

Detroit back from the brink? Auto industry crisis and restructuring, 2008–11

Thomas H. Klier and James Rubenstein

Introduction and summary

The Great Recession of 2008–09 took a severe toll on the U.S. auto industry. Faced with a combination of declining sales, high structural costs, and high levels of debt, Chrysler LLC and General Motors Corporation (GM)—two of the three Detroit-based carmakers—approached the federal government for help. The third Detroit-based carmaker, Ford Motor Company, did not seek government assistance. In late December 2008 and early January 2009, Chrysler and GM, as well as their former financing captives,¹ received a first wave of financial support from the U.S. government. After several attempts to restructure their operations failed, the two companies filed for bankruptcy in the spring of 2009, an action that only a few months earlier GM chief executive officer (CEO) Rick Wagoner had declared to a U.S. Senate Committee was “not an option” (*Economist*, 2009).

In this article, we review the crisis experienced by the U.S. auto industry during 2008 and 2009, as well as the unprecedented government intervention prompted by a constellation of events that might be called a “perfect storm.” We then analyze how the auto industry has changed in some very significant ways as a result of the crisis. This article continues a narrative begun in an earlier article (Klier, 2009), which documented the challenges facing the Detroit Three carmakers through 2007, first from foreign imports and then from North American-based production by foreign-headquartered producers.

Declining fortunes of the Detroit Three

As part of the severe recession of 2008–09, the United States experienced its sharpest decline in production and sales of motor vehicles since World War II. Sales of light vehicles (cars and light trucks) in the United States dropped from 16.2 million in 2007 to 13.5 million in 2008, and then to 10.1 million in 2009

(figure 1). In addition to rising unemployment, tightening credit markets contributed significantly to the sales decline, as 90 percent of consumers finance automobile purchases through loans, either directly from the financing arms of the vehicle manufacturers or through third-party financial institutions. Both types of lenders experienced difficulty in raising capital to finance loans at the time.² “By midsummer of 2008, the nightmare scenario was coming to life—soaring fuel prices, a miserable economy, no credit for consumers.” As the market was deteriorating by the day, “[m]ore than fifteen

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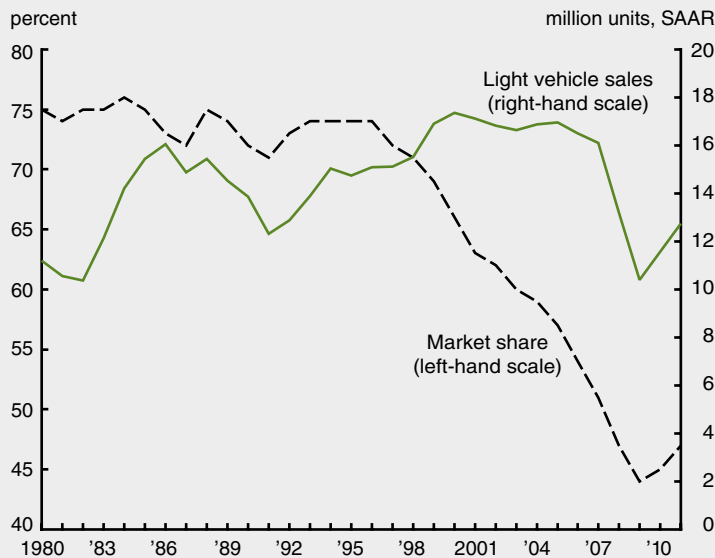
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FIGURE 1**U.S. light vehicle sales and Detroit market share**

Note: SAAR indicates seasonally adjusted annual rate.
 Source: Ward's Auto Group, Auto Infobank, online database.

depended critically on selling large volumes of light trucks—minivans, sport utility vehicles (SUVs), and pickups—a segment of the market that declined relatively rapidly during the recession.

Foreign-headquartered carmakers had entered the U.S. market during the 1950s with fuel-efficient vehicles and began producing cars here in 1978. The Detroit Three reacted to the loss of much of their share of the passenger car market during the 1980s and early 1990s by focusing on the profitable light truck segment, which expanded from one-third to one-half of the overall light vehicle market during the last two decades of the twentieth century. But when growth of the light truck market slowed in the early 2000s, the Detroit Three began to lose market share to international competitors at a faster rate. A sharp spike in gas prices to \$4.00 a gallon

Big Three assembly plants were either idling or operating on reduced shifts. Twenty-five thousand UAW workers went on indefinite layoff, as Detroit frantically tried to cut production faster than sales fell. ... The American auto industry was collapsing like a tent in a hurricane” (Vlasic, 2011, p. 284). The steep decline in sales during 2008 and 2009 was particularly disruptive for carmakers because it ended nearly a decade of stable sales at record-high levels of 16–17 million units per year. During the second half of the twentieth century, sales had soared from 6 million units in 1950 to 17 million in 2000, yet short-term cyclical changes with double-digit annual percentage changes were typical until 1991, with sales fluctuating by more than 10 percent during ten of the previous 24 years. In contrast, between 1992 and 2007 annual sales figures rarely fluctuated by more than 3 percent per year.³ After two decades of remarkable stability, carmakers had come to rely on high volumes of vehicle sales and had made their investment decisions accordingly.

The sales decline was more severe for the Detroit Three carmakers than for their foreign-headquartered competitors. Combined U.S. sales for Chrysler, Ford, and GM fell from 8.1 million in 2007 to 4.6 million in 2009. Their combined market share declined from 50 percent to 44 percent during these two years.⁴ The Detroit Three carmakers were vulnerable during the severe recession in part because their viability

during the first half of 2008 further depressed light truck sales, especially for the Detroit Three (Klier, 2009).

In response to plunging sales, carmakers drastically cut back production in the United States, reducing output by 46 percent in the course of just two years, from 10.4 million light vehicles in 2007 to 8.4 million in 2008 and 5.6 million in 2009. This rapid decline in production resulted in massive job cuts: Between 2007 and 2009, employment declined from 185,800 to 123,400 in assembly plants and from 607,700 to 413,500 in parts plants. The U.S. auto industry had already been shedding jobs before the onset of the 2008–09 recession—from a peak of 237,400 assembly and 839,500 parts jobs in 2000—due to productivity increases as well as ongoing market share loss by the Detroit producers.⁵

The Detroit carmakers had struggled to address the growing problem of legacy costs—principally generous retiree health care obligations—earlier in the decade (Vlasic, 2011; Klier 2009). By 2006, both Ford’s and GM’s bond ratings had fallen below investment grade and the companies’ problems were in the news.⁶ As a first step, Ford and GM negotiated a special agreement with the United Automobile Workers (UAW) union on sharing some of the health care costs in 2006.⁷ The Detroit carmakers also started reducing their work force through buyouts and early retirement

offers.⁸ Ford, which by many accounts was in worse shape than its two Detroit competitors at the time (see Vlastic, 2011), for the first time in its history hired a CEO from outside the company—Alan Mullaly, who joined the company in September 2006 from Boeing. In December of the same year, Ford secured a line of credit in the amount of \$23.5 billion by pledging virtually all of its assets as collateral. At the end of the summer of 2007, shortly before the onset of the recession, the Detroit carmakers reached a new labor agreement with the UAW. All three companies had negotiated a transfer of health care liabilities for retired blue-collar workers to a newly formed trust, a so-called voluntary employee benefits association, or VEBA.⁹ The new labor contract also introduced a second-tier wage level for new hires, paying substantially less. All three carmakers subsequently announced large buyout programs to improve their competitiveness. Yet these efforts turned out to be too little and too late to allow them to withstand the impact of the rapidly declining economy.

Government rescue efforts

The principal steps in the government rescue of Chrysler and GM took place relatively quickly between December 2008 and July 2009. The key developments in order included: 1) Congress's inability to agree on a remedy regarding a request for assistance from the Detroit Three; 2) the issuance of a short-term loan by the outgoing Bush administration; 3) the creation of a presidential task force shortly after the inauguration of President Obama; 4) the rejection of restructuring plans drawn up by the carmakers; 5) the managed bankruptcy of Chrysler; 6) the managed bankruptcy of GM; and 7) several post-bankruptcy initiatives.

Congressional inaction

Prompted by the rapidly declining fortunes of the Detroit Three carmakers, their CEOs and the president of the UAW pleaded their case for emergency aid before the Senate Committee on Banking, Housing, and Urban Affairs on November 18, 2008,¹⁰ and before the House Committee on Financial Services the next day (Cooney et al., 2009). Ford's CEO accompanied his colleagues from GM and Chrysler, even though ultimately Ford decided not to request government money.¹¹ Ford's leadership realized that a default by one of the other Detroit carmakers could have serious repercussions for Ford through linkages with shared parts suppliers, which would also be negatively affected.

The committee hearings did not go well. The CEOs failed to make a compelling case and so their request for financial help was not received sympathetically by a broad audience on Capitol Hill.¹² Detroit's role

had changed considerably since the 1950s, when Charles E. Wilson, head of GM at the peak of its market power, stated during his confirmation hearings as Secretary of Defense that what was good for the country was good for General Motors and vice versa. By 2008, the footprint of Detroit's carmakers had shrunk substantially. The political debate reflected that fact. Senator Carl Levin, who represents Michigan, home state of the Detroit Three, argued that the condition of the Detroit carmakers was "a national problem first of all, without any question." On the other hand, Senator Richard Shelby, who represents the southern state of Alabama, at the time home to three assembly plants of foreign-headquartered producers, opposed a government rescue, saying: "I don't say it's a national problem. ... But it could be a national problem, a big one if we keep putting money [in]" (MSNBC, 2008, cited in Klier and Rubenstein, 2011, p. 198).

Less than three weeks later, on December 4 and 5, a second, more urgent request by the Chrysler and GM CEOs before the same two congressional committees resulted in the introduction of a bill in the House on December 10, 2008. Legislation authorizing loans to the carmakers passed the same day by a vote of 237–170 (Cooney et al., 2009). At the suggestion of the Bush administration, this legislation authorized the use of a direct loan program, previously authorized by the Energy Independence and Security Act of 2008 and already appropriated for the Department of Energy to support alternative fuel and low-emissions technologies (EISA, P.L. 110–140, funded under P.L. 110–329, §129). In the Senate, a move on December 11 to close debate for the purpose of achieving a final vote on the House-passed bill failed by an insufficient majority of 52–35.¹³ After considering other funding mechanisms, the Senate abandoned further action on the issue and the bill died (Cooney et al., 2009).

Short-term rescue

By the beginning of December 2008, GM and Chrysler could no longer secure the credit they needed to conduct their day-to-day operations (Congressional Oversight Panel, 2011b). GM posted a near-record loss of \$30 billion in 2008 and entered 2009 with a cash supply of only \$14 billion.¹⁴ "General Motors had weeks—maybe days—before it defaulted on billions of dollars in payments to its suppliers" (Vlastic, 2011, p. 329). The company announced it would idle 20 of its factories across North America. Privately held Chrysler, acquired by Cerberus Capital Management from DaimlerChrysler in 2007, also had a dangerously low supply of cash to meet day-to-day obligations. Chrysler announced it would close all its plants for a

month. Ford posted a record \$14.6 billion loss in 2008 but did not face the immediate cash shortage of the other two Detroit-based carmakers, because it had borrowed a substantial sum in 2006 (Cooney et al., 2009).

Faced with the imminent collapse of Chrysler and GM one month before he was to leave office, President George W. Bush issued an executive order on December 19, 2008, permitting the Treasury Department to utilize the Troubled Asset Relief Program (TARP) under the Emergency Economic Stabilization Act (EESA) of 2008 to support the two carmakers.^{15,16} Treasury established the Au-

tomotive Industry Financing Program (AIFP)—the vehicle with which funding would be provided—under TARP on December 19.¹⁷ President Bush stated that “government has a responsibility not to undermine the private enterprise system ... [but if] we were to allow the free market to take its course now, it would almost certainly lead to disorderly bankruptcy and liquidation for the automakers” (Cooney et al., 2009, p. 8). The White House fact sheet that accompanied the announcement stated that “the direct costs of American automakers failing and laying off their workers in the near term would result in a more than 1 percent reduction in real GDP growth and about 1.1 million workers losing their jobs, including workers for automotive suppliers and dealers” (White House, 2008).

Through the Bush Administration’s TARP commitments, GM and GMAC received \$13.4 billion and \$6 billion, respectively, on December 29 and 31, 2008.¹⁸ Chrysler received a \$4 billion loan on January 2, 2009. The Bush administration also loaned \$1.5 billion to Chrysler Financial. TARP loans made it possible for Chrysler and GM to stay afloat during the transition to the Obama administration (Cooney et al., 2009). Including the Obama administration’s assistance, GM ultimately received \$50.2 billion through TARP, Chrysler \$10.9 billion, and GMAC \$17.2 billion (table 1).

The Bush administration made the TARP loans available with a number of conditions, derived from terms in the legislation passed by the House.¹⁹ “The overriding condition is that each firm must become ‘financially viable’; that is, it must have a ‘positive net value, taking into account all current and future costs, and can *fully repay the government loan*’” (Cooney et al. 2009, pp. 8–9, emphasis in original).

TABLE 1				
TARP assistance to U.S. motor vehicle industry				
	Chrysler	General Motors	GMAC/Ally ^a	Chrysler Financial
(----- billions of dollars -----)				
Financial				
Total TARP assistance	\$10.9	\$50.2	\$17.2	\$1.5
Bush administration	4.0	13.4	6.0	1.5
Obama administration	6.9	36.8	11.2	0.0
Recouped	9.6	24.0	5.1	1.502
Repayment of principal ^b	7.9	23.1	2.5	1.5
Income ^c	1.7	0.9	2.6	0.02
Outstanding	0.0	22.6	14.6	0.0
Loss on principal	(2.9)	(4.4) ^b	0.0 ^b	0.0
Net profit/loss	(1.3)	TBD	TBD	0.02

^aGM’s financing arm, General Motors Acceptance Corporation, was renamed Ally Bank in 2009.
^bAs of August 17, 2011.
^cIncome/revenue received from TARP assistance.
 Notes: TARP indicates Troubled Asset Relief Program. TBD indicates to be determined.
 Source: Canis and Webel, 2011.

The term sheets spelled out a number of concessions for the stakeholders:

- Management—Restrictions were placed on executive compensation and privileges, including pay, bonuses, golden parachutes, incentives, and benefits. Executives were also restricted from compensation agreements that would encourage them to take “unnecessary and excessive risks” or to manipulate earnings (Cooney et al., 2009, pp. 42–43).
- Unions—Compensation was to be reduced by December 31, 2009, and work rules were to be modified, to be equivalent to those of foreign-headquartered assembly plants in the United States. Half of the future contributions to the planned VEBA were to be made with company stock holdings.
- Investors—Unsecured public claims were reduced by at least two-thirds and no dividends were to be dispersed while government loans were unpaid.
- Dealers and suppliers—New agreements were to be signed to lower costs and capacity.
- Treasury—Warrants were issued to purchase common stock (Cooney et al., 2009).

The carmakers were required to produce restructuring plans for financial viability by February 17, 2009.

Presidential task force

On February 16, 2009, barely a month after he took office, President Barack Obama appointed a presidential task force on the auto industry to devise a strategy for dealing with Chrysler and GM. Several cabinet members and other top government officials served on the task force, which was co-chaired by

Treasury Secretary Timothy Geithner and National Economic Council Director Larry Summers. Steven Rattner, co-founder of the hedge fund Quadrangle Group, was named as its first lead advisor. Replacing him later in 2009 was another advisor to the task force, former investment banker and United Steelworkers union negotiator Ron Bloom, who was at the time also named senior advisor for manufacturing policy.

The composition of the task force was notable for not including any individuals with close ties to the auto industry. Instead, membership was drawn primarily from the financial and legal sectors, focusing on people with experience in restructuring troubled companies. The task force adopted metrics for evaluation and processes for decision-making from other industries, rather than relying on those long in use in Detroit Three accounting offices.²⁰

According to Bloom, the task force considered three policy options: 1) no further government assistance beyond TARP loans; 2) additional loans with no strings attached; or 3) additional financial resources tied to restructuring.

Rattner explained that option 1 was rejected because, without government intervention, both Chrysler and GM “would have unquestionably run out of cash quickly, slid into [Chapter 7] bankruptcy, closed their doors and liquidated” (Rattner, 2010b, p. 2). Rattner considered bankruptcy to be “scary,” because customers might be unwilling to buy from bankrupt carmakers, especially if the proceedings dragged on for a long time (Rattner, 2010b, pp. 2–3). “The consequences of allowing General Motors to go into an uncontrolled Chapter 7 liquidation would’ve been devastating,” according to Bloom. “The ‘D’ word I’d use would be ‘devastating’” (Lassa, 2010).

Especially influential in the task force’s decision to reject option 1 was an estimate by the Center for Automotive Research (CAR) that nearly 3 million jobs would be lost in 2009 if all three of the Detroit-based carmakers ceased U.S. production; CAR’s estimate was based on current employment of 239,341 at the Detroit plants, almost 4 million indirect and supplier jobs, and over 1.7 million spin-off jobs (Cole, McAlinden, Dzikzek, and Menk, 2008).²¹ Regarding option 2, Bloom argued that “[t]he costs of that would have been in the many multiples of what we spent” (Lassa, 2010). The task force selected option 3 (Lassa, 2010).

Rejected plans

As a condition for receiving TARP loans in December 2008, Chrysler and GM were required to submit restructuring plans to the Treasury Department by February 17, 2009, in order to qualify for further

federal assistance. The task force took on the responsibility of reviewing the viability plans submitted by Chrysler and GM. Before completing its review, the task force created the Auto Supplier Support Program on March 19, 2009. The purpose of the program was to ensure that Chrysler and GM could continue to pay their parts makers during a period of uncertainty and tight credit.

Under normal conditions, automotive suppliers ship parts to auto manufacturers and receive payment 45–60 days later. Suppliers typically sell or borrow against the carmaker’s payment commitments, also known as receivables. In early 2009, the downturn in the economy and uncertainty regarding the future of GM and Chrysler resulted in tightening credit for auto suppliers. Banks then stopped providing credit against supplier receivables (Congressional Oversight Panel 2011b).

To implement the supplier support program, GM Supplier Receivables LLC and Chrysler Receivables SPV LLC were created. The Treasury committed \$3.5 billion to GM and \$1.5 billion to Chrysler. Those funds were to be allocated by each carmaker to specific suppliers. Ultimately, only \$290 million was loaned to GM suppliers and \$123 million to Chrysler suppliers.²² The program was terminated in April 2010 (Congressional Oversight Panel 2011b). All loans were fully repaid.

On March 30, 2009, President Obama announced the results of the task force’s review. It concluded that neither GM’s nor Chrysler’s plan had established a credible path to viability. The task force found that Chrysler’s plan to close plants and dealerships, reduce labor costs, and change operations did not go far enough (Canis and Webel, 2011). GM’s plan was found not to be viable primarily because of “overly optimistic assumptions about prospects for the macroeconomy and GM’s ability to generate sales” (Congressional Oversight Panel, 2011a, p. 97).

The President’s announcement offered the following lifelines to the two companies: Chrysler could obtain working capital for an additional 30 days in order to devise a more thorough restructuring plan that would be supported by its major stakeholders, such as labor unions, dealers, creditors, suppliers, and bondholders (Canis and Webel, 2011). GM was provided with 60 days of working capital in order to submit a substantially more aggressive plan (Congressional Oversight Panel, 2011a). However, if the companies could not meet those requirements, bankruptcy would be the only alternative available. The task force emphasized that while Chrysler and GM presented different issues and problems, in each case “their best chance of success may well require utilizing the bankruptcy code

in a quick and surgical way” (White House, 2009b). “In the Administration’s vision, this would not entail liquidation or a traditional, long, drawn-out bankruptcy, but rather a structured bankruptcy as a tool to make it easier...to clear away old liabilities” (Congressional Oversight Panel, 2009, p. 13).²³

To assuage consumers’ concerns about Chrysler or GM not being able to honor their product warranties, Treasury created a program to backstop the two car-makers’ new vehicle warranties. That program was also announced March 30, 2009. It applied to any new GM or Chrysler car purchased during the restructuring period (Congressional Oversight Panel, 2009).²⁴

Chrysler restructuring

The task force seriously questioned whether Chrysler could become a viable entity. According to Rattner, “from a highly theoretical point of view, the correct decision could be to let Chrysler go” (Rattner, 2010b, p. 4). If Chrysler were liquidated, buyers of its most attractive vehicles—Jeeps, minivans and trucks—were likely to turn to Ford and GM. “Thus, the substitution effect [of Chrysler customers switching to Ford and GM products] would eventually reduce the net job losses substantially. ... We intuited that the substitution analysis was more right than wrong...” (Rattner, 2010b, pp. 3–4). Ultimately, the task force determined that allowing Chrysler to liquidate during a severe recession would cause an unacceptably high loss of jobs. However, it concluded that Chrysler was not viable outside of a partnership with another automotive company. That partner turned out to be the Italian carmaker Fiat.²⁵

Bloom later claimed the task force was not very close to letting Chrysler go under. “Rather, it was a bargaining chip to bring in line all the parties, including Chrysler, Fiat, Cerberus,²⁶ the banks, the United Auto Workers’ Voluntary Employee Beneficiary Association, even Daimler.²⁷... ‘Everybody needed to know there was a very bad alternative that awaited them if they didn’t come to the table’” (Lassa, 2010).

During April 2009, Chrysler worked with its stakeholders to devise a restructuring plan that could meet the requirements of the task force and avert bankruptcy. The company reached tentative agreements with most stakeholders. Among Chrysler’s creditors, the larger banks agreed to write down their debt by more than two-thirds. However, some mutual funds and hedge funds, representing about 30 percent of the company’s debt, would not agree to the proposal. Chrysler could only avoid bankruptcy if all of its creditors approved the settlement, so the disagreement prompted its filing for bankruptcy on April 30, 2009 (Webel and Canis,

2011). Bankruptcy “dramatically changed the nature of the discussions that we were having with the stakeholders,” especially the debt holders (Rattner, 2010b, p. 5).

During bankruptcy proceedings, the government provided Chrysler with \$1.9 billion of debtor-in-possession (DIP) financing, effectively a loan to a bankrupt firm allowing it to continue operating while in Chapter 11. During bankruptcy, a DIP loan is senior to the other claims on the firm (Congressional Oversight Panel, 2011b). “[B]ecause of the extraordinary conditions in the credit markets [at the time],” the task force concluded, “bankruptcy with reorganization of the two auto companies using private DIP financing did not appear to be an option by late fall 2008, leaving liquidation of the firms as the more likely course of action absent a government rescue” (Congressional Oversight Panel, 2011b, p. 7).

To facilitate a rapid exit from bankruptcy, the task force utilized an obscure and rarely used section of the U.S. Bankruptcy Code known as Section 363(b) of Chapter 11.²⁸ “Under that section, a newly formed company would buy the desirable assets from the bankrupt entity and immediately begin operating as a solvent corporation” (Rattner, 2010b, p. 3). “Section 363 allows a bankrupt company to act quickly to transfer intact, valuable business units to a new owner. (The conventional bankruptcy process restructures a corporation as a whole.) Once exotic and obscure, 363 had provided the only bright spot in the cataclysmic implosion of Lehman Brothers. It was used to salvage Lehman’s money-management and Asian businesses” (Rattner, 2010a, p. 60).²⁹

Through Section 363(b), Chrysler’s viable assets—that is, the properties, contracts, personnel, and other assets necessary for Chrysler to move forward as a viable operation—were allocated to the “new” Chrysler. The “old” Chrysler kept the “toxic” assets destined for liquidation or write-off permitted under bankruptcy laws. A similar plan was later used for GM on its journey through bankruptcy.

Chrysler had filed for bankruptcy on April 30, 2009. A mere 31 days later, on May 31, the bankruptcy judge, Arthur J. Gonzalez, cleared the sale of all viable assets to the “new” Chrysler. Three Indiana state pension plans that together held about 8 percent of the company’s secured debt appealed the judge’s decision to the Second Circuit Court of Appeals in New York, which affirmed the sale on June 5, 2009. Holders of 92 percent of the secured debt had agreed to an exchange of debt at a value of 29 cents on the dollar. The Indiana funds had obtained their bonds a year before the bankruptcy filing at 43 cents per dollar of

face value; they argued in court that they should have been repaid at that value. The funds appealed the ruling to the U.S. Supreme Court.

On June 9, the U.S. Supreme Court allowed the sale of Chrysler to go ahead, ending the legal proceedings. Chrysler's secured creditors were forced to accept the original offer of \$2 billion.³⁰ Daimler, the minority owner of Chrysler at the time of the filing, agreed to waive its share of

Chrysler's \$2 billion second lien debt, give up its 19 percent equity interest in Chrysler, and settle its pension guaranty obligation by agreeing to pay \$600 million to Chrysler's pension funds. The private equity firm Cerberus, the majority owner at the time of filing, also agreed to waive its second lien debt and forfeit its equity stake (Congressional Oversight Panel, 2009). Upon exiting from Chapter 11, the new Chrysler received a final TARP installment from the federal government of \$4.6 billion in working capital and exit financing to assist in its transformation to a new, smaller automaker (Webel and Canis, 2011).

The largest equity owner in new Chrysler was initially the United Auto Workers' health care retirement trust, a VEBA with an ownership share of 67.69 percent. The union's VEBA trust was accorded a large piece of new Chrysler because old Chrysler's retiree health care liability of \$8.8 billion could not be met, as originally stipulated in the 2007 agreement, with a cash contribution. Half of that claim was converted into a 55 percent ownership stake. In exchange for the other half, the UAW VEBA received a \$4.6 billion unsecured note from the new Chrysler (Webel and Canis, 2011).³¹

Fiat initially obtained 20 percent of Chrysler's equity without making any direct financial contribution (table 2). The justification was that Fiat was to manage Chrysler and to develop competitive products, especially small, fuel-efficient vehicles (Webel and Canis, 2011).³²

The bankruptcy court's decision outlined steps that Fiat could take to raise its equity stake in Chrysler by a total of 15 percent of additional equity by meeting three performance benchmarks:

- A technology event—when it obtained regulatory approval and began U.S. production of a fuel-efficient engine based on Fiat engine designs. Fiat met this commitment in January 2011 when

it began production of its MultiAir engine at a Chrysler plant in Dundee, Michigan.

- A distribution event—based on Chrysler reaching certain revenue targets and export market goals. In April 2011, Fiat met this commitment when it exported \$1.5 billion of Chrysler vehicles from North America while also opening up its European and Latin American dealer networks to Chrysler vehicles.
- An ecological event—reached when regulators approved and U.S. production began of a new vehicle with fuel efficiency of at least 40 miles per gallon. Fiat announced in December 2011 that it would meet this commitment by assembling at its Belvidere, Illinois, plant the Dodge Dart, a new Fiat-based small car with a fuel efficiency of 40 miles per gallon (Webel and Canis, 2011).

On May 24, 2011, Chrysler refinanced and paid back its U.S. and Canadian government loans in full. Fiat exercised a call option to increase its ownership interest by an incremental 16 percent, on a fully diluted basis. On July 21, Fiat reported it had paid \$500 million to purchase the remaining 6 percent ownership interest by the U.S. Treasury and \$125 million for the remaining 1.5 percent ownership held by the Canadian government. By the end of 2011, Fiat's stake in Chrysler had reached 58.5 percent. Going forward, "Fiat's share could rise to more than 70 percent if it exercises the rights it holds to purchase some of the UAW VEBA Trust stake. Fiat purchased these rights from the U.S. Treasury for \$60 million" (Webel and Canis, 2011, p. 8).

In offering a final accounting of the Chrysler bailout, the Congressional Research Service estimated a \$1.3 billion gap between the funds loaned to Chrysler and the funds recouped (see table 1). TARP had provided \$10.9 billion in loans to support the company. In return for this \$10.9 billion, the government earned approximately \$1.7 billion in interest and other fees and recouped approximately \$7.9 billion in principal

TABLE 2						
Chrysler ownership since 2009 bankruptcy						
Owner	June 2009	January 2011	April 2011	May 2011	July 2011	December 2011
(----- percent -----)						
VEBA Trust	67.69	63.5	59.2	45.9	46.5	41.5
Fiat	20.00	25.0	30.0	46.0	53.5	58.5
U.S. government	9.85	9.2	8.6	6.5	0.0	0.0
Canada/Ontario governments	2.46	2.3	2.2	1.6	0.0	0.0

Sources: Webel and Canis, 2011, through April 2011, and PRN Newswire (2012).

(\$5.5 billion in loan repayments, \$1.9 billion recouped from the bankruptcy process of the old Chrysler, and \$560 million paid by Fiat for the U.S. government's new Chrysler common equity and rights), resulting in a \$1.3 billion loss (Webel and Canis, 2011).³³

GM restructuring

By the end of March 2009, the task force had concluded that GM's situation was different from that of Chrysler: GM was too big to fail. "We soon could not imagine this country without an automaker of the scale and scope of General Motors. The task became not whether to save GM but how to save GM" (Rattner, 2010b, p. 3). To that end, the task force decided that GM could not survive under its existing leadership.³⁴ Consequently, GM CEO Rick Wagoner stepped down at the request of the task force at the end of March 2009.³⁵

Like Chrysler, GM could not reach agreement with all of its stakeholders outside of bankruptcy. The company followed the path established by Chrysler and filed for bankruptcy on June 1. In just over five weeks, on July 10, 2009, a new GM emerged from protection. During the bankruptcy proceedings, the government provided a final TARP installment of \$30.1 billion as DIP financing, bringing total U.S. government loans to GM to \$50.2 billion (see table 1).³⁶

The U.S. government was the majority owner of the new GM that emerged from the bankruptcy process, as most of the TARP loans made to GM were converted into an initial 60.8 percent ownership stake (Canis and Webel, 2011). In addition, the governments of Canada and Ontario together held 11.7 percent, the VEBA held 17.5 percent, and unsecured bondholders and creditors of the old GM held 10 percent (table 3).³⁷

Sixteen months after emerging from Chapter 11 bankruptcy, GM launched an initial public offering (IPO) on November 18, 2010. The IPO sold shares worth \$23.1 billion, making it at the time the largest IPO in U.S. history, and was widely considered a success. GM initially had set a target price in the range of \$25–\$26 per share. In the days prior to the offering, market interest seemed strong, and the offering price was raised to \$33 a share. In addition, more shares were sold than originally intended due to the strength of investor demand. As a result, the U.S. Treasury was able to sell more of its shares than had been anticipated, although it realized losses (Congressional Oversight Panel, 2011b; Canis and Webel, 2011). Both the VEBA and the Canadian government sold shares as well.³⁸ Following the IPO, the U.S. government's stake in GM dropped to around 32 percent or approximately 500 million shares. In order for the government's

TABLE 3		
GM ownership since 2009 bankruptcy		
Owner	July 2009	December 2011
	(- - - - percent - - - -)	
U.S. government	60.8	32.0
Canada/Ontario governments	11.7	9.0
VEBA trust	17.5	10.3
Unsecured bondholders	10.0	9.6
Common shareholders	—	35.2
Pension plan	—	3.9

Sources: Canis and Webel, 2011, and Schwartz, 2011b.

remaining 32 percent of the company to be worth \$26.2 billion, representing all of the government's remaining unrecovered investment, GM's market capitalization would have to be approximately \$81.9 billion (SIGTARP, 2012). To achieve this market capitalization, the price of GM stock would have to exceed \$52 per share, or more than twice its price in April 2012.

The new GM differed from the old GM in a number of important ways:

- Lower labor costs—GM's North American bill for hourly labor declined from \$16 billion in 2005 to \$5 billion in 2010 (Congressional Oversight Panel, 2011b).
- Lower level of employment—Old GM had 111,000 hourly employees in 2005 and 91,000 in 2008. New GM had 75,000 immediately after bankruptcy in 2009 and 50,000 in 2010 (Congressional Oversight Panel, 2011b).
- Fewer plants—GM had closed 13 of the 47 U.S. assembly and parts plants it operated in 2008. Most of the closed plants and machinery remained with old GM.
- Fewer brands—GM's Pontiac, Saturn, and Hummer brands were terminated, and Saab was sold. GM retained four nameplates in North America: Chevrolet, its mass-market brand; Cadillac, its premium brand; Buick; and GMC. GM retained Buick primarily because of the brand's strength in China and GMC because of its strength as a higher-priced truck nameplate. GM also reduced its dealer network by about 25 percent.³⁹
- Retiree health care costs—The GM restructuring agreement gave the VEBA a significant ownership stake in GM because at the time the company did not have the financial resources to provide cash.

Bankruptcy also removed expensive liabilities from GM's balance sheet.⁴⁰ Left with old GM were

environmental liabilities estimated at \$350 million for polluted properties, including Superfund sites; certain tort liability claims, including those for some product defects and asbestos; and contracts with suppliers with whom the restructured GM would not be doing business (Canis and Webel, 2011).⁴¹

New GM not only emerged with much-reduced debt, it also had a much lower break-even point—the volume of cars at which the company’s revenues equal its costs. “In 2007, GM needed a 25 percent market share, or roughly 3.88 million vehicles sold out of a market of 15.5 million, in order to break even. Today [2011], GM needs a market share of less than 19 percent, or approximately 2.09 million vehicles sold out of a market of 11 million. In sum, GM is now able to break even with a smaller share of a smaller market. ... This improvement has been driven in part by the reduction in labor costs, in addition to improvements in vehicle pricing” (Congressional Oversight Panel, 2011b, p. 32).

Government post-bankruptcy initiatives⁴²

As the presidential task force on the auto industry neared completion of its restructuring efforts, President Obama signed Executive Order 13509 on June 23, 2009, creating the White House Council for Automotive Communities (renamed in 2010 to the White House Council on Automotive Communities and Workers). The function of the Council was “to establish a coordinated federal response to issues that particularly impact automotive communities and workers and to ensure that federal programs and policies address and take into account these concerns” (see the *Federal Register* document at www.gpo.gov/fdsys/pkg/FR-2009-06-26/pdf/E9-15368.pdf).

The first executive director of the council was Ed Montgomery, a University of Maryland economist.⁴³ The principal activity of the Auto Communities Office has been to identify appropriate federal funding sources to assist communities negatively impacted by the auto industry restructuring, especially in the Great Lakes states. Examples include funds from Treasury, the U.S. Environmental Protection Agency (EPA), and the U.S. Department of Justice to clean up sites of closed plants, as well as the Department of Energy’s \$2.4 billion initiative to accelerate the manufacturing and deployment of the next generation of batteries and electric vehicles (see Klier and Rubenstein, 2011).⁴⁴

To stimulate sales of new vehicles, the federal government sponsored the Car Allowance Rebate System (CARS) during the summer of 2009. The program, originally announced in the President’s March 30 speech and more commonly known as “cash for

clunkers,” provided consumers with a credit of \$3,500–\$4,500 toward the purchase of a new vehicle if they scrapped an older vehicle (see, for example, Mian and Sufi, 2010, and Li, Linn, and Spiller, 2011). To qualify, the scrapped vehicle had to be currently registered, less than 25 years old, and have fuel economy rated by the EPA at 18 mpg or less. The program was originally planned to disperse \$1 billion over three months, but when demand proved much higher than expected, Congress appropriated an additional \$2 billion. Due to the program, light vehicle sales temporarily jumped to 14.2 million units, measured at a seasonally adjusted annual rate, in August 2009, up from July’s 11.3 million units. Well-timed to sustain a budding recovery in vehicle sales at the time, the program’s net effect was rather small.⁴⁵

Assessment of government intervention

At the time of this writing, almost three years have passed since the bankruptcy filings. The industry has recovered slowly but steadily, and all three Detroit carmakers reported profits for 2011.⁴⁶ Yet opinions regarding the government interventions are still divided, as evidenced by the different responses to Chrysler’s 2012 Super Bowl ad, which referenced the company’s recovery (see Fifield, 2012).^{47, 48}

The White House has made it clear that it considers the restructuring of Chrysler and GM a success. A year after the bankruptcy filings, the administration stated, “[w]hile this process of regaining long-term financial health will require much work, innovation, and perseverance, there is no doubt that over the course of the past year they have moved back from the brink to a position of contributing to the economic recovery of the nation and auto communities” (White House 2010, p. 16). More recently, President Obama cited the auto industry intervention in his 2012 State of the Union address as a success of his administration’s manufacturing policy (White House, Office of the Press Secretary, 2012). Around the same time, in remarks delivered at the National Automobile Dealers Association convention, former President George W. Bush stated that he would “make the same decision again if I had to” (Wilson, 2012).

A more formal and quite extensive evaluation of the government’s intervention in the auto sector was performed by a congressional oversight panel, a bipartisan body created by Congress in 2008 in the underlying TARP statute.⁴⁹ Established with the purpose of reviewing the current state of financial markets and the regulatory system, this committee has issued several reports on TARP overall, as well as specifically on the auto industry.⁵⁰ The committee consisted of

five members, one each appointed by the majority and minority leaders of the House and the Senate, as well as one jointly appointed by the Speaker of the House and the majority leader of the Senate. Its reports were unanimous.

The panel concluded that the restructuring had succeeded.⁵¹ “The industry’s improved efficiency has allowed automakers to become more flexible and better able to meet changing consumer demands, while still remaining profitable. Improved production procedures and lower inventory have resulted in fewer discounts on new car sales, improving the profitability on each car sold” (Congressional Oversight Panel, 2011b, p. 15). “Treasury was a tough negotiator as it invested taxpayer funds in the automotive industry. The bulk of the funds were available only after the companies had filed for bankruptcy, wiping out their old shareholders, cutting their labor costs, reducing their debt obligations and replacing some top management” (Congressional Oversight Panel, 2009, p. 2).

In its evaluation, the panel raised four principal concerns with regard to the government intervention:

1. Some recovery of the U.S. auto industry would have occurred anyway, even with the liquidation of Chrysler and possibly GM.⁵² In addition, the panel asked if TARP would be able to reverse the long-term decline of the Detroit-based carmakers.
2. The rescue of Chrysler, GM, and their financial arms created a moral hazard. The panel raised the issue of an ongoing implicit guarantee from the government with respect to the entire TARP program, as well as specifically in the case of the auto industry.
3. The use of TARP money was “controversial” (Congressional Oversight Panel, 2011b, p. 4) as the definition of “financial firms” in the TARP legislation did not mention manufacturing companies, such as the Detroit Three carmakers (Canis and Webel, 2011, p. 2).⁵³
4. Finally, the panel pointed out that government assistance had not yet resulted in a positive return on the taxpayers’ investment.⁵⁴

The panel also suggested improvements to the governance of the bailout process, such as improved transparency of both Treasury and company management, establishment of clear goals and benchmarks to facilitate evaluation of progress, and a better balance between Treasury’s dual roles as shareholder and government policymaker (Congressional Oversight Panel, 2011a).

Industry restructuring

We have summarized the events leading up to the government intervention in this industry and the details of the restructuring. Now, we look at how the structure of the U.S. auto industry has subsequently changed. We focus on significant changes in four areas: utilization of production capacity; geographic distribution of production facilities; allocation of market share among the major producers; and cost structure.

Production capacity

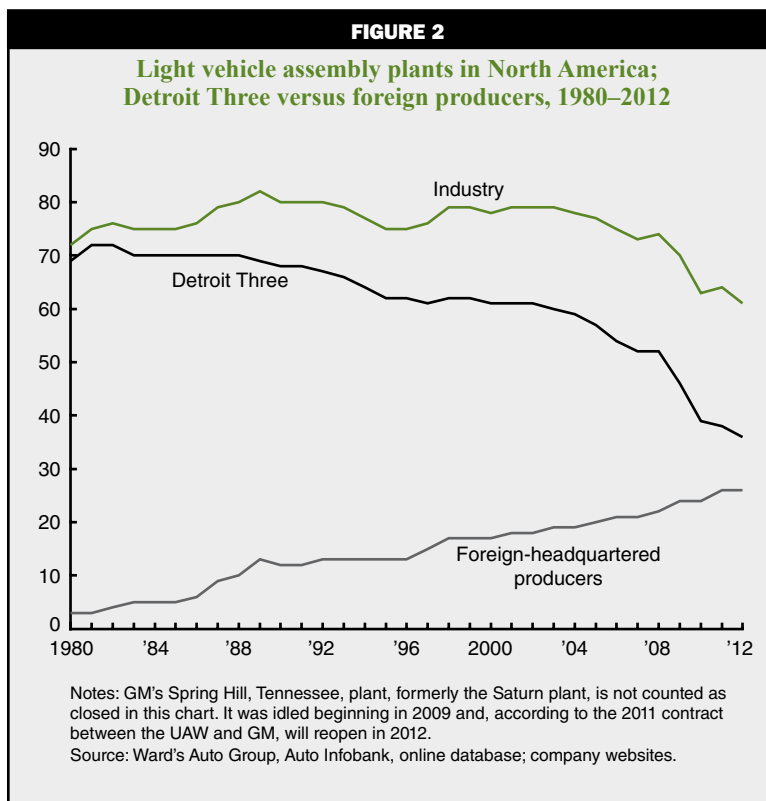
Auto assembly is a capital-intensive undertaking. An assembly plant costs hundreds of millions of dollars to build, employs several thousand workers when operated at capacity, and produces more than 200,000 units per year under standard operating conditions.

As is typical for capital-intensive industries, auto assembly is characterized by significant barriers to entry (as well as to exit), at least at a global scale. However, at the regional scale, as the auto industry has become more international, existing producers have expanded assembly operations beyond their home region. As a result, the North American auto industry has been impacted significantly by the arrival of foreign-headquartered producers.

Volkswagen was the first foreign-based carmaker to start assembling vehicles in the United States, when it opened a plant in western Pennsylvania in 1978.⁵⁵ Since then, ten other foreign carmakers have set up assembly plants in North America, raising the count of producers operating full-scale assembly operations to 14. In 2010, foreign-headquartered producers accounted for 44 percent of all light vehicle production in North America.

Although the number of companies assembling light vehicles in North America increased to 14 by 2010, the overall number of North American assembly plants remained rather stable, averaging 77 between 1980 and 2007. As foreign-headquartered carmakers opened new assembly plants in North America, the three Detroit-based carmakers closed some of theirs (figure 2).

What role did the restructuring during the Great Recession play? Most importantly, it resulted in an unprecedented number of plant closures. Between January 2008 and December 2010, the Detroit Three shut 13 assembly plants in North America and announced the closure of three more. The number of plants closed by Detroit carmakers during the two years of the recession matched the number of plants closed during the previous seven years of the decade,



Capacity utilization in the production of light vehicles in the United States averaged 77.6 percent between 1972 (when data collection for that series began) and 2007. In the auto industry, capacity utilization rarely reaches 90 percent, even during peak sales years. During recessions, capacity utilization below 60 percent has been common (it occurred for a combined total of 40 months between 1972 and 2007). At the depth of the Great Recession, during January 2009, a record-low level of 25.9 percent was recorded for capacity utilization in light vehicle assembly in the United States. However, after the restructuring of GM and Chrysler, industry capacity utilization rose more rapidly than did production, as a result of the large number of plants that the Detroit Three closed during the bankruptcy proceedings.

Since capacity utilization is a key driver of profitability for carmakers, the unprecedented number

a period during which Detroit had significantly reduced its production capacity.

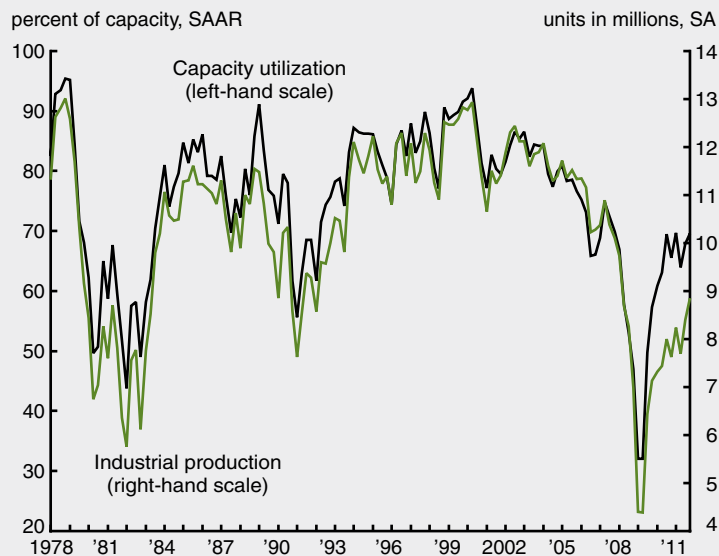
To illustrate the outsized response in plant closings, we can compare the most recent downturn with the period between 1978 and 1982, a similar event according to several measures. U.S. employment in vehicle assembly fell by 34 percent during the recent recession and by 32 percent between 1978 and 1982. Similarly, employment in motor vehicle parts production declined by 32 percent during 2007–09 and by 28 percent during 1978–82. Production in light vehicles fell by 46.5 percent in the most recent recession and by 45.4 percent in the earlier recession. Yet, the capacity adjustment was much smaller then. Only six assembly plants were shut between 1979 and 1983, compared with 14 between 2008 and 2011.

The recent plant closures correspond to a removal of approximately 2.6 million units of production capacity in North America. The vast majority, 2.36 million units, was taken out in the U.S.⁵⁶ A result of this sharp and rapid reduction in capacity has been a decoupling of the traditional relationship between the level of capacity utilization and the level of production in this industry (see figure 3, which illustrates the change for the U.S.).⁵⁷

of assembly plant closures during the recent restructuring is enabling carmakers to achieve profitability at historically low output levels.

Industry geography

The massive capacity reduction between 2007 and 2009 also altered the footprint of the auto industry by accelerating the clustering of nearly all U.S. auto production in the interior of the country, in an area known as auto alley. Auto alley is centered along north–south Highways I-65 and I-75 between the Great Lakes and the Gulf of Mexico. Beginning around 1980, the Detroit Three and the international carmakers constructed nearly all of their new production facilities in auto alley, and the Detroit Three began to close plants elsewhere in the country. The main impetus for the reconcentration of vehicle assembly in the interior of the country was the fact that nearly all vehicle models were produced at only one assembly plant. The plants in turn shipped their products from their respective locations across the country to serve the entire market. Transportation cost efficiency necessitated an interior location. Agglomeration economies between assembly and supply chain locations kept both types of activities co-located.

FIGURE 3**U.S. light vehicle production and capacity**

Notes: SA indicates seasonally adjusted; SAAR indicates seasonally adjusted annual rate.
Sources: Board of Governors of the Federal Reserve System and Haver Analytics.

Auto alley's share of U.S. light vehicle production rose from 78 percent in 2007 to 83 percent in 2011.⁵⁸ By the end of 2011, all assembly activity was located in the interior of the country (figure 4). The only two assembly plants not shown in the 2011 version of the assembly map are located in the state of Texas.

The restructuring of the Detroit Three carmakers has also resulted in a change in the distribution of assembly plants within auto alley. Since 2007, the production share of the Detroit Three in the southern half of auto alley (Kentucky and south) has dropped by half, from 23 percent to 12 percent. In the northern half, it has remained constant at 74 percent. This bifurcation shows up even stronger at a higher level of resolution. The highway labeled US 30 runs east-west through northern Ohio, Indiana, and Illinois. At the end of 2011, the Detroit Three were operating 17 assembly plants north of US 30 and two to the south (see horizontal line in figure 4, panel B). The foreign-headquartered carmakers have 16 assembly plants south of US 30 and only one to the north. That plant is scheduled to revert to Ford in the near future.

The changing distribution of auto plants during the restructuring is significant for two reasons. First, the concentration of Detroit Three assembly plants in the northern portion of auto alley reduces transportation costs for both receiving parts from suppliers and

shipping assembled vehicles to consumers. Second, as a result of a more concentrated footprint, the Detroit Three operate major manufacturing facilities in a noticeably smaller number of states. The number of states with a Detroit Three assembly plant declined from 16 in 2007 to ten in 2011.⁵⁹ On the other hand, the foreign-headquartered carmakers had assembly plants in ten states in 2011, compared to eight in 2007. The widespread opposition to the rescue of Chrysler and GM reflected in part the small number of states with substantial Detroit Three employment (in 1980, the count had been 19).

Market share

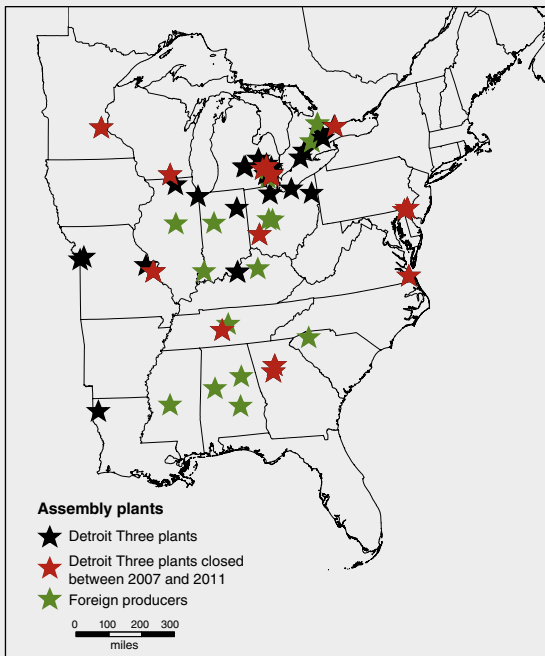
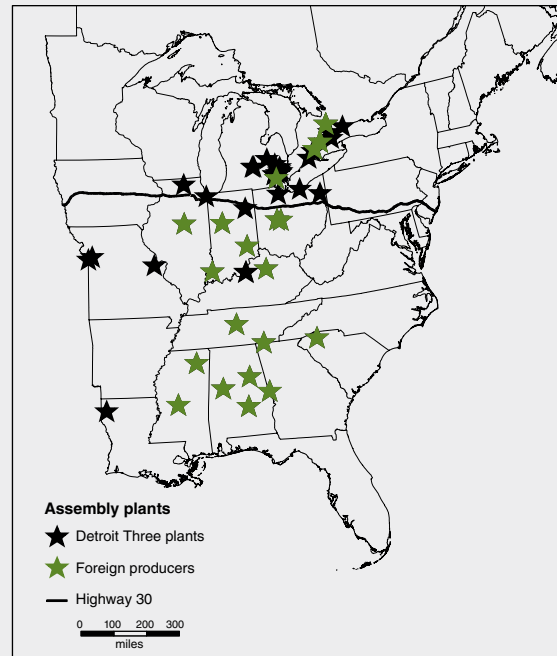
Despite the remarkable turmoil experienced by the auto sector during the recent recession, none of the carmakers exited the industry. As a result, the auto industry is more competitive in 2011 than it was just

five years ago. The share of the largest four companies in U.S. light vehicle sales dropped from 75 percent in 2000 and 67 percent in 2007 to 60 percent in 2011. Seven companies each held at least 5 percent of the market in the United States last year. It appears as if the U.S. industry structure is moving toward the European market structure, with eight sizable players, but few representing more than 20 percent of the market.

During the decade leading up to bankruptcy, the share of U.S. automotive sales held by the Detroit Three had plummeted from 72 percent in 1997 to 47 percent in 2008. The Detroit Three had been losing market share for decades, but at a much more modest rate. Their market share had declined from 95 percent in 1955 to 75 percent in 1980, but then had stabilized at 70–75 percent during the 1980s and 1990s (Klier, 2009).

In contrast, the Detroit Three gained market share in 2011 for the first time since 1995—moving up to 47 percent from 45 percent in 2010. Detroit Three sales increased from 4.7 million in 2010 to 5.4 million in 2011, whereas those by foreign-headquartered carmakers increased more modestly—from 5.7 million in 2010 to 6.1 million in 2011.

The two restructured companies—Chrysler and GM—increased their respective market share from 9.3 percent to 10.7 percent and from 19.1 percent to

FIGURE 4**Location of assembly plants in U.S. and Canada****A. 2007****B. 2011**

Notes: Neither map shows two assembly plants located in Texas. In 2007, there was also a plant on the West Coast in the San Francisco Bay area.
 Source: Ward's Auto Group, Auto Infobank, online database.

19.7 percent. Ford's market share declined from 17.0 percent to 16.6 percent, primarily because Volvo was counted in Ford's total for the first seven months of 2010 until it was sold to Zhejiang Geely in August 2010.⁶⁰ Especially noteworthy for the Detroit Three was the increase in the share of their sales accounted for by passenger cars rather than trucks, after three decades of having ceded most of the high-volume family car market to the Japanese carmakers. Detroit Three passenger car sales increased from 1.7 million in 2010 to 1.9 million in 2011, representing an increase in market share.

It is possible that the market share gain for the Detroit Three in 2011 may turn out to be an anomaly, reflecting the severe disruptions in production faced by their Japanese competitors following the March 2011 earthquake and tsunami in Japan and the October 2011 floods in Thailand. It is possible, however, that the improved performance of the Detroit Three in 2011 represents a genuine shift in momentum, as Japanese carmakers have suffered a number of other setbacks as well. For example, the high value of the yen has had a negative impact on profits, and several key models have received lukewarm or negative reviews upon

introduction. At the same time, the Detroit Three have introduced new models, especially smaller passenger cars, that have been favorably reviewed and are selling at much faster rates than the models they replaced.⁶¹ It is too early to tell which of these competing explanations will hold.

Cost structure

Labor costs were long cited as an important contributor to the uncompetitive position of the Detroit Three. Over the years, the companies' labor cost structure had become essentially fixed, as job security became a key element of successive labor agreements with the UAW. In addition, health care and pension liabilities skewed the competitive landscape against the domestic carmakers.⁶²

The UAW and the Detroit Three began to address labor cost issues with the 2007 labor agreement. That contract for the first time introduced a much lower second-tier wage; established the VEBAs, which would ultimately, once funded, take on the health care liability for active and retired workers; and severely curtailed the reach of the infamous "jobs bank."⁶³

As a result of the 2007 contract, the UAW average hourly wage was \$29.06.⁶⁴ Wages at the Detroit Three were somewhat higher than those at foreign-owned assembly plants: \$26 per hour at Toyota and \$25 at Honda in 2007. However, when the total cost of production labor—including benefits—was calculated, the gap between the Detroit Three and foreign-owned assembly plants was much bigger: The hourly average became \$61.48 at the Detroit Three versus \$47.50 at Toyota in 2007 (McAlinden, 2008).⁶⁵

In light of the recession that soon followed, the agreements from 2007 were not able to address the uncompetitive labor cost structure of the Detroit carmakers fast enough. During the industry downturn and financial crisis, the UAW and the Detroit carmakers were engaged in continuous negotiations to find ways to bring down costs. For example, the union agreed to a no-strike clause for GM and Chrysler through 2015; differences during contract negotiations would have to be resolved by binding arbitration while the no-strike clause was in effect. In its December 2008 restructuring plan, Ford had attached a table that illustrated its labor cost breakdown. Wages and wage-related costs in 2008 were \$43 per hour, versus an average of \$35 per hour at foreign-owned U.S. auto manufacturers. However, Ford's all-in hourly labor cost came to \$71, versus \$49 for the foreign-owned companies. The principal difference was legacy costs of \$16 per hour, versus comparable costs at foreign companies of \$3 per hour (Cooney et al., 2009).⁶⁶

Post restructuring, the negotiations between the UAW and the Detroit producers regarding a new 2011 master contract were rather important. The outcome would indicate if the lessons learned during the painful restructuring would soon be forgotten. The union stated upfront that it expected to be made whole for the concessions its membership had made during the downturn. By the same token, the Detroit producers argued that key to sustainable profitability was continued competitiveness of vehicle production within North America. At the end, the contracts negotiated and ratified during September and October 2011 found a way to address both concerns. While fixed labor costs hardly rose, variable pay options for union members were increased significantly. Detroit's labor costs were now competitive with foreign producers operating within North America. Hourly labor costs ranged from \$58 at Ford to \$52 at Chrysler, compared with \$55 for Toyota (see McAlinden, 2011).⁶⁷

Summary and outlook

As the U.S. auto industry started to recover from a sharp and deep recession, the Detroit Three became profitable again. During the fall of 2011, both Ford's and GM's credit ratings were upgraded to within a shade of investment grade.⁶⁸ At the beginning of December 2011, Ford decided to reinstate its dividend for the first time since 2006. And capacity utilization in U.S. vehicle production had returned to respectable levels by the end of 2011. Chrysler turned out to be the real surprise story of this recovery. Virtually given up for dead in early 2009, the company had repaid all its loans by mid-2011, several years ahead of schedule. It was rolling out new products and gaining market share in the process.⁶⁹

This article recapped the main events of the industry's decline and restructuring. It is hard to say how much of the current recovery is attributable to the government intervention, but we can say that the ensuing restructuring of the Detroit carmakers has substantially changed the U.S. auto industry, perhaps permanently. A large number of assembly plants have closed, reducing assembly capacity while reinforcing auto alley as the dominant footprint for the industry. The new labor contract between the Detroit Three and the UAW, agreed upon in late summer 2011, provides for wage competitiveness going forward. Despite the turmoil, no carmaker exited the industry, making for a very competitive environment. Looking ahead, the industry is facing a very dynamic stretch in light of stricter regulations on vehicle safety and fuel efficiency. In addition, there is significant uncertainty about the evolution of engine and transmission technologies. This unfolding story suggests that the newfound competitiveness of Detroit will be thoroughly tested over the coming years.

NOTES

¹By 2008, Chrysler Financial and GMAC, once the captive financing arms of Chrysler and GM, were owned by Cerberus Capital Management, a private investment firm. Cerberus owned 100 percent of Chrysler Financial and 51 percent of GMAC.

²For example, AutoNation, one of the country's largest publicly held dealer groups, reported a 20 percent decline in vehicle sales immediately after the collapse of Lehman Brothers—Lehman filed for bankruptcy on September 15, 2008 (Strauss and Engel, 2009).

³As the economy came out of the 1991 recession, vehicle sales grew by more than 3 percent each year between 1992 and 1994. Other than that, vehicle sales fluctuated by more than 3 percent only one more time (8.9 percent in 1999) through the end of 2007.

⁴Ward's Auto Group, Auto Infobank, online database.

⁵Data from the Bureau of Labor Statistics via Haver Analytics. A number of these job cuts took place via buyouts (see note 7). In addition, the Detroit carmakers vertically disintegrated a large part of their in-house parts operations by spinning off Visteon (Ford) and Delphi (GM) around the turn of the century. Both parts companies subsequently downsized their U.S. operations in drastic fashion.

⁶Loomis (2006) wrote in her *Fortune* magazine cover story that at GM, "the evidence points, with increasing certitude, to bankruptcy." York (2006) suggested in a speech to the Detroit auto show that GM's rate of cash burn at the time would be sustainable for roughly another three years. No separate bond ratings were available for Chrysler at the time, since it had merged with the German carmaker Daimler.

⁷In light of the dire situation the carmakers were in, the UAW agreed that retirees would, for the first time, pay monthly health care premiums as well as co-payments for doctor visits and prescriptions. Active workers would forgo a \$1.00 per hour wage increase with the money going toward retiree benefits (Vlasic, 2011). Notably, this agreement was reached while the existing labor contract was good for another year.

⁸Between 2006 and 2010, the Detroit Three eliminated over 100,000 jobs that way (Bunkley, 2009).

⁹The VEBA was scheduled to take over responsibility for providing health benefits to more than 700,000 members and dependents on January 1, 2010. The total value of the trust was set to be about \$57 billion, with GM providing about \$32 billion, Ford roughly \$14 billion, and Chrysler about \$11 billion. In total, the Detroit Three contributions were projected to fund 64 percent of the future retiree health obligations (O'Brien, 2008). The VEBA is overseen by a board consisting of 11 members—six independent directors approved by the courts and five UAW designees.

¹⁰GM had approached the Treasury several weeks earlier with a request for aid, but had been turned down (Vlasic, 2011). Before that, during midsummer of 2008, GM attempted to raise funds both by selling assets and borrowing; however, the debt market had pretty much shut down by then (Vlasic, 2011). That prompted GM to hold discussions about a possible merger with either Chrysler or Ford soon thereafter. The discussions between GM and Chrysler went on between July and October of 2008.

¹¹Ford had started to implement its new business plan prior to the onset of the recession. The plan was centered around a focus on the Ford brand and a revival of the company's car business. It included spinning off brands such as Aston Martin (2007), Jaguar and Land Rover (2008), and Volvo (2009). The business plan had started to

show positive effects by the beginning of 2008, when Ford reported a small quarterly profit. The company's U.S. market share bottomed out in September 2008, six months earlier than those of its hometown competitors. Within nine months, Ford had essentially made up the market share it had lost since the beginning of 2006. Ford also had the benefit of having secured a large line of credit well before financial markets seized up. The company did, however, apply for loans under the Department of Energy's Advanced Technology Vehicles Manufacturing Program. In September 2009, Ford received a \$5.9 billion loan as part of that program to finance up to 80 percent of qualified expenditures to produce more fuel-efficient vehicles (Vlasic, 2011).

¹²The lack of support was accentuated during the hearings by the revelation that the three CEOs had flown to Washington on private jets (Vlasic, 2011).

¹³A last-minute negotiating effort led by Senator Bob Corker failed to reach agreement on the following three conditions: GM and Chrysler had to cut their debt by two-thirds, the union had to take stock instead of cash for half the VEBA, and wages and benefits needed to match those in plants of foreign competitors within a year (Vlasic, 2011). Ultimately, conditions similar to these became part of both the Bush and Obama administrations' rescue efforts (see below).

¹⁴"The company needed a bare minimum of \$10 billion on hand just to stay in business and maintain its rolling schedule of paying suppliers for parts" (Vlasic, 2011, p. 273).

¹⁵The decision to support the auto industry was communicated to the incoming administration. However, Rattner (2010a) reports there was little cooperation between the outgoing and incoming administrations.

¹⁶In conjunction, the governments of Canada and Ontario supported Chrysler and GM by extending initial interim loans representing 20 percent of the U.S. interim financing on December 20 (Industry Canada, 2009). Ultimately the Canadian support package for both carmakers amounted to CDN\$14.4 billion (\$10.6 billion to GM and \$3.8 billion to Chrysler). See Shiell and Somerville, 2012.

¹⁷TARP authorized the Secretary of the Treasury to purchase troubled assets from financial firms. Guiding principles for the Treasury's management of TARP were: to protect taxpayer investments and maximize overall investment returns within competing constraints; to promote stability for and prevent disruption of financial markets and the economy; to bolster market confidence to increase private capital investment; and to dispose of investments as soon as practicable, in a timely and orderly manner that minimizes financial market and economic impact (U.S. Department of the Treasury, 2010, p. 10, quoted in Canis and Webel, 2011, p. 3.)

¹⁸GM also received a \$1 billion loan from Treasury on December 29, 2008. The ultimate funding of the \$1 billion agreement was dependent upon the level of investor participation in a GMAC rights offering (it turned out to be \$884 million). Pursuant to the rights of the loan agreement, in May 2009 Treasury exchanged its \$884 million loan to old GM for a portion of old GM's common equity interest in GMAC (U.S. Department of Treasury, 2012). That's why here and in table 1, the initial support for GMAC is listed as \$6 billion (\$5 billion plus the \$1 billion loan to GM at the time).

¹⁹The primary difference was the requirement that U.S. employees of GM and Chrysler accept reductions in their compensation to bring it into line with that of employees in foreign transplants in the United States (Cooney et al., 2009). President Bush's team

compromised between elements of the House bill and the specific conditions put forth by Senator Corker by including requirements similar to Corker's, but making them nonbinding and subject to the judgment of the administration's "car czar" (Rattner, 2010a, p. 41). Rattner (2010a) later argued that "Bush appropriately designated the Treasury Secretary as the ultimate authority under the loan agreements, effectively declaring that there would be no independent car czar. Finally, adopting Corker's conditions—as imperfect as they were—provided a baseline of expected sacrifices that paved the way for our demands for give-ups from stakeholders" (p. 42).

²⁰"This was not a managerial job; it was a restructuring and private equity assignment" (Rattner, 2010a, p. 48).

²¹The estimates of job losses varied considerably. The Council of Economic Advisers expected a loss of more than 1 percent in real GDP growth and about 1.1 million jobs, including parts production companies and dealers (Congressional Oversight Panel, 2011b). Moody's Analytics chief economist Mark Zandi estimated the total job losses from a liquidation of Chrysler and perhaps GM would ultimately be about 2.5 million. The Economic Policy Institute suggested an even bigger number, 3.3 million (Zandi, 2008; Scott, 2008; Executive Office of the President, 2010).

²²There were fees associated with tapping into that program. According to Rattner (2010a), "suppliers thought twice before signing up."

²³The history of Delphi's slow recovery from bankruptcy provides some justification for wanting to act more promptly. GM's former parts subsidiary, Delphi, was spun off as a separate company in 1999. The company filed for bankruptcy in October 2005, but it took four years until it emerged from Chapter 11 in October 2009. Moreover, the new company only returned to the public markets with an initial public offering in November 2011.

²⁴Treasury committed \$640.7 million to this program—\$360.6 million to GM and \$280.1 million to Chrysler. On July 10, 2009, the companies fully repaid Treasury (Office of the Special Inspector General of the Troubled Asset Relief Program [SIGTARP], 2012).

²⁵Chrysler had begun discussions with Fiat a year earlier (Congressional Oversight Panel, 2009, p. 12, fn. 37; Vlasic, 2011).

²⁶The private equity firm that had acquired Chrysler from Daimler in 2007.

²⁷Daimler at the time still owned a minority stake in Chrysler.

²⁸This would commonly be referred to as a "pre-packaged bankruptcy."

²⁹Fishman and Gouveia (2010) suggest that it would be a mistake to treat the Chrysler and GM cases as a signal that a new order in bankruptcy law implementation is in place. They argue that few future debtors will be able to argue, as Chrysler and GM could, that the national economy is tied to their fate.

³⁰Their secured claims had amounted to \$6.9 billion.

³¹In the spirit of shared sacrifice, the VEBA was awarded 50 to 60 cents on the dollar (Rattner, 2010a). Going forward, Chrysler has to meet a schedule of payments through 2023 to fund the balance of the claims.

³²See Congressional Oversight Panel (2009), figure 1, p. 27, on who received what in the Chrysler restructuring.

³³Exactly how large of a loss might be attributed to the Chrysler assistance, however, depends on what accounting method is used. This \$1.3 billion figure does not fully include a number of other

cost factors, such as the cost to the government to borrow the funds that it then provided to Chrysler, a premium to compensate the government for the riskiness of the loans, and the cost to the government in managing the assistance given (Canis and Webel, 2011). Rattner (2010b) suggested that the auto team never anticipated a full recovery of the capital infusion, considering the industry bailout succeeded in avoiding considerable economic and human calamities.

³⁴Rattner (2010b) states that "if ever a board needed changing, it was GM's, which had been utterly docile in the face of looming disaster. ... The top brass was sequestered on the uppermost floor [of corporate headquarters], behind locked and guarded glass doors. ... Analyses seemed engineered to support pre-ordained conclusions. ... [GM leaders] appeared to believe that virtually all their problems resulted from some combination of the financial crisis, oil prices, the yen-dollar exchange rate, and the UAW" (Rattner, 2010b, pp. 4–5).

³⁵At the time, it was announced that GM's board would be overhauled. Six of the existing members, including the long-time lead director George Fisher, would resign by the time new GM emerged from bankruptcy. The open slots on GM's board were filled by the auto task force. Chrysler's board was also restructured during bankruptcy.

³⁶As of December 31, 2011, the GM entities had made approximately \$756.7 million in dividend and interest payments to Treasury under AIFP. New GM repaid the \$6.7 billion loan provided through AIFP with interest, using a portion of the escrow account that had been funded with TARP funds. What remained in escrow was released to new GM with the final debt payment by new GM (SIGTARP, 2012).

³⁷All secured creditors were paid in full. The VEBA's claims on GM, which amounted to \$20.56 billion, were satisfied by means of a 17.5 percent ownership in new GM, a \$2.5 billion note, \$6.5 billion in preferred stock, plus warrants to buy an additional 2.5% in equity. See Congressional Oversight Panel (2009), figure 2, p. 31, for more details.

³⁸The VEBA can break even if it sells its remaining shares at \$36.96 per share (Muller, 2010).

³⁹See SIGTARP (2010) for more detail on GM's and Chrysler reduction of their respective dealer networks.

⁴⁰GM shed \$65 billion of liabilities with the bankruptcy (Rattner, 2010a). By comparison, Ford reduced its automotive debt by \$20.8 billion on its own between 2009 and 2011. It also paid its VEBA obligations in full.

⁴¹Unlike in Chrysler's case, new GM assumed future product liability claims involving its older vehicles. Chrysler's bankruptcy court papers kept it immune from punitive damages involving older vehicles (see Spector, 2012).

⁴²See Klier and Rubenstein (2011).

⁴³Montgomery returned to the University of Maryland in August 2010, and 12 months later, Jay Williams, former mayor of Youngstown, Ohio, was named to the position. The function was transferred to the Department of Labor and renamed the Office of Recovery for Auto Communities and Workers.

⁴⁴Both GM and Chrysler withdrew their applications for loans under the Department of Energy's Advanced Technology Vehicle Manufacturing Program after emerging from bankruptcy. GM had applied for \$14.4 billion and withdrew its application in January 2011; Chrysler withdrew its application for \$3.5 billion in February 2012 (Snavely, 2012).

⁴⁵During the first half of 2009, light vehicle sales in every month had reached less than 10 million units on a seasonally adjusted annualized basis. Li, Linn, and Spiller (2011) suggest that “cash for clunkers” had no positive effect on vehicle sales beyond 2009 and that about 45 percent of the stimulus went to consumers who would have purchased a new vehicle anyway.

⁴⁶Specifically, the net full-year profit for 2011 was \$183 million at Chrysler, \$7.6 billion at GM, and \$20.2 billion at Ford.

⁴⁷Rattner (2010a) reflected in his account of the restructuring that a bit more “shared sacrifice” might have been possible. Specifically, he wondered whether the recovery share of Chrysler’s secured creditors should have been lower, the compensation of old GM’s bondholders should have been wiped out, and active workers’ wages as well as the generous pensions plans should have been cut (Rattner, 2010a). On the other hand, Senator Bob Corker, who was instrumental in the negotiations to broker a deal in the Senate during December 2008, suggested in 2010 that the auto task force deserves credit for going further than his suggested requirements by implementing further reductions in debt from the automakers as well as convincing the UAW to accept more of its retiree health care obligations from GM in equity (Crain Communications Inc., *Automotive News*, 2010).

⁴⁸Often the Chevy Volt, GM’s plug-in hybrid electric vehicle, becomes a focal point of this debate. That car was unveiled during the celebration marking GM’s 100th anniversary on September 16, 2008, to demonstrate the company’s commitment to leadership in new technology (Vlasic, 2011). The auto task force provided a critical view of the vehicle’s prospects in its March 2009 evaluation of GM’s viability plan: “While the [Chevy] Volt holds promise, it is currently projected to be much more expensive than its gasoline-fueled peers and will likely need substantial reductions in manufacturing cost in order to become commercially viable (White House, 2009a).

⁴⁹Another group, the Office of the Special Inspector General of the Troubled Asset Relief Program (SIGTARP), was also established by Congress in 2008. Its purpose was to prevent fraud, waste, and abuse of the \$700 billion TARP program. It is a law enforcement agency and submits quarterly reports to Congress.

⁵⁰The committee issued its final report on TARP on March 16, 2011.

⁵¹[G]overnment intervention in the auto sector has been noteworthy for the major restructuring that was required as a condition for receiving government financing” (Congressional Oversight Panel, 2011b, p. 8). As a result of government intervention, “GM and Chrysler are both more viable firms than they were in December 2008” (Congressional Oversight Panel, 2011b, p. 7). GM in particular has been judged to be “on a credible path to recovery” (Congressional Oversight Panel, 2011b, p. 7).

⁵²“Over the longer term, it is highly likely that the assets of these firms—particularly those related to the production of the more successful truck and minivan models—would have been brought back into production by competing firms such as Ford or the international auto manufacturers that build vehicles in the United States” (Congressional Oversight Panel, 2011b, pp. 7–8).

⁵³“Although the TARP seemed originally to target only those companies whose financial operations made them a potential risk to systemic stability, the use of the TARP to support the automotive industry suggests that a company may be considered ‘systemically significant’ merely because it employs a certain number of workers” (Congressional Oversight Panel, 2011a, p. 107).

⁵⁴The panel concluded that “[t]o the extent that success is defined as a return of taxpayer money, it remains somewhat unlikely that all TARP funds invested will be returned” (Congressional Oversight Panel, 2011a, p. 106). In March 2012, the Congressional Budget Office (2012) estimated the loss from the intervention in the auto industry at \$19 billion.

⁵⁵Volkswagen first entered Mexico as a producer during the mid-1960s. (Nissan entered the same year.)

⁵⁶Between 2007 and 2011, GM’s North American production capacity declined by 31 percent, Chrysler’s by 22 percent, and Ford’s by 8 percent. These reductions were not spread evenly across the three NAFTA countries. The Detroit Three’s capacity fell by 19 percent and 30 percent in Canada and the U.S., respectively, but rose by 25 percent in Mexico (authors’ calculations based on data from Ward’s Auto Group, Auto Infobank, online database).

⁵⁷Similar reductions in auto industry capacity were not made in either Europe or Asia.

⁵⁸Here, auto alley is defined as the following states: Wisconsin, Illinois, Michigan, Indiana, Ohio, Kentucky, Tennessee, Mississippi, Alabama, Georgia, and South Carolina.

⁵⁹The count for 2011 includes Tennessee, even though the old Saturn plant located there is not scheduled to reopen until 2012.

⁶⁰However the company’s market share was up noticeably from 14.7 percent in 2008.

⁶¹For example, in 2011 the Chevrolet Cruze, GM’s newly introduced compact car, was ranked sixth among the bestselling cars in the U.S. and second among compact cars, just behind the Toyota Corolla.

⁶²In 2003, for example, according to Sean McAlinden of the Center for Automotive Research (CAR), the cost of labor at Detroit Three assembly plants averaged \$2,530 per vehicle, compared with \$1,260 at foreign-owned assembly plants in the United States. Higher labor costs per vehicle came in part from a wage rate of \$46 per hour at the Detroit Three plants, compared with \$28 per hour at the international plants. The gap also resulted from lower productivity at the Detroit Three plants: It took 55 hours to assemble a vehicle at the Detroit Three plants, compared with 45 hours at the international plants (McAlinden 2008).

⁶³The Detroit carmakers and the union had created the jobs bank as an “employee-development bank” in the 1984 labor contract. “Back then, it was designed as a temporary repository for laid-off workers so they could be retrained for new positions in higher-tech factories. For the UAW, the jobs bank was an ironclad means to provide security for its members when the industry hit a rough patch. What it evolved into, though, was a holding bin for excess workers.” The workers kept getting paid while in the jobs bank; some of them remained there for years (Vlasic, 2011, pp. 108–109).

⁶⁴The 2007 average hourly wage compared with \$17.35 for all U.S. manufacturing. The gap between the UAW rates and the overall average wage rates had grown especially large after 2000 (McAlinden, 2008).

⁶⁵That comparison does not include health care costs. Once the VEBAs were approved, the responsibility for health care costs for retired auto workers lay with those organizations and was off the books of the Detroit Three. Note, however, that the VEBAs have not yet been fully funded by GM and Chrysler (see Schwartz, 2011a).

⁶⁶Ford also demonstrated that by transferring the retiree health benefit obligations to the VEBA, its hourly wage cost would fall to \$58. If the company could replace 20 percent of its projected work force with new employees earning the entry-level wage, its hourly labor costs would come down to \$53 (see Cooney et al., 2009).

⁶⁷A key factor in the variation in labor costs among the Detroit Three is variation in the shares of second-tier wage earners each of them has hired to date. Second-tier wages are about half of what “continuing workers” earn.

⁶⁸Ford regained its investment grade rating from Fitch Ratings on April 24, 2012.

⁶⁹Between 2009 and 2011, both companies also grew their U.S. production faster than the industry as a whole (up 51 percent). Chrysler’s U.S. output rose by 142 percent, and GM’s rose by 59 percent.

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