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The Mazda Turnaround

Two years after the Arab oil embargo of November 1973, Toyo Kogyo, the maker of Mazda automobiles, declared a 17.3 billion yen ($70 million @ $1 = ¥250) loss. New car registrations had dropped 22 per cent in Japan in 1975. Exacerbating these problems, the industry had earlier accepted labor demands for a 30 per cent increase in nominal wages. Thus costs were pushed up just as sinking demand foreclosed further increases in prices.

Toyo Kogyo was hit harder than its competitors. Mazda registrations in Japan fell 31 per cent in contrast to Honda (−5 per cent), Toyota (−6 per cent) and Nissan (−26 per cent). Toyo Kogyo's inventories piled up precariously, peaking at 140,000 unsold vehicles. Reasons for Toyo Kogyo's particular vulnerability were numerous.

1) The Wankel (rotary) engine was less fuel efficient than conventional engines at a time of extreme fuel conservation.
2) Toyo Kogyo was far more dependent on exports than its Japanese competitors and its confrontation with the U.S. Environmental Protection Agency had precipitated a particularly steep revenue shortfall in the U.S. market. Plummeting sales and the rotary's tarnished image triggered U.S. dealer back outs and a general weakening of the distribution network.
3) Toyo Kogyo had not cut back production when competition did. Consequently, inventories piled up, precipitating a severe cash flow problem.
4) Toyo Kogyo was the highest-cost producer averaging only 19

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automobiles per employee annually against a Japanese industry average of 30. The company had previously concealed this problem by offering lower dealer margins. Now, in time of crisis, this further weakened its dealer network.

Like Chrysler, and more recently International Harvester, Toyo Kogyo was on the brink of bankruptcy. With 37,000 direct employees in 1974 (and an additional 23,000 employed by dependent suppliers), Toyo Kogyo accounted for one-quarter of the total manufacturing employment in the Hiroshima area. Since Hiroshima's other major industry, shipbuilding, was unalterably in steep decline, the regional economy faced virtual collapse if the automaker failed.

Toyo Kogyo's management faced the classic challenge of troubled companies anywhere: cutting costs, boosting sales, trying to keep ahead of cash flow, holding creditors in place and retaining the loyalty of suppliers and dealers. How individual companies juggle these factors, however, is rarely the same when the details are examined closely. Not only companies, but fundamental social processes are tested and revealed. This article outlines the crucial steps taken at Toyo Kogyo. What emerges is a detailed portrait of the interplay between economically significant events and institutional and cultural factors.[1]

Toyo Kogyo's turnaround was dramatic. By 1980 debt had been reduced considerably. Cash and deposits had grown by 100 billion yen. Revenues from sales had more than doubled and, most critical, production per employee had gone from 19 to 43 vehicles per year. Profits as a result of these improvements doubled from their preoilshock levels. Yet this is a complex story.[2]

1. This narrative is based on field work in Hiroshima in September 1982, involving interviews with 16 of Toyo Koygo's managers, its union leader, 3 suppliers, a dealer, and the Sumitomo Bank executive who headed the rescue team in Hiroshima. Toyo Kogyo was extraordinarily cooperative, both in its candor and in its willingness to make factual materials available to us. The result is a remarkably detailed picture of what happened in nearly all aspects. Our ongoing work with Chrysler will soon add a comparative dimension to this research.

2. Toyo Kogyo Company also continues to supply us with information that casts additional light on the dynamics involved. Some of our analyses may change as a result. In addition, the behind-the-scenes political and financial arrangements involving Toyo Kogyo's bank and the Ministry of Finance was one subject the company has not covered for us and which must be pieced together by a slow deductive process that is ongoing.

Part I. The Pre-Crisis Situation

Management

Toyo Kogyo was founded as Toyo Cork Industries in 1920; Jujiro Matsuda, founder and first president, produced his first motor vehicle in 1931. It was a three-wheeled truck constructed by connecting a truck bed to a motorcycle engine and frame. He assigned his automotive product line the name "Mazda," based on an anglicization of Matsuda. The founder was a strong, autocratic manager characteristic of many start-up entrepreneurs. Over the next 45 years, this style of management was passed from grandfather to father to son, the personality of the firm continuing intact over three generations despite extraordinary increases in the company's size, sales, and the complexity of its operations.

Toyo Kogyo diversified beyond automobiles into rock drills and precision measuring instruments during J. Matsuda's era. This product line took the firm through World War II, during which time it also manufactured rifles. And when the world's first atomic bomb exploded in Hiroshima on August 6, 1945, fate smiled on the young company. Toyo Kogyo's facilities were located on the sheltered side of the only hill in the river delta in which Hiroshima is situated. While the city was devastated, Toyo Kogyo's facilities were intact—permitting a fast start amidst the rubble of the postwar recovery. Jujiro's son, Tsuneji, was installed as president in 1951. By this time, Toyo Kogyo had become Japan's leading truck maker.

Throughout the 1950s, Toyo Kogyo focused on its established niche as a truck manufacturer while competitors such as Toyota and Nissan expanded into the larger and more lucrative automotive segment of passenger cars. It was not until the early sixties, as Toyota began to successfully export automobiles to the United States, that T. Matsuda began to grasp the implications of having neglected the passenger car market. At this juncture, however, Toyo Kogyo was a late entrant and sought a viable means of closing the gap. With characteristic Matsuda flair, Toyo Kogyo hung its fate on the rotary engine. If the gamble paid off, Matsuda calculated, Toyo Kogyo could leapfrog competition and establish a distinctive niche in the market place.

T. Matsuda signed a technical agreement with Audi NSU-Wankel of West Germany in 1961. Six years later, having redesigned the engine in practically every respect, Toyo Kogyo succeeded where General Motors had failed, introducing the first commercially successful rotary in automotive history. Gradually, Toyo Kogyo began to build manufacturing experience in that complex string of activities necessary to produce a passenger car. Progress was slow, however. In 1970, third generation K. Matsuda took over from his father as president of Toyo Kogyo. That same year Mazda launched its U.S. campaign. The powerful but quiet rotary engine was an immediate hit. By 1973 Mazda's exports to the U.S. alone reached 117,000 cars, and 70 per cent of Mazda's sales were now exports (as contrasted to 40 per cent for Nissan and Toyota).

Mazda's success with the rotary served to conceal a variety of weaknesses that would contribute to the yet unforeseen crisis of 1975. First, the success of the family's bold product decisions had created an aura of invincibility. While some market data was collected and a slim staff of "strategic planners" wrote occasional reports, the firm's initiatives in the market place depended almost entirely upon the thinking of the Matsuda currently in charge. Since product innovation had always enabled Toyo Kogyo to succeed, Toyo Kogyo was primarily product driven. Market research was meager and heavily filtered by the president's own biases. The Matsuda dynasty also resulted in a near absence of a strong and capable management below the Matsuda level. The company had always recruited the cream of engineering talent, but, within the managerial ranks, a dominating family style tended to cultivate "yes-men." Ideas and initiatives from below did not flow upward. A wide variety of fine tuning improvements, essential to long-term success, were neglected. For example, minor yearly model updates were ignored, and major model changes were irregular and at long six-to-eight-year intervals—far longer than Nissan or Toyota. There were few pressures on suppliers to reduce costs and improve facilities. Information and control systems had not kept up with the growth of the company.

Compounding the latent dangers just noted was the fact that the final Matsuda president, Kenji, was less charismatic and interpersonally skillful than his father and grandfather. He listened poorly, had a strong ego, did not share information, and did not keep his commitments to members of his management team. Says one Toyo Kogyo executive of that era:

> Mr. K. Matsuda's preoccupation was in making Mazda an international brand. He was very proud and very frightening to his people.

> He'd scold you for anything . . . and not surprisingly, his managers didn't dare tell him what he didn't want to hear.

As noted the productivity of Toyo Kogyo workers was about 70 per cent of workers in the leading Japanese auto companies. Inventories were high and cost controls virtually nonexistent. The easy pace on the assembly line floor reached a level where workers could leave the line to go to the toilet without needing a replacement. At the infrequent executive meetings, Matsuda's managers gave brief reports and listened to lectures from the president. There was enormous overlap in management functions, poor communication, and poor problem solving.

The oil crisis of 1973 didn't *cause* Toyo Kogyo's problems, it simply *exposed* them. When the U.S. Environmental Protection Agency showed that Mazda's rotary engine—installed in 80 per cent of the Mazdas exported to the United States at the time—got only 10 miles per gallon in city driving compared with 20 for Datsuns and Toyotas, Mazda's American sales dropped 60 per cent in one year. Furthermore, K. Matsuda would not acknowledge the oil crisis as a long-term problem. For twelve agonizing months, Toyo Kogyo continued to mire itself more deeply in difficulty and in debt. Middle management was paralyzed. Accustomed to direction from the top and severely sanctioned by presidential outbursts, executives below Matsuda's level could not bring about a corrective change of course, despite considerable below-the-surface consternation.

As months slipped by and problems worsened, an inevitable consensus emerged: Toyo Kogyo's choice was becoming one of saving the face of the president or saving the company.

Dealer Relations

The situation with dealers had greatly deteriorated by 1975. Toyo Kogyo sells its passenger cars through a network of 114 "independent" dealers. Each dealer has an exclusive territory in which it operates a set of new car sales offices and used car lots. None of these dealers is cross-franchised with other auto manufacturers. Thus, while in ownership and management they are independent, they are quite dependent on Toyo Kogyo in such crucial matters as the product's competitiveness, new product development, and marketing policy.

This tight and exclusive arrangement is characteristic of auto retailing in Japan, but not in the United States. When Toyo Kogyo faltered in North America, some dealers bailed out and others used their cross-franchised situation to protect their interests. No such shifts were possible in Japan, although individual car salesmen (reliant to some degree on commissions) began to leave Mazda dealers in significant number in 1974 and 1975.

It is important to recognize the important differences in automotive retailing between Japan and the United States. United States salesmen work a showroom, handling several makes of new and many kinds of used cars simultaneously. The customer comes to them. An American car salesman averages 8-10 car sales per month. In Japan sales are largely conducted door-to-door. Because space is at a premium, showrooms and lots are small and scattered. Just as Japan has a preponderance of small "mom and pop" retail stores, so in autos the arrangement is one of spatially scattered small outlets that are quite labor intensive. A seasoned car salesman sells about 4-5 cars per month. Ironically, in an industry in which the Japanese have the highest levels of manufacturing productivity in the world, its distribution productivity is comparatively low.

Auto sales volume in Japan varies in direct relationship to the number of salesmen in the field. This is true for all makers and it is one key to how Toyo Kogyo was able to simultaneously reduce labor costs and increase auto sales by dispatching manufacturing and office personnel to sales jobs out in its "independent" dealer network.

Toyo Kogyo's dealers had more than an inkling of the company's precarious situation in 1975. Their inventories of unsold cars had been growing from late 1973. Toyo Kogyo was booking its auto shipments to dealers as "sales." The dealers carried the inventory, but made payment to the manufacturer only upon an actual retail sale. By mid-1975 140,000 cars in excess of normal inventory were sitting on dealer lots and Mazda transshipment centers (including those for export). Domestic sales which had been running about 18,000 a month in 1973 had declined to 11,000 per month in 1974. At that rate, if the factory closed down entirely, it would still take over a year just to get inventories in line.

This situation was made tolerable to the dealers by Toyo Kogyo's willingness to accept very long promissory notes which in effect constituted an agreement to demand payment only when the cars were actually sold. The 11–12 per cent interest on these notes was the dealers' responsibility, however, and this was destroying their margins.

Dealers had many other things to complain about. The company offered poor incentives. The development of new models was erratic and dealers felt that the company was out of touch with consumer desires. All of these competitive weaknesses were especially distasteful, in combination with the fact that Toyo Kogyo shipped to dealers whatever it produced. Production was not geared to dealer orders, but rather dealers had to accept whatever came off the line. Dealers were locked into a subordination to Toyo Kogyo that had unhealthy consequences for both, since the automaker could drift out of touch with the marketplace. Such problems are especially serious in cases of exclusive ties within a hierarchical system. Japan's economy appears to have more arrangements of this type than the American economy and is, theoretically at least, more vulnerable to such problems.

As sales slumped in 1974 and 1975, Toyo Kogyo continued to produce too many cars not gaining customer acceptance. To salesmen, the company was refusing to face up to reality. During 1974 an estimated 20 per cent left their jobs with Mazda dealers and many were not replaced. Sales threatened to slip even further as manpower to generate sales decreased. A vicious circle was building momentum in which rising inventories, eroding dealer margins, Toyo Kogyo management inflexibility, and loss of sales force all led in a common, destructive direction.

Supplier Relations

Approximately 70 per cent of the total manufacturing cost of a Mazda comes in the purchase of materials and parts, and thus is external to the company. Fundamentally, Japanese auto companies are planners, assemblers, and marketers of autos. The company's large group of suppliers can be divided, for purposes of explanation, into (1) material suppliers, (2) direct subcontractors in the Hiroshima area, and (3) component suppliers. The first group consists largely of steel companies, and most of the sales to Toyo Kogyo of this group are conducted through trading companies.

The second group includes about 91 companies that are very closely tied to Toyo Kogyo. They belong to an association known as the Toyukai (Friends of Toyo Kogyo), whose members are all located in Hiroshima and whose major common function is to produce parts according to Toyo Kogyo designs, including everything from body stamping work to seat manufacturing. Many Toyukai members sell only to Toyo Kogyo and nearly all sell 50 per cent or more of their production to the automaker. As in the case of dealers, Toyukai suppliers are very tightly linked to the company. Their dependency on its policies and business fortune has been nearly total for many years.

Materials costs account for about 18 per cent of total purchasing costs in manufacturing. Payments to Toyukai subcontractors account for another 26 per cent. The largest group of suppliers in terms of their role in the manufacturing cost structure are the components makers who account for 56 per cent of total external manufacturing costs. Some of these firms produce according to company designs and several sell more than 50 per cent of their production to the company. Others, however, such as battery and headlight makers, sell to all the auto companies in Japan. The success of Toyo Kogyo is of less consequence to their survival. This latter type of component supplier can be said to have arm's-length dealings with Toyo Kogyo.

Relationships with most suppliers have complex histories. More than half of the external manufacturing input comes from suppliers who must work very closely with Toyo Kogyo in such matters as production planning, product design, engineering, and finance. In many cases Toyo Kogyo actually purchases the materials for fabrication by its subcontractors. The situation with closely related suppliers involved several kinds of inefficiencies in the period prior to the financial crisis. It appears that suppliers were dealt with in a patronizing manner that simultaneously protected them, made them subservient, and prevented them from progressing rapidly in terms of productivity. The automaker had access to its suppliers' books. This allowed its purchasing department to set prices that granted suppliers a reasonable profit. Such a financially-based arrangement was cozy as long as Mazdas sold well. But it did not pressure suppliers to seek greater manufacturing efficiencies. "It was an old style ('wet') kind of relationship," states one supplier, with each side asking favors at times and neither side introducing the kind of scientific managerial thinking that would have forced rapid progress. Top officials spent time entertaining suppliers, but not time working with them to strengthen their common business. Suppliers with questions or suggestions for Toyo Kogyo felt they were rarely heard. Most dutifully carried out orders, taking Toyo Kogyo designs without comment as to how they might be changed to reduce manufacturing costs. The Toyukai was an association in name only as far as the suppliers were concerned, since there was no leadership of the group to better meet competition.

At last some subcontractors were seriously damaged when they followed Toyo Kogyo's urging and expanded plant and equipment just as sales began to fall. They accepted the company's misplaced optimism and paid a price for their uncritical loyalty. The overall picture for suppliers was one of poor, top-down communication, a lack of sharp dealing, and an aura of warm human ties.

In sum, in both its relationships with dealers and suppliers, Toyo Kogyo's superior position in the overall business grouping had led to an aloofness and a lack of good two-way communication. Top management was failing to exercise progressive leadership and it was seeking to balance and rebalance its subordinate firms' interests without forcing the whole system to be more competitive in the fundamentals of product attractiveness and manufacturing cost.

In the context of such a "typically Japanese" structure, management to be successful must shape the meaning of hierarchy to realize interdependence. It must achieve overall coordination by establishing good communication, something that depends on a spirit of mutuality and trust. In Toyo Kogyo's case, the structure was in place but imbued with a patronizing spirit that undermined communication. A separation of the parts resulted that greatly lowered the rate of improvement and adjustment. The company's early success in autos had masked this weakness. Observers of Japanese auto subcontracting have failed to note such problems in their accounts of its labor and other cost advantages. When the system is not conducted with a sense of equity, participation, and mutual respect, its integrity can be undermined leading to decreasing morale, inflexibility, and inefficiency disguised by continuing good formal relations and loyalty. The managers on the top do not see how their subcontracting network is falling behind competition until a serious failure in the market-place occurs.

The Union

As is typical in Japan, all regular employees except middle and senior management belong to the Toyo Kogyo union. Like other unions in the Japanese auto industry, it was characterized in 1973 by a fundamental recognition of the need for the company to prosper if wage increases and job security were to be assured. On the other hand, and again like other auto unions, it has a history of aggressively pursuing the interests of its workers through the threatened use of strikes. "Our union had always negotiated with strong member support. We would take a strike vote and go in with a threatening posture. The members supported a union that fought hard with management for the gains it achieved. . . . And management typically responded to our strike threats with a conciliatory attitude,'' explains Ichihara Hayato, the union's president.

Yet management was not fully open with the union when the company's problems became serious. The two sides sat down on a regular basis to talk about the company's results, but the excess of inventory and the financial difficulties were not seriously examined. ''We knew there were serious problems and we had been urging management to reduce its debt level for some time, but our opinions were ignored,'' said Ichihara.

As a result of greatly increased inventory profits, continuing economic prosperity, and high inflation in 1973, nominal wages in Japanese manufacturing increased by a monumental 30 per cent in 1974. Planning for the 1974 wage settlements had largely been concluded by the time of the oil shock of November 1973. A company in trouble, like Toyo Kogyo, should have been in serious discussion with its union throughout 1974, but not until November 1974, one year after the first oil embargo, did management acknowledge to the union's leadership the extent of its problems. Wage costs represented 19 per cent of the total internal manufacturing costs of a car at Toyo Kogyo. Given permanent employment, massive layoffs were out of the question, but other, less severe adjustments were possible if begun early enough. In its relations with the union, Toyo Kogyo's management displayed the same lack of leadership and openness already noted in dealer and supplier relations. It seriously underestimated the severity of the company's problems in 1974 and moved to remedy them too late to allow for normal adjustments.

Central to this pattern was the character of K. Matsuda. He apparently resisted advice from nearly everyone, including his bankers who were increasingly alarmed. Toyo Kogyo's location, far from Osaka and Tokyo, may partly explain its independent spirit, but Matsuda's behavior was something more. His status as a leading citizen of Hiroshima and his family's central historical role in creating and building Toyo Kogyo made him nearly invulnerable to pressure until it was certain the company would fail. Only in early 1975 did Sumitomo Bank send in a top manager and Matsuda's role began to diminish.

Part II. The Turnaround

The Sumitomo Bank

The two major lenders to Toyo Kogyo were the Sumitomo Bank and the Sumitomo Trust Bank, the former the company's lead bank.

Hiroshima Bank was next among the top lenders and also a principal lender to many of the company's local suppliers. In all, 73 lending institutions were financing the company in 1975.

It is evident that the Sumitomo Bank knew of Toyo Kogyo's problems, and yet it did not or could not influence President Matsuda to take major corrective action.[3] Nor is it clear whether, or to what degree, Sumitomo shared its knowledge of Toyo Kogyo's problems with the other creditor institutions. By early 1974, the bank had placed two officers within Toyo Kogyo to familiarize themselves with Toyo Kogyo's financial condition. This was certainly noticed by all close to the situation, yet no overt actions or statements from the financial community occurred.

By late 1974, however, sensing the magnitude of Toyo Kogyo's problem, and with an exposure of $234 million, the bank's role shifted quickly. The head of its Tokyo office, Tsutomu Murai, was designated to head a team of seven resident Sumitomo executives who would supervise the automaker's affairs. In a sense, the bank was putting the company in a quasi-receivership status, but without any involvement from courts or lawyers.

In December 1974, the bank made its first public statement about its problems. It called a meeting of all the lenders and announced categorically that it would stand by the automaker. It expressed confidence that the company could be put back on a healthy business footing. As proof of its confidence, the bank said Sumitomo Trust Company would carry any new loans that Toyo Kogyo needed to tide over immediate problems. This no doubt came as a relief to the other financial institutions involved. It served to consolidate and strengthen the general resolve among the lenders. Not one called a loan or refused to turn over its existing credits as they came due. As noted earlier, it also came as some relief to lending banks that Sumitomo was installing a cadre of its own executives in Toyo Kogyo to oversee a restoration to health. This team's work will be reviewed shortly.

Managing a consortium of lenders to a faltering giant can be extremely difficult. Even a small bank's refusal to continue financing can unravel the fabric of confidence upon which such arrangements depend. In the Chrysler case just such snags made the financial package cumbersome, slow in creation, and dependent on govern-

3. Sumitomo was, in part, preoccupied with the bankruptcy of Ataka Trading Company absorbing $80 million in losses on this venture. Undoubtedly much of top management's attention had been directed toward reorganizing parts of Ataka into Ito Chu Trading, another Sumitomo affiliate.

ment guarantees. In the case of Toyo Kogyo, the surface events, at least, indicated a high degree of solidarity and capacity for mutual reliance among the private sector financial institutions. Sumitomo's dominant position worked to maintain confidence and allowed Toyo Kogyo management to focus on operational problems, whereas in the Chrysler case, outside financial concerns occupied top management for most of one year.

The Sumitomo Group also contributed in smaller, less conspicuous ways. The bank, the trust bank, and the Sumitomo Marine and Fire Insurance Company switched their auto purchases entirely to Mazda, and they asked all Sumitomo Group companies to do what they could to purchase more cars and trucks from the company. Toyo Kogyo sources estimate the 600-member Sumitomo Group purchased 3,000 vehicles per year (or 18,000 vehicles over the six years 1975–1981), a conservative guess given the total size of the group.

Some other key lenders, especially Hiroshima Bank, aided the recovery in yet another way by supporting the suppliers during the critical period when their orders were down and cash flow was very tight. Especially critical here was the banks' willingness to carry the lengthened (and theoretically quite insecure) promissory notes Toyo Kogyo was issuing to its suppliers in 1975. Without Sumitomo's willingness to back up the entire system, the financial safety net would have quickly collapsed.

The National Government

The fact the government in Tokyo made no loans or loan guarantees has been pointed out as illustrating a basic difference between the Japanese and the American approach to large bankruptcies. The comparison, obviously, is with the Chrysler loan guarantees; yet, in fact, the Chrysler case seems quite unusual by U.S. standards and no clear precedent for such guarantees existed or exist as a result. There is no doubt that the Japanese government chose to play an indirect role that relied primarily on the private sector. It is also clear that Japanese bankers did not hold out for government loan guarantees. But this is not to say that the government (the Ministry of International Trade and Industry [MITI], the Ministry of Finance, and the Bank of Japan) chose to depend solely on market mechanisms. Rather, the government followed a separate strategy from either of the extremes usually contemplated by Americans.

From what we have learned and from what we understand of

Japan, there is little doubt that the government played a key role in the decision that Sumitomo Bank would preserve Toyo Kogyo. The economy had not faced such economic uncertainty in two decades and a whole region faced economic collapse along with Mazda's maker. The government could not allow Hiroshima to enter a depression that would affect the morale and confidence of the nation. Sumitomo already had severe problems with Ataka, however, and no one questions that close consultation between Sumitomo and government financial authorities occurred. A former senior official of the Ministry of Finance has remarked to the authors that while the Ministry would allow most any industrial company to go under, it would never permit the collapse of Japan's largest banks and trading companies. Sumitomo Bank by this perspective has an implicit government guarantee. Such a guarantee is quite outside the public, legal domain and requires no explicit invocation. This does not imply that the Ministry of Finance would have compensated Sumitomo directly for any losses. Rather, presumably it would have cared for the bank and restored it to health by granting it special business favors (e.g., shifting larger portions of the government's cash account to Sumitomo). In all likelihood, it was this unstated understanding confirmed by close, private cooperation that was the background for the bank's very energetic response to Toyo Kogyo's problems.

The question of who took the initiative in deciding on the bank's role remains unanswered. All company officials interviewed denied any government involvement, but at least one reliable source close to the bank and the government said that Sumitomo was virtually ordered to step in by the Ministry of Finance. If Toyo Kogyo's problems stemmed primarily from weak or inappropriate management, then to Sumitomo the risks of a total commitment were not as great as one might assume since the auto industry as a whole was one of Japan's strongest, and the bank was already deeply involved through its loans, stock ownership, and Sumitomo Group involvements. Stepping in to reshape management was something the bank, but not the government, could do.

MITI does not appear to have been actively involved with Toyo Kogyo's problems prior to their public disclosure. Since the company is situated out in Hiroshima and has maintained a tradition of family management and a policy of keeping outsiders at arm's length, it seems to have divulged much less of internal matters to bureaucrats than is usually assumed to be true in Japan.

It is also interesting that the national Diet and especially the Diet members from Hiroshima Prefecture played no significant role in generating pressure for a rescue effort. In the Chrysler case, Congress was heavily involved with Michigan's representatives spearheading efforts to get a government guarantee. In contrast, Toyo Kogyo did not seek or need much assistance from the area's elected Diet representatives. Legislative involvement in business affairs brings forth a particular kind of lobbying and publicity. In the Chrysler case, unions and management joined with local government to secure particular favors. Risk management became largely a public affair. This was not the kind of publicity or involvement Sumitomo or Toyo Kogyo wanted.

While the Ministry of International Trade and Industry viewed the country's auto industry as overcrowded and due for an adjustment,when Toyo Kogyo faltered, MITI's reaction was one of support. In early 1976 a vice minister traveled to Hiroshima to visit the company and announced to the press his ministry's full support. It is quite difficult to ascertain the nature or the extent of that support. Company and Sumitomo Bank officials do not credit MITI with a significant role, but one director of a competing auto firm tells us that MITI officials cautioned his company against taking advantage of Toyo Kogyo's problems in the market place—specifically urging dealer restraint in exploiting Mazda's rotary engine fuel inefficiencies. In addition, MITI explicitly directed Toyo Kogyo's large suppliers (such as Mitsubishi Steel) to continue its dealings on "normal terms." MITI also "counseled" with the media and was seen as highly successful in curtailing coverage that might have significantly damaged consumer confidence.

Research to date has not extensively documented such reports. MITI's behind-the-scene activities of this kind may have been more extensive, but our research has so far not turned up further evidence. Whether they were of great consequence is quite a separate question, of course, but there is no doubt that the shadow of government involvement represented assistance to the beleaguered company, and when we compare this environment to the extended public debate, media criticism of Chrysler, and the reluctant, *ad hoc* process that produced a government guarantee at the eleventh hour, the differences are surely noteworthy.

One minor legislative move was made to help Toyo Kogyo nationally. A bill was submitted to the Diet to reduce the licensing fees for new passenger cars that met certain stiff emission standards. Only Mazdas with Wankel engines and Hondas could pass the test. The proposed fee reduction was viewed by all as a legislative mechanism to help Mazda sales. Testimony on this bill took months; when it finally passed, it actually made little difference to Mazda sales.

In sum, the crucial part played by the government was bureaucratic, implicit, and private. Its readiness to stand behind leading financial institutions was the ultimate strength of the safety net lying below the company. Such a commitment is fully tested in a widespread recession, but instances like Toyo Kogyo and Ataka Trading illustrate the way the government can "leverage" its commitment to stability by encouraging private sector financial institutions to take the responsibility and initiative for problem cases. For banks, bankruptcy risks are partly a product of confidence. As confidence is established, the risk is reduced. The government and lead banks are crucial in initiating this attitudinal turnaround. We can envisage a set of concentric circles with the government at the center, the top 10 or so banking and trading firms in the next circle, large companies like Toyo Kogyo in the third circle, and so forth, out to much smaller supplier firms. Bankruptcies in Japan are numerous indeed, but rarely do they affect companies other than those in the outer circles. Japan has an implicit social policy of protecting the inner circles, it appears, and the crucial government job is one of allocating scarce resources to maintain core stability without sacrificing the growth of overall economic efficiency. In this task, the core private sector institutions are key allies. This is not a legal or legislated arrangement, but one that has evolved historically. It seems evident that market forces can work differently within each circle of the system. There is considerable room for flexibility and *ad hoc* rearrangement in the government's response to each case.

Management

Tsutomu Murai, a Sumitomo Bank executive with no prior manufacturing experience, was selected as the bank's "delegate" to the Toyo Kogyo management team. Murai had been carefully selected from a number of possible candidates. In addition to having experience with a previous rescue situation, he came from Japan's southernmost island, Kyushu, and had a style and personality that "fit" with Hiroshima. Four executives accompanied Murai. They were placed in charge of the marketing, finance, and cost control functions. When they first arrived, many Hiroshima people resisted their involvement, viewing them as an "Occupational force." For a time, employees derisively named Toyo Kogyo "Sumitomo Auto."

Murai's title at Toyo Kogyo was executive vice president. He states:

> I went in with no biases—and in hindsight that was best. There were four bad aspects of the balance sheet when I arrived: 1) the debt was too big; 2) inventory was too large; 3) accounts receivable was too large; 4) there were too many employees. These were my top four priorities. The company was a backwater company, a seat-of-the-pants operation, there were no management systems. I felt we needed to bring in an appropriate large-company way of doing business. In addition, Toyo Kogyo was not a well-known brand and had a poor national brand image. We needed to work in all of these areas.

Murai's style is worth noting in detail. As he tells it,

> I wanted to have Toyo Kogyo employees understand my personality and create an atmosphere of openness. For example, I looked for opportunities to drink with younger people and when I had time, I looked up union officials out on the shop floor and joined them in a cup of coffee. I accepted lots of invitations for dinner. I wanted to reduce feelings of hesitancy towards me. Once after some employees went fishing, I talked them into coming over to my apartment to cook their catch. In an incident that became famous, I was walking from one bar to another one night with a Tokyo journalist when a bunch of younger Toyo Kogyo employees unhesitatingly greeted me and I replied, "There are too many of you to buy drinks." Everyone had a good laugh and the surprised journalist wrote about the new openness at Toyo Kogyo. I spent almost no time by myself at Toyo Kogyo. If there was any extra time, I went out to union offices. My secretary worked on the principle of scheduling as many meetings as possible. I spent a lot of time with Hiroshima business leaders, with the press, and with managers and workers at the education and training center. In two years, I met every manager personally and with at least 2,000 of our hourly employees.
>
> I worked sixteen-hour days. Around 10 P.M. I'd begin work on the drafts of speeches I'd be making the following day. I did my thinking and reading at midnight—worrying over the abacus. When you are absorbed in something, you cease eating and sleeping. I lived alone in Hiroshima for the entire time, but my wife came from Osaka to host foreign visitors and join me in serving as go-between in Toyo Kogyo marriages. I saw her perhaps once a week over the four years.

Murai's approach, in part revealed in his own account, was to keep a low profile and try to utilize the energies and talents of Toyo Kogyo's own managers. It is important to bear in mind that from Murai's arrival in December 1974 until late 1978 when K. Matsuda formally resigned, all efforts toward change were attempted in the presence of the Matsuda president. Murai enlisted some of the best and brightest middle managers, buried under the Toyo Kogyo management hierarchy, to spearhead actual changes. He put a bright and intensely likeable executive in charge of cost reduction and created a task force to ascertain the true facts of Toyo Kogyo's predicament. His task force established systems and key indicators through which the executive committee could take informed action. A company producing a million vehicles a year must plan for long-term capital development. Murai found they had no data base upon which to make decisions, and what information existed was split up all over the company. Over time, he established systems to capture key production, sales, and other crucial figures on a weekly basis.

Murai placed Toyo Kogyo plant manager and production specialist Yoshiki Yamasaki in charge of the production streamlining effort. Throughout 1976 and 1977, Yoshiki Yamasaki persisted in efforts to streamline Toyo Kogyo's production process. Age 58, himself a factory engineer, Yamasaki had the age and factory expertise to unequivocally represent the Toyo Kogyo culture, yet he had the flexibility and leadership capabilities to effect the necessary change. Production began to increase. Vehicles produced per worker increased to 34 by late 1977. Yamasaki's record and legitimacy as a career Toyo Kogyo person made him an ideal candidate for the presidency when Matsuda resigned. He had come up through the ranks and had the loyalty and confidence of the employees.

Sumitomo exercised considerable wisdom in its intervention in Toyo Kogyo. In contrast to a more abrupt and heavy-handed approach (aimed at debt reduction at practically any cost) often insisted upon by American leaders, Sumitomo gave Murai no deadline or fixed plan. Sumitomo chose him for his personal qualities as a top manager who could fit in smoothly, not as a hit man who would stand separate and apart. Nor did Murai leap into immediate action. While his colleagues from Sumitomo gathered facts on the financial and marketing picture, he went about building relationships, trying to improve the climate of communication and problem solving. This was not a cosmetic or short-term effort. He persisted for two years restoring confidence, encouraging openness, and strengthening planning and control systems.

Murai encountered a vertical organization with strong functional units, all reporting to K. Matsuda. There was little coordination between divisions. Murai forged a new executive committee and an Office of the President to foster integration. Whereas K. Matsuda had used the executive committee for reports and monologues, Murai scheduled meetings on days when Matsuda was absent and ran them like case discussions. He had a knack of bringing out the issue and building consensus around the common threads. He asked the executive committee members to adopt a double perspective—their own division's and the total company's. In this manner he put decision-making responsibility into their laps and encouraged them to exercise it jointly. The executive committee met weekly and served as the nerve center of the emerging system. As support staff, Murai enlisted junior managers from the next level down.

Despite Murai's efforts, the obstinance of K. Matsuda created many barriers to change. This situation finally led to an orchestrated effort involving the bank and leaders of the Hiroshima business community to convince Matsuda to step down. Matsuda's departure permitted Yamasaki to be named president and legitimized many of the latent efforts toward shared decision making and decentralization. One executive recalls: "Whereas in K. Matsuda's tenure, Mr. Murai was always pushing one step ahead, as soon as Mr. Yamasaki became president, Mr. Murai stepped into a 'one-step-behind' position."

Despite progress on other fronts, Toyo Kogyo's relations with its dealers remained poor until K. Matsuda's departure. Yamasaki's very first move as president was to call a dealer conference. For three days, 16 hours a day, he listened to grievances. At the conclusion, tears in his eyes, he committed himself to a number of significant changes, including increasing dealer margins from 16 per cent to 21 per cent (to be competitive with other Japanese manufacturers). He also agreed to not produce cars unless dealers ordered them. For many of Toyo Kogyo's dealers, this was the first time in 40 years they had met with the president. This fact and Yamasaki's ability to listen and his evident sincerity began to erode widespread dealer cynicism.

It is important to remember that Yamasaki had virtually no sales experience. His entire career was in manufacturing. Yet at the age of 60, upon assuming the presidency, he devoted over 50 per cent of his time during the first year to sales problems, most of it in the field, and personally visited all 114 dealerships. Murai traveled with him. Yamasaki made a practice of insisting that his host, the dealer, sit in the seat of the most honored guest. This, too, symbolized Toyo Kogyo's commitment to change. And there was substance as well as symbolism. For the first time, dealers were genuinely consulted in Toyo Kogyo's product planning for future models.

Yamasaki is striking for his friendly demeanor and warm, open manner. In contrast to K. Matsuda's top-down style, Yamasaki listens. In his subordinates' view, his management style embraces two interesting techniques—management by sampling, and triangulation on key details. Yamasaki turns up at meetings or on the factory floor at any time of the day or night. Talking to workers, observing, grasping the gist of a management discussion, he has effectively taken "core samples" throughout his organization. He has a sharp memory for detail and can recall facts from previous conversations to remind a manager if a discrepancy has occurred.

One executive recalls:

> While commuting to the office, Mr. Yamasaki often drove through the factory areas. After becoming president, he'd regularly stop and walk into a plant. He'd talk to foremen, lead men, or workers—he knows them so it was like talking to old friends. By the time their managers learned that the president was in the area, Mr. Yamasaki was gone. Later he'd be on the phone with follow-up questions.

During the frustrating days before K. Matsuda's departure, Yamasaki had encountered many entrenched beliefs among first line management. Initiating a job rotation program, two-thirds of Toyo Kogyo's section chiefs were rotated to new positions during Yamasaki's first year as president. "Too many people had stayed in one job too long," he states. "The reshuffle changed their ways of looking at problems." Yamasaki inaugurated extensive education and training of supervisory people to focus their attention on process efficiencies. More specifically, this training was aimed at getting supervisors to understand which activities created value and which did not (e.g., attaching a component to a car adds value; bringing the component from a pile to the car creates no value). Foremen's education also focused on time and motion studies and improved machine layout.

Toyo Kogyo's Director of Training explained further:

> In 1976, I encouraged team meetings as much as possible. However, sometimes these meetings lacked a specific focus. I read about Honda's "plastic model games" in which competing teams assemble model cars and compete to achieve the best time and quality.

His training staff created teams of six to eight foremen. Each team chose a production strategy and established procedures to produce the most units with the highest quality. The group decided whether to produce all three of its cars by a division of labor like an assembly line or via a job shop process. Teams were judged on four criteria: 1) facility investment = tools, pliers, scissors, knives, tape, string (each tool was " priced" and the total price was scored); 2) assembly time; 3) quality; and 4) a test drive (each car was set in motion over a 20-meter course and scored on its performance). In this way, shop floor supervisors were trained to focus on efficiency and quality. The training stressed teamwork, analysis, and participative problem solving.

Under Yamasaki, Toyo Kogyo also instituted "walking rally" training—a nighttime contest in which teams learned to navigate through a city in a fixed time span without aid of watches. Self-Defense Force training (including marching and obstacle courses), Zen meditation, and a marathon 50-kilometer mountain climb up Mt. Oro were also required of male employees. Explains the Director of Training, "the underlying purpose has been to train intensively in order to build each employee's character. Character provides the basis for individual capability day-to-day."

The Union

There had been some warning signs earlier in 1974. Employees read in the paper that their company had put its two large office buildings in Tokyo and Osaka up for sale. Yet no public financial announcements were made and employees were not enlisted in an effort to correct the problem. By November, however, there was simply not enough cash to pay the full amount of the December bonus. President Matsuda called an emergency meeting with the union's leaders to request a postponement of the bonus. Abruptly, the atmosphere became tense.

The union was asked to accept a postponement of 60 per cent of the end-of-year bonus and to approve a plan by which Toyo Kogyo employees would be dispatched to dealers to help boost sales, filling the breach created by departing salesmen. The pressures on the union were enormous once the problems were clear, for the company's survival was a crucial concern to everyone in Hiroshima and the union's members would have no other jobs awaiting them if Toyo Kogyo went under. Still, much hard bargaining occurred. The union demanded and received management's promise that there would be no layoffs. Without agreement on this crucial principle the negotiations would have foundered. This is a crucial point in grasping the labor relations aspect of Mazda's turnaround: once job security and the company's survival were tied inextricably together by the reconfirmation of permanent employment, union and management were inclined to move along a relatively cooperative path.

The union accepted a rescheduling of bonus payments; one-quarter of the payments to be postponed six weeks and one-quarter postponed twelve weeks. In calculating the financial impact of these postponements, the following picture appears. The 1973 bonus level of 4.9 months' salary (paid in two installments over the year) had already been cut to 4.8 months (based on an industry-wide agreement). The second installment of 1974's bonus payment (i.e., 2.4 months' salary for each employee, due in December) amounted to ¥3.8 billion. Rescheduling alleviated a critical cash flow problem by shifting approximately ¥1.9 billion into the first quarter of 1975.

This formula was followed for the three following bonus payments in the next 18 months. With base salaries increasing at approximately 12 per cent a year during that period, we can estimate that about a ¥4 billion improvement in annual cash flow was achieved. Alone this change hardly solved the company's problems. Its significance was in the fact that a fundamental agreement between labor and management and subsequent union membership approval of that agreement was accomplished in just three weeks. Worker acceptance, furthermore, was facilitated by the union's efforts to arrange bridge loans from its credit union for members who could not meet personal payments as a result of the bonus postponement. As the union president explained,

> Toyo Kogyo is a crucial part of the Hiroshima economy. If it fails we lose our jobs and so do many of our neighbors. We had no choice but to do our part in the effort to help Toyo Kogyo. There would have been immediate public disapproval and great dissension in the union if we had resisted management's proposals even though the company's problems were primarily management's responsibility.

The Dispatched Worker Program

At the time of the bonus rescheduling, President Matsuda also asked the union for approval of a plan to send several thousand Mazda employees to dealers where they would learn to sell the company's cars. Only "volunteers" would be dispatched and they would retain all of their seniority and other privileges as Toyo Kogyo employees. The dealers would pay each dispatched worker ¥150,000 a month and cover local housing costs; the company would pay remaining wages, bonuses, and benefits. Dispatched workers would serve for six- to twelve-month intervals; families would stay behind. A special two-week sales training course would be established to facilitate worker adjustment to their new jobs.

The plan seemed full of potential for exploitation. It put seasoned industrial workers in the capacity of temporary migrant labor in an unknown occupational field and it took them far from the protection of their union. The union was reluctant to approve the plan without strong assurances that 1) the program would be voluntary; 2) appropriate living and working conditions would be guaranteed; and 3) no career would be penalized if an individual did not succeed as a salesman. With these preconditions met, the union was induced to explain to the rank and file how the program would benefit the company given that there were simply not enough orders coming in to justify the numbers of Toyo Kogyo employees. The union was granted the right to independently monitor all aspects of the program, interviewing each "volunteer" before final selection, visiting dispatched workers at the dealerships, and checking the personnel files of those who had served as salesmen.

The plan proved to be an ingenious move from the company's point of view. It reduced annual labor costs by ¥1,800,000 ($7,600) per dispatched worker while helping to fill the gap created by the departure of salesmen. Yet only the fact that auto retailing in Japan is so labor intensive made the program sensible. A dispatched worker had to sell only 1.5 cars per month for the dealer to recover his costs. Even this level of accomplishment required inexperienced people to work hard calling door-to-door. Many dealers were skeptical at first. In the final analysis, dealers, like the union, had no choice. The average dispatched worker actually sold two cars per month and with the incentives the dealers received on incremental sales increases, the results proved satisfactory to the dealers who continued to utilize dispatched workers right through 1981.

In its final form, the dispatched worker program was divided into two stages. Stage one was a hastily put together arrangement in which workers rotated in and out of sales in less than one year, insufficient time to become fully effective. In January 1978, stage two began. Workers (and their families) were sent out for two years with an optional third year. During the three years of stage one, over 8,000 workers participated. At its peak 2,900 employees were serving as salesmen and another 450 as service mechanics. From 1978 to 1981, during the four years of stage two, the average number of dispatched workers in dealerships grew to about 2,900. Assuming 1,700 per year over three years for stage one, and 2,900 per year over four years for stage two the overall gain for the company is as in Table I. Again, this program alone did not save the company, but it had an immediate effect and, in combination with other cost reduction efforts, it proved to be a significant contribution over the entire course of the recovery.

The most important ingredient to the program's success was its acceptance by Toyo Kogyo's workers. Had they not been willing to go, it would have failed and led to union-management conflict. Had they seen the program as oppressive they could have also sabotaged it by simply not selling cars.

The proposal had assumed workers would volunteer, but did this really happen? And were the numbers of "volunteers" sufficient? Many of the over-simplifications about Japanese management and company loyalty can be put to the microscope in this kind of situation. Some workers did actually step forward of their own will, but most were quite reluctant. There was no flood of volunteers. Managers and foreman had to actively recruit "volunteers" and there was a good deal of peer pressure to take one's turn once the program got rolling. The first "volunteers" almost everywhere were more senior people, including many middle managers and foremen. This seems contrary to practical reason since 1) they were the ones least inclined to leave their families; 2) they were the least *dispensable* to their work places; and 3) they would be the slowest to learn a new kind of work. Yet, as the leaders of their work groups and the ones expected to be the most responsible, employees in their thirties and forties were under the greatest obligation. They were the ones to set the example. The first groups of dispatched employees were largely from this age group, the one that Japanese social logic points to as the most appropriate.

Proportionally more went from the white-collar than the blue-collar ranks, but there was a general balance from department to department due to the administration's guiding hand. Nearly every section was expected to supply "volunteers." Managers were allocated targets for their recruitment efforts. Once the flow out and back was established, group pressure worked to keep up the supply.

Table I

Annual Labor Cost Savings	Annual Contributed Auto Sales
Stage 1 (1,700 × ¥1.8 million) = ¥3.1 billion	(1,700 × 24) = 40,800
Stage 2 (2,900 × ¥1.8 million) = ¥5.2 billion	(2,900 × 24) = 69,600
Seven Year Total ($120.4 million) ¥30.1 billion	Seven Year Total 400,800

As time passed, those who had not stepped forward came to feel a degree of shame for not having sacrificed as their colleagues had. Thus, in the first three years over 20 per cent of Toyo Kogyo's employees were veterans of the sales experience. While it is clear that this sacrifice was far from a spontaneous outpouring of company loyalty, it was the product of the strong sense of common interest and collegial responsibility (especially in the older workers). Japanese culture and the Japanese orientation toward company organization provided the foundation of obligation that resulted in acquiescence to the plan. The results, however, were not simple to achieve or just a product of Japanese values. A great deal of management effort and union cooperation were required.

We do not hear about this kind of program in large Western companies, and as noted earlier, this specific remedy would not be as effective in less labor-intensive retailing situations. But more to the point, Western values, unionism, management assumptions, and employment systems do not favor acceptance of such an approach. While cultural and other Japanese factors help "explain" success, they did not cause such a program. But they do provide a positive context. From the outset of the bonus postponement negotiations, there was a degree of management openness. The union was asked to make many sacrifices. As a *quid pro quo* for these hardships, it insisted on a clear picture of what was happening. But even this did not occur without hitches. In fact, K. Matsuda was less than fully open. As a result, the program almost foundered in the early part of stage one when volunteers failed to materialize. It was not until Murai arrived in late 1974 that great managerial emphasis was given to disclosure with the union and mutual communication. From the union standpoint, Murai's arrival was the turning point. And following in this course Yamasaki as president actively pursued a philosophy of cooperation with the union. States the union president: "K. Matsuda never appeared in collective bargaining; it was done by the director of industrial relations. In contrast, Mr. Yamasaki always attends collective bargaining personally."

Production Improvements and Quality Teams

Toyo Kogyo first endeavored to come to grips with its manufacturing deficiencies soon after Murai's arrival at Toyo Kogyo. With Yamasaki spearheading the effort, many of the old "givens" of production were reexamined.

For two years prior to becoming president himself, Yamasaki had analyzed factory operations. He detected an "elegance" (meaning "sloppiness") that the company could ill afford. The factory had expensive, built-in safeguards against failure. Among the luxuries, Yamasaki ruefully recalls the large parts inventories on the factory floor that ranged from a two-day supply to an entire week's supply. Not only did such large inventories absorb capital and space, but they also encouraged workers to become slipshod about maintenance and generally to operate less efficiently. "If the level of a river is very high, it is difficult to see the many rocks underneath," says Yamasaki. In a characteristic Japanese reliance on metaphor, he adds, "It is necessary to reduce the water level to find the rocks."

Yamasaki brought needed efficiencies to the assembly line. To step up the rate of production, more costly but durable drill bits were purchased. Machine maintenance improved, so that down-time fell by 50 to 60 hours per month. Despite Toyo Kogyo's massive debt, automation was introduced throughout the engine plant assembly line. Thus, as the company brought out each new model and moved it along the assembly line (GLCs alternating with RX-7s, Capellas, and other models, seemingly at random), the factory management programmed spot-welding robots and other machines to deal with each one in turn. (To facilitate production, new models were deliberately designed with a number of interchangeable parts.)

The "water level" began to fall. Inventory was reduced to a half-day for most parts, and to only a couple of hours for some, the common standard among leading Japanese car manufacturers. To guard against recidivism, Yamasaki established a rule that, in some areas of the plants, there could be no more than two boxes of parts alongside the assembly line at any one time. By defining the presence of the third box as "waste," he made the concept tangible, and difficult to ignore. In this way parts floats were reduced from a 6.8 days' supply to one of 2.5 days' supply.

The benefits of the program were not only reduction of expenses arising out of floats but the resolution of structural problems surfaced by these efforts. The reliability of machinery and the quality of workmanship were enhanced. These improvements in production methods and processes occurred as the level of floats came down. Specific examples illustrate these programs.

Example: Shortening of change-over time for dies and cutters

stamping dies	40 minutes to 10 minutes
ring gear cutter	390 minutes to 13 minutes
die-casting machine	90 minutes to 4 minutes

Example: Machining of steering knuckles

number of workers	11 to 4
number of floats	1,000 to 60

Example: Machining of timing gear case and cover

number of workers	10 to 7
number of floats	650 to 0

The examples illustrate the extensiveness of float reduction. However, as noted earlier, float reduction tended to surface other problems creating a sequence of problem solving challenges. The Mazda Quality Control program (MQC) addressed these challenges—in fact, its name creates a false impression—for at its core it fostered group problem solving based on careful statistical analysis and time and motion studies. All of this entailed intense involvement by workers and by their first line supervisors. (As noted earlier, by 1978 each of these supervisors had been retrained and rotated through different jobs to stimulate their perception of problems.)

At Toyo Kogyo, as at other Japanese auto companies, the system of worker group participation known as *jishu kanri* had been established years before. But it lacked vitality. Yamasaki revitalized these groups. In all, 2,000 different *jishu kanri* groups were established with seven or eight members apiece. Their focus was on productivity and quality control. Voluntarily organized, Mazda Quality Circles usually meet two or three times a month to discuss immediate work of their common concern. Circle leaders are elected alternatively among the members. As of September 1981, the company had 1,600 circles in operation.

A snapshot of an assembly line section team captures the intensity of current Toyo Kogyo efforts. The section's day begins with the usual exercises and a lecture by one of the workers (each day another takes a turn) on how to eliminate a particular production problem. On the walls are charts of the section's productivity, its down time, and a separate chart, by *individual* worker, indicating the errors committed that month. Workers maintain their own machines—including robots—and 60 per cent of all assembly line workers are capable of performing rather extensive maintenance activities. While workers alone solve only 15 per cent of the issues raised in their circle activities (help from engineers and management is required to solve the rest), it is the capacity of these sessions to define problems and opportunities that has contributed immensely to Toyo Kogyo's results. In 1979, 600,000 employee suggestions (22 per capita) saved Toyo Kogyo approximately $11 million. In 1982, 1.8 million suggestions were generated for a remarkable rate of 65 per capita. About 60 per cent of these suggestions were adopted.

The Suppliers' Contributions

Prior to Murai's involvement, suppliers were seen to be of great importance in Toyo Kogyo's overall cost position, but management exercised little direct control over them. Recall that 70 per cent of manufacturing costs were external. As an emergency measure, beginning in late 1974 and continuing through 1977, payment terms to suppliers were lengthened from the usual 180 days to 210 days. The only exceptions were very small suppliers protected by law from terms over 120 days. This was not a popular move with suppliers who were already suffering from declining demand. Nor was it an act of leadership on the automaker's part. It was simply a crisis move that few suppliers could oppose. Given the size of Toyo Kogyo's purchasing budget (about ¥300 billion), however, a one-month extension significantly improved its cash flow (by about ¥25 billion) and reduced interest payments by several billion. These costs were actually shifted to and spread out among the suppliers. In turn, they generally passed on some of the risk involved in continued sales to Toyo Kogyo by discounting the notes with banks or by making sales through a trading firm. The financial framework was a safety net common to both the central manufacturer and its suppliers.

Where the commitment to Toyo Kogyo was likely to give way first was among those large components suppliers whose size, diversity, and breadth of customers would allow them to drop the automaker's business as too risky. In 1974–75 a study was made of one such supplier located in the Kansai. The company did about 15–20 per cent of its total business with Toyo Kogyo and it was expected to make significant investments for tooling changes as new models came along. This supplier stationed its second highest executive in Hiroshima for long periods of time in 1975 in order to assess on a daily basis the risk factor in continuing to do business with Toyo Kogyo. As this executive explained, his company did not want to go bankrupt with Toyo Kogyo, but it felt it had to stick by Toyo Kogyo as long as possible because it would be a favored supplier after the crisis. Loyalty would be rewarded, he assumed.

Upon Murai's arrival, these relationships began slowly to change. By the time Yamasaki assumed the presidency, Toyo Kogyo was ready to adopt a much more aggressive stance.

Yamasaki asked for significant price reductions, proposing a two year program (Table II). Already in 1976 supplier prices had been rolled back an average of 2 per cent on an *ad hoc* one-year basis. In June 1977, the new schedule outlined step reductions every six months totaling between 12 and 17 per cent. The plan had separate targets for different categories of suppliers. Toyo Kogyo proposed to work with each supplier to achieve these goals through more productive manufacturing processes and better coordination of design work to lower costs. For the past two years, in fact, some Toyo Kogyo engineers had been working with suppliers and results were impressive. Anticipating greater cost savings than price reductions, the scheduled price cuts were the company's way of sharing the gains. Toyo Kogyo also stated that if cost reductions proved difficult to achieve despite real efforts, the company would be flexible on a case-by-case basis. In this way Toyo Kogyo began playing a leadership role for its production system.

The cost reductions scheduled did not come primarily from heavy investments in labor-saving equipment. Rather, the gains came from small process improvements of many kinds achieved over many months of examination and adjustment. These kinds of changes in turn would allow small but continuous reductions in the supplier labor force. At times, as many as 250 Toyo Kogyo engineers were working full time with suppliers in the pursuit of improved manufacturing.

On the basis of results available, Yamasaki's program was a significant success, accomplishing an average reduction of about 14 per cent in supplier prices over two and a half years. The Toyukai Association suppliers' work force, to cite a key example, was reduced from 23,000 to 17,000 from 1974 to 1981, despite an increase in annual auto production of half a million vehicles. Within the Toyukai, productivity increased 220 per cent while the wage level increased 68 per cent during the 1976–1980 period. The savings to Toyo Kogyo of the cost reductions we estimated in Table III. These savings were large enough to improve the overall competitiveness of

Table II
Scheduled Price Reductions

	1st six mos.	2nd	3rd	4th
parts suppliers	5%	3%	2%	2%
stamping	7	5	5	0
machining	6	5	4	2

Table III
Estimated Savings from Cost Reductions

	1976	Step I	Step II	Step III	Step IV
Total Purchasing Budget Estimate (billions)	¥300	¥400	¥500	¥600	¥600
Average Rate of Six Months Reduction	2%	6%	4%	3.5%	1.75%
Cumulative Rate of Reduction			10%	13.5%	15.25%
Straight Savings	¥6	¥12	¥10	¥9	¥5
Cumulative Savings (billions)	¥6	¥12	¥25	¥34	¥46
Total for four years (1976–1980)			¥123 billion		

the company. Profits and dealer margins improved greatly as a result and the suppliers themselves gained from both increased sales to and shorter payment terms from Toyo Kogyo.

Most media commentary on Japanese auto manufacturing has implied that robots and other capital equipment have provided a great advantage. Certainly, Detroit's response to Japan's lower production costs has emphasized a need for heavy investments in automated equipment. Ironically, the truth of the matter, as evidenced by this research on Toyo Kogyo, is that the great majority of labor-saving innovations at Toyo Kogyo involved little or no capital expenditure. Most were initiated at the shop floor level through the interaction of plant management and workers. Toyo Kogyo sources confirm that fully 80 per cent of the improved productivity came from small, incremental improvements in processes and quality control. Spot checks with plant floor people confirmed this estimate. Even though its plant and equipment were old by the standards of the Japanese auto industry, Toyo Kogyo chose to focus on incremental process improvements; management realized how much slack there was in the system.

The fact that 70 per cent of the cost of manufacturing was external made this program the single most crucial one in putting Toyo Kogyo back on a sound footing. It did not produce quick savings, but it laid a new competitive foundation. Especially remarkable is the fact it was accomplished in the face of inflationary pressures and in a Japanese industry already highly efficient by world standards.

Labor Costs

The principle of permanent employment was explicitly reaffirmed in the November 1974 agreement with the union in exchange for cooperation in delaying bonus payments and dispatching workers to the dealers, as noted earlier. Management faced a long, uphill effort to cut labor costs and raise productivity. A number of separate adjustments were involved (Tables IV and V). First, hiring was virtually frozen from spring 1976 to allow natural attrition to lower the level of total employment. Second, restraint in wage and bonus increases were required. Third, efforts were undertaken to improve manufacturing productivity so that Toyo Kogyo labor force reductions could continue without undermining plant efficiency or product quality.

Before the oil crisis the natural attrition rate for Toyo Kogyo was about 11 per cent. This was a turnover rate high enough to reduce total numbers quickly, but most departures were of young, lower salaried workers. In 1973, even *before* the financial crisis, the company was replacing only one of every five departing workers, which meant a 10 per cent reduction in work force annually. From 1976 through 1978, management initiated a nearly complete hiring freeze. But due to the recession and the tight job market, the company's attrition rate had declined by then to only 6 per cent. On the other hand, production was picking up during this period and, thus, despite the slower rates of workforce reduction, high rates of labor productivity could be maintained.

Nearly all of the reduction occurred among factory workers. The number of office workers (including design engineering and R&D) was down 2 per cent from 1974, whereas the blue-collar work force had declined by 18 per cent. Or, put another way, 82 per cent of the total reduction in the work force took place on the factory side of the organization. Much of this remarkable imbalance can be explained by two converging factors:

1) The attrition rate among young males (high school graduates) working in the factory was very high whereas the attrition rate for male university graduates working in engineering, sales, and administration was very low. New male high school graduates left the company at the rate of 16 per cent in their first year, for example, whereas the rate for university graduates was 1 per cent.
2) Improvements in manufacturing efficiencies were regularly achieved, but office efficiency was neither targeted nor improved as effectively.

Table IV
Employment Reduction Pattern

	1973	1974	1975	1976	1977	1978	1979	1980	1981
1. Departures Total (Male & Female)	4079	3546	2510	2061	1828	1838	1385	1060	1171
Retirement	150	140	205	209	187	216	276	297	242
Others	3929	3406	2305	1852	1641	1622	1109	763	929
Female	450	434	403	355	358	266	206	162	180
Attrition rate	11%	9%	7%	6%	6%	6%	5%	4%	4%
2. Total Company Employment	36,891	35,325	33,266	31,232	29,546	27,827	26,809	27,283	27,874

Table V
Hiring Patterns

	1973	1974	1975	1976	1977	1978	1979	1980	1981
High School									
Male	99	109	165	0	0	0	59	610	664
Female	141	269	121	29	45	0	51	125	77
Junior College									
Female	112	99	100	1	38	0	45	77	64
Technical School									
Male	28	34	3	0	0	0	0	29	28
University									
Male	98	149	56	0	43	20	44	163	184
Female	13	12	11	5	6	3	15	49	40
Others									
Male	3	1		0	0	0	0	0	3
Female	39	26		0	0	0	12	29	27
Total Male	228	293	224	0	43	20	103	802	879
Total Female	305	406	232	35	89	3	123	280	208
Total New Hires	533	699	456	35	132	23	226	1082	1087

These two factors shaped the resulting patterns in which productivity increases in manufacturing greatly exceeded those in clerical, marketing, administrative, and other white-collar areas. The units of production per factory employee ratio moved from 33 vehicles in 1974 to 75 in 1981. Productivity had more than doubled in seven years.

The most direct way to calculate the value of labor cost reductions is to multiply the numbers reduced by the average salary and bonus for each year (Table VI). Since most of the attrition came from the ranks of younger blue-collar and female workers, we have opted to estimate their wages and bonuses as but 50 per cent of the company average. By this conservative calculation the cumulative labor cost savings achieved from 1974 until 1979 (the last year of actual reduction) amounted to about ¥60 billion.

Negotiated restraint in the rate of increase of wages and bonuses was another targeted source of savings. By comparing Toyo Kogyo's increases with those for the Japanese auto industry as a whole, we can assess the contribution of this factor. Regarding the reputed flexibility of enterprise unionism in Japan, the picture is actually quite mixed. While the union adopted a cooperative approach to the dispatched worker program, a far less flexible response occurred in the matter of wages (Table VII).

Only in 1975 are the increases significantly different. In hourly terms, a ¥3,552 monthly difference comes out to be about a 2 yen per hour difference. From 1974 to 1978 the total Toyo Kogyo/

Table VI
Estimated Base Pay and Bonus Savings due to Decrease in Number of Employees

	1974	1975	1976	1977	1978	1979
Annual Decrease in Employees	2,847	2,054	2,036	1,696	1,815	1,159
50% of Average Annual Pay & Bonus (thousand yen)	918	1,032	1,145	1,307	1,459	1,636
Savings over Previous Year's Employment Level (billions yen)	2.6	2.1	2.3	2.2	2.6	1.9
Savings Calculated as Total Work Force Reduction to Date (billions yen)		5.0	7.9	11.2	15.2	19.0
Total Accumulated Savings (billions yen)					60.0	

Table VII
Negotiated Increase in Average Monthly Base Pay

	1973	1974	1975	1976	1977	1978	1979	1980	1981
Toyo Kogyo	¥14,238	24,498	11,403	10,106	12,900	10,481	10,347	11,900	13,900
Industry	¥14,445	25,742	14,955	11,502	13,186	11,420	10,075	11,756	13,671
Toyo Kogyo/Industry Difference	−¥207	−1,244	−3,552	−1,396	−286	−61	+272	+144	+229

industry difference in base pay increases amounted to only ¥6,539, which comes to only a 4 yen per hour difference. The picture for total annual wages (Table VIII) reveals the same absence of significant flexibility.

Restraint takes average Toyo Kogyo wages below the industry average only in 1976, a result negotiated in the spring of 1975. Otherwise, Toyo Kogyo union members' average base pay actually remained above the industry average through the period.

Bonus payments, however, present a different story. As shown in Table IX, rates of bonus increase were below industry average rates in 1975, 1976, 1977, and 1978.

In summary, as we assess labor costs, most of the total real difference in average wages between the company and the industry stems from decreases in the rate of increase in the bonus. Combining bonus and wage changes results in the following overall picture:

	1973	1974	1975	1976	1977	1978	1979	1980	1981
Toyo Kogyo/Industry Total Difference in Average Wage and Bonus (in thousands)	¥−30	+17	−79	−109	−53	−45	+205	+144	+175

At the maximum point below industry averages (1976), Toyo Koygo employees earned ¥109,000 less per year than their counterparts at other auto firms. What does a ¥109,000 difference in the average pay package mean? It means an hourly differential of ¥46 (or 18¢). (Consider this in contrast to the hourly differentials between Chrysler and its American competitors on the order of $1 per hour.) While the average take-home pay of union members did not change much, interpretation is clouded by the fact that labor reductions during these years had the effect of rapidly raising the average age of Toyo Kogyo's employees. Pay differentials in an industry must obviously be adjusted for average age, especially given the prominence of seniority-based increases. In this case, an adjustment would show Toyo Kogyo's wages to be lower relative to its competitors, but how much lower is difficult to calculate without more information on the other auto companies. With this caveat, we still conclude that both in absolute monetary terms and when compared to Chrysler, Toyo Kogyo's savings through wage restraint contributed comparatively little to the overall cost cutting effort. Evidence to this effect is summarized in Table X.

In conclusion, while bonuses proved to be somewhat elastic, they certainly did not drop drastically, even in 1974 and 1975 when

Table VIII
Average Total Annual Wage for Union Members (Thousand Yen)

	1973	1974	1975	1976	1977	1978	1979	1980	1981
Annual Base Pay									
Toyo Kogyo	1008	1295	1529	1667	1894	2136	2369	2421	2500
Industry	1032	1289	1525	1696	1869	2008	2155	2287	2390
Toyo Kogyo/Industry Differential:	−26	+6	+4	−29	+25	+28	+14	+134	+110

Table IX
Comparison of Average Bonuses

	1973	1974	1975	1976	1977	1978	1979	1980	1981
Annual Bonus Differential									
Toyo Kogyo	¥432	540	535	623	720	783	904	995	1104
Industry	¥436	529	618	703	802	856	915	985	1039
Average	¥ −4	+11	−83	−80	−82	−72	−9	+10	+65

Table X
Savings From Wage and Bonus Restraint

	1975	1976	1977	1978	4-year Total
Base Pay					
Toyo Kogyo/Industry difference in pay increases (annual total)	−42,624	−16,752	−3,432	−732	−63,540
Cumulative Savings* (billion yen)	1.5	2.0	1.7	2.8	7.0
Bonus					
Toyo Kogyo/Industry difference (annual)	−79,000	−109,000	−53,000	−45,000	n.a.
Savings (billion yen)*	2.4	3.4	1.5	1.3	8.6
Total (billion yen)	3.9	5.4	3.2	3.1	15.6

* Savings are calculated by multiplying the annual figures by the total employment of the company for the year. Conceivably, changes in management salaries differed from this pattern, but the effect of such differences would not be large enough to warrant a separate calculation.

the crisis was greatest. The contention that the bonus is not a guaranteed part of wages in Japan, but rather something tied to the health of the company, is not confirmed. While the union accepted *in principle* that reduced rates of bonus increases were more palatable than reduced increases in base pay, union members came out of the whole affair with their income virtually intact. Finally, it is well worth noting that once the company was healthy again union members were given a share of "the profits" in terms of increases in wages (and presumably bonuses) above the industry average from 1978 on. It appears their "loyalty" and cooperation during the crisis were rewarded. Finally, when questioned about wage negotiations during the period, management underscored its wish not to gain great concessions at the expense of worker livelihood and morale. Reducing the head count was the preferred method, since "it was the employees who had to turn the company around."

Hiroshima Support

With about a quarter of all manufacturing jobs in the local economy dependent on the survival of Toyo Kogyo, it is not surprising that prefectural business leaders acted quickly in late 1975 to do what they could for the company. Mazda sales in the prefecture increased dramatically in that year as a result of a variety of efforts.

Members of the Hiroshima City Chamber of Commerce formed an association (the Kyoshinkai) of company presidents each pledging to increase his organization's purchase of Mazdas. The directors of this association were all past presidents of the Chamber of Commerce, making it equivalent to a local *zaikai* activity. The association lobbied effectively with taxi companies, the city, and the prefectural government to buy more Mazdas. The taxi companies began converting to Mazdas in 1975. Toyo Kogyo's share of all local taxis rose from 2 per cent in 1975 to 40 per cent by 1982. This represented sales of about 4,000 autos over six years. In a similar manner the prefectural government increased its purchases by about 900 Mazdas in six years and the city government by about 550.

Kyoshinkai organizations sprung up in other cities of the prefecture as time went on and business leaders recognized that their economies were also involved with Toyo Kogyo. Officials of the original association were reluctant to even estimate the total Mazda purchases of member companies since 1975. Over 600 local companies hold memberships (including the telephone company, and the gas and electricity utilities). If we estimate quite conservatively that each bought 6 more Mazdas a year, the association generated an annual sales increase of 3,600 cars (and a six-year total of 21,600 vehicles). This represents only one per cent of total Mazda domestic sales at the 1975 level, but such additional sales were crucial to raising sales past the break-even point.

Finally, impatient with the slow progress of an identical bill in the National Diet, the prefectural legislature passed a resolution in 1975 lowering registration fees on Mazdas because its cars could pass a stricter emission standard. This legal sleight of hand helped boost local sales, particularly during 1975, making Mazda price competitive with Toyota and Nissan in Hiroshima.

The total impact of all of these hometown efforts amounted to an improvement in overall company sales in 1975 of slightly over one per cent. Combined with the Sumitomo group purchases, perhaps a two per cent increase in sales was accomplished by these particular forms of economic loyalty that year.

Conclusions

Just as the company's cash flow, sales, and production problems in 1974 revealed underlying weaknesses in management and leadership, so the many programs that contributed to improving cash flow, cost cutting, and increasing sales rested on managerial changes that unlocked the potential strengths of the organization's thousands of employees. Before taking up the question of assessing the basic roots, we can first assess the relative contributions of each program and of the many constituent parts of the turnaround.

Full recovery took a number of years. First came the rescue stage. Improving Toyo Kogyo's cash flow and firming up its existing credit lines were the two most immediate challenges. Sumitomo Bank, with the government as a shadow partner, played the pivotal role in the latter regard, its bold action virtually guaranteeing the company's debts. The bank, the suppliers and the union members all contributed to improving cash flow (Table XI).

What is most striking in these figures is how important the supplier relationship was to the auto manufacturer, even in resolving

Table XI
Immediate Cash Flow Improvements (billion yen)

Longer payment terms to suppliers	¥25.0
Postponement of Bonus Payments	¥4.0

the cash flow crisis. By comparison, sacrifices by the union do not seem particularly large. The already suffering dealers were not asked to play any kind of financial role other than to accept the dispatched workers and cover a portion of their wages in hopes they would help car sales.

As we turn to the second phase of the turnaround, a variety of cost cutting programs take center stage (Table XII). The overall cost-cutting process took place over at least six years with the major efforts aimed at reducing direct labor costs and bringing down the prices of materials and parts supplied by vendors. The impossibility of layoffs made gradual long-term efforts to reduce labor costs (and to exploit them via natural attrition) the only viable avenue to a competitive cost structure.

The significance of supplier price reductions and decreases in the Toyo Kogyo work force stand out as the significant elements of this effort. More than 85 per cent of the total cost savings were generated by these two programs, each of which involved a gradual reduction of head count as efficiencies were achieved. The relative insignificance of wage and bonus restraint in the total picture also emerges clearly in this comparison as accounting for less than five per cent of the total savings generated by the four programs. The dispatched worker program, while not inconsequential, is also a small contributor. (There were other major programs aimed at reducing costs, such as improved inventory controls, but we do not have adequate knowledge of the savings involved.)

Table XII
The Four Key Cost Cutting Programs (billion yen)

	1975	1976	1977	1978	1979	1980	Total
1. Dispatched worker Program Savings	4.0	4.0	4.0	7.2	7.2	7.2	33.6
2. Salary and Bonus Savings from Work Force Reductions (cumulative)	7.6	15.5	26.7	41.9	60.0	—	151.7
3. Base Pay and Bonus Restraint (Relative to Industry Average Increases; Base Pay cumulative)	3.9	5.4	3.2	3.1	—	—	15.6
4. Estimated Cumulative Savings from Supplier Price Reductions	—	6.0	12.0	59.0	45.0	—	123.0
Total	15.5	30.9	45.9	111.2	113.2	7.2	323.9

If we compare the four programs on an annual basis, however, we reach somewhat different conclusions. In 1975, wage restraint and the dispatched worker program together generated slightly more than half of the total. Even in 1976 they contributed a quarter of all savings. Thus, the value of the programs requiring union cooperation was in tiding over the crisis in the short term. Toyo Kogyo's ability to quickly marshall its work force in difficult situations is clearly an aspect of the Japanese company that deserves credit.

Once Toyo Kogyo's immediate cash flow needs were solved, emphasis on cost savings shifted elsewhere. As early as 1976 wage and bonus increases were being *accelerated* in an apparent catch-up effort to bring Toyo Kogyo in line with the industry. To American competitors, lower Japanese wages represent an important competitive advantage; however, for Toyo Kogyo, competing against Nissan and Toyota, no such advantage existed. In fact, the hiring freeze kept average wages and bonuses up due to the rising average employee age it created.

Indeed, the heart of the cost cutting story is undeniably the capacity of engineers, foremen, and shop floor production workers to continously generate new efficiencies of many kinds in both Toyo Kogyo's and the suppliers' plants over a four-year period. Neither heavy capital outlays nor brilliant ideas accomplished this feat. Rather, the effort was a matter of discovering the potential of existing plants and equipment. It was the result of employee dedication, skill, and a capacity to cooperate at lower levels of the organization that proved most crucial in putting the company's production on a solid competitive footing. Management directed and facilitated this process, but only thousands of hardworking people realized the goals. To what can this effort be attributed? In our estimation both management and the quality of human resources were crucial. The Japanese willingness and talent to make such changes are the cornerstones of the country's postwar manufacturing success, not only in turnaround situations, but in successful companies of all kinds. Here, at the micro level, culture and society play a large role in differentiating one country from another.

How do we evaluate the influence of permanent employment in this overall pattern? It forces management to take a longer-term view of cost-cutting measures, as it endures the risky wait for attrition. And it forces management to take seriously the potential of average workers to make a difference. Compared to American turnaround situations, Japanese companies in trouble are apt to find themselves long on people and about equally strapped for cash—

although cash flow remains a problem longer due to the inability to make layoffs. Using people well thus becomes a necessary skill of Japanese management in such crises. The Toyo Kogyo story also suggests that labor cooperation has a good deal to do with the way management structures its turnaround efforts. The support of union leaders, the talents of lower-level management, and the basic capacities of the production workers all come into play as additional factors shaping the success of such an approach. Clearly a permanent employment approach encourages a sense of long-term mutual interests upon which greater effort and better communication can be achieved.

Ironically, the long-term effort at improving labor productivity led to a significant reduction in blue-collar jobs. About a 30 per cent decline was experienced by the Toyo Kogyo "group" in manufacturing employment. Using its increased profits, furthermore, the company has been completing a new, highly automated plant that will contribute to productivity gains and further reductions in the amount of labor input per unit. The union's membership experiences wage gains in all this, but the union has declined in size. Permanent employment, in this sense, is a factor causing companies in prosperous industries to aggressively seek labor productivity increases in an on-going alliance (if unstable) with unions that are trading off decreasing numbers of jobs for an increasing standard of living. The alliance has proved a dynamic and viable one to date.

Improved sales were important to the turnaround, too. Toyo Kogyo's sales never sank as much as Chrysler's did and they rebounded quickly enough after 1974 to facilitate the productivity improvements we have just considered. One factor sustaining domestic sales in 1975 was the absence of damaging news coverage that might have eroded consumer confidence. Secondly, the Japanese dealers held their course—having few alternatives but to increase their efforts to sell Mazdas. The dispatched worker program, as noted before, contributed incremental sales of 400,800 vehicles, enough in itself to liquidate three times the excess inventory on hand at the start of 1975. Friendly institutions in Hiroshima and the Sumitomo Group purchased perhaps 40,000 additional autos. And important as these factors were, perhaps the most significant element of the sales story was the development of two immensely popular new models—the GLC/Familia in 1977 (the third greatest selling model in auto history) and the RX-7 sports car in 1978. Both models were conceived during K. Matsuda's tenure, but they were developed in remarkably short cycles due to the inspired atmosphere of trying to save the company. A project team approach was utilized that was free to create designs tailored to the customer's needs and dreams. The design process, in other words, was a product of the new management style and, as on the production side, this new style unlocked great energy and initiative.

The Toyo Kogyo story contains many of the best and many of the worst qualities of Japanese business practices. Before 1975, it was a "one-man" company with weak supplier and dealer relations and little mutuality in management's treatment of the union. Furthermore, as the crisis mounted in 1973 and 1974 little was done to reverse this situation at a time when trust and open communication were most needed.

The company possessed few of the attributes of Japanese management so widely praised of late, yet it was very Japanese in an older sense. It was autocratically run and secretive. Communication was almost entirely top-down. Paternalistic practices were notable and patron-client relationships were quite prominent. In other words, "wet" and "feudalistic" qualities were much in evidence.

It is remarkable, then, that things held together so well. Despite a generally poor economic situation, seven other automakers competing fiercely for the domestic market, declining Mazda popularity, and high production costs, the commitment of Toyo Kogyo held firm. The safety net of relations proved to be both constant and flexible in its response to the needs of the mother company. It is also remarkable how, with a basic shift in management philosophy and approach stemming from Murai and Yamasaki, fundamental improvements in the entire system were gradually accomplished that did much more than just float the company off the rocks. Costs were cut to such a degree, for example, that Mazda is now a leading international competitor.

What explains the strength of the safety net? Three things 1) the immediate and firm government-Sumitomo Bank-financing group commitment to the company; 2) the "we're all in the same boat" quality of relationships with the company on the part of dealers, suppliers, workers, and people in the Hiroshima region; and 3) the latent readiness to pull together and sacrifice for a long-term common goal on the part of those involved. All three are factors which *in degree* distinguish Japan from the United States. If we take the Chrysler case as an example, we can immediately note: 1) the many months of ambivalence and delay in lender and government commitments; 2) the extraordinary damage to consumer confidence rendered by the media which aired the company's problems in public;

3) the ability of most suppliers and dealers to hedge their relationship to the company (e.g., cross-franchising and broadening their customer base); 4) the less flexible union-management dealings, especially around work rules; 5) the radical surgery approach taken by the banks who came in to recover their debts in Chrysler; and 6) the primarily financial (rather than production cost) orientation of leadership in the American example. The Chrysler case will need to be examined in far greater detail before the precise nature of the differences can be substantiated, but early indications suggest that these basic points will stand.

The strength of the safety net raises the question of risk. It is widely appreciated that in Japan the assessment of risk is less a matter of weighing the balance sheet and the assets of a company and more a matter of appraising its network of support and the quality of its management. Size is a factor in risk assessment in all countries, but is it more significant in Japan? Other questions immediately come to mind. How does the government view market forces in circumstances like Toyo Kogyo's? Does the system surrounding large Japanese companies spread the risk so effectively that market forces are comparatively weaker than in comparable cases in other countries? If so, does the cost of capital reflect this in Japan? Is there a middle ground between "bailing out" a troubled company and "letting the market work," a concept that we in the West have trouble grasping and analyzing due to the polarities of our thinking about the workings of an economy? There are no clear answers to these questions at present, but this case cannot be fully analyzed without considering them.

At the heart of such crises is the meaning and limits of interdependence as a social quality. Independence and dependence, freedom and constraint, superordination and subordination are the alternative qualities of relationships anywhere and Japanese economic ties can be judged along these dimensions. But there is a static arbitrariness and shallowness in the insights gained by such an approach. The challenge as we see it is to grasp the underlying dynamics of interdependence as an institutional and cultural starting point. A process approach that centers on leadership and management skills and considers the relational system's response to varying pressures and opportunities appears to be a more fruitful avenue for study. The Toyo Kogyo turnaround is a lesson in managing interdependence.

It is also a lesson in the economic significance of such fundamental, but seemingly intangible characteristics of a society as attitudes, work habits, cooperation, commitment, and skills—matters of national character and culture. Relatively low interest rates, MITI bureaucrats, trade barriers, and the like are, no doubt, important factors in a comparative history of economic growth, but only managers and workers build cars and other products. And their capacity to pull together in a crisis is a crucial measure of a society's strength.