

THE GLOBALIZATION OF BUSINESS
IN THE 1990s:
IMPLICATIONS FOR TRADE AND INVESTMENT

VOLUME II
THE AMERICAS

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MADE IN AMERICA? LESSONS FROM THE NORTH AMERICAN AUTO INDUSTRY

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ABSTRACT

The share of the North American auto market held by the Big Three (Chrysler, Ford and General Motors) fell steadily from 1960 on, as the US automakers lost ground to the Asian Four (Honda, Mazda, Nissan and Toyota). The Big Three responded with strategies that were unsuccessful because they did not address the technological superiority of the Asian product and production process. It was only when the Asian Four moved onshore in the 1980s that the Big Three understood the competitive challenge -- the need to shift from mass to lean production -- and began the shift to technological upgrading. Little has been accomplished; however, the mid-1990s may provide a window of opportunity.

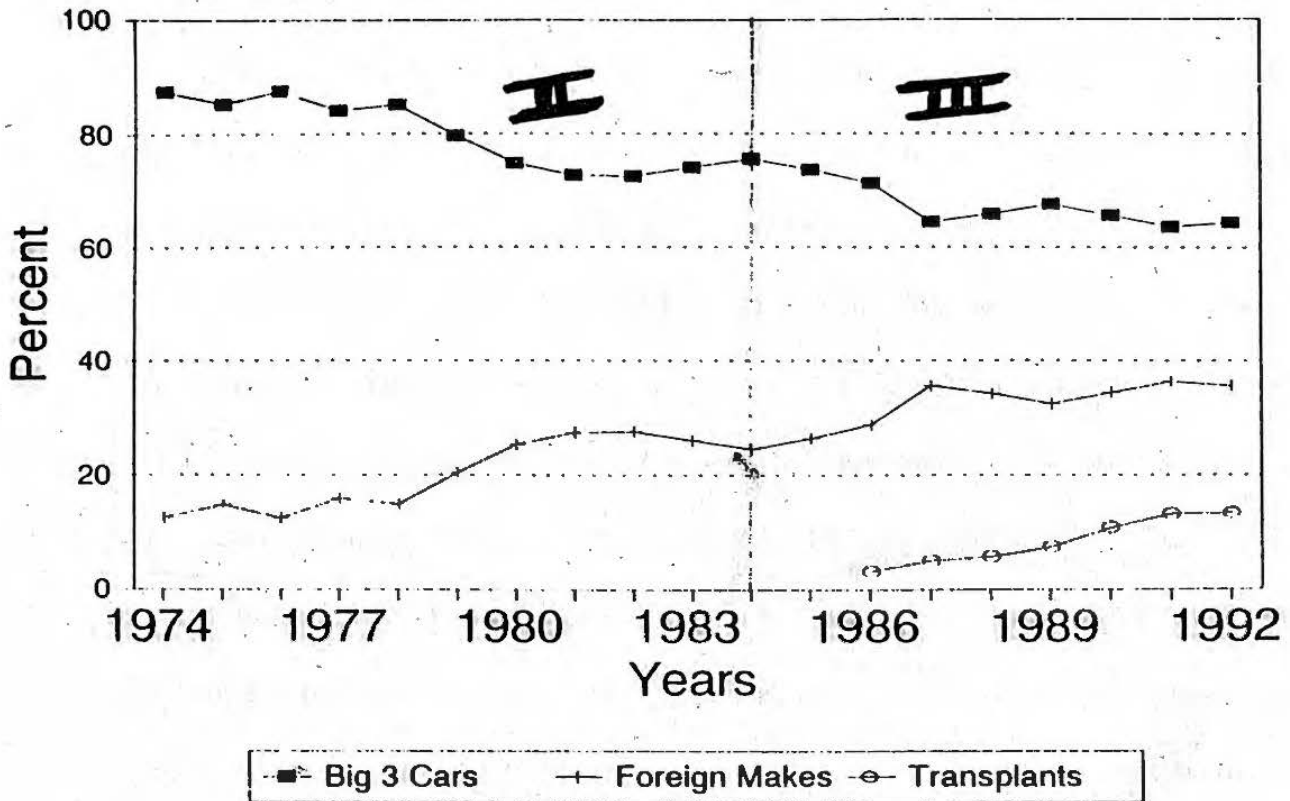
I. INTRODUCTION

The Big Three (Chrysler, Ford and General Motors (GM)) fell on hard times in the 1960s, times from which they have only recently begun to recover.¹ In the 1950s, the Big Three led the world in auto exports. Even in late 1960s the United States had an export surplus in automotive products, but by the late 1980s, the US auto deficit had reached \$US 60 billion, one-third of the total US trade deficit (Dertouzos et al. 1989).

Since 1960, the share of North American (NA) vehicle sales held by the Big Three has fallen steadily while sales of European and Japanese imports have risen. By the mid-1980s, over 30 percent of the market was held by foreign auto multinationals (MNEs), either through imports or vehicles produced in transplant operations. Foreign makes produced onshore were negligible in 1986, but now represent almost 20 percent of NA sales. (See Figure 1.)

¹ The industry can be broken into three segments: cars, light trucks, heavy trucks, buses and recreational vehicles. In this paper, we focus on the car and light truck segments and call this the "auto industry".

FIGURE 1: NORTH AMERICAN MARKET SHARES, 1974-92



The gain in NA market share by (what we can call) the *Asian Four* (Honda, Mazda, Nissan and Toyota) has been widely seen as clear evidence of the Big Three's loss of competitiveness, where "competitiveness" is defined as the ability of a firm to maintain and expand its market share over time.² Other measures of competitiveness such as labour productivity, length of time from product design to first sales, number of defects per vehicle all showed the same trend: the Big Three were not competitive with the Asian Four. What explains this loss of competitiveness? We argue that the loss can be explained by the *technological*

² The Asian Four have also crowded European cars out of the NA market, first at the low end (Honda Civic and Mazda 323 versus the Volkswagen Rabbit) and more recently at the high end (Lexus versus Mercedes Benz). The European share, in volume terms fell by half, from about 30 percent of foreign imports in 1974 to below 15 percent in 1992, while the Japanese share rose from 40 to 85 percent of foreign imports. In this paper, for brevity, we focus on the competition between the US and Japanese automakers.

competition model (Clark 1988, Eden 1994, Eden and Molot 1994b).

The technological competition model examines the ways that foreign entry into a domestic market changes the prevailing pattern of competition within the domestic industry. In the model, the foreign firm enters with a innovative product. The competitive advantage of the entrant is not low cost labour or its ability to underprice the incumbents, but its *technological competence* (Cantwell 1991). Technological competence is a firm specific advantage, partly embodied in a product but also partly tacit and context specific, and not readily transferable outside the firm.

The technological competence possessed by the Japanese automakers, and the main factor explaining their success, is the so-called method of *just-in-time or lean production* (Best 1990, Eden 1994, Hoffman and Kaplinsky 1988, Kenney and Florida 1993, Womack et al. 1990). Japanese firms have developed a set of work practices very different from the *mass production* methods developed and used by US multinationals since the early 1900s. To quote Bruce Kogut:

These practices, often called Toyotism, consist of reliance on a small central parent, on a quasi-integrated supplier and sales network, and on the flexible use of multi-skilled workers who are given relatively large autonomy in decision making. These new organizing principles account for the historical rise in Japanese investments abroad. (Kogut 1994, pp. 119-120)

Japanese autos have distinctive set of product characteristics that come from concept, design, materials, components, equipment and procedures, all involving in-house development. The competitive advantage is *firm embodied* and partly noncodifiable, and therefore difficult to transmit outside the firm.

In the model, the incumbents, faced with a new entrant, are slow to realize the challenge of technological competition and slow to respond to it. They may not perceive the entrant's product for the long-run threat it really is. Foreign entry therefore generates competition which the incumbents, working from an outdated technological paradigm, are poorly equipped to fight.

Until the incumbents realize that the underlying technology has changed, their responses continue to be inadequate, market penetration by the entrant rises, and technological diffusion is slow. The incumbents will resist adopting the new technologies of the entrant for various reasons, including inertia, lack of information, and the costs of switching (Kogut 1994).

There are three possible economic strategies that the incumbents can adopt in response to the challenge of new competitors: intensification, rationalization, and technological upgrading (Rubenstein 1992).³ *Intensification* is a short-run strategy, focusing on improving productivity while holding the number of plants and technology constant, through activities such as changing the output mix, shifting production lines, running plants at less or more than full capacity, etc. The second strategy, *rationalization*, is a long-run strategy that usually involves reducing total capacity through the closing of existing plants. *Technological upgrading*, the third option, is a very long run strategy that involves investing in technological change, e.g. replacing labour with robots, investing in R&D, adopting just-in-time delivery and production method, and so on.

When the domestic firms do respond, they are likely to first adopt strategies based on intensification. The intensification strategy must fail because it does not deal differences in the underlying technologies of the incumbents and the entrant. As penetration continues, the incumbents may move to a rationalization strategy; however, this strategy also fails to address the problem. Only a fundamental change in the technological paradigm used by the incumbents can address the competitiveness issue. The domestic firms must either emulate the foreign entrant's technology or attempt to modify their own to better suit customer needs. This may mean that a shock is necessary for the incumbents to finally recognize the true nature of the

³ Eden and Molot (1994) also discuss political strategies that can be used by the incumbents and the roles governments can play in affecting firm competitiveness. These are not discussed here.

competitive threat and to induce the appropriate response. Such a shock can be provided by the entrant's movement onshore through foreign direct investment (FDI) in transplant production (Cole 1991, Kenney and Florida 1993).

The demonstration effect of having the entrant onshore is important for two reasons. First, producing onshore helps dispel any spurious arguments that the entrant competes on the basis of lower wages or other offshore advantages. In addition, onshore production helps diffuse the technology of the foreign entrant. Multinationals tend to reflect the national organizing principles of their home countries (Kogut 1994). These organizing principles diffuse more easily between firms than between countries, and even more easily between affiliates of a multinational enterprise. Therefore FDI is the means by which MNEs act as *agents of change or investment bridges* in transferring home country organizing principles to host countries.

This is what happened in the NA auto industry. The Big Three first did not recognize the true nature of the competitive threat from Asian imports: *the shift in technological paradigms from mass to lean production*. When the US firms responded, they first adopted intensification strategies, and then, as their market share tumbled, moved to rationalization strategies. It was only when the Asian Four moved onshore in the early and mid-1980s that the Big Three began to adopt lean production methods.

We argue that the technological competition faced by the Big Three can be decomposed into three separate time periods, or three distinct challenges. The first challenge came from European and Japanese auto imports in the 1960s; the second from the 1970s oil price shocks and the Japanese imports that followed; and the third from the movement onshore by the Asian Triad in the 1980s. Each of these challenges induced responses by the Big Three designed to restore their competitiveness. Each of the responses has been unsuccessful. These challenge-and-

response periods: *import penetration* (1954-74), *surplus capacity* (1974-84) and *transplant production* (1984-94)⁴, together represent a sustained period of *technological competition* (1954-94), one that is not yet over.

II. IMPORT COMPETITION, 1954-74

The U.S. auto market of 1950s and 1960s was dominated by a product technology developed in the 1930s: watercooled, carburetted V8 engine, automatic transmissions, rear-wheel drive, power steering and power brakes. The American car was an all-purpose road cruiser emphasizing power, comfort, a smooth ride and versatility. The innovative efforts of the Big Three were largely incremental and stylistic; cars came with a variety of cosmetics, body styles and accessories, all built on the same sized platform.

The first challenge to the Big Three came in the late 1950s when the first European auto imports appeared. The market share held by Volkswagen, Renault and Fiat grew from one percent to 10 percent between 1955 and 1959, but poor performance, unreliability, and lack of a dealer/service network meant their share soon fell. This also happened to the first Asian entrants, Toyota and Nissan. By 1963, import penetration had fallen to 5 percent. In 1965, the Japanese firms tried again with better made cars, and the import penetration rate started to rise. Even so, 1973 was an all-time peak sales point for the Big Three at almost 10 million units sold.

The Big Three's response to this import competition was muted because they initially lacked any products even roughly similar to the first wave of imports. The US MNEs responded to the import competition in two ways. First, they introduced shorter platforms, thus increasing

⁴ The dates of the periods, in practice, overlap but for our purposes we divide them into distinct periods.

the number of models sizes offered to consumers. Second, to reduce the proliferation of models, they introduced corporate twins, vehicles that were mechanically identical and looked alike, but sold under different names. Although the Big Three expanded the number of platforms, they continued to concentrate on the family-sized car, partly because profits were higher on larger platforms. This allowed overseas competitors to capture other market segments, especially the compact car segment.

We conclude that 1954-74 can be seen as the first challenge to the Big Three. The response of the Big Three was slow and ineffective even though they were larger, more experienced and better endowed than the foreign entrants. The Big Three clearly believed that the loss in market share would be temporary, and responded with an *intensification strategy*, designed to cut costs in existing plants without major technological change, while retreating from the subcompact market segment. It did not work.

III. THE SECOND CHALLENGE: SURPLUS CAPACITY, 1974-84

The second challenge came when world demand for autos began to stagnate in the 1970s due to declining domestic markets and adjustments to oil price shocks. The Big Three's sales plummeted to seven million in 1975; sales rose to more than nine million by the late 1970s but fell again after the 1979 second oil price shock. By 1982, the Big Three's sales had fallen to below 5.5 million, a floor previously attained in the 1950s. Big Three auto production fell by more than 40 percent to below six million units.

Sales of imported vehicles, on the other hand, rose by 25 percent over the period. The growth was led, in 1973-74, by the Volkswagen Rabbit which became the dominant design for subcompacts. In 1976, Honda entered with the Honda Accord, which became the dominant

design for the compact model.

The Big Three responded to the threat of surplus capacity by restructuring their operations through: (i) downsizing, (ii) plant closures, (iii) sourcing "captive imports" from Japan and South Korea, and (iv) establishing US-Asian joint ventures. These strategies can be considered rationalization strategies since they attempt to alter the number and size of plants to reduce cost, while leaving the basic technological processes unchanged.

First, the Big Three downsized their car models; this shrinkage in the length of platforms, started by GM, continued for more than ten years. Downsizing meant increasing the number of platforms and the proliferation of models, thus reducing the demand for individual models and raising per-unit production costs. Second, Ford and Chrysler closed plants in the early 1980s in order to reduce total capacity.⁵ Third, the Big Three began to import vehicles produced in Japan for sale in North America under a Big Three name. In 1971 Chrysler became the first to buy these captive imports, from Mitsubishi Motors. Captive imports had reached 150,000 annual sales by the mid-1980s. The fourth response was to initiate joint offshore production with Japanese firms, starting with Ford buying 25 percent of Toyo Kogyo in 1979 in order to produce Ford-Mazda imports for NA sale. The Big Three also purchased interests in South Korean auto firms.⁶

The 1974-84 period represents the second challenge, surplus capacity, for the Big Three. Their response, rationalization, failed to address the underlying differences between mass and

⁵ GM, on the other hand, ignored the crisis and opened plants in the early 1980s. It was forced to close a large number of plants after sales declined in the late 1980s.

⁶ GM bought 50 percent of Daewoo Motor Company. Ford bought 10 percent of Kia Motors Corporation; Mazda bought 8 percent of Kia and helped design the captive model. Mitsubishi, partly owned by Chrysler, bought 15 percent of Hyundai.

lean production. The Big Three decided to improve productivity by reducing costs; i.e. to downsize, outsource and close plants. These cost savings worked temporarily but did not stem the long run decline in market share of the US multinationals. Because they were reluctant to make fundamental changes, the Big Three were trapped in second best strategies.

The technological competence of the Asian Four can clearly be seen in their products. The imports had four cylinder engines and front wheel drives; they emphasized fuel economy, good acceleration, nimble handling, efficient use of space, solid construction, and high levels of fit and finish (Clark 1988). The cars had better acceleration and handling, used less gasoline, better frequency of repair records, fewer defects per vehicle and received better buyer evaluations than Big Three vehicles. Most new innovations were first introduced on imported cars (e.g. four-wheel steering, four-wheel drive, turbocharging, antilock braking systems). The product cycle was also significantly shorter for Japanese producers than the Big Three (43 compared to 62 months from conception to consumer (Dertouzos et al. 1989)).

It was clear that the technology in autos had shifted. The Big Three needed to produce a small car with fewer parts, more automated processes, and superior fit, finish and reliability, a car where ease-of-manufacturing was the key design criterion. This meant the MNEs had to change everything: engine designs, materials, electronics, as well as the components in brakes, steering, suspensions, and so on. Not surprisingly, the MNEs faced significant internal problems that prevented them from addressing the challenge of lean production.

IV. THE THIRD CHALLENGE: TRANSPLANT PRODUCTION, 1984-94

Despite the voluntary export restraint (VER) program begun in 1981, import penetration continued in the mid-1980s. The Asian auto MNEs also upgraded and expanded their offerings

to enter new market segments. Starting in 1982, fears of being closed out of the US market, together with the rising yen, led the Asian Four to set up transplant operations in North America. Sales by these transplants increased steadily from 1986 on.

Once onshore, the Asian Four began sourcing more of their parts locally, partly for political reasons (to reduce tensions caused by the widening U.S.-Japan trade deficit) but also for economic motivations (the rising yen made imported parts very expensive). In the late 1980s, Japanese first-tier suppliers began to follow their traditional customers and to set up transplants in North America. We now see the beginnings of *regional core networks* of auto assembly and parts firms within North America (Kenney and Florida 1993, United Nations 1993), replicating the complete value chain of the auto industry, from R&D through parts production, assembly, sales and service.

The Big Three responded in the third period with three strategies: (i) continued downsizing, (ii) outsourcing, and (iii) adoption of lean production techniques. First, rationalization through downsizing continued in the 1980s. Although the Big Three varied in their degree of vertical integration⁷, each automaker owned large parts producers. Downsizing involved not only the closure of assembly plants but also closing parts producers. Ford and Chrysler both implemented cost-cutting measures and layoffs during the late 1980s and have emerged somewhat leaner and more efficient.^{*} GM, the largest US producer and the one whose

⁷ GM is the most vertically integrated, followed by Ford and then Chrysler.

^{*} Chrysler closed 3 plants between 1988 and 1990 (Womack et al. 1990, pp.244-45) while Ford reduced the number of its suppliers from 2400 in 1980 to 1400 in 1993 (Eden and Molot 1994b).

market share has slipped the most, has had the most difficult time.⁹

A second strategy has been outsourcing, searching for the lowest cost production site for parts and components. The Big Three, especially GM and Ford, have traditionally sourced most of their parts and manufactured components in-house as part of their mass production strategy to provide large batches of identical, low cost, "just-in-case" parts.¹⁰ This changed in the 1980s when the Big Three moved aggressively to search for lower cost production sites.¹¹

A third strategy has been adoption of some of the components of lean production. The Big Three have begun to adopt Japanese production methods based on just-in-time sourcing, zero-defect quality, and flexible automation. Chrysler and Ford have gone some distance towards this goal (Womack et al. 1990, p.244).

We argue that this change in technological trajectory was caused by the movement onshore of the Asian transplants. Onshore production finally brought the Big Three and the Asian Four face to face. This meant that technological diffusion could occur. We argue that this diffusion, albeit occurring slowly, can be traced to three factors: (i) learning by doing through US-Japanese joint ventures, (ii) the demonstration effect of Asian Four's North American transplant operations, and (iii) increased efficiency of first-tier autoparts producers, generated

⁹ In 1991, it announced the closure of 6 assembly plants and 15 other factories (Keller 1993, p. 39). In 1992 GM indicated that it would close a further 23 plants, reducing its employees by some 35,000. If the corporation follows through with its downsizing plans, up to 90,000 jobs could be gone by the end of the 1990s (Eden and Molot 1993, p. 15).

¹⁰ Estimates of in-house as a percent of total components vary from 50-75 percent for GM, 40-50 for Ford and 30-40 for Chrysler (Rubenstein 1992, p. 168).

¹¹ For example, GM was the first US auto producer to move to the Mexican maquiladoras, setting up a wire harness plant and a seat cover and interior trim plant in Ciudad Juarez in 1978. After the Mexican peso collapsed in 1982, the number of auto maquiladoras rose sharply to 129 by 1988.

through their collaboration with the Asian Four automakers.

Joint ventures in assembly have allowed the Big Three access to Japanese lean production techniques, thereby assisting the Big Three to improve their own product attractiveness and competitiveness. NUMMI, the GM-Toyota joint venture, provides the best example of learning by doing; its efficiency levels are close to Japanese auto plants (Womack et al. 1990, p.83, Keller 1993, p.04). NUMMI techniques have been employed by GM in its Saturn plant (Rubenstein 1993). Seeing that the Asian Four can employ US workers in US plants and achieve efficiency levels well above those achieved by the Big Three has also proved a potent motivator.

Kenney and Florida (1993) argue that the US autoparts producers have moved fastest along the route to adopting lean production techniques. In order to sell to the Japanese transplants the autoparts firms have had to meet quality controls and just-in-time delivery schedules, that provide "striking evidence of the transfer and generalizability of the Japanese model of production both inside and outside the corporation" (Kenney and Florida 1993, p.154). Following along behind, the Big Three have begun to reduce the number of their first tier suppliers while at the same time bringing them into the production and design process; they have also demanded greater cost effectiveness and price reductions.

Therefore in this third period, when the Asian Four moved onshore, we argue that the Big Three finally began to shift to technological upgrading. Has it worked? Apparently so.

V. CONCLUSION: A WINDOW OF OPPORTUNITY?

Regardless of the type of response, the slide in the Big Three's market share of the NA market continued unabated -- until last year. In 1993, the rapid rise in the yen-dollar exchange rate, buoyant US demand and the depressed market for cars in Japan and Europe caused a

marked turn around in the fortunes of the Big Three. All three producers are now "in the black", their production and sales figures are at all-time highs, and for the first time in many years the Big Three's share of the NA market is rising. Has the loss in competitiveness been reversed?

Our analysis suggests the need to be very cautious. The US automakers have made progress, but important unresolved problems remain. First, there is still substantial excess capacity within the NA auto industry, of approximately two million units (Rubenstein 1992: 289). Although the Japanese-owned firms are running at close to capacity, several of the U.S.-owned plants are not. Thus downsizing is likely to continue, particularly within General Motors. Second, the transition from mass to lean production by the Big Three has only just begun. The Big Three have emulated many of the techniques of the Japanese MNEs - the move to JIT, the reduction in the number of suppliers, etc. - but whether the lessons have been fully integrated remains to be seen.¹²

Clearly, the upswing in auto sales provides a window of opportunity for the US automakers to upgrade technology and move to becoming *lean enterprises, based on innovation-mediated production*. (Kenney and Florida 1993). The North American Free Trade Agreement (NAFTA) provides a second window of opportunity. Its rules secure the "firstcomer" status of the Big Three through the Auto Pact. NAFTA also provides increased opportunities for downsizing and outsourcing on a continental scale. Lastly, NAFTA include tight rules of origin that will require the Asian Four to source more parts and components within North America in order to keep their dutyfree status.

Almost forty years since the first wave of import penetration, the Big Three are still far

¹² The Neon car by Chrysler may be the first real evidence of a member of the Big Three adopting these techniques. Another may be the recently announced change in GM's strategy for developing new vehicles; a strategy which looks like the adoption of lean production processes.

behind in adopting lean production techniques. Whether the US automakers will use the window of the mid-1990s to become truly lean enterprises remains to be seen. What is clear is that the Asian Four will continue their own technological upgrading; thus the benchmark for the Big Three will continue to rise and the technological competition continue.

REFERENCES

Best, Michael, The New Competition: Institutions of Industrial Restructuring, Cambridge: Harvard University Press, 1990.

Cantwell, John, "The Theory of Technological Competence and its Application to International Production", Multinationals, Technology and Economic Growth, Donald McFetridge, ed., Calgary: University of Calgary Press, 1991.

Clark, Kim, "Managing Technology in International Competition: The Case of Product Development in Response to Foreign Entry", International Competitiveness, Michael Spence and Heather Hazard, eds., Cambridge: Ballinger Publishing Company, 1988.

Cole, William, "Competitive Economies and the Economics of Competition", Competing Globally through Customer Value: The Management of Strategic Suprasystems, Michael Stahl and Gregory Bounds, eds., New York: Quorum Books, 1991.

Dertouzos, Michael, Richard Lester, Robert Solow and The MIT Commission on Industrial Productivity, Made in America: Regaining the Productive Edge, Cambridge: The MIT Press, 1989.

Eden, Lorraine, "Multinationals and Technological Competition", mimeo, Ottawa: Carleton University, 1994.

Eden, Lorraine and Maureen Appel Molot, "Insiders and Outsiders: Defining "Who Is Us?" in the North American Auto Industry", Transnational Corporations, forthcoming 1994a.

Eden, Lorraine and Maureen Appel Molot, "Made in America? The Auto Industry in the 1990s", presented at the annual meetings of the International Studies Association, Washington, D.C., April 1, 1994b.

Eden, Lorraine and Maureen Appel Molot, The NAFTA's Automotive Provisions: The Next Stage of Managed Trade, C.D. Howe Commentary No. 55, Toronto: C.D. Howe Institute, 1993.

Hoffman, Kurt, and Kaplinsky, Raphael, Driving Force: The Global Restructuring of Technology, Labour and Investment in the Automobile and Components Industries, Boulder: Westview Press, 1988.

Keller, Maryann, Collision: GM, Toyota, Volkswagen and the Race to Own the 21st Century, New York: Doubleday, 1993.

Kenney, Martin and Richard Florida, Beyond Mass Production: The Japanese System and its Transfer to the U.S. New York and Oxford: Oxford University Press, 1993.

Kogut, Bruce, "An Evolutionary Perspective on the NAFTA", Multinationals in North America, Lorraine Eden, ed., Calgary: University of Calgary Press, 1994.

Molot, Maureen Appel, ed., Driving Continentally: National Policies and the North American Auto Industry, Ottawa: Carleton University Press, 1993.

Rubenstein, James, The Changing U.S. Auto Industry: A Geographical Analysis, London and New York: Routledge, 1992.

United Nations, World Investment Report 1993: Transnational Corporations and Integrated International Production, UNCTAD Programme on Transnational Corporations, New York: United Nations, 1993.

Womack, James, Daniel Jones and Daniel Roos, The Machine that Changed the World, New York: Rawson Associates, 1990.