GLOBALIZATION AS A BALANCING ACT BETWEEN SURVIVAL AND EXTINCTION: The Case of the Automotive Industry

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At the end of the work day on January 3, 2001 a group of American industrialists stood before TV cameras in Austin, Texas to report on their day of conferencing with U.S. president-elect George W. Bush. Flanked by the CEO of Cisco, John Chambers, and the chairman of General Electric, Jack Welch, billionaire Steve Forbes, the group's spokesman, reported that the U.S. economic growth rate was falling rapidly. He cited an 18 percent drop in General Motors' new vehicle sales in December, 2000 compared with December, 1999 and reported that the auto industry expected to sell over one million fewer vehicles in 2001 compared with 2000. General Motors' profits actually went down 92 percent in the fourth quarter of 2000 partly because of heavy losses overseas, especially in Europe and especially in Germany. January's sales were up again, but the car companies were unsure about the rest of 2001.[1] Decline in demand for automobiles was usually a harbinger of general economic slowdown.

This could be bad news for the world since the automotive industry played such a large role in the world's economy. In the early 1990s the world automotive industry directly employed some four million workers. Another ten million manufactured related materials and components. Another six million sold or serviced vehicles. The total number of workers in the industry worldwide was some twenty million –two thirds of the population of Canada.[2] There were also the families of workers. If each worker had two others in his or her immediate family – certainly a conservative assumption – this would put the total number of people directly affected at least 60 million, more than the size of Great Britain's population. In the mid90s the U.S. Department of Commerce calculated that every General Motors job had a direct impact on five more jobs.[3]

Many people took facts like these as evidence that automotive companies were powerful, especially since they operated globally. Yet, neither scale nor scope by itself assured profitability or perpetuity. People often failed to recognize how vulnerable the companies were.

Over the 20th century, numerous car companies had faded away or been absorbed by bigger companies. In 1921 the U.S. had 88 major auto companies; by 1926, 45; by 1935, 10; by 1998, two, not counting transplants and recognizing that DaimlerChrysler was a German company. General Motors almost collapsed in the early '90s; 23 of its plants were slated for closing, and 74,000 workers were laid off. In late 1999, there were rumors that the company might be subject to takeover and split-up, the prize being the communications satellite belonging to Hughes Electronics, a GM subsidiary. By March 24, 2000 GM's market capitalization was at $53.6 billion and Hughes had a market capitalization at $19.3 billion. (Roger Smith had bought GM's stake in Hughes for a reported $5.2 billion.) By January, 2001 the Chrysler division of DaimlerChrysler had depleted its cash reserves, and the overall company was in such deep trouble that other auto companies were expressing interest in acquiring parts of it.[4]

Measured in Wall Street stock prices, the American car companies were no longer as important as they once were. GM was still the largest manufacturing company in the world in terms of sales, with $161 billion worth of sales worldwide in 1998, but GM's market capitalization of $90.2 billion in late 1999 was not impressive compared with General Electric's $452 billion. GM's $2.9 billion profits in 1999 were less than a third of General Electric's $9.3 billion. The pending merger of American On Line and Time Warner to become the largest media and communications company in the world distressed car company executives who liked to think of their industry as Number One.[5]

Foreign automakers in the U.S. were an increasingly competitive challenge. The combined share of Asian vehicle makers in the U.S. was 28.4 percent of U.S. vehicle sales in October, 1999.[6] GM's share of U.S. vehicle sales fell to 27.1 percent in November, 1999, its smallest share since the 1920s.[7]

The fact is that American auto companies are an endangered species. Several decades ago American journalists referred to the Big Five. Later, they wrote about the Big Four; then, the Big Three. If GM were split up there would then be only the Big One. Ford Motor, in deep trouble in 2000 because of failures in the Firestone tires on Ford Explorers, nevertheless had the advantage of being shored up by the Ford family's combined assets.[8]

The same kind of attrition was taking place among auto companies on a worldwide basis. The number of British firms making vehicles dropped from 88 in 1922 to 22 in 1937, with six of them serving three-fourths of the market.[9] The more than 150 integrated motor vehicle manufacturers in France in the 1920s had dwindled to just over 40 by the 1950s. By the late 1950s the total number of carmakers in Western Europe had dropped to 34. By 1980 there were only ten major companies, not counting two from abroad.[10] Although, according to Weihrich,[11] in the 1990s about 175 companies produced the over 45 million cars, buses, and trucks sold around the world, some journalists were already referring to the world's Big Ten, Seven or Six OEMs. Soon it might be five or even four.

Critics of the automotive industry expressed concern about the size and global nature of the surviving companies, just as there was concern about the size and dominance of Microsoft. To a lower-level employee of an auto company, certainly the company looked powerful. To the companies, the picture looked different. It was "eat or be eaten", "grow or die".

Early Globalization

In the 1980s and 1990s, American labor union leaders, some third party political contenders such as Ross Perot and Pat Buchanan, and some academics and intellectuals tied to the labor unions such as Barry Bluestone complained about the overseas spread of American manufacturing.[12] Collective bargaining was supposedly a way of redressing the imbalance of power between employers and workers. However, when a company became transnational, the labor unions with which it dealt found it almost impossible to become equally transnational, despite Marxist rhetoric about the international proletariat. The complaint was that companies manufactured abroad because labor was cheaper there and workers less organized.

The record of the automotive industry clearly shows that the primary motive for establishing branches abroad was not a search for cheaper or more tractable labor. Many of the earliest auto assembly plants abroad and many in less developed countries today were established simply to put cars together from U.S.-made knockdown kits because it is easier and cheaper to ship knockdown kits than to ship assembled cars. Since the car companies established operations abroad decades before the United Auto Workers was created, obviously they were not trying to avoid the union. Ford Motor began its expansion into Canada in 1904, one year after the company was founded in 1903. Three years after GM was put together, GM acquired a foreign subsidiary. Neither move was motivated by a search for cheaper labor. GM's first move into Canada was the result of a personal relationship between Billy Durant and R. Samuel McLaughlin. Later, the purpose was to access new markets. When cars were expensive toys for the rich (of whom there were few), and manufacturing entailed initial high investments, foreign sales were necessary to sell enough cars to enable profits. Initial investments were still high after assembly lines and mass production were introduced. To aggregate enough profits to compensate for initial costs, foreign markets needed to be accessed. A search for economies of scale was also what motivated Henry Ford to buy rubber plantations abroad.[13]

To sell within a country or trading bloc it was often necessary to manufacture within that country or trading bloc. Before World War I approximately one-fourth of the people of the world lived within the British empire. Trade among members of the British Commonwealth received some preferential treatment from 1907 onward and more from 1919 and after. To share in that preferential treatment, a company should have a presence somewhere within the empire. The same kind of motive operated in the 1960s after the European Economic Community had been formed and after various other trading blocs were put together in the world. High national or trading bloc tariff barriers and domestic content laws in many countries meant that to sell abroad at a profit an American company had to be abroad.[14] By the 1980s when the American market had become saturated so that sales growth was largely restricted to the rate of replacements (perhaps three percent a year), emerging markets with an annual sales growth potential of perhaps 15 percent looked all the more enticing. In the latter part of the 20th century, as Dr. Wolfgang Ziebart (member of BMW's management board) said at an automotive congress in January, 2000, being a global player made it easier to deal with currency fluctuations and fluctuations in demand in particular regions and to avoid being dependent on individual markets.

Ford's first foreign auto plant in 1904 was in Windsor, Ontario across the river from Detroit. That same year, Percival Perry helped form a company in England to sell Fords throughout Europe. By 1908 (the same year Ford opened its new assembly plant in Highland Park, Michigan) Ford had a branch in England with Perry as branch manager. By 1913 Ford had produced 6000 of the 25,000 cars ever produced in England.[15]

GM and Ford lost control of their plants in Spain during the Spanish civil war in the 1930s, but--by the time World War II began-- GM had Vauxhall Motors in England and Adam Opel AG in Germany, and operations in Canada, Mexico, Argentina, Uruguay, Belgium, Sweden, Denmark, Egypt, Java, Australia, New Zealand, India, South Africa, Japan, and China.[16] Ford had its huge English Dagenham plant and other operations in England, and operations in Ireland, France, Germany, Belgium, Holland, Denmark, Brazil, Chile, Argentina, Mexico, South Africa, and Japan. Ford Company, Ltd. headed by Sir Percival Perry also had sales offices in Portugal, Italy, Greece, the Middle East and North Africa.[17]

The 1950s and 1960s

The steep rise of Latin American tariffs on imports of assembled vehicles during the 1930s was an incentive for auto companies to establish local assembly plants there.[18] In 1950 some smaller U.S. car companies such as Studebaker, Packard, and Willys followed the example of Ford, GM, and Chrysler and began to produce in Mexico. Before the mid60s many European assemblers and importers were also operating in Mexico.[19]

If local content requirements became too onerous, companies could not import enough of the parts that they needed. When Mexico increased its domestic content requirement from 20 percent to 60 percent and pursued other more stringent import substitution policies, the 17 foreign vehicle manufacturers in Mexico dwindled to nine by the end of the 1960s and to seven by 1972.[20] It was in reaction to Mexico's restrictions that American car companies expanded their operations in Canada. In January, 1965 the U.S.-Canada Automotive Products Agreement was signed allowing GM, Ford, and Chrysler to rationalize production across the two markets.

A number of other less-developed countries pursued import-substitution policies in the 1960s, Brazil among them. With its large potential market, Brazil was especially attractive. Volkswagen-Brazil was established in March, 1953 and Mercedes-Benz-Brazil was operating its truck assembly plant in Brazil by September, 1956.[21] Soon Brazil had eleven companies producing vehicles, including Toyota.

Increased competition in the U.S. from foreign cars helped provoke American companies to produce more abroad. Before the mid60s, dozens of foreign manufacturers were selling vehicles in the U.S. market. The first Volkswagen Beetle arrived in the U.S. from Germany in 1949; the first official exports of it to the U.S. began in 1950. By 1955 the U.S. had 251 VW dealers. Nissan began selling cars in the U.S. in 1958; Renault, in 1959. By the 1960s, Japan – highly dependent on commodity imports, especially oil – had to pay for the imports some way and so officially adopted the motto "export or die".[22] Conditions in Japan forced the Japanese producers to innovate both in process and product.[23] Japanese companies could make cost-competitive small cars because skilled labor and steel were cheap there. Japanese car and truck exports to the U.S. grew tenfold between 1967 and 1971.[24]

The American car companies' response to such challenges was to accelerate overseas production to wherever it was feasible. During the '60s Chrysler evolved Chrysler-United Kingdom-Ltd. as a wholly owned subsidiary of Chrysler Corporation; increased its stake in Simca in France; acquired a Spanish truck maker; and made new acquisitions in Latin America. Soon – like the other Detroit auto companies – it had dealings on six continents. By the end of the decade Chrysler was operating plants in 18 countries.[25] In the early 1970s Chrysler went on a worldwide acquisition binge. Ford increased its overseas production from 45.6 percent in 1970 to 57.6 percent in 1980.[26] By the '90s Ford had 22 plants in various European Union countries and many elsewhere.[27]

In the 1960s and 1970s the emergence of the Eurocurrency market, the collapse of the Bretton Woods international currency exchange system and two oil price shocks provided the basis for phenomenal expansion of global financial flows in the 1980s.[28] When multinational corporations, often US companies operating in Europe, deposited their foreign currency earnings in Europe rather than repatriating them back home where they would become subject to capital controls, this accounted for much of the initial growth in Eurocurrency funds in the l960s. As the Eurocurrency markets grew and became more liquid, they became convenient for raising large loans."[29] "The development of Eurocurrency and the Eurobond markets in the 1960s "heralded the development of truly international financial markets."[30]

Growth rates of six and seven percent, year after year, were quite common in Latin American and some Asian countries beginning in the 1960s."[31] Japan was in a good position by the 1960s when its real income growth rate averaged eleven percent a year. While the exchange rate was still fixed at the early postwar level of 360 yen to the dollar, this "became a form of subsidy that made Japanese exports very price-competitive."[32] Each Japanese car company was part of a *keiretsu*, a conglomerate regrouped from the pre-World War II *zaibatsu* system with a bank as part of the group. This fact plus the high personal savings rate in Japan meant that the cost of capital for Japanese car companies was the lowest in the world.[33]

Changes in international finance and currency arrangements were a key factor affecting car company globalization in the last third of the 20th century. The dollar/yen exchange rate was a bonanza to Japanese car makers selling their cars in the U.S. Under the monetary system which had been set up at Bretton Woods, currency exchange rates were fixed and the dollar, based on gold, was the world's reserve currency. The valuation of the dollar had to be kept stable because of its role as the world's reserve currency. During the '60s the system grew increasingly unstable as the U.S. trade surplus shrank, long-term capital moved outside the U.S., and U.S. gold reserves dwindled.   In 1971 the convertibility of the dollar to gold was suspended. By 1971 the dollar was so overvalued that it had to be devalued by six percent and an increase in the value of the yen against the dollar had to be negotiated. To control inflation the U.S. government mandated price and wage controls that lasted until 1973. In June, 1972 the British government decided to float the pound, a formal break with the fixed rate system. In 1973 exchange rates were again realigned but a new system of floating exchange rates was around the corner.

The U.S. share of world vehicle production dropped from 76 percent in 1950 to 45.9 percent in 1965.[34] Foreign vehicle imports into the U.S. were increasing.

By the 1960s, Japan – highly dependent on commodity exports, especially oil – officially adopted the motto "export or die".[35] Conditions in Japan forced the Japanese producers to innovate both in process and product.[36] Japanese companies could make cost-competitive small cars not only because of Japan's low-cost skilled labor and cheap steel but also because capital was cheaper there. Japanese car and truck imports into the U.S. grew tenfold between 1967 and 1971.[37] Foreign car imports in general had become 15 percent of the U.S. market by 1971. Of the world's seven million cars built in 1950, North American assembly plants built 85 percent; by 1970, they built 41 percent of the world's 22 million.[38]

The 1970s

A floating exchange system for the world was formally installed by the middle of the 1970s. Because the U.S./Japanese balance of payments heavily favored Japan, the yen was still cheap in relation to the dollar so that Japanese cars sold for less in the U.S. than American cars.

As oil prices quadrupled because of OPEC action in October, 1973, the Japanese oil bill rose from its $4.5 billion level in 1972 to $21.2 billion in 1974.[39] When the Japanese economy "was thrown into simultaneous inflation and stagnation"[40] "…a strong export drive dramatically reversed Japan's current account balance from a $500 million deficit in 1975 to a surplus of $17 billion in 1978."[41] "From 1973 through 1978, the net savings by the household sector of the United States declined sharply while net investment by the corporate sector increased sharply from 1975 on."[42] This exerted a strong pressure on American interest rates. The paucity of American household savings and the large U.S. adverse balance of payments could have been disastrous had it not been for the fact that Japan kept the bulk of its reserves in U.S. treasury bills.[43] In other words, Americans had to borrow foreign savings to make up for the fact that they did not save enough.[44]

After the Iranian revolution began in December, 1978 and a second oil crisis ensued, the European Community began its move toward a single European currency bloc in 1979 when it formed the European Monetary System to protect its members from the volatility of the dollar. Unlike most other industrial countries, the U.S. maintained price controls on domestic oil production. "The world moved into a period of uncoordinated policies against the looming problem of high interest rates and Third World debt."[45]

The U.S. car companies were suffering in the 1970s from the stagflation of the Vietnam War period, high interest rates, sudden high oil costs, numerous governmental regulations requiring expensive responses, and the inroads of foreign competition, especially Japanese. Between 1950 and 1979 the American share of world vehicle markets was nearly halved.[46] By 1978 foreign car imports took almost 28 percent of the U.S. market. Helped by the continuing strong dollar, Japanese cars accounted for one-third of the imports.[47]

One American car company response was to buy stakes in foreign companies. For example: Ford held 25 percent of Mazda in the early '70s and 33 percent by 2000. By the summer of 1997 Ford held eight of Mazda's board seats and half of its managing director posts.[48] Having 9.4 percent of Kia in 1998, Ford was considering increasing its stake to 51 percent. Ford bought Jaguar, Aston Martin, and Volvo outright. Chrysler owned 24 percent of Japan's Mitsubishi in 1985 but gradually reduced its share to less than three percent until DaimlerChrysler negotiated to buy a large share again. In 1990 GM bought 50 percent of Saab and later acquired the whole company.[49] As of 1994, GM owned 37.5 percent of Japan's Isuzu Motors and by 2000, 49 percent. Up to 1992 GM had a stake in Korea's Daewoo; in 1999 GM began a relationship with

Honda and acquired 21 percent of Japan's Fuji Heavy Industries, the maker of Subaru cars. By 2000 GM held 20 percent of Fiat and ten percent of Suzuki.[50] Early in 1980 General Motors joint ventured with the Japanese to operate plants in Ontario (CAMI) and California (NUMMI).

The U.S. trade balance and U.S. inflation got worse in the latter 1970s. When the value of the dollar fell rapidly, in October, 1978 it had to be defended by government action. For the car companies there was some respite. After a record downturn triggered by the 1973-4 oil crisis, the automotive industry's sales surged to record levels in 1977.[51] Then, in 1979 the U.S. economy was sliding into deep recession. In 1980 combined losses of the American Big Four auto companies amounted to $42 billion.[52] Chrysler was in such trouble that its overseas empire was collapsing. To stay afloat after its bonds and preferred stocks were downgraded, Chrysler had to sell its foreign branches and subsidiaries. Yet, in 1980, when Chrysler was operating under U.S. government supervision "because of its $1.5-billion federal bailout plan, the company went on another worldwide merger search – this time at the government's request."[53] Ford was also in some trouble in 1980. When foreign-made cars, most of them coming from Japan, were 21.9 percent of the U.S. market by 1980, [54] the four leading U.S. car companies had located 37 percent of their production abroad.[55]

At first, the OPEC countries did not absorb their sudden gains into their domestic coffers. They invested their large surpluses in the international money markets, which "gave the international banks almost $50 billion to recycle through the world economy during 1974-6, and large sums thereafter." The banks increasingly made loans to developing countries such as Brazil that were financially squeezed by high prices for imported oil.[56]

Economic conditions hurt car sales in the debtor countries where U.S. car companies were already invested. Paul A. Volcker, chairman of the Board of Governors of the U.S. Federal Reserve from 1979 to 1987, gives the following account: "At the end of 1974, the foreign loans of all banks to developing countries totaled $44 billion; about one third had been made by American banks that were then leading the wave of internationalization in all areas of banking."[57] "By the end of 1977, for the 150 or so U.S. banks with significant loans to the developing world, those loans totaled 150 percent of capital, much higher than any time in memory. By 1979 the ratio had increased slightly to 165 percent". Nine banks "had the equivalent of about 250 percent of their capital committed to loans to developing countries by the end of the 1970s."[58] "The great bulk of the loans were denominated in dollars" removing the risk that their borrowers would be able to repay in their own depreciating currencies; the U.S. economy was inflationary.[59] "As the loans came due they were typically 'rolled over'."[60] "By the end of 1979, just as the second oil crisis broke, loans to developing countries reached $233 billion, almost five times as much as five years previously."[61]

The 1980s

From mid-March, 1980 – responding to federal credit controls and Federal Reserve tightening – U.S. consumers suddenly stopped spending. The country found itself in what became known as the Volcker recession. Despite Federal Reserve restrictions on money supplies, inflation increased. By mid1981 the recession had deepened. By the end of 1982 the U.S. unemployment rate had risen to a postwar high of over 11 percent.[62] Auto company manufacturing plants were closing in Detroit; in the U.S. at the end of 1982, 254,964 hourly auto workers were on indefinite layoff. Unemployment among black teenagers in Detroit reached an estimated 75 percent. There were beggars on the streets where none had been before.

The Reaganomics initiated in 1981 "had four major elements: the reduction of federal spending, the reduction of personal income taxes combined with tax incentives for business investment, the deregulation of business and an anti-inflationary monetary policy." Increased defense outlays and expenditures on Social Security, Medicare, and the like made it impossible to cut federal spending. Interest rates rose, the dollar strengthened in international currency exchanges, and the U.S., which had $141 billion of net assets abroad in 1981, had net liabilities of $111 billion in 1985.[63] The large Japanese investments in U.S. treasury bonds kept the economy from crashing.[64]

When the new Reagan administration cut taxes in 1981 without a corresponding cut in federal expenditures, this led to huge fiscal deficits which were not eliminated until the 1990s. However, high interest rates helped attract the investments from abroad that helped finance the deficits.[65] During the early 1980s tens of billions of Japanese dollars, especially from Japanese insurance companies and pension plans, were invested in American 30-year Treasury bonds. The U.S. depended on this money.[66] The dollar exchange rate "moved sharply upward in 1983 in response to foreign purchases of U.S. securities." "The rise was almost explosive in 1984, and by early 1985 the dollar had appreciated by about 45 percent above 1980 levels against the [German] mark …eventually the strength of the business recovery petered out in the face of a high trade deficit."[67]

One of the conditions the federal government had exacted in exchange for its loan guarantees for Chrysler Motor was that there be local participation in backing the company. Sitting on the committee of Detroit city and Michigan government officials reviewing the situation before local support was authorized, I asked why Chrysler was expanding its Mexican operations while closing its Detroit plants. The Chrysler representative blustered his way past the question. The fact was that the company saw production in Mexico as a life raft.

Another fact was that Mexico was a *leaky* life raft. In the three years before the end of 1982, bank loans to developing countries had increased more than 50 percent to over $361 billion, one third of which was held by American banks.[68] The 1979 oil crisis triggered a new round of Latin American borrowing. In 1981 over 70 percent of the debt owed international banks was owed by just ten countries.[69] Despite the fact that Mexico was an oil producing country, it added "$15 billion to its indebtedness in 1981 alone, increasing the amount outstanding by almost 35 percent."[70] Mexico was in a full-fledged debt crisis by August, 1982. The response was a 70 percent devaluation of the peso.[71] In 1983 the Mexican government reduced to three the number of model lines permitted per car manufacturer; then two; then – by 1987 – one.[72] Yet, by 1987 the foreign car companies were busy expanding their investments in Mexico.

Profits for the car companies were down, then up, then down again in the 1980s. General Motors laid off some 200,000 UAW workers in 1980-1981. Ford lost $3.2 billion between 1980 and 1982.[73] The America companies were brought out of their slump when Japanese car companies were obligated to adopt voluntary restraints on exports of their vehicles to the U.S. These particular restraints lasted between 1981 and 1985. Thus sheltered and benefiting from a new oil glut, after three bad years, American car companies made record profits in the U.S. in 1983 and 1984 but they had losses in Europe. Hard times soon followed. Late in 1986 GM announced that it would be closing eleven plants. Again, overseas expansion was seen as one solution. Early in 1985 Chrysler formed an International Business Development Group to increase component purchases overseas and to seek overseas joint ventures.[74]

Several events and evolving institutions in the 1980s paved the way for more thorough globalization in the 1990s. England under Margaret Thatcher cut taxes, removed foreign exchange controls, privatized companies, and followed free market principles whenever possible. The U.S. Reagan administration from 1981 to 1988 pursued similar policies. Australia, Canada, and – somewhat more cautiously – Germany, France, and Switzerland also deregulated.[75] By the mid1980s virtually no regulatory barrier impeded capital flows among developed countries.[76] After the U.S. pressured Japan into financial deregulation, Japan's capital outflow, $18 billion in 1983, reached $137 billion by 1987.[77]

By the 1980s, many companies "would like to see the ownership of their shares distributed among the major capital markets of the world and into the countries in which they [did] business."[78] The Eurobond market, which was not regulated by any government or official body, began to explode after 1979. U.S. companies became the dominant players. Between 1981 and 1984, Ford and GM, among other top-rated companies, issued more bonds in Europe than in the United States.[79] "Beginning in the early 1980s, bankers all over the world went into an extremely active period of international expansion."[80]

By 1985 there were 600 transnational mining and operations in the world that had annual sales of over a billion dollars.[81] American car companies – transnational almost from their beginnings – were clearly thinking in new kinds of global terms by the mid1980s. Chrysler saw the minivan as a world car and was holding discussions about this in China, Europe, and some Communist bloc countries. Ford was beginning to think in terms of marketing world cars. Direct investment was often a necessary condition for sales abroad because of the continuing import-substitution policies of less-developed countries. In 1989 Richard Child Hill wrote: "A few hundred corporations now control a large fraction of the world's productive resources. Changes in the organization and location of transnational production chains can determine growth and decline, prosperity and depression among cities, regions and even nations."[82]

There were continuing international currency exchange problems throughout the '80s. By 1984 the dollar's exchange rate was excessively high. "The yen and the mark, relative to the dollar, had been driven by the end of 1984 back to their 1973 levels or below, and their car, machinery, and electronic manufacturers were finding the lush American market easy pickings."[83] A cheaper yen in relation to the dollar fostered Japanese exports to the U.S. As the yen rose from 202 to a dollar in 1980 to 235 in 1982 to 260 before the end of 1985, and the American economy was growing, the "Japanese trade balance with the U.S. exploded". "Auto-related exports [to the U.S.] accounted for about half the estimated $60 billion trade deficit the United States had with Japan in 1986."[84]

By early 1985, the British pound sterling had fallen to close to one pound for one dollar. Margaret Thatcher telephoned President Reagan just before a meeting of the G-5 finance ministers (from the U.S., U.K., Germany, France and Japan) in Washington and persuaded him to urge the ministers to intervene in support of the pound.[85] In the spring and early summer, declines in the dollar approached 20 percent.[86] At a meeting of the finance ministers at New York's Plaza hotel in September, 1985, the Japanese finance minister volunteered to permit the yen to fall by more than ten percent in the hope of diverting U.S. protectionist measures.[87] In the Plaza Accord, it was agreed that the relevant countries would set exchange rate policy and support it with intervention.[88] The finance ministers and central bank governors agreed that: "Some further orderly appreciation of the main non-dollar currencies against the dollar is desirable." By the end of October "the dollar had fallen by more than 12 percent against the yen and close to nine percent against European currencies. "…by January 1986 it stood on average a full 25 percent below the peak it had hit about one year before."[89] Of the U.S. overall $152 billion trade deficit in 1987, $56 billion was a deficit with Japan and $33 billion of that "reflected the flow of vehicles and car parts to the United States."[90]

Fearing higher American tariffs and affected by the currency realignment, the Japanese car companies began to build plants in the U.S. By the mid80s Honda was assembling cars in Marysville and Liberty, Ohio. In the mid80s Mitsubishi and Chrysler collaborated in setting up a factory in Bloomington, Illinois. In the late '80s Ford helped Mazda set up a factory in Flat Rock, Michigan near the Ohio border. The Japanese soon had ten car-making plants in the U.S. and Canada, getting about half their parts from Japan.[91] By the end of the century, Toyota alone had four plants in North America (not including NUMMI in California), producing 750,000 vehicles per year.[92] At the same time, with cash to spare in 1985 and helped by currency realignments, the top three U.S. auto companies began to acquire new foreign subsidiaries.

Within the six months after the Plaza Accord, Japanese export industries started to complain about the rapid appreciation of the yen. Between 1986 and 1987 "the Japanese growth pattern clearly shifted from being led by exports to being led by domestic demand."[93] By the beginning of 1986 the dollar had depreciated by an average of 25 percent from its peak a year earlier. In February, 1987 the dollar reached a peak of 263 yen to the dollar, having been at 238 yen to the dollar the day before the Plaza Accord. Volcker said: "The dollar's nominal rate against the yen depreciated about 41 percent in the two years following the Plaza. But the dollar's real rate, which is weighted by its foreign trade flows around the world, declined by only 32 percent…because many developing countries simply pegged their currencies to the dollar."[94] Despite the currency exchange changes, "the key American trade and current account deficits continued to rise in 1986."[95]

Latin America was in trouble in the 1980s. "Between 1984 and 1986, the current account deficit of the heavily indebted developing countries increased from $31 billion to $48 billion. … roughly one quarter of what they earned each year from their exports was mortgaged to meeting their annual interest payments to their creditors, mainly in the industrial world." In Mexico in 1986 the federal budget deficit was almost 13 percent of the GNP and Mexico's debt-to-GNP ratio rose to over 80 percent by 1987.[96] "In the total bank exposure to Latin America, U.S. banks held 37 percent, Japanese banks 15 percent, British 14, French 10, German 9, Canadian 8, and Swiss 3." By 1986 Japanese banks were the only banks increasing their lending to Latin

America.[97] "In February of 1987, Brazil abruptly announced that it would suspend interest payments on its $90 billion outstanding debt because its trade surplus was shrinking and its reserves were dwindling."[98]

The lending banks had to face up to the fact that the loans might not be repaid. In 1987 the CEO of Citicorp reserved $3 billion against 20 percent of the bank's Third World debt. Other banks followed. The price of Latin American loans went down in the secondary markets and then new lending to Latin America nearly dried up in the late 1980s. "By the early 1990s, most banks had reserved against all but their short-term trade loans to Latin America by 50 to 100 percent."[99] Some debt reduction was renegotiated with Mexico. In 1988 "Mexico auctioned off some of its old debt at a discount for new Mexican government bonds fully guaranteed by zero coupon bonds issued by the U.S. Treasury."[100] Flight capital began to return to Mexico. In February, 1990 Mexico made a deal with the International Monetary Fund. Toyoo Gyohten, the Japanese vice minister of finance, later wrote: "The major lesson we learned [from the debt crisis] was that we now live in a world of globalized and interdependent economies."[101]

Since the new set of exchange rates after the Plaza Accord had not produced the desired quick adjustments in the American adverse balance of payments, at a summit in 1986 and a G-5 meeting in February, 1987, the focus shifted to macroeconomic policy changes, but these too did not make sufficient changes in the balance of payments.[102] At the G-5 meeting in Paris in February, 1987 rather precise ranges were set for exchange rates between the dollar and other currencies. From 1988 on, the G-5 and G-7 paid more attention to microeconomic policy. When the dollar did strengthen in relation to the yen, the Japanese response was to build more cars in the U.S. and other foreign countries. They even exported some of their U.S.-built cars to Japan. In 1995 Honda exported more from North America to the world than Ford did.[103]

In August, 1987 the U.S. Congress postponed the target year for balancing the federal budget from 1991 to 1993.[104] The world's principal stock exchanges experienced crashes in October, 1987. (The crash in Australia was the biggest one-day drop in that country's history.)[105] Gyohten believed that the stock market crashes came because all the efforts by the G-7 to align exchange rates and coordinate macroeconomic policies had failed to produce tangible, clear results.[106] The market value on the Tokyo Stock Exchange grew 99 percent between 1986 and 1990. Between late 1987 and 1990 it had the largest capitalization in the world. Then the Tokyo exchange also crashed, in 1990.[107]

Globalization of banking and finance continued to increase as stock exchanges and financial enterprises were increasingly linked by computers. The velocity and volume of financial transactions greatly increased. Despite the stock market crashes, by 1988 "most major investment banking firms had seven hundred to eight hundred people in London and half that number in Tokyo."[108] When the London stock exchange closed for the night, Tokyo's was open, which meant the world's stock exchanges could operate on a 24-hour basis. Global capital markets operated with Euromoney, which Smith defines as "the liquidity in the global financial system that operates without regard to national borders and the maintenance of that liquidity by the central banks of several countries." Its forms might be bank deposits, certificates of deposit, floating-rate notes, or equity securities.[109] In 1990 Germany's Deutsche Bank had subsidiaries in

41 countries. The bank's pursuit of aggressive globalization strategies throughout the 1990s was part of the story behind the DaimlerChrysler merger.[110]

As production of Japanese car company transplants within the U.S. continued to increase, but parts were still imported from Japan, a hue and cry was raised about the adverse effect this had on the U.S. balance of payments. In response, the Japanese increased their parts production within the U.S. By 1989 the Japanese had 227 U.S. parts production facilities, in 35 states; Germans had 101; and the British had 37. Over two-thirds of the foreign-owned plants produced for the U.S. Big Three car companies.[111] Increasingly, Japanese transplants exported to other countries – even to Japan – from the U.S. This helped the U.S. balance of payments situation and mollified U.S. labor unions somewhat but it was no solace to the U.S.-owned car companies. By 1991 the U.S. share of world exports was only 12 percent, including the exports of transplants.[112] In G-5 countries generally, overseas affiliates of multinational companies now accounted for one-fourth or more of their host countries' exports.[113]

The U.S. was not the only advanced industrial country with a large share of its manufacturing done by foreign transplants. The foreign share of French manufacturing production was 26.6 percent in 1980 and 26.9 percent in 1989. In Canada the share hovered near 50 percent.[114]

The 1990s

All the factors that led to a general increase in globalization in the 1990s affected and were affected by increased globalization of the auto industry: the fall of the Berlin wall late in 1989, the dissolution of the U.S.S.R. in December, 1991, the shift of much of the former Communist bloc to freer market economies; increases in regional trade organization – NAFTA going into operation in 1994; APEC formed in 1989 after ASEAN was already a trade community; Mercosur and other Latin American trade blocs; more economic unity in the European Union; greater links between domestic and international air travel; the adoption of the Mosaic browser in 1994 and the subsequent surge in use of the Internet; the laying of fiber optic cables under the oceans and the proliferation of communications satellites; increases in number of linkages between the world's stock exchanges; privatization of many national communications industries leading to new ownership that often transcended international boundaries plus more global TV broadcasting; increases in international migration; and so forth.

What came to be known as the Washington consensus favoring free trade and free enterprise, deregulation, privatization, tax reforms, and openness to direct foreign investment was reinforced by the International Monetary Fund. Emerging countries clung less tightly to import substitution policies, often as a quid pro quo for help from the IMF. To the car companies, all this translated into the opening of new foreign markets and new opportunities for investment abroad.

For a while it appeared as if Russia itself offered such an opportunity, but the Russian economy declined rapidly during the 1990s and the Russian automobile industry shared in that decline. The car assembly process in Russian factories was notoriously slow.[115] Between 1990 and 1998 production of commercial vehicles in Russia fell 75 percent.[116] In 1994 about 80 percent of the cars imported into Moscow came in illegally or under dubious auspices. Yet, by 1999 Ford and GM were planning more production in Russia.[117]

Illustrating the cliché "investment follows opportunity", soon after the fall of the Berlin Wall, GM had a plant in Eisenach, Germany. GM began production in Hungary in March, 1992. A plant established by its new joint venture in Poland was assembling cars in November, 1994; by 1998, GM's gleaming new Adam Opel plant in Gliwice began producing compact cars. Over the decade Detroit car companies opened half a dozen plants in Eastern Europe and Russia, the hottest markets being Poland and Hungary. In 1999 American companies sold 1.7 million vehicles in Central Europe, a 35 percent growth over a decade.[118]

Southeast Asia was a lure to investors in the early 1990s, including American car companies which before then had invested much less in Asia than in Europe and Latin America. Also in 1995, GM – which had a five percent share of Asia's 12 million vehicle sales (not including India)--was aiming to get a ten percent share within nine years.[119] Construction began in 1997 on the company's new plant in Thailand's Rayong province, which was expected to build up to 100,000 cars a year in 1998 and many more by 2005. Plans were delayed when economic crisis hit Southeast Asia. Chrysler began assembling vehicles in Thailand in 1995. In 1998 Ford and Mazda opened their $470 million Auto Alliance plant to build pickup trucks 120 miles southeast of Bangkok near Cambodia.[120] GM had a plant in Taiwan and one in Indonesia. GM set up a joint project with Isuzu in the Philippines in 1979, but by the 1980s the Philippines were known as the basket case of Asia and the project was abandoned. Ford closed its money-losing plant in the Philippines in 1984. Both companies were trying again in the Philippines in the '90s. In 1993 American car companies learned about a Mitsubishi Master Plan to dominate the Vietnamese vehicle market. The U.S. did not yet have formal diplomatic relations with Vietnam. After those relations were established, in August, 1995 Chrysler applied for a license to operate a plant near Ho Chi Minh City in Vietnam to assemble cars and trucks from kits.[121] Ford also had a small plant in Vietnam to assemble vehicles from kits. The 1997-1998 Asian economic meltdown put some plans on hold.[122]

There were efforts elsewhere in Asia. After India turned to economic liberalization in 1991, both Ford and GM began to sell cars there. In 1994 India's government approved a GM proposal to build passenger cars there in collaboration with an Indian manufacturer. Japanese and European car companies also flocked to India. By the end of the decade the Ford and GM operations in India were still losing money.[123]

The big news in the 1990s was what was happening in China where disposable incomes were rising fast. The U.S. trade imbalance with China as of April, 1993 was $19 billion, second only to the U.S. trade imbalance with Japan.[124] China's new vehicle market grew from 50,000 in 1980 to an estimated 1.4 million in 1995. American Motors was the first American car to go to Communist China when it began its Beijing Jeep joint venture in the mid80s. Chrysler acquired a 31 percent stake in Beijing Jeep when it acquired AMC in 1987. GM, with a joint venture to produce pickup trucks in Shenyang, also won approval to build cars (and later also minivans) in Shanghai beginning in 2001. As of 1993, Ford had only an auto parts joint venture in China. Then in August, 1995 Ford bought 20 percent of Tiangling Motors to build buses and vans beginning in 1997. In 2000 Ford and GM were vying to joint venture with a Chinese small-car maker in Chongqing in Sichuan province.[125] In 1997 Ford was negotiating with a local partner to build small family cars in China beginning in 2000 and GM was negotiating to replace Peugeot as the foreign partner in a Guangzhou carmaking joint venture. By 1998 foreign firms probably accounted for about ten percent of manufacturing's value-added in China and 19 to 29 percent of the output of all private enterprises.[126] Production by foreign multinational corporations was probably at least one-third of the total output in Guangdong province.[127]

U.S. car companies went to Asia to get their foot in the door. They hoped to make real profits in Mexico and Brazil, where they had been for some time. As of 1998, foreign multinational corporations had about a 30 percent share of manufacturing in major Latin American countries.[128] After Mexico's foreign debt crisis and a massive debt rescheduling program in 1983 and 1984, Renault left Mexico. There were only five vehicle producers remaining: VW, Nissan, Ford, Chrysler, and GM. In 1984 the Mexican Commerce Ministry informally suggested to the U.S. trade representative's office that a U.S.-Mexico auto pact might possibly be created. When the U.S.government polled Washington representatives of American car companies in 1985 about whether the companies wanted an agreement with Mexico similar to the Canadian agreement, they said no.[129] In 1988 Mexico declared a moratorium on payment of its staggering US$85 billion foreign debt, demanded that the debt be restructured, and nationalized the banking system.[130]

To help remedy its situation, Mexico began turning away from its barriers to foreign investment. By the end of the 1980s, the worst of the debt crisis was over. By the time the Bush administration was pushing the NAFTA agreement, arguing that it would give U.S. companies more leverage in world markets, the auto companies supported the idea although privately there were some doubts. Some 110 U.S. and Canadian companies were already making vehicle parts in Mexico in 1993. In that year, suppliers in all three NAFTA countries formed a Federation of North American Automotive Parts Manufacturers' Associations.[131] According to the U.S. Office of Technology Assessment, the Big Three U.S. auto makers were expecting to increase U.S. auto exports to Mexico from 1,000 cars to 60,000 a year. (At the time, car sales in Western European were dropping off sharply.) When the NAFTA agreement went into effect on January 1, 1994, none of the U.S. auto companies wanted to be outdone by the others. Altogether they had a huge number of vehicles massed at the border ready to be exported into Mexico. Late in 1994 another financial crisis hit Mexico.

Held comments: "Deregulation of financial markets in developing countries often led to high levels of speculative activity, largely fuelled by short-term capital inflows. In the 1994-5 Mexican peso crisis, large capital outflows came after three years of heavy capital inflows and a boom on the Mexican stock exchange; as economic growth faltered, the exchange rate became unsustainable and was subject to a speculative attack."[132] Vehicle sales in Mexico plunged in 1995 and early 1996 but rebounded later in 1996. In 1997 vehicle sales there increased 70.5 percent.[133] When Mexico benefited from an oil price boom in 2000, the task was to avoid another stampede of speculative foreign investment such as the one in the early '90s that had driven the country to near-bankruptcy.[134]

Brazil was not tempting to investors in the early '90s when its inflation rate reached 1000 percent and when, by early 1994, prices were increasing at a rate of more than 2000 percent a year. The situation changed after in July, 1994 when a "crawling peg" was established between the Brazilian real and the American dollar; the real would trade against the dollar within a pre-set band and depreciate by seven percent a year. From that date, inflation declined significantly. In 1997 prices rose by only 3.4 percent. Laws were changed in 1994 and 1995 to encourage foreign investment. Privatization of oil, gas, and telecommunications in the first half of the '90s contributed to an optimistic business climate. At the end of 1996, well-capitalized foreign banks had effective control of 10 percent of the banking system; by September, 1998, 19 percent.[135]

As a result of these changes and because of Brazil's size, from 1994 to 1998 Brazil seemed to be the new frontier for the world's automotive companies. Having the most sales in Brazil in 1987 were VW, GM, and Ford but Fiat was coming up fast. In 1992 Chrysler announced that it would return to Brazil after a 13-year absence. The rise of car sales between 1993 and 1995 induced Mercedes-Benz and Renault to build new Brazilian assembly plants. Honda announced in 1996 its plans to build vehicles in Brazil. Most of the plants of the Big Four (VW, Fiat, Ford, and GM) were at full capacity by the end of 1996. Fiat, Ford, GM, Honda, Mercedes-Benz, Peugeot-Citroën, Renault, Toyota, and VW/Audi all planned new car manufacturing operations to take place between December, 1997 and 2000. Investments were also in the works to produce more trucks, buses, and vans. *The Economist* stated in September, 1998: "Brazil is a large market protected by high tariff barriers and no fewer than 13 vehicle makers [including Hyundai, Toyota, and Asia Motors, a Kia subsidiary, among others] have been lured to build plants there. Brazil could soon overtake Britain and Italy in car making."[136] In 1998 the government began treating foreign companies the same as domestic ones.[137]

Yet, the situation was unstable. The 1997-1998 Asian crisis caused cash-strapped investors from Japan, Korea and Southeast Asia to flee Brazil. The government raised interest rates to try to stem the financial outflow and finance the growing deficit in current accounts.[138] In the first half of 1998 car sales in Brazil fell 23 percent. After Russian default and devaluation in mid-August, 1998, the fall in Brazilian stock prices was nearly 40 percent by September 21 and the country lost some $20 billion in reserves in the same period. In response the government made a large increase in domestic interest rates and cut its spending by $4 billion.[139] Early in 1999 the Brazilian government devalued the real, which had the effect of disrupting the regional economy and plunging the Mercosur customs union into crisis. Mercosur trade contracted in 1998; in 1999 trade between Argentina and Brazil fell even more sharply.[140] The Financial Times reported on November 2, 1999 (p. 1): "Although Brazil has grown faster this century than any other major economy in the world – with the exception of Japan – it has yet to break free of a persistent cycle of boom and bust." Despite its problems, from January to November, the country had received more than $20 billion in foreign investment. By March, 2000 the economy had clearly stabilized but there were still problems.[141]

For companies wishing to globalize, there were several ways of going abroad. One was to establish a subsidiary, a subunit of the parent company. Or the company could simply collaborate or form strategic alliances with selected foreign firms. For example, in 1998 GM and Japan's Suzuki were planning to coordinate their global operations, with Suzuki specializing in the design and development of small cars for GM and with GM focusing on midsize and large vehicles. The agreement was designed to help them both expand globally faster and at lower cost.[142] Another way was to enter into more formalized joint ventures. This was mandated by some countries, such as China, which required – as many countries did -- that domestic interests retain majority control. Joint ventures and other non-equity relations between firms grew from

1,760 in 1990 to 4,600 in 1995. Often--such as in China-- there turned out to be conflicts of agenda and company culture.[143] One company might acquire a stake in another by purchase or stock swap, as American companies did in some Asian and European companies. Or there might be outright acquisition and merger. Global merger activity totaled over USD$2.3 trillion in 1998; $3.3 trillion in 1999; $3.5 trillion in 2000. A larger company might absorb a smaller one, as the American companies did Volvo, Saab, Lotus, Aston Martin, and Jaguar. Sometimes the deal was between two large companies such as between Chrysler and Daimler formally merged by November 11, 1998. That merger at first was presented as a merger of equals, although Chrysler was in many ways in the stronger position. It became clear over time that Daimler had acquired Chrysler. Motives for merger varied from a simple "urge to merge" to strategic efforts to buy image, product, technological innovation, or access to markets. The buzzword often used was "synergy". The end result was sometimes less than synergistic – as in the case of DaimlerChrysler--because of clashes between company cultures reflecting national cultural differences. An exodus of Chrysler's top, talented executives contributed to a sharp decline in the price of DaimlerChrysler stock until 2001 when rumors were surfacing that DaimlerChrysler was ripe for breakup.[144]

From the 1980s onward, American companies experienced a rash of hostile takeovers. It was after Chrysler shareholders Kirk Kerkorian and Lee Iacocca tried to take over Chrysler in 1995 that the company agreed to its $36 billion merger with Daimler-Benz in part to forestall any more of such efforts. The way to keep from being taken over was to grow the company to make takeover more difficult. Large cash reserves within a company were a temptation to those who wanted to take over the company because the reserves could be used after takeover to pay off the debt. Better – some company executives thought – to spend the money on foreign acquisitions to keep cash reserves from growing too large and tempting.

Dr. Ziebart reported to the Automotive News World Congress in Detroit in January, 2000 the results of a survey of major international mergers between 1996 and 1998: "83 percent of the mergers did not produce any increase in shareholder value, and in 53 percent of the cases, the value actually fell."[145] By 2000, GM's CEO was saying: "The best phrase to describe our company is the GM network." "Alliances can provide many of the benefits of an acquisition without the capital, cultural and marketplace trauma involved in a full merger."[146]

Nationalism persisted in the automotive industry worldwide. For example, Rumania, Yugoslavia, Czechoslovakia, Malaysia, and Indonesia all had "national cars" but development of such cars was usually in collaboration with foreign companies. Almost everywhere in the world, including the U.S., national governments assisted domestic car companies in various ways. Foreign activities of Japanese, Korean, German, and American auto companies were often seen as a form of national imperialism. In spite of their global holdings American car companies were still very American. Ford had 345,000 workers altogether worldwide,[147] but the Detroit papers reported in 1999: "Almost 46 percent of Ford's hourly employees live and work in the greater Detroit area. Ford has 25 plants in Michigan, three parts-distribution centers and five research/engineering facilities." Eleven more plants were in nearby Ohio.[148] In 1996 two-thirds of GM's 750,000 employees worldwide were in the U.S. In 2000, GM had 37,500 employees in southern Michigan.[149]

On January 1, 2000 in the *Detroit News* (p. 1), David Phillips wrote: “The 1990s may well be remembered as a new golden age for the U.S. auto industry.” In 1991, 12.3 million light vehicles were sold; by 1999, 17 million. In 1993 the U.S. Big Three’s profits were $2.4 billion; by 1999, between January and September, $14.3 million. Profit margins by that time were around five percent. The U.S. market for vehicles had been sizzling, but the strategy of globalizing had not paid off well. GM lost $124 million in Latin America/Africa/Middle East in 1998 and $146 million in Asia in 1999.[150] By October, 2000 the Asian Wall Street Weekly reported that Indonesia, Thailand, the Philippines and Malaysia all had higher levels of external debt than they did in 1997. By January, 2001 the world outlook was bleaker, especially for U.S. companies. Heavy truck producers in the U.S. predicted a sharp fall in their output.[151] A *New York Times* headline read: “A Strong Dollar Adds to Detroit’s Woes”. The U.S. automotive trade deficit with Japan in 2000 was $45 billion.[152] Because of exchange rates, foreign car companies were in the midst of another binge of investment in the U.S. Despite the comparatively good times for the auto industry in the 1990s, there was still serious overcapacity worldwide.

External Structural Changes Requiring Internal Structural Changes

Even though American auto companies had moved early to establish branches abroad, travel between countries was slow before the 1960s and world telephone infrastructure was not what it is now, not to mention the fact that there was no Internet. Executives abroad were left largely to their own devices.[153] The new technology and globalization in the 1980s and 1990s led to a new *globalism* in company structure and operations. CEOs and other high-level executives in the 1990s were often foreign-born (e.g., Scots Alex Trotman of Ford, Lebanese-Australian Jacques Nasser of Ford, Swiss-born Bob Lutz of Chrysler) and/or had often directed company operations abroad.

There was considerable experimentation as the companies searched for ways to be more global in management. With each new CEO, operational and marketing strategies tended to shift. Organizational policies vacillated between efforts to achieve more centralization and new region-based decentralization. Ford at one time was talking about a “world car” – one brand sold everywhere something like Henry Ford, Sr.’s Model T. There was talk of having more global platforms, and collaboration on a global basis between design teams situated various places in the world. At the same time, consumer differences in taste, life style and contextual circumstances made a case for niche marketing. With the help of the Internet and computerized manufacturing, the companies hoped to move toward mass customization.

CEO Donald Petersen hoped to make Ford a globally integrated enterprise. CEO Alex Trotman’s Ford 2000 project, begun in 1994--seeking first to merge many operations in North America and Europe and later to fold in Asia and Latin America--had caused many managers abroad to relocate in Dearborn. An analyst for Morgan Stanley commented: “Ford 2000, in a sense, is the largest merger in history.”[154] CEO Jacques Nasser, reversed course and reorganized the company during 1999. Beginning in 2000, executives dealing with four regions in the world-- South America, Europe, Asia, and North America—would have added marketing and product development responsibilities in their regions. Nasser’s idea was to decentralize decision making power away from the Dearborn international headquarters.

In the 1970s and even more in the ‘80s, American car companies automated production and moved toward adopting “lean production”, including just-in-time deliveries. Just-in-time delivery of parts simplified manufacturing by eliminating all non value-added operations, equipment, and resources. This included inventory materials, machines, and manpower, and activities such as moving, storing, counting, sorting, scheduling, and quality inspection. The idea was to deal with problems as they arose to maintain minimum inventories, maximum quality control, and uniform plant load. It took Information Control System software to do this, as well as changed relations with suppliers. The problems and costs of just-in-time fell disproportionately on low-end suppliers. There was less shipping by railroad boxcars and more by truck. For truckers, there were new cost problems since shipments were smaller and more frequent. New smaller and more numerous warehouses had to be deployed by suppliers or truckers. The OEMs called it lean manufacture.[155]

The OEMs felt they needed more cost-cutting flexibility since the market for consumer durables such as cars was subject to sharp swings up and down. Because they were locked into union contracts and commitments to a huge pool of retirees and had other fixed costs, when there was a downturn in consumer demand in the short term they felt they had to maintain production volume, cut prices, and take a cut in profits.[156] A longer-term solution was to devolve more responsibilities to suppliers, cutting the supplier list drastically and dividing the list into three tiers, arranged in a hierarchy. Suppliers were expected to have international buying teams for sub-parts and raw materials as the OEMs moved toward global sourcing strategies. GM hoped to coordinate purchasing of commodities on a worldwide basis. The desire was to have suppliers do more research and development and also, hopefully, to preassemble modules containing multiple parts. Ideally, suppliers would be located in an industrial park near the OEM’s final assembly operations. Perhaps their workers would even come on to the floor of the final assembly plant to put all the modules together. Often, this required new plant construction in greenfields, and new kinds of labor arrangements which were difficult to achieve at the sites of old plants. (The reduction of labor costs *was* one motive for manufacturing abroad since, as a *Detroit News* editorial reported,[157] the average DaimlerChrysler assembly worker earned $70,000 a year including benefits and had 37 vacation days.) The companies saw their new plants in Latin America, Asia, and Eastern Europe as an opportunity to start fresh in the new mode. This meant that the suppliers had to globalize, to have operations where they were needed in each industrial park.[158] The banks, accountants, lawyers, ad agencies, and other professionals serving the car companies also felt pressure to globalize, to be able to offer on-the-spot services where needed.

Not the least of the new changes were changes in supply chain operation and in selling, financing, and the aftermarket, all affected by growing use of computers and the Internet. Supply-chain infrastructure was globalizing for many industries. This often entailed the building of new inland terminals such as that for Los Angeles ports, served by new rail, highway, and airline links. E-commerce required new warehouse deployment and also put a premium on services of companies like Fedex and United Parcel Service. By the late ‘90s the car companies were collaborating with suppliers to set up on-line auctions for the buying and selling of raw materials and certain parts. A majority of trade done by auto companies was intra-firm or business-to-business trade, and in January, 1998 an Automotive Exchange Network (ANX) debuted to facilitate emailing between some OEMs and their suppliers and exchange of engineering data and business files. “Ultimately, it could involve some 40,000 suppliers, dealerships, and financial services companies—practically any organization that wants to do business with the industry." In May, 2000 COVISINT was announced, involving DaimlerChrysler, Ford, GM, Renault, and Nissan. It was expected to be a unified global industry exchange which other global OEMs and major suppliers were invited to join. The vision was that it would connect sellers and buyers globally, reduce inventories and cycle times, and enable collaborative product development. Some companies chose to set up their own networks.[159]

The success of Dell Computer in direct selling to consumers attracted car company attention. What restrained the car companies from more widespread use of the Internet in selling was the fact that state laws often restricted this kind of selling in order to protect the more than 20,000 U.S. dealers.[160] The hoped-for mass customization was impeded, the companies claimed, because their outdated U.S. factories were not flexible enough to deal with real-time Internet orders. Newer American factories in Asia and Latin America could be designed to be more flexible. GM was testing use of the Internet for selling in Taiwan, England, Australia, Brazil, and China. In 1994 in Japan Aucnet was auctioning about 150,000 vehicles a year to dealers. Volvo, a Swedish car company, began a test program in Brussels in July, 1998 to allow customers to order vehicles directly from the factory on the Internet. Because many countries were struggling with the problem of how to censor the email and website content that came in from other countries, some--such as China with its C-Net--were planning to develop their own Internets, which might create new problems for globalized foreign companies. The OEMs and major suppliers were adopting standardized enterprise resource planning computer software programs.[161] "When Giants Collide. Megamergers Face an Invisible Threat: Incompatible IT" was the title on a *Computerworld* magazine insert on September 12, 1998.

While the American companies inspired awe or fear because of their size, they felt beleaguered by rapid change. When the European Union's new currency, the euro, went into effect on January 1, 1999, the British did not participate. The euro was intended to be the beginning of the end of the dollar's hegemony, but between the time the euro was launched and June, 2000 the dollar appreciated 20 percent against the euro and rose sharply against the pound. (The U.S. Treasury Secretary had a strong dollar policy between 1995 and 1998.) The euro's value in exchange for the dollar and the pound sterling became so depressed that Ford felt compelled to close down car making at its large plant at Dagenham near London, and Nissan's CEO warned that the model Nissan plant in northeast England might have to close. After the 1997-1998 meltdown in Asia, the exchange value of Asian currencies was growing only modestly. On June 2, 2000 the *Financial Times* reported that increased cross-border mergers and acquisitions had "added to the inscrutability of currency movements since their effect on currencies depend[ed] partly on whether the transaction [was] financed by cash or shares."[162]

Although public protests against globalization were mounting at the turn of the millennium, and although the car companies knew all too well the pitfalls of manufacturing abroad (it had not been a bed of roses, but production at home was no picnic either), they were not going to (could not) pull back to manufacture solely within American boundaries. For economies of scale, global reach had been part of their structure from the beginning. The auto companies by the turn of the millennium were too deeply imbedded in global financial systems and global infrastructure to reverse course. Yet, they knew all too well that there would be further problems.

ENDNOTES

[1] *New York Times*, January 18, 2001: B1. The drop in GM's fourth-quarter revenues included a one-time loss of $939 million for the phasing out of GM's Oldsmobile division. See also Rhoda Miel, "Carmakers tightening their belts in 2001," *Automotive News*, 1/15/01: 36X. In the fourth quarter of 2000, GM lost $882 million in Europe, $254 million in Latin America, $107 million Asia Pacific, and $16 million in Latin America/Africa/Middle East. Hughes' profits were $1 billion. *Detroit Free Press*, 1/18/01: E1, E3. *Automotive News*, 2/5/01: 1, 116.

[2] Peter Dicken, *Global Shift, The Internationalization of Economic Activity*, 2nd ed. (London: Paul Chapman, 1992): 268.

[3] Micheline Maynard, *Collision Course. Inside the Battle for General Motors* (New York: Birch Lane Press, 1995): 8.

[4]*Detroit News*, 3/24/00: 2A; *Detroit News and Free Press*, 3/25.00: 1A, 9A. (I wish to thank Ralph Pezda for keeping me abreast of news in Detroit in the last half of the '90s.) Maynard: 15; Stan Luger, *Corporate , Power.American Democracy, and the Automobile Industry* (Cambridge: Cambridge University Press, 2000): 189; *Automotive News* commented 12/4/00: 20 that DaimlerChrysler stock prices had more than halved since early 1999. On the clash of cultures in DaimlerChrysler see *Automotive News*, 12/6/99: 1, 32; Schrempp's comments in *Automotive News Europe*, 11/20/00: 23. By 12/00 shareholders were pressuring Schrempp to quit. *Automotive News Europe*, 12/4/00: 1, 4.

[5]*Detroit Free Press*, 12/7/99: 1A, 2A; *Detroit News*, 3/24/00: 1A; Maryann Keller, *Rude Awakening. The Rise, Fall, and Struggle for Recovery of General Motors* (New York: HarperPerennial, 1989): 205, 168, 169. On 8/3/98: 101, Automotive News quoted John Fiedler of auto supply company Borg-Warner: "I think our stock market has not given the U.S. auto industry any credit at all for what has happened in the last five years, for the stability of our companies. None of our P/E ratios are what they ought to be. That's an inequity that is going to catch up with us."

[6] *New York Times*, 11/7/99: Sec. 3, 1.

[7] Jon Pepper in *Detroit News*: 12/10/99: 14A.

[8]The Ford family had special voting privileges because of its holdings in Class B stock shares. To retain its privileges, the family had to retain 33.7 million shares of Class B voting stocks. By the year 2000, Henry Ford's two surviving grandchildren, Josephine F. Ford and William O. Ford, Sr., were in their mid70s. In midApril arrangements more made so that the family would have $1.42 billion of common stock to sell, to cover possible estate taxes, without touching the family holdings of Class B stock. *New York Times*, 4/15/00: B3.

[9]Murphy: 747.

[10]Krish N. Bhaskar, *The Future of the World Motor Industry* (London: Kegan Page, 1980); --, *The Future of the UK and European Motor Industry* (Bath: Sewells, 1983).

[11]Heinz Weichrich and Harold Koontz, *Management; a Global Perspective*, 10th ed. (New York: McGraw-Hill, 1993): 705.

[12]See, for example, Barry Bluestone, Bennett Harrison, and Lawrence Baker, *Corporate Flight: The Causes and Consequences of Economic Dislocation* (Washington, D.C.: Progressive Alliance, 1981).

[13]Lawrence R. Gustin, *Billy Durant, Creator of General Motors* (Flushing, Mich.: Craneshaw, 1984): 85-86. Ford R. Bryan, *Beyond the Model T, The Other Ventures of Henry Ford* (Detroit: Wayne State University Press, 1990): 152-161. Thomas O'Brien, *The Century of U.S. Capitalism in Latin America* (Albuquerque: University of New Mexico Press, 1999): 126.

[14]See section on "Trade and Commerce", under the heading of "British Empire", *Encyclopædia Britannica* (Chicago: 1952): 190-194; John Dunning and Peter Robson (eds.), *Multinationals and the European Community* (Oxford: Basil Blackwell, 1988).

[15] "Sir Percival Lea Dewhurst Perry" in Ford R. Bryan, *Henry's Lieutenants* (Detroit: Wayne State University Press, 1993): 227-233.

[16] Alfred D. Chandler, Jr., *Scale and Scope. The Dynamics of IndustrialCapitalism* (Cambridge: Belknap Press of Harvard University Press, 1990): 209; Dicken: 298; Thomas O'Brien, *op.cit.*

[17] Bryan, *Henry's Lieutenants*: 231; Richard O'Brien, *Global Financial Integration. The End of Geography* (London: Pinter, 1982).
[18] See Peter O'Brien and J. Felix Lobo Allen, *International Industrial Restructuring and the International Division of Labour in the Automotive Industry* (Vienna: UN Industrial Development Organization, 1984).
[19]*Automotive News*, 9/27/93: 37.
[20]Johannes Werner, *Automotive News*, 9/27/93: 37.
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[24]Walter Hayes, *Henry, A Life of Henry Ford II* (New York: Grove Weidenfeld, 1990): 110.
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[26]Manuel Castells, *The Informational City. Information Technology, Economic Restructuring and the Urban-Regional Process* (Oxford: Basil Blackwell, 1989): 326.
[27]Weihrich: 13.
[28] David Held, Anthony McGrew, David Goldblatt, and Jonathan Perraton, *Global Transformations: Politics,* Economics*, and Culture* (Stanford: Stanford University Press, 1999): 201.
[29] Held et al.: 202.
[30] Bank for International Settlements, *Recent Innovations in International Banking*, 1986.
[31] Paul Volcker in Volcker and Toyoo Gyohten, *Changing Fortunes, The World's Money and the Threat to American Leadership* (New York: Times Books, 1992): 190.
[32] Smith, *Global Bankers:* 274.
[33] Smith: 301.
[34] Trachte and Ross: 200.
[35] Smith, *GlobalBankers*: 263.
[36] Porter: 161.
[37] Hayes: 110.
[38] Trachte and Ross: 201; Luger, *Corporate Power*: 43; Hayes: 110.
[39] Gyohten in Volcker and Gyohten: 131.
[40] *Ibid*.: 132.
[41] *Ibid*.: 153.
[42] *Ibid*.: 156.
[43] *Ibid*.: 154.
[44] *Ibid*.: 156.
[45] *Ibid*.: 162.
[46] Motor Vehicle Manufacturers' Assn.: however, in the third quarter of 1979 when Ford lost $300 billion in the U.S., its worldwide operations gained $103 million (*Detroit Free Press*, 11/15/79). In 1979 and 1980 Ford in the U.S. got loans from its English and German subsidiaries (*Wall Street Journal*, 6/25/80 and 6//27/80: 22).
[47]Trachte and Ross: 201; Luger: 43.
[48] *Automotive News*, 3/26/97: 4.
[49]*Automotive News*, 11/8/99: 24L.
[50] *New York* Times, 3/23/00: C1, C25; Detroit *News*, 4/7/98: 3B; 5/7/98: 3B; 6/3/98: 3B; 7/2/98: 3B; *Detroit Free Press*, 2/21/94: 11F. *Automotive News*, 5/2/94: 20; 12/28/92: 33. Smith, *Global Bankers*: 81. In May, 2000 DaimlerChrysler agreed in principle to buy 34 percent of Mitsubishi Motors (*New York Times*, 11/26/00: 11). In 2000 GM acquired 20 percent of Fiat Auto while Fiat acquired 5.1 percent of GM (*Financial Times Auto*, 6/14/00). See also story from *Automotive News Europe*, 7/30/00 at autonewseurope.com/stories/anecwagoner703.htm. For other details on ownership stakes and joint ventures see Walter Adams and James W. Brock (eds.), *Structure of American Industry,* 9th ed. (Upper Saddle River, N.J.: Prentice Hall, 1995).
[51] *Automotive News*, "Automotive World News", 9/6/82: 15.
[52] *Automotive News*, 12/26/94: 10.
[53] *Detroit News*, 5/7/98: B1.
[54] *Wall Street Journal*, 6/?/80.
[55] Trachte and Ross: 205.

[56] Held et al., *Global*: 202.
[57] Volcker in *ibid.*: 190.
[58] *Ibid.*: 194.
[59]*Ibid.*: 193.
[60]*Ibid.*: 197.
[61]*Ibid.*: 191.
[62]*Ibid.*: 175, 194. See U.S. Department of Transportation, The U.S. Automobile Industry, 1980, Report to the President from the Secretary of Transportation," 1/81; *Business Week*, 11/9/81: 106-107.
[63] Gyohten in Volcker: 248.
[64] Gyohten in Volcker: 249.
[65] Volcker in *ibid.*: 179..
[66] *Ibid.*: 239.
[67] *Ibid.*: 170.
[68] *Ibid.*: 198.
[69] Rob Vos, *Debt and Adjustment in the World Economy* (Basingstoke: Macmillan, 1994): 140.
[70] Volcker in *ibid.*: 197-198. For general background see Christian Suter, *Debt Cycles in the World-Economy, Foreign Loans, Financial Crises and Debt Settlements, 1820-1990* (Boulder: Westview Press, 1992).
[71] *Automotive News*, 1/31/83: 8; "Peso crisis unsettles Mexican auto industry," *Automotive News*, 9/13/82.
[72] *Automotive News*, 2/9/87: 2; in 1978-1979 about 362,000 vehicles a year were sold in Mexico and Ford and GM were expanding their plant capacity there. *Detroit Free Press*, 5/4/79: C9.
[73] *Automotive News*, "100 Events That Made the Industry", 6/26/96: 140.
[74] *New York Times*, 2/15/85: 31; 12/7/86: 1. *Detroit News*, 2/24/84: 6A, 3/22/85: 5B; *Business Week*, 2/26/85: 44.
[75] Smith, *Global Bankers*: 221.
[76] Smith, *Global Bankers*: 52.
[77] Smith, *Global Bankers*: 283.
[78]Smith, *Global Bankers*: 112.
[79] Smith, *Global Bankers*: 163 , 165, 181.
[80] Smith, *Global Bankers*: 10.
[81] Dicken: 49.
[82] Jim Mann, *Beijing Jeep. How Western Business Stalled in China* (New York: Touchstone, 1990). Richard Child Hill, "Comparing Transnational Production Systems: The Automobile Industry in the USA and Japan," *International Journal of Urban and Regional Research*, 13 (3) (September, 1989): 462-480; this quote, 462).
[83] Volcker in *ibid.*
[84] Smith, *Global Bankers*: 237; *Automotive News*, 1/18/87: 521.
[85] Volcker in *ibid.*: 240.
[86] Volcker in *ibid.*: 242.
[87] Volcker in *ibid.*: 244.
[88] Volcker in *ibid.*: 235.
[89] Volcker in *ibid.*: 246.
[90] Doron Levin, *Behind the Wheel at Chrysler. The Iacocca Legacy* (New York: Harcourt Brace, 1995): 173.
[91] *Business Week*, 4/22/85: 174; *Automotive News*, 722/85: 3 on a bill in the U.S. Congress to place a 25 percent tariff on imports from Japan.
[92] *Business Week*, 4/25/88: 92.
[93] Gyohten in Volcker: 271. At the 1988 Automotive News World Congress, Albert T. Warner, director of the U.S. Department of Commerce, said: "With a relationship of yen to dollar of 125 to 130, Japanese manufacturers turned to foreign countries as sources for parts and vehicles to be sold in Japan…It also turned the Japanese to manufacture of larger higher margin cars." Reprinted in *Automotive News*, 9/5/88: E26.
[94] Gyohten in Volcker: 269.
[95] Volcker: 259.

[96]Gyohten in *ibid*.: 269; Barbara Marga Weiss, "Host Company Perspectives on Foreign Investment," paper for ISA conference, 3/00: 13.
[97]Gyohten in *ibid*.: 222.
[98]Gyohten in *ibid*.: 221.
[99] Gyohten in *ibid*.: 217; on Mexico, *Automotive News*, 9/27/93: 37.
[100]Gyohten in *ibid*.: 222.
[101] Gyohten in *ibid*.: 219.
[102] Volcker: 254.
[103] Gyohten: 257.
[104] Gyohten in *ibid*.: 269.
[105] Will Slatyer and Edna Carew, *Trading Asia-Pacific Futures Market* (St. Leonards, Australia: 1993): 130.
[106] Gyohten in *ibid*.*: 268.*
[107] Slatyer, *Trading*: 130.
[108] Smith, *Global Bankers*: 46.
[109] Smith, *Global Bankers*: 189.
[110] *New York Times Magazine*, Part 2, "The Business World", 9/23/90: 28; *Business Week*, 3/28/88: 78.
[111] *Automotive News*, 5/15/89: 45. On GM in 1987, *Detroit Free Press*, 5/17/87: 1A, 14A.
[112] Richard Worthington, *Rethinking Globalization*. *Production, Politics, Actions* (New York: Peter Lang, 2000): 40 citing World Bank, *World Development Report*, *1998/1999* (New York: Oxford University Press, 1999); and…*1993* (New York: Oxford University Press, 1993). Worthington's data from pre1989 are from Ankie Hoogvelt, *Globalization and the Postcolonial World* (Baltimore: Johns Hopkins Press: 1977): 71.
[113] DeAnne S. Julius, *Global Companies and Public Policy* (London: Pinter, 1990).
[114] Held: 251.
[115] Glenn E. Curtis (ed.), *Russia, A Country Study* (Washington, D.C.: Federal Research Division, Library of Congress, 1998): 352.
[116] *Financial Times*, 9/3/98: IV.
[117] Daniel Howes, *Detroit News*, 1/9/99: B1; *Automotive News*, 9/19/94: 30, 9/28/98: 17; 12/19/94: 4; 7/17/00: 1; *Automotive News International*, 1/00: 10; 7/17/00: 1.
[118] Howes, *ibid.*; *Automotive News*, 12/7/92: 4; 5/8/95: 29; 11/7/94: 2; 7/17/00: 16; *Detroit News*, 5/24/98: C1, C3.
[119] *Automotive News*. 5/27.96: 8
[120] *Automotive News*, 11/18/93: 48; 12/4/95: 2; 8/4/97: 3; 2/8/94: 34; 5/10/93: 4; *Detroit News*, 8/4/95: 1B; 7/5/98: C1, C3; 5/26/98: B1, B2.
[121]*Journal of Commerce*, 3/17/94: 3A; *Detroit News*, 8/4/95: 1B.
[122]*Detroit News*, 8/4/95: 1B; *Automotive News International*, 10/99: 5, 28; 1/00: 15. Philippe F. Delhaise, *Asia in Crisis, the Implosion of the Banking and Finance System* (Singapore: John Wiley and Sons, Asia, 1998).
[123]*Automotive News*, 4/2/93: 4.
[124]*Automotive News*, 7/13/98: 46.
[125] *Automotive News*, 5/20/96: 46; 6/24/96: 33; 7/4/95: 41; *Detroit News*, 7/5/98: 30; *Asian Wall Journal Street Weekly*, 11/6-12/00: 2. John Wiley, Vehicle Chief Engineer of GM's China Project Team, "Bringing GM's Global Manufacturing Strategy to Shanghai," remarks to University of Michigan Management Briefing Seminar, Traverse City, Michigan, 8/8/00. *Automotive News*, 5/26/97: 1, 53; 1/4/88: 56.
[126]Eric Ramstetter, "Measuring the Size of Foreign Multinationals in the Asia Pacific," in Grahame Thompson (ed.), *Economic Dynamism in the Asia Pacific* (London: Routledge, 1988), cited by Held: 253. *Financial Times*, 4/24/00: 16: The car industry had about 25 percent overcapacity worldwide.
[127] Held: 253.
[128] Held: 253.
[129] *Automotive News*, 11/18/85: 1.
[130] *Mexico Business. The Portable Encyclopedia for Doing Business in Mexico* (San Rafael, CA: World Trade Press, 1994): 7.
[131] *Automotive News*, 10/4/93: 3; 5/30/93; 9/27/93: 37.
[132] Held: 213 citing Grabel: 195; see also John Manzella, *Mexico and NAFTA: The Real Impact* (Journal of Commerce, 1994): 165.

[133] *Automotive News*, 2/27/95: 1, 33; 1/9/95: 4; 3/27/95: 44; 3/18/96: 29; 1/26/98: 38. West European sales also fell sharply in 1973 (*Automotive News*, 3/2/94: 18). In 1996 the Mexican minimum wage was 29 cents an hour, but Chrysler's Mexican plants were paying $2 to $6 an hour (*Automotive News*, *12*/16/96: 36). See Stephen J. Randall and Herman W. Konrad (eds.), *NAFTA in Transition* (Calgary: University of Calgary Press, 1995)

[134] *Financial Times*, 3/24/00: III; *Automotive News*, 5/30/94: 50; 7/29/96: 28.

[135] *Financial Times*, Survey, 9/25/98: I, IV.

[136] *The Economist*, 9/5/98: 60; *Automotive News*, 7/12/99: 91; 8/26/96: 43; 8/8/94: 3, 41.

[137] Gomez of Delphi at Economist Automotive conference.

[138] *Detroit News*, 7/19/98: C1, C31.

[139] *Financial Times Survey*, 9/25/98: IV.

[140] Thierry P. Ogier in *Journal of Commerce*, 6/22/99: 15.

[141] *Financial Times Survey*, 3/24/00: III.

[142] *Asian Wall Street Journal Weekly*, 9/21/98.

[143] UNCTAD, 1997: 12; Held: 256.

[144] *Detroit News*, 1/27/00: 8A; Jürgen Grässlin, *Jürgen Schrempp and the Making of an Auto Dynasty. The Story of the Man Behind DaimlerChrysler* (New York: McGraw Hill, 1998). The day after the merger was announced, the editorial reaction of the Detroit News was: "The merger…shows how frightened the world's automakers have become about surviving in an increasingly brutal industry." (*Detroit News*, 5/7/98: 7A). At the time he retired, Robert Eaton, Chrysler's chairman, explained that Chrysler was basically a regional player (i.e., selling primarily in North America) in a glutted marketplace. Without some kind of merger, he said, an economic downturn in North America would marginalize Chrysler and it might have the kind of near-death experience it had had in the late 1970s and early 1980s (Jon Pepper, *Detroit News*, 1/27/001A, 9A). See Bill Vlasic and Bradley E. Stertz, *Taken for a Ride. How Daimler-Benz Drove Off with Chrysler* (New York: William Morrow, 2000). *Automotive News*, 11/20/00: 1, 38, 39, 40 on "The Crisis at Chrysler". *The Economist*, 1/27/01: 59. Despite the DaimlerChrysler experience, global alliances were still sought after. *Automotive News* commented about GM in 2000: "Global alliances give the GM network 24 percent of global sales, including 30 percent in Latin America, 18 percent in Asia-Pacific, 20 percent in Europe and 30 percent in North America." At about this time, Ford acquired a new relationship with Daewoo, which sold almost 20 percent of the cars and light trucks in central Europe (28 percent of sales in Poland) and was present in the Ukraine and Uzbekistan (*Automotive News Europe*, 7/17/00: 10).

[145] *Automotive N*ews, 2/28/00: 32FF. See AT Kearney, "Corporate Marriage: Blight or Bliss? A Monograph on Post-Merger Integration," 1999: "58 percent [of mergers] actually destroy value. …within four years, 50 percent of all alliances (in the United States) are deemed failures."

[146] *Automotive* News, 7/3/00: 40; *Automotive News Europe*, 8/25/00; www.autonewseurope.com/stories/anecwagoner703.htm.

[147] On Malaysia's Proton: *Automotive News*, 6/19/95: 3, 7/22/85: 14. Also, Edmund Terence Gomez and Jomo K.S., *Malaysia's Political Economy. Politics, Patronage and Profits* (Cambridge: Cambridge University Press, 1997. China was hoping to develop a Chinese car that would be sold worldwide (*Automotive News*, 7/21/97: 30. About India, *Automotive News International*, 10/99: 5 and 1/00: 15; *Automotive News*, 12/95: 39: "Telco plans a small car for India". *Detroit Free Press*, 10/16/99: 11A; DaimlerChrysler had 75,000 workers.

[148] *Detroit News and Free Press*, 10/9/99: 1.

[149] *Detroit News*, 1/11/00: B1; Maynard: 8. 91.

[150] *Financial Times*, 1/21/00: 13, "Asian Financial Markets": 4/28/00. During 1999 and 2000 Ford's profits exceeded those of General Motors (*Detroit Free Press*, 1/24/01): C6.

[151] Jon E. Hilsenrath and Jason Booth in *Asian Wall Street Journal Weekly*, 10/23-29/00: 6. *Financial Times*, 1/21/00: 13.

[152] *Automotive News*, 1/1/01: 4; *New York Times*, 1/13/01: B1.

[153] Weihrich: 707; *Financial Times*, 1/13-14/01: B1.

[154] *Detroit News and Free Press*, 10/9/99: 1; 10/16/99: 11D; *Automotive News*, 4/4/94: 1; 4/25/94: 1, 42; 2/27/95: 21i; 8/2/95: 21; 4/1/96: 22; 7/1/96: 37; 9/18/95: 1.

[155] Castells: 324; Satyer, 1986: 155.

[156] *Wall Street Journal*, 1/6/00: B1.

[157] *New York Times*, 9/17/99: 12A. Dicken: 219-220; *The Economist*, 9/5/98: 60. Automotive *News*, 4/6/98: 12; 6/5/00, 1, 26 on modular assembly at GM's Ramos Arizpe plant in Mexico. *Automotive News Detroit Extra*, 8/27/84; *Automotive News Insight*, 10/2/95: 24D; 3/16/98: 22D; *Automotive News International*, 7/3/00: 5 re the modular approach at GM's Blue Macaw plant in Gravatai, Brazil.
[158] On suppliers, *Automotive News*, 4/14/97: 1, 45; 8/14/95: 50; 4/14/97: 1, 45; 4/4/94: 30; 2/9/98: 4F: "OEMs, suppliers are in a modular mood."
[159]Held: 263; *New York Times*, 9/17/99: 12A. About ANX see *Automotive* News, 9/14/98: 220; 6/1/98: 10. Nicholas Negroponte, *Being Digital* (New York: Knopf, 1995). "In 1972 there were only 150,000 computers in the world." By January, 2001 over half of Americans used the Internet. Trevor Stewart, "The E-Business Tidal Wave", Deloitte Touche Tohmatsu booklet, 1998: 23. AT Kearney booklet, "E-tailing Strategies for Automakers and Dealers," 1999. Ward's Auto World Supplement to Software Strategies, "The Integrated Automotive Enterprise", 6/00. Economist Intelligence Unit and KPMG International, booklet, "The e-business value chain. Winning strategies in seven global industries," 2000: 6: many suppliers to auto companies are worried about loss of profits if they move their business to new online exchanges.

For information about supply-chain and other management trends, I am indebted to several conferences: an i2 Planet conference in Las Vegas in the fall of 1998; an "Automotive and Industrial Conference" in Troy, Michigan 4/15/99; an Economist Latin American Automotive Conference 10/24-25/99 in Dearborn; the International Automotive Conference in Sunderland, England, April; 18-19, 2000; Automotive News Europe Congress, Montreux, Switzerland, 6/19-20/00; University of Michigan Management Briefing Seminars in Traverse City, Michigan, 8/7-8/00; a "Cross Border Trade" conference in Los Angeles, 1/24/25/00; several annual Automotive News World Congresses in Detroit in the 1990s. I have visited Ford factories in Dearborn, Chrysler factories in Detroit, the Nissan assembly plant and TRW supplier plant in Sunderland, and the Toyota facilities in Toyota City, Japan. Also, several GM facilities in Michigan.
[160]*New York Times*, 9/17/99: 12A; 1/25/01; *Wall Street Journal*, 10/25/99: B6.
[161] *Wall Street Journal*, 10/25/99: B6; *Automotive News*, 9/19/94: 45e; 3/20/00: 22; *Automotive News Europe*, 6/19/00: 6, 7. Connie Lang, "General Motors Turns a Corner, Economic Crisis in Asia Steers Car Maker to New Cybermarket," *Asian Wall Street Journal Weekly*, 4/3-9/00: 1.
[162] *Financial Times*, Survey "Foreign Exchange", 6/2/00: I, II, III.

Corinne Lathrop Gilb (professor of history emeritus) was Planning Director for the City of Detroit between 1979 and 1985 and, as such, sat on community boards with auto executives, supervised studies of the auto industry, met with envoys from the Japanese auto industry, and supervised the processing of federal and state grants for auto-related projects in Detroit. Her forthcoming book is entitled "High Tech Car Companies and the Question of Diasporas—the View from Detroit".

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