CHAPTER 2

Crisis and Recovery in the U.S. Auto Industry: Tumultuous Times for a Collective Bargaining Pacesetter

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The auto industry historically has played a prominent pacesetting role in American collective bargaining, introducing many now common features—multi-year contracts with cost-of-living-adjustment escalators and built-in annual real wage increases, supplementary unemployment benefits, "30 and out" pensions, quality of working life programs, and pattern bargaining. From the early 1980s on, automotive labor relations was again at the forefront in taking actions to modify this long-established model, under pressure from both foreign and domestic competitors and from new production methods often linked to team working and related innovative human resource practices.

During these years, labor and management in the auto industry faced a combination of long-term structural factors and periodic sharp cyclical downturns. These pressures resulted in increased diversity and decentralization in collective bargaining outcomes at both company and factory levels and widespread experimentation with new work designs and human resource practices at the workplace. This led to debate within both union and management ranks about the best way to deal with these changes. Japanese, Korean, and European companies also became owners or co-owners (with American company partners) of assembly plants and auto companies in the United States. The fact that virtually all of the assembly plants that were solely owned by Japanese, Korean, or German companies operated without a union introduced the threat of non-union operations to what had been one of the few remaining fully unionized sectors in the American economy.

Then in 2008 and 2009, a crisis of historic proportion hit the U.S. auto industry, particularly General Motors (GM), Ford, and Chrysler, who were already suffering from longer-term market share declines when the crisis arrived. GM and Chrysler went through bankruptcies they were able to escape from only with the help of bailout funds from the U.S. federal government. First facing massive layoffs and plant closings and then the threat of the potential liquidation of one or more of the U.S.-based producers, the United Auto Workers (UAW) agreed to unprecedented concessions that included the transfer of retiree health care liabilities to union-managed funds and a significantly lower-tier wage for new hires. Recent years have seen the recovery of profits and a modest rebound in employment at GM, Ford, and Chrysler. Meanwhile, many other changes have occurred within the U.S. auto sector, including a more prominent role for supplier companies and an increasingly large role for foreign-owned auto plants (that were also put into a vulnerable position during the financial crisis by their dependence on at-risk suppliers).

Before we analyze recent developments in U.S. automotive industrial relations, we first review the industry's distinctive and often innovative history of labor–management relations. In the next section, we describe the unions and the companies involved in automotive labor relations. Subsequent sections focus on the competitive and technological environment affecting the bargaining context for the U.S. automotive industry; the structure of collective bargaining; new developments in collective bargaining from 1979 to the present, with a particular emphasis on the past ten years; and a look at challenges confronting the industry going forward.

THE PARTIES

The Unions

The United Auto Workers (UAW) is the primary union representing workers in the auto industry. The International Union of Electricians (IUE), which recently affiliated with the Communications Workers of America, also represents some hourly workers in the assembly firms (primarily in the electrical products plants of these firms). By the late 1940s, the UAW had organized all hourly workers in the companies that assembled cars and trucks. Until 1985, the UAW was an international union because it included Canadian autoworkers. In 1985, the Canadian autoworkers voted to secede, and a separation agreement was negotiated between the United States and Canadian parts of the UAW to form the Canadian Auto Workers.

The UAW is a large and fairly centralized union. The internal structure of the union includes departments organized along company lines in the auto industry and an agricultural implements department. National union

staff coordinates bargaining within each department and also assist in the implementation of benefits, employee assistance, health and safety, and quality of working life programs.

The central figure in the union over the postwar period was Walter Reuther who along with his brothers was active in the union's sit-down strikes and organizing efforts in the 1930s. Reuther served as president of the UAW from 1947 until his death in 1970. During his tenure, Reuther led a coalition (the Administrative Caucus) that dominated the national affairs of the union, and while he was alive, Reuther's influence and imagination encouraged an innovative spirit within auto bargaining (Steiber 1962). Under Reuther's guidance, the UAW also was very active in national and local politics and a strong supporter of the Democratic Party.

Yet, even with the dominance of the Reuther coalition, the UAW historically has had strong democratic traditions. This was evident, for example in the 1980s and 1990s with the internal debates between Reuther's Administrative Caucus, which explored new forms of work organization and experimented with union–management collaboration, and the more militant New Directions Movement, which espoused a return to more traditional forms of work organization. In 1996, the UAW, United Steel Workers (USW), and International Association of Machinists (IAM) announced plans to merge by 2001. Merger talks, however, stalled (with the IAM pulling out of the process) over disagreements concerning how union officials would be selected (elections versus appointment) and other matters (Bureau of National Affairs 2000).

The UAW continues to be organized in three primary departments aligned with the main domestic companies, even following Chrysler's acquisition by Daimler and then Fiat.[4] When supplier firms spun off from GM, Ford, or Chrysler (Delphi from GM and Visteon from Ford), they were still covered by the UAW department for the parent company.

The Companies

The American assembly companies are commonly referred to as the Big Three—GM, Ford, and Chrysler. We will continue to use this term for consistency and simplicity, even though the creation in 2009 of Fiat–Chrysler means that the "Big Two-and-a-Half" would be more appropriate. More significantly, with growth in the number of foreign-owned auto plants and the increase in U.S. sales by the parent companies of those plants, the competitive situation in the U.S. market increasingly resembles that of Europe, in the sense that there is fierce competition among six or seven original equipment manufacturers, each having 10% to 20% market share, rather than the dominance of domestic automakers that the term *Big Three* implies.

The Big Three produce a number of car and truck parts, and they assemble those parts into final vehicles, although the extent to which the assemblers are vertically integrated (i.e., using parts produced in their own plants) varies. Overall, the trend across all the assemblers is toward much more disintegration (i.e., many fewer parts procured from fully owned suppliers, particularly since the spinoffs of Delphi and Visteon). The Big Three are completely unionized, and their national (companywide) collective bargaining agreements cover the companies' final assembly and parts plants. Table 1 contains basic information about these companies.

Since the early 1980s, there has been a steady stream of foreign investment in the form of U.S.-located assembly plants with Japanese (starting with Honda in 1982), German (BMW in 1994), and Korean (Hyundai in 2005) ownership, referred to in the industry and in this paper as the transplants. Table 2 contains summary information on these plants. Three of the transplants acquired union status by virtue of their joint venture arrangements with U.S. companies [NUMMI (GM–Toyota), Diamond

TABLE 1
U.S. Automotive Companies: North American Assembly Operations

	Assembly plants			
2000 company	U.S.	Canada	Mexico	2000 N. American vehicle production
GM	21	3	3	5,631,771
Ford	16	3	2	4,669,253
Chrysler	11	3	3	2,972,355

	Assembly plants			
2005 company	U.S.	Canada	Mexico	2000 N. American vehicle production
GM	21	3	3	4,565,603
Ford	15	2	2	3,117,305
Chrysler	12	2	2	2,794,546

	Assembly plants			
2010 company	U.S.	Canada	Mexico	2000 N. American vehicle production
GM	11	3	3	2,565,616
Ford	10	2	2	2,328,278
Chrysler	6	2	2	1,571,662

	Assembly plants			
2011 company	U.S.	Canada	Mexico	2000 N. American vehicle production
GM	11	3	3	2,565,616
Ford	9	2	2	2,619,797
Chrysler	7	2	2	1,993,455

Sources: *Automotive News Market Data Book*, various issues; *Ward's Automotive Yearbook,* various issues.

TABLE 2
Japanese, German, and Korean Automobile Assembly Plants (Transplants) Based in the United States and Canada

Company name	Company ownership	Plant location	Production startup	Est. employment in 2010	Output 2000	Output 2010	Output 2011
Honda of America Mfg.	Honda 100%	Marysville, OH	1982	4,315	451,367	340,561	285,258
Nissan Motor Mfg. USA	Nissan 100%	Smyrna, TN	1983	6,700	377,275	282,027	333,392
New United Motor Mfg. Inc.	GM 50%; Toyota 50%	Fremont, CA	1984	Closed*	344,076	90,814	0
Honda Canada Mfg.	Honda 100%	Alliston, ON	1986	4,600	326,823	278,272	232,411
AutoAlliance International	Ford 50%; Mazda 50%**	Flat Rock, MI	1987	3,500	107,431	122,754	116,430
Mitsubishi Motor Mfg.	Mitsubishi 100%	Normal, IL	1988	1,300	221,975	29,375	37,083
Toyota Motor Mfg. (Canada)	Toyota 100%	Cambridge, ON	1988	4,300	183,739	307,698	289,124
Toyota Motor Mfg. (KY)	Toyota 100%	Georgetown, KY	1988	6,900	123,553	371,694	315,889
CAMI Inc.	GM 50%; Suzuki 50% 3	Ingersoll, ON	1989	2,775	107,651	242,929	—
Honda of America Mfg.	Honda 100%	East Liberty, OH	1989	2,230	225,723	246,743	195,304
Subaru-Isuzu Auto Inc.	Fuji Hvy. Ind. 50%; Isuzu 50%	Lafayette, IN	1989	1,315	208,676	245,751	241,175

Sources: *Automotive News*, various issues; *Automotive News Market Data Book*; company websites.
* In 2012, Ford took 100% ownership of this plant.
** In 2009, GM took 100% ownership of this plant.
*** NUMMI closed in 2010 after GM withdrew from the joint venture during its bankruptcy proceedings and Toyota declined to purchase GM's equity share.

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TABLE 2 (CONTINUED)
Japanese, German, and Korean Automobile Assembly Plants (Transplants) Based in the United States and Canada

Company name	Company ownership	Plant location	Production startup	Est. employment in 2010	Output 2000	Output 2010	Output 2011
BMW Mfg. Corp.	BMW 100%	Spartanburg, NC	1994	4,600	38,665	157,703	277,074
Mercedes-Benz U.S.	Daimler-Benz 100%	Vance, AL	1997	4,000	80,005	125,393	127,273
Toyota Motor Mfg. (IN)	Toyota 100%	Princeton, IN	1998	4,600	129,724	243,992	248,659
Honda Mfg. of Alabama	Honda 100%	Lincoln, AL	2001	4,300	—	272,082	264,324
Nissan North America US Mfg.	Nissan 100%	Canton, MS	2003	4,100	—	228,954	229,502
Toyota Motor Mfg. Texas Inc.	Toyota 100%	San Antonio, TX	2003	2,000	—	150,098	147,645
Hyundai Motor Mfg. Alabama	Hyundai 100%	Montgomery, AL	2005	3,000	—	300,500	342,162
Kia Motors Mfg. Georgia	Hyundai 100%	West Point, GA	2009	2,500	—	153,665	282,316
Honda Mfg. of Indiana, LLC	Honda 100%	Greensburg, IN	2010	2,000	—	95,116	81,554
Toyota Motor Mfg. (MS)	Toyota 100%	Blue Springs, MS	2011	2,000	—	—	2,358
Volkswagen	VW 100%	Chattanooga, TN	2011	2,000	—	—	32,259

Sources: *Automotive News*, various issues; *Automotive News Market Data Book*; company websites.
* In 2012, Ford took 100% ownership of this plant.
** In 2009, GM took 100% ownership of this plant.
*** NUMMI closed in 2010 after GM withdrew from the joint venture during its bankruptcy proceedings and Toyota declined to purchase GM's equity share.

Star (Chrysler–Mitsubishi), and Auto Alliance (Ford–Mazda)]. These arrangements have been somewhat fluid; they have been altered at two of these plants since they opened, and NUMMI closed in 2010.[5]

In the three decades since the first Japanese transplant was located in the United States, the penetration of Japanese producers has been dramatic. As of 2012, 15 Japanese car factories operate in North America. In addition to the Japanese facilities, two German transplants started production in the 1990s—BMW in Spartanburg, North Carolina; and Mercedes-Benz in Vance, Alabama. Volkswagen opened the third German transplant facility in Chattanooga, Tennessee, in 2011, returning to the U.S. for the first time since its failed effort at a converted Chrysler plant in Westmoreland, Pennsylvania, which closed in 1988. Hyundai and Kia established their own facilities in Alabama and Georgia, respectively, bringing the total number of foreign-owned factories to 20. Overall, transplant production doubled from approximately two million units in 1990 to more than four million in 2011.

Because of the growth in transplant production, the geography of automotive production has shifted. The initial Japanese transplants in the 1980s were located close to the I-75 interstate highway in states near (or just south of) the Great Lakes Region (Ohio, Tennessee, Kentucky, Indiana, Michigan, Illinois) in proximity to the bulk of the Big Three's facilities. However, since 1994, foreign firms have been choosing locations farther south, albeit still close to I-75 to facilitate supply chain logistics, in Alabama (Mercedes-Benz, Honda, Hyundai), Georgia (Kia), Mississippi (Nissan and Toyota), and Texas (Toyota), as well as further investment in Tennessee (Nissan, Volkswagen). Although Ford, GM, and Chrysler all had factories in that region, many of those factories have since closed; also now closed are all Big Three assembly plants on the East and West Coasts.

Overall, although the east–west dispersion of automotive manufacturing was dramatically reduced, north–south dispersion was greatly increased such that many new foreign-owned plants are located far from areas with substantial histories of unionization. This combination of geographical separation and location in historically non-union states poses substantive challenges for the UAW's efforts to organize the newer transplants.

Although the UAW has launched various organizing drives in unorganized transplants in recent years, none of these drives has come close to being successful. The UAW, for example, tried to unionize Nissan workers in Tennessee in 1997, and then again in 2001, but soundly lost both representation elections (receiving only 32% of the vote in the 2001 election) (Bureau of National Affairs 2001). Despite these losses, UAW efforts to organize the transplants continue. In the case of Nissan, it shifted its focus to the newer Mississippi plant, trying (unsuccessfully) to unionize the facility in 2005 and 2007.

As a result of the employment and market share declines occurring at the Big Three and the union's inability to organize the transplants and many of the independent supplier companies (described more fully later), UAW membership has declined significantly. In 1979, the UAW's membership peaked at 1,527,858 members. The union had 654,657 members as recently as 2004. As of 2011, the UAW had 380,719 members, a reduction of 75% over 33 years (Bureau of National Affairs 2012).

THE BARGAINING CONTEXT

The Competitive Environment

From 1946 until 1979, the auto industry in the United States was on a prosperous growth path, even in the face of the industry's periodic sharp cyclical swings. Over those years, domestic production of cars and trucks increased from 5 to 13 million vehicles. This economic environment was conducive to steady improvements and general stability in labor relations. Three environmental factors were critical—growth in domestic auto sales, a low level of imported vehicle sales, and a high degree of unionization. Yet, in the early 1980s, labor and management that had grown accustomed to long-run growth in total vehicle sales and profits were confronted by a number of fundamental changes in the auto market.

One important aspect of the change was an increase in international competition in the form of increased vehicle imports. The level of imports increased steadily during the 1960s and 1970s from a postwar low of 5% in 1955; surged during the 1980s; declined in the 1990s as Japanese, Korean, and German companies increased their North American production capacity; and rose again as the sales of foreign models only available as imports grew. The market share of these foreign automakers, based on sales of both imported and locally manufactured products, has increased steadily from less than 10% of the market in the mid-1960s to more than 50% today. As shown in Table 3, the North American market share of the Big Three plummeted from close to 70% at the turn of this century to 47% in 2011, with a large chunk of the lost market share going to Japanese and non-Japanese transplants.

Sizable cyclical swings buffeted the auto industry from the early 1980s through the arrival of the new millennium. The industry experienced a sharp downturn in the early 1980s, a sales rebound in the late 1980s, another downturn in the early 1990s, and a sales/profit recovery in the mid- and late 1990s. Following the attacks of 9/11/2001, automotive sales helped lead an economic recovery, spurred by extensive sales incentives, driving the U.S. industry to record annual sales of nearly 17 million in 2005. During these swings, industry employment rose and fell along with vehicle sales and production. Then in 2008 and 2009, the U.S. auto industry was hit with its biggest downturn ever as a consequence of the

TABLE 3
U.S. New Vehicle Sales of American Automakers, Japanese Transplants and Imports, and Total Imports, 1991–2011 (in 1000s)

	American automakers					
Year	Sales	Total sales (%)	Japanese transplants production	Other transplants production	Japanese imports sales	Total imports sales
1991	8,672	70	1,312	19	1,862	2,567
1992	9,279	72	1,438	17	1,698	2,337
1993	10,247	73	1,644	15	1,575	2,158
1994	10,998	73	1,921	73	1,597	2,145
1995	10,764	73	2,036	100	1,337	1,908
1996	10,990	72	2,310	130	1,127	1,714
1997	10,788	71	2,301	147	1,271	1,947
1998	10,93	70	2,409	243	1,310	2,036
1999	11,731	69	2,586	293	1,500	2,494
2000	11,582	67	2,818	337	1,619	2,868
2001	11,042	65	2,922	325	1,659	3,079
2002	10,598	63	2,882	297	1,772	3,292
2003	10,281	62	3,071	266	1,737	3,310
2004	10,135	60	3,483	209	1,677	3,395
2005	9,868	58	3,735	294	1,743	3,402
2006	9,060	55	3,627	441	2,146	3,692
2007	8,402	52	3,744	487	2,223	3,753
2008	6,346	48	3,241	423	2,043	3,375
2009	4,656	45	2,764	413	1,484	2,721
2010	5,228	45	3,454	737	1,403	2,669
2011	5,996	47	3,020	1,029	1,433	2,792

Sources: *Ward's Automotive Yearbook*, various issues; *Automotive News Data Center*.

financial crisis. Total car and truck production in the United States plummeted from 10.8 million in 2007 to 8.7 million in 2008 and ended at a low of 5.8 million in 2009. By 2011, the production levels were back to the 10.8 million of 2007, but close to 40% of that now represents foreign transplant production.

Also significant for collective bargaining in recent years has been the formation of more extensive linkages between the assembler companies

and their parts suppliers. Most assemblers dramatically reduced the number of their parts suppliers and initiated longer-term contracts with the select group of suppliers that remained. In the late 1990s, GM and Ford spun off their internal parts plants into separate companies, Delphi and Visteon, respectively. Other first-tier suppliers have also grown through merger and acquisition, forming (along with the Big Three spinoffs) a new class of mega-supplier capable of designing, building, and handling the complex logistics for major modules or subsystems of the vehicle. These mega-suppliers are primarily non-union, with some exceptions, although the UAW is devoting considerable organizing resources to change this situation. The collective bargaining implications of these spinoffs and the emergence of the mega-suppliers are discussed later in this chapter.

Partially as a result of the spinoff of supplier divisions but also as a result of a strong trend in the direction of outsourcing, employment at supplier plants has increased dramatically since the 1980s, at the expense of employment at vehicle assembly plants. Auto parts employment grew 61% from 1980 to 2000, while over the same period, employment fell just 3% at auto assembly plants (Katz, MacDuffie, and Pil 2002). However, the ratio of assembly production workers to supplier production workers dropped steadily over this period, from 0.94 (1980) to 0.57 (2000), with further decline to 0.39 by 2012. Interestingly, this shift in employment has not been accompanied by a commensurate closing of the gap between auto assembler and parts sector wages, as shown in Table 4. The pressure on wages from the non-union parts sector, which is now larger than the unionized sector, is the primary reason behind this persistent differential (the difference in benefits received by workers in the assembly and parts sectors, although difficult to quantify, are likely much larger).

Plant-Level Performance Differentials

In the face of heightened competition, the Big Three and the UAW made substantial changes in their industrial relations practices from the early 1980s on. An important force for change was the perception that Japanese-owned plants, both in Japan and in the United States, had substantial productivity and quality advantages over the typical Big Three plant because of their use of lean production, a system developed by Toyota and used to varying degrees by all Japanese companies.

Lean production is described as combining a different way of thinking about production goals (quality and productivity as mutually attainable, not a trade-off) with new production methods aimed at boosting efficiency through the elimination of waste (reducing buffers through just-in-time inventory systems; "building in" rather than "inspecting in" quality) and human resource practices aimed at motivating workers and developing

TABLE 4
Employment and Wage Data for US Auto Assembly and Parts Sectors, 2003–2012

	Assembly employment			Parts employment					
Year	Production employees	All employees	Assembly hourly wage ($)	Production employees	All employees	Parts hourly wage ($)	CPI	Assembly real wage ($)	Parts real wage ($)
2003	227,800	277,000	27.96	556,300	693,100	20.19	184.500	15.15	10.94
2004	219,100	268,300	28.90	552,700	682,700	20.84	191.000	15.13	10.91
2005	201,400	250,000	29.59	540,400	658,200	21.90	197.600	14.97	11.08
2006	187,600	234,400	28.87	517,500	640,800	21.11	201.500	14.33	10.48
2007	179,300	223,000	29.65	482,400	597,000	20.66	210.177	14.11	9.83
2008	146,000	186,900	28.67	403,900	517,000	21.09	212.425	13.50	9.93
2009	109,600	139,900	27.97	326,300	421,800	20.82	216.330	12.93	9.62
2010	109,300	138,100	29.55	343,300	443,500	20.85	218.803	13.51	9.53
2011	131,600	165,500	28.02	349,700	453,900	20.40	226.230	12.39	9.02
2011	138,400	172,500	28.13	356,900	470,200	19.89	229.815	12.24	8.65

Sources and notes:

The assembly data refer to SIC 3711 (NAICS 3361), while the parts data refer to SIC 3714 (NAICS 3363).

2003–2011 Employment and hourly wage data: January issues of *Employment and Earnings*, U.S. Department of Labor, Bureau of Labor Statistics, previous year's November data.

2012 Employment and hourly wage data: June issue of *Employment and Earnings*, month of May's data.

2003–2006 data can be found online at http://fraser.stlouisfed.org; 2007–2012 data can be found in *Employment and Earnings* publications

CPI data can be found at http://tinyurl.com/rdx83a

2003–2011: November CPI data; 2012: May CPI Data

The real wage figures are derived by dividing the Assembly Wage and Parts Wage columns by the CPI numbers.

their skills (work teams; job rotation; problem-solving groups; increased worker training; performance-based bonus pay; reduction of status barriers) (Womack, Jones, and Roos 1990; MacDuffie 1995). Underpinning the entire system is the idea of *kaizen*, or continuous improvement in production processes and in productivity and quality outcomes. According to this model, buffer reduction reveals production problems and creates the pressure to solve them. This gives management an incentive to develop worker skill and motivation and to encourage extensive worker participation in the improvement process; workers in turn may be willing to participate if they perceive this activity as contributing to their employment security through achieving better quality and productivity and if it improves their job design and boosts pride in their work.

The identification of lean production as the source of Japanese competitive advantage represented an important shift away from Japan-specific explanations based on factors such as lower wage rates, longer working hours, cooperative enterprise unions, lifetime employment, and cultural differences. Data from M.I.T.'s International Assembly Plant Study indicated that the transplants, using American workers, engineers, managers and (at some plants) union officials, achieved performance results, in terms of both productivity and quality, that matched or surpassed most American plants (Krafcik and MacDuffie 1989; Pil and MacDuffie 1999).[6]

Furthermore, the source of the transplants' performance advantage appeared to be their implementation of lean production methods very similar to those used in plants in Japan (Shimada and MacDuffie 1987; Florida and Kenney 1993). However, these practices have been adapted to the U.S. context (Pil and MacDuffie 1999).

This view of lean production has been challenged on two points. Some researchers question whether lean production is indeed a distinctive paradigm with performance advantages, pointing to industry- and company-level statistics on inventory levels and financial performance that show only modest variation across U.S. and Japanese companies (Williams, Haslam, Johal, and Williams 1994). According to these researchers, any Japanese or transplant cost advantages are due to lower wages in the various tiers of the supply system.[7] Other accounts of the transplants develop a broader critique of lean production, arguing that it is dependent on sweating workers through a faster work pace, rigid job standardization, intensive peer pressure for higher work effort within teams, and continual stress from the lack of buffers and from *kaizen* efforts to remove work content from jobs (Parker and Slaughter 1988; Babson 1995).

Overall, the data show that while the idea of lean production as a new production paradigm capable of superior performance has taken hold strongly among corporate management at the U.S. companies, the implementation of lean production at U.S. plants has been relatively slow, and

it varies for different aspects of this system. Most quickly adopted have been lean production policies on the reduction of buffers. The pace of implementation of new human resource practices has been slower, particularly in cases where new work structures such as teams are being implemented at existing plants.

In recent analyses, we have shown that automakers can attain productivity levels of under 18 hours per vehicle and decent quality at their assembly plants using what we term an efficient mass production approach. These productivity levels are on par with those of factories that recently adopted lean manufacturing practices, and quality levels of 40 defects per 100 vehicles are approaching the average of 30 defects per 100 vehicles attained by experienced lean factories. The main hallmark of this approach rests in reducing inventory levels, increasing automation levels, and reducing buffers (MacDuffie et al. 2013). However, a further important prerequisite is a great reduction in product variety at each plant, which includes reducing engine and transmission variations and limiting color options. Efficient mass production plants thus achieve productivity through lower manufacturing complexity but in turn may lack the capabilities for handling high levels of product variety and the flexibility to adjust production mix when demand shifts. This choice may have competitive implications where these plants compete with more fully flexible, high variety plants in the United States and elsewhere. The fact that many U.S. assembly plants fall into this efficient mass production category also calls into question past predictions that the industry would largely converge on the Toyota/lean production prototype.

One of the key performance criteria that companies will have to deal with in years ahead, as noted previously, is organizational flexibility to deal with production variability. As more content shifts out of assembly factories through outsourcing, and as efforts continue to increase the responsiveness of manufacturing to customer demand through build-to-order initiatives, flexibility in terms of production volumes will become increasingly important. Vehicle sales vary dramatically during the course of the year, and the current solution of maintaining between one and two months of finished goods inventory in the distribution system is under increasing cost and competitive pressures as customers seek more customized products.

Although increased sales incentives and other tools can be used to even out customer demand during the course of the year, another avenue is to increase manufacturing flexibility (Holweg and Pil 2001, 2004). Currently, plants face very high fixed costs, and per-unit costs increase dramatically as production volumes drop. Indeed, it costs the average North American plant 84% of full-capacity costs to run at half-capacity production levels for a week. It is slightly cheaper to produce at half capacity for a full year

but doing so still costs almost 77% of full-capacity costs. Labor represents an important source of rigidity in reducing production (overcapacity situations are typically handled with overtime), and layoffs seem to be the primary solution. This is true, even for some of the transplants; for example, the Mitsubishi–UAW contract for the Normal, Illinois, plant had an explicit no-layoff provision.

There are few provisions in place, either at transplants or at the Big Three, to alter labor levels more flexibly in response to shifts in demand. During the auto sales boom of the 1990s, that was not a big issue because plants often ran close to full capacity. However, the Big Three were slow to make the investments necessary to adjust production mix or volume at their North American plants to deal with demand volatility and shifting customer preferences. Right up until the massive sales downturn in 2008 and 2009, these automakers had some factories running extensive overtime, while others were operating well under capacity. Even after restructuring and dealing with overcapacity problems, the Big Three still have a long way to go to be as flexible, both technologically and in terms of the organization and workforce, as their competitors. Various experiments in production flexibility are under way overseas. These include the banking of hours when labor demand is low and using those hours at a later date without incurring overtime. The models now in vogue in Europe typically limit the number of hours that can be banked or withdrawn in any one time period, specify the length of time that banked hours can be held, and provide an agreed-upon compensatory payment if no work-hour reductions follow a period of overtime.[8]

In contrast, the Big Three auto companies, like other large U.S. manufacturing firms, have little flexibility in altering their labor use during the course of the year (short of layoffs). Most of management's efforts are centered on increasing capacity utilization rather than managing reductions in demand. The most common approaches are to run plants for three shifts or to use three crews of workers to run two shifts six or seven days a week.

These issues warrant attention because production (and labor relations) flexibility may emerge as a key source of international comparative advantage (or disadvantage) in the years ahead.

Mergers and Co-Production

Consolidation between the auto assembly companies, including mergers and co-production agreements, became a strong trend around the globe in the late 1990s. Ford—already the owner of Jaguar and Aston Martin and with a controlling equity share of Mazda—bought Volvo and Land Rover. GM purchased the 50% of Saab that it did not already own,

increased its equity stakes in Isuzu, Suzuki, and Fiat, and purchased Daewoo out of bankruptcy in 2001. In Europe, French-based Renault purchased a controlling equity stake in Nissan and Samsung, and Germany-based Volkswagen bought Bentley, with BMW claiming the Rolls-Royce brand. In Korea, Hyundai took over Kia and became by far the dominant firm in both domestic and export sales.

Daimler-Benz also increased its stake in Mitsubishi, leaving Honda and Toyota as the only two fully independent Japanese automakers. Even Honda and Toyota, while asserting their independence, became more intertwined with the fate of other firms, with Honda beginning to sell engines to GM and Toyota, embarking on a joint venture plant and product in Europe with Peugeot, and taking a small (under 10%) stake in Subaru. All of those firms remained unionized in their home countries throughout this period of consolidation, although the foreign firms with assembly plants in the United States remained non-union.

Despite the initial enthusiasms for consolidation, things rapidly fell apart for the Big Three when the auto market collapsed in 2008. Ford was forced to divest its ownership of Aston Martin, Jaguar, Volvo, and Land Rover, as well as most of its stake in Mazda. GM had to abandon Saab (which disappeared after bankruptcy) and divest its stakes in Fiat, Isuzu, and Suzuki. Both GM and Chrysler were forced into bankruptcy. GM re-emerged as a stand-alone entity. Chrysler, in contrast, emerged initially as a new entity jointly owned by Fiat, the U.S. and Canadian governments, and the UAW's retirement health care trust, a voluntary employee beneficiary association (VEBA). After several months, Fiat purchased the government stake and then started purchasing shares from the VEBA, effectively becoming Chrysler's largest owner. We will discuss the implications of the crisis in more depth later in this chapter. However, it left the Big Three with few of the global partners they had entered into relationships with only a decade or so earlier. And in the process of rationalization, in-house brands were not spared, with the crisis-driven restructuring causing the elimination of Saturn, Pontiac, and Oldsmobile for GM, Mercury for Ford, and Plymouth for Chrysler.

THE STRUCTURE OF COLLECTIVE BARGAINING

Pattern Bargaining

Prior to 1979, the U.S. auto bargaining structure involved very strong pattern-following within and across the auto companies. From the early 1980s on, however, the degree of pattern-following has declined across the Big Three, and cross-company variation has increased with the entry and then growth of the transplants.

In the traditional bargaining structure that prevailed at the Big Three, compensation is set by national, company-specific multi-year agreements (from 1955 to 1999 they were for three years; the most recent, four years). Some work rules such as overtime administration, employee transfer rights, and seniority guidelines are also set in the national contracts. Local unions, in turn, negotiate plant- level agreements, which supplement the national agreements. These local agreements define work rules such as the form of the seniority ladder, job characteristics, job bidding and transfer rights, health and safety standards, production standards, and an array of other rules, that guide shop-floor production. The local agreements do not regulate wages or fringe benefits, which are set in the national contract. Some indirect influences on wage determination, however, do occur at the plant level in the definition and modification of job classifications provided through the local agreements.

Local bargaining over work rules allows for the expression of local preferences and some adjustment to local conditions. In this system, the grievance procedure with binding third-party arbitration serves as the end point of contract administration, although disputes concerning production standards, new job rates, and health and safety issues are not resolved through recourse to arbitration.

The influence of the agreements reached in the auto assembly firms has traditionally extended out to the auto supplier sector and beyond. The UAW, for example, has used the auto assembly agreements as a pattern setter in their negotiations in the agricultural implements industry. Other unions, especially those linked to auto production such as the rubber industry, also looked to the contracts in the auto assembly firms as pattern setters. From the early 1950s until the late 1970s, the extent of inter-industry pattern-following varied somewhat over time, but generally it continued at a high level. In the 1980s, the pattern-leading role of the Big Three settlements declined (Budd 1992).

The Bargaining Process: Wage Rules and Fringe Benefit Determination

From 1948 until 1980, formulaic mechanisms were used to set wage levels in collective bargaining agreements in the Big Three. The formulaic wage-setting mechanisms traditionally included in the contracts were an annual improvement factor (AIF) that after the mid-1960s amounted to 3%per year, and a cost-of-living adjustment (COLA) escalator that often provided full or close to full cost-of-living protection.

The importance of these formulaic mechanisms was that they provided continuity in wage determination over time, and across the assembly companies at any given point in time. The continuity over time was provided by the fact that, except for minor adjustments, the formula mechanisms rigidly set wages from 1948 until 1979 among the Big Three

companies.[10] Continuity across the industry was provided by intercompany pattern-following and by the fact that in the plants covered by the company agreements, the national contract wage was not modified in local bargaining.

Along with increases in real hourly earnings, autoworkers received steady improvements in their fringe benefit package. A number of these fringe benefit advances such as supplementary unemployment benefits, "30 and out" pensions, and paid personnel holidays were innovations that eventually spread to the auto supplier firms and to a number of other industries. Over the postwar period, fringe benefits became a larger share of total worker compensation.

Job Control Unionism

At both national and shop-floor levels, the labor relations system in the Big Three traditionally relied on contractually defined procedures to regulate disagreements between labor and management. The contractual regulation of these procedures was heavily focused on "job control."[11] Wages were explicitly tied to jobs and not to worker characteristics. In addition, much of the detail within the contract concerns the specification of an elaborate job classification system with much attention paid to the exact requirements of each job and to seniority rights that were tied to a job ladder guiding promotions, transfers, and layoffs (Piore 1982).

From the late 1940s until the late 1970s, the application of wage rules and job control unionism produced steadily rising real compensation to autoworkers and long-term growth in auto employment and production. With limited import penetration in auto sales, this was a bargaining process in which the geographic bounds of union organization closely matched the relevant product market. The consistency the bargaining process had with the economic environment was one of the primary factors contributing to the system's attractiveness to both labor and management. Important political functions for labor and management also were served by the stability and continuity in the auto negotiation processes.

DEVELOPMENTS IN COLLECTIVE BARGAINING FROM THE EARLY 1980S ON

Wages

As import share rose in the 1980s and economic recession took hold, the total bargaining power of labor and management at the Big Three auto companies declined, and the contracts negotiated in the early 1980s reflected this power decline. In addition, the relative bargaining power of the UAW was weakened by such factors as the rise in imports, the ease by which the companies could move production offshore, and the erosion of strike leverage resulting from excessive production capacity.

In collective bargaining at the Big Three, the wage rules traditionally used to set wage levels were modified significantly, first as part of efforts to avoid bankruptcy at Chrysler in 1979 and 1980. In agreements reached at the Big Three after 1979, the traditional formulaic wage rules were replaced by lump sum increases, periodic base pay increases, and profit sharing.[12] With respect to fringe benefits, the agreements reached at the Big Three after 1979 included a number of concessions.

The introduction of profit sharing received much attention in the press, particularly in light of the traditional pattern-setting role the auto assemblers have played in American collective bargaining. The payouts of the profit-sharing plans adopted in the Big Three from 1983 on have varied substantially, in large part because of differences in the financial performance of the companies. The profit-sharing payouts between 1983 and 2012 at Ford, GM, and Chrysler, respectively, totaled $61,790, $32,171, and $51,385 (Table 5). From 2001 until 2009, as shown in the table, profit-sharing payouts were either nil or insignificant. With the recovery of the Big Three over the past two years, significant payouts returned. The level of the payouts and the variation in profit-sharing payouts received by workers across companies were the source of some controversy within the workforce and the UAW. Meanwhile, the companies were concerned about the possibility of unusually large profit-sharing payouts in the future as a result of their strong financial recovery. This led to serious focus on the profit-sharing plans in fall 2011 bargaining and substantial modifications of the various plans in the contracts negotiated and signed at that time.

Income and Employment Security Programs

The contracts at the Big Three after 1979 also included a number of new income and job security programs—programs that were induced by the layoffs and plant closings occurring at the Big Three. These programs include guaranteed income stream benefits, joint national employee development and training programs at each company funded by company contributions, and jobs bank programs protecting workers displaced by causes unrelated to the market (i.e., sales). A worker's seniority heavily influenced the level and duration of benefits he or she received in these programs, although the specific benefit criteria varied across the programs.

Big Three contracts from 1990 on provided extensive additions to the income security package. A significant new element in these contracts was the provision that workers could not be laid off for more than 36 weeks *whatever the cause*. The contracts also include guaranteed employment levels at each Big Three plant. The companies agreed to replace workers at rates that depend on whether a plant is above or below its employment target and the cause of any employment declines. The basic

TABLE 5
Big Three Average Worker Profit-Sharing Checks, 1983–2012

Year	Ford ($)	GM ($)	Chrysler ($)
1983	402	605	0
1984	1,993	515	0
1985	1,262	329	0
1986	2,177	0	500**
1987	3,762	0	500**
1988	2,874	242	725
1989	1,025	50	0
1990	0	0	0
1991	0	0	0
1992	0	0	425
1993	1,350	0	4,300
1994	4,000	550	8,000
1995	1,700	800	3,200
1996	1,800	300	7,900
1997	4,400	750	4,600
1998	200	6,100	7,400
1999	8,000	1,775	8,100
2000	6,700	800	375
2001	0	0	0
2002	160*	940	460
2003	195	170	0
2004	0	195	1,500
2005	0	0	650
2006	0	0	0
2007	0	0	0
2008	0	0	0
2009	450	0	0
2010	5,000	4,300	750***
2011	6,200	7,000	1,500
2012	8,300	6,750	2,250
TOTAL	61,790	32,171	51,385

Sources: Unpublished table prepared by the UAW Research Department, February 8, 1995; various news stories in the Daily Labor Report, Bureau of National Affairs; and the 2007 Chrysler Media Briefing Book.

*Ford made this payment despite losing $980 million.

**Chrysler workers received a $500 contractual payment not tied to profits.

***Chrysler workers received $750 despite Chrysler not earning a profit after interest expenses and restructuring obligations.

guarantee was that for every two workers that leave because of attrition, one new worker was to be hired.

A key factor that loomed in the background that influenced the workings of the employment guarantees and the companies' efforts to improve productivity was the fact that the workforces at all of the Big Three had substantial seniority because there had been limited new hiring among these firms since 1979.

All of these trends intensified significantly after 2001 as the influence of the Big Three and the UAW over labor relations in the U.S. auto industry declined. The beginning of the new century saw the Big Three face declining market share coupled with the failure of the UAW to organize the transplants or make significant inroads into organizing the non-union independent supplier plants. Market share declines along with steady productivity increases led to sizeable declines in employment levels at the Big Three firms and a weakening of the historic role the UAW had played as a pattern setter in the wider auto sector and general U.S. labor market.

The UAW agreed to massive redundancies in the companies' workforces from October 2005 through 2009 that were achieved largely through voluntary severance and early retirement plans. For example, internal data from Ford reveal that the number of hourly workers at Ford fell from 102,907 in 2000 to 40,274 in 2009.[14]

It is revealing that, although the UAW was agreeing to pay concessions, the union still had a sizeable amount of relative bargaining power, despite facing a sharp decline in employment levels and deterioration in the financial strength of the Big Three (and associated declines in the union's total bargaining power). The union's relative power derived from the weakened financial state of the Big Three made the companies especially vulnerable to strike threats, which if exercised, would likely have led to their collapse. The UAW used this relative bargaining power to negotiate extensive severance and retirement options for its now largely aged workforce.

Especially noteworthy were the changes made to medical care benefits during the 2007–2009 crisis. In their 2007 company-level collective bargaining agreements at GM, Ford, and Chrysler, under the pressure of significant layoffs and plant closings and facing the threat of potential corporate bankruptcies, the UAW accepted the creation of VEBAs to fund retiree health benefits. A VEBA is a form of trust fund whose sole purpose is to provide employee benefits. In December 2009, for example, Ford transferred all retiree health care liabilities to the UAW Retiree Medical Benefits trust (a VEBA), paying a total of $14.8 billion as part of this transfer. The creation of VEBAs for retiree medical benefits also helped clarify and solidify the auto companies' financial situations by removing

the retiree health obligation from their financial books. VEBAs also put authority for benefit levels in the hands of boards made up of a combination of UAW appointees and outside trustees. Furthermore, the stock transfers associated with funding of VEBAs gave the UAW significant ownership stakes in GM and Chrysler.

The benefit package in the Big Three–UAW collective bargaining contracts came under particular pressure as the legacy costs associated with pensions and retiree health care were criticized in the popular press as well as by corporate managers. These costs were high in part because the large number of retirees relative to active workers, given the declines that had occurred in the size of the Big Three workforces. (It is worth noting that pensions and retiree health plans are part of the private benefit system that prevails in the United States, in contrast to the more public provision of these benefits common to many other countries.)

The U.S. auto legacy costs were criticized as the key source of the competitive cost disadvantage the Big Three faced vis-à-vis the transplant companies. The latter were advantaged by more limited benefit plans, younger current workforces, and very few retirees. Internal data from the Ford Motor Company showed total average hourly labor costs of $58.12 in 2010, including a base hourly wage of $29.11, overtime costs of $3.36 per worker hour, and fringe benefit costs of $25.64 per worked hour. Ford also claimed that the amortized costs of the Ford VEBA added an additional $12 per hour to average hourly labor costs. In contrast, Ford internal data suggested that the base average hourly earnings at the transplants was between $24.70 and $29.72 per hour in 2009 and that the cost of fringe benefits paid to the transplants' hourly workers in the United States averaged $13.50 to $18.29 on an hourly basis.

THE BANKRUPTCY AND GOVERNMENT BAILOUT OF GM AND CHRYSLER

The global financial crisis of 2007 through 2009 led to even more dramatic changes in the profile of the U.S. automobile industry. The crisis amounted to a "perfect storm" in that the effects of ongoing structural changes in the auto sector (Big Three market share declines and the growth of transplants and non-union suppliers) were exacerbated by a sharp cyclical downturn in auto sales that itself was greatly intensified by the credit crisis affecting the United States. The credit crisis had particularly large effects on auto sales, which plummeted because of the increased role that car loan securitization had come to play in auto purchases and the sudden collapse of securitization markets that came with the U.S. housing market collapse. As shown in Table 4, employment in the auto sector (NAICS 3361 and 3363, all employees) fell from 970,100 in 2003 to a low of 561,700 in 2009 (a decline of 42%). The employment losses at the Big

Three were even larger and were associated with massive profit losses at the three companies. For example, Ford lost, respectively, $17.0 billion, $5.0 billion, and $11.8 billion in 2006, 2007, and 2008. Meanwhile, GM suffered an even greater loss of $38.7 billion in 2007.

By June 2009, two of the Big Three American car manufacturers (GM and Chrysler) had filed for bankruptcy and emerged as new companies with significant government ownership. In addition, Fiat became a co-owner of Chrysler. Ford managed to avoid similar bankruptcy and government ownership because it had arranged large private loans before the financial collapse. Ford raised $23.5 billion in liquidity, consisting of $18.5 billion of secured debt, which was backed by virtually all of the company's domestic assets, and $5 billion of unsecured debt.

Under pressure from the U.S. government to bring labor costs to the lower levels found in the transplants and fearing the potential liquidation of GM and Chrysler, the UAW agreed to unprecedented concessions. These concessions included a lower wage for new "non-core" hires ($14 per hour versus the $28 per hour received by then current UAW workers), the end to the much maligned jobs banks, a pay freeze for current workers, and six-year collective bargaining agreements that included no-strike and binding interest arbitration provisions.[15]

The no-strike and binding interest arbitration provisions came as part of the legislation authorizing the Troubled Asset Recovery Program (TARP) bailout of GM and Chrysler. The language approved by the U.S. Congress and accepted by the companies and the UAW reads:

> Upon expiration of the 2007 agreement, the parties will enter into a new National Collective Bargaining agreement which will continue in full force and effect until September 14, 2015. Unresolved issues remaining at the end of negotiations on the 2011 renewal of the 2007 Agreement shall be resolved through binding arbitration with wage and benefit improvements to be based upon General Motors maintaining an all-in hourly labor cost comparable to its U.S. competitors, including transplant automotive manufacturers. (UAW General Motors Settlement Agreement, Addendum to 2007 GM-UAW National Agreement, p. 6)

Interestingly, in November 2009, workers at Ford rejected tentative contract modifications that would have included similar no-strike and interest arbitration provisions. A revised 2007–2011 Ford–UAW contract that excluded those two terms was eventually accepted by the Ford workforce.

When the new lower entry tier was created in the company-level collective bargaining agreements in 2007, the lower tier was limited to so-called non-core jobs (and three specific job classifications). This restriction did not last long. As stipulated in the contract modifications negotiated in spring 2009 at each of the three companies, *all* new hires from that point on are being hired into the lower pay tier.

Furthermore, the UAW agreed to allow certain other workers who would otherwise work at the regular base pay rate (and receive the regular expansive fringe benefit package) to be transferred to the lower-tier pay level. For example, the May 2009 modifications to the 2007 UAW–GM agreement included language stating, "It is understood that the compact and small car segment is extremely competitive and in order for the company to consider investing in producing such vehicles in the U.S., innovative labor agreement provisions will have to be put in place so that such production can be done profitably under what may be extremely challenging market conditions" (Bureau of National Affairs 2010). Making use of this language, at the GM Orion assembly plant, a number of current workers on layoff status were called back to work on the assembly of a new small car (the Aveo) at the lower-tier pay level.[16]

Although the UAW obviously values the hiring (or recall) of workers, it faces a difficult choice regarding how far it is willing to accept employment at the lower tier of pay. For one thing, as the use of the lower tier of pay spreads, it is ever more difficult for the union to defend the higher pay tier or bargaining in subsequent rounds of negotiations for increases to regular-tier worker wages.[17] Potentially even more worrisome for the UAW is the fact that the creation of a growing lower tier of workers creates intense political pressures inside the union, especially within local unions if lower-tier workers become a sizeable share of the workforce.[18]

The Increase in Diversity and Decentralization

The pay concessions and the move to contingent compensation schemes that tied wages to company performance increased the variation in employment conditions across the auto assembly companies. The profit-sharing payments received by workers at the Big Three from 1983 to 2011, listed in Table 5, were one aspect of this variation. In addition, sizeable pay variation was created through the addition of the unionized transplants and the wage and benefit policies at the non-union transplants.

Sizeable variation also now appears in the work practices used in unionized auto assembly plants because work rules and work organization have been modified in different ways and at a varied pace across auto assembly plants. The threat of increased employment loss resulting from increased foreign sourcing of vehicles, plant closings resulting from excess capacity,

and outsourcing of certain operations, all created pressure to lower costs and improve product quality. Ultimately, the pressure for increased interplant work rule divergence came from the same source as the pressure for intercompany pay variation—the fear that even greater losses in employment would result if previous policies were maintained. Companies often used investment decisions as explicit leverage for these changes, a strategy that unions perceived as whipsawing (i.e., forcing plants to compete against each other through concessions).

The traditional work system in assembly plants involved numerous job classifications, a very heavy and highly structured role for seniority rights in job assignments (transfers, promotions, shift preferences etc.), and a clear separation in the responsibilities of workers and managerial employees. The team-based approach, in contrast, provides greater and broader responsibilities to the blue-collar workforce, in many instances involving workers in production decisions, and in some cases, even in basic business decisions. The core of this approach is the work team, typically led by an hourly team coordinator. As the use of teams has spread, the number of supervisors has been reduced and the role of the remaining supervisors has shifted to a coaching and facilitating role (although discipline did remain a key function of supervision).

The pace at which this team-based approach has spread varies across the Big Three. GM was the first automaker to experiment extensively with this approach in the 1970s by using initially non-union strategy plants in the South as a testing ground for the concept. In the early 1980s, GM started spreading the team approach in its northern assembly plants. By the late 1980s, GM management often made use of a team approach a necessary precondition for the survival of what were then often redundant facilities. Ford and Chrysler were more gradual in their implementation of the team-based approach in part because neither was building new assembly plants in the 1980s and 1990s (and thus did not have the opportunity to experiment in greenfield sites) and in part because the GM experience of introducing teams in existing (brownfield) plants had not always worked out so well (Katz, Kochan, and Keefe 1987).

Yet from the early 1990s on, even at a number of Ford and Chrysler assembly plants, management was pressuring the union and workforce to move to a team-based approach. Both Ford and Chrysler management began pushing what they referred to as modern operating agreements (MOAs), which included teams, reduced job classifications, and weakened seniority rights. MOAs were often negotiated at a time when corporate decisions were being made about investment in a new product or new technology for a given plant; some were approved only under the threat of plant closure. The provisions of MOAs were negotiated centrally by the

company and the UAW and then approved locally, creating some tensions between the national and local unions.

Despite these varied and often difficult founding conditions, however, evidence from the Chrysler MOA plants suggests that as workers gained experience working in teams, the majority became quite positive about these work reforms. Ultimately, the actual experience of working under the MOA work reforms was more important in shaping worker responses than the forcing strategy used during implementation to overcome the barrier of workers' negative preconceptions (Hunter, MacDuffie, and Doucet 2002).

Substantial variation is now widespread in how teams and other features of this approach are actually being implemented. A number of the Big Three plants do not implement teams or small group activities to any noticeable extent. Furthermore, in team plants, there is wide variety in the procedures used to select team leaders and the role that hourly team members exert in that selection process.

The existence of teamwork organization is part of a deepening of worker involvement in managerial roles and activities. Yet, in many other ways not directly linked to teams per se, workers and union officials are playing an increasing role in plant operations and other business decisions. In broad terms, these activities blur the lines between the roles that workers and managers exercise in the production process. This blurring occurs, for example, when workers serve on a task force to solve a specific production problem, and it also occurs when workers become members of the many types of joint committees that are now typically a key part of each plant's administrative structure (e.g., committees on in-sourcing, quality, scrap reduction, and energy savings). In some Big Three assembly plants, union officers now meet regularly with plant managers as business issues or crises arise, and in some cases, this participation extends to involvement in the preparation of a plant's long-term business plans. In recent analyses with international assembly plant data that include North American plants, we have found that the voice workers provide through team-based mechanisms can substitute for the voice provided through the union local. This counters the perceived notion that union and team-based voice complement one another and suggests another potential risk for the UAW in team plants (Kim, MacDuffie, and Pil 2010).

The most extensive participatory labor–management relationship in the auto industry (and perhaps the most extensive anywhere) occurred at the Saturn Corporation (Rubinstein and Kochan 2001). As early as 1982, GM undertook an extensive study of the small car segment and concluded that it needed to undertake a substantively new approach to its products and manufacturing model, as well as its labor relations, if it was going to be competitive. GM and the UAW decided to explore the issue in a joint

effort, ultimately resulting in the creation of the Saturn Corporation in 1987 and the opening of the Saturn plant in Spring Hill, Tennessee. Billed as "a different kind of company, a different kind of car," Saturn served as the test bed for a number of innovations, ranging from its no-haggle pricing to its space-frame product technology to process technology such as its lost-foam engine casting process (Pil and Rubinstein 1998).

Most intriguing, however, was Saturn's innovative labor–management relationship. Centered on a consensus decision-making process, it included a partnering arrangement whereby the UAW was involved not just in supplier selection and dealer approval but also in the day-to-day management of the Saturn operations. Every supervisor (called a module adviser) had a union counterpart. At the top level of Saturn was a Strategic Advisory Committee that engaged in long-run business planning and included the president of the UAW local union. Unfortunately, plagued by sales declines and a lack of attractive new models and facing a national union and corporate leadership that were not committed to radical labor relations change, Saturn did not survive the 2007–2009 financial crisis.

Despite the general pattern of diversity and decentralization, new corporate-level initiatives beginning in the mid-1990s attempted to standardize the production system across plants around the world. This trend differs from a past in which production systems varied widely across facilities, depending on history, product line, vintage of technology, nature of labor relations, and the inclinations of particular managers and union officials. One factor, as noted previously, is the influence of lean production, which most auto companies have seized on as their model for manufacturing. But a more universal impulse derives from the high level of complexity and volatility affecting many modern manufacturing operations and therefore the goal of reducing process variance while also establishing a clear basis for evaluating the impact of changes in production methods. Standardization becomes an important step in both internal learning processes and in the transfer of learning across settings.

The most prominent examples of this trend can be found at Ford and Chrysler. Following their MOA initiatives, which were carried out jointly with the UAW but affected only a small number of assembly plants, both companies by the late 1990s chose to promote a common production system, modeled closely on the Toyota Production System, throughout all of their North American plants; these were called the Ford Production System and the Chrysler Operating System. General Motors has been attempting a replication strategy, with new plants in China, Poland, Argentina, and Brazil all modeled on their successful implementation of lean production at Eisenach in the former East Germany. Mercedes-Benz has been much influenced by the success of its new plant in the United States, which was set up from the start to operate under lean production,

and its managers now speak of implementing a common production system, modeled on Toyota, that will be applied in its German factories as well.

The historical record suggests that such efforts at standardization often fail to achieve anything more than partial diffusion. This trend is also directly counter to the pattern of diversity and decentralization observed for industrial relations and collective bargaining. But it is worth noting that a logic now exists for automakers to undertake careful efforts to coordinate production globally, particularly for products built on common platforms, and that efforts to transfer knowledge across plants are far more extensive and sophisticated that in the past. Indeed, in recovering from the industry crisis, Ford and GM are both emphasizing not just North American uniformity in production systems but the goal of global consistency in initial implementation and in diffusion of any solutions found to production problems. This logic could certainly affect corporate strategies for industrial relations in such areas as work organization, pay and benefits, and dispute resolution. Union responses could thus have a more determinant effect on whether the standardization of production systems, is achieved even partially.

Although variation in employment relations has increased in the auto parts sector generally in a manner similar to developments in the assembly sector. At the same time, a number of factors differ in these two sectors, in part because of differences in the timing and intensity of non-union employment growth. Before they were split off into separate companies, the internal parts operations of GM, Ford, and Chrysler had been the largest producers in the auto parts industry.

Prior to the spinoff of Delphi and Visteon, Big Three company negotiators frequently had complained about the competitive pressures confronting the internal parts plants and had expressed the desire to create separate lower-tier pay rates for these operations. The UAW successfully had resisted these demands, but it was less successful in constraining the outsourcing of parts production and the negotiation of work rule concessions. In line with the Big Three–UAW bargaining structure, there were separate local (often plant) agreements at the internal parts operations, and from the early 1980s on, major concessions were negotiated in the work practices at the internal parts plants.

To improve their ability to sell auto parts to a range of customers and for bargaining leverage vis-à-vis the UAW, in May 1999, GM formally spun off its parts subsidiary, Delphi Automotive Systems, against the wishes of the UAW.[19] The formal terms of the spinoff initially provided that Delphi workers were covered under the same terms of the GM–UAW national agreement. Then in 1999, a separate Delphi–UAW national contract was negotiated. The 1999–2003 Delphi-UAW agreement closely

mirrored the GM–UAW agreement for the 45,000 workers at Delphi's U.S. plants and provided that wages, layoff benefits, pensions, health care, and other benefits were to be on par with the GM–UAW national contract. The Delphi contract also included a mirror card check union recognition clause that was important to the UAW given the fact that some of Delphi's plants were non-union and the possibility of future acquisition by Delphi of non-union operations.

Interestingly, the UAW negotiated even more-favorable terms with Ford when Visteon Corporation (employing 23,500 hourly workers in the United States) was spun off. The 1999 Ford–UAW contract provided lifetime coverage under Ford–UAW contracts for existing employees of Visteon (these employees continued to be formally paid by Ford). The 2004 contract negotiations between suppliers and the UAW led to dramatic wage reductions for new workers, bringing salaries for this cadre of employees more in line with wages offered at non-union suppliers. But cost challenges remained. Delphi went bankrupt in 2005. Meanwhile, Ford reabsorbed a large portion of the firm and associated employees that same year in an effort to keep Visteon afloat. Even that was not enough, and Visteon entered bankruptcy in 2010. It recently re-emerged with just more than 25,000 employees—less than a third of what it had in 1998.

Declining Unionization of Independent Auto Suppliers

Because the growth of non-union competition has become such a significant factor in the independent auto parts sector, it is worth examining how non-union growth has occurred. The independent (non-Big Three) parts companies that produce auto parts but do not assemble those parts into final vehicles were heavily, although never completely, organized with a lag behind the unionization of the Big Three. The percentage of the supplier plants with a majority of their workers covered by a collective bargaining agreement rose from 50% to 55% in 1940 to 95% in 1957, and unionization then produced a substantial rise in the earnings of organized workers.

Union coverage in the independent parts plants, however, fell substantially from the mid-1970s on (Katz and Darbishire 2000:43–44). The fall in unionization has been a major cause of the decline in the earnings of workers in the independent parts firms relative to the earnings of workers in auto assembly plants. Relative earnings declines occurred earlier, and have been much greater, in small firms. These earnings declines are probably linked to the fact that unionization declines were particularly large in small auto supplier firms.

The push for concessions at the independent parts firms from the early 1980s on was exacerbated by the fact that independent parts firms faced all the pressures that were impinging on the auto assemblers, lacked the

financial resources of the assemblers, and faced greater low-wage domestic non-union competition. Even in the face of a set of common pressures, substantial diversity emerged in the employment relations strategies pursued by independent parts firms—diversity influenced by business and union strategies and the degree to which new investments, or the lack thereof, gave management an interest in work reorganization and/or bargaining leverage.

The Recovery of the Big Three from 2010 On

The managed bankruptcy of GM and Chrysler with support provided by federal TARP funds helped those companies recover as did the slow but significant broader economic recovery. In addition, GM, Chrysler, and Ford successfully launched a number of new products. This approach contributed to strong vehicle sales, which involved some growth in market share relative to foreign imports and the transplants. The sales recovery in turn led to solid financial returns at the Big Three. As shown in Table 5, this recovery led to the reintroducton of large profit-sharing payouts for Big Three autoworkers.

As auto sales rose so did auto sector employment, to 642,700 in 2012 (a rise of 14% from the 2009 low), as shown in Table 4. Although this increase in employment was significant, it is important to note that auto sector employment remains far below previous levels. It is also noteworthy that the average hourly wage of autoworkers continued to fall, declining from $29.65 in 2007 to $28.13 in 2012 (Table 4). Contributing to this fall was the hiring of workers at the lower pay tier at the Big Three.

Fall 2011 bargaining at the Big Three led to collective bargaining settlements that included large lump-sum payments for regular workers but no base pay or normal cost-of-living-adjustment increases (Hobbs, 2011). Notably, the size of these lump sums varied across the three companies in line with differences in the financial performance of the three companies. For example, Ford workers received a contract ratification bonus of $6,000 and annual inflation protection bonuses of $1,500, while at GM, the ratification bonus was $5,000 and the inflation bonuses were $1,000.

The 2011 contracts did provide significant pay increases to the lower-tier workers. Under the new four-year contract, pay for lower-tier workers can rise by 2015 to a maximum of $19.28 per hour by the end of the contract. Because regular (higher-tier) workers did not receive any base pay increases in the contracts negotiated in fall 2011, this agreement promised to narrow somewhat the pay differential between lower-tier and regular workers.

The 2011 contracts also provided sizeable investment and product placement commitments from the companies. This is another part of the

UAW's efforts to ensure that employment growth would follow at the Big Three. As in 2007 and 2009, the company-level contracts negotiated in 2011 also included large early retirement buyouts for current workers. Furthermore, the GM–UAW and Chrysler–UAW 2011 contracts were settled through negotiations and, as a result, the interest arbitration impasse procedure provided in the 2009 TARP provisions did not come into play.

New Organizing

The UAW has been seriously challenged by the decline occurring in the percentage of the auto workforce that is organized. This decline has been particularly steep in the independent auto parts sector, but the increasing share of non-union (transplant) auto assembly plants is also emerging as a key threat to the union's power.

The UAW has used card check and election neutrality provisions to assist its organizing activities. GM and Ford, for example, agreed to accept card check recognition within their operations and those of any subsidiaries. The UAW has recently intensified its efforts to organize one or more of the foreign transplants. UAW President Bob King appointed Richard Bensinger as the acting director of the UAW's organizing department, and Bensinger expanded the staff involved in organizing efforts currently under way at a number of the transplants. Apparently, King and Bensinger also made overtures to some of the parent owners of transplants, seeking their agreement to adhere to a set of ethical principles as a way to defuse the animosity that normally appears in organizing efforts (Bureau of National Affairs 2011).[21]

The UAW also increased organizing campaigns focused on organizing workers outside the auto sector. The UAW, for example, has had great success organizing table-games dealers and other Detroit casino workers and has been aggressively conducting organizing drives among university graduate teaching assistants and workers in the health care sector (Bureau of National Affairs 1999).

A LOOK TO THE FUTURE

The events of recent years confirm that a key determinant of the future course of auto labor relations will be the strength of the U.S. economy, given the heavy influence the business cycle exerts on auto sales and labor's bargaining power. It also remains to be seen how Fiat–Chrysler performs, as well as the consequences of the current European overcapacity problem for further international mergers and consolidation. Experience suggests that the latter exerts mixed effects on labor's bargaining power, reducing labor's power by enhancing outsourcing opportunities and providing whipsaw advantages to ever-larger corporate behemoths, yet it potentially benefits labor through the advantages that industry consolidation exerts

on labor and management's total power by generating oligopoly-based economic rents.

A number of long-term structural challenges also confront the UAW and autoworkers (and, obviously, auto management as well given the interactive nature of labor relations). A particularly critical issue is whether the UAW (or other unions) will find a way to reverse the sizeable growth in non-union employment occurring in both auto parts and auto assembly operations. As this chapter described, although the Big Three remain fully organized, the auto sector is increasingly unorganized. The UAW has had only limited success organizing in the independent parts sector, even as the union increasingly relies on state-of-the-art organizing techniques. In the assembly sector, the abject failure experienced in recent UAW organizing at the transplants is foreboding.

Union strength is also waning in the auto sector because of the heightened opportunities assembly and parts companies have to outsource production, especially because so much of any outsourced work tends to go to non-union (and low-wage) domestic or international sites. Although the UAW has benefited from the fact that just-in-time and other lean production methods have produced pressure for production concentration, and hence the absence of long-predicted U.S. de-industrialization in this sector, the fact or threat of outsourcing continues to weaken the union.

This chapter also reported on the substantial shrinkage occurring in employment at the Big Three companies even after their recent financial recovery. Given that the Big Three were the high payers and pattern setters in the auto industry, these developments do not bode well for the future bargaining power of the UAW.

The creation of a lower tier of workers in the Big Three who earn significantly lower wages and fringe benefits compared with regular workers has created political and strategic issues for the UAW. Will the UAW continue to press for a narrowing of the pay differential between lower-tier and regular workers and even at some point create a step/seniority-based promotion ladder that guarantees access to regular pay for lower-tier workers? Although the UAW would clearly desire such a resolution to the two-tier wage issue, it is unclear whether it will have the bargaining power to achieve this objective. What is more certain is that as the share of lower-tier workers grows, political tensions are likely to build, especially at shop-floor and local union levels.

Although the unionized component of the automotive sector struggles to rediscover its footing after the dramatic bankruptcies of not just Chrysler and GM but also of the two largest unionized suppliers, intensified competition from transplant facilities will continue to put pressure on both the UAW and the Big Three. The Big Three have increased their factory-level flexibility to some extent (although a flexibility gap with the transplants

remains) and have eliminated a large number of factories that were underperforming. However, volumes have shrunk to the point at which pressure from non-union competitors operating in the domestic market will certainly alter the nature of collective bargaining in the years to come.

Whatever the course of economic developments, it is clear that there will be much to be learned from the ongoing evolution of the auto industry. Although the influence of the Big Three and the UAW may decline, the auto sector remains a sizable employer and a source of revealing information concerning the evolution of production practices and industrial relations.

ENDNOTES

[1] 30-and-out pensions provide that workers can retire and receive pension benefits after 30 years of service no matter what their age.

[2] For an analysis of the internal political operation of the UAW, see Steiber (1962).

[3] For lively accounts of the early history of the UAW, see Reuther (1976) and Howe and Widick (1949). An interesting account of the UAW during World War II is provided in Lichtenstein (1982).

[4] Chrysler was acquired by Daimler and became a wholly owned subsidiary in 1998. In 2007, Daimler sold an 80% stake in Chrysler to Cerberus Capital. In April 2009, Chrysler filed for bankruptcy. It emerged from bankruptcy as a new entity, owned by Fiat, the U.S. and Canadian governments, and the UAW's retirement health care trust. In 2011, Fiat purchased the stakes held by the U.S. and Canadian governments.

[5] Mitsubishi bought out Chrysler's share of Diamond Star in 1995. The NUMMI plant closed in June 2010 after GM, during its bankruptcy proceedings, decided it could no longer maintain its 50% ownership share and Toyota declined to buy out GM's share; a small area in the NUMMI facility is now being used to build Tesla electric vehicles. In September 2012, Ford retook full management control of the AutoAlliance plant when Mazda ceased producing vehicles in the United States, renaming the plant the Ford Flat Rock Assembly Plant. Outside the U.S., GM and Suzuki had a unionized joint venture plant, CAMI, in Ingersoll, Ontario; GM took full control of this plant in 2009, and in 2012, Suzuki announced that it would no longer sell vehicles in North America.

[6] This research used a methodology for productivity that adjusts for differences in vertical integration, product size, option content, and absenteeism to ensure comparability across plants. Quality data are derived from J.D. Power's Initial Quality Survey, adjusted to include only those defects that the assembly plant has some control over.

[7] Williams, Haslam, Johal, and Williams (1994) claim that performance differentials observed in M.I.T.'s International Assembly Plant Study are not valid because such plant-level comparisons cannot be made accurately. However, their own case rests on shaky empirical evidence, including national industry data that include car and truck producers as well as suppliers, and company data that are unadjusted for vertical integration, among other problems.

[8] This is very different from the jobs bank included in Big Three contracts with the UAW from the 1970s on. While originally designed to protect workers displaced by technological change and give them rights to bid on jobs elsewhere in the company, per-

sistent year-after-year declines in market share at these companies meant no realistic prospect of redeploying those being paid under this provision while not working. GM and Chrysler dropped this provision as part of the bankruptcy-related negotiations, and Ford did the same.

[9] The history of wage setting in the U.S. auto industry is discussed in more detail in Katz (1985).

[10] A chronology of postwar bargaining in the U.S. auto industry is in Bureau of National Affairs (various years) and U.S. Department of Labor (1969).

[11] Job control unionism is not synonymous with business unionism. The latter refers to the political philosophy of the labor movement. There are labor movements, such as those in Japan, that could be characterized as business unionist but not job control oriented.

[12] See Katz (1985 and 1988) for descriptions of early and mid-1980s bargaining.

[13] These and other job and income security programs are described more fully in Katz (1985 and 1988).

[14] For example, see Bureau of National Affairs (2008) for a description of the expanded attrition program at GM.

[15] The lower-tier hires also received significantly lower fringe benefits including a cash-balance defined contribution pension and much more limited health care benefits.

[16] Another key part of the 2009 contract modifications was terms that allowed the companies to contribute stock in lieu of much of their cash obligation to the newly created VEBA funds.

[17] The UAW did constrain the potential number of lower-tier workers as it negotiated caps on the share of each company's workforce that could be employed at the lower tier (the cap was first set at 20% at GM in 2007 and then expanded to 25% in the 2009 contract renegotiation).

[18] For a discussion of political tensions between lower- and higher-tier workers with reference to experiences in other U.S. industries, see Chaison (2009).

[19] Chrysler had reduced its vertical integration with much less fanfare in the early 1980s during its earlier brush with bankruptcy.

[20] Mean earnings in the supplier firms relative to earnings in assembly firms rose from 87.5% to 95.3% from 1940 to 1957 (Katz 1988).

[21] Bensinger had been the director of the Organizing Institute launched at the AFL-CIO during John Sweeney's presidency and later had developed an ethical principle–based approach to organizing in tandem with a former president of Bethlehem Steel, Richard Schubert.

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