | <b>2003</b> | <b>2004</b> | <b>2005</b> |
| Car Plants  | 7.6         | 7.2         | 7.3         | 7.5         | 7.4         |
| Light Truck Plants  | 8.7         | 10.4        | 11.0        | 11.6        | 10.9        |
| <b>Total LV Plants</b>  | <b>16.3</b> | <b>17.6</b> | <b>18.3</b> | <b>19.1</b> | <b>18.3</b> |
| Heavy Truck Plants  | 1.7         | 1.8         | 1.6         | 1.9         | 2.1         |
| <b>Total All Plants</b>   | <b>18.0</b> | <b>19.4</b> | <b>19.9</b> | <b>21.0</b> | <b>20.4</b> |
| Source: U.S. Census Bureau 2005 and Earlier Annual Survey of Manufactures |             |             |             |             |             |

**Table 5**

| U.S. Motor Vehicle Sales (Millions) |             |             |             |             |             |             |             |
|-------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                                     | 2000        | 2001        | 2002        | 2003        | 2004        | 2005        | 2006        |
| Cars                                | 8.8         | 8.4         | 8.2         | 7.6         | 7.5         | 7.7         | 7.8         |
| Light Trucks                        | 8.5         | 8.7         | 8.7         | 9.0         | 9.3         | 9.2         | 8.7         |
| <b>Total LV</b>                     | <b>17.3</b> | <b>17.1</b> | <b>16.9</b> | <b>16.6</b> | <b>16.8</b> | <b>16.9</b> | <b>16.5</b> |
| Med/Heavy Trucks                    | 0.5         | 0.4         | 0.3         | 0.3         | 0.4         | 0.5         | .5          |
| <b>Total All</b>                    | <b>17.8</b> | <b>17.5</b> | <b>17.2</b> | <b>16.9</b> | <b>17.3</b> | <b>17.4</b> | <b>17.0</b> |
| Source: Ward's Automotive Reports   |             |             |             |             |             |             |             |

**Table 6**

| Total Passenger Vehicle Market   |            |            |            |            |            |
|--|------------|------------|------------|------------|------------|
|  | 1986       | 2003       | 2004       | 2005       | 2006       |
| <b>TOTAL SALES</b>   | 16,121,645 | 16,629,773 | 16,849,353 | 16,921,005 | 16,475,109 |
|  |            |            |            |            |            |
| <b>AMERICAN BRANDS</b>   |            |            |            |            |            |
| Total Sales  | 11,813,719 | 10,001,046 | 9,864,680  | 9,609,279  | 8,815,017  |
| Share of Market  | 73.3%      | 60.1%      | 58.5%      | 56.8%      | 53.5%      |
|  |            |            |            |            |            |
| <b>JAPANESE BRANDS</b>   |            |            |            |            |            |
| Total Sales  | 3,386,912  | 4,801,902  | 5,154,463  | 5,472,051  | 5,768,779  |
| Share of Market  | 21.0%      | 28.9%      | 30.6%      | 32.3%      | 35.0%      |
|  |            |            |            |            |            |
| <b>GERMAN BRANDS</b>   |            |            |            |            |            |
| Total Sales  | 503,550    | 912,943    | 882,933    | 870,283    | 920,879    |
| Share of Market  | 3.1%       | 5.5%       | 5.2%       | 5.1%       | 5.6%       |
|  |            |            |            |            |            |
| <b>KOREAN BRANDS</b>   |            |            |            |            |            |
| Total Sales  | 168,882    | 637,692    | 688,670    | 730,863    | 749,821    |
| Share of Market  | 1.0%       | 3.8%       | 4.1%       | 4.3%       | 4.6%       |
| Source: Derived from Ward's Automotive Reports by U.S. Department of Commerce/Automotive Industries Team |            |            |            |            |            |

**Table 7**

| <b>Light Truck Sales</b>   |             |             |             |             |             |
|--|-------------|-------------|-------------|-------------|-------------|
|  | <b>1986</b> | <b>2003</b> | <b>2004</b> | <b>2005</b> | <b>2006</b> |
| <b>TOTAL TRUCK SALES</b>   | 4,642,687   | 9,019,292   | 9,343,421   | 9,253,939   | 8,694,351   |
| Share of Total Pass. Vehicle Market  | 28.8%       | 54.2%       | 55.5%       | 54.7%       | 52.8%       |
|  |             |             |             |             |             |
| <b>AMERICAN BRANDS</b>   |             |             |             |             |             |
| Total Sales  | 3,657,896   | 6,600,174   | 6,664,536   | 6,439,881   | 5,709,268   |
| Share of Truck Market  | 78.8%       | 73.2%       | 71.3%       | 69.6%       | 65.7%       |
|  |             |             |             |             |             |
| <b>JAPANESE BRANDS</b>   |             |             |             |             |             |
| Total Sales  | 972,503     | 2,016,273   | 2,207,810   | 2,313,429   | 2,453,639   |
| Share of Truck Market  | 20.9%       | 22.4%       | 23.6%       | 25.0%       | 28.2%       |
|  |             |             |             |             |             |
| <b>GERMAN BRANDS</b>   |             |             |             |             |             |
| Total Sales  | 12,288      | 112,601     | 147,659     | 143,705     | 157,990     |
| Share of Truck Market  | 0.3%        | 1.2%        | 1.6%        | 1.6%        | 1.8%        |
|  |             |             |             |             |             |
| <b>KOREAN BRANDS</b>   |             |             |             |             |             |
| Total Sales  | 0           | 198,309     | 232,668     | 258,510     | 273,559     |
| Share of Truck Market  | 0.0%        | 2.2%        | 2.5%        | 2.8%        | 3.1%        |
| Source: Derived from Ward's Automotive Reports by U.S. Department of Commerce/Automotive Industries Team |             |             |             |             |             |

**Table 8**

| Passenger Car Sales  |            |           |           |           |           |
|--|------------|-----------|-----------|-----------|-----------|
|  | 1986       | 2003      | 2004      | 2005      | 2006      |
| <b>TOTAL CAR SALES</b>   | 11,478,958 | 7,610,481 | 7,505,932 | 7,667,066 | 7,780,758 |
| Share of Total Pass. Vehicle Market  | 71.2%      | 45.8%     | 44.5%     | 45.3%     | 47.2%     |
| <b>AMERICAN BRANDS</b>   |            |           |           |           |           |
| Total Sales  | 8,155,823  | 3,400,872 | 3,200,144 | 3,169,398 | 3,105,749 |
| Share of Car Market  | 71.1%      | 44.7%     | 42.6%     | 41.3%     | 39.9%     |
| <b>JAPANESE BRANDS</b>   |            |           |           |           |           |
| Total Sales  | 2,414,409  | 2,785,629 | 2,976,653 | 3,158,622 | 3,315,140 |
| Share of Car Market  | 21.0%      | 36.6%     | 39.3%     | 41.2%     | 42.6%     |
| <b>GERMAN BRANDS</b>   |            |           |           |           |           |
| Total Sales  | 491,262    | 800,342   | 735,274   | 726,578   | 762,889   |
| Share of Car Market  | 4.3%       | 10.5%     | 9.8%      | 9.5%      | 9.8%      |
| <b>KOREAN BRANDS</b>   |            |           |           |           |           |
| Total Sales  | 168,882    | 439,383   | 456,002   | 472,353   | 476,262   |
| Share of Car Market  | 1.5%       | 5.8%      | 6.1%      | 6.2%      | 6.1%      |
| Source: Derived from Ward's Automotive Reports by U.S. Department of Commerce/Automotive Industries Team |            |           |           |           |           |

**Table 9**

| U.S. Exports of Passenger Vehicles & Light Trucks – Top 5 Markets<br>Billions of Dollars, FAS |        |        |        |        |        |        |
|---|--------|--------|--------|--------|--------|--------|
|   | 2001   | 2002   | 2003   | 2004   | 2005   | 2006   |
| World   | 21.348 | 24.606 | 26.838 | 29.499 | 35.374 | 40.179 |
| Canada  | 11.214 | 13.526 | 14.802 | 14.686 | 16.184 | 18.083 |
| Mexico  | 3.755  | 3.799  | 3.178  | 3.987  | 4.438  | 4.160  |
| Germany   | 1.768  | 2.786  | 3.928  | 3.980  | 3.661  | 5.177  |
| S. Arabia   | 0.848  | 0.901  | 0.660  | 1.040  | 2.162  | 2.267  |
| UK  | 0.523  | 0.624  | 0.863  | 0.852  | 0.821  | 1.006  |
| Source: U.S. Census Bureau, using OAAI HTS Selections   |        |        |        |        |        |        |

**Table 10**

| U.S. Imports of Passenger Vehicles & Light Trucks – Top 5 Sources<br>Billions of Dollars, Customs Value |         |         |         |         |         |         |
|---|---------|---------|---------|---------|---------|---------|
|   | 2001    | 2002    | 2003    | 2004    | 2005    | 2006    |
| <b>World</b>  | 120.317 | 127.562 | 127.906 | 135.148 | 136.450 | 148.364 |
| Canada  | 38.436  | 39.056  | 38.332  | 43.255  | 44.009  | 43.058  |
| Japan   | 30.559  | 34.344  | 31.596  | 31.625  | 34.413  | 42.898  |
| Mexico  | 20.727  | 19.773  | 18.261  | 17.407  | 16.945  | 21.701  |
| Germany   | 15.003  | 17.795  | 19.710  | 20.344  | 20.307  | 19.233  |
| Korea   | 6.341   | 6.796   | 7.933   | 10.040  | 8.769   | 8.761   |
| Source: U.S. Census Bureau, using OAAI HTS Selections   |         |         |         |         |         |         |

**Table 11**

| Value of Manufacturers' Product Shipments (Billions of Dollars) |              |              |              |              |              |
|---|--------------|--------------|--------------|--------------|--------------|
|   | 2001         | 2002         | 2003         | 2004         | 2005         |
| Cars  | 84.6         | 85.8         | 79.0         | 81.3         | 81.9         |
| Light Trucks  | 116.5        | 134.7        | 165.1        | 154.1        | 146.2        |
| <b>Total LV</b>   | <b>201.1</b> | <b>220.5</b> | <b>244.1</b> | <b>235.4</b> | <b>228.1</b> |
| Med/Heavy Trucks  | 13.0         | 16.0         | 15.2         | 21.2         | 26.1         |
| <b>Total All</b>  | <b>214.1</b> | <b>236.5</b> | <b>259.3</b> | <b>256.6</b> | <b>254.2</b> |
| Source: U.S. Census Bureau 2006 Annual Survey of Manufactures   |              |              |              |              |              |

**Table 12**

| Capital Expenditures for Plant and Equipment (Billions of Dollars) |             |             |             |             |             |
|--|-------------|-------------|-------------|-------------|-------------|
|  | <b>2001</b> | <b>2002</b> | <b>2003</b> | <b>2004</b> | <b>2005</b> |
| Car Plants   | 2.3         | 2.1         | 2.1         | 2.4         | 2.4         |
| Light Truck Plants   | 2.8         | 2.6         | 2.9         | 2.1         | 1.5         |
| <b>Total LV Plants</b>   | <b>4.0</b>  | <b>4.7</b>  | <b>5.0</b>  | <b>4.5</b>  | <b>3.9</b>  |
| Med/Heavy Truck Plants   | 0.5         | 0.2         | 0.2         | 0.2         | .2          |
| <b>Total All Plants</b>  | <b>4.5</b>  | <b>4.9</b>  | <b>5.2</b>  | <b>4.7</b>  | <b>4.1</b>  |
| Source: U.S. Census Bureau 2006 Annual Survey of Manufacturers     |             |             |             |             |             |

**Table 13**

| Total U.S. Motor Vehicle Registrations (Millions) |             |               |                     |
|---|-------------|---------------|---------------------|
|   | <b>Cars</b> | <b>Trucks</b> | <b>All Vehicles</b> |
| 2001  | 137.6       | 92.0          | 230.4               |
| 2002  | 135.9       | 92.9          | 229.6               |
| 2003  | 135.7       | 94.9          | 231.4               |
| 2004  | 136.4       | 100.0         | 236.4               |
| 2005  | 136.6       | 103.8         | 241.2               |
| Source: U.S. Department of Transportation         |             |               |                     |

**Table 14**

| U.S. Cars and Trucks Registrations per:  |       |       |       |       |       |       |
|--|-------|-------|-------|-------|-------|-------|
|  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  |
| 1,000 Residents  | 784   | 819   | 796   | 793   | 804   | 838   |
| 1,000 Driving Age (16yrs & older)  | 1,017 | 1,071 | 1,027 | 1,021 | 1,034 | 1,074 |
| 1,000 Licensed Drivers   | 1,158 | 1,205 | 1,182 | 1,176 | 1,188 | 1,202 |
| Derived from U.S. Department of Transportation/U.S. Census Bureau data<br>by<br>U.S. Department of Commerce/Automotive Industries Team |       |       |       |       |       |       |