

**The Automotive Industry, General Motors,
and Genesee County**

A Report Prepared For

**The Charles Stewart Mott Foundation
Flint, Michigan**

By

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Executive Summary

The past two decades have seen major shifts in the patterns of domestic industrial production. Manufacturing has declined as a percentage of our GNP, and our needs for manufactured goods are increasingly met by offshore production. The midwest region of the United States relies heavily on manufacturing for its jobs and economic activity, and Genesee County, with its central city of Flint, ranks as one of the middle-sized metropolitan areas of the United States most dependent on the manufacturing sector for its local economy. The midwest manufacturing base is heavily concentrated in automotive production, and Genesee County's manufacturing base is almost exclusively automotive. The automotive activities of the Genesee economy are virtually all concentrated in and supportive of one company, General Motors, and GM activity in Genesee represents almost the entire span of automotive manufacturing activities that the corporation pursues throughout the United States.

The automotive industry has, since 1978, undergone a series of shocks that have fundamentally altered its structure and shape, and the full dimensions of these changes are not yet completely clear. General Motors has experienced these, and has also endured some particular shocks reflecting its own structure and circumstances. How General Motors reacts to its changed competitive environment, and how successful that reaction is will have major impact on the Genesee economy. There is little question that Genesee County is facing further serious economic problems as automotive competition increases; the real questions facing Genesee have to do with the seriousness, timing, and duration of those problems.

This report highlights the results of our enquiries into the likely future of automotive activity and employment in Genesee County through 1990. While the report contains much detail on GM facilities in Genesee, it does not constitute a focused analysis of GM, and it should not be considered as such.

I. Background.

Production for the U. S. automotive market now is multinational, and this internationalization of production has profoundly impacted the traditional domestic industry. Increased import penetration, domestic production of foreign nameplate vehicles, nondomestic sourcing options for traditional U.S. manufacturers, and emphasis on quality and cost as bases of competition are all facets of this trend. Growing international competition in and for the domestic market is the major external circumstance influencing the future structure of the domestic industry, selecting which companies will play what roles in the future production of vehicles for that market. The viability of automotive manufacturing within the United States, and the future role of the traditional U.S. manufacturers and their suppliers of raw materials, parts, components, and production equipment in that domestic manufacturing activity will be determined by international competition, and played out under much more complex "rules" than in the past.

The major international competitor to the U.S. automotive industry, at least for the next fifteen years, will be the Japanese. The Japanese industry is structured quite differently from our own, and differs in some fundamental strategies for manufacturing a vehicle. It is clear that the U.S. industry must change in two major ways if it is to compete effectively with the Japanese. One of these changes involves the division of production activity between the manufacturer and its suppliers, and how that division is negotiated. If it is internationalization that sets the new rules of the game, it is the nature of the manufacturer-supplier relationship that arises in response to internationalization that will go far toward determining how well the traditional U.S. industry competes. The other change involves broad issues in the deployment and utilization of human resources. How effectively the traditional U.S. industry can deploy its human resources will largely determine how rapidly it can secure its competitive advantages and overcome its competitive disadvantages compared to Japan.

There are five critical factors that influence the current competitive situation of the traditional U.S. automotive industry *vis a vis* Japan. Our mushrooming automotive trade deficit with Japan reflects their "export-led" development strategy and our own domestically-led development. The twin "oil shocks" of the 1970s impacted consumer preferences, providing the Japanese with a

market opportunity they successfully exploited, and have defended well. The differing "agreements" that have governed the importing of Japanese vehicles since 1981 provide a political cast to automotive competition and arguably provided the impetus for the Japanese to move upscale. Differences in the basic costs of manufacturing vehicles in the two countries long favored Japan, and that has provided them further competitive edges. Finally, the nature of the competition between the two industries has changed and blurred, as a variety of coproduction and sourcing arrangements have developed.

The U.S. automotive industry experienced a lengthy and severe economic downturn from late 1979 through 1982. On some, but not all measures of performance the industry has recovered. There is no question, in our view, that the domestic industry still faces a major competitive challenge from the Japanese automotive industry. **The traditional industry needs to make major improvements in productivity and to continue improving its quality.** To accomplish these goals it must make major changes in the ways that the manufacturers and suppliers do business with each other, and the ways that human resources are deployed.

The task of restoring competitiveness requires increased productivity in the manufacturing and support functions that pervade the complex work of producing an automobile. At given volume for a standard unit, increased productivity will inevitably involve the elimination of jobs. The pressures upon the industry to reduce costs are enormous, and its truly impressive efforts to date have not assured its competitiveness with the Japanese. Reorganization of the manufacturers, closings of older production facilities, improvements in design for manufacturing, introduction of new technologies for both production and support activities, and the offshore sourcing of vehicles and components all point to substantial reductions in the automotive workforce.

Productivity comparisons for the Big Three indicate that GM now seriously lags both Ford and Chrysler, and it is apparent that GM has called back more of its workforce since the 1982 trough. That suggests that the bulk of employment reductions in the industry will occur at GM, and that, of course, is bad news for Genesee County.

It is clear that the manufacturers intend to reduce the size of their supplier base, rationalize the flow of material, parts, and components from these suppliers, and move more work from their own facilities to independent suppliers, including new "transplant" facilities of the Japanese. **The supplier base in Genesee is almost exclusively constituted of captive or allied GM facilities.** These facilities are

under extreme pressure as GM increases its outsourcing, but also from the general reduction in the number of suppliers and the reductions associated with tiering. These plants must now compete on a quality and cost basis with outside suppliers, and that is difficult for them to achieve. They are not well configured to compete for survival or position in a reduced, tiered industry: they lack the experience and often the engineering resources required. For Genesee, the shrinking of the supplier base and the advent of the transplant suppliers makes this a particularly difficult time to try to diversify the automotive base of the county by attracting independent suppliers. While GM's dominance in the labor market may soon disappear as a barrier to independents locating in Genesee, the uncertainties of their own competitive futures are likely to restrict their interest in new facilities.

II. General Scenarios for Industry Employment.

Three major factors are likely to lower levels of employment at the traditional U.S. automotive manufacturers over the next four to ten years. The first is decreased demand for its product, the second is improved productivity in its remaining operations, and the third is decreasing vertical integration, or increased outsourcing of the parts and components of the vehicle to independent suppliers. Each of these factors, independently and in combination, will result in lower employment at the Big Three.

We see a **market** that will increasingly be served by manufacturers other than the Big Three. Imports, including "captives" marketed by the Big Three, and transplants, produced by offshore manufacturers in North America, will increase their market share, more so in cars than in light trucks. In all probability, an economic downturn will see their share increase even further. Overall, we see a market in 1990 about the size of 1985's and thus somewhat smaller than 1986's. Market shrinkage and share loss will reduce North American 1990 car production of the Big Three to 76% of 1986 levels. **Thus we estimate that overall industry employment will also fall to roughly 76% of 1986 levels as a function of lost market.**

The domestic industry has averaged about 3% annual **productivity improvement** since the mid-1950s, and closer to 4% from 1980 to 1985. If 3% improvements can be maintained through 1990, **Big Three employment will fall**

further, to 67%, reflecting the combined impacts of market and productivity improvement. It is difficult, of course, to improve productivity while volumes are falling, so this estimate can be viewed as pessimistic in terms of employment. Moreover, jobs lost to productivity improvements have historically been offset by job gains from market expansions; with little prospect of that, the cooperation necessary to achieve productivity improvement may be less readily offered. Still, since GM appears to lag Ford and Chrysler, we would expect it to pursue this approach more vigorously, and that suggests more job losses for Flint.

The manufacturers are all increasing their levels of **outsourcing**, and again it is GM that is likely to be most aggressive, reflecting their higher levels of vertical integration. One published set of expectations as to the **likely increase in outsourcing suggests a further fall to 55% in manufacturer employment levels**. Again, this is particularly a problem for Flint, because it lacks the independent supplier base that might absorb some of this work, and hence cushion the job losses at GM facilities.

These general scenarios are subject to numerous qualifications and could change substantially as events develop between now and 1990. If, for example, the new GM10 cars duplicate the market performance of Ford's Taurus/Sable program, then our market share estimate for GM (and perhaps the Big Three) would need to be modified. The job guarantees in the new contract between GM and the UAW may affect the pace of outsourcing, or dampen the job loss impacts of productivity improvement. Still, **an estimate of 20% job loss (half of the cumulative impact of all three factors) by 1990 seems quite realistic.**

III. GM in Genesee.

We interviewed nine GM managers and seven UAW officials, providing coverage for 11 of the 12 GM facilities in Genesee from the management view, and all 12 from the union view. These interviews provided us with information about the facilities and the perspectives and opinions of the management and labor. The analysis of the plants permitted us to make an individual risk assessment for each facility, although these assessments are subject to numerous qualifications and developments. The views of these respondents, and four community

residents active in economic development permit us to make some general observations about GM in Genesee.

Our respondents indicated that the major problem facing their facility today is the need for the operation to become competitive, typically specifying cost as the relevant competitive dimension. The managers see Genesee facilities as somewhat higher cost, but a somewhat better location than other GM facilities, still see GM as competitive with its domestic rivals, and are concerned about the offshore competition. The union officials have a somewhat different view of the facilities' comparative performance on these dimensions. They rate the facility's comparative engineering competence substantially lower than the managers against both other GM facilities and domestic competitors. They agree that their manufacturing competence is about on a par with other GM facilities, but they see this as a weakness compared to domestic competitors. It is clear that neither managers nor union officials are persuaded that these facilities are competitively strong at this point in time. On the other hand, they certainly are not ready to describe their situation as competitively weak, except perhaps compared to their offshore competitors.

Most managers and officials reported that the product quality and productivity levels at their facility have improved since the upturn began. The managers use a variety of measures in the quality area, and find them generally satisfactory for their needs. They report fewer, and less satisfactory measures of productivity. Union officials describe a variety of problems associated with plant efforts to improve productivity and quality, but no clear pattern of conflict over these issues.

Managers see issues related to the workforce (work rules, hourly productivity, etc.) as the major blocks to facility survival, **while union officials see management practices** (inability to secure non-GM work, salaried productivity, etc.) **as the major problems.** We do not feel that the respondents' stress on factors on the other side of the management/union divide is particularly surprising. We suspect that this is an area where both sides are probably accurate in their perceptions of each other.

There is tremendous variation among GM managers in their attitudes about the Genesee workforce, its union, and their own facility's workers. There is certainly not a monolithic, shared view. Some managers expressed opinions and views that were negative and hostile in the extreme, while others basically had positive feelings, at least about their own workers. Most of the managers view their own workforce as "better" than the area workforce. The area workforce is seen as rigid,

exceptionally resistant to change, and unaware of how much the situation of GM (and their own situation) has changed. But it is also seen as highly skilled, hard working, and quite aware of the problems ahead. Some managers also qualified their views by stressing the high percentage of their workers with "good" attitudes, and a small, but important percentage with "bad" attitudes. So, too, some managers insisted on distinguishing the workforce and the union, reporting that most problems with the workforce are really problems with the UAW leadership and structure.

Union officials showed a similar range of views about the GM managers, ranging from assertions that they would not hire a particular manager to run a business they owned, to seeing them as reasonable and effective managers. Some UAW officials also expressed frustration with the GM leadership and structure, as distinguished from the local management cadre.

These responses raise some issues in our minds about the nature and type of relationships that exist in Genesee County GM facilities. We are struck by the apparent lack of awareness of many of the GM managers of what occurs at other GM facilities in Genesee. We recognize that GM is organizationally complex and that Flint/Genesee is large, but we still find it puzzling that so little information is shared among the GM managers. There is no question that the "quality" of labor relations in the Genesee facilities is highly variable. What is disturbing is that some managers attribute all or most of their problems to the "Flint workforce" while seemingly unaware that some of their fellow managers appear to be dealing very effectively with that "Flint workforce."

The working relationships between plant managers and local union officials in Genesee are highly variable. Some meet on a regular basis, some seem to rarely see each other outside of specific needs, and both parties choose to define those needs as infrequent. Some seem to have developed relationships that recognize areas both of conflict and cooperation, and treat the areas of conflict as legitimate and necessary, but not to the exclusion of cooperation where appropriate. Others seem mired in the past, with a view that anything desired by the other side must be opposed -- there can only be conflict. The "Flint workforce" indeed has a reputation in the industry of being hard-nosed and set in its ways. This reputation strikes us as seriously exaggerated, but to the extent that there is some truth to it, we wonder why GM management in Flint does not have a similar reputation.

There appears to us to be an inconsistency in the managers' attitudes towards the

general Flint workforce as contrasted to their attitudes about their facility's workforce. **The managers' attitudes toward their own workforces are much more positive than their attitudes toward the area workforce.** This reflects to some extent the negative views of certain facilities held by other managers, but it also reflects the managers' honest belief, in many cases, that their own workforce is just about the only "good" one in Genesee. We suspect that this contributes to the continuing bad reputation of the Flint workforce in the industry. It is troublesome because it appears to us to perpetuate a stereotype of the area workforce that is inaccurate if we accept the individual manager's reports of their specific workforce, and aggregate them to typify the area workforce. Some of the union officials we interviewed are concerned about this problem, and recognize that as long as the managers' continue to define good situations as exceptions, the fact that most of them are defined as good will not shift the overall perception.

A number of the GM managers expressed concerns about the concentration of GM activity in Flint. There is a feeling that the broader community turns to GM whenever there is a need for business representation -- on a committee, participation in a drive, or whatever. While they recognize that there are no realistic alternatives to GM for some of these activities, and some of them recognize that the situation is exacerbated by their own decision to live elsewhere, it still represents a background irritant. Some managers mentioned that the concentration of GM in Flint creates problems for them in their efforts to address problems in their own plants if these efforts require UAW cooperation. These managers feel that word travels fast as to what work arrangements are at the different facilities. They sometimes feel that this makes union officials more sensitive to the opinion of their fellow officials, the impact of this opinion on their own membership, and less sensitive to the manager's view of the plant's problems than would otherwise be the case. This results in slower movement and change than occurs in more isolated facilities. Some managers feel that the presence of the UAW means that GM does not have local influence and prestige commensurate with its role in and significance to the local community. This particularly galls them in the political arena, where they feel that candidates curry favor with an electorate heavily constituted of UAW GM workers by "running against the Corporation."

These interviews persuade us that the Genesee facilities of GM are reflective of the corporation as a whole. There are particular and idiosyncratic aspects, to be sure, but it is not the case that these facilities are all like each other and

unlike the rest of GM. We suspect that the variability of the Genesee facilities on most dimensions is greater than the difference between them, taken as a group, and the non-Genesee GM facilities. On some key dimensions -- productivity, product quality, labor relations climate at the plant level, their competitive performance, and the threats they face -- we see little difference overall between these facilities and GM nationally. On some dimensions -- location and the level of GM concentration, most notably -- they are clearly different.

We also asked our respondents to comment on the general advantages and disadvantages of a Genesee location for GM. The most frequently mentioned advantage is the workforce. The officials stress the trained nature of the workforce, while the managers stress its skill-level, a difference that we see as more one of verbal form than substance. Next comes a cluster of locational advantages: the general advantage of location; proximity to suppliers; proximity to customers -- whether the vehicle market or other GM plants; and transportation facilities, a key mechanism for exploiting proximity. Respondents mentioned two other advantages: the replacement costs of current GM investments in Genesee and the presence of good utilities, particularly the abundant water required for many manufacturing operations.

Genesee's location, especially with regard to supplier and GM customer plants is seen as a significant advantage. That may be especially important as GM moves to a JIT supply system because minimizing travel distances, and thus the uncertainties associated with transportation, is felt by many to be a key element in the successful implementation of JIT. Genesee's attempts to lure suppliers in response to Buick City's JIT efforts may have had relatively little success, but Genesee's proximity to so many suppliers and GM customer plants may provide some leverage for the retention of current GM work in the county.

A cluster of issues about the relationship of GM management and the UAW form the core of the managers' views of Genesee's disadvantages, but if the managers see UAW dominance as a problem, they also see GM dominance as a problem. If current investment represents an overall advantage for Genesee, for some of the Genesee facilities it represents a disadvantage due to the age and condition of some of the facilities. Business costs, including taxes and the "social wage" -- Worker Compensation and Unemployment Insurance -- were mentioned less often than we expected.

It does strike us that the unusually heavy GM/UAW concentration in Genesee

represents a real difficulty for the officials and managers. **The dominance of the local economy by GM, and the related political influence of the UAW are distinguishing characteristics of Genesee.** Both managers and officials are in unusual situations because of the extraordinary GM presence. Managers and officials are both perhaps less independent of organizational pressure than they would be in communities with one or a few facilities of the same company. The ultimate impact of this, we suspect, is to make both groups somewhat conservative, reluctant to break out of the molds of the UAW and GM as they perceive them. This may be a bit more of a problem for the UAW officials, since the managers are somewhat insulated by different divisional affiliations and reporting relationships. We suspect, however, that the power of informal communication influences them as well.

The aggregated plant level risk assessments suggest that Genesee by 1990 may well lose 8,000 GM jobs beyond those announced for Fisher #1 and already implemented at Truck and Bus Line #1.¹ If the three plants that we feel are most at-risk close, this number could grow to 12,500.

The range of GM facilities in Genesee on virtually any dimension -- function, product, age, reputation, etc. -- is enormous. **Just as Genesee is a microcosm of the Corporation, it is exposed, to greater or lesser degree, to all the risks and threats that face the Corporation.** We have outlined three major threats to employment levels at these facilities: market, productivity improvement, and outsourcing. These three threats also pose risks of plant closure, although that is a separate issue. Since it is often the case that some job losses must be accepted in order to ensure the survival of the plant, risk of job loss does not always imply risk of closure. The critical decision facing management and labor is how to balance that decision: how many jobs can and should be eliminated in exchange for what level of improved chances for survival? This decision is not a simple one, because too many events that influence the decision to close a plant are uncontrollable and unknown at the time the decision must be made.

The loss of GM share in the final vehicle market inevitably means the loss of employment at some assembly plants, and associated losses throughout the GM supplier chain. Unfortunately, this threat is largely beyond the control of plant-level employees,

¹The reader can find specific details and comments on Genesee facilities in Chapter Three of the Report; such material does not properly lend itself to summary presentation.

whether salaried or hourly. To be sure, their efforts can result in quality improvements and cost reductions that influence the vehicle's market success, but it is probably the case that the design and marketing decisions beyond their control play at least as large, and perhaps a larger role in market acceptance and sales. The relatively poor market performance of the GM H-Body vehicles such as the Buick LeSabre and Oldsmobile 88 represents a real threat to employment levels at Buick City Assembly, just as the declining market share of GM domestically produced vehicles threaten production throughout GM's engine, transmission, and major stamping facilities.

The other two threats -- productivity and outsourcing -- while not completely under the control of plant level employees, are proportionately more so than vehicle sales. So it is here that plant level efforts must focus. The losses to productivity and outsourcing are often complementary: the jobs a plant does not lose to one may well be lost to the other. Failure to improve productivity, for example, will sometimes result in a cost level that permits the product to be purchased much more cheaply on the outside. Some Genesee plants, Grand Blanc Stamping and Buick City Hydra-matic, for example, are likely to experience job losses due to productivity improvements rather than immediate outsourcing. Other plants may experience higher levels of job loss due to productivity improvements, or face more immediate outsourcing risks, as they begin to lose products to outside suppliers. Flint Manufacturing and Buick City Axle-Forge may face this situation.

Outsourcing of products poses a risk for job loss at most of the component operations in Genesee. Some products may be lost due to material changes -- plastic might replace steel for gas tanks, for example -- and other mature, commodity-like products may be more inexpensively available elsewhere -- oil filters and spark plugs, for example. In either case, these products may be outsourced. The gradual loss of products to outside sources represents a real threat to component facilities throughout GM, as even strong facilities such as Coldwater Road could eventually become noncompetitive in their remaining products because of the higher unit-overhead on the resulting smaller volumes. Finally, the consolidation and downsizing of GM poses the risk of resourcing within GM as fewer plants are required. Truck & Bus Assembly, for example, needs a replacement product for the Suburban by the early 1990s, but that product may go to another plant if GM requires fewer truck plants by then. Both engine plants and Buick City Hydra-Matic are at some risk because of such consolidation.

Risk of closing varies over time and circumstances, so it is impossible to predict with any certainty which of Genesee's plants are most likely to close. **But no GM facility in Genesee is completely safe; all face some risk of job loss, either long-term temporary or permanent.** The community must recognize that the alternative uses of many of these plants are extremely limited. The age and condition of Flint Manufacturing, for example, suggests that its alternative uses would be on a much smaller scale than its current volume and complexity. So, too, any of the Buick City facilities would be restricted to alternative uses by GM or the few possibilities of an on-site supplier.

The complexity of GM's organizational responsibility for Genesee means that the ongoing evaluations of and decisions for these facilities will be made in separate GM units, perhaps at different times. The separate consideration of each plant will likely ignore the possible benefit that Genesee might offer as a reconfigured complex supporting the production of a particular vehicle. This raises a serious risk that **decisions to close [whether permanently or temporarily] plants may be made suboptimally for GM, and with undue adverse impact for Genesee.**

There is little that these plants can do to alter immediate market threats, although their efforts to reduce costs through quality and productivity improvements may have eventual impact on GM's market share. However, those efforts will be critical in determining any given plant's risk of losing work, whether to capacity related reductions or to efficiency/quality related outsourcing. These are the criteria that will influence how much GM employment Genesee can retain or attract in the near future, and should therefore be the focus of local efforts. **The next few years' efforts are critical for the Genesee facilities if they are to weather developing market conditions, and to ensure their survival in a GM downsized to meet its competitive challenges.**

IV. Impact on the Genesee Labor Economy.

The labor economy of the Flint Metropolitan Statistical Area (MSA) or Genesee County underwent a series of important changes during the 1970-1986 period. Several major employment forecasts for this economy in the last twelve months have featured the most important of these changes: a lessening commitment by the General Motors

induced effect, or the famous multiplier or "ripple" effect, upon the rest of Genesee employment.

We found a strong relationship between Genesee GM and durable goods manufacturing employment. **During the 1970-1986 period, for every 1% change in GM employment, durable goods manufacturing employment within the county changed by about 1.1%.** These results show that GM employment and durable goods employment in Genesee are almost synonymous in terms of employment measurement.

As noted, future GM employment loss in Genesee will arise from three major sources: plant shutdowns and productivity increases, outsourcing, and reductions due to loss by GM of domestic market share. We estimate the total, permanent loss of GM employment in Genesee from the 1986 level **will total 21,719 jobs by the fourth quarter of 1990.** About 14,270 of these job cutbacks will occur as a result of plant closings scheduled in 1987 (6,400), and as a result of "productivity" or outsourcing cutbacks experienced during the period (7,870). The remaining cutbacks will occur as a result of the loss of GM domestic market share through the same period.

The forecast of GM employment reductions within the county was used as the primary predictor of the impact of such manufacturing job loss upon all other employment within the county. A historical analysis of this impact was carried out using quarterly data from the 1970-1986 period. This analysis estimates that **the permanent loss of 10 GM jobs will result in the loss of 5.8 jobs elsewhere in the county. Another result is that about 4.6 quarters will pass before the full impact of the each GM job loss is felt, or it will take almost five quarters after the loss of each GM job before the full impact of this loss is felt in the rest of the Genesee labor economy.**

This forecast can be presented at a more detailed level through a comparison of first quarter, 1987 levels of employment and unemployment in Genesee with levels estimated for the fourth quarter of 1990:

- Durable goods manufacturing employment will fall from a level of 58 thousand to a level of 40.4 thousand.
- All other employment in the county will fall from a level of 116.9 thousand to a level of 110.7 thousand.
- The county unemployment rate will rise from a level of 11.0% in 1987:1 to a level of 25.8% in 1990:4, uncorrected for relocation of Genesee residents.

The loss of current Genesee employment, then, is expected to total about 23,800 from 1987:1 levels by 1990:4. An additional 10,500 potential jobs, or jobs that would have been created, will be lost within the county by 1992 as a result of these projected GM employment reductions.

We examined a particular worker readjustment alternative, migration or relocation for the purpose of increased earnings, upon the Genesee labor economy. Using a combination of the results of recent population studies of Genesee and a special displaced auto worker migration model developed for this study, the following conclusions emerged regarding the likelihood and effect of relocation activity from Genesee in the 1987-1990 period:

- **A rough estimate of Genesee's total out-migration rate during the 1980-1985 period was 14.8%, far below the national average for major metropolitan areas (19.6%).** Genesee residents, in other words, do not possess a high overall propensity to move compared to the national average.
- There is a tendency for Genesee residents, reflected in the population data since 1975, to move out of the county in large numbers just after the advent of an auto downturn. This net movement does not last long, and is overcome by a reverse tendency of many **economic migrants to return to Genesee as economic conditions in the county improve.**
- The migration model developed for this study takes into account homeownership status, average age and seniority levels, and occupation of the future GM permanent layoffs. The use of this model provides an estimate of about 3,164 GM layoffs as out-migrants from Genesee during the 1987-1990 period. An additional 1,800 other Genesee residents who are members of the Genesee labor force will also leave the county during this period. Including family members, then, about 15,000 total residents are expected to leave the county as a result of the GM employment reductions in the Flint-Saginaw-Pontiac areas.

The final impact of out-migration upon the future labor economy may be small indeed. **The ripple effect will not be reduced by one dollar or one job as a result of worker relocation.** The income and thus local consumption spending of a worker who relocates to find new work or retire is just as lost to Genesee as if the worker remained in Genesee as an unemployed resident receiving no outside compensation. In fact, there is strong reason to believe that the loss will be even greater since unemployed residents must generate some income to maintain subsistence.

If skilled blue and white collar workers, as well as young workers, find it easier to relocate and thus make up a relatively large proportion of migrants, **Genesee will suffer a drain of skilled and young labor with serious, negative impacts in the not too distant future, hampering recovery efforts.**

Migration will tend to lower the future unemployment rate in Genesee; at least in the short run. The estimated total of 4,978 migrants would reduce both the stock of unemployed and the county labor force by the same number, **resulting in an unemployment rate of 23.7% in 1990:4.** Another benefit would be a reduction in the demand on county social services related to 5,000 fewer unemployed. Finally, it is quite likely that the migrants themselves would be the largest gainers in terms of increased earnings, at least in the short run. This will depend heavily upon economic and employment conditions in regions outside of Genesee that workers can migrate to. If "pull" conditions are favorable, word will filter back to Genesee and migration of the unemployed may well accelerate.

This migration scenario has not developed in Genesee during the past two recessions. Evidence indicates that workers return migrate to Genesee in large numbers as county economic conditions improve, or as migrants fail to find acceptable employment at their migration destinations. In other words, the migration alternative, or solution, has not worked in the past for Genesee, and is not likely to in the future. The American labor force over the last 15 years has become a decreasingly mobile group, and no more so than in the Midwest, and for manufacturing workers in this region.

Our final forecast of the total employment impact of the expected GM employment changes in Genesee calls for the loss of 34,316 current and potential jobs in the Genesee labor economy by early 1992, when the full impact of 1990 GM job losses are felt. If our estimates for migration are correct, Genesee County will experience an unemployment rate of 23.7% by 1990:4.

V. Community Response.

Genesee has two primary advantages, a skilled workforce and an excellent location in relation to suppliers and customers. Its major disadvantages are the relationship

between GM management and the UAW, a traditional workforce that has been slow to change, and the large GM presence. **The major issue facing Genesee is how to improve the balance of these advantages and disadvantages**, both to increase the level of GM activity that stays in Genesee, and to attract replacement activity for the inevitable loss of some GM presence. Our interviewees suggested nine efforts that would contribute to attracting replacement activities. These suggested efforts range over the long- and short-term, the very concrete to the abstract, and the very direct to the extremely indirect. No clear consensus emerges.

Our interviewees from Youngstown and South Bend strongly suggest that communities that elect to do little in response to the kind of economic losses facing Genesee, but simply try to ride it out, will only find the problems exacerbated. Rather, they suggest, **some combination of two strategies -- replacing lost activity with activity in the same area of the economy and diversification based on worker retraining -- should be pursued**. The first strategy builds on the strength of the local economy, although it is its current weakness. The second provides some hope of developing an economy better insulated from the shocks characteristic of the "one industry" town.

VI. Study Recommendations.

Our analysis predicts major economic dislocation for Genesee County through 1990. Employment losses at GM will be high, and the current economy unlikely to absorb them. Our recommendations suggest some steps that may lessen the extent, and hence the adverse impact of these GM reductions, and some approaches for developing other areas of the economy.

A major immediate challenge for Genesee is to avoid the five or so years of "community depression and half-hearted response" that seems to characterize so many other communities that have faced such extreme dislocation. We suspect that the experiences of these communities do not so much suggest that such a period is inevitable, but that it is unless actions to avoid it are implemented.

Care must be exercised that the presence of two such dominating players as GM and the UAW does not convert economic development efforts into simply another forum

for these two players to pursue issues in their relationship, or freeze out the legitimate interests of other stakeholders. The representation of these organizations across different levels (e. g. divisions, facilities, and locals) in economic development efforts may mute the first, but risks the second.

These recommendations are organized around the threats, challenges, and opportunities they present. Particular attention must be paid to the retention of current GM facilities, the generation of replacement activity, and maintenance of impacted workers. Community efforts must strike a balance between the targeted and focused efforts and those that are broader and more diffuse. We have tried to identify those areas where the Mott Foundation might play a particular role, either in enabling or implementing a specific recommendation.

Genesee needs to begin to develop a broad-based, consensual vision of the targets and means for its economic development activities. South Bend's Committee of One Hundred might provide a model for these activities, and the Genesee Area Focus Council, Inc., a logical framework for its development. It is imperative that this activity be pursued aggressively now; delays associated with the community's lack of a sense of imminent crisis will only make that crisis worse when it inevitably arrives.

The community must develop better coordinated, focused efforts. Focused efforts should be balanced between efforts targeted to the retention of existing employment and the attraction of new employment and coordination of the many economic agencies in Genesee is essential. Careful evaluation of current agencies and their charters should provide guidance in reducing their numbers and improving their coordination. South Bend's Project Future might be an appropriate model, and the Confederation of Area Municipalities for Economic Opportunity, Inc. an organizational structure.

The community must balance targeted, focused "projects" with broader, more strategic programs. Current efforts to expand services at Bishop Airport makes sense in terms of the patterns of population shift from Detroit, providing service to the Troy/Rochester population base, in addition to improving services for local facilities of GM. The community should also assess its realistic options for pursuing replacement activity in the manufacturing sector and diversification into other economic sectors. The strategy of simply weathering the storm seems fated to incur greater costs and provide lower payoffs.

Both broader and more focused efforts must address two facets of the community's endowment. Genesee has numerous positive attributes, and these must be developed and accentuated in efforts aimed at attracting new and maintaining current employment. Genesee's negative attributes must be recognized and steps initiated to ameliorate them.

The community must strike a balance between longer-term development efforts and efforts to address the immediate needs of residents directly affected by the dislocation. The "safety-net" provided by GM and the UAW provides Genesee an unusual cushioning of immediate adverse income effects. The exact parameters of these benefits must be identified, and their existence reflected in community economic development efforts. These benefits may offer Genesee unusual options for structuring the workforce retraining that will be critical to diversification efforts.

The community must apprise itself of what actions GM will or might pursue to assist the community through its period of adjustment. The community needs to discover what kinds of investments and/or payments GM considers possible, to determine what the likely schedule of those may be, and begin to build this information into its responses. This activity should be pursued jointly with GM, so that various possibilities can be explored, critiqued, revised, and implemented.

The community needs to exploit further both the University of Michigan-Flint and GMI as resources for analysis and expert assistance. These are potentially extremely valuable resources for a wide variety of economic development efforts. They also may in themselves constitute attractions for certain kinds of employers. The study currently underway to determine the viability of a high technology center in Flint is an initial opportunity to develop these institutions as local resources.

We recommend that appropriate officials from either the Mott Foundation or the Flint community [or both] remain in contact with our interviewees in South Bend and Youngstown. A continued information exchange network will likely benefit all three communities. Flint, in particular, may benefit from the experiences of South Bend and Youngstown in responding to some of the problems it will soon face.

The unusually heavy GM/UAW concentration in Genesee requires some

unusual responses on the part of both organizations. It is difficult to envision what this might be, because the non-parallel structures of the UAW and GM in Genesee provides no ready meeting ground. But this is a problem, and some work towards its resolution is clearly indicated. Three possibilities come to mind:

- GM might create an office with area-wide responsibility for Genesee;
- GM might assign an "area responsibility" for Genesee to a current high-ranking GM executive; or
- the active participation of both GM and UAW leaders in economic development organizations, or the creation of a joint UAW-GM committee on economic development, might provide an opportunity for informal resolution of some of these problems. These activities should, of course, provide benefit to the community as well.

GM should take a stronger, better coordinated stand in community development. Key GM executives are frequently rotated through the area and many do not live in the Genesee area during their stay. This retards the development of community understanding and effective contribution during their stay and in their later careers.

The UAW must be key in supporting long-term economic development efforts for Genesee. As with GM, the UAW needs to present better coordinated positions on key issues. In particular, the UAW must be brought into activities beyond simple retention of existing UAW jobs, and provide support for retaining and attracting other jobs for the local economy.

Flint/Genesee must identify what the community can and should do to assist plants in securing work, as well as efforts to address more broadly based problems, such as "community attitudes." For this to be accomplished effectively, GM cooperation must be secured, and a mechanism for plants to make the community aware of their situations and needs must be established. The community must be aware of specific threats/opportunities to the plants, including:

- information on potential outsourcing decisions, so that "packages" or combinations of Genesee facilities can be marshalled;
- when current products are available for internal bidding within GM; and
- when potential new products are available.

Steps must be taken to ensure that Genesee suffers its proportional loss of GM activity, rather than a disproportionately high share. Because of the age of its facilities, the large concentration of its employment in the "supplier" divisions of GM, and the dispersed responsibility for those facilities, Genesee might suffer more losses than necessary as individual decisions are made. The community must make GM aware of the potential impact of those discrete decisions, so that some close-calls might go for, rather than against Genesee. Flint/Genesee must take steps to ensure that GM's consideration of the future of local operating facilities reflects:

- specific evaluation of those facilities, not an automatic application of general policy to a negatively stereotyped Genesee location;
- appropriate consideration of these facilities as sources for new or re-sourced products; and
- the possible reconfiguration and relocation of GM activities within Flint/Genesee, including the expansion of functions such as engineering and marketing where necessary for facility survival. A "Truck City" might be worth consideration, and its establishment might make Genesee more successful in attracting suppliers than Buick City alone has been.

The community should perform a realistic assessment of the potential of facilities that are slated to be closed by GM. The community should identify the options they might support for attracting either replacement employment in manufacturing or supporting employment opportunities in other sectors. The availability of these facilities should be ascertained.

The community must identify opportunities for replacement activity, both in non-GM automotive, and in nonautomotive manufacturing. The strength of Genesee has been manufacturing, and that strength has been tied to the automotive industry. While diversification away from both the automotive industry and manufacturing has some attractions, it must be combined with a strategy that rests on Genesee's strength. To make these options feasible, the community must preserve its skill-base through the dislocation period, and establish a process for monitoring such opportunities.

Flint/Genesee must realistically consider the level of effort that should be devoted to pursuing three types of automotive replacement activity: Ford, traditional suppliers, and transplant suppliers. All of these are objectively low probabilities of success, but success at any would be immediately beneficial and

probably generate further success. Japanese transplants in particular are reluctant to locate in highly urbanized and unionized areas with high minority percentages in the workforce. They are, however, under pressure to do so, and the increase of such suppliers to serve Mazda in Flat Rock offers a window of opportunity for Genesee. GM's assistance might be instrumental in securing transplant suppliers to GM and its Japanese partners at NUMMI, Isuzu, and Suzuki. Ford and traditional suppliers would probably resist an area so dominated by GM, but readily available capacity and workforce may overcome that reluctance.

The Automotive Industry, General Motors,
and Genesee County

A Report Prepared For

The Charles Stewart Mott Foundation
Flint, Michigan

By

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Automotive Transportation,
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The Automotive Industry, General Motors, and Genesee County

Introduction

The past two decades have produced major shifts in the patterns of industrial production. Manufacturing has declined as a percent of Gross National Product, and the specific mix of domestic production has changed quite markedly in relation to the product markets it might serve. It is an open question whether the United States will continue to decrease its manufacturing role -- perhaps reaching a truly "hollow" economy -- or will enjoy a resurgence of manufacturing. There is debate about how important the answer to this question is for the national economy; some see the decline of manufacturing as a serious threat to our national economic well-being, while others view it as an inevitable, perhaps even desirable, maturation of our economy to a post-industrial phase. Whatever the merits of these views, there is no question that the decline of manufacturing poses serious, potentially devastating problems for some regions and localities.

The midwest region of the United States relies heavily on manufacturing for its jobs and economic activity, and Genesee County, with its central city of Flint, ranks as one of the middle-sized metropolitan areas of the United States most dependent on the manufacturing sector for its local economy. The midwest manufacturing base is heavily concentrated in automotive production, and Genesee County's manufacturing base is almost exclusively automotive. The automotive activities of the Genesee economy are virtually all concentrated in and supportive of one company, General Motors, and GM activity in Genesee represents almost the entire span of automotive manufacturing activities that the corporation pursues throughout the United States.¹

The automotive industry has, since 1978, undergone a series of shocks that have fundamentally altered its structure and shape, and the full dimensions of these changes are not yet completely clear. In a real sense, the industry is at a cross-roads: the

¹Hammer, Thomas R. "Evaluation of Development Potentials for Metropolitan Flint, Michigan." Final Report to the Charles Stewart Mott Foundation, December, 1986.

traditional industry could easily continue to shrink precipitously in market share, supporting seriously reduced activity through a number of strategies relying on nondomestic manufacturing; or, it could stabilize, though at a smaller market share than pre-1978, supporting that activity through domestic manufacturing. The stakes are enormous, as the automotive industry continues to this day to be a major source of wealth creation for our society. For Genesee County, the stakes are almost total, because it is an automotive economy.

General Motors has undergone the industry-wide shocks that have occurred since 1978, and has also endured some particular shocks reflecting its own structure and circumstances. How General Motors reacts to its changed competitive environment, and how successful that reaction is will have major impact on the Genesee economy. There is little question that Genesee County is facing further serious economic problems as automotive competition increases; the real questions facing Genesee have to do with the seriousness, timing, and duration of those problems.

This report details the results of our enquiries into the likely future of automotive activity and employment in Genesee County through 1990. The report is divided into five chapters, reflecting the structuring of our enquiry into five major activities. First, we evaluate the likely developments and future performance of the traditional U.S. automotive manufacturers, especially General Motors. This chapter begins with a review of the development of the U. S. automotive industry and a brief overview of the industry's development in Genesee County. Some information on the development of the Japanese automotive industry is presented, because that industry is at once the main competitive problem of the domestic industry and a major model for the domestic industry's responses.² We then review the competitive issues facing the domestic industry.

Second, we develop general scenarios of how those issues are likely to impact employment levels in the industry. Here we focus on how market factors, productivity improvements, and changes in traditional sourcing patterns for components will impact employment levels in the industry. Special attention is given to developing market projections for GM.

²The European role in the U.S. market is considerably smaller, especially in terms of unit sales, and the domestic industry seems to have made a more ready accommodation to it. Countries like Korea, Brazil, and Mexico are recent competitors whose current share is small, and future share difficult to predict.

Third, we assess the likely developments at the constituent facilities of General Motors in Genesee County. This chapter develops information from an extended set of interviews with UAW officers and General Motors' managers about the GM facilities located in Genesee County. This information is used to specify the likely local impacts of the general scenarios developed in Chapter One.

Fourth, we develop projections of General Motors' labor demand for Genesee County. This chapter provides historical base-line data on General Motors' employment levels in Genesee County, and provides standard projections for labor demand through 1990. The implications for labor demand of the most likely scenarios developed in Chapter Two are detailed.

Fifth, we provide information that might serve as a preliminary inventory of Genesee County's advantages and disadvantages, both for retaining as large a share of GM employment as possible and for developing alternative employment and economic activity. This chapter builds on the results of interviews conducted in other communities that have faced serious economic dislocation (reported in Appendix A), and selected interviews with residents of Genesee County active in various local economic development activities. The chapter provides the respondents' views of Genesee's needs and some productive strategies for meeting these and discuss a number of possible responses for the community and a few of its main institutional actors. Chapter Five concludes with our recommendations for meeting the challenges ahead for Genesee.

Chapter One: The U.S. Automotive Industry

Production for the U. S. automotive market now is multinational, and this internationalization of production has profoundly impacted the traditional domestic industry. Increased import penetration, domestic production of foreign nameplate vehicles, nondomestic sourcing options for traditional U.S. manufacturers, and emphasis on quality and cost as bases of competition are all facets of this trend. Growing international competition in and for the domestic market is the major external circumstance influencing the future structure of the domestic industry, selecting which companies will play what roles in the future production of vehicles for that market. The viability of automotive manufacturing within the United States, and the future role of the traditional U.S. manufacturers and their suppliers of raw materials, parts, components, and production equipment in that domestic manufacturing activity will be determined by international competition, and played out under much more complex "rules" than in the past.

The major international competitor to the U.S. automotive industry, at least for the next fifteen years, will be the Japanese. As has been the case in a number of manufacturing areas — radios, televisions, audio components, for example — the Japanese have proven themselves to be formidable competitors. It is not clear, however, that Japanese competition must ultimately mean the disappearance of the traditional U.S. automotive industry, or the inevitable shift of most of its economic activity outside the country. Automobile production will not necessarily follow the same pattern that occurred for these other consumer durables: the demise of traditional domestic manufacture in the face of imports. The critical questions facing the United States are how much of that economic activity and wealth creation *can*, and how much of it *will* be kept here.

It is clear that the U.S. industry must change in two fundamental ways if it is to compete effectively with the Japanese. One of these fundamental changes involves the division of production activity between the manufacturer and its suppliers, and how that division is negotiated. If it is internationalization that sets the new rules of the game, it is the nature of the manufacturer-supplier relationship that arises in response to internationalization that will go far toward determining how well the traditional U.S. industry competes. The other fundamental change involves broad issues of the

utilization of human resources. How effectively the traditional U.S. industry can deploy its human resources will largely determine how rapidly it can secure its competitive advantages and overcome its competitive disadvantages compared to Japan.

Internationalization of the competition for the automotive market represents the critical change of the past decade, and the Japanese present the most immediate and direct competitive threat to the traditional industry. The Japanese industry, in providing the competitive challenge, also provides the model for many of the responses of the traditional domestic industry. Because of that, the chapter begins with an overview of the historical development of the two national industries, and an evaluation of their current competitive situations. Any intelligent appreciation for the likely course of developments in this competitive relationship must be grounded in an understanding of its current parameters and historical development. These define the competitive challenge the traditional industry faces, and, in turn, influence the appropriate responses.

Background on Automotive Competition

The automotive industry plays a central role in the economies of both the United States and Japan. Statistics on industry share of GNP, share of consumption of the output of materials and industrial products, share of total domestic capital investment, and, in the case of Japan, share of total exports all support the conclusion that the automotive industry is a central, highly important sector in each national economy. The industry share of jobs is a case in point. For each economy, about 10% of all jobs are automotive related; it appears that in the case of the United States, about 1.7% of all jobs are directly tied to the production of vehicles, whereas the level in Japan is somewhat higher -- about 2.0%.³

Japan and the United States are now the world's leading producers and consumers of motor vehicles. However, they pursued very different routes in reaching this position, and it is important to be aware of these differences when assessing their current and

³Cole, Robert E. and Taizo Yakushiji [eds.] The American and Japanese Auto Industries in Transition, Ann Arbor: Center for Japanese Studies, The University of Michigan [English] and Tokyo: Technova, inc. [Japanese], 1984: pp. 20-21. These calculations are our own, based on data presented in this report.

future competitive relationships. It is perhaps especially critical in the case of automotive competition to develop some understanding of the national experience of the two industries. Concern over the competitive success of the Japanese has waxed and waned since 1978, and this concern has become both a source of debate itself, and a backdrop for other debates. These debates have attracted numerous participants representing varied interests, and there has been a fair amount of oversimplification of complex issues. This report cannot correct all misinformation, nor expose all myths; but some basic understanding of how the two industries developed is essential if the reader is to form an independent judgment about the problems and prospects of the traditional industry. The purpose of this section is to give the reader an overview of how the two industries looked at the opening of the 1970s, and to provide some basis for understanding the rapid changes that have taken place since then.

United States.

Background.

The historical development of the automotive industry in the United States has been heavily domestic. The manufacturers relied on domestic sources for raw materials, parts, components, and production equipment, built their vehicles here, and for the most part marketed them here. Domestic manufacturers maintained virtually exclusive control of the U.S. market from the first decade of this century through the middle of the seventh. The European industry influenced the domestic manufacturers in technical and design areas, to be sure; but it is still the case that the industry in the United States was truly domestic.

Beginning in the post-war period, from the late 1940s through the end of the sixties, Detroit produced vehicles increasingly tailored to the needs, preferences, and pocketbooks of the American driver. The American consumer wanted, and Detroit delivered, products highly tailored to North America, with limited appeal elsewhere. Imported vehicles filled niches, competing for the relatively small sales volumes available in the sports, extreme luxury, or budget small car markets. Detroit was not concerned about the small import market share in these relatively low volume niches.

Lack of concern was the predominant response even to the sharp surge in imports by Volkswagen in the late 1950s and early 1960s. By and large, the importers had little interest in challenging this situation. The North American sales of foreign automobiles were small by Detroit's standards, but they were often large and indeed quite profitable by the importers' own standards.

The U.S. companies quite early became active in producing offshore *for offshore markets*. That, combined with their market-tailored domestic production, resulted in the domestic operations of the U.S. manufacturers exporting virtually no vehicles. Thus the domestic industry was simultaneously insulated from broad foreign competition and cut off from export opportunities. American automotive suppliers were more actively engaged in export, but the larger supplier companies also followed the strategy of establishing facilities abroad to service European manufacturers, including the offshore production of U.S.-based manufacturers.

The size of the automotive market is largely a function of economic variables such as real income and fuel prices, and characteristics of the vehicle, such as longevity and the level of quality for price. In the view of most observers, the domestic automotive market is now mature, and only modest increases in size, on the order of 2% per year, are likely for the foreseeable future, as replacement demand rather than new users constitute the bulk of sales.

Industry Structure.

Since 1900, there have been thousands of vehicle nameplates, and hundreds of automotive manufacturers in the United States. It is true that the lion's share of domestic production has long been held by the Big Three (GM, Ford, and Chrysler): 36% in 1910, reaching the high 80% just prior to World War II, and touching 98% in 1980.⁴ But there were twelve manufacturers in 1950, and the familiar "traditional domestic industry" of the Big Three plus American Motors was really a creature of the sixties. But it is clear that most of these manufacturers were short-lived, makers of specialty or niche vehicles, and for the most part struggled along as marginal producers.

⁴*ibid.*, p. 18.

In that sense, the automotive industry fairly rapidly concentrated, and the manufacture of vehicles was dominated by just a few companies.

The Big Three and the major independent suppliers concentrated their activities in the automotive sector. While GM and Ford, for example, were long active in other economic arenas, from household appliances to aerospace, and many of their automotive goods have nonautomotive applications and markets, their business remained overwhelmingly automotive. The Big Three typically reported 90% or more of their production and sales in their automotive business lines.⁵ The Big Three met their capital needs through earnings, equity financing, and loans; they did not become linked or associated with other manufacturing firms, with the exception of GM's relationship with DuPont in the 1920s.

These manufacturers typically engaged in the final assembly and production of the vehicle, and also manufactured large portions of the major subsystems, such as the powertrain. In addition, each of the Big Three had major divisions that could, and often did, manufacture a wide variety of parts, components, and subassemblies for the final vehicle.

The level of vertical integration of the manufacturers has varied widely since the early days of the industry. Henry Ford's dream of a nearly complete vertical integration of vehicle manufacturing came close to reality in the River Rouge complex of the thirties: the raw material was brought in, steel produced, metal stamped, bent, and shaped, and the myriad parts of the car manufactured and then assembled. Flint represented the same type of vertically integrated, geographically concentrated complex in the early days of Buick. In the post-war period, until quite recently, the Big Three have had fairly stable levels of vertical integration, with GM vertically integrated at about the 55% level, Ford hovering around the mid-40% level, and Chrysler in the mid-to high-30%⁶. These manufacturers depend upon a host of smaller companies for the intermediate production goods and raw materials that compose the balance of the vehicle. These supplier companies provide anything from nuts, bolts and other fasteners to engines, transmissions, and major body stampings. Supplier companies range in size

⁵Cole and Yakushiji, *op. cit.*, p. 25.

⁶Of late, GM's level of vertical integration has been reported more commonly as 70%, and that has been presented as a competitive disadvantage compared to the lower levels at both Ford and Chrysler. On a value-added basis, if not a part count basis, the earlier estimates seem to still be more accurate. See GM *Annual Report, 1986*.

from the "mom and pop" concerns with few employees and sales measured in the thousands to very large and substantial manufacturing companies with thousands of employees and sales measured in the hundreds of millions. The manufacturers, too, play the role of suppliers to each other, and many American cars today have significant content from the two non-nameplate manufacturers.

The U.S. automotive industry, then, is a highly diverse and diffuse collection of manufacturing companies, spanning the automotive assemblers, their many divisions, and a wide variety of processors and producers of raw materials, parts, and components which ultimately are incorporated into motor vehicles. As much as 55% of the purchased value of a U.S. automobile is provided by suppliers whose home industries range from steel and rubber to plastics and electronics.

These "upstream" suppliers, numbering some 40,000 firms, enjoyed \$40 billion in sales to the four domestic manufacturers in 1980, by which time the downturn in the industry was in progress. However, approximately 4800 of these firms accounted for roughly 85% of these sales, and, in fact, some 120 firms alone accounted for 45% of this total. Moreover, these very large suppliers, in terms of dollar volume, typically have a relatively low percentage of their total sales concentrated in the automotive sector, while the many smaller suppliers' sales are more concentrated in the automotive sector. These suppliers and their own automotive-related suppliers were estimated to provide 1.4 million jobs as of 1979, at least a third of which had disappeared by the time the upturn began in 1983. Historically, the supplier industry is estimated to provide approximately 40% to 50% more jobs than do the assemblers themselves⁷.

So the automotive supplier industry is a critical component of the U.S. automotive industry; at the same time it is a highly diffuse and diverse group of firms. It includes companies which supply the manufacturers directly and those who do so through other supplier firms; there are a relatively few large suppliers who tend to be less dependent upon the assemblers, and many small suppliers who tend to be more dependent upon them. Companies that are primarily automotive suppliers span a wide variety of home industries, from rubber to plastics and steel to electronics. While "the automotive industry" is closely identified in the public mind with the Big Three, the identification of the problems, concerns, and interests of the manufacturers with those of the industry *in toto* is, in some important respects, an error.

⁷ibid., Chapter Nine, and Michael S. Flynn, "Changing Manufacturer/Supplier Relationships." Testimony before the Subcommittee on International Trade of the Committee on Finance, United States Senate: Hearings on the State of the U.S. Automobile Industry, June 27, 1984.

Industry Characteristics.

The relationships between the manufacturers and the suppliers that constitute the traditional industry have often been stormy. The manufacturers have the in-house capability to perform most of the types of work that the suppliers do, and however stable the levels of vertical integration have been, the exact mix of the make-buy decisions by the manufacturers has varied, often from year to year. The supplier, then, is often in competition with the manufacturer itself for the manufacturer's business. The manufacturer's have historically preferred maintaining multiple sources for parts and components, partly to assure themselves of uninterrupted supply, but also to some extent to allow them to reduce piece-prices through the direct competitive bidding of suppliers for shares of the total business.

The United Auto Workers is an important player in the U.S. automotive industry, since they represent workers at the Big Three, AMC, and at many major supplier locations. There is some truth to the current view that management-union relations in the automotive industry have been characterized by high levels of suspicion, distrust, and resistance on both sides. But there is also a history of reasonable levels of cooperation, of recognition of shared interests. It is clear, however, that the attempts by management to "idiot-proof" the production system, and the attempts by the union to protect their members have jointly resulted in very elaborate and unwieldy sets of job classifications and work rules. Most observers see these as major barriers to the efficient deployment of the workforce and thus hindrances to the productive execution of the manufacturing process.

The "rules of production" that have governed the industry, at the level of the manufacturers and many of the suppliers, are those suitable to large volume mass production in a protected market. Perhaps the major rule is to get the product out the door: production is the most important rule. Capital equipment should never be idle, and inventory must be maintained to assure the continual flow of production. Questions of quality, cost, and effectiveness all give way to the imperative of production. Human labor must not be allowed to interfere with production, and therefore jobs must be designed so as to be as basic as possible, and ease of substituting

workers a major concern; when a job does require human skill, it must be a clear responsibility of designated workers. The industry attitude became one of "if it ain't broke, don't fix it," and as long as vehicles rolled out the door, it became difficult to regard anything as "broke."

Technological Development.

The first few decades of the automotive industry can be characterized as a period of technological revolution, as a spate of major technological innovations in both the vehicle and the way it was manufactured occurred and took hold. By the 1930s, the basic vehicle had evolved in its essential characteristics: fuel, basic configuration, powertrain, and major subsystems were all there. So, too, the basic elements of mass production technology were in place: the movable assembly line, transfer lines, and a commitment to automating the process. Innovation since then has been largely evolutionary and involved small, incremental improvements within the basic parameters already established. That does not suggest that innovation has been absent or that when it occurs it is unimportant. One need only consider the rapid growth of productivity that characterized the industry through the fifties and sixties to understand that many "little" innovations can sum to an impact equivalent to a "big" innovation. But the process is different, and that needs to be recognized. The process of innovation, and the diffusion of those innovations throughout the industry, followed a pattern that at once favored incremental rather than radical innovation, and reinforced the conventional definitions of problems and solutions.

Statistics on research and development are difficult to interpret, and conservative definitions of the companies that constitute the automotive industry miss the important role that many supplier companies play. Even so, the automotive industry is an important source of industrial research and development activities, with GM and Ford typically ranking in the top five in total amounts spent. This partially reflects the size of these companies, but other information also suggests the important role of the automotive manufacturers in research and development, and, of course, the importance of research and development to the manufacturers. Throughout the 1980s, the automotive Big Three have spent, on the average, in excess of 3.5% of their sales in research and development. Research and development expenditures across all industries

have risen from 2.0% to 3.1% during that period, however, so the automotive industry is no longer as much above average as it had been.⁸

Government Policy.

Government policy has not been a central, determining factor throughout the development of the industry, either in shaping the ways the industry developed or in preventing it from developing in other ways. Most, if not all, government action that was targeted to the automotive industry happened in the 1960s and 1970s, with the development of regulations in the areas of safety, fuel economy, and pollution. Earlier activity, such as the development of a fine highway system, was generally more beneficial and less noticed. On balance, the actions of government targeted to the automotive industry have not had clear cut positive or negative impact, but rather represent a mixed picture. General government actions, not targeted to the industry, but impacting the industry as well as the rest of society, have had greater impact. Here again, the impact has been mixed. In some cases, the impact of the same action has changed with time. The low price of fuel, partly reflecting its low tax content, certainly helped the industry, in the sense of providing more customers. On the other hand, that policy turned out to have been a major drawback to the industry when gasoline shortages led to the plummeting of large car sales after the OPEC cut back in exports of 1973. To be sure, government policy was an important shaper of the general environment the industry faced, and from time to time an immediate, major element of that environment. But, on balance, its role has been primarily indirect, and alternated between being positive and negative, however one chooses to make that judgment.

⁸See *Business Week*, "R & D Scoreboard," various issues, including a Special Edition of March 22, 1985, and no. 2952, June 23, 1986.

Genesee County.

Genesee County and, more importantly, its central city of Flint has been a center of the U.S. automotive economy almost since the industry's origins. While it is not the purpose of this report to trace the industry's history in Flint, some of the elements of that history have important consequences for Flint's current role and future prospects in the industry.

The industrial history of Flint, Michigan reflects a cross-section of the assets and circumstances that influenced the development of most industrial cities in the Midwest: abundant natural resources, large population concentrations, available capital, industrious and innovative work force, and sheer luck. Luck is mentioned because there is certainly a bit of truth to the statement that early industries (and in turn their home towns) were developed because the right people were in the right place at the right time. For Flint, the "right people" were persons such as Henry Howland Crapo, William A. Patterson, James H. Whiting, William Crapo "Billy" Durant, Josiah Dallas Dort, Charles W. Nash, and A.B.C. Hardy.

Throughout its history, Flint's economy has been primarily based on one industry: fur trade, lumber, carriage manufacturing, and automobile component manufacturing and assembly have all taken their turn as the dominant industry in Flint. In addition, Flint's manufacturing industries have typically been centered around one individual or corporation: Henry Howland Crapo (lumber and major developer of the railroads to serve Flint) in the mid-1800's, Durant-Dort Carriage Company in the late 1800's, and General Motors Corporation in the 1900's. It appears that Flint's second and third transition (lumber to carriages and carriages to motor vehicles) were actually facilitated by the fact that the local industries were centered around a small group of companies or individuals. In each case, there is significant evidence of leadership and community-loyalty that marshalled resources toward new, consensus goals. It appears that it is this type of leadership which Flint is now in need of as the community faces a forth major transition.

There are three key periods in Flint's history that have greatly influenced its current economic and social base, image, and perception. The three periods are 1880 to 1900 (Flint's economic emphasis changed from lumber to carriage making), 1903 to 1920 (the growth of General Motors), and 1936 to 1937 (the sit-down strike at GM facilities).

Relating a brief history of these three periods provide a structure for understanding Flint's current situation.

From Lumber to Carriages

The Flint area was a major source of lumber through the mid-1850's. Henry Howland Crapo, (grandfather of William Crapo "Billy" Durant) was a major contributor to the development of the lumber industry, mayor of Flint, and governor of Michigan. By the 1880's, timber resources within the state were seriously depleted,⁹ and Flint's lumber mills were placed in an "at risk" position.

"But, fortunately for the future of Flint, the great entrepreneurs and firms of the [lumber] industry—H.H. Crapo, J.B. Atwood & Company, Begole, Fox & Company—kept their capital and profits in the city and provided investment funds for the development there of first the carriage industry and then the automobile industry."⁹ This form of community commitment was clearly shown by James H. Whiting, a hardware business owner, who was "given the mission of converting the firm from a processor of raw materials into a manufacturer of finished wooden products"¹⁰ when he became the manager of a local lumber mill. In 1882 Whiting established Flint's first incorporated business, The Flint Wagon Works. This firm was actually Flint's second carriage manufacturer; William A. Paterson had opened a carriage shop in 1869. Paterson concentrated primarily in low volume, high quality carriages, while Whiting targeted higher volume segments.

Flint's major carriage maker, the Durant-Dort Carriage Co. (originally named the Flint Road Cart Company), was founded in 1886. Formed by Billy Durant and Josiah Dallas Dort, the Durant- Dort Carriage began operations in an idle cotton mill. Within fifteen years it was the largest volume producer of horse-drawn vehicles in the United

⁹Fine, Sidney. Sit-Down: The GM Strike of 1936-1937. Ann Arbor: The University of Michigan Press, 1969, p.100.

¹⁰Dunham, Terry B. and Lawrence R. Gustin. The Buick -- A Complete History. Princeton, NJ: Princeton Publishing Company, 1985, p. 24.

States.¹¹ By the 1890's, "more than half of the community's 13,103 inhabitants were associated with the carriage business in one way or another."¹² Precursors of the high level of vertical integration that would become synonymous with GM were present in the Durant-Dort operation: "clustered around the city soon were numerous wheel, axle, varnish, seat, and top manufacturers wholly owned by Durant-Dort."¹³

The late 1890's witnessed the development of a new type of transportation -- the automobile. Early pioneers built crude models that were basically mechanical carriages. One such pioneer was A.B.C. Hardy, an employee of the Durant-Dort Carriage Company. Hardy quit the carriage company to organize his own auto firm and between 1901 and 1903 he built 52 Hardy Flint Roadsters.¹⁴

From Carriages to Automobiles

Hardy was certain that the automobile was going to develop into a major industry. He realized, however, that the potential of the automobile could only be developed with the right people and capital funding. Hardy turned to James H. Whiting, head of Flint Wagon Works and one of Flint's most influential citizens. Through Hardy's arguments, Whiting became convinced that "the horseless carriage would eventually make the horse-drawn variety obsolete. If Flint, in general, and the Flint Wagon Works in particular, were to prosper, this was surely a new field to carefully consider."¹⁵ Whiting felt that he did not have adequate engine expertise inhouse to develop a horseless carriage. He learned of, and later successfully pursued, the Buick Motor Company of Detroit.

In September 1903 the Flint Journal reported the acquisition of Buick Motor by

¹¹In the first of a number of parallels, the other major carriage manufacturing center was South Bend, Indiana, headquarters of the Studebaker Company.

¹²Fine, *op. cit.*, p. 101.

¹³Dunham & Gustin, *op. cit.*, p. 28.

¹⁴Dunham & Gustin, *op. cit.*, p. 29.

¹⁵Dunham & Gustin, *op. cit.*, p. 29.

the stockholders of the Flint Wagon Works. The company was to move from Detroit to Flint and have its base on Kearsley Street, across the street from the Flint Wagon Works facilities. The Journal wrote: "The announcement that this new enterprise is in the hands of such successful, conservative, and prudent businessmen as the stockholders of the Flint Wagon Works is at once a guarantee to the people of Flint that an industry of importance has been added to the manufacturing interests of the town and there is every reason to believe that the new company will grow very rapidly."¹⁶

The date of incorporation for the Buick Motor Company of Flint was January 19, 1904. By July the first Buick was being driven around the city, but the initial capitalization of \$75,000 was quickly depleted and Buick owed \$25,000 each to three Flint banks. The company that was a "guarantee to the people of Flint" only ten months before was very close to insolvency. Whiting believed that a younger management team and more money could save the company. In September 1904 Whiting approached Billy Durant, who had left the Durant-Dort firm and moved to New York, to move back to Flint and manage this new enterprise which was producing the replacement for the horse-drawn carriage.

"Durant felt a strong loyalty to Flint—a trait evidenced many times in his career—and the possibility was real that the failure of Buick could cripple the local economy. Further, there was the fact that influential Flint residents, many of them his friends, some his relatives, were turning to him for help."¹⁷ Durant agreed to join the company and in November 1904 he was elected to the board of directors.

The two largest vehicle concerns were then joined: Durant-Dort Carriage Company transferred \$500,000 in capital to Buick Motor Company. Assembly immediately moved to Durant-Dort's facilities in Jackson, Michigan. "The move to Jackson was a quick solution to Buick's need for assembly space, but it was makeshift and unsatisfactory. Not only were the Flint-based stockholders unhappy with the decision to assemble cars outside their city — they accepted it only because of economic realities — but Durant found it inconvenient and expensive to ship bodies, wheels, springs, engines, and transmissions from Flint to Jackson."¹⁸

¹⁶Dunham & Gustin, op. cit., p. 29.

¹⁷Dunham & Gustin, op. cit., p. 38.

¹⁸Dunham & Gustin, op. cit., p. 44.

"Reportedly [Durant] tried to interest investors in both Jackson and Bay City, Michigan in building a large new Buick factory. There were good reasons for this. Jackson was twice as large as Flint at the beginning of the Century, had a good deal of industry, and was a major railroad junction. Bay City had the advantage of excellent port facilities on Lake Huron. But businessmen in neither city offered encouragement, or cash, to lure Buick. And it seems unlikely that Durant really strongly considered any place but Flint anyway. That was where his financial backing and supplier plants were. Talking about Jackson and Bay City was probably no more than a feint to get more money from Flint investors. In the 1890's he had made a similar move, incidentally, announcing that he was taking his carriage firm to Saginaw, in an apparent effort to wring some concessions out of Flint. It had worked then, and it worked this time."¹⁹

The local community did respond: personal commitments were made for additional Buick shares. It was noted that "the small city of 14,000 people had invested in Buick to a remarkable degree, much of the money having originated in the lumbering industry thirty years before."²⁰ However, local financial sources did make some effort to keep production local. One 1905 agreement for a stock subscription was made "with the understanding that the Buick Motor Company will discontinue its Jackson plant and locate its entire business in Flint"²¹ as soon as it would be economically possible. Durant and Buick pushed ahead: two vehicles built in 1903, 37 in 1904, and 750 in 1905. The entire production of 1905 was in Jackson (with the major components shipped from Flint); in fact, the second Buick car catalog indicates that Jackson was the home of Buick and Durant himself made Jackson his home.

As noted before, Durant was very loyal to Flint. Although Jackson was the early base of Buick's assembly operations, Durant began construction of a factory on Flint's North Side that would be 14 acres under one roof and claim the title of being the world's largest automobile plant. "[Durant] fully intended to be the world's largest producer of automobiles, just as he had been number one in carriage production with the Durant-Dort Carriage Company."²²

¹⁹Dunham & Gustin, op. cit., p. 44.

²⁰Dunham & Gustin, op. cit., p. 47.

²¹Dunham & Gustin, op. cit., p. 44.

²²Dunham & Gustin, op. cit., p. 49.

"In Durant's busy mind, he could envision gathering automobile component firms in Flint to supply Buick, just as he had brought axle, varnish, and wheel companies to town to supply his buggies. His first move in this direction came in 1905. On June 4th he sent a letter to Utica, New York, addressed to Charles Stewart Mott, president of the Weston-Mott Company, producers of axles for Buick and other automobile companies. Mott later wrote: 'My first impression of Flint was that it was a small country town with about 15,000 population and a lot of good, progressive people wanting to make it a fine city. W.C. Durant was the spark plug with great ideas and very loyal to Flint. Dort was a fine man and Flint's number one citizen. Always ready to help make Flint grow and become a better place in which to live.' Durant put together a package that Mott could hardly refuse. Flint investors would give Weston-Mott \$100,000 in new capital and a factory site next to Buick. Durant would give Mott an exclusive contract to make axles for Buick, yet still allow him to sell to other suppliers. Weston-Mott's factories were finished in the Summer of 1906 and the Mott family moved to Flint in 1907."²³

Durant in three years took Buick to a capitalization of \$2.6 million from \$75,000, production increased to 5,000 in 1907, and Flint became the official home of Buick and its assembly operations.

The great expansion of Durant's automotive empire began in 1908. It was in the Spring of 1908 that Durant, Henry Ford, and Ransome E. Olds (through the efforts of Benjamin Briscoe) had their first discussion of a potential merger. As history shows, these talks broke down, but the idea of a corporation that would control the majority of the U.S. market captured the imagination of Durant. With a capitalization of \$2,000, articles of incorporation (New Jersey) for the General Motors Corporation were filed on September 16, 1908. It would be through this new company that Durant would build the largest automobile manufacturer in the world. Almost immediately Durant increased GM's capitalization from \$2,000 to \$12.5 million. The first acquisition was Buick Motor on September 29 for \$3.75 million. That was quickly followed by the purchase of Olds Motor Works for a little more than \$3.0 million on November 12. Within eighteen months of the original incorporation, Durant put an astonishing collection of companies together through purchase of the entire company or a

²³Dunham & Gustin, op., pp. 49-50.

substantial interest.²⁴

The number of factory workers in Flint grew from 4,500 in 1908 to 10,200 in 1909 and to 15,000 in 1910. A Detroit newspaper reporter wrote: "One must see for himself; one must get into the atmosphere of tremendous undertakings; one must himself walk over the literal miles of factories in process of construction before one begins to grasp the immensity of the manufacturing undertaking that has made Flint, next to Detroit, the automobile center of the world..."²⁵

The beginning of Flint's decline as the center of decision making for GM occurred in 1910. During the years 1909 and 1910, the financial community became increasingly critical and skeptical about the levels of capitalization behind the automobile companies. GM, because of its rapid expansion through acquisitions and mergers, was a specific target of this criticism. In 1910 major financial sources cut off GM's line of credit. The Buick Motor Division itself was estimated to owe at least \$6.7 million to various creditors. The creditors formed a committee to "effect a reorganization and a restriction of enthusiasm."²⁶ Significant to Flint was the fact that the creditors were not based in Flint, and thus the sense of community pride that influenced earlier decisions became less of a factor in subsequent decisions. This event marked the first shift of GM corporate power away from Flint.

Durant was desperate to secure financing to keep his operation solvent. He secured a \$15 million loan only after agreeing to the stipulation that a voting trust of bankers would control GM for the five year term of the loan. Durant would maintain the title of vice president; however, the real base of GM's decision making had been

²⁴See Dunham & Gustin, op. cit., p. 75. A partial list of these companies, many with names that live on as GM divisions, includes: Buick Motor Company, Flint; W.F. Stewart Company (plant 4), Flint; Olds Motor Works, Lansing; Seagar Engine Works, Lansing; Oakland Motor Car Company, Pontiac; Marquette Motor Company, Saginaw; Cadillac Motor Company, Detroit; Michigan Motor Castings Company, Flint; Randolph Truck Company, Flint; Champion Ignition Company (AC), Flint; Reliance Motor Truck Company, Owosso; Rainier Motor Company, Saginaw; Welch Motor Company, Detroit; Jackson-Church-Wilcox Company, Jackson; Michigan Auto Parts Company, Detroit; Rapid Motor Vehicle Company, Pontiac; Cartercar Company, Pontiac; Ewing Automobile Company, Geneva (Ohio); Elmore Manufacturing Company, Clyde (Ohio); Dow Rim Company, New York City; Northway Motor and Manufacturing Company, Detroit; Bedford Motors Company, London (Ontario); National Motor Cab Company; Novelty Incandescent Lamp Company; Heany Lamp Companies; Brown-Lipe-Chapin Company, Syracuse; and Oak Park Power Company, Flint.

²⁵Dunham & Gustin, op. cit., p. 59.

²⁶Dunham & Gustin, op. cit., p. 81.

moved to New York. Durant turned his attention to other automotive interests and began to build his strategy for regaining control of GM. In association with Louis Chevrolet and others, Durant began to build Chevrolet Motor Company to the point where, in late 1915, Durant offered to exchange five shares of Chevrolet stock for one share of GM. Originally, Chevrolet—and Durant—had headquarters in Detroit. However, in late 1914 Durant moved his headquarters to New York so that he could be closer to the stock exchange and more easily carry out his plan to acquire GM stock. This would lead to a further isolation of Flint from the GM decision making process.

The GM voting trust expired on November 16, 1915. Durant had been buying GM stock for approximately one year. By December 12, 1915 Durant personally owned 71,218 shares or 44 percent of GM common stock.²⁷ Durant also enlisted friends and family so that he influenced the majority of the voting shares for both GM and Chevrolet Motor Company. With the control of Chevy, Durant was able to authorize an increase in capitalization from \$20 million to \$80 million and make the offer of a buyout of General Motors. By May 1916, Chevrolet Motor Company owned 54.5 percent of GM. Durant had beaten the banker's voting trust.²⁸

The years 1916 to 1920 were turbulent ones for GM: Walter P. Chrysler, then Buick general manager, became president of Buick Motor Company; component business operations were consolidated to form the United Motors Corporation; Alfred Sloan joined the company (through the acquisition of Hyatt Roller Bearing); the du Pont family become more involved in financing and management; the General Motors Corporation would be formed from the old Company with \$100 million of capitalization; the Company's assets grew to \$350 million, employment to 100,000, and sales to \$600 million; the stock price rose to \$420 per share and crashed to \$13; and Durant was forced out of the Company after losing a personal fortune of approximately \$100 million.

For Flint, this was the end of an era. No longer would Flint be at the center of GM decision making. The GM building was completed in downtown Detroit in late 1919. This facility, along with offices in New York City, would be the focus of the major corporate decisions that would shape GM and impact Flint operations. But

²⁷Clay, Ed. Chrome Colossus: General Motors and Its Times. New York: McGraw-Hill Book Company, 1980, p. 143.

²⁸Clay, op. cit., p. 146.

beyond the physical location of the key executives, with the resignation of Durant Flint lost perhaps the last major force within GM that viewed Flint as more than just another industrial city. Durant viewed Flint as his home and home to his friends and family. Durant, and others mentioned above, made the betterment of Flint a major factor in business decisions for the lumber mills, carriage shops, or auto manufacturing firms. It was this type of local community leadership and identification that Flint lost as the industry and GM expanded into billion dollar enterprises.

The Sit Down Strikes

The perception of the labor relations environment in Flint is heavily influenced, both for residents and outsiders, by events that happened fifty years ago. The sit down strikes of January and February 1937 are often used to explain current problems in labor-management relations, problems in adjusting to change, and the mindsets of the union and the corporation. While history is important for its symbolic value and the perspective it provides for understanding current events, it should not be allowed completely to shape current reality. To paraphrase one interviewee, future labor-management relationships cannot fall back to the pattern set in the 1910s (strong management) nor should they go back to the 1930s (strong labor), but should be based on the business environment of the 1980s.²⁹ Yet many in Flint believe that those two pasts remain the only available choices in the present and for the future.

Early efforts by the UAW to gain recognition as the bargaining agent for GM workers occurred in Flint primarily because of the city's high proportion of GM employment and investment. The exact outcome of those attempts to organize and be recognized was the result of a complex combination of personalities, circumstances, and actions.

In 1936 Flint had five GM union locals. Total membership, however, was only 150.³⁰ This membership met in secret for fear of reprisals by GM management. It appears that this early membership was motivated more by the principle of unionization

²⁹This view was from a UAW local president.

³⁰Fine, *op. cit.* p. 108

itself rather than any specific GM-related grievances. At this time, Flint was characterized as a "laboring man's town, but . . . not a union town."³¹

One author notes Flint's and the industry's rapid growth as one cause of labor discontent and the subsequent growth of the union movement. "Flint grew like a mining camp, without design, without planning. Many workers did not identify with Flint as a community and tended to see the city as 'a place to camp, rather than a place to settle.' A large proportion of the workers who were lured to the city by automobile jobs and the high wages that GM paid were from rural backgrounds, and many of them reacted unfavorably to the industrial discipline imposed by the factory. Instability of employment, a characteristic of the automobile industry in the 1920s, was especially marked in Flint, where labor turnover rates in some plants sometimes reached 200 or 300 percent."³²

The importance of community pride during the build up to the eventual sit down strikes were observed in that "The UAW's organizing efforts in Flint met with least success in the great Buick plant. Buick workers, employed in the oldest GM division in Flint, were, on average, older than Fisher Body and Chevrolet workers, had lived longer in the city, and were far more inclined to identify with Flint and with the Company than were their counterparts in the other GM plants, who were newer to the city and more hard-boiled in their attitudes toward the company and toward their jobs. Working conditions were also better at Buick than in the other GM plants, and the question of production standards was less than a problem."³³

The exact reasons for the rapid decay in the management-labor relationship are difficult to specify. Certainly GM actions and reactions to the organizing efforts were partially responsible. Another reason for the rapid growth of interest in unionization was the strong leadership and talents of the UAW personnel in the Flint area. Key to the effort were Robert Travis, the UAW director of organization for Flint, and Roy Reuther, Travis's aid (along, of course, with Reuther's brothers Victor and Walter). Membership within Flint rose from 150 in October, 1936 to 1,500 in November, and to

³¹Fine, op. cit., p. 108.

³²Fine, op. cit., p. 102.

³³Fine, op. cit., p. 119.

4,500 in December (approximately ten percent of the GM Flint workforce).³⁴

GM, in November 1936, attempted to ease building tension and reduce the attractiveness of the union by increasing wages, initiating time-and-a-half for time worked over 40 hours per week, and a year end bonus. It did not, however, reduce its opposition to the union organization drive. This opposition set the stage for the sit down strikes of 1937, a tactical decision reflecting Travis's experience as the president of Chevrolet's Toledo local strike committee in 1935. There he learned "how vulnerable GM was to a strike in one of its key plants and how a small, strategically placed group of workers could successfully challenge even a corporation as large as GM."³⁵

The history of the employee occupation of Fisher Buildings No. 1 and No. 2 is too rich to go into any great detail for the purpose of this report. The strike is a very important historic event in the development of the UAW, General Motors, Flint, and the automotive industry. The strike should be seen as that: the significant turning point in the recognition of the UAW by the General Motors Corporation. It was not the first sit down strike, nor did not mark *per se* the founding of the UAW. It was, however, a critical -- perhaps even crucial -- development in the subsequent success of the UAW.

Genesee and GM Today.

Perhaps second only to Detroit, Flint and Genesee today represent the bounded community that could come closest to producing a complete car with locally manufactured and assembled parts and components. That makes it very easy to look at Flint as a microsm of the traditional industry, reflecting the strengths and weaknesses of the entire industry. In our view, this would be a fundamental mistake. Flint shares the general problems of the industry, to be sure, but to varying degrees and in varying ways. Perhaps it is important to stress here how Flint/Genesee differs from the overall industry.

³⁴Fine, *op. cit.*, p. 117.

³⁵Fine, *op. cit.*, p. 112.

The first and most obvious distinction is that Flint is very much a GM town. The automotive manufacturing base of Genesee County is almost without exception owned by GM. GM is the dominant player in the domestic automotive industry, but it is not the entire industry. Therefore, in assessing the relevance of scenarios for the future development and problems of the domestic industry, care must be taken to highlight the special situation of GM. This is not to imply that the futures of Ford and Chrysler, or the activities of domestic facilities producing foreign nameplate vehicles are irrelevant to Flint: they are not. Other manufacturers represent GM's competition, but they also represent actual and potential customers for some of the GM facilities located in Genesee County.

Flint is currently the headquarters of Buick. Buick was one of the five car divisions that were key in the old corporate structure of General Motors, and the identification with, focus upon, and concern about Buick by the local community reflects the past economic importance to Genesee County of this circumstance. Major design and production decisions for Buick were made in Flint, and Flint was well represented. Buick is now an element of the BOC (Buick-Oldsmobile-Cadillac) Group, and most of the major decisions are currently made at that level. Flint, then, has seen its influence erode with the reorganization of General Motors and the declining role of the Buick car division. While we think it is important to keep the GM-Genesee connection clearly in mind, it may be that the Buick-Flint connection is *too* clearly in the minds of many. Buick, and the remaining Buick activity in Flint is important, but it does not *and cannot* play the paramount role it did a few decades ago.

Second, the current relationship between the UAW and GM in Flint reflects the early history of that relationship more strongly than is typically the case. In a number of our interviews we were struck by the frequency and kinds of references to and comments about the sit-downs in 1937. In some cases it was difficult to remember that these events transpired some 50 years ago, as some respondents (both management and labor) drew upon them to explain their current situations or views. Even recognizing the high rate of children and grandchildren of both managers and workers that have or currently work at GM Flint facilities, it is difficult to credit the level of unresolved conflict about that era. Some union officials talk as though they faced the same issue -- recognition -- and the same managers that their predecessors faced in 1937, and some GM officials are still defending the corporation's actions at that time and denying the workers' need (if no longer their right) to be represented by the union.

But GM's response to union organization in Flint was not very different from the majority of other automotive companies, nor were the UAW's issues or tactics especially extreme. The "Battle of the Overpass" which occurred at Ford Motor Company's River Rouge plant during their organization period might well be a more understandable symbol of such intensity. Yet it appears to be more "a lesson painfully learned" and a treasured bit of history, rather than a currently relevant explanation for labor-management problems and issues. The UAW, the city of Dearborn, and the Ford Motor Company accept the event of the "Battle of the Overpass" as part of their history; so too must the UAW, the city of Flint, and General Motors accept their sit-down strikes. Events such as these, although unpleasant and, in retrospect, unfortunate, can provide a common basis to build upon, or a shared memory. It is extremely damaging when they instead represent a continuing basis of conflict, rather than receding in their importance in current events as time passes.

Third, the role of light trucks (including sport and utility vehicles) is somewhat more important in Flint than in the industry as a whole. Light trucks have been increasing as a proportion of the total vehicle market, and have so far been more insulated than passenger cars from offshore competition. Even with the closure of Line #1 at Truck & Bus Assembly, enough of Genesee's automotive activity centers around these vehicles that their role in the light vehicle market must constitute a focus for analysis useful at the local level.

Fourth, Flint/Genesee's concentration at the level of the manufacturer reflects a corresponding lack of a strong supplier base within the County. Genesee provides excellent access to an outstanding local supplier base, but that base is located in other counties -- Wayne, Oakland, and McComb most notably. Some of the structural changes the industry faces suggest a redistribution of activity from manufacturers to suppliers. Many counties that are balanced in their automotive activities will see some income and job loss as the shift occurs, but not experience massive worker dislocation: they will lose manufacturer activity, but replace a portion of it with new supplier activity. Genesee, however, will almost certainly lose as this transfer of activity develops: there are not enough suppliers in the County to expand sufficiently in response to these new opportunities to provide any notable offset to the losses likely as GM increases its level of outsourcing.

These four characteristics of Genesee's automotive endowment make it atypical, and each presents a mixture of strengths and weaknesses. As such, they will recur

throughout this report as qualifiers to general expectations and specifications of local expectations. Let us now turn to briefly examine the development of the competitor that now challenges the traditional domestic industry and its Genesee County presence in their own national market -- the Japanese industry.

Japan.

Background.

The prewar Japanese industry was considerably smaller than was the American industry, never reaching 100,000 vehicles produced in one year, a level the U.S. reached in 1909. Government action in 1926 resulted in the emergence of three primary manufacturers, and by 1936 there were six. That year saw the forced removal of both GM and Ford from participation in the Japanese industry, an event with perhaps more symbolic than real importance today. As in the United States, the industry shifted massively into war time production, and, unlike the United States, required rebuilding after the war.

In the postwar period, the Japanese motor vehicle industry specialized in small, fuel-efficient vehicles for its formally protected domestic market. The Japanese assemblers manufactured some vehicles from "knock-down kits", under license from European manufacturers, and reached their first 100,000 vehicle year in 1956. Imports constituted a substantial share of the Japanese market in the early 1950s, but the establishment of trade barriers swiftly reduced their share, and, by 1960, production and sales were both virtually 100% Japanese.

Significant export activity by the Japanese industry developed during the second half of the 1960s, and this helped fuel the sudden production upsurge the industry experienced during that time. But export activity was not as important in that upsurge as was the sharp increase in domestic sales. Exports came to play a more key role in the continuing expansion of the Japanese industry after 1970.

The growth of the Japanese market parallels the growth of the American market, but with three important differences. First, and more obviously, growth in Japan has

happened much later in time. The American industry recorded its first 100,000 vehicle year in 1909, and by 1918 reached a production level just under 2,000,000. Japan experienced the same growth from 1956 through 1965, nearly a half century later. Second, since 1965, the growth of the Japanese industry has been much smoother and far more time compressed than was the case in America, even if we take the depression and war years into account. Growth in the American market can be fairly characterized by a somewhat uneven, ragged mountain range, with higher and higher peaks, but frequent and often deep valleys between them. That is, there has been a general pattern of growth years, followed by downturns, and recovery years that yield new records. Japan's growth can be better characterized by the ascending slope of one mountain, with a few scattered downturns, to be sure, but paling in comparison to the steady and stable increases in volume. Third, the role of heavy vehicles, including trucks and busses, in the expansion of the motor vehicle industry has been more important in Japan than in the United States. We think of a motor vehicle industry dominated by passenger cars that truly represent personal transportation. In Japan, the motor vehicle industry is less dominated by these personal transport vehicles, and the importance of a variety of commercial applications is correspondingly greater.

The Japanese automotive market is influenced by the same factors as is the American market. There are some key differences, however, that suggest that the total available market in Japan, on a population basis, is likely to be smaller at maturity than the American market. These include the size and quality of the highway system, Japan's greater population density, the availability of a better alternative public transportation system, and the higher "fixed costs" of operating a vehicles, from higher licensing and inspection fees to higher parking costs. At this time, most observers agree that the Japanese market is not yet completely mature, although expectations differ about when, and at what level, complete maturity will occur.

Industry Structure.

The concentration of assembly in just a few companies has not occurred in Japan, and the nine assemblers compete fiercely in Japan's domestic market. Toyota and Nissan, however, have accounted for the bulk of passenger car sales in Japan, typically accounting for a combined market share near 60%, and a bit higher share of the export

market. Most observers, however, feel that the competition within the Japanese market is much fiercer, and more price-based, than has been the case in the United States. While this may be accurate, it is probably true that the differences in concentration and degree of competition between the American and Japanese domestic automotive markets may be somewhat less real than they appear to be. In both countries there is a dominant manufacturer, and while there is fierce competition over a few points of market share, year to year variations are objectively fairly small (if important) in both markets.

The structure of industries and companies in Japan is generally quite different than it is in the United States, and that is certainly true of the automotive industry and companies. There are large industrial groupings in Japan that have a reality and importance that defies any parallels in the United States. Typically organized around a major bank and/or trading company, these groups include companies from the major industrial sectors, and form an important nexus of business transactions in Japan. A group company will usually prefer doing business with another member of the group, unless there are compelling reasons to go to a nongroup company. The companies within a group are often characterized by complicated systems of equity participation, and that is reinforced by habit and perceptions of common interests. The Japanese automotive assemblers have differing degrees of connectedness to the groups with which they are allied, ranging from full membership to statuses perhaps more accurately described as associate member, or even, in some cases, as friendly nongroup. These ties, however, were important in securing the capital necessary to establish the industry in postwar Japan, and to fuel its initial growth stages. While these groups are no longer as important as they once were as sources of capital for a now-successful automotive industry in a burgeoning economy, they still serve a number of functions that benefit the assemblers, and at the same time provide a broad context for their business decisions. The American manufacturers, by contrast, are subject to both the benefits and costs of their greater independence from specific sets of other industrial companies.

The Japanese assemblers, like their American competitors, perform the final assembly for the vehicle and manufacture some of its main subsystems and components. In general, however, it appears that they are much less vertically integrated than the American manufacturers; that is, they perform a smaller proportion of the manufacturing activity, and themselves account for a lower percentage of the value-added in the completed vehicle. Toyota is by all reports the least vertically integrated Japanese assembler.

Industry Characteristics.

Since they are less vertically integrated, the Japanese assemblers must rely upon outside suppliers for an even greater proportion of the vehicle than do the American manufacturers. The nature of the relationship that exists between the assemblers and their suppliers is quite different from that found here. A later section will discuss these differences in more detail, but for now it will suffice to indicate that manufacturer-supplier relations in Japan are typically viewed as more cooperative, stable, and efficient than is the case here. While the Japanese assemblers do not have major divisions that provide competition for outside suppliers across a range of parts and components, they do have very close ties to major or first-tier suppliers such that in many ways these first-tier suppliers approximate the captive supplier divisions found in the U.S. manufacturers.

The Japanese automotive supplier industry appears to be more concentrated than its U.S. counterpart, numbering some 8000 firms. Further, roughly 400 firms, or 5% of the total, account for over 90% of the supplier sales to the Japanese assemblers. These very large, first-tier (or direct) suppliers in Japan appear to have a higher concentration of their sales in the automotive sector than either their U.S. counterparts, or smaller, second-tier (indirect) suppliers in Japan. Much more often than is the case in the United States, a Japanese supplier will have only one, rather than multiple customers among the manufacturers. The manufacturer will often hold an equity position in these large, dedicated suppliers, increasing their similarity to the captive or internal supplier divisions of the U.S. manufacturers.

At the supplier level, then, the Japanese industry is more concentrated than the U.S. industry, and this is the reverse of the situation for the vehicle manufacturers. In Japan, larger suppliers are more dependent both upon automotive sales and sales to one manufacturer than are their U.S. counterparts.

The workforce at the assemblers and most major suppliers are represented by unions, although here again, as in the case of the relationship between manufacturer and supplier, there are marked differences between the U.S. and Japan. A number of key differences between the United States and Japan appear to contribute to a

markedly less adversarial system of union-management relations. First, the automotive unions at the assemblers are "enterprise" unions, and thus their boundaries of membership are limited to employees of the company. There is an umbrella Japan Auto Workers organization that somewhat consciously patterns itself after the UAW, but it is not at all the industry-wide force that the UAW has become, partly because it does not completely control the bargaining of its member unions. Second, membership in the union covers workers in both the white-collar and blue-collar ranks, including managerial levels. This tends to blur the line between management and labor issues in ways that prevent the sharp divisions in the U.S. industry. Third, the traditional permanent employment system, and the *nenko* system of seniority-based wages are firmly entrenched in the automotive industry. The first two factors probably reduce the level of rancorous conflict that the "divided loyalties" of separated union and employer permit here. The third factor, in combination with the high levels of growth the Japanese industry has enjoyed, means that both job security and wage increases are bargained in a context that provides each individual virtually certain employment, and some level of wage increase each year.

The rules of production in the Japanese automotive industry are extraordinarily different than those that seem to characterize the American industry. Waste reduction and quality improvement are the governing themes, and utilization of capital equipment can, and often does, take second place to those imperatives. Human labor is seen as an important and valuable resource, and one that must be nurtured and developed. Jobs are designed, and workers trained, so that flexible assignment is possible, but that involves developing multiple skills, rather than the reduction of skill that the substitution imperative emphasizes here. Finally, a drive toward ultimate excellence pervades manufacturing in Japan, and the automotive industry is a leader in that drive. The American industry has only recently begun to learn that this pursuit of perfection can pay enormous dividends, rather than involve costs for fixing something that is not obviously broken.

Technological Development.

The Japanese assemblers in the postwar period initially borrowed product technology heavily, especially from the European manufacturers that provided them

with knock-down kits. Since the middle of the 1950s, however, they have increasingly relied on a mixture of borrowing, adapting, and innovating themselves, and are now clearly first rate in many of the areas of product technology. In the area of process technology, they also initially relied on technologies and strategies borrowed from both the European and American industries. But even in the early 1960s they were showing evidence of improvement in their applications of these technologies, rather than direct borrowing. They have rapidly established themselves as the leaders in the application of process technologies, and the development of the supporting environment that the full exploitation of these technologies require.

The structure of the automotive industry in Japan appears to provide the Japanese automotive industry with an edge in the speed that innovations diffuse. The industrial groups may provide avenues for the more rapid diffusion of nonautomotive innovations in product, process, and materials to the industry, while the closer ties between the assemblers and their suppliers allow the faster diffusion of technological innovations throughout the supply chain of a particular assembler.

Government Policy.

The role of government policy in the competitive success of the Japanese automotive industry is, if anything, even more hotly debated than is the role of government in the development of our own industry. The image of "Japan, Inc." that portrays Japan as a society with elaborate and successful industrial policies, and that attributes the success of the Japanese in a variety of competitive business arenas to the activity of the Ministry of International Trade and Industry (MITI) is at best a crude oversimplification. As in the United States, policy was not often directed at the automotive industry, and the results of other policies were mixed in their effects. To be sure, the general protectionism and commitment to preserving scarce foreign exchange that permeated the trade stance of Japan in the late 1950s and early 1960s strongly benefited the domestic automotive industry in numerous ways. So too did the government commitment to developing a strong, competitive machine tool industry, steel industry, and automotive parts industry. On the other hand, MITI tried to discourage the automotive assembler industry itself, and when that failed, attempted to bring about a concentration of the industry, another policy initiative that failed. It is

probably fair to say that government actions in Japan, whether targeted to the automotive industry or not, and whether meant to encourage or to discourage that industry, had much less to do with the success of the industry than most Americans believe (and than many Americans would find comforting to believe).

Recent Automotive Competition

In 1973, the Japanese auto industry ended a run of eighteen years of consecutive new records in automotive production. The domestic industry also enjoyed a record year in 1973, though that was its first since 1965. Japanese vehicles accounted for about 9% of the U.S. market, a substantial, but not yet threatening share in the eyes of Detroit. In 1977-78, Japanese market share was above 12%, jumped to 16.6% in 1979, then to over 21% in 1980. Japanese market share peaked in 1982 at 22.6%, and as of 1985 was just below 20%. These bare statistics at once indicate why the traditional American automotive industry now is highly concerned about Japanese competition, and at that same time might lead one to ask if that competition has not reached some sort of natural limit.³⁶

The immediate background of the current competitive situation of the traditional U.S. automotive industry *vis a vis* Japan requires understanding of five critical factors: the trade deficit with Japan; the twin "oil shocks" of the 1970s, and their dramatic impact on consumer preferences; the differing "agreements" that have governed the importing of Japanese vehicles since 1981; the basic costs of manufacturing vehicles in the two countries; and the changing nature of the competition between the two industries, especially its impacts upon the structure of the domestic American industry. These factors are important for understanding how the current situation developed, but also in identifying likely scenarios of future evolution of the domestic industry.

³⁶See Cole and Yakushiji, op. cit., p. 16, for example.

Trade Balance.

The U.S. merchandise balance of trade showed a deficit of about \$148 billion in 1985, rising to roughly \$160 billion in 1986; our bilateral deficit with Japan stood at nearly \$50 billion in 1985, and is nearly \$55 billion now. For 1986, \$32 billion of our bilateral deficit with Japan is accounted for by trade in motor vehicles and parts. We have run substantial deficits with Japan for some time, but they are no longer offset by significant surpluses with other nations, especially those in South America. This has served to focus attention on the bilateral deficit with Japan as if it were something new, and on the Japanese as the source of our problems.

Various arguments have been proposed that suggest the source of our current mushrooming trade deficit is to be found in one or another general economic circumstance. One form of this describes a "too strong" dollar, driven up in value by U.S. monetarism or by high interest rates brought about by our need to finance our national debt, and by the perception abroad that the dollar represents a "safe haven" currency in an uncertain world. This argument sometimes includes a "too weak" yen, accompanied by the implicit or explicit notion that the Japanese government deliberately manipulates the value of the yen in order to foster exports. Yet another version focuses on alleged differences in tax codes, with manufacturers in VAT-type systems said to have an advantage over those in more direct systems such as our own.

Some suspect that our trading partners, perhaps especially Japan, engage in a variety of exclusionary trade practices, ranging from tariffs, quotas, and government subsidies to less formal trade barriers such as product certification hurdles, restricted access to distribution networks, and the like.

With respect to Japan, the vast majority of our imports are manufactured goods, and our exports in this sector are small indeed. Further, automotive goods account for fully half of our manufacturing sector trade deficit with Japan. We have now become a net importer, not just of vehicles, but of automotive parts and components as well. For automotive companies, it is this exact trade imbalance that is the problem, and it must be recognized that the overall trade balance with Japan could be altered without any improvement in the automotive sector. If Japan is "opened" to U.S. goods in agriculture and telecommunications, for example, that might well help to balance our overall bilateral deficit, without lowering the automotive trade deficit.

These arguments have differing degrees of merit, and the actions each suggests have differing likelihoods of occurring. There is little likelihood that even the complete elimination of all of these sources would erase our trade deficits, and they would have at best negligible impact on our bilateral automotive deficit with Japan. The simple fact is that the Japanese have the reputation for being the high quality, low cost producer in the world of most automotive goods. Their suppliers are tightly tied to the assemblers, in carefully established and developed relationships, making for a difficult market for U.S. suppliers to enter, even those with demonstrated quality and price advantages. Japanese consumers are not likely to find U.S. vehicles attractive, even if they were to become price competitive, because our strengths lie in types of vehicles that are not well-suited for typical use requirements in Japan. At best, the elimination of all automotive trade barriers in Japan would present U.S. automotive manufacturers and suppliers the opportunity to invest significant resources and time in the long-range development of a potential market for their products. Whether the U.S. industry would even pursue this opportunity is itself open to question. In sum, the automotive trade deficit with Japan will not be solved by more U.S. exports, at least not in the foreseeable future.

Oil Shocks.

The oil embargo imposed by OPEC in 1973 surprised the automotive industry as it did everyone else. The subsequent shortages and price increases resulted in a major shift in consumer preferences to smaller, more fuel efficient vehicles. That represented a marketing opportunity that the Japanese were very well positioned to exploit, and one that Detroit simply could not immediately meet. The actions of the U.S. government in response to the oil "crisis" created a true dilemma for Detroit. On the one hand, government pursued a policy of restraining any further increase in the price of oil, and that encouraged consumer preferences to drift back in the direction of the traditional larger, more comfortable, but fuel inefficient vehicles that had been Detroit's hallmark. On the other hand, the government instituted legislative requirements that Detroit improve the efficiency of its vehicle fleet. These Corporate Average Fuel Economy (CAFE) standards, then, impelled the American automotive industry to develop vehicles that would compete directly with Japanese imports, at the same time that cheap fuel

attracted consumers back to their historic preferences. Nevertheless, the general economic recovery fueled Detroit to its record production year in 1978 -- nearly thirteen million vehicles, over nine million of them passenger cars.

In 1979, the second "oil shock" hit, and the price of gasoline again increased sharply. The bottom fell out of the light vehicle (passenger car and light truck) market, skidding from 11.2 million sales in 1978 to just under eight million in 1982, with Detroit's share of production at just over five and a half million. In FY78/79,³⁷ the Japanese marketed about 1.43 million passenger automobiles in the United States, taking nearly 12.5% of the market. Two years later, in FY80/81, Japanese sales reached 1.9 million. This impressive 32% sales gain took place while the total U.S. new car market fell over 23%, to about 8.8 million sales, and gave the Japanese 21.5% of that year's market. The Japanese were obviously well positioned, offering an attractive range of high quality, fuel efficient automobiles at competitive prices, at a time when fuel prices and availability, interest rates, and a developing recession all combined to shift dramatically the traditional purchasing patterns of the U.S. consumer.

The oil shocks of the 1970s, then, had two major impacts upon the domestic automotive industry. First, they severely depressed the total market for cars, both through their general economic impact and their specific effects on the price of gasoline. Second, they provided the occasion for sharp increases in the share of the domestic market held by Japanese importers, through their effects on the price of gasoline, and the increased awareness on the part of consumers of the quality and reliability of Japanese vehicles.

The sharp recent decrease in the price of oil will, unfortunately, not smoothly transfer sales back to the domestic producers. They simply do not have the capacity to produce the old "boulevard ride, gas-guzzling" cars of old, nor is it clear that the consumer now would shift back to them. In a sense, Detroit has done very well in meeting the challenges of improved fuel economy, and today's U.S. fleet no longer faces the competitive domination by the Japanese on this dimension that was the situation just a decade ago. To the extent that fuel economy is less of a differentiating factor now than it once was, there is less reason to expect changes in the price of fuel to result in changes in consumer preference. The drop in fuel prices is welcome in Detroit, to be sure, because of its direct and indirect effects on the size of the automotive market; but it is not likely to substantially impact the share of those sales that Detroit captures.

³⁷April 1, 1978 through March 31, 1979, the Japanese fiscal year.

Market Restrictions.

The third major factor readers need to consider is the variety of "agreements" that have governed the import of Japanese vehicles since April, 1981. These agreements called for the Japanese to limit their exports to the United States, and were founded on the rationale that Detroit needed both time and the money from recaptured sales to become competitive. The original agreement called for the Japanese to import no more than 1.68 million passenger cars, the average of their imports during Japanese fiscal 1979 and 1980. The "Voluntary Restraint Agreement" or VRA as it is called, was kept in force for three years, then extended at a somewhat elevated level (1.85 million vehicles) for a fourth year. In 1985, the U.S. government elected not to ask for a fifth year of restraints, but the Japanese government imposed a limit of its own, called VER (for Voluntary Export Restraint), setting a limit of 2.3 million vehicles. There were other arrangements limiting the importation of vehicles other than passenger cars: a separate agreement on Four-wheel drive vehicles, and a 25% tariff on light trucks³⁸.

How well the VRAs worked and who really benefited from them are open questions. Even the automotive industry, huge as it is, is subject to external events and forces over which it has little control. The unexpected strengthening of the dollar against the yen and other currencies offset much of the domestic industry's improvement in manufacturing efficiency. The recent weakening of the yen, if it continues to trade below 200 to the dollar, should provide Detroit some further breathing space. The VRA set numerical, rather than market share limits, and that undercut its effectiveness for the first two years: in the falling U.S. market, this resulted in increased Japanese share, and does not appear to have provided any sales protection for Detroit. On the other hand, this afforded the Japanese quite handsome profits from their American sales, and these were then available for investment in facilities and products. There have been clear and dramatic increases in the perceived quality of domestically-produced vehicles, but it is unclear how rapidly, if ever, that might convert

³⁸Changes in the light-truck tariff would raise the import threat to domestic production of these vehicles, elevating the threat to Genesee's Truck & Bus operations, and some of the other facilities as well.

to recaptured sales and customer. Some point to industry profits (and executive bonuses) for the past few years as evidence that VRA was not in fact necessary.

As with any major government action, it can be quite difficult to develop a consensus regarding its total costs and benefits, and their distribution among relevant actors. Even the manufacturers are divided on their views of the relative costs and benefits of VRA to them, with GM opposing, and Ford and Chrysler supporting their continuation after the fourth year. Not surprisingly, these differences reflect the competitive positions and strategies of the manufacturers. Many argue that the consumer has paid dearly through increased prices for the less-than-spectacular post-1981 small car capital investments of the manufacturers.³⁹ The manufacturers' cost containment efforts have put price pressures upon suppliers that have denied suppliers the returns they require in order to support their own investments to become competitive. VRA's influence on automotive prices, Japanese profits, Japan's view of VRA in relationship to bilateral trade in other sectors, investment decisions of U.S. manufacturers, and the U.S. commitment to free trade have all been widely reviewed and analyzed.

Whatever the wisdom of VRA and VER in any specific version, it clearly did not buy the traditional domestic industry the time it required to become competitive with the Japanese, if being competitive means reducing their market share to the 10% level, or, for that matter, being able to hold it at about 20%. Most observers feel that the Japanese share of the U.S. market has not peaked, and that it could relatively quickly expand to 30% or more, if Japan had completely unrestricted access to the U.S. market. The traditional U.S. industry has come a long way, but it still has quite some distance to go. It is also clear that whatever the effective level of protection VRA afforded, any further protection will come from Japanese self-imposed restraint out of fear that some type of formal protection will be reimposed.

This leaves the Japanese industry today facing a situation in which its internal needs for growth in a limited domestic market clash with the limits on exporting to the United States, whether arranged VRAs, or unilaterally self-imposed out of realistic fears that unlimited exports will eventually result in policies that shut them out of the most open and largest market for their exports.

³⁹Perhaps the most noteworthy proponent of this point of view is Robert W. Crandall. See, for example, his testimony before the U.S. Senate Hearings, op. cit..

Manufacturing Cost.

The general economic uncertainties, such as oil shocks or general levels of prosperity, and the political actions of nations, such as VRA or VER, are often so removed from the control of a manufacturer that they are best viewed as distractions. Such "distractions", of course, can make or break a particular manufacturer, and they must be recognized as important parts of the business environment. But on balance, they should not be allowed to distract the manufacturer from the basic task of manufacturing, and attending to those factors that are more or less under its control. The costs associated with the manufacturing of a particular product are more controllable by the manufacturer than are the availability of oil or government limits on imports. In the long run, as those less controllable factors even out in their effects, or become neutralized by the manufacturer's responses, the basic efficiency of the manufacturer's operations is going to be the key to its survival.

An elusive number -- the manufacturing cost difference, or MCD -- has come to symbolize, both for the industry and the public, the competitive disadvantage of the U.S. industry *vis a vis* the Japanese. This is somewhat unfortunate because it reduces a very complex comparison to an oversimplified summary. Any particular calculation of it depends upon the specific vehicle (or mix of vehicles) compared, adjustments for the level of vertical integration of the production process made by the analyst, the capacity utilization rate of the manufacturers or plant sites compared, and the level of technological content of the manufacturing process. It is not surprising that the publically available reports show a wide range of specific estimates. Nevertheless, these reports do support the argument that in the period 1978-1981, the U.S. assemblers faced a substantially higher cost of production than did their Japanese competitors, perhaps as much as \$1500 for a compact or subcompact vehicle.⁴⁰

The immediate significance of any sizeable MCD is clear: if the Japanese can manufacture a vehicle for considerably lower cost than we can, they can cover the transportation costs of delivering that vehicle to the U.S. market, and still be in a

⁴⁰See Flynn, Michael S. "U.S. and Japanese Productivity Comparisons: Strategic Implications," *National Productivity Review*, vol. 4, no. 1, pp. 60-71 for a detailed listing and review of these reports.

position to compete on a price basis. If their vehicles are higher quality, and cost less, ultimately they will win in the market place. But the Japanese have not yet chosen to compete on price, but rather have elected to convert their lower costs into a higher unit profit margin. Why, then, one might ask, is Detroit worried about this uncertain manufacturing cost disadvantage that has not been activated in the market? Should Detroit be concerned that Japanese companies make a higher return? The answer is of course Detroit should be concerned. The MCD serves as a competitive weapon in ways other than actual price competition. The MCD is a major threat, and the Japanese control its exercise. No one should be comfortable when a competitor can dictate the basis of competition in their industry, nor should they rely on a competitor's good will or concern about political retaliation to restrain such a potent competitive resource. The MCD is competitively important because, if it is not exercised in a price-competitive fashion, it implies higher profits, and those profits can fund a variety of actions, from investment in manufacturing facilities to underwriting a range of new product developments. These can strengthen a manufacturer on a number of competitive dimensions other than price, including quality and rapid response to changing consumer tastes. The MCD, then, provides the Japanese not only a significant competitive edge, but a range of options in its exploitation.

These reports identify a variety of sources for this cost disadvantage, from taxes and exchange rates to wage rates and productivity. Different reports consider different factors, make different assumptions about the operation of these factors, and follow different rules in partitioning the cost difference among its many possible sources. All of these reports consider two factors: the number of hours which go into a vehicle, or "unit labor productivity", and the wage costs associated with those hours. Each report estimates that over 50% of the cost difference is accounted for by this "labor content". However, the reports differ widely in the extent to which they attribute the cost difference to each of these underlying components of labor content. Productivity in the Japanese industry is reported to be anywhere from 20% to 240% higher than in the U.S. industry, and this differential is estimated to account for from about 10% to 54% of the total cost difference. Wages in the Japanese industry are portrayed as constituting from 45% to 60% those of the U.S. industry, and this factor is estimated to account for anywhere from 25% to 80% of the total cost difference. Many of the reports also consider material costs, the costs of the manufacturer purchasing raw materials, parts, and components from its suppliers. The estimates here vary considerably, and are subject to distortion, but the reviews suggest that this is an important component of

the manufacturer's MCD. Material costs include, of course, wage and productivity differentials at the supplier level of the two automotive industries.

It is difficult to estimate exactly what these cost comparisons are today. The U.S. assemblers are functioning at much higher capacity utilization rates, labor costs have been restrained both through renegotiations and altered work rules, specific savings have been made from inventory practices and pressure on suppliers, and break-even points substantially reduced. At the same time, the exchange rate for the yen has first weakened and then strengthened against the dollar, the ratio of retired to active workers has increased, and the Japanese industry has not been standing still.

The recent strengthening of the yen against the dollar provides a current example of the volatility and complexity of the MCD. One recent report by a respected industry analyst estimates that the MCD may have substantially increased, reaching \$2100 for a subcompact, and as much as \$3100 for a midsize vehicle, a product line that the earlier studies generally suggested might face less of an MCD. The impact of changes in the yen against the dollar, he noted, would be mitigated by the fact that so much of the Japanese offshore purchases of raw materials are in dollars.⁴¹ The importance of this is clear: if the price of oil falls from \$30 a barrel to \$15, U.S. purchasers experience a 50% fall in the cost of oil. If at the same time the yen strengthens from 240 to 175 to the dollar, the Japanese purchaser, using dollars, experiences a 64% decrease in the cost of that oil. So the fluctuation of the yen against the dollar has quite different implications for Japanese manufacturing costs incurred at home (wages, for example) that will "rise" in comparison to U.S. costs, and those incurred abroad (ore and coal from Australia, for example) that may well fall. To further complicate the issue, major Japanese assemblers are heavily dependent upon export sales, and most of these are in currencies that have weakened considerably against the yen. So some of the cost reductions afforded by dollar-denominated purchases are offset by yen income reductions from those sales. A Ford spokesman more recently suggested that the MCD had been reduced from \$2500 to \$1600 as the yen increased from 240 to 175 to the dollar, but it is unclear whether this estimate includes the indirect cost reductions the Japanese enjoy with the strengthening yen.⁴²

⁴¹Zoia, Dave. "Japanese Cost Edge Put at \$2100 - \$4000," *Automotive News*, February 24, 1986, p. 2.

⁴²Saunders, John. "Dollar Slips To New Low Against Yen," in the *Detroit Free Press*, March 19, 1986, p. 5B.

There is little question that the strengthening of the yen has markedly reduced, though, the Japanese manufacturing cost advantage. As the yen moves from 240 to 160 to the dollar, the dollar denominated cost for the Japanese has increased by 50%. That means that a \$2000 manufacturing cost advantage at 240 yen is eliminated at 160 yen if the base cost at 240 yen to the dollar was \$4000. If that base cost was \$3000, and the Japanese advantage \$2000, then at 160 yen to the dollar the Japanese advantage falls to \$500. The strengthened yen provides U.S. manufacturers and suppliers a window of opportunity to pursue their own efforts to become competitive, but if they simply rely on the continuation of the current exchange rate to maintain their competitiveness, they will find themselves again facing a major manufacturing cost disadvantage: the Japanese automotive industry will find ways to reduce costs in response to the problems created by a strong yen.

Wage differentials are less of a long-range concern than productivity differentials. There is evidence that these reports underestimate the actual wage costs incurred by the Japanese industry;⁴³ more importantly, the permanent employment system, the seniority based wage system, and the aging labor force in Japan will all combine to increase these costs for Japan. A disadvantage in labor rates is something the United States has and will continue to face, be it from Japan now, or from somewhere else, such as Korea, later; we will have to compensate for that fact through efficient use of labor, or ultimately lose that activity to offshore competition.

The compensation system in Japan, as distinct from the level of wages, probably provides the Japanese with a competitive edge. It is an impressive system that promotes loyalty, identification, and effort from all levels of employees. It is in many ways similar to the familiar "company town" of our own earlier history, although it certainly lacks the more exploitative aspects that system often entailed. Unfortunately, just as the permanent employment system reduces labor mobility, so too the compensation system reduces economic choice. Neither of these systems are candidates for direct export to the United States, however well they function in Japan.⁴⁴

⁴³Flynn, Michael S. "Estimating Comparative Compensation Costs and Their Contribution to the Manufacturing Cost Difference," Working Paper Series No. 21 of the Joint U.S.-Japan Automotive Study, January, 1984.

⁴⁴Flynn, Michael S. "Compensation Levels and Systems: Implications for Organizational Competitiveness in the U.S. and Japanese Automotive Industries," Working Paper Series No. 20 of the Joint U.S.-Japan Automotive Study, September, 1983.

The productivity differentials are of major and enduring competitive significance and concern. First, the Japanese have evolved a highly efficient, technically and managerially sophisticated production process which is embedded in a supportive social system within the factory. Because of the long-term, close relationships between the assemblers and their supplier companies, information and assistance in these areas has spread rather rapidly throughout the industry, whether involving research and development on hard technologies, their implementation, or the development of social structures and technologies to support them. For a variety of reasons, the relationships between U.S. assemblers and their suppliers -- even their own internal supplier divisions -- have been considerably less close, and imbued with a short-term orientation. That means that there is much more time required for the identification and successful implementation of advanced manufacturing techniques and their supportive frameworks. Second, the U.S. assemblers face tremendous pressure to compensate for these productivity differences by sourcing from abroad, where factor prices are lower, even though the differences in both labor rates and productivity appear to be lower at the supplier level of the industry. These decisions to purchase abroad might permanently alter the shape of the U.S. industry, as it denies the supplier industry the time and resources it requires to improve its own competitive position. The captive suppliers of the manufacturers are at particular risk, since they typically have higher wages and lower productivity than independent suppliers -- and this is what lies behind the thrust to increased outsourcing, perhaps especially at GM. Third, closing the productivity gap requires both time and resources, commodities which might be in scarce supply for the U.S. automotive industry if it were to face aggressive competition from the Japanese. It is important to remember that there is no evidence that the Japanese have elected to compete on the basis of price, although that is ultimately the significance and the threat of a substantial MCD. Since they have been able to sell all the vehicles that they have shipped here, they have not had any reason to price-compete. The profits they have earned here have, on the other hand, funded investment programs that contribute to the competitive excellence of their products, and those profits have not been available to the traditional industry.

The Changing Nature of Competition.

If we look back to the decade of the 1970s, competition between the U.S. and Japanese industries was fairly clear and easy to understand: the Japanese built vehicles in Japan, shipped them to the United States, and there competed with the products of the traditional U.S. manufacturers -- products that were overwhelmingly produced in the United States and/or Canada. To be sure, there were some blurred lines. Each of the American Big Three held an equity position in one or more Japanese assembler, although none of these involved Toyota, Nissan, or Honda, the major exporters of passenger cars to the American market. So, too, the Big Three sourced some of their parts and components from Japan (and other offshore locations), and thus their products were not as totally domestic as Japanese products. But, by and large, the idea that these two national industries were in direct competition with each other had a clear and unambiguous referent. That sharp division has blurred with time, and already dramatically impacted the structure of what has been called here "the traditional U.S. automotive industry."

GM markets a Chevrolet vehicle that is manufactured in an old GM facility in California, but is managed by Toyota as a joint-venture partner. Nissan is building trucks and passenger cars in Tennessee, and Honda manufactures cars in Ohio. A Chrysler-Mitsubishi joint venture will build cars in Illinois, Mazda will build in Michigan with much of the output targeted for Ford, and Toyota will establish its own facility in Kentucky. Numerous Japanese supplier companies are opening manufacturing facilities in the United States, from Nippondenso in Michigan to Topy in Kentucky. Some of these involve joint ventures with established American suppliers like Kelsey-Hayes; many of them, however, are independent.

These "transplants", as they are generally called, complicate the issue of competition between Japan and the United States. They typically have high levels of sourcing from Japan, especially for the high value-added components like engines, transmissions, and transaxles. It is highly unlikely that they will ever come to approximate the traditional role of manufacturer or supplier as it once existed here. On the other hand, they are located here, and have adapted to a variety of local circumstances that makes them different from their Japanese roots. The strengthening of the yen from 240 to 160 to the dollar decreases investment costs for the Japanese in

the United States by 33%, and, as would be expected, the number of announcements of the establishment of U.S. production facilities by Japanese automotive suppliers has increased markedly during that time.

These transplants are an important competitive threat to the traditional industry. For manufacturers they clearly will compete directly for sales, and may well derive the benefits, but not the costs, that the market associates with imported Japanese vehicles. For suppliers, including the captive or allied suppliers of the traditional manufacturers, the Japanese suppliers drawn here by Japanese nameplate manufacturers not only represent direct threats to the traditional suppliers' access to the transplant manufacturers, but undoubtedly will compete for their business at their traditional domestic customers. On the other hand, to the extent that these transplants eventually replace sales that would otherwise have been lost to imports, they may play a critical role in the maintenance of automotive production in the United States. Moreover, to the extent that they provide a path of transferring some of the competitively successful practices of the Japanese industry to traditional U.S. suppliers, they may constitute an important competitive resource for those suppliers.

The forms of cooperation that are developing between companies within the two national industries, from joint ventures to vehicle sourcing to the establishment of Japanese production in the United States, are a profound development. What these activities hold for the future is unclear in specific outline. But it is a safe assumption that a report such as this ten years from now will have a much more complex task describing the domestic industry, and the meaning of competing with the Japanese will likely be much less clear and sharp.

The Current Competitive Task

The U.S. automotive industry experienced a lengthy and severe economic downturn from late 1979 through 1982. Sales, employment, and the market share held by domestically produced vehicles were all dramatically lower than pre-1979 levels. In 1985, the "industry", at least in the sense of the Big Three manufacturers, looked healthy on some of these measures. The market rebounded to just above its 1978 level, although imports currently account for approximately 26% of new vehicle sales, and

both Yugoslavia and Korea have begun marketing vehicles here. The profits of the Big Three have been quite strong for three years now, although both Chrysler and, even more, GM showed declines in 1986 profit levels. GM in fact, fell behind Ford for the first time since the 1920s. Employment has rebounded from its 1982 low point. Some argue that the industry is in good shape, that the competitive situation with Japan has stabilized, and that the domestic industry, like its vehicles, has been downsized and made more efficient. Others are concerned that the impressive strides the industry has made are insufficient, and that turbulent times are still the order of the day for the traditional domestic industry.

There is no question, in our view, that the domestic industry still faces a major competitive challenge from the Japanese automotive industry. The traditional industry needs to make major improvements in productivity and to continue improving its quality. To accomplish these goals it must make major changes in the ways that the manufacturers and suppliers do business with each other, and the ways that human resources are deployed. These are not easy tasks, and their achievement will involve a variety of costs. But the alternative is a further erosion of market share, and the movement of more economic activity offshore.

Productivity and Employment.

The task of restoring competitiveness requires increased productivity in the manufacturing and support functions that pervade the complex work of producing an automobile. At given volume for a standard unit, increased productivity will inevitably involve the elimination of jobs. The pressures upon the industry to reduce costs are enormous, and its truly impressive efforts to date have not assured its competitiveness with the Japanese. Reorganization of the manufacturers, closings of older production facilities, improvements in design for manufacturing, introduction of new technologies for both production and support activities, and the offshore sourcing of vehicles and components all point to substantial reductions in the automotive workforce.

The automotive industry often pays penalties for its central role in the manufacturing economy. The economic downturn of the early eighties hit the industry hard in terms of employment, and the simultaneous increase in Japanese market share further lowered production, and thus employment. Hourly jobs at the Big Three fell

from 736,000 in 1978 to 455,000 in 1982. The recovery of the market since 1982 has restored some 95,000 hourly jobs at the Big Three, raising their hourly employment to about 550,000 in 1985. For 1985, hourly employment was just under 75%, and production was back to nearly 88%, but the market was at just over 101% of the 1978 levels. The Big Three provided 26% fewer hourly jobs in 1985 than they would have if all conditions from 1978 held (101% - 75%); half of that loss is due to lower production from lost market share (101% - 88%), and half due to the increased productivity of the Big Three (88% - 75%)⁴⁵.

A variety of information suggests that job loss in the industry will have to be on the order of a further 25%-30% over the next five or so years for the industry to begin to approach cost-competitiveness with the Japanese.⁴⁶ That would involve a total loss of about 46% of 1978 hourly jobs by 1990. Unfortunately, even recaptured market share cannot come close to offsetting that level of loss, although further share loss would certainly add to it. Moreover, if those jobs are merely transferred to the supplier level, even at lower labor costs, then the industry will have failed in its efforts to become competitive. In that case, the looming threat represented by the manufacturing cost advantage of the Japanese will continue. Their exploitation of it through price competition would create major problems for the traditional domestic industry.

Productivity comparisons for the Big Three indicate that GM now seriously lags both Ford and Chrysler, and it is apparent that GM has called back more of its workforce since the 1982 trough. That means that the bulk of employment reductions in the industry will occur at GM, and that, of course, is bad news for Genesee County.

Further job reductions are likely to result in the disproportionate loss of salaried jobs. To some extent this reflects the more rapid removal of hourly jobs that has already occurred, but it also results from the technological and organizational innovations that increase the efficiency of tasks traditionally falling to professional, technical, and clerical workers. The computerization of many routine functions, such as

⁴⁵It may be that some of these hourly jobs represent transfers to the supplier industry due to increased outsourcing, although the bulk of those likely went out of the country; to the extent that this happened in Genesee County, it undoubtedly reflected outmigration. It may also be that the increased complexity of manufacturing vehicles from 1978 to 1985 masks additional job losses by 1978 standards.

⁴⁶Arthur Anderson & Co. *Cars and Competition*, 1985, projects employment losses of 23%; general manning levels of assembly plants and various reports of specific shrinkages by occupation all suggest that this is a minimal likely level.

scheduling, drafting, and billing will drastically lower the need for certain categories of salaried employees. Organizational changes in the management of the companies, from participative management to employee involvement, will lower the need for many jobs that routine supervision and monitoring have required. Ford and Chrysler appear to be positioned such that further white collar reductions can be made with few if any layoffs. GM's current salaried staff reduction efforts are of this type, but it is doubtful that the full 25% targeted by 1988 can be accomplished without forced layoffs. That, too, bodes ill for Genesee.

The likely dislocation of these numbers of workers, and perhaps especially the high number of "white-collar" workers raise national issues of the allocation of these social costs. Current programs of unemployment insurance are almost solely income maintenance, and while recent UAW - Big Three contracts begin to address issues of retraining, these will not cover the white-collar workforce. Many white-collar jobs in the automotive industry are very narrow and repetitive with the annual production run. These jobs have little market value, and their holders are quite a few years beyond their general training. Some debate on this issue is already emerging, but it is one that is probably going to become more, rather than less urgent over the next few years.⁴⁷ For communities like Genesee, while there will be some cushion in the timing of the impact of layoffs of the hourly worker (see Chapter Three), the net loss will be extremely high, and the salaried layoffs that will probably occur will lack even this.

It is inevitable that the automotive industry will provide less employment in the future than it has in the past. Total market growth will not keep abreast of the loss of jobs required for the industry's competitiveness. The surest way to minimize this job loss, then, is to increase the market *share* of the traditional manufacturers' U.S. built vehicles with high levels of domestic part and component sourcing. Job losses tied to productivity improvements protect remaining jobs and can serve to secure the extra jobs associated with competitive success; job losses to market share decline and sourcing offshore are simply lost.

⁴⁷See, for example, Global Competition: The New Reality. The Report of the President's Commission on Industrial Competitiveness, John A. Young, Chairman, January, 1985. This Report considers alternatives such as retraining vouchers tied to Unemployment Insurance for displaced workers.

Automotive Suppliers.

The companies that comprise the traditional supplier base to the automotive industry face a number of risks over the next few years, beyond those they share with the manufacturers. First, observers agree that the number of companies directly supplying the manufacturers will be reduced as the manufacturers rationalize and reduce their transaction costs. Many suppliers face the prospect of significant change in their role in the production of automobiles, and that will typically involve lower levels of profit. Second, the total number of suppliers, both direct and indirect, will shrink as the industry comes to approximate the tiered structure that exists in Japan. Direct suppliers will themselves rationalize and reduce their own supplier base. Suppliers that hope to be direct suppliers to the manufacturers will find that their level of responsibility for design, engineering, and the coordination of modules (higher-order assembled components and subsystems) will increase, while indirect suppliers will find themselves increasingly competing on the basis of manufacturing excellence.

Third, the domestic automotive industry in the United States is already dramatically different than it was in 1978. Three Japanese nameplates are produced here, accounting for 6.5% of the 1987 market⁴⁸; three more will soon come onstream. Traditional suppliers must gain access to this different domestic business, because it represents an opportunity for offshore suppliers to enter domestic production. Many major Japanese suppliers are setting up production facilities here, and it would not be surprising if the Koreans soon follow, especially in light of Hyundai's decision to produce in Canada. Fourth, the Big Three have increased their levels of offshore sourcing of parts, components, and raw materials, and this trend will likely continue.

It is difficult to overestimate the significance of the competition from vehicle and parts imports, as well as from nontraditional domestic manufacturers and suppliers. These companies are, more often than not, proven, world-class competitors, and they appear to have succeeded in transplanting much of their competitive advantages to their operations in North America.

The industry has generally recognized that a major source of competitive advantage for the Japanese has been their superb execution of actual manufacturing

⁴⁸Through July 20, 1987

processes, coupled with a systems view of manufacturing that encompasses functions such as design and purchasing that we have traditionally viewed as distinct activities within the segmented manufacturing organization.

There is also no question that the Japanese manufactures are more efficient and more effective in coordinating their own efforts and those of their suppliers than are the Big Three. We have traditionally relied on practices such as dual sourcing, repetitive evaluations of the make-buy decision, and dual engineering of supplier produced parts and components. These increase the transactions costs, since they represent maintenance of capacity to cover a variety of just-in-case scenarios. Perhaps most often, these practices exist to enable the manufacturers to obtain a low piece-price, without regard to system efficiency. To compete effectively with Japan, the U.S. industry will have to continue to monitor and improve its performance as an industry, in addition to the individual efforts of its constituent companies.

The supplier base in Genesee is almost exclusively constituted of captive or allied GM facilities. These facilities are under extreme pressure as GM increases its outsourcing, but also from the general reduction in the number of suppliers and the reductions associated with tiering. These plants must now compete on a quality and cost basis with outside suppliers, and that is difficult for them to achieve. They are not well configured to compete for survival or position in a reduced, tiered industry: they lack the experience and often the engineering resources required. For Genesee, the shrinking of the supplier base and the advent of the transplant suppliers makes this a particularly difficult time to try to diversify the automotive base of the county by attracting independent suppliers. While GM's dominance in the labor market may soon disappear as a barrier to independents locating in Genesee, the uncertainties of their own competitive futures are likely to restrict their interest in new facilities.

Product Quality.

Traditional North American manufacturers and suppliers now find themselves facing a complex competitive challenge. Not only must they overcome their competitive disadvantage, but they must accomplish this simultaneously on a number of dimensions, dimensions that they have traditionally viewed as incompatible. One of the lessons the industry is still learning from the Japanese, for example, is that quality can reduce rather than increase costs. The industry approach to improving quality relied heavily upon inspection to detect defects, and then rework and repair to correct those defects. The Japanese, through emphasis on process capability and worker self-inspection, have reaped enormous savings in lowered scrap and rework costs, as well as higher labor productivity through lower inspection requirements. The simple point that it is cheaper to do it right the first time than to repair, rework, and even scrap products a high percentage of the time was overwhelmed by the production imperative: keep cranking the iron out the door.

The U.S. industry has made a fundamental shift in its thinking over the past few years. That shift was necessary for its survival, but is no less impressive for that. "Simple points" such as the advantages of defect prevention over defect detection strategies for improving quality are neither simple nor obvious when they are small parts of an overall production philosophy — a philosophy that was enormously successful under the competitive conditions of the industry before the 1970s. Such beliefs do not change rapidly nor easily, and the very complexity of the industry only increases the time required for general acceptance of these new ways of defining problems and seeking solutions.

Data from 245 North American suppliers collected by the Joint U.S.-Japan Automotive Study in late 1983, and replicated on four samples since then, suggest that suppliers recognize the complexity of their task. They report that quality and delivery performance now outweigh short-term price as criteria in the purchasing decisions of the manufacturers, and that manufacturing and engineering competence soon will. Short-term price has not lessened in importance, however, nor is it expected to do so in the future; other dimensions are simply becoming more important than they were in the past. How well suppliers can meet this challenge is still very much an open question. Improved quality in parts shipped too often reflects a culling of parts produced rather

than the reductions in scrap and rework required for real cost reductions.⁴⁹

There is little question that the quality of the traditional domestic industry has improved substantially, and current comparisons with the Japanese are difficult to make. Such comparisons are very dependent on the exact dimensions of quality that are compared. A recent survey of technical experts in the traditional industry asked for comparisons between the two industries on thirteen dimensions of vehicle quality.⁵⁰ These panelists rated the traditional industry ahead on four dimensions, and behind on seven, although the extent of the differences between the industries ranged from quite small to extreme. Unfortunately for the traditional industry, some of the areas where it attains superior quality may be less important to consumers than some of the areas that Japan executes well. The areas of clear advantage for the traditional domestics include basic structural integrity of the body and chassis, safety, corrosion resistance, and ride and comfort. The Japanese are rated higher on fuel economy, driveability, fit and finish, and total car reliability. In a sense, three of the four dimensions of quality that favor the domestic industry may be less visible to the consumer, while four dimensions of Japanese advantage are all fairly accessible to the prospective purchaser. It is worth noting that the majority of these respondents feel that the two industries will be the same these dimensions by 1990, except for safety, where the domestic industry may continue to enjoy an advantage. That would suggest that quality, broadly defined, will become competitively neutral over the next few years. While these panelists are in the position to influence the outcomes they expect, and that makes their views particularly important, that will happen only if both industries work hard on these component dimensions of quality.

The Japanese represent a moving target, and appear to maintain a substantial edge on some critical dimensions of quality. The technology panel discussed above felt

⁴⁹Flynn, Michael S. "Supplier Perceptions of Customer Quality Expectations." Paper presented at the American Society for Metals Conference on Customer/Supplier Relationships, Chicago, Illinois, November, 1985.

⁵⁰Cole, David E. and Richard L. Doyle. Delphi IV Forecast and Analysis of the U.S. Automotive Industry Through 1995. Ann Arbor: Office for the Study of Automotive Transportation, University of Michigan Transportation Research Institute, 1987. The discussion that follows is based on Table MKT-32, pp. 82-84 of Volume One. The twelve dimensions of vehicle quality are: fit and finish; basic structural integrity of body and chassis; engine and drivetrain integrity and durability; maintenance requirements; corrosion resistance; ride and comfort; styling; handling; safety; total car reliability; fuel economy; and driveability.

that the Japanese were higher quality in the fit and finish of the vehicle: 94% of that panel rated the Japanese higher. Twelve domestic nameplates averaged 87%, and the seven Japanese imports averaged 114% of the industry average in a recent survey of customer satisfaction, perhaps the most critical measure of quality for the marketplace.⁵¹ Other information, some of it proprietary, shows that the U.S. industry has improved its level of "fit and finish" quality, reliability, and warranty performance over the past five or so years, but that the Japanese still appear to hold a lead in this area.

It is probably fair to say that in this last downturn of the business cycle (1980-1982), the automotive industry began making serious efforts to redress fundamental industry problems, rather than just taking temporary measures and waiting for the upturn of the business cycle to carry them along. There is little doubt that the competitive strength of the Japanese vehicle manufacturers played a major role in these reactions, leading the U.S. manufacturers to undertake major efforts in pursuit of cost reductions, quality improvement, and productivity gains. The industry, by all reports, is continuing these efforts, and may well increase them now that the Voluntary Restraint Agreement with Japan has ended, and the self-imposed Voluntary Export Restraint by the Japanese appears to be tenuous.

Manufacturer-Supplier Relationships.

Evidence from the same series of supplier surveys discussed above reveals some of the changes that are taking place in the relationship between the manufacturers and their suppliers. The effective coordination of suppliers and manufacturers contributes to both the Japanese manufacturing cost advantage and to their high quality levels. The traditional North American manufacturers have recognized this, and are actively pursuing changes in their traditional relationships with their suppliers. These changes involve the reallocation and rationalization of tasks between the manufacturers and their suppliers and altered business practices, as well as the altered sourcing criteria discussed above. Supplier views about these changes are important for two reasons:

⁵¹DeLorenzo, Matt. "Mercedes and Subaru Top Satisfaction Index," *Automotive News*, August 26, 1985, p. 22.

first, these suppliers can observe what is actually happening; second, while there may be reason to be cautious about the accuracy of these supplier perceptions, they can reveal the suppliers' own premises for action.

Suppliers were asked their views of a number of changes in the way the OEMs do business with them. The practices included represent programs, intentions, and wish lists of both manufacturers and suppliers. Virtually all of them reflect publicized aspects of the way that the manufacturer-supplier relationship is reported to exist in Japan.

Suppliers report quite variable rates of implementation for these different OEM practices, and none of them are reported to be moving at a rapid rate. The three slowest moving practices, however, are moving at an accelerating rate: each of them averaged at least one-half a scale point higher (on a four-point scale) in early 1985 than they did in late 1983. Earlier supplier involvement in product and process design also increased by this amount. Since there are connections among these efforts, it is not surprising that they might almost lurch along in this fashion. For suppliers, of course, this implies that they must respond across a broad range of changing demands.

The two most rapidly moving dimensions are technology and quality. Both of these dimensions raise a fundamental issue for suppliers: are the OEMs trying to rationalize the allocation of tasks, or are they simply shifting a particular cost burden to suppliers? The same issue arises in the case of Just-In-Time or JIT, a minimal inventory scheduling of production. Many suppliers view it as a shift of inventory costs from the manufacturer to the supplier, rather than a stripping of inventory from the entire system.

Finally, those practices that most directly bear upon the continuous coordination of supplier and manufacturer efforts are viewed as having very uneven rates of implementation. JIT and order-release stability are one-half a scale point apart, for example, though, to be sure, they were a full scale point apart in late 1983.

These results are not disheartening. It is not surprising that an industry as large and complex as this one moves slowly and unevenly to change traditional practices. The important point is that it is moving, and data collected at different points in time suggest that the rate of change is accelerating, rather than merely reflecting alternating OEM program emphasis, or a return to traditional patterns with the upswing in the business cycle.

The automotive industry, then, faces a complex challenge, and time is a scarce resource. It must improve its productivity and certain consumer-critical areas of quality, and those improvements must be large indeed. But it habitually thought of productivity and quality -- perhaps especially quality on these consumer-visible dimensions -- as negatively related, and so now must change some very basic traditional patterns of thinking. The industry has identified paths to improved productivity and quality that themselves are highly complex and will take time. But these changes will not be easy, and they will involve some major human costs. The critical questions are, of course, how these efforts will be coordinated, and whether they hold the promise of gains sufficient to restore the industry to competitive parity rapidly enough to be of use. Those questions will form the focus of the next chapter.

Chapter Two: Scenarios for Automotive Industry Employment

Three major factors are likely to lessen the levels of employment at the traditional U.S. automotive manufacturer over the next four to ten years. The first is decreased demand for its product, the second is improved productivity in its remaining operations, and the third is decreasing vertical integration, or increased outsourcing of the parts and components of the vehicle to independent suppliers. Each of these factors, independently and in combination, will result in less employment at the Big Three. This section will develop some general scenarios of the type of impact that might well develop over the next four years.

A general caution is appropriate regarding our use of scenarios throughout this report. The text presents and discusses our expectations and rationales, and the scenarios display the numerical implications of those arguments. The scenarios do not, in any sense, represent *tests* of our assumptions and predictions, nor do they *amplify* them by integrating them into an established model built upon well-established empirical relationships. In later sections of the report, the scenarios are combined in ways that constrain their results to be internally consistent, and the scenarios are used as input to more traditional economic models. In this section they are heuristic devices, meant to clarify and to highlight the implications of our discussion. They should be treated as such, and not invested with an aura of rigor and certainty beyond what they can bear.

Market Scenario for Automotive Industry Employment

The internationalization of the U.S. automotive market is clear if one examines the sources of the vehicles sold in the market. There are four usefully distinguished types of vehicles servicing the U.S. domestic market in the mid-1980s. There are the

traditional domestic vehicles, manufactured and marketed here by the Big Three.¹ There are imported vehicles, manufactured abroad by nondomestic companies and sold in the United States. These imports are often called "true imports" to distinguish them from vehicles manufactured abroad but marketed here by the Big Three, often called "captive imports." Captive imports represent a distinct type of vehicle because their sales levels reflect the strategic decisions of the Big Three as well as their manufacturers. Finally, there are the transplants, vehicles manufactured and sold in the United States by foreign companies. Hondas from Marysville, Ohio are an example of transplants, as are Novas from New United Motor Manufacturing, Inc., the GM-Toyota joint venture in California.

Each of these types of vehicles bears different economic relationships to the domestic economy. The traditional domestic vehicle reflects overwhelmingly domestic economic activity. In spite of increased offshore sourcing by the Big Three, the typical domestic vehicle is assembled here, using parts and components that are themselves manufactured and assembled here, with materials that are processed and fabricated here. This domestic chain of value-added represents jobs and profits at each stage of production and sale. Transplants provide domestic assembly jobs and profit, but have lower levels of domestically sourced materials, parts, and components than traditional domestic vehicles. Imports, whether true imports or captives, represent value-added chains of production abroad, with a serious loss of jobs and profit to the domestic economy. To be sure, imports provide jobs and profits in the retailing and servicing sectors of the industry, but the manufacturing share is eliminated. Captive imports, of course, provide somewhat greater shares of final sale profit, and often some participation in manufacturing profit when the source of such vehicle is offshore operations of the Big Three, or a foreign nameplate partially owned by one of the Big Three. Such is the case with GM in its sales of Suzuki and Isuzu vehicles. Some of the multinational suppliers, such as Allied-Signal and Kelsey-Hayes, also participate to a limited degree in profits from the sale of some captive and true imports.

¹Traditional domestic vehicles include those manufactured by the Big Three in Canada for sale in the United States, largely reflecting the fact that production data, unlike sales data, cannot be readily separated for Canada and the United States. In the past, whether the Big Three sourced a particular car from a U.S. or Canadian plant was not considered important. With increased general trade friction and the possible renegotiation of the Auto Pact between the United States and Canada, Canadian cost advantages, and the separation of the Canadian Auto Workers from the UAW, such sourcing decisions are soon likely to become more controversial.

As discussed above, the participation of each of these types of vehicles in the U.S. market has changed radically since the early 1970s, and most observers expect further changes in the next four years. Table One presents sales data for the past three years, and a projection for the 1990 market based on the 1984 data developed in 1985.² These data are for passenger cars only; the different controls applied to imports in the light-truck segment, including sport/utility vehicles like the Blazer and Suburban, require separate discussion of this segment of the market. The row labelled "Imports" includes both captives and true imports, because their impacts on employment are virtually indistinguishable.

²Luria, D. L., R. Hervey, and D. Andrea. "The Capacity Explosion: Implications for Michigan Suppliers," in the *AIM Newsletter*, v. 1, no. 2, March, 1986.

TABLE ONE

CAR MARKET EXPECTATIONS
BY PRODUCTION SOURCE

	MARKET			
	1984	1985	1986	1990
<i>GM</i>	4.6	4.6	4.4	3.4
<i>FORD</i>	2.0	2.1	2.1	1.4
<i>CHRYSLER</i>	1.0	1.1	1.2	1.0
<i>BIG THREE</i>	7.6	7.8	7.6	5.8
<i>TRANSPLANTS</i>	0.4	0.4	0.6	1.5
<i>IMPORTS</i>	2.4	2.8	3.2	3.7
<i>TOTAL</i>	10.4	11.0	11.5	11.0

In 1984 the Big Three manufactured and marketed 7.6 million cars in the United States.³ These analysts see this total falling to 5.8 million by 1990, or a loss of 26% of the domestic build. If everything else remains the same, we would expect to see 26% fewer jobs in the domestic automotive industry due to decreased demand for product alone.

The intervening years appear to offer some comfort, since GM maintained its 1984 level in 1985 and fell just over 4% from 1985 to 1986; Ford gained 5% in 1985 and held that level in 1986; and Chrysler showed an impressive 10% gain from 1984 to 1985, and followed it up with a 9% gain from 1985 to 1986. However, these performances were accomplished while the total market grew 6% and 5% respectively, and imports grew nearly 17% from 1984 to 1985, following that with another major gain of 14% from 1985 to 1986.

Table Two converts the data displayed in Table One to market shares, where each source's vehicles are presented as a percentage of that year's total market. This allows the reader to compare the performance of each vehicle source from year to year while removing the impact of overall market growth. The apparent comfort of Table One turns out to be just that: apparent and not real.

³Canadian production is included in the manufacturing, but not the sales total, as noted above.

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TABLE TWO

CAR MARKET SHARES
BY PRODUCTION SOURCE

	MARKET			
	1984	1985	1986	1990
<i>GM</i>	44.2%	41.8%	38.3%	30.9%
<i>FORD</i>	19.2%	19.1%	18.3%	12.7%
<i>CHRYSLER</i>	9.6%	10.0%	10.4%	9.1%
<i>BIG THREE</i>	73.1%	70.9%	66.1%	52.7%
<i>TRANSPLANTS</i>	3.8%	3.6%	5.2%	13.6%
<i>IMPORTS</i>	23.1%	25.5%	27.8%	33.6%
<i>TOTAL</i>	100%	100%	100%	100%

The stability of Big Three domestic production turns out to be primarily due to overall market growth, a growth level that few seriously expect the market to sustain. From 1984 to 1986 the sales of domestically produced automobile fell 7% as a percent of the available market. Chrysler gained 0.8%, Ford lost 0.9%, and GM lost 5.9%. Transplants gained 1.4%, and imports captured an extra 4.7% of the available U.S. market.⁴

Projecting these market share losses of domestically produced Big Three vehicles reaches just over 52% market share by 1990, quite consistent with the analysts' projections. If GM market share losses continue at their pace since 1984, the share of its domestically produced vehicles could fall below 27% by 1990.

How can these market shares shift so dramatically in such a short time? Part of the answer lies in market competition, and part lies in the strategies of the Big Three themselves. Offshore manufacturers reap enormous profits in the U.S. market compared to what is generally available in their own domestic markets. The U.S. market is one of the relatively unrestricted markets available, especially to the Japanese, who find the European market relatively closed in those countries that themselves have a domestic industry. The Korean industry hopes to grow at a pace that cannot be sustained by their own level of domestic sales. In short, the U.S. market is targeted by producers throughout the world. Many of these producers simply have competitive advantages that will allow them to increase their share: in some cases, price; in other cases, quality; and in still other cases, prestige or status associated with the nameplate.

The transplant operations of the Japanese alone will have the capacity to produce roughly 1.5 million vehicles by 1990, and these vehicles are certainly not meant to replace vehicles imported from Japan. They will be squarely targeted at the traditional domestic vehicle, as most recently shown in the selection of the Camry for Toyota's Lexington plant. These transplants will have many, and probably all of the competitive advantages of their imported cousins, and may meet lowered market resistance from buyers that wish to "buy American." The Big Three sold 179,931 fewer domestically built vehicles in 1986 than they did in 1985; the transplants built 189,873 more. That is roughly three-quarters of an assembly plant's output that transferred from traditional to transplant domestic manufacture in one year.

Demographic data on new-car purchasers suggest that domestic and import car

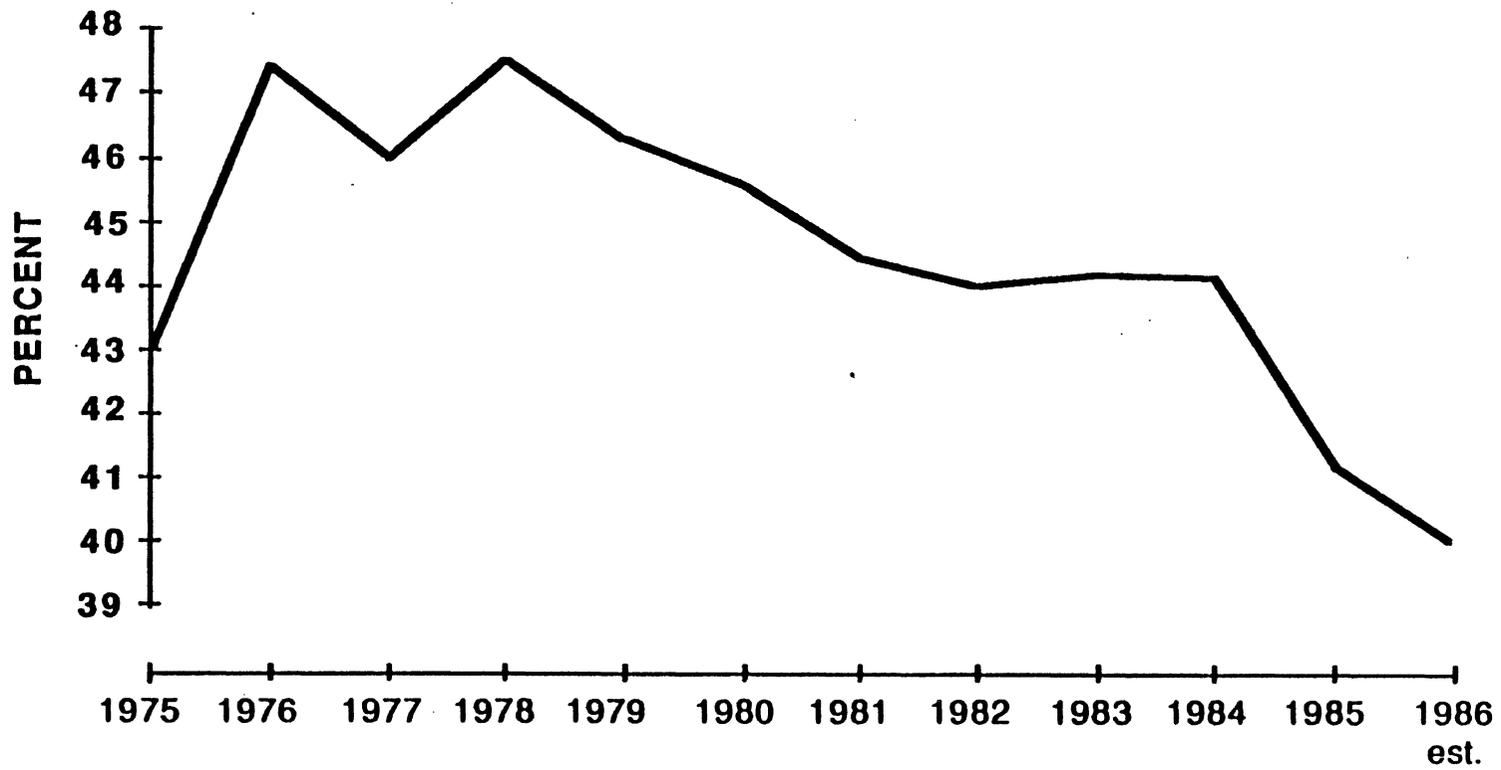
⁴These percentages are not completely consistent due to rounding error.

buyers differ in age, income, and education level. Import car buyers are younger, more affluent, and better educated than are the buyers of traditional domestic cars. There are two implications from these data. First, unless buying patterns shift with age, the population of car buyers will become increasingly composed of people more likely to buy import vehicles. Second, the market for the high-profit vehicles that are so important to the overall operations of the traditional domestic manufacturers may become even more import oriented than it has been to date. These shifts would both decrease the share of the market held by the traditional domestic car.

In addition to these effects of direct competition, the strategies of the Big Three are eroding their own domestic manufacturing. For a variety of reasons, the Big Three are increasing their reliance on captive imports and transplants to service certain segments of the market, and these vehicles displace cars that might have been built here. Ford is replacing the Lynx with the Tracer, sourced from its Mexican operations for the United States and from Taiwan for Canada, and will replace much of Mustang production with vehicles from Mazda's transplant operations in Flat Rock. GM is sourcing Novas from its NUMMI venture, Spectrums and Sprints from Japan, and the Pontiac LeMans from Korea. Chrysler continues to source a wide variety of vehicles from Mitsubishi, and its new arrangements with Renault may include sourcing vehicles from France.⁵ Figure One displays GM's market share from 1975 to 1986, showing 1986 at just over 40%. The extra few percentage points compared to our figures represent sourcing of captives and transplants, and that share of GM sales is virtually certain to rise over the next few years.

⁵And certainly will include vehicles from Brampton, Ont.

GM's Share of the U.S. Auto Market —1975-1986—



Automotive News

There is little question that the domestic automotive industry faces a serious problem of overcapacity in the near future. Many observers see as much as 30% more capacity than demand will warrant by about 1990. The numbers in Table One suggest that capacity might exist for 13.7 million vehicles by 1990; in a market at 1984 levels, that is 32% excess capacity, and 19% even in a boom market like 1986. This excess capacity will not result from a cyclical downturn in demand, a situation the industry faces every few years, and manages to weather, however well or poorly, by employee layoffs and recalls when the market turns up again. This 30% excess in 1990 will be structurally redundant capacity, capacity that will for the most part not ever again be required to meet market demand. In the view of virtually all observers, it is the traditional domestic industry -- the Big Three -- that will hold most of this excess capacity.

Three drivers or factors will produce this excess capacity. The level of imports marketed in the United States by foreign manufacturers is expected to rise. The Big Three will themselves source more vehicles produced abroad, both from their own offshore facilities and from offshore manufacturers. These "captive" imports will be offered for sale through the Big Three distribution networks and often under the Chrysler, Ford, or GM name. Finally, the onshore manufacturing activities of foreign nameplate manufacturers will increase markedly between now and 1990. All three of these circumstances result in more vehicles for the domestic market, and none of them are likely to increase the size of that market. The result is overcapacity. No one can foresee exactly how this situation of overcapacity will play out in the market, nor specify precisely how each company or nameplate will fare. But observers are unanimous in expecting the brunt of the burden to be borne by the manufacturing facilities of the Big Three. That is certainly the thrust of this scenario.

Table Three displays the projected 1990 sale of domestically produced cars as a percent of 1984 sales. The Big Three are expected to manufacture and sell 74% of the vehicles they did in 1984. That expectation holds specifically for General Motors.

TABLE THREE

PERFORMANCE COMPARED TO 1984
BY PRODUCTION SOURCE

	MARKET			
	1984	1985	1986	1990
<i>GM</i>	100%	100%	96%	74%
<i>FORD</i>	100%	105%	105%	70%
<i>CHRYSLER</i>	100%	110%	120%	100%
<i>BIG THREE</i>	100%	103%	100%	76%
<i>TRANSPLANTS</i>	100%	100%	150%	375%
<i>IMPORTS</i>	100%	117%	133%	154%
<i>TOTAL</i>	100%	106%	111%	106%

A critical question facing communities like Genesee is how this excess capacity will be shed. GM has already announced specific plant closings and made it clear that there will be more. A major task, then, is to avoid any further closings of the facilities located in Genesee. But even if this happens, there is a question of how much activity will remain at plants that survive, and that depends on how effective the actual closings are in reducing overall capacity. It is possible that surviving plants will function above, at, or below their current levels. They could function above their current levels if closings are designed to increase facility utilization and productivity, at their current levels if closings simply match capacity to current production requirements, or below if GM retains excess capacity after the closings. A later section of the report will address this issue directly.

Finally, Table Four displays the expectation of the jobs that the traditional domestic industry will support in 1990 as a function of the jobs it provided in 1986, simply as a function of decreased volume and market share, ignoring for the moment any other changes that may occur.

TABLE FOUR

JOBS AVAILABLE IN 1990
AS A PERCENT OF 1986 JOBS:
SHARE CHANGE

	<i>AVAILABLE JOBS</i>
<i>GM</i>	77%
<i>FORD</i>	67%
<i>CHRYSLER</i>	83%
<i>BIG THREE</i>	76%
<i>TRANSPLANTS</i>	250%
<i>IMPORTS</i>	116%

The traditional domestic industry will provide about three-quarters of the jobs in 1990 that it did in 1986 if these projections hold and no other changes occur. The domestic economy can take little comfort from the increased level of offshore jobs that the U.S. market will support in 1990. So, too, the traditional domestic auto worker can take little comfort from the increased jobs available at transplant facilities -- such workers will find it hard to secure such jobs even if they are willing to relocate. This may be particularly true of minority and female workers, who appear to be underrepresented (in terms of their national labor force participation rates) in these plants. That is a particular problem for Genesee County, since the composition of the GM workforce suggests that many workers will simply have little or no chance of securing employment in the transplant automotive facilities.

Alternative Market Scenarios

These scenarios covering the size of the total passenger car market and the shares of the key production sources suffer from a number of limitations. The first, and perhaps most correctable deficiency is that they are limited to passenger cars. The truck market is also quite important to GM employment in Genesee County. Three facilities -- an assembly plant, a metal fabrication plant, and an engine plant -- are exclusively or predominantly dedicated to truck production, while many of the component and part operations are proportionately dependent on truck sales.

Second, market scenarios are speculative, and the farther into the future they are cast, the more problematic they become. This simply reflects the greater possibility that an event, or events will occur that render inaccurate the assumptions underlying the scenario. The occurrences and timing of an economic downturn, a sharp acceleration or change in consumer preference for types or sources of vehicles, changes in the rules of trade in vehicles and/or components, and the development of exogenous shocks such as the two "oil crises" of the 1970s all might result in substantial alteration of a scenario's accuracy and therefore value. It is possible, if not practical, to generate vast numbers of scenarios that cover multiple possibilities and combinations of possibilities. That would, unfortunately, undercut a primary heuristic value to these kinds of exercises -- the sharpened focus on a few likely outcomes they provide -- and offers no protection against the unanticipated event.⁶

We offer in this section a few alternative scenarios, primarily to provide an overview of the light truck market and to present the potential impacts of an economic downturn. We shall also provide an alternative scenario for GM's competitiveness, and that of its Buick nameplate, again cautioning that the special importance of Buick *per se* to Flint/Genesee, compared to other GM nameplates, is questionable.

To generate scenarios for the light-truck and Buick markets, we will use a PC-based program developed at the Industrial Technology Institute in 1985 for an automotive supplier. The major virtue of this program is that it requires the user to

⁶As far as we are aware, for example, all analysts missed the first oil shock, and most missed the second. These two events dramatically impacted the market, both its size and the shares held by the different production sources.

specify a number of assumptions about the behavior of the market, and then portrays the market that is consistent with these specifications three years in the future. The total size of the market is determined by the user's expectations about the rate of GNP growth and/or real interest rates. A major weakness of the model is that it requires the use of 1987 sales for baseline estimates to develop 1990 projections, although we are far enough along in the year to make this less of a problem than it would have been earlier.

1987 Market

The first task in using this program is to estimate the baseline data for 1987. The September 22, 1986 edition of *Automotive News* contains the predictions of 17 automotive analysts for the 1987 market. Not surprisingly, there is a range of estimates, both for total vehicle market size (from 14.4 to 16.2 million vehicles) and the composition of the market in terms of light trucks/passenger cars and imports/domestics.

Table Five displays the 1987 predictions of Autofutures^R based on 1984 data and the consensus forecast of these 17 analysts -- a consensus forecast reported by *Automotive News*⁷. The only significant departure of Autofutures^R from the consensus is the estimate of higher import car share and lower import truck share.

The Big Three manufacturers have also indicated their forecasts, and these are quite similar to the independent analysts'. Ford and Chrysler make identical predictions of a 15 million vehicle market, the same as the consensus, although they see it tipped a bit more to trucks, with 10.5 million passenger vehicles and 4.5 million light trucks. GM is a bit more optimistic, with Roger Smith anticipating 10.6 million cars and 4.7 million trucks for a total of 15.3 million vehicles⁸. GM's chief economist, on the other hand, illustrates the range of these forecasts: he sees a 14.5 to 16 million vehicle

⁷Fleming, Al. "Forecasts Vary, Show a Lack of Certainty", *Automotive News*, September 22, 1986, p. 1.

⁸Fleming, November 17, 1986, *op. cit.*

market, made up of 10 to 11 million cars and 4.5 to 5 million trucks⁹.

Finally, the U.S. Department of Commerce has also issued a forecast, but one focused on the passenger car market and the role of imports. For 1987 this forecast sees a 10.7 million car market, with just over 34% of that going to imported vehicles.

Autofutures^R, then, in early 1985 provided a forecast of the 1987 market remarkably close to the consensus estimate of other analysts made in late 1986. This suggests that the same form of analysis can usefully be applied in developing projections for domestic light vehicle sales through 1990.

⁹Versical, David. "GM Expects Weak Start for Industry in '87 Sales", *Automotive News*, December 22, 1986, p. 3.

TABLE FIVE

1987 MARKET PROJECTIONS:
TWO SOURCES

000,000s

MARKET

	<i>Autofutures</i>	<i>Consensus</i>
<i>Domestic Cars</i>	6.95	7.50
<i>Import Cars</i>	3.75	3.20
<i>Total Cars</i>	10.70	10.70
<i>Domestic Trucks</i>	3.54	3.50
<i>Import Trucks</i>	0.62	0.80
<i>Total Trucks</i>	4.16	4.30
<i>TOTAL</i>	14.86	15.00

Reference: 1986 market = 16.05

Model Projections to 1990

Autofutures^R offers two basic economic drivers: changes in real interest rates and GNP growth rate. When GNP is above 2%, it converts to vehicle sales with an elasticity of .5: each percentage point of GNP above 0 converts to a 0.5% increase in sales. However, when GNP growth falls below 2%, sales are severely impacted: each percentage point of GNP growth below 2 results in a loss of 5% of sales. For this project, no change in interest rates is assumed, and two scenarios of GNP growth are developed. The first is essentially continuation of what has transpired over the past few years, a somewhat weaker growth than is typical for a normally expanding economy. This scenario suggests GNP growth of about 2.5% between now and 1990, or a steady sales growth of 1.25%. The second scenario anticipates a cyclical downturn or recession in 1988 of -1.5% GNP decrease, followed by a weak year at 1.5% growth, and 1990 at a stronger 4.5% growth. This scenario sees sales plunging 17.5%, followed by a further loss of 2.5%, and a final year of 2.25% increase. This downturn, then, is not as severe as the 1980 through 1982 downturn.

The selection of the proper baseline level is important, and 1986 presents a problem. Virtually all analysts, whether independent or industry-employed, are convinced that 1986 was an exceptionally strong year for vehicle sales. This was due to the convergence of a number of unusual factors, all of which tend to increase sales. Some of these factors are one-time shocks, such as the changes in the tax code, even if it may be difficult to estimate their impact on sales for 1987. Others, such as the offering of special incentives or the availability of low-cost fuel, are not only difficult to assess, but are much less certain as to whether they will continue. Because of the widespread conviction that 1986 was indeed unusually strong, it provides a tenuous baseline for generating predictions about future sales. Here again, two scenarios will be adopted. The first will use 1987 sales of 15 million vehicles as the base. This reflects the broad consensus of analysts at this time, as indicated above. The second one will use 1987 sales of 15.7 million vehicles as the base. This reflects the average of the five most optimistic analysts discussed above, and covers the possibility that fewer 1986 sales were "borrowed" from 1987 than most believe. It also provides an appropriate baseline

should 1986 represent a permanent upward shift in the level of sales rather than an especially spectacular year in a normally developing market. It is an admittedly optimistic scenario, and one with lower likelihood of developing than the first. It does, however, have the merit of providing a "best-case" scenario.

If we combine these two dimensions -- future economic performance and level of 1987 sales -- four scenarios for vehicle sales emerge. These are displayed in Table Six. Consensus and Optimistic refer to whether 1987 sales are 15 or 15.7 million vehicles, while Flat and Down(turn) refer to the expectation of steady economic expansion at 2.5% or a cyclical downturn in 1988.

The Consensus/Flat scenario depicts a market falling about 6.5% from 1986 to 1987, then steadily working its way back to a level of about the 1985 market in 1990. The Consensus/Down model portrays a market falling precipitously after the 1986 to 1987 correction, reaching its low point in 1989, and by 1990 reaching the approximate level of the 1981 market. The Optimistic/Flat model allows some correction from 1986 to 1987, but then resembles the 1986 market for 1988 through 1990. The Optimistic/Down market corrects in 1987, falls in 1988 and 1989, and begins to recover in 1990, approximating the 1983 market. These are plausible scenarios, and indeed generate believable markets, quite similar to markets and patterns that we have seen in the recent past.

TABLE SIX

MARKET PROJECTIONS:
FOUR SCENARIOS

000,000s

SCENARIOS	YEARS			
	1987	1988	1989	1990
Consensus				
Flat	15.00	15.19	15.38	15.57
Down	15.00	12.38	12.07	12.34
Optimistic				
Flat	15.72	15.92	16.12	16.32
Down	15.72	12.97	12.65	12.93

Reference: 1986 market = 16.05

Scenario Projections to 1990

Two further specifications are required for these projections to be useful in delimiting the passenger vehicle market of the traditional U.S. industry. The first is to specify what proportion of light vehicles will be trucks, and the second is to estimate the market share that will be held by true imports and the burgeoning transplant activities in North America of offshore producers.

The popularity of minivans, the multiple uses for light trucks, and the likelihood of continuing low-price fuel all suggest that light trucks will continue to increase their share of the light vehicle market. From 1984 to 1986, light truck share increased at about 3.5% per year. If we somewhat conservatively estimate their 1990 share at 30%, they need only duplicate this 3.5% increase in share once, or, alternatively, average about 1.2% increase in share between 1986 and 1990 to achieve this level.

Transplant capacity in the United States alone will be at least 1.7 million cars by 1990. Their market performance to date, as well as the performance of their imported cousins, suggest that they should be able to sell close to that number of cars. Again, conservatively, we will set their level of sales by 1990 at 1.5 million cars. These cars, however, are likely to be somewhat more downturn-resistant than traditional cars; to reflect this, we will use 1.3 million as their expected sales in 1990 for the two Down scenarios. This is based on their experiencing about 75% of the fall in sales from the downturn that is experienced by the traditional American industry.

Import share remains difficult to estimate. There are a number of factors that could radically shift the import share, including the actions of both U.S. and Japanese governments and industries. It does not seem likely that the VER arrangement will survive much longer in its current form. The Japanese auto makers are unhappy with it, and changes in market share in Japan and the United States, most notably the decline of Nissan, will require some adjustment. The continued sourcing of Japanese cars as captive imports by Chrysler and GM, and Ford's sourcing of Mazda-like cars from Mexico and Flat Rock blur the lines and make it more difficult to enforce limits. The U.S. government, of course, refuses to push for any import restrictions, even though it may be unrealistic to hope that U.S. cars can be exported to Japan in the

foreseeable future. The Japanese are not likely to increase dramatically their direct imports, at least not until the transplant vehicles further blur the lines, but will probably increase their level of "captive" imports for sale by the Big Three. The yen has increased substantially against the dollar, but there is no evidence that the Japanese price increases to date have decreased their sales, nor is it likely that they will be forced to increase their prices to cover all of their exchange losses¹⁰. The European manufacturers appear to be following a strategy of gradual increase, and the recent success of the Hyundai and Yugo may encourage other new entrants by 1990. There is little or no question that import share will rise for the next few years; the real question is by how much.

If import share grows at 7.3% per year between now and 1990 it will reach 37.5% of the passenger car market by then. Short of political action by the U.S. government or a significant switch in strategy by the U.S. or Japanese auto manufacturers, this is a likely level, and not a particularly high estimate¹¹.

Table Seven displays the 1990 estimates for each of the four market scenarios. Each market is specified at 30% truck share, 37.5% import share of the car market; the flat scenarios anticipate 1.5 million transplant sales, and the downturn scenarios, 1.3 million transplants. The best car market generated is 11.4 million, about the level of 1986, in the Optimistic/Flat scenario; the next best is 10.9 million, close to 1985, in the Consensus/Flat scenario. The two Downturn scenarios produce car markets like 1981 and 1983, the two sides of the 1982 trough. However, because of the increased share enjoyed by transplants and imports, both captive and direct, the market available to traditional, domestically produced cars ranges between 4.1 and 5.6 million: their best

¹⁰Flynn, Michael S. "The Exchange Rate and the Competitive Position of the U.S. Automotive Supplier," Ann Arbor: Industrial Technology Institute, ITI-1004, June, 1986.

¹¹Mary Ann Keller, for example, sees an import share that may reach the low 40s by the early 1990s. Our assumption would suggest 40% by 1991. See "Import Car Issue Causes Rift at Dealers' Convention," *Ann Arbor News*, February 4, 1987, p. B7.

market is about the level of their 1982 market, a very bad year indeed¹².

What kinds of changes would substantially improve the outlook for the 1990 traditional car market? The two main changes that would affect these results are the overall performance of the economy and the import share of cars. If we start with the Optimistic scenario's 1987 market, and experienced three years of 5% GNP growth, we would expect a 1990 light vehicle market of 16.9 million vehicles, and traditional domestic car sales of 7.4 million. But this is 150,000 less than the 1984 level. So even a rather remarkable string of good years for the economy is not likely to return us to the days when traditional domestic sales moved upward with predictable pauses and downturns.

If import shares could be held to about 30% of the car market, somewhat better results obtain. The Flat scenarios would yield 7.6 and 8.0 million units, while the Downturns would yield 6.0 and 6.7 million traditional domestic car sales. Action by either the Japanese or U.S. government to limit the imports of Japanese vehicles is impossible, however, unless it also limited other imports into the U.S. market. Such action could be effective, but it is highly unlikely. In the United States, the Executive branch of the federal government is committed to resisting restrictions, and in Japan, the vehicle manufacturers will strongly resist any government restrictions, especially in view of the strengthened yen's impact on their profits. Ford and/or Chrysler might decide to add capacity and compete more aggressively on the basis of their own production, but this is a long-term response, and their short-term responses are only likely to exacerbate the problem. GM currently is shedding capacity, and has experienced successive years of declining market share, three in terms of the total car market and five in the traditional domestic car market. There are anomalies in the sale of GM cars that suggest that changes in the exterior sheet metal of some vehicles might significantly improve their market performance, but the GM track record of the past few years makes one less than sanguine that this will happen, at least to a degree sufficient to retard the import share growth significantly, rather than simply cannibalize their own sales.

¹²Some would argue that these scenarios are all optimistic in regard to the import share of the car market, especially the Downturn scenarios. Imports, so this argument runs, are more resistant to downturns than the average traditional domestic cars. It certainly is the case that imports did quite well in the 1980-1982 downturn and subsequent recovery: Japanese vehicles increased their market share, even under the VRA during the recovery. If import share is set at 40% rather than 37.5% in the Downturn scenarios, to model this greater resistance, then the number of traditional cars in the Consensus scenario would be 3,882,000 and in the Optimistic scenario, 4,131,000.

These scenarios are grim indeed for those whose livelihoods are tied to the manufacture and sale of traditional domestic cars by the Big Three, and the Detroit promise to "role the Japanese back into the ocean" and its replacement promise to "leapfrog the Japanese" ring increasingly hollow, especially as the Europeans and other new entrants have increased their participation in the domestic market. But however grim these figures may be, it is exceedingly difficult to create plausible scenarios that bode much better. Whatever the slogans may trumpet, the realities are indeed gloomy.

TABLE SEVEN

1990 MARKET PROJECTIONS:
FOUR SCENARIOS

000,000s

SCENARIOS

SEGMENT	Consensus		Optimistic	
	Flat	Down	Flat	Down
Cars				
Traditional	5.31	4.10	5.64	4.36
Transplant	1.50	1.30	1.50	1.30
Import	4.09	3.24	4.28	3.39
Total	10.90	8.64	11.42	9.05
Trucks	4.67	3.70	4.90	3.88
Light Vehicles	15.57	12.34	16.32	12.93

Reference: 1986 market = 7.60 traditional, 0.61 transplant, and 3.24 imports for 11.45 total cars; added to 4.60 trucks, for a total light vehicle market of 16.05.

Buick Projections to 1990

Projections for any particular manufacturer or nameplate require the specification of further assumptions about the behavior of the car market, and are, of course, inherently more difficult to make. One only need consider the remarkable turn-around of Chrysler as it moved from about 8.5% of the U.S. car market in 1981 to about 10.3% in 1985 and 1986 to recognize the myriad factors that influence competitive performance at the level of the company or nameplate. Because of the sheer impossibility of taking all known factors into account, and the even greater likelihood of misspecifying some of them, this analysis develops estimates in a number of different ways, drawing on Autofutures^R, to be sure, but supplementing this with other modes of analysis. This multi-method approach should provide greater assurance of the reasonableness of these admittedly "ball-park" estimates.

If Buick maintains its 1986 share of traditional domestic cars through 1990 -- that is, suffers share loss only to imports and transplants, not to other traditionals -- then it will account for 10.12% of the traditional car market. This assumes that Buick's share is steady, and is represented by the middle column of Table Four.

This scenario suggests, then, that the Buick market by 1990 is likely to shrink to about three-quarters of its 1986 size, and in a Downturn might be just over half its 1986 size. If import share could be held to 30%, then 1990 Buick sales would be at or above 1986 levels in the Flat scenarios, but fall to 79% and 88% in the Down scenarios. If GNP grows at a 5% rate, sales would be about 750,000. These scenarios for import share and GNP growth suggest that Buick could approximate its current sales level in 1990 only in extremely unlikely circumstances.

But how likely is it that Buick will maintain its 1986 market share in 1990? There are a number of factors that mitigate against this expectation. GM has seen its market share of traditional, domestically built cars slip seriously since 1981. Domestically built Cadillacs, Chevrolets, Buicks, Oldsmobiles, and Pontiacs accounted for 44.0% of the cars sold in the 1982 market; in 1986, they constituted 38.1% of car sales. Not all of this is due to imports and transplants: GM's share of traditional domestic cars also fell, from 63.3% to 57.4%, over that time, with Ford and Chrysler adding the 5.9% that GM lost.

GM, to be sure, has not lost total market share as drastically because it has turned to imports -- like the Spectrum and Sprint -- and transplants -- the Nova -- to fill out its sales. In terms of total sales, GM's market share was about 41% in 1986. Some analysts see further decline in GM share, perhaps to as low as 35% in the early 1990s¹³. Since GM can maintain sales and profits with nontraditionally sourced cars, and appears likely to do this, Buick production and sales depend on whether any of these cars are assigned to it. At this time, it is unclear how many more cars will be so sourced, and how many, if any, will be assigned to Buick. Our analysis assumes that the current pattern of only assigning such cars to Chevrolet and Pontiac dealers will continue, and that Buick continues to sell only traditional cars.

In addition to GM's lost market share, Buick has itself lost share among the GM traditional domestic cars. From 1982 to 1986 the market has risen in size by 43.6%, GM 28.9%, but Buick only 6.4%. Buick's share of GM traditional nameplates was about 20.5% from 1982 to 1984, but has fallen precipitously in 1985 (to 18.5%) and 1986 (to 17.6%). Whether this trend continues or can be reversed is a major issue facing the nameplate.

There is a serious question whether GM's reorganization is complete. Some analysts speculate that the blurring of the traditional identities of the GM nameplates over the past decade, combined with inevitably shrinking sales volume, make it likely that the nameplates will be reconfigured. The combination of Buick and Oldsmobile is distinctly likely under this scenario. Another possibility is that GM will try to move Cadillac more firmly into the luxury market, and that Buick will upscale closer to where Cadillac is today. That would suggest drastically lower Buick production and sales, while providing a higher unit profit. It is possible, though unlikely, that what we call Buick today will be a quite different entity by 1990; these developments seem more plausible by 1995. These possibilities are ignored in this analysis.

It is difficult to predict all the factors that influence the car market, and even more difficult to predict all the contingent moves that a particular company or a division might make in a competitive industry. It is possible that GM will recover share, and also possible, though less likely, for Buick to recover share within GM's traditional cars. At the present time, nothing suggests that this is likely, however. To the contrary, Ford and Chrysler may continue to take share away from GM: both companies have

¹³Ann Arbor News, *op. cit.*

introduced at least one good-selling, large volume car in the 1980s, and, unlike GM, have clearly differentiated their vehicles. GM's higher volume platforms have had uneven sales across the different GM nameplates, and Buick has not done well in this system: Buick ranks third in 1986 sales of the three high volume body types (A, G, and J) that are sold by all four divisions (ignoring Cadillac), and in one (N) sold by three.

If GM continues to lose market share among traditional cars at the rate it did from 1982 to 1986, then it will sell 52% of those cars in the 1990 market, down from 57.4% in 1986. If Buick continues to lose share among GM traditional cars at the rate it did for that same period, it will fall to 15% of GM's traditional nameplates. It is possible that GM will recover share against Ford and Chrysler, and so too might Buick recover share against its sister nameplates. If we set those figures at their 1982 to 1986 highs, then GM might recover to 63.31% of the traditional car market (1982 level), and Buick to 20.85% of GM traditional cars (1983 level). Combining these expectations into a high and a low prediction provides two scenarios that could be called Continued Erosion and Recovery. These are displayed in the left- and right-hand columns of Table Eight. We would expect Buick's share of the traditional car market in 1990 to be 7.8% under the Continued Erosion scenario, and 13.0% under the Recovery scenario. These two scenarios provide reasonable lower and upper bounds to the steady-state shares assumed for both GM and Buick above.

If we assume that GM and Buick both recover to their 1982 to 1986 peak performance, then Buick sales in 1990 will be 5% to 10% lower than in 1986 if no downturn occurs. If a downturn occurs, they will be from 26% to 31% lower. If GM and Buick shares continue to erode, then 1990 could see Buick sales fall to 54% to 57% of their 1986 level with no downturn, and to 42% to 44% with a downturn. In no case does Buick sell as many cars in 1990 as it did in 1986.

TABLE EIGHT

1990 BUICK MARKET:
THREE GM/BUICK SCENARIOS

000s

GM/BUICK SCENARIOS

SCENARIOS	Erosion	Steady	Recovery
Consensus			
Flat	414	538	691
Down	320	415	533
Optimistic			
Flat	440	571	733
Down	340	441	566

Reference: 1986 Buick sales = 769,434

Buick Performance in 1990

Converting the sales projections in Table Eight to percentages of 1986 Buick sales provides the range of estimates for changes in Buick sales by 1990. These are displayed in Table Nine.

These scenarios cover a wide range: 1990 Buick sales could fall only to 95% of their 1986 level, or to as low as 42%. The range is not surprising, since the scenarios reflect quite different performances by the economy, GM, and Buick. The important point is that all of them suggest a fall in Buick sales, and the midrange expectations for GM and Buick performance suggest a decrease of 26% to 30%. Buick's strength in the luxury end of the market suggests that it will have some resistance to a downturn, so somewhere between the Steady and Recovery performances may be the most likely in the Down scenarios. Since we assume no captive imports will be marketed through the Buick Division, these sales estimates are also production estimates.

TABLE NINE

**1990 BUICK MARKET:
THREE GM/BUICK SCENARIOS**

Percent of 1986

GM/BUICK SCENARIOS

	Erosion	Steady	Recovery
SCENARIOS			
Consensus			
Flat	54%	70%	90%
Down	42%	54%	69%
Optimistic			
Flat	57%	74%	95%
Down	44%	57%	74%

Reference: 1986 Buick sales = 769,434

Summary of Market Scenarios

If GM sales hold steady at about 42% of the market, and if the economy avoids a downturn between now and 1990, then we would expect GM (and Buick) sales in 1990 to be about 70% to 74% of their 1986 level. If GM does not substantially increase its captive import and transplant share of sales, then production should be at about that level. A very similar range describes the scenario of an economic downturn, combined with a recovery of GM/Buick traditional, domestic share to somewhat higher levels. If Buick and Cadillac sales continue to be resistant to downturns, this is not an unlikely expectation. The most likely scenarios, then, call for GM/Buick sales somewhere around three-quarters of their 1986 levels.

These results are consistent, then, with the early, simpler scenario presented above. This consistency, however, does not really provide greater faith in the expectation, because it simply reflects the similarity in the assumptions underlying the two procedures. The second set of scenarios do, however, provide greater detail as to what those assumptions are, and thus more opportunity for readers to adjust those scenarios as they deem appropriate for assumptions they are willing to make.

Productivity Scenario for Automotive Industry Employment

A major source of the Manufacturing Cost Difference (MCD) between the U.S. and Japanese automotive manufacturers lies in the efficiency or productivity in the deployment of human labor. As indicated above, the Japanese appear to have had a substantial edge in labor productivity, measured by the the labor hours required to produce a vehicle, in the late 1970s and early 1980s. Our disadvantage reportedly ranged from 20% to 240% more labor hours required to produce a vehicle.¹⁴

This comparison with the Japanese becomes all the more important as they add transplant capacity in the United States. It is quite clear that major Japanese manufacturers across a wide range of industries are able to match, or come very close to matching the productivity and quality levels they attain in their own domestic production. The transplant operations do not and will not function at the levels of the traditional automotive industry, and will have very little adverse impact on the Japanese overall performance. That means that their advantage will not shrink because they produce in the U.S. business environment with an American labor force. This should undercut the very human tendency of traditional managers to blame their disadvantages on factors beyond their control, such as government policies or recalcitrant labor, and focus on sources of the disadvantage that they can control. Many of these controllable sources are factors affecting attained levels of labor productivity.

Improved labor productivity, measured by hours of labor in the car, often means fewer jobs, and that makes it a contentious issue. The UAW and its members, of course, are interested in preserving jobs, both for the currently employed worker and as a sum total. Historically, the UAW has been quite willing to negotiate productivity improvements in exchange for wage and benefit increments. But in the past these negotiations often took place when the market was growing, so that productivity improvements did not mean the necessary loss of jobs by the current membership since

¹⁴Productivity is better examined in terms of the output generated by all inputs, or what is called total factor productivity. The comparisons between Japan and the United States on this measure are more difficult to construct, and the exact comparisons more murky than is the case with labor productivity. Since our focus is on the number of jobs that the industry will support, the more narrow focus on labor productivity is appropriate: whether a worker is replaced by capital equipment or more efficient organization and deployment of tasks is of major importance for the manufacturer, but of less importance to this analysis.

increased production would add jobs lost to productivity improvement. For the company, paying more for increased productivity was tolerable because pattern bargaining made those costs competitively neutral. Today the UAW must place greater emphasis on job security and the companies compete in an industry where pattern bargaining, should it continue, each year covers a smaller portion of the relevant competition.

In principle, virtually everyone supports productivity improvement. In today's circumstances, however, it has become a much knottier issue than it has been in the past. The hope is that improved productivity will either permit the market to grow, perhaps through price reductions supported by cost reductions, or, more realistically, result in increased market share, through competitive strategies and/or product developments possible with reduced costs. The threat is that failure to improve productivity exposes the traditional domestic manufacturers to further volume reductions associated with share loss, and that will itself reduce the jobs available in the industry. It is difficult to develop creditable scenarios that involve no job loss for the traditional industry; the difficult issue for the UAW and the traditional companies is to identify a level and type of job loss that preserves the maximum possible number of total jobs. That will take hard bargaining, and it is simply unclear what the outcome of the bargaining is likely to be, and when that outcome is known, it will be equally difficult to forecast how successful it will be in practice.

The domestic automotive industry has averaged about a 3% improvement in productivity since the mid-1950s, and closer to 4% from 1980 to 1985. Table Ten presents the *additional* impact of a 3% annual productivity gain upon the job loss associated with lost market share displayed in Table Four.

TABLE TEN

JOBS AVAILABLE IN 1990
AS A PERCENT OF 1986 JOBS:
PRODUCTIVITY GAINS

	<i>AVAILABLE JOBS</i>
<i>GM</i>	68%
<i>FORD</i>	62%
<i>CHRYSLER</i>	73%
<i>BIG THREE</i>	67%

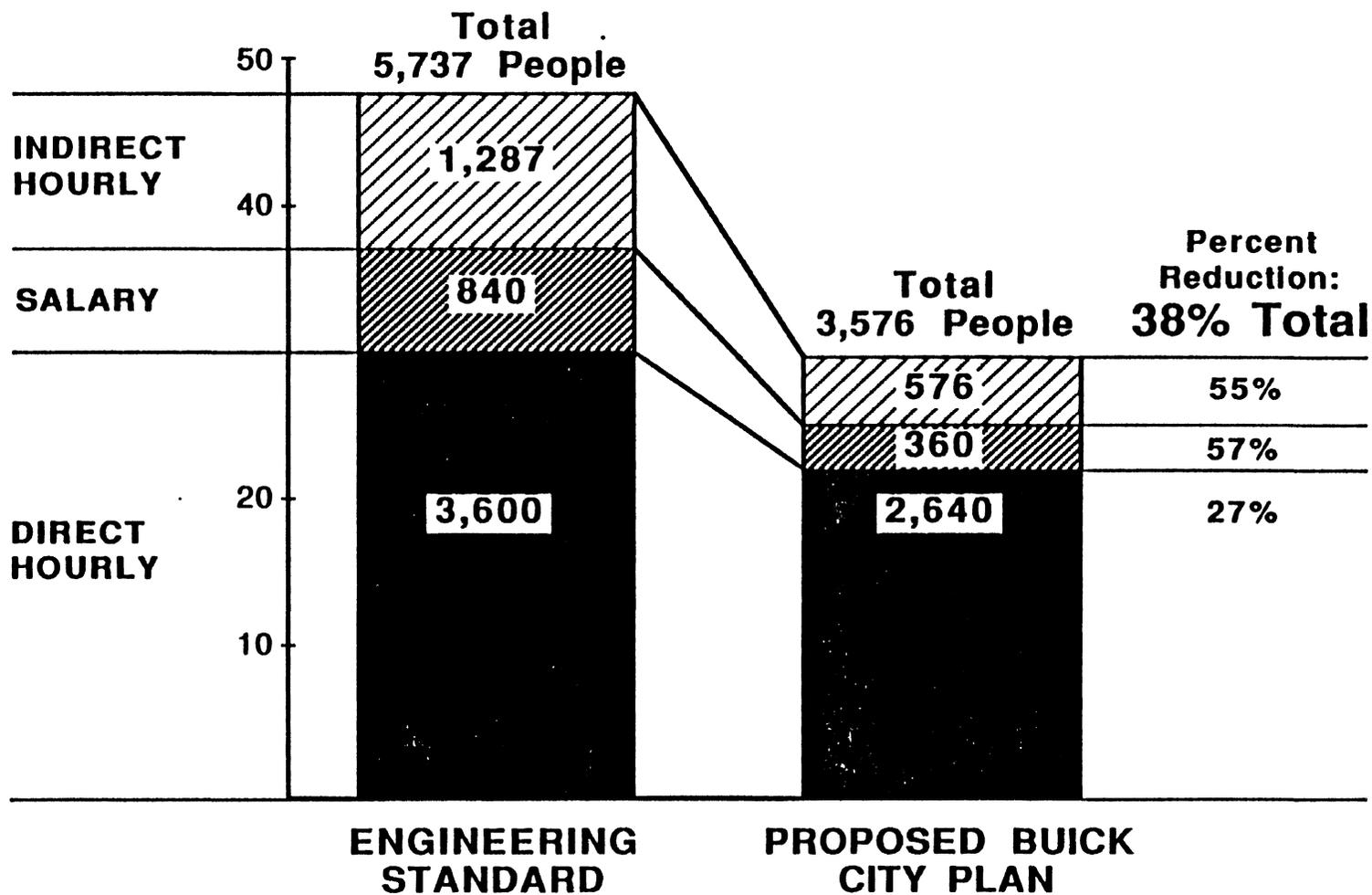
One might question how realistic it is to assume that the industry can maintain its historical average rate of productivity increase when its production volumes are expected to fall from 7.6 million to 5.8 million vehicles. To be sure, it is relatively easier to improve productivity as production volumes rise, and relatively more difficult to do so as volumes fall. However, as discussed earlier, most observers feel that the industry must improve its productivity at a rate faster than the 3% per year that Table Ten assumes if it is to become competitive with the Japanese within any reasonable time. We agree with these observers, and feel that a significant push will be made. As a consequence, incorporating the historic rate in this scenario seems quite reasonable. In fact, for the sake of the domestic industry, we hope this scenario errs on the low side.

Recent productivity estimates indicate that the Big Three have been quite uneven in their rates of productivity improvement, and that GM now significantly lags both Ford and Chrysler. These estimates are based on a "vehicle per worker" measure, and so to some extent reflect higher overtime and lower vertical integration levels at GM's domestic competitors, and not just the number of labor hours in the vehicle. Even so, most observers agree that both Ford and Chrysler currently maintain a significant labor productivity advantage over GM. That suggests that GM is the company most likely to make substantial improvements over the next four years, both because it is more immediately important for them to do so, and because models for how to accomplish substantial gains are readily available in their domestic competitors.¹⁵

Figure Two displays the engineering standards approved for Buick City assembly operations at the time of major capital investments in the complex. It is difficult to evaluate how closely current operations approximate these standards because of the inclusion in current plant totals of workers in stamping operations that formerly were counted separately. But it does illustrate what GM thought were reasonable goals for productivity improvements in a typical older plant. That goal was a 38% reduction in headcount and time. It also illustrates the likely differences in impact of these productivity improvement efforts for different groups of workers: these numbers call for a reduction of about 27% in the direct hourly workforce, but over 50% for both the indirect hourly and salaried categories. This differential impact is a topic we shall return to later in the report.

¹⁵GM would probably argue that their much criticized investments in manufacturing technology of the past few years now provides them a base for truly impressive productivity increases over the next few years. How accurate this may be is open to question, but we think there is little question that GM will have to close the gap with Chrysler and Ford, if not the Japanese, however they chose to do it.

ASSEMBLY TIME (Persons Employed)



Jobs lost to productivity improvements have the potential to protect remaining jobs, and some possibility, however slim, of expanding jobs. Jobs lost to offshore competitors are simply lost, and have predominantly negative impacts on the domestic economy.¹⁶ As discussed above, it is no easy task to determine the optimal rate of productivity improvement, and even were it, reaching agreement and concerted effort would still be problematic. Nevertheless, we are persuaded that jobs will be lost, either to productivity or to offshore competitors and their transplant operations.

It would be extremely difficult, if not impossible, for Genesee County to lure transplant activity, even in the increasingly unlikely event that further transplant operation are established.¹⁷ For Genesee County, then, the rapid improvement of productivity in ways that protect the remaining jobs is crucial. It will entail some job loss, perhaps significant job loss in view of GM's situation, but the alternative cannot but reduce jobs at least as much, and, in all likelihood, significantly more.

Outsourcing Scenario for Automotive Industry Employment

As already discussed, the Japanese assemblers are generally less vertically integrated than the Big Three — that is, they make less of the final vehicle themselves, sourcing relatively larger proportions of parts and components from external suppliers. This difference in levels of vertical integration is particularly striking when one compares Toyota and GM: by all accounts, GM is the most, and Toyota the least vertically integrated among the major Japanese, U.S., and European manufacturer.¹⁸ The difference is striking, with GM manufacturing from two to three times the proportion of the vehicle that Toyota does, depending on the estimate of GM's vertical integration that one accepts.

¹⁶The argument that import cars provide many domestic jobs is undoubtedly correct. However, those jobs would virtually all be replaced by jobs associated with the same functions in the domestic industry if import sales were replaced by domestic sales. When production goes offshore the jobs lost are not themselves "replaced" by any jobs associated with the import industry. In that sense, the current debate about "protecting" jobs — the autoworker's from imports, and the import retailer's and repairer's from trade restrictions — is not just a matter of what individual's are hurt.

¹⁷The most likely possibilities at this point are the addition of another U.S. plant by Honda, and the possible establishment of transplant operations by Hyundai.

¹⁸Hyundai is probably less vertically integrated than Toyota.

The classic arguments for high levels of vertical integration rest on the advantages of controlling the entire process. Such control provides economies of integration and the opportunity to capture profits throughout the chain of manufacturing. With vertical integration, however, has come higher wage costs, overhead costs, and, arguably, stultification due to size. Whatever the optimal level of integration may be in theory, there is no question that the traditional industry has reversed its thinking on this question, perhaps most especially GM. The argument now is that a strong independent supplier base provides more flexible capacity; lower production costs due to wage, benefit, overhead, and productivity advantages; and frequently higher technical expertise within given parts and components. For these reasons, the Big Three are all increasing their levels of outsourcing -- buying rather than making a part or component.

Generally, outsourcing involves a shift of jobs from the manufacturer to the supplier industry. Job loss in this shift will involve some jobs, if in fact the suppliers are more productive than the manufacturers, but should not be massive. The overall value of the jobs, measured by wages and benefits, will decline, especially for jobs that shift from the manufacturer or major supplier into smaller suppliers. There will be economic losses and job losses, but they will be less than those incurred if the production shifts offshore. For Genesee County, however, outsourcing will mean job loss just as much as if the jobs went offshore. The thinness of the supplier base in Genesee County means there is little or no chance that work and jobs can be added as outsourcing increases both at Genesee facilities and those located elsewhere. For Genesee, outsourcing means job loss.

Because GM is the most vertically integrated, losses due to outsourcing should eventually be the largest at GM, although it may well take longer for these losses to develop. A particular risk to Genesee is that the many component plants located there may have less control over their own individual survival as GM moves to outsource categories of parts and components based on the average performance of their relevant facilities or divisions. These issues will be discussed in a later section of the report.

Table Eleven displays one set of expectations about changed levels of vertical integration at the Big Three.¹⁹

¹⁹Luria, Hervey, and Andrea, op. cit..

TABLE ELEVEN

JOBS AVAILABLE IN 1990
AS A PERCENT OF 1986 JOBS:
MANUFACTURER OUTSOURCING

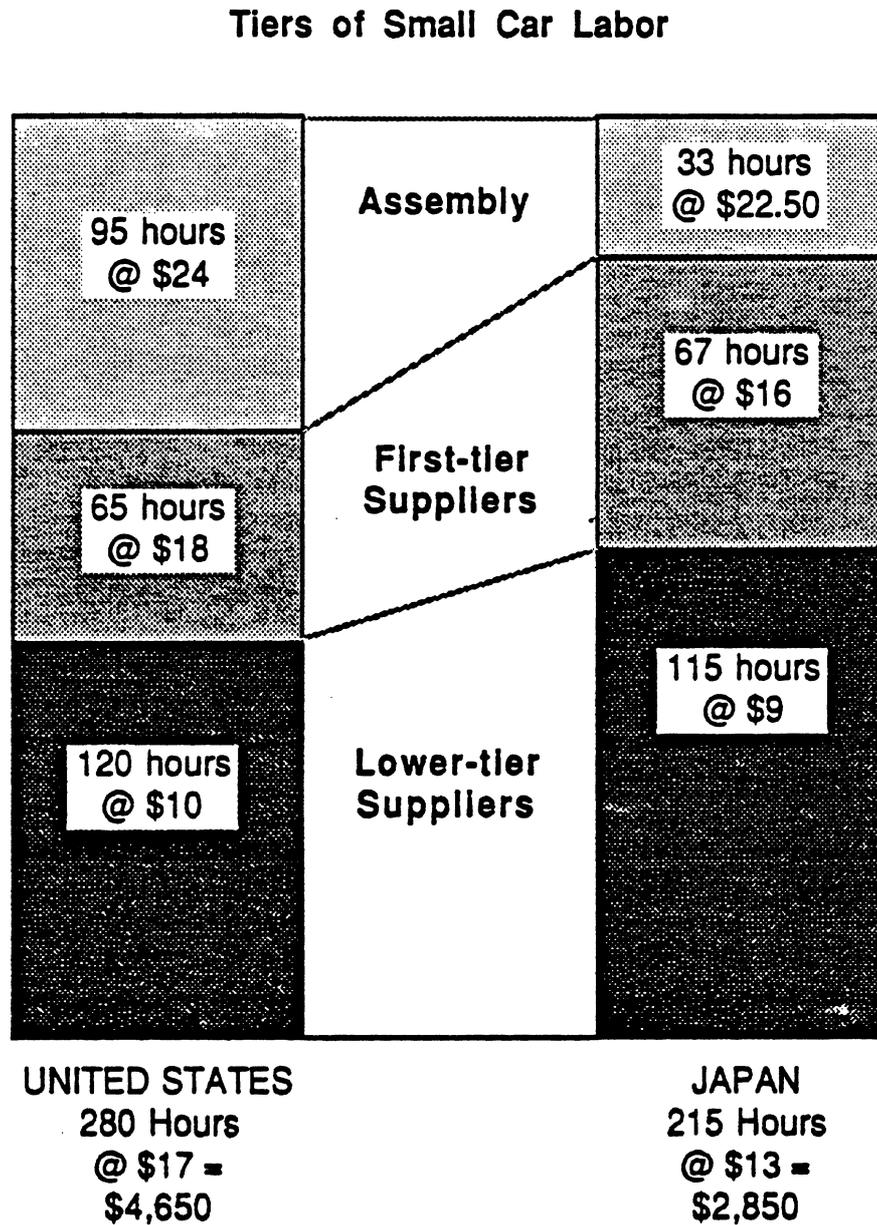
	<i>AVAILABLE JOBS</i>
<i>GM</i>	57%
<i>FORD</i>	48%
<i>CHRYSLER</i>	62%
<i>BIG THREE</i>	55%

These estimates are additional to the estimates for market and productivity job losses presented in Tables Four and Ten. So Table Eleven displays the cumulative impact of all three factors.

Figure Three presents a stylized representation of the allocation of production hours between the manufacturers and their suppliers for the traditional U.S. and Japanese industries. The total cost of production reflects differences in wages and productivity levels, but a significant portion is due to differences in the vertical integration of the two industries. If the distribution of the 280 hours in a U.S. car were identical to the Japanese distribution, then the Japanese cost advantage would be reduced by \$566, or almost one-third, at current wage and productivity levels.²⁰ This graph illustrates exactly why outsourcing is an attractive response for the manufacturers.

²⁰At 160 yen to the dollar.

Figure 3: Stylized Distribution of Hours of Work In U.S. and Japanese Auto Industries¹



¹ Set at 49% level of vertical integration for the United States, 26% for Japan. Yen converted to dollar at 160:1.

Summary of Scenario for Automotive Industry Employment

The combined market, productivity, and outsourcing scenarios suggest that GM employment might reach 57% of its 1986 level by 1990. Two important issues for Genesee County are the likelihood that this will occur and how closely the changes in GM locally will approximate these nation-wide estimates.

This final estimate represents a worst-case scenario from the perspective of level of current employment. However necessary some shrinkage in total employment, for a variety of reasons, may be for GM's long-term viability and size, the immediate impact of shrinkage approaching this level by 1990 is disastrous for current GM employees and communities with high concentrations of GM facilities. There are many reasons to be skeptical that employment losses will in fact reach this magnitude by 1990.

First and foremost, the very experience of GM and its competitors suggest that the market share of any particular manufacturer is quite volatile. To be sure, the strategic goals of the corporation with regard to market-share have recently shifted, but that change may itself be reversed in the next few years, and market-share receive increased emphasis. The volatility of market-share is suggested by Ford's apparent reluctance to add capacity in spite of two years of serious capacity problems. The tremendous resources of GM suggest that sudden changes in its fortunes are always possible, and none of its major competitors are ready to assume that continued shrinkage of GM market-share is inevitable or even likely.

There are already two hopeful signs for GM future market share. A new group of GM cars -- the scaled-down GM10 program -- comes on-stream this Fall.²¹ Preliminary reviews of these cars are heartening, and it is possible that they will duplicate the market success that Ford has enjoyed with its current Taurus/Sable program. Preliminary data for 1987 models suggest that GM has narrowed the quality advantage that many observers feel has been a major source of Ford's recent success.

This is a contract year, and there is no question that job security will be a major

²¹The Buick nameplate will have a period of nearly one year of exclusive access.

issue at the tables. It is conceivable that the UAW and GM will emerge from these talks with an orderly, staged plan for downsizing the workforce that will permit the avoidance of some of the psychological and social costs of sudden massive lay-offs and afford impacted communities more advance notice to prepare for and time to respond to closings and/or significant workforce reductions. This is not to suggest that either GM or the UAW will "bargain away" necessary productivity improvements, but that they may accomplish these improvements in a smoother fashion.

It is much easier to identify parts and components that are more cost-efficient to buy than make, but it is no easy task to identify outside sources and establish the relationships that provide the required items at acceptable cost, quality, and delivery terms. This is a particular problem for GM, since the quantities of business it is targeting for outsourcing suggest that there will be specific, if not general capacity problems for the supplier industry. This year's contract may also provide a smoother, more predictable, and perhaps more limited reliance on increased outsourcing as a method of cost reduction.

Each of these factors, then, is subject to qualification, and certainly their combined impacts may be less than the additive sum of their individual impact. Increasing productivity is difficult when volumes are falling, and certainly we would expect that some of the increased productivity will be accomplished through outsourcing. So this maximum estimate of employment losses may well overestimate the likely levels of job losses.

With these cautions in mind, it still seems reasonable to anticipate that GM job losses will be on the order of 20% between 1986 and 1990. This is roughly half-way to the targets represented by the maximum estimates, and should be realistically possible. It must be stressed that this level involves high levels of job losses, although the personal costs will be proportionately lower because a greater share of the reductions could be made through normal turnover and retirement rather than involuntary lay-offs.

The competitive situation of the domestic automotive industry is grim, and many argue that GM is at greatest risk. There is no doubt in our mind that the industry, its employees, and the communities that support the industry are in for some very serious shocks in the next half-decade. No creditable scenarios can suggest otherwise, short of political actions that we believe are extremely unlikely. Exactly how grim the future is remains to be seen, but communities like Genesee should plan for a moderately grim

scenario of job losses and the decrease of associated economic activity. The next chapter will address the issue of how closely these general scenarios apply to Genesee.

Chapter Three: GM Facilities in Genesee County

This chapter reviews the various GM facilities currently located in Genesee County, providing an overview of their current operations and detailing our estimates of the risks to employment levels at each. The prior chapter examines the broad threats to national levels of GM employment, and provides a framework for deductive inference about the likely impacts of these threats on Genesee County. This chapter reverses that procedure and considers each of the major facilities or operations GM currently has in Genesee County, providing a framework for inductive inference about the likely threats to GM employment levels throughout Genesee County.

Our risk analysis for these facilities is structured to cover the three major threats detailed in the general scenarios -- market performance, productivity improvement, and outsourcing -- and the local factors that may themselves be threats or may influence how those general threats operate at the facility level. These local factors primarily reflect the physical attributes of the facility, the circumstances affecting its product(s), and its labor climate.¹ The analysis should provide a sense of the level of risk for each facility and the comparative importance of the different sources of risk.

These risk analyses reflect our judgement at a particular time, in light of the circumstances of the industry and GM as we view them. Frankly, they have a very uncertain half-life. Because of this, we try, in the discussion, to detail the concerns and evaluations that underpin our estimates in hope that these estimates can be qualified, challenged, altered, and updated as developments require, rather than be treated as cast in concrete and immutable. We hope they provide a base for future revision, and that

¹This is a contract year, and some fundamental issues are likely to emerge at the bargaining tables and throughout subsequent application of the contracts that will have major impact on local plants. Management is persuaded that GM must be downsized if it is to become competitive again. This "downsizing" really reflects two themes: labor costs must be decreased through improved productivity, and production must be rationalized through the outsourcing of noncompetitive work. These two thrusts will be resisted by the UAW because of concern that the first will convert to "sweating" the workforce, and that both will result in job loss for current and future membership. A major roadblock to improved productivity, in management's view, is the job classification system and the workrules associated with it. For the UAW, these are the major lines of defense against sweating, arbitrary treatment, and job loss. How these issues are resolved this Fall will be a major conditioner of GM's future performance. For this report we focus on how these issues have been -- and are likely to be -- important for the specific plant, to the extent that we can do so without violating the confidentiality assured our sources. But the general uncertainty about these issues should be kept in mind.

their utility may go beyond the simple test of whether, as currently formulated, they turn out to be correct or incorrect. The volatility of the factors that we think are particularly crucial to GM's success and the viability of its specific operations make these kinds of risk assessments themselves a very risky activity. We do not mean to hedge them with caveats and qualifiers to the point that they lose any utility for present planning, but we do recognize that they require frequent revision to maintain their currency.

Information Sources

Much of the information underlying our analysis is derived from documentary and interview sources, and that makes a caution for the reader necessary: *the interpretations and opinions we present here are our own, and they may or may not reflect the views of the people we interviewed.* In at least some cases we know our opinions are sharply divergent from those held by our interviewees, in others there is probably general consensus in our views and theirs. Our interviews were structured to secure information and the views of the respondent, and we have been influenced by the information as well as their views in forming our own opinions. In some cases we feel the views of the interviewees are unduly optimistic or pessimistic in light of the information they provide, and, in those cases, our analysis reflects our judgement, not the rote reporting of the interviewee's opinions.

A second caution is in order. Our analysis is based on the information we sought and that others were willing and able to provide us. That dual selection process -- first our decision to ask, then others' decisions to respond or not -- means that there may be facilities with particular strengths and/or weaknesses that we failed to address or about which our respondents chose not to inform us. While we feel we covered the general issues well, and our interviewees and data providers were quite open and forthcoming in their responses, it is possible that particular factors that are important in assessing the risk for a given facility are not properly taken into account. This could be due to our simply being unaware of the factor, but also could reflect our failure to understand its significance.

We also encountered some difficulties in securing responses about some of the

facilities. In some cases, different sources provided us with discrepant information. This problem arose particularly in the area of employment numbers, and undoubtedly reflects different procedures and timing in our informants' collection of the relevant information. In other cases, our sources covered more than one facility, and in these cases almost always focused their responses on the facility that they knew best. This results in our levels of information about different facilities varying somewhat -- we have more information about some plants and operations than we do about some others. Finally, we were simply unable to obtain interviews with management and/or union personnel at some facilities due to time pressures and scheduling difficulties. Happily, we were able to secure interviews with management and/or union respondents for all major *production* facilities, although not always with people with the most current experience of those facilities.

We conducted formal interviews lasting from about one hour to as much as two hours with nine GM managers and seven UAW officials. Seven of the managers are plant managers, and five of the UAW officials are presidents of their Locals. Because some respondents have responsibility for multiple facilities, this provided coverage for 11 of the 12 production facilities from the management view, and all 12 from the union view. These interviews were quite useful in helping us understand the individual GM facilities in Genesee County and the particular issues and problems they face. To the extent that this Project provides useful information, it in large measure reflects the time these people provided us, and their generally frank and open responses to us. They, of course, are not responsible for any remaining misunderstanding or misinterpretations on our part, nor for the opinions we have formed based on the information they provided.

GM in Genesee

Before beginning a facility-by-facility review, some general information about the GM facilities in Genesee County is useful. These points cover those areas where our interviews found little variation across the individual GM operations, and those dimensions where, while there may be variation across the facilities, the confidentiality assured our interviewees or the method of gathering the information precludes facility-specific discussion.

Competitive Performance.

We asked our respondents to indicate what they felt are the major problems facing their facility today and what they expect they will be in 1990-1995. Without exception these questions elicited comments on the need for the operation to become competitive, and almost without exception specified cost as the relevant competitive dimension. Specific needs to become more productive and/or to improve quality were often mentioned as important steps to this goal, and the most frequently mentioned means to these goals was a change in the way labor is deployed in the manufacturing function. These changes ranged from simple assertions that individual worker productivity must improve to more complex arguments that managers must provide a better focus for and leadership of worker efforts. Union officials more often than managers stressed the need to respond politically to the problems of competing with imports, whether vehicles or parts and components.

We also asked our respondents to rate their facility's performance against other GM facilities, their domestic competition, and offshore competition on a series of five-point scales covering different competitive dimensions.² The managers rate their facilities as "about the same" (3.0) as other relevant GM facilities, and just a bit better (3.1) than their domestic competition. They rate the facilities less favorably in comparison to offshore competitors, however, assigning a mean of 2.6.³

These managers rate the Genesee facilities weaker in product innovation (2.0) and short-term price or cost (2.3), but somewhat stronger in location (3.4) and capital availability (3.3) than other relevant GM facilities. Compared to domestic competitors,

²There were ten dimensions: engineering competence, manufacturing competence, product innovation, process innovation, quality, delivery performance, short-term price, long-term price, capital availability, and location. Most of the interviewees interpreted "price" as "cost." These dimensions are drawn from earlier work, starting with the Joint U.S.-Japan Automotive Study, and reflect the selection criteria used by purchasing agents. For this work, the response scale runs from 1 [Quite a bit worse] through 3 [About the same] to 5 [Quite a bit better].

³These are unweighted mean across items. Differences mentioned in the text are not based on statistical tests. The responses from union officials to these items were insufficient to permit these summaries across the items.

these managers see engineering competence (3.9) and product innovation (3.5) as strengths, and manufacturing competence (2.6) as the major weakness. When the comparison base shifts to offshore competition, only engineering competence (3.2) and location (3.2) are rated above the mid-point of the scale, while long-term price/cost (2.0), quality (2.2), and manufacturing competence (2.2) fall well below the mid-point of the scale. These managers have faith in GM's engineering skills, but less in its manufacturing competence.⁴

The managers, then, see Genesee facilities as somewhat higher cost, but a somewhat better location than other GM facilities, still see GM as competitive with its domestic rivals, and are concerned about the offshore competition. Perhaps more revealing than these specific numeric estimates is our impression that most of the managers were unsure about how they compared with their domestic competition and even less sure about how they compared with the offshore competition. Some, in fact, told us that they were unsure about those comparisons. This strikes us as an unfortunate carry-over from the days when knowing how one compared with the rest of GM was sufficient information for a GM manager, because the internal GM competition was in fact the most relevant competition. That, of course, is much less true today than it may have been 15 years ago.

The union officials have a somewhat different view of the facilities' comparative performance on these dimensions. They rate the facility's comparative engineering competence substantially below the managers' ratings against both other GM facilities (2.4 vs. 3.2) and domestic competitors (2.8 vs 3.9). While they agree with the managers that their manufacturing competence is about on a par with other GM facilities (3.1), they see this as an even more major weakness compared to domestic competitors than do the managers (2.0 vs 2.6). On the other hand, they see product innovation as a bit better compared to other GM facilities (2.8 vs 2.2) and a major weakness (1.3) compared to domestic competitors, where the managers see it as a strength (3.5).⁵

The purpose of these kinds of data is not, of course, to establish the reality of the

⁴Many of these facilities have multiple product lines, and both the managers and officials frequently emphasized that these comparisons are very dependent on exactly the product compared. Some plants are strong in one product line, weak in another, and these average responses reflect such situations. Since we are interested in employment levels, this is not a serious problem for our overall analysis.

⁵Unfortunately, there were not enough usable responses from the officials with offshore competition as the comparison base to permit comparisons with managers' views.

situation, but rather to compare and contrast the views of some key participants. It is clear that neither managers nor union officials are persuaded that these facilities are competitively strong at this point in time. On the other hand, they certainly are not ready to describe their situation as competitively weak, except perhaps compared to their offshore competitors. The managers emphasize cost (and many side comments throughout the interviews focused on hourly labor costs) while the union officials are less confident in the facility's engineering competence than the managers. There are at least two interpretations of this pattern. The first is that each group is simply pointing a finger at something they consider to be the other group's responsibility. But the second, perhaps more benign interpretation is that each group may be less able to see its own contribution to the competitive problems facing GM. The recognition that there are disagreements, but that they are more in the nature of degree than kind may be an important step to resolving them and working cooperatively towards their solution.

Quality and Productivity.

The prior chapter detailed two major competitive concerns of the traditional domestic automotive industry. The first is quality, a dimension where the Japanese in particular hold a clear competitive edge, at least in the view of consumers. The second is manufacturing cost, again primarily an issue *vis a vis* the Japanese, where the U.S. disadvantage presents a potential threat of price competition, and a competitive disadvantage in product development.⁶ The focus of industry efforts to reduce the manufacturing cost difference has been in the area of productivity improvement. Because of the central role of quality and productivity in the industry's thinking and decision-making, we explored these topics with our respondents.

⁶The recent strengthening of the yen against the dollar has seriously eroded, and possibly eliminated this advantage. It is not surprising, however, that the traditional manufacturers still are concerned about its past effects, are unsure about how their manufacturing cost compares with Japan today, and are extremely apprehensive that it may return to its former levels in the next few years. There is little evidence that the strengthened yen has led to a return of the old attitudes that costs necessary to keep the product rolling along full blast are acceptable. The German Mark has also appreciated strongly against the dollar, and that helps, but it should be noted that the currencies of many South American countries, Taiwan, Mexico, and Korea have not. For many plants, these countries merely replace the Japanese as the source of worry in the area of manufacturing costs.

We asked both managers and union officials whether there had been any changes in the facility's attained quality since the upturn began in 1983, and the kinds of changes they expect to see between now and 1990/95. Seven of the managers reported that the product quality at the facility has improved since the upturn began and three of these seven described significant improvements. One felt that quality had not really improved over that period, while the final one suggested that it had slipped early in the period, but was now climbing. This last manager felt that rapid changes in process and product accounted for the slippage. One union official felt that quality had not improved, while the other six felt that it had. All the respondents felt that quality would improve between now and 1990/95, with quite a few of them commenting that it had to improve, or the facility might not survive.

We see improved quality as a survival issue, so we were somewhat heartened by these responses. These responses, of course, do not provide information that allows a direct assessment of how much improvement has occurred, nor do they allow a comparative assessment with other facilities in GM or the industry more generally. Some of the managers did give us such specific information, however, and in these three cases the improvements were impressive indeed, and at least two of the facilities compare quite favorably with their competitors. This suggests to us that the Genesee facilities are, on the average, performing well in improving this dimension, and at least some of them have achieved remarkable progress.

We asked the same question with regard to productivity improvements. One of the managers felt that productivity had not improved, partially reflecting product changes and the volumes of production, and another was unsure. Two described a mixed picture, with one reporting improvements at the production system level but not at the level of the individual worker, while the other reported variable progress in this area, but a beginning acceleration. The remaining five all reported productivity improvements. Six of the seven union officials felt that productivity has improved, and one was unsure.

The cost reductions provided by (or indicated by) productivity improvements are also survival issues, and many of the respondents again indicated this in stating that they expect improvements between now and 1990/95. As is the case in the area of quality, the respondents are unanimous in expecting future improvements in productivity.

We were provided with less specific information in this area than in the quality

area, but at least two of these facilities have made substantial improvements in productivity, and one is currently making impressive strides. It is also a more problematic area than quality because of its implications for job loss, whether for an individual or from the County economy. A few managers and union officials mentioned this, noting that while productivity will come, it gets into the gut areas and could pose some difficulties.

We asked the managers how they measure quality, and whether these measures are adequate to their management needs. We asked this question because we think it is important that managers have such measures and be able to use them to target improvements in quality, and, of course, actually use them. All the managers could describe at least one measure of quality that they use. The range is interesting, covering a manager who mentioned one measure to five managers that described three or more. The commonly used measures included corporate audits, conformance to specifications, a variety of customer information, and scrap and rework rates. Some particular measures appropriate to the product were also mentioned. All of the managers reported that they were satisfied with the measures available to them.

While there is variation in the number of measures used, as well as the detailed understanding we felt the respondents showed, this is an area that shows substantial improvement, in our judgement. The measures available to a manager have multiplied, and many, if not all managers clearly use the information for making decisions. These are major changes in the domestic industry compared to five years ago. While these responses do not allow comparison across GM, we would be surprised if the Genesee facilities lagged the corporate average in this area. Six of the nine managers also mentioned the use of statistical procedures, such as SPC, in assessing and responding to their quality problems, and this is encouraging.

The same question targeted to productivity elicited quite different responses. Far fewer measures were described to us, and the managers report far less satisfaction with them. Most of the managers reported some version of standard labor hours or labor efficiency, and only a few specified measures of productivity for other parts of the process. Two of the managers were unclear as to how satisfactory the measures are, and three reported that they are satisfactory. One indicated that they need to be improved without specifying exactly how. Three reported that they are not satisfactory, asserting that they need to reflect better the actual mix of labor and capital in the process and provide finer information to permit clearer problem identification and specification.

Most of the measures available reflect the typical labor efficiency focus of the industry, and that is not surprising. These measures, in the opinion of most observers, are too narrowly focused on what is called "labor productivity" -- unit output per worker, or worker input per unit -- for an industry so capital intensive as automotive manufacturing. Frankly, we are impressed that four managers are able and willing to express criticism of this focus, one that is so traditional⁷ to the industry. We are also pleased that these managers have made efforts to develop broader and more useful measures.

A number of respondents suggested that further improvements in productivity would involve some changes in labor practices. We included a question for union officials about whether management's efforts to improve quality and productivity have raised any issues or conflicts with their memberships, and, if so, how those conflicts have been resolved. Three of the union officials thought these efforts have not raised issues or conflicts, one commenting that they are mutual management and labor concerns, another that there have been no strike votes over such issues and that grievance levels have gone down, and the third indicating that most efforts to date have been targeted around quality.⁸

One union official sees some issues and conflicts, but "not a lot", because the workers are basically receptive to these efforts. He did express concern that this could shift radically in light of GM's payment of large executive bonuses while not paying profit-sharing, and decisions like the sale of the Elyria (OH.) Fisher Guide plant in spite of its impressive improvement in these areas.

One official reported that some of the programs have been problems. He specifically identified a QWL⁹ program that was "all kissy-kissy, but then you'd arrive back at the plant 30 seconds late and be written up." He described the resolution of these kinds of conflicts as involving a move to more of a team concept of production. This official also reported that the salaried ranks are quite disaffected by GM's recent changes in overtime pay policies, and thinks that may be a bigger worker issue for GM

⁷Some would say sacred.

⁸Two managers, it is worth mentioning, have obtained improvements in both quality and productivity from quality efforts.

⁹Quality of Work Life, the generic GM name for a variety of employee involvement programs.

in the long run.¹⁰

Another official reported problems with the coordination of these efforts between GM plants. An example of this is the assembly plant instructing a parts plant to ship bad quality parts to avoid shutting down the assembly plant, then sending the parts plant a complaint notice about the quality of that shipment. That suggests to the workers in the parts plant that the old philosophy of "quantity over quality" still reigns supreme. This official also sees some difficult negotiations as improved quality and productivity start to eliminate jobs. He's concerned about how well management and labor will respond to the first conflicts over the elimination of inspection and repair jobs that have been necessary because of bad first-time quality.

Another official reports that management made clear promises of additional work that were not fulfilled, so that productivity and quality improvements have eliminated jobs. This has raised the issue for the membership about whether management is only giving lip service to jointness, and could result in a reversion to higher levels of mistrust. Management can also be reluctant to share information about salaried workers that the union feels is important for making joint decisions about cost reduction efforts; this creates issues about how full a "partner" the union really is.

We suspect that more of these issues will rise to the surface as efforts to improve quality and productivity continue. They are not easy and simple issues, and there certainly are areas of conflicts in the interests of managers, workers (both hourly and salaried), and union officials. If times will be tougher, we suspect that those plants that have made good progress to date on clarifying goals and recognizing and addressing legitimate conflicts will find this a base for responding to future issues. Those plants that have skirted these issues in accomplishing the relatively easier first efforts may find that the harder steps are even more difficult than they foresee.

Factors in Facility Survival.

We also provided our respondents with a list of 17 factors that might block the

¹⁰This was mentioned by at least one manager, and both managers and union officials recognize the key role of middle-management within the plant in the success or failure of many of GM's programs.

facility's attainment of competitive performance sufficient to assure its survival.¹¹ On balance, both managers and officials report that the facilities face moderate obstacle to survival. The managers' responses across these items averaged 3.2, while the officials' averaged 3.0. There are, however, some substantial differences in their views of which factors are more or less serious obstacles.

Managers reported work rules and hourly productivity levels (both 4.1) as the most major obstacles, followed by workforce resistance to change (3.8), salaried worker productivity (3.8), and the number of currently populated job classifications (3.7). Union leaders reported the inability to secure non-GM work and salaried productivity levels (both 4.5) as the major obstacles, followed by management resistance to change (3.5), poor product design (3.3), and the general performance of the economy (3.3). These views of management and union are again variable depending upon the specific product or area addressed, but on balance reflect what we would expect to find throughout GM. They are also influenced by the respondents' interpretation of the questions. Some gave us ratings of how difficult the obstacles will be to overcome, others how serious they are today. Two managers, for example, rated workforce resistance and productivity as more serious obstacles than management resistance and productivity, but commented that that is because they feel they have more direct control in these areas over the salaried workforce.

We were somewhat surprised that the facility's bad reputation at corporate headquarters is typically seen as minor to moderate obstacle. The managers rated it 3.2, and the union officials 2.5. One manager rated this a major, and one an absolute obstacle, but one also rated it as no obstacle and another as minor. It may be that Flint's bad reputation at corporate headquarters is more facility specific than the community thinks. While that may be worse for those facilities, it offers some comfort for the others, since their efforts may not be completely outweighed by a community-wide bad reputation.

¹¹This "laundry list" of factors includes: ineffective utilization of current production equipment; lack of investment in new production equipment/technology; employee attitudes and motivation; poor supplier performance; poor product design; GM's declining market performance; training/education level of the workforce; management resistance to required changes; workforce resistance to required changes; inability to secure non-GM work; currently negotiated work rules; number of currently populated job classifications; current quality performance; general performance of the economy; current ratio of output to hourly employees; current ratio of output to salaried employees; bad reputation of facility at corporate headquarters; and "other", permitting the respondent to volunteer other factors they feel are important. These factors are rated as to how much of an obstacle they may be using a five-point scale. The scale is 1 [None], 2 [Minor], 3 [Moderate], 4 [Major], and 5 [Absolute].

The level of capital investment across these facilities is seen as minor problem by managers (2.3) and by officials (2.5). It is interesting that some respondents from both groups volunteered that the rate of investment represented more of a problem because the facilities have not always been able to absorb and effectively deploy the new technology that such investment has provided. One manager expressed particular concern that the "soft" technologies of organization have lagged behind the "hard" equipment technologies and that this mismatch has created problems. But it does not appear that these Genesee facilities have typically lacked capital investment, although a few of them, to be sure, clearly have. Most of these facilities appear to be modern, and some of them are close to leading-edge in their equipment endowments.

We do not feel that the respondents' stress on productivity and resistance to change on the other side of the management/union divide is particularly surprising. Managers – salaried workers – see hourly resistance to change and the need to improve hourly productivity; union officials see salaried resistance to change and the need to improve salaried productivity. This is similar to the views of these groups on the facilities' competitive performance in engineering and cost. We suspect that this is an area where both sides are probably accurate in their perceptions of each other.

Labor and Community Relations.

The management stress on work rules and job classifications as impediments to facility survival is interesting. We are more persuaded that management feels hampered by these constraints than that they have a clear idea of what specific changes they want. Plant managers, in particular, often support the continuation of traditional classifications and work rules because they are costs that are not specifically attributable to the plant, and they ensure smoother running of the plant, and hence lower cost, in cost-areas more attributable to their own performance. The high wage of some infrequently used skilled trade workers is a general problem, but if not having them on hand shuts down the plant, the manager is likely to be held responsible. In our view, these responses are not typically reflective of the managers' specific attitudes about the Genesee workforce so much as a general management feeling that they require the flexibility to improve productivity, and that work rules and job classifications are major barriers to attaining this.

These questions did, however, elicit a wealth of material on the managers' attitudes about the Genesee workforce, its union, and their own facility's workers. There is tremendous variation in these attitudes among GM managers, not a monolithic, shared view. Some managers expressed opinions and views that were negative and hostile in the extreme, while others basically had positive feelings, at least about their own workers. Most of the managers viewed their own workforce as "better" than the area workforce. The area workforce is seen as rigid, incredibly resistant to change, and unaware of how much the situation of GM (and their own situation) has changed. But it is also seen as highly skilled, hard working, and quite aware of the problems ahead. Some managers also qualified their views by stressing the high percentage of their workers with "good" attitudes, and a small, but important percentage with "bad" attitudes.

So, too, some managers insisted on distinguishing the workforce and the union, reporting that most problems with the workforce are really problems with the UAW leadership and structure. Union officials showed a similar range of views about the GM managers, ranging from assertions that they would not hire a particular manager to run a business they owned, to seeing them as reasonable and effective managers. Some UAW officials also expressed frustration with the GM leadership and structure, as distinguished from the local management cadre.

These responses raise three issues in our minds about the nature and type of relationships that exist in Genesee County GM facilities. The first has to do with the relationships among GM managers, the second the relationship between these managers and the union officials representing their workforce, and the third an issue about the perceptions of the workforce.

We were struck by the apparent lack of awareness of many of the GM managers of what occurs at other GM facilities in Genesee. Their major source of information seems to be the newspaper (a source whose limitations we are only too aware of ourselves!).¹² We recognize that GM is organizationally complex and that Flint/Genesee is large, but we still find it puzzling that so little information is shared among the GM managers. There is no question that the "quality" of labor relations in the Genesee facilities is highly variable. What is disturbing is that some managers

¹²One manager compared what meetings there are to press conferences, noting that one facility reads a prepared statement.

attribute all or most of their problems to the "Flint workforce" while seemingly unaware that some of their fellow managers appear to be dealing with a very different "Flint workforce." We do not mean to suggest that there are no differences in the workforces or the union locals at the different facilities -- there probably are. But we find it difficult to believe that these managers would not benefit from the experiences of their colleagues, at least to help them target and focus their efforts, rather than maintaining their rather unfocused negative response to the workforce. This lack of communication is all the more surprising since a number of these managers are very aware of what they see as a very efficient communication pattern across plants within the union structure.

The union officials showed great variability in their ready knowledge about the facilities they represent. Some of them knew the "hard facts" like production volumes, quality performance, and specific headcounts as well or better than the facility managers. Others seemed to be very unaware of these "details". While some of this variation may reflect the officials different views of what is important for them to know, some of it clearly reflected differences in their working relationships with plant management and the information they share. What is a proper working relationship between a plant manager and the local union official is a topic of much debate, and we recognize that. Nevertheless, there is a minimum amount of information sharing necessary if discussions are to be targeted and productive. In a few cases, we question whether this minimum exists.

Our sense is that the working relationships between plant managers and local union officials in Genesee are indeed varied. Some meet on a regular basis, some seem to rarely see each other outside of specific needs, and both parties choose to define those needs as infrequent. Some seem to have developed relationships that recognize areas both of conflict and cooperation, and treat the areas of conflict as legitimate and necessary, but not to the exclusion of cooperation where appropriate. Others seem mired in the past, with a view that anything desired by the other side must be opposed -- there can only be conflict. The "Flint workforce" indeed has a reputation in the industry of being hard-nosed and set in its ways. This reputation strikes us as seriously overblown, but to the extent that there is some truth to it, we wonder why GM management in Flint does not have a similar reputation.

There appears to us to be an inconsistency in the managers' attitudes towards the general Flint workforce as contrasted to their attitudes about their facility's workforce.

We are confident that had we asked for attitudes towards each of these groups of workers on traditional five-point scales, the summation of the managers' attitudes toward their own workforces would be much more positive than the summation of their attitudes toward the area workforce. This reflects to some extent the negative views of Buick City and Truck & Bus held by managers of other facilities, but it also reflects the managers' honest belief, in many cases, that their own workforce is just about the only "good" one in Genesee. We suspect that this contributes to the continuing bad reputation of the Flint workforce in the industry. It is troublesome because it appears to us to perpetuate a stereotype of the area workforce that is inaccurate if we accept the individual manager's reports of their specific workforce, and aggregate them to typify the area workforce. Some of the union officials we interviewed are concerned about this problem, and recognize that as long as the managers' continue to define good situations as exceptions, the fact that most of them are defined as good will not shift the overall perception.

The prior chapter discussed the 1937 sit-down strike, noting the continuing impact it has on attitudes in the Flint community. We found it interesting that this event received more mentions in our interviews than did the role of the Flint UAW Locals in passing the 1982 special contract requested by GM. There is no question that many UAW officials feel that the risk they took then is either not recognized or simply not appreciated by the Corporation. There is also a very real issue in their minds as to whether the Corporation actually lived up to its side of the bargain. Many managers are concerned that the Flint workforce and community have not yet realized the seriousness of the competitive challenge that GM faces, nor the adverse consequences that GM's responses inevitably will involve in Flint. This partially reflects the Corporation's past "threats" and subsequent behavior, and a number of managers recognize that the "business-as-usual" attitudes that they find so frustrating are in part the result of past GM management behavior.

Three of the concerns that a number of the GM managers expressed reflects the level of GM activity in Flint. The first is a feeling that the broader community turns to GM whenever there is a need for business representation -- on a committee, participation in a drive, or whatever. While they recognize that there are no realistic alternatives to GM for some of these activities, and some of them recognize that the situation is exacerbated by their own decision to live elsewhere, it still represents a background irritant. One of the managers made an interesting observation. He felt that

a plant manager where there was only one GM facility would in fact have to do more than is required in Flint, because Flint provides higher visibility corporate personnel as targets for such community groups. It may well be that what these managers see as an over-reliance upon GM by Flint may be partially due to Flint's over-reliance upon a few of the available GM managers.¹³

A number of managers mentioned that the concentration of GM work in Flint creates problems for them in their efforts to focus on the problems they see in their own plants if these efforts require UAW cooperation. These managers feel that word travels fast as to what work arrangements are at the different facilities. They sometimes feel that this makes union officials more sensitive to the opinion of their fellow officials, the impact of this opinion on their own membership, and less sensitive to the manager's view of the plant's problems than would otherwise be the case. This results in slower movement and change than would occur if they were in a more isolated facility.

A number of managers feel that the presence of the UAW means that GM does not have local influence and prestige commensurate with its role in and significance to the local community. This particularly galls them in the political arena, where they feel that candidates curry favor with an electorate heavily constituted of UAW GM workers by running against the Corporation. They see GM being blamed inappropriately and inadequately commended for its actions. For some of these managers, this seems to be a primary source of whatever negative attitudes they have about the community.

The topic of the advantages and disadvantages of Genesee will be covered in Chapter Four, but it is worth commenting here that in general the GM managers we interviewed are not especially hostile to Genesee or Flint; some in fact are quite positive. They do see it as a good location for their plants, see many strengths in the workforce, and feel that the problems that exist are resolvable.

Most -- but not all -- of these managers see difficult days ahead in the labor relations area as they see their efforts to improve efficiency conflicting with union and worker resistance to required changes. The timing of these problems is quite variable, however. Some plants are fairly far along on the capital investment, product rationalization, and quality strategies for improving efficiency, and will soon more directly turn to questions such as work rules, job classifications, and manning levels. Other facilities may still be a year or two away from these more difficult issues.

¹³This over-reliance, to be sure, may reflect some GM manager's refusal to participate, partially based on their knowledge that others will.

Key Decisions.

An issue of concern to Genesee is exactly what decisions will be key in the continuation of the GM facilities in the county, and who will make those decisions. Beyond the interview topics already discussed, we directly asked this question of our respondents.

Our respondents generally referred back to their earlier comments in identifying what decisions would be key to a facility's survival, and used this question as an opportunity to summarize and reinforce their earlier remarks. Both managers and officials mentioned the need to reduce costs and to improve quality and labor climate.

An interesting split develops, however, as to where the managers and officials think the key decisions that will determine whether facilities survive or die will be made. Six of nine mentions by UAW officials target Corporate Headquarters ("the Fourteenth Floor") as the place where such decisions will be made. Seven of 11 manager mentions identify the local facility, with those decisions either under the control of management or under the joint control of management and labor. The UAW officials see a situation such that the key decisions will be made on relatively cut-and-dried measures of current performance, with performance on those measures outside their control. The managers, on the other hand, see those decisions as highly influenced by factors that are indeed under the control of local officials and managers.

The truth probably lies somewhere in the middle. To be sure, GM has and will again close plants that appear to have done everything the Corporation has asked of them. This is inevitable when such decisions must reflect overall capacity needs when GM faces shrinking demand. Some plants will be closed in spite of heroic efforts and accomplishments. But it is not the case that these decisions are narrow, or without regard to local performance. We suspect that some UAW officials are overly pessimistic about their ability to influence their own fate; on the other hand, we suspect that some managers are overly optimistic about their own degree of fate-control. Perhaps the official and two managers that see the control of the key decisions as primarily lying within the joint control of local UAW and management personnel have the healthiest attitude, even though that does not guarantee that they will succeed.

It should be noted that only a few of our respondents commented on the loss of Genesee influence on corporate decisions. Those that did treated it as a fact of life, to be regretted, but not of overwhelming significance. As we have indicated elsewhere, the loss of headquarter facilities in Flint is damaging, but less important than many local residents may think.

Summary.

These interviews persuade us that the Genesee facilities of GM are indeed reflective of the Corporation as a whole. There are particular and idiosyncratic aspects, to be sure, but it is not the case that these facilities are all like each other and unlike the rest of GM. We suspect that the variability of the Genesee facilities on most dimensions is greater than the difference between them, taken as a group, and the non-Genesee GM facilities. On some key dimensions -- productivity, product quality, labor relations climate at the plant level, their competitive performance, and the threats they face -- we see little difference overall between these facilities and GM nationally. On some dimensions -- location and the level of GM concentration, most notably -- they are clearly different.

Buick City Complex

In terms of employment, the largest "single" GM facility in Flint/Genesee is the Buick City Complex, composed in reality of many operations. The major operations are Buick City Assembly, the Hydra-matic operations, BOC Engine Plant #36, and Axle/Forge Plant #31. A numerically small, but organizationally important part of the Complex is managed by Delco Division. We will review each of these operations separately, then comment on the Complex as an entity.

Buick City Assembly

Buick City Assembly is one of four assembly plants in the BOC Group's Flint Product Team, and is currently allocated two versions of GM's multi-divisional H-body, the Buick LeSabre and the Oldsmobile 88.

GM invested over \$400 million in Buick City, most of that in Assembly, by September, 1985 when the conversion to front-wheel drive vehicles was completed. The Assembly plant is now a bit of a show-case plant, representing a serious effort by GM to develop a "Japanese-style" manufacturing environment, at least in terms of its layout and many of its procedures. The plant stresses its J-I-T (Just-In-Time) relationship with suppliers, requiring suppliers to deliver smaller lots more frequently, and dealing with a somewhat reduced number of direct suppliers. This affords the plant significant savings in inventory -- its inventory turns are reported to be about 10 times the level of the traditional domestic plant -- and better quality control on incoming production parts and components. One of the often-publicized examples of this approach is Buick City's receipt of built-up seats from Lear-Siegler's Fenton plant in truckload lots that are unloaded onto pallets in the sequence that they will be used on the line.¹⁴ The plant currently has major panel stamping adjacent to the line, the only traditional domestic assembly plant so configured.

The plant has some interesting examples of newer process technology, the equipment and its configuration that constitute the machine side of the actual assembly operations. Engine dressing is accomplished with AGVs (Automated Guided Vehicles) that carry the engine and its parts, as well as some other parts and components, from work station to work station, rather than on a traditional line that moves the engine from work station to work station on a fixed schedule, with parts stocked at each work station. The vehicle assembly line splits into two parallel lines at about a half dozen places to allow different cycle times for the jobs comprising the same set of operations. There is a fairly high level of automation, including a publicized robotic windshield

¹⁴One of the major disappointments for both GM and Genesee has been GM's inability to persuade significant numbers of Buick City suppliers to locate close to the Complex. The benefits to GM and Genesee of such arrangements are clear, but the suppliers were concerned with adding capacity, especially in an area that they view as high wage, and for non-union suppliers, an area likely to result in significant unionization pressure.

insertion operation.¹⁵ It does not, however, have the level of automation of some other GM plants, such as Hamtramck.

The "soft-side" of process technology is also represented. The line splits allow different cycle times for jobs, and that permits the evaluation of how important this factor may be in areas such as product quality and worker satisfaction. There is direct contact at some level between the production workers that assemble the vehicle and the suppliers that provide the parts and components that the workers use. Both of these are interesting efforts, although it is unclear at this time how they actually impact quality and productivity. In our view, it is perhaps more important that efforts of this type are made than the specific success of the particular effort, since we are confident that continued experiments of this type will lead to changes that are important in attaining improved quality and productivity.

The physical plant at Assembly is a definite strength. To be sure, it has not yet reached the levels of efficiency or smoothness that the planners envisioned, but it has not faced the rather severe problems that some of the more automated plants have. On the surface, everything should be rosy at Buick City Assembly, with very little threat to its employment levels. After all, it has received substantial recent capital injection and is now a well-modernized plant.

Labor relations at Buick City Assembly are in a state of flux, and that may be a major problem. The plant has just recently begun to settle down after absorbing large numbers of workers from GM facilities in Bay City and Saginaw. These workers came in from part and component operations with different work standards, and absorbing large numbers at one time presented a variety of problems. The workforce is relatively older, and that influences resistance to changes that management deems necessary -- such workers are likely to be more skeptical about both the need for and the benefit from management requests for changes in the operations of the plant. Management, too, has a past history it needs to overcome.

There are some problems that this facility faces that are rooted in or reflective of the general problems facing the traditional industry, and we now turn our attention to those issues.

¹⁵This operation seems to us to represent some of the problems GM has faced in automating its plants: it is much more complex, and less efficient than the same operation as performed at Honda in Marysville, Ohio, for example.

Market Considerations

The Flint Product team currently has responsibility for H-body (Buick LeSabre, Oldsmobile 88, and Pontiac Bonneville) and C-body (Buick Electra, Oldsmobile 98, and Cadillac) cars, and has four assembly plants reporting to it. As mentioned, Buick City assembles LeSabres and 88s. Willow Run Assembly also produces H-bodies, the 88 and Bonneville, while Wentzville (Mo.) runs a small number of H-bodies, but primarily C-bodies. Lake Orion runs C-bodies. Perhaps the easiest way to think of these models is that the C-bodies are slightly larger, more upscale cars than the H-bodies. Because of the similarity of the two body styles, they are relatively easily assembled in the same plant, as evidenced by the fact that Wentzville already does assemble both styles. So the Flint Product Team has two body types, four nameplates, and six basic models to distribute among four assembly plants.

These vehicles are not directly equivalent to many imported vehicles, if conventional size and price segmentations are used as the comparative base. However, they do fall in a price range that the Japanese are approaching as they raise prices in response to the strengthening of the yen. There is a real possibility that the increased price, upscaled Japanese cars will challenge this size segment of traditional vehicles. It is difficult to estimate how important the threat from imports/transplants is, but it is no longer a challenge that can be treated as irrelevant based on the size of the vehicle assembled at Buick City, and it is a challenge that is likely to increase, not recede, over the next five to ten years.

The most immediate threat to Buick City is that the market to support four plants for these vehicles appears quite unlikely to develop. Sales for 1986 and to date in 1987 suggest that three assembly plants are sufficient, and some GM projections through 1992 indicate a level of vehicle production that could be met with three plants operating at roughly 240,000 vehicles per year, the industry planning standard.¹⁶ It is

¹⁶On the other hand, GM is still indicating that all four of these plants will be making C- and H-bodies through 1992. See *Ward's Automotive Reports*, April 20, 1987, pp. 120 & 125. If those plans remain firm, then Buick City might lose one shift; how permanent this loss would be would depend on whether the market recovers and/or GM decides to close a plant.

possible that none of these four plants would close -- the Leeds (Mo.) plant of the Lansing Product Team might be closed, and, perhaps, one of these plants transferred to that Team. But our general scenarios suggest that more than one GM assembly plant will close, and it would be unduly optimistic to assume that Buick City could not be among them, just as it would be unduly pessimistic to assume that Buick City must be among them.

Genesee County has myriad advantages for an assembly plant, just as it does for other GM facilities.¹⁷ Location in Southeastern Michigan provides wonderful access to suppliers, both in parts and components and in the services required to ensure smooth operation of a plant. But these advantages are generally shared by Willow Run and Lake Orion, and one has to wonder if the disadvantage of having all three plants concentrated in one area, all the same distance from the market, might not outweigh these advantages. The "center" of the vehicle market has shifted West and South, and thus Wentzville has a clear "proximity to market" edge on these three plants; that may or may not balance its "proximity to sources" disadvantage. One is almost forced to conclude that if one of these plants is closed, it is likely to be one of the Michigan plants. It is clear that the Buick City Complex provides some *potential* advantages over either Orion or Willow Run, but it is less clear that these advantages are truly significant, and even less clear that they exist in fact as well as theory. The following section on productivity will examine this issue in more detail.

Perhaps the biggest risk to Buick City Assembly, and to other GM assembly plants, comes at the end of the current vehicle program. For Buick City, this is likely to be in the 1995 time frame, although the decision will probably be made by 1992. At that point, GM will have written off their current investment in the plant and that investment will no longer be a factor protecting the plant. In the light of probable shrinkage in the number of GM assembly facilities, that puts all current plants at some level of risk. The continued sourcing of smaller cars abroad means that there will be fewer replacement programs available than in the past, and if the import and transplant cars continue to erode GM's market share, there will be fewer plants needed within that smaller number of available programs.

It is clear that few, if any plants can consider themselves to be completely safe beyond their current program's life. We doubt that GM will select plants for closing on

¹⁷ A separate section details the advantages -- and the disadvantages -- of a Genesee location.

a lottery basis, but will rather select the plants that provide them with the best hope for competitive cost and quality in production. That means the plants are indeed caught in a competitive situation and subject to whipsawing by the corporation. It is difficult to believe that the circumstances admit any other possibility.

Productivity

Buick City appears to have made progress in improving its productivity, although it is unclear how much progress, or what the effect of the efforts to this point bode for the future. The Engineering Standards for the assembly plant prior to 1985 called for 840 salaried, 1287 indirect hourly, and 3600 direct hourly workers, for a total of 5737¹⁸ employees at standard volume. The Buick City proposal calls for 360 salaried, 576 indirect hourly, and 3216 direct hourly workers. This represents an overall reduction of about 38% in the labor hours required for the vehicle, although not spread equally across the three categories of workers.

Our best estimate is that there are 305 salaried workers at Buick City Assembly, suggesting that the salaried target in the original proposal has been met and in fact exceeded. The current level indicates that the salaried reductions have reached the point that the plant is just over 60% of the way to meeting the additional 25% across the board reduction in salaried workers GM has targeted. It is possible that the plant may lose an additional 10% of its salaried workforce by the end of 3rd Quarter, 1988. Some sources indicate that there are some salaried workers at the plant that are on some type of pre-retirement assignment. If they continue to perform their former tasks, or contribute directly to the operation of the plant, then the official headcounts may indicate more progress in salaried headcount reductions than has actually been attained.

It is more difficult to determine the plant's progress in meeting the hourly reduction targets. This reflects, in part, the difficulty of obtaining a current number for the hourly workforce because the actual headcount is quite variable. There is a further problem in identifying what operations should be included in such a before-after comparison. Stamping is now done adjacent to the line, and those workers are included in the Buick City Assembly totals; before the plant conversion, however, stamping was

¹⁸Correct total would be 5727.

a separate operation with a separate headcount. Finally, the numbers provided us by different sources reflect differences in the time they were collected, in the level of aggregation of the numbers across operations, and the precision of the numbers at the time they were collected.

One estimate of the hourly workforce at Buick City Assembly puts the total headcount at just under 4700. This level of reduction would mean that the plant is only 11.5% of the way to meeting its initial goal. Another estimate provided us with more detail on the headcounts for different operations. If we eliminate all other operations, this estimate suggests that the hourly workforce for assembly is now about 4150, or about 44% of the way towards the target. Finally, a third estimate suggests that proper corrections yield an assembly workforce of about 3700, a level that would represent just over 71% progress toward the target. It seems likely that the middle number is our best estimate of the actual situation, and that implies that another 930 hourly workers will lose their jobs if the original targets are met.

The BOC Group Executive recently described Buick City as one of the "... most efficient assembly plants anywhere in the world."¹⁹ It is difficult to assess the accuracy of this statement, although we are extremely skeptical that Buick City approaches the productivity levels of some of the Japanese plants, both here and in Japan. On the other hand, we have no information to suggest that Buick City Assembly is lower than other GM plants, and are persuaded that it is certainly ahead of many of them. Nevertheless, the productivity levels will have to improve to ensure the plant's survival beyond the current program, and perhaps even to ensure its survival through the current program. Our own belief is that this improvement will have to meet the original targets at least, and perhaps achieve a substantial gain beyond that target, on the order of a 20% further reduction. That would involve another 600-650 jobs.

Outsourcing.

Outsourcing represents a threat to assembly plants, although many popular discussions concentrate on its impacts at parts and component plants, where, to be sure, it is likely to have more impact. We have already discussed the first form of this threat:

¹⁹Mr. Battenberg, quoted in *Automotive News*, May 25, 1987.

the outsourcing of the entire vehicle. The increased reliance of GM on captive imports to service certain vehicle segments, whether Spectrums from Japan or A-bodies from Mexico, makes fewer vehicle programs and/or a reduced build available to the traditional domestic plants. The other form that this threat takes is in the outsourcing of work traditionally performed in the assembly plant to a parts or components plant, whether in GM or outside. The drive of the manufacturers for modular sourcing and manufacturing increases this threat. Modular sourcing refers to the practice of buying built-up sub-assemblies or modules rather than purchasing the discrete parts and components and assembling them in the final assembly plant. The rationales for pursuing this strategy have to do with the costs associated with the work, and, in some cases, the quality of the module.

The most commonly used examples for assembly plants involve the "cushion rooms" (where seats are assembled) and the preparation of the wheel for mounting on the vehicle. In both cases the manufacturers argue that it makes no sense to pay the assembly plant's premium wages for what are essentially low-skilled and labor intensive operations. For Buick City Assembly, these threats are already accomplished: both seats and wheels come into the plant as built-up modules. That means that there are no further job losses expected in these areas. It is entirely possible, however, that other forms of modular sourcing will be issues at Buick City. Once the manufacturers consider an approach like modular sourcing, a wide variety of traditional assembly work is at risk. Door build-up and instrument panel assembly are two other areas that appear to be receiving wide consideration, for example.

Summary.

On balance, Buick City Assembly faces low odds of closing before the expiration of its current vehicle program -- we think that if a plant is closed, it is more likely to be Orion.²⁰ At the same time, the market situation suggests that the level of jobs and income that Buick City supports will fall -- jobs as a result of productivity

²⁰The plant risk scores published by the Auto-In-Michigan Project assign higher risk scores to both Willow Run and Orion than to Buick City. We are less persuaded that Buick City faces lower risk than Willow Run, primarily because we feel the risk score associated with perceived labor climate should be higher at Buick City than at Willow Run, rather than the reverse, as in the AIM assessment.

improvements that are essential to keep the plant open after 1992, and income because of reduced work loads and the lack of overtime characteristic of an assembly plant experiencing flat-out production.

The major problems facing this plant are the poor market for its product and the need to improve productivity. While there are hopeful signs that the market may be improving for the LeSabre, the plant should address the productivity issue directly, for that is where the management and union officials have more control over their own fates.

BOC Engine

The BOC Engine Plant, located in the Buick City Complex, is a major GM facility, employing about 3,300 hourly (1,000 skilled trades and 2,300 production workers) and 700 salaried workers. This is one of the newest of GM's engine plants, and contains three modules of production equipment capable of churning out 4,600 units a day. The plant is over one million square feet in area, and that space is almost totally utilized at the present time. The plant currently produces two V-6 engines, the 3.0 and 3.8 liter, manufactures blocks and heads both for its own use and for the line in Lansing, and machines crankshafts and camshafts. The plant is temporarily shut down as of this writing to implement some changes in both engines; the plant anticipates significant capital investment in the 1988-1989 period to upgrade the engines, and perhaps even more to modernize them later. The product program looks relatively safe through the 1995 period.

The product program and the physical plant are both advantages here, and the specific labor relations climate does not appear to represent a major problem. There are, however, problems reported because of the general Buick City Complex labor situation, to be discussed below.

Market.

This plant has been running flat out for the past few years, and the demand for its engines remains strong. This, however, is a mixed blessing. When plants run three shifts a day for seven days a week, as this one had for the past few years until only recently, both the equipment and the workforce suffer fatigue. That makes it very difficult to implement fundamental improvements in the product quality or the plant's level of productivity. The plant has managed to improve its quality by some measures, though some critical ones -- levels of scrap and rework -- have not improved substantially. It is an open and crucial question whether the quality has improved as rapidly as customer's expectations have. Recent reductions in production level should provide the plant the opportunity to make some of the needed changes.

The Engine Plant is not completely insulated from potentially adverse consequences in the marketplace. As the Japanese move their vehicles upscale, they become serious direct threats to the midsize GM vehicles that consume the vast majority of this plant's output. The major Japanese producers are all bringing major engine programs on stream. If GM decides it needs to speed up its development of new engines to meet this challenge, it is possible that the expected life-cycle of the engines made at BOC Engine will be shortened. While this plant currently looks quite safe, just as with assembly plants, the securing of a replacement product should be a major concern now, however remote 1995 might appear.

Productivity.

As indicated above, the flat-out production pace of this plant until recently has precluded major efforts to improve its fundamental productivity. Now that that pace has slackened a bit, it is likely that major effort will develop in this area. That suggests that this plant may face some of the problems and strains that such efforts have elicited in other plants, as well as some shrinkage in employment as improvements are implemented. It seems to us that this plant represents a critical test for the GM facilities in Genesee. Will management and labor be able to work out agreements that make the plant competitive while protecting the individual worker and insulating the

community from the sudden shocks of a non-orderly workforce reduction? Our sense is that issues of manning levels, work rules, job classifications, and job security are going to be more important at this plant over the next few years than they have been for the past few years.

Targeted salaried reductions could eliminate 15% of those jobs by the end of 3rd Quarter, 1987 and another 10% of the current level by 3rd Quarter 1988.

Outsourcing.

Engine plants are not immune to outsourcing pressures, at least at the plant level. This is especially so if we include work that is shifted from one type of captive plant to another, or resourced.

The engine plant of the future might be quite different from those we find today. Richard Hervey of Sigma Associates has suggested that there are at least two different models for the way engine plants might develop in the next ten to twenty years.²¹ One model calls for large regional engine plants, not unlike the current regional stamping plants. These will be high-volume plants that serve a number of assembly plants, but much of the machining and casting work done currently at facilities like BOC Engine Plant would be performed elsewhere, either at other GM facilities or at outside suppliers. The engine plants, on the other hand, are likely to perform much of the engine "dressing" work currently completed in the vehicle assembly plants. The other model approximates the adjacent, dedicated stamping facilities that serve primarily, and typically exclusively, the neighboring assembly plant. These plants would have smaller volumes, and would also probably lose the many functions that the regional engine plant is likely to shed.

If the regional model develops, it is unlikely that BOC Flint, Lansing BOC and CPC Pontiac would all be retained. They simply would not be needed, especially if an engine plant to serve Missouri, Kansas, and Louisiana and/or Texas were established. If BOC were eliminated, the question would be whether it might become one of the feeder

²¹Hervey, Richard P. "Engine Manufacturing Strategies for the 1990s," *Aim Newsletter*, 1, 3, pp. 4-8, June, 1986. report.

plants, performing the functions shed by the new regional plant. If smaller, adjacent plants become the norm, then BOC engine is well-positioned *as long as Buick City Assembly stays open.*

If BOC Engine Plant becomes a regional plant, its employment would probably remain near its current level, although it would likely have a lower ratio of skilled to unskilled workers.²² If it becomes an adjacent engine plant, its employment level will fall, perhaps by as much as half, and the skill mixture of its workforce probably be lowered. If it becomes a feeder plant to a regional engine plant, employment will fall, but its skill mixture would probably become somewhat richer.

A module for the 3.8 engine was recently placed in Lansing, rather than added at Flint, although much of the machining work for that module has been performed in Flint. This strikes us as reflecting adjustment to capacity needs rather than as indicative of GM opting for an adjacent engine plant strategy.²³ The recent announcement of the removal of the third-shift machining work from BOC and the reduction of about 16% in daily output will reduce hourly employment by about 1,000 workers.²⁴ This is entirely consistent with the general movement of traditional engine plant work to earlier stages of and different locations for production, but may simply reflect further capacity adjustments. This is also true of the conversion of the Lansing line to produce blocks for the "3800" version of the 3.8.²⁵

Summary

This plant certainly looks safe from closing through the mid-1990s, though probably closer to its current 2200 hourly jobs than the 3300 it supported in May. There will, however, undoubtedly be further job reductions, perhaps on the order of 10%-15%, as productivity improves, both through improved utilization of capital equipment and

²²This is contrary to Hervey's predictions; even in a more capital-intensive plant, as the work shifts from machining to assembly, the skill levels will go down.

²³*Ward's Automotive Reports*, July 10, 1986, p. 211.

²⁴*Ward's Automotive Reports*, June 1, 1987, pp. 169 & 174.

²⁵*Ward's Automotive Reports*, June 15, 1987, p. 188.

work reorganization. How smoothly and effectively these changes occur will have major impact on the plant's longer term future, as either falling demand or the general reorganization of engine production puts engine facilities at risk of closing in the mid-1990s.

Buick City Hydra-matic

The Buick City Hydra-matic operations encompass three plants in the middle of the complex, plants #10, #5, and #81, covering just over two million square feet. They employ about 2900 hourly and 300 salaried workers, manufacturing a number of transmission components, including shafts, planetary gear sets, and torque converters. They currently produce all FWD torque converters for GM. Some assembly work is performed on the components of these torque converters. All of these operations are fairly capital intensive, and the plants have about 1300 pieces of machinery and close to a 2:1 ratio of skilled to unskilled production workers.

The capital investment in these plants since about 1980 has been on the order of \$700+ million, and something on the order of \$60 - \$80 million in the past year and one-half. These investments converted the plants from RWD components to FWD components and production of torque converters. The physical plants are in good shape and quite modern -- further capital investment is likely to be in new equipment technologies rather than in replacement of old machines. The plants were part of the Buick Division until about two years ago when they transferred to Hydra-matic. Since Hydra-matic had done their engineering and controlled their scheduling, this has not presented the major problems that this kind of reorganization has at some other facilities.

Both the product and the physical plant represent strong plusses at these facilities. Labor climate reflects more of a question mark, and some of that simply reflects the location of these facilities in Buick City.

Market.

These facilities are more like a vehicle assembly plant in the market threats they face than the typical parts and component plants such as Fisher-Guide operations. Transmissions and their components are "close" to the final vehicle, both because the facilities that manufacture them are not likely to diversify into other products, and because their relatively high cost means that they will be built at levels reflecting the vehicle build for the market. There will be market fluctuations, and these will involve periodic temporary lay-offs. But the more serious problem is erosion in the traditional domestic vehicles' share of the market.

However, these facilities also differ from assembly facilities because there are fewer of them. The loss of 240,000 vehicle sales on a permanent basis would ordinarily mean the loss of an assembly plant; in and of itself, this loss of sales would not mean the loss of a transmission facility. So an issue of over-capacity for the assembly plants will often mean reduction in work at, but not the elimination of transmission facilities.

Even if the excess capacity among the traditional manufacturers reaches the levels we anticipate, this will not necessarily mean the closure of transmission facilities.²⁶ Hydra-matic at Buick City is the exclusive source of torque converters for the automatic transmissions in all of GM's FWD cars. That means that loss of the product at Buick City will only occur if GM decides to stop their own production or create an entire alternative plant to produce it. Either of those possibilities are extremely remote by 1990.

Productivity.

These facilities appear to be making reasonably good progress in improving their product quality and unit productivity. There is some suggestion that this has been costly, however, because of the high levels of capital investment it required. On the

²⁶At least one estimate of excess capacity suggests that the entire domestic industry will lose one transmission plant. [See John O'Donnell report in *AN June*.] We suspect that this will be averaged across existing plants, rather than resulting in a specific closure.

other hand, we are told that the improved quality is the result of making a higher proportion of good product than in the past, and that is key to quality serving as a cost reducer. Many plants are improving their quality of *parts shipped* by more careful inspection of the same good/bad product mix of earlier years, and that increases, rather than decreases costs.

These facilities are likely candidates for a fairly rapid shift in emphasis to organizational and job design strategies for improving both quality and productivity. This partially reflects the extent to which other strategies have already been implemented. How smoothly these changes will proceed is an open question at this point. What develops in this area in the immediate future will have more influence on the chances of these facilities surviving beyond 1990 or even 1995, rather than between now and 1990. We consider it likely that there will be a reduction of 15%-20% of the workforce by about 1990 if these facilities are to remain open throughout the decade of the 1990s. A reduction of the salaried workforce by about 10% is likely by the end of the 3rd Quarter, 1988 to meet the corporate goal.

Outsourcing.

Transmissions currently represent core products that GM has shown little interest in leaving, even though there is some outsourcing, both domestically and offshore. We consider it unlikely that these facilities will close or substantially alter their current product mix due to outsourcing.

Summary.

These Hydra-matic facilities are very unlikely to close by 1990, although they will in all probability experience a decline in jobs on the order of 15%-20%. They are strong facilities, reflecting large capital investments and strong product positions. The next round of changes will involve tensions in the labor relations area, and successful resolution of those challenges would make these facilities strong through the end of the century.

Buick City Axle and Forge #31

This plant currently employs about 1900 hourly (600 skilled) and 100 salaried workers. It reports to the Powertrain Product Team, and currently produces a broad variety of products, some engine related, and some not. The engine related products include water pumps, pistons, front engine covers, and stamped manifolds. The products that are not related to the engine are largely carry-overs from before the plant was assigned to the Powertrain Product Team, and include suspension parts, torque converters, brake drums, brakes, and miscellaneous stampings.

The threats to this plant are serious, and all center around GM's attempts to rationalize its operations and shed excess capacity. Consequently we will not structure this discussion around the plant-specific threats of declining market share, productivity improvements, and outsourcing.

Product diversity can be a source of strength in a manufacturing company, helping it weather the cyclical nature of most markets. Product diversity, however, confers little if any such protection to a manufacturing plant when all the products depend on the same final market -- vehicle sales, in this case. For a manufacturing plant, such diversity can be a major handicap, as it interferes with coordination and coherent effort. Such plants are typically at a disadvantage in corporate-wide comparisons of cost, productivity, and quality, often being derisively labelled "cats and dogs", reflecting the almost random collection of left-over products assigned them. A particular risk for such plants is that they are often seen as in a phasing-out stage, and that is particularly true when the parent company is trying to shed its "cats and dogs."

There certainly are advantages to GM in maintaining this type of plant. Relatively flexible, available capacity is certainly useful to the company, even if it means highly uncertain and variable employment for its workforce. But capacity reduction is the name of the game at GM these days, and in that environment, even if the utility of such capacity is recognized, there will be lots of other plants becoming available to meet that need.

A final problem facing this plant is that it is not an integral part of the

Powertrain Product Team's natural mission. The presence of non-engine related parts, and the high outsourcing potential of many of its engine related parts means that its immediate reporting relationship is to a group that, we suspect, would see little advantage in fighting for its survival.

The information we collected on this plant unfortunately makes it sound like a plant that is drifting towards closure. There has been relatively little capital investment of late and no firm or even likely plans for major investment on the horizon. The plant faces intense competition from outside suppliers, and many of its products are facing stiff competition from offshore, competition that will only increase as Japanese suppliers set up operations in the United States. Even with its current broad range of products the facility is seriously underutilized, and that available space has not, and likely will not be used for either expanded or new production.

This plant is a likely candidate for closure by 1990. It may well close before then. Increased lay-offs due to sourcing shifts to other GM plants or to outside suppliers are the key indicators at this point. Lay-offs due to variations in demand associated with vehicle market fluctuations will undoubtedly occur, but those must be recognized as normal, if undesirable.

Buick City Delco

We could find little information on Plant #3, and were not able to interview anyone directly involved with it. It makes springs, and hence fits into Delco's suspension product lines.²⁷ Its current employment is about 250, and we were unable to obtain a salaried/hourly rate breakout.

The significance of this facility is that it adds a fourth management group to the Buick City Complex. It is unclear to us why it is located in Buick City or that Delco will stay in this product line, so based on the very scanty information we were able to collect, we would see it as a prime candidate for closure, transfer to another management group, or movement to a location outside the complex.

²⁷Delco makes shock absorbers and struts for GM.

Buick City Complex

The Buick City Complex is the direct descendant of the old Buick manufacturing facilities, and represents an attempt to establish a fairly integrated, diversified product, centralized manufacturing facility.

The major problem with the facility seems to be its organizational complexity. Four management groups -- Flint Product Team, BOC Powertrain Product Team, Hydra-matic, and Delco -- have responsibility for different plants in the Complex. This division of management responsibility is the result of the GM reorganization of a few years ago, and reflects the rationalization and concentration of product responsibility in these groups. But the hourly rate workers at the Complex are all represented by UAW Local 599, reflecting the single-management, single-local conditions before the reorganization. That has some particular implications for labor-relations issues at the Complex.

First of all, hourly rate workers have bumping rights throughout the Complex. That means that lay-offs can involve shifting of workers as a higher seniority worker claims a job to avoid lay-off. To the extent that these jobs are becoming more complex and more differentiated from each other, that creates problems beyond simply the administrative costs of shifting personnel. It is also the case that union officials are elected Complex-wide, and that has created a bit of a rotational system for their union assignments, since they prefer assignments to large rather than small facilities because the larger have more voting strength. So the rotation of the workforce creates some problems in the efficiency with which tasks are accomplished, both in corporate and union spheres.

The rotation of the hourly rate workers and their union officials creates an extreme version of what management views as the "overawareness" of what is being done in other facilities that pervades the Genesee facilities. Any arrangements that might be made to reflect the particular circumstances of a plant have to be "brokered" through both a formal (Local 599) and informal (word-of-mouth) process. In management's view, this is virtually impossible to achieve, as everyone becomes concerned with the informal evaluation of the arrangement.

From the union point of view, dealing with four management groups is less than ideal. Since the union is concentrated it can move swiftly when it needs to, but often sees management lagging as each of the four groups tries to meet its own needs and preferences. Programs such as awareness seminars and changes such as the introduction of team leaders can be more readily and uniformly implemented on the union side than on the management side.

Buick City is indeed complex. The management groups face two coordination tasks -- coordinating with each other in Buick City matters, with their own organizational reporting relationships in other matters -- and combining the two has not been smooth. The union local represents about 15,500 hourly rate workers that are spread across a huge area and distributed among plants that face somewhat different issues and threats. Because of these, accountability and responsibility are more vague than they should be, and there is a bit of a "passing-the-buck" aura about the facility.

It is an open question whether these problems are transitional (the structure of the Complex is relatively new), or are endemic to such a large and complex facility. For the facility to be as efficient as it theoretically can be, and thus provide increased survivability compared to the survivability of its constituent plants, they must be resolved. It appears that some accommodation to make the union and management organizational structures is probably quite important. Whether this more effectively would entail developing multiple locals within the union, or the development of a coordinated management structure is unclear. It is, however, clear that this issue will not be an easy one to resolve, and may not be possible to resolve at the Buick City level of either the corporation or the union.

Truck and Bus

The reorganization of GM resulted in three vehicle-producing Groups, two for cars and one for trucks. The car Groups are BOC, formed from the old Buick, Oldsmobile and Cadillac Car Divisions, and CPC, based on the old Chevrolet and Pontiac Car Divisions and GM of Canada. The truck producing Group is GM Truck & Bus, and like BOC (and to a somewhat lesser extent, CPC), this Group has substantial operations and employment in Flint.

The truck market is segmented in a variety of ways, but for our purposes a straight-forward division into three segments is sufficient: light, medium, and heavy trucks. The heavy trucks cover roughly semi-tractors²⁸, and the very largest single-unit rigs. Medium trucks include most delivery vehicles and the largest pick-ups. Light trucks, the segment of most concern to Genesee, includes a wide array of vehicles, ranging from small and full-size pick-ups to vans and sport/utility vehicles like the Blazer and Suburban.

The past decade has seen steady growth in the truck share of the light vehicle market (cars plus light trucks) such that these vehicles now comprise just under 30% of the market.²⁹ That makes them increasingly important in their own right, but also as a source of sales for parts and component facilities. The general explanations for this increased share -- life style, the disappearance of larger, more powerful cars and station wagons to meet special use needs, the expanding role of light delivery vehicles -- suggest that the share will not noticeably recede in the next decade or so.

While the Japanese have made a concerted assault on the small pick-up market over the past few years, the light truck market overall has been subject to lower levels of import penetration, with domestics retaining about 80% share. Light trucks are protected by a 25% tariff rather than a quota, and the increased value of the yen against the dollar since the Fall of 1985 makes this an especially effective protection now. In fact, the Japanese share of small pick-ups dropped from first quarter 1986 to first quarter 1987. That does not mean that the import threat is insignificant in this market, nor that it has been rolled back. But it has been, and currently looks as though it will continue to be less of a factor than it has been in the car market.

GM's share of domestic production for the light truck market is not as strong as its corresponding share in cars, 31.1% for the first five months of 1987. AMC, Ford, and Chrysler are relatively stronger in light trucks than they are in cars. GM markets vehicles in this segment under two nameplates, Chevrolet and GMC, with the GMC versions typically being somewhat more upscale and higher priced.

Truck & Bus has management responsibility for two facilities in Genesee County,

²⁸Trailers for these vehicles are made by many manufacturers, but not by the Big Three. Tractors are made by GM, Ford, and a number of other manufacturers.

²⁹Through the first five months of this year, light truck sales are up 1.3%, while car sales have fallen 10.3%, with traditional cars down 12.3%.

Truck & Bus Assembly and Flint Met Fab (Metal Fabrication). We will consider each facility separately.

Truck and Bus Assembly

Truck & Bus Assembly comprises 3.5 million square feet, two assembly modules (Lines #1 and #2), and employs about 8100 people when fully utilized. It is one of GM's newer truck facilities, and is located at Bristol Road and I-75, at the edge of Flint and adjacent to the Met Fab Plant. It uses engines that are produced at CPC Flint Engine Plant. The future of this plant, based on location alone, should be rosy indeed: it has the potential of anchoring a truck assembly complex that would come close to matching the Buick City Complex.

But the future is unclear at Truck & Bus Assembly, and highly unlikely to be rosy, at least by 1990. Line #1 shut down on May 29, ahead of its scheduled August closing. GM has introduced a new line of full-sized pick-up trucks, the GMT-400, and those will be built at Fort Wayne, Pontiac, Janesville, and Oshawa (Ont.). The old C/K full size that Truck & Bus built is being phased out at the Pontiac plant, not at Flint. Truck & Bus failed to secure the replacement program, and will not even have the extended life of producing the old program through its final termination.

The closure of Line #1 represents the loss of about 3600 jobs in the Genesee community. It is still unclear how much impact this will have on the local unemployment rate or income receipts within the County. Some 500-600 workers may have transfer rights to Pontiac, and some 1100+ higher seniority workers have elected to take some period of unemployment so that less senior workers keep their jobs. The transfer of workers, of course, represents a loss of income to the County, although if they maintain their residence (as most are likely to do), they will be a source of positive commuter income. They will not show up as unemployed, although their jobs will no longer be readily available within or to the Genesee community. The high seniority workers that elect periods of unemployment will receive higher SUB (Supplementary Unemployment Benefits) pay than would the lower seniority workers, so that provides some income-cushion to the County. As of this writing, it is still unclear what the total impact of this closing will be, and it is equally unclear what types of retraining may be

available to those workers that are eventually the permanently laid-off due to this closing.

It seems highly unlikely that any new program product will be assigned that would revive Line #1. GM simply does not require that much capacity. There may be some possibility of the assignment of some other product that is phasing-out, but that is not likely, and would involve less than traditional levels of employment.

For purposes of this discussion we will focus on Line #2, recognizing that Line #1 is, in all likelihood, permanently gone. Some of our comments, however, will reflect experiences and problems that may have been more of an issue for Line #1 than for Line #2; this partly is due to their direct applicability to Line #2, but also to the indirect impacts of the Line #1 experience on Line #2.

Truck & Bus Assembly Line #2 assembles the Suburban, Chevrolet Blazer, and the GMC Blazer-equivalent Jimmy. These fit into the sports/utility segment of the light truck market. Employment has fallen to 4500 with the loss of Line #1. About 4100 are hourly rate and the remaining 400 salary rate, as best we can determine. These vehicles will probably be replaced in the 1990 to 1991 time frame, so the next six to eighteen months are the likely period for determining whether Line #2 will be assigned a replacement program or become a likely candidate for closure. If no replacement program is assigned, the phase-out of the current product would probably keep the plant open through about 1993, though after 1990/91 it would entail substantial reduction in employment levels, probably dropping to one shift.

The loss of Line #1 represents a "crisis" for the plant. A major question is whether this crisis will result in needed improvements in the plant through a heightened awareness of risk, or whether management and workforce will simply become embittered and hostile to any further changes. It is too early to know which of these reactions will occur, but that reaction may be the critical ingredient of the plant's efforts to influence its own fate.

The plant manager is new, and arriving in the circumstances he has certainly does not make the job easier. How rapidly he is able to earn the respect and trust of the workforce and union is a critical uncertainty, and the general upheaval of the closing will make that a difficult task to accomplish. But his best efforts, just like those of the workforce, are subject to numerous constraints at higher levels of management.

A major handicap for the facility is its lack of a clear coat-base coat painting

system. These systems are extremely expensive, and have been or are being installed in GM plants that are assigned new programs. The lack of this system is a serious handicap, and the announcement that one will be installed would constitute an indicator that the plant is likely to remain open beyond its current program.

Perhaps more than any other facility in Genesee, this is the one that suffers from a bad reputation, whether deservedly or not. The workforce is seen as recalcitrant and extremely resistant to any kind of change. It may be that this view is so widely held within GM that the plant will not be able to implement all the steps it would require to make it viable. It may be that this view is so entrenched that this plant will be the next truck assembly facility to be closed no matter what improvements it accomplishes in the quality and cost areas in the near future. Stereotypes are remarkably resistant to change, and information contrary to them can be treated as exceptional long after the weight of the information has shifted. This plant may become a victim of such attitudes no matter how well it performs over the next few years.

Market.

The Suburban and Blazer/Jimmy, as indicated, are in the Sports/Utility segment of the light truck market. They are special purpose vehicles, serving in many respects the functions served by the more powerful station wagons that were available 10 to 15 years ago. The Suburban in particular reflects the utility part of the segment, offering the cargo (and towing) capacity, but not the limited passenger capacity or ride of a small truck. The Blazer provides some of the same utility features, but veers a little closer to the Sports part of the segment. The Suburban dominates its market, competing primarily against the Ford Bronco and AMC Wagoneer. Both Chrysler and Ford, however, are likely to challenge this profitable and expanding segment more seriously in the future. The Blazer faces stiffer competition, primarily from the Ford Bronco and AMC Jeep.

The light truck market has risen just over 1% through May 1987 compared to a year earlier; GM light truck sales, however, have fallen 8.8% for that period, while the combined sales of the products made on Line #2 have fallen even more sharply than that -- 14.9% during that same period. This is not shaping up to be a good sales year for either GM or the products of Line #2.

While these vehicles have been strong performers in their markets, and those markets have been more effectively insulated from offshore competition than have the car markets, they may also be even more vulnerable to downturns in the economy. The Suburban and Blazer are not often the sole vehicle, and rarely the primary vehicle, of their owners. Somewhat compensating for this is the fact that customers for these vehicles tend to be of higher income, and somewhat more recession proof than the typical car buyer. So while a downturn in the economy will hurt sales of these vehicles, it is unclear whether its impact would be more or less than for cars.

Foreseeable circumstances suggest that both these vehicles should remain strong, if somewhat weakening, performers in a strong segment of the market through 1990. Something unforeseen -- another oil shock, the Japanese making a concerted assault on this segment, unusually strong product offerings from Ford and/or Chrysler -- could develop that would drastically reduce demand for these vehicles, but those must be considered very unlikely at this time.

The Blazer/Jimmy is currently assembled in Shreveport as well as Flint, but Flint is the sole source for the Suburban. In all likelihood it will remain the source for the life of the program in view of the costs of moving equipment and tools to another location. It is not impossible, however, that softness in the Blazer/Jimmy line would lead to reduced work in Flint. The Suburban is down 7.2% so far this year, but the Blazer/Jimmy is down a startling 26.6%.

Productivity.

Flint Truck & Bus has been a relatively high cost, and, at best, undistinguished quality facility. Exactly how this circumstance developed will undoubtedly be a topic of debate in Genesee County for some years to come, but it seems to us that Truck & Bus typified the problems of the domestic industry from the immediate post-War period through the 1970s. Truck & Bus's circumstances permitted those problems to persist long after the automotive industry in general began to address them and to implement some necessary changes. Truck & Bus assembled vehicles for a much more protected market, and hence quality and cost were viewed as less competitively significant. Volumes were high, profits good, and the plant just kept rolling along. Whether this was due to "hard-headed" labor or "soft-headed" management is no longer material;

the critical issue is whether or not Truck & Bus can make enough progress in a short time to become a respectable member of its industry once again, and thus a viable candidate for the siting of a replacement program. Some of the cost and quality issues at Truck & Bus are more amenable to improvement than others.

Three issues are problems that the facility will have to overcome, but cannot solve. Line #1's product, the C/K pick-up truck, was an old product, introduced in 1973. Typically, an older product permits a plant to produce high quality vehicles, because sufficient time passes to work out the bugs in the process, whether involving equipment or work organization. This did not happen with the C/K, largely because the design did not remain stable throughout its life, but was subjected to a fairly steady stream of add-on features. Adding features to a stable design in ways that permits high quality, efficient manufacturing is something the traditional industry -- including GM -- has only lately begun to execute well. The add-ons, as traditionally executed, typically decreased quality and increased costs because of their disruption of the assembly process. This was certainly true of the C/K, and, perhaps to a smaller extent, with the Suburban. In any event, the reputation of Truck & Bus Assembly has been partially formed by Line #1, and that reputation will linger even after the closure of the line.

Some of the quality problems that the Suburban experiences are inherent in the design, and the plant can only work around them and try to overcome them. This typically involves extra assembly cost, and still produces a less-than-desirable level of quality.

The second issue facing Line #2 is that it will now have to pick up some of the fixed overhead costs that were attributable to Line #1 in the past. This reflects GM's accounting system, and there is nothing that the plant can do about it. Put simply, on May 30th the unit-cost of assembling Suburbans and Blazers increased, because the number of units over which the overhead could be spread plummeted. The space occupied by Line #1 requires some level of maintenance and service, and continues to involve some level of "operating" expense. These costs are now added to the burden borne by Line #2.³⁰

The third issue is that Line #2 will undoubtedly face some "churning" of its workforce throughout the next year. It just has absorbed workers shifting from Line #1 with high seniority, but as indicated above over 1100 high seniority workers have

³⁰The decreased unit sales of its products, of course, also increases the overhead cost per unit.

accepted lay-offs in place of their lower seniority co-workers. These lay-offs will be filtering back into the plant from time to time. This creates some level of problem for the plant, because making progress on the quality and cost front will require numerous changes, from training in quality-control techniques to possible shifts in job content and procedures. This situation is not impossible, but these kinds of efforts are certainly more easily and rapidly implemented with a stable workforce. It must be mentioned that the average age of the workforce at Line #2 will undoubtedly rise. To the extent that the plant makes increased individual effort a keystone of its attempts to improve productivity, that represents a problem -- younger workers can maintain a fast pace, according to some, much better than older workers.

Truck & Bus Assembly is making a concerted effort to address its quality problems, emphasizing SPC and work with its suppliers. How rapidly and effectively these efforts and programs yield results is critical to the plant's survival. The quality of the vehicles assembled on Line #2 reportedly has improved over the past few years, but that is generally true of the traditional assembly facilities. It must improve its quality *compared to other facilities* if it is to have much of a chance of securing a replacement product, and that decision, it must again be stressed, is likely to be made within the next 18 months, and probably closer to six months.

The plant must also make some impressive and fundamental reductions in its costs of assembling the vehicles. Some of these costs are really beyond the control of personnel at the plant level. But to the extent that assembly costs can be controlled within the plant, progress of a sustainable, fundamental type must be forthcoming. Without such progress, it is difficult to believe that Line #2 will not be selected for phase out as GM reduces its assembly capacity. Substantial workforce reductions, perhaps on the order of 20%, may be required by 1990 if this plant is to remain open. The salaried reduction program will probably eliminate about 10% (roughly 40 jobs) of the staff by the end of 3rd Quarter 1988.

The future of Line #2 is grim indeed, and all but the most optimistic scenarios suggest that this facility will likely close at the end of its current product programs. How likely the plant is to achieve the kinds of quality and cost improvements that will improve its chance for survival is unclear, and, to be frank, it is not clear that there are efforts that can ensure its survival.

This plant is in a state of flux. The workforce has been nearly cut in half by a closing that most did not expect to happen. It is too early to predict whether this will

result in the workforce responding to a crisis by agreeing to try anything to salvage the plant, or if it will lead to a sense of resentment and opposition. If it does lead to the first, it is not clear that GM management will develop the strategies that make the plant competitive on quality and cost in the time available -- there certainly are examples of GM plants where heavy capital investment and/or cooperative labor were insufficient to keep the plants open, as GM made its decisions on a range of business criteria. And those decisions are typically made above, and often against the recommendations of plant-level managers. The kinds of decisions that might be required to save this plant are likely to include some that are outside the authority of the plant manager and his staff, but require approvals at higher levels.

Outsourcing.

Outsourcing does not represent a clear threat to this facility at this time. GM product plans to not appear to involve outsourcing in to serve the segment of the light truck market this plant serves.

Summary.

This plant has been hit hard by the closing of Line #1, announced last Fall for this August, but moved up to the end of May. This closing has and will have major impact on the Genesee economy, although some of the impacts may be less than expected due to transfers and to the actual lay-off patterns. But this closing increases the risks of losing Line #2, and thus the entire facility.

Line #2 faces a negative reputation throughout the Corporation and, to some extent, the community. Whether or not this reputation is deserved and the extent to which it reflects the past are questions that are open to debate, but the fact of the reputation is real. That reputation *may* be sufficient to render moot any of the successes the plant achieves in the areas of cost and quality, successes critical to its survival.

The critical time period for this plant is the next 6 to 18 months when the

decision about a new product will likely be made. Over the next six months, the progress on quality and cost are the critical performance dimensions for the plant. Fundamental changes that yield ready results and promise further improvements are necessary. Whether that is possible is an open question, depending only to some extent on the actions of plant management and workforce.

This facility will probably stay open through 1990, but face a further loss of jobs on the order of 20% or so if it is to have much chance of surviving beyond the mid-1990s.

Flint Met Fab

Flint Met Fab was opened in 1954 to produce body stampings for the 1955 Chevrolet. The facility encompasses about 2 million square feet, and covers just over 85 acres; it is located adjacent to Truck & Bus Assembly on Bristol Road. Current employment is about 3920 hourly (about 29% skilled) and 450 salaried workers. Flint Met Fab still produces a range of stampings (floor pans, e.g.), but most of its output consists of engine cradles and exterior sheet metal. About 60% of its output currently is used in a variety of car programs, including both engine cradles and sheet metal (the C/H-bodies, A-bodies, F-bodies, E/K-bodies, and the new GM10 or W-body). The balance of production, roughly 40% is for trucks, including the steel frame for the M-Van and exterior sheet metal for the GMT400, the new pick-up truck in GM's product line.

Given the mix of vehicles it serves, Met Fab could well have been assigned to any of the three vehicle Groups when GM reorganized. There is some likelihood that it will lose some of the work it currently does for BOC and CPC as capacity becomes available in their own plants; some replacement work has already been resourced to CPC plants. Whether the assignment to Truck & Bus helps the plant secure work or results in lost work is unclear at this time, but the distinct possibility exists that it will lose more work than it gains. The future of this facility may be more closely tied to Truck & Bus Assembly than its present is, as it competes for truck work with other Truck & Bus Met Fab plants. Proximity to a thriving assembly plant can be a major asset to stamping, engine, and component plants. This is not to say that Met Fab will lose all its car work,

because it probably will not. The winning of the engine cradle work for the W-car suggests that it can compete for and secure car business. But it will lose work when capacity or lack of a clear edge gives the nod to the car divisions' own plants.³¹

Met Fab is basically divided into three sections: West, Center, and East. The sections are differentiated by product, customers, and the current situations they face. The West section is the most at risk. This section has lost fender work, received little capital investment, and no new products have been secured for it as older products ended or were resourced. The Center section is modern, and recently received some new Tri-X machines. This section does engine cradles, including the new W-body work, and also does the frame work for the M-van. The East section is probably the most modern, and does the sheet metal for the GMT400 and miscellaneous work for the M-vans. About half of the work in the East Section is new. The West section of the plant is the most at risk, and if it should close, it would increase the burden on the remaining two sections of the plant.

Local 659 of the UAW serves this plant, along with CPC Engine, Flint Manufacturing, and Flint Parts. In contrast to Buick City, however, this situation of one local-multiple managements does not seem to represent a major problem. Whether that is because the facilities served are geographically separated, the lack of bumping across plant lines, or some other reason, we cannot say. But it does strike us as distinctly different from the same formal situation at Buick City.

Market.

Met Fab produces a fairly broad range of stampings for a variety of vehicles. In this sense it is diversified, both in regard to product and to customer base. This protects it from the concentrated market risks that a Buick City or Truck & Bus Assembly might face, but at the same time virtually ensures that the broad market risks we outlined in the prior chapter will have some impact on the plant's production volumes. That may mean that there will be a fair amount of uneven activity at Met Fab over the

³¹Some products that Met Fab loses will not necessarily be lost to Genesee County: the stamping area at Buick City Assembly and Grand Blanc Stamping might well be among the alternative facilities that win some of the work that Met Fab loses.

next few years, as first one product area, and then another experience downturns in demand. It seems likely that this facility will be hit by a series of primarily short-term lay-offs for inventory and production adjustments. While these can create administrative headaches and some discomfort for the workforce, they have much lower negative impact on jobs and income, reducing the levels of hours worked and income, but not directly the numbers of jobs. There will, in all probability, be some level of job loss eventually due to the cumulative impact of these intermittent product-specific downturns. This will occur as the total number of workers required for the plant's average production shrinks with the increasing frequency of these variable reductions in production.

Two specific market issues are relevant to Met Fab. As discussed, Met Fab has secured significant work for GM's new multi-divisional W-car, and the GMT400 pick-up truck that replaces the old C/K truck formerly assembled at Truck & Bus Assembly. If these vehicles are successful in the market, then Met Fab stands to gain work due to their production volumes. This work will not likely add to Met Fab's total employment, but the added jobs will help offset likely job losses due to productivity improvements, outsourcing, and resourcing to other divisions.

Met Fab, along with other stamping plants, like Grand Blanc Stamping, or parts and component plants that do some stamping, such as Flint Manufacturing, face some uncertainty due to possible material changes. The specific risks are that plastics and/or other lighter weight material will continue to displace the stamped steel in the traditional vehicle. This appears to be less of a general threat than it was a few years ago, partly reflecting the realization that steel-plastic comparative manufacturing costs are not as different as they once were thought to be.³² due in part to the continuing low cost of fuel, and within GM, due to cancellation of the GM90 program, the plastic-bodied 1990/1991 replacement for the Firebird/Camaro. It is, however, likely that some of the outsourcing of smaller stampings will involve replacement of steel by lighter weight materials.

³²Smith, Donald. "Challenges to Michigan's Automotive Stamping Industry," *Aim Newsletter*, 1, 3, pp. 1-2, June, 1986.

Productivity.

The quality and productivity levels at Met Fab are not an immediate, crisis-level source of risk to the facility. However, like most of the Corporation's facilities, there is clear room for and need for improvement. Those facilities that do not improve may find their ranking within the corporation seriously lowered.

Met Fab is heavily dependent on its suppliers for its final product quality, and those suppliers are heavily concentrated in the materials area. Steel, in particular, is a major component of the plant's purchases, and while the quality of steel has improved over the past few years, it still has a way to go before it becomes quality competitive with that used by GM's Japanese rivals. The domestic industry lags the Japanese in two quality areas that are critical to Met Fab's use: surface quality (especially critical for exterior sheet metal) and dimensional uniformity (important for all products and their processing). Met Fab has begun to track these dimensions and is working with its suppliers to improve the quality of the steel it requires. Quality is an area where the cooperation between management and union at Met Fab has been fairly impressive and effective.

Productivity improvement at Met Fab has been uneven, if generally there. A major concern for a facility like Met Fab is the Corporate focus on measuring productivity by unit labor efficiency, typically emphasizing variations from standard hours. The capital intensive work at Met Fab would be better reflected by measures tailored to its situation, and that would provide it with better information for targeting improvement strategies. Met Fab has had some significant introduction of new technologies over the past few years, and like many facilities, has had some problems effectively integrating that technology into its operations. This appears to be an area receiving attention and emphasis, and the benefits from those technologies should increase.

It is generally clear that in stamping operations the significant advantages of the Japanese have much more to do with their capital equipment deployment than with their direct levels of labor usage.³³ Domestic stampers need to adjust to lower volume runs than they had become accustomed to in the past, and a critical part of that

³³*ibid.*

adjustment involves increasing their flexibility. That, in turn, requires decreasing the time required for complete die-change (from last good part to first good part.), and that involves changes in the ways that dies are designed, produced, and maintained. This is an issue at Met Fab as well as at Grand Blanc.

Met Fab probably needs to improve its productivity on the order of 15% to 20% by the 1990 frame, and that should realistically be attainable. It will involve some changes in labor deployment and perhaps standards, so how effectively the plant management and union address these issues is quite important. The local contract this year will set the stage for improvements between now and 1990, and those changes, in turn, may be critical for the plant's survival to the end of the century.

The salaried reduction program will probably eliminate about 75 jobs at Met Fab by the end of the 3rd quarter of 1988.

Outsourcing.

Met Fab produces a variety of medium and small stampings that are likely candidates for outsourcing to independent stampers over the next few years. This outsourcing of products will represent immediate losses of work. But it may also provide the opportunity for the facility to concentrate and focus its efforts in ways that improve its attained quality and productivity, and hence increase its odds of survival. The reduction in the types and numbers of products a plant is responsible for often allows the plant to make significant focused improvements in performance because of the increased coherence of its remaining work.

The resourcing of products for cars to BOC and CPC probably represents a larger threat to the number of jobs at Met Fab, and presents the risk of decreased product coherence, since these are likely to be in major product areas.

Summary.

Flint Met Fab appears to be a reasonably secure facility through 1990, albeit with

a likely shrinkage in employment. It also appears to be a likely candidate for staying open through the end of the century, assuming it makes progress on quality and productivity. It has no overwhelming handicaps that suggest that it is at higher risk than other facilities it must compete against for surviving the GM capacity reduction efforts of the next few years.

The future of Met Fab will be much more secure if the W-car and GMT400 programs are major market successes, and the survival of Truck & Bus Assembly would have some impact on Met Fab's security. The facility will lose some jobs to productivity improvement and to both outsourcing and resourcing over the next few years. The hope is that a somewhat smaller, more focused and competitive facility emerges, one that will provide secure jobs.

AC Complex

The AC Complex off Dort Road is second only to the entire Buick City Complex in its total number of Genesee employees: approximately 8,800 hourly rate employees, of whom roughly 1,200 are skilled, and another 1,000 salaried workers. These workers are spread throughout four plants or facilities. The AC Division is one of the oldest of GM's component divisions, originally added in the earliest days of the Corporation through the purchase of the Champion Ignition Company in Flint. AC World Headquarters is still located in Flint, accounting for another 2000 or so salaried workers and encompassing a significant research capacity.

The Fuel Pump facility produces mechanical and electronic fuel pumps and fuel senders, employing roughly 2,000 hourly rate workers. The Plug plant produces spark plugs for gasoline-powered engines and glow plugs for diesel engines, also employing about 2,000 hourly workers. In terms of employment, the Instrumentation facility is the largest, with 4,500 hourly employees. This facility produces parts and components for instrument displays, electronic vehicle controls, and a variety of plastic moldings. The fourth facility, the Filter plant, produces oil, air, and fuel filters. This is by far the smallest of the facilities, employing about 300 hourly rate workers. AC is the sole source for catalytic converters to GM, but this work is performed at plants outside of Genesee County.

Design for these products is done at Corporate, at Division, and, for the Instrumentation plant, at Delco. AC has more direct influence then, on the design of the products it manufactures than most of the plants in Genesee, although it clearly does not have complete control. Still, this represents some potential advantage, since much of the manufacturing cost of a product is dictated by the product design.

AC's status as an old component division confers some advantages and disadvantages. Since Corporate strategy calls for decreasing vertical integration, AC is placed at risk; because it is old, it has picked up a mix of products over the years, including many that appear to be prime candidates for outsourcing. But it also has more experience than most GM component operations in selling its products outside of GM. AC currently has about 400 customers, including most vehicle manufacturers worldwide, adding international experience to its capability to succeed outside of GM.

The AC facilities are old, although not in the same state of disrepair that characterizes Flint Manufacturing, for example. There has been little significant capital investment in products other than spark plugs over the past four or five years, and that suggests risks of discontinuation or replacement. These product lines are subject to somewhat different risks, of course, and shall be addressed in the relevant sections of this analysis.

It seems to us that AC faces significant loss of work to outside suppliers. The product mix of the Complex presents a variety of threats, and it is difficult to predict exactly the ones that will result in losses versus the ones that will be overcome. But it is highly likely that some of these products will be lost. GM has issued a list of parts and components divided into three categories: green represents those parts and components in which GM is competitive; yellow those in which GM is not currently, but might become competitive; and red covers those in which GM is not, and is unlikely to become competitive. We do not know how AC's products were rated, but we strongly suspect that many of them are yellow, and would be surprised if none of them were red.

This presents a serious challenge to AC management. They face the same problems that management elsewhere faces, to improve substantially their product quality and reduce significantly their product cost. We suspect that to accomplish these goals they will need to make some hard choices as to which products they will fight to keep, and which they will let go. We think this is likely because of the level of effort that will be required to meet the quality and productivity challenge. It may be that AC has too many, and too disparate products to try to become competitive in all of them.

To do so might entail too high a risk of losing more products because too many of them just fall short of the required performance. The contrary argument, of course, is that the broad-based efforts involved in attempting to salvage all current products provide more opportunities to identify critical efforts that are transferable across the entire range of products. The management literature is replete with an implicit and explicit debate about the virtues of diversity or focus in manufacturing, and we do not mean to address that debate. Suffice it to say that there are potential benefits and costs in either choice, but it is a real choice at AC, and, in our opinion, more so there than for any other GM facility in Genesee.

Local 651 represents the hourly rated workers throughout the AC Complex. By all reports there is a good management-union relationship here. Again, this does not mean that there is no conflict, nor that serious problems cannot develop. But we do have the sense that there is shared understanding of problems the Complex faces, and respect for areas of disagreement about what needs to be done.

Market.

Even though it is more diversified in its customer base than many internal GM supplier divisions, AC is heavily dependent on GM, and, beyond GM, on other automotive manufacturers. So AC is heavily exposed to the risks of GM's further loss of market share and any downturn in the automotive market.

The diversity of experience and customer base may provide AC with an edge in securing nonGM business compared to other part and component operations. To the extent that such business is automotive, however, it may provide smaller comfort than were it nonautomotive. We frankly are quite unsure about how competitive in cost and quality AC is compared to other producers. As is often the case in a competitive market, potential customers have very different views of the competence of potential suppliers. For AC, that is compounded by the range of products it produces: its competitiveness is in all probability quite variable across its products.

AC is extremely diverse in its products and in its manufacturing capabilities, and there are two product areas where this may stand them in good stead. The market for both electronic components and controls and for products incorporating ceramics are

likely to expand, even in the face of a declining vehicle market or GM production. Recent University of Michigan Delphi projections suggest that the automotive market for electronic controls and components will expand substantially by 1992. AC may well benefit from this shift in on-vehicle electronics usage. However, it must be noted that this is the product area for which product design responsibility lies with Delco, not with AC. Because of its experience with ceramic plug insulators, AC has played a role in GM's efforts to adapt and commercialize ceramics, valued for their heat resistance and thus potential role in increasing engine efficiency. The use of ceramic parts is also expected to expand in the future. Here the downside for AC is that most of the foreseeable uses for ceramics involves engine parts and components not currently manufactured by AC. Nevertheless, these two areas represent possible, though perhaps not probable areas for expansion at AC.

Productivity.

AC's quality reportedly has lagged the general industry upturn, although serious programs to address this issue are now in place. Training in statistical process control (SPC), an important mechanism for monitoring equipment capability, product quality, and identifying sources of problems, has begun for the workforce. It is probably fair to say that AC quality is uneven, rather than bad or good. As is the case with so many producers of multiple products, how good the quality is often depends most on the exact product in question. AC has received a Ford Q-1 Rating for its fuel pumps, for example. This is an important award, and in the view of independent suppliers provides a competitive edge for its winners.

AC has probably maintained about the traditional industry average in productivity increases over the past five or so years; however, those have been better than traditional years for the industry as a whole. There are some promising signs at AC in the past year. In some of its operations it has made truly outstanding improvement, increasing productivity by as much as 25%, and productivity has been targeted for serious efforts throughout the division. Inventories have been substantially reduced during the past year, and further reductions are targeted for this year. The JIT efforts at AC are specifically aimed at avoiding warehouses and supplier stock piles. We think that is critical, since inventory earlier in the system merely reduces some cost, but

certainly does not eliminate sources of cost and quality problems. The Complex has had some difficulty in implementing new production technologies, and this has held them back. These problems seem to be nearing resolution, however, and that should improve productivity.

We expect to see further workforce reductions at AC due to productivity improvement. The Corporate mandated reductions in salaried staff will probably eliminate another 80 jobs in the production facilities, and as many as 150 to 200 from the Headquarters staff by the 3rd Quarter of 1988. It seem quite likely that the hourly workforce will shrink by about 20% by 1990. If that does not occur due to productivity improvement, it will happen through loss of work to competitors. Some of these improvements may be covered by expanded production if AC is successful in securing new products and/or new customers.

Outsourcing.

GM outsourcing is the major risk to AC's current level of activity and employment, as is the case throughout the Corporation's parts and component operations. The loss of significant portions of its GM business could be disastrous at AC because so many of them require high volumes for efficiency. For AC, the fact that GM outsourcing decisions will be made by so many elements of the corporation complicates the issue even further, because the loss of one or two internal customers could render AC noncompetitive for the rest.

The AC Complex in Flint faces a particular problem. As AC reduces capacity on a worldwide basis, and balances its operations across that same world, one has to ask whether the high concentration of product and production in Flint will continue to make sense. This, of course, will be an especially important question in the face of significant loss of domestic GM business, whether due to market decreases or increased outsourcing by AC's current internal customers. It may also be that the division will be pressured to source more work from its offshore operations in the name of immediate cost reductions, rather than invest the time necessary for Flint to become more cost competitive. On the other hand, Flint is the Division's worldwide headquarters, and that should provide some incentive for the Division to invest in making Flint competitive and maintaining a significant manufacturing presence.

Some of AC's products are difficult to consider within the "core" automotive business of GM, especially as that definition continues to contract. Moreover, some of them are unusually exposed to potential outside competitors.

The filter products, in particular, seem to be prime candidates to be produced outside of GM. They are mature, commodity-like products with very low entry-barriers. Not only are there significant outside competitors, but further capacity could readily and rapidly become available should AC abandon these products.

Plugs represent a more complicated case. They certainly do not seem to be "core" products for GM. It is less clear that they are commodity products, although most would view them that way. There do appear to be barriers to entry: making spark-plugs, simple as the end-product may be, is not so simple a task, primarily because of the ceramic content and the precise process control required to obtain the specified resistance. There is excess capacity outside GM, but it is unclear that it is sufficient to meet GM's needs. The replacement of the traditional 8-cylinder engine of a decade ago with 6- and 4-cylinder engines clearly reduces demand for spark plugs; so too does the longer useful life of today's plugs. Both these circumstances have freed up capacity at Allied's Autolite and Champion, for example. There are also more readily available offshore suppliers today than a decade ago.

AC's broad manufacturing capability may provide some insulation from these outsourcing threats. If in fact modular or system sourcing becomes more prevalent in the industry, then AC may be well-placed to serve such a role. The Division seems to have adopted the rhetoric, describing itself as a supplier of fuel, air, exhaust, and instrumentation/display *systems*. It has the research, design, and engineering capacity to move in that direction. If it does, and is successful, then Flint seems a logical place for much of that work simply because of the ready availability of suppliers, including other GM facilities in Genesee. Gaining work as a modular supplier would offset some product-specific business losses. It might also prevent some of those losses, since a marginal part might be outsourced, but such a part within a module be kept in-house for reasons of control and coordination.

Summary.

AC is one of the oldest GM component divisions, and is currently headquartered in Flint. However, AC has already lost business within GM that would have automatically been its a decade ago. It will lose more, but it is difficult to say how concentrated the loss will be within a product area, or, for that matter, how large the losses will be. But there is perhaps more hope at AC than at many other GM captive suppliers that some of these losses can be covered by the development of new customers and products .

Because of this, we see a wider range of possible futures for AC than for most of the other facilities GM currently has in Genesee. It could shrink drastically due to a combination of market, productivity, and outsourcing events, perhaps by as much as 50% by 1990. If that happens, we would expect further reductions through the decade of the '90s, probably culminating in a very small manufacturing presence. On the other hand, it could be successful in fending off or at least minimizing the market and outsourcing threats, through product and customer development, and suffer an employment loss more on the order of 25% by 1990. In either case, the short-term damage to the Genesee economy is serious; in the latter case, the long-term damage is likely to be substantially less.

Fisher Guide Division

The Fisher Guide Division Division is a result of the GM reorganization, and consists of plants that produce a variety of on-vehicle parts and components for final assembly. The Division is very much the remnants of old Fisher Body, and still suffers somewhat from that heritage. Because it is a parts and components division, Fisher Guide is particularly subject to outsourcing pressures. Its plants face three serious competitive challenges. First, they often must compete for a particular product with smaller, more focused independent plants, and these plants frequently pay lower wages than GM. Second, the pressure within GM to become competitive through outsourcing naturally targets this division. Third, many of these plants reflect the old Fisher

Body/GM practices, and these are not conducive to the levels of quality and productivity the plants must attain if they are to survive. The Division has lost two of its nine plants this year: Fort Street in Detroit is closing, and the Elyria (Oh.) plant is being sold to Johnson Controls, presumably to be operated by their Hoover-Universal subsidiary. Most observers feel that this Division is likely to experience further closings or sales because it is the logical place for GM to shed "non-core" work to outside suppliers.

Fisher Guide has two plants in Flint, one located on Coldwater Road, the other in the old Chevrolet complex in central Flint.³⁴ The situations of these two plants are quite different in a number of respects, so we will treat each separately.

Flint Manufacturing

Flint Manufacturing encompasses numerous buildings (seven or eight, depending on the source relied upon) in the old Chevrolet manufacturing complex. Formerly part of the Chevrolet Division, it was transferred to Fisher Guide at the time of the reorganization. It is an old facility, and faces numerous and serious risks. It may, along with the Buick City Axle & Forge plant, represent the remaining Genesee facility most likely to close by 1990.

Flint Manufacturing produces a variety of parts relying on a number of processes. It manufactures exhaust manifolds, gas tanks, valves, SMC (Sheet-molded Compound) engine covers, oil pans, and a variety of large injection molded parts. It has little definable product strength, and its broad process capabilities may be more of a handicap than a strength in today's environment. Its current headcount includes about 3500 hourly workers (roughly 25% skilled) and just over 500 salaried workers. The plant has had three managers in the past five years, and the most recently appointed one is shared with the Fisher Guide Coldwater Road plant.

Local 659 represents the hourly workforce at Flint Manufacturing. This Local also

³⁴Flint Manufacturing, as this facility is known, was transferred to AC in October. As the following discussion indicates, this is surprising. Whether this reflects a move to phase out the plant, to strengthen its management, or to provide AC access to its workforce is unclear, but the situation should be closely watched.

represents the workforce at CPC Engine, Flint Met Fab, and Flint Parts. Local 659 also represents the hourly workers at Flint Tool and Die (Plant 38), the old Chevrolet Die Engineering facility located at Flint Manufacturing, but reporting to BOC through Grand Blanc Stamping.³⁵

Market.

Flint Manufacturing, because of its product variety, faces the general market risks outlined in the prior chapter. If GM sales of domestically produced vehicles fall as much as seem likely, this plant faces a roughly 23% decline in demand for its products by 1990.

Productivity.

This plant has had little in the way of recent capital investments, and this combined with the age and layout of its component buildings makes it a high cost plant to operate. This plant appears to have experienced some productivity improvement over the past few years, but perhaps less than is typically the case.

The workforce is described as ready to listen to suggested changes, but it is not clear that many suggestions have been forthcoming. Nor is it clear that many can be: the new plant manager is shared with another facility, and it is unlikely that this permits him the time required for a thorough-going overhaul at Flint Manufacturing.

We are unsure of how much progress this plant has made in reducing its salaried workforce 25%, as mandated by the Corporation. There could be a reduction of about 15% by the end of the 3rd Quarter of 1987, with a further 10% reduction by the end of 3rd Quarter 1988.

³⁵This facility has about 400 hourly rate and 40 salary rate workers. They are counted in the Flint Manufacturing total because of their location and representation, rather than with Grand Blanc, that organizationally controls them.

Outsourcing.

Flint Manufacturing is subject, we suspect, to extreme risk from the pressure at GM to lower the level of vertical integration. Its product breadth means that it will face continuous pressure from smaller, more focused outside suppliers. All GM parts plants are probably subject to severe damage by "guerrilla raids" from the supplier community, and these seem especially likely at Flint Manufacturing. As different products are lost to outsourcing, the burden on those remaining increases, making them in turn more vulnerable. It is not clear that Flint Manufacturing has a product, product line, or a few core products that might form the basis for it becoming itself more focused and efficient as it sheds "cats and dogs" to the outside supplier community.

Summary.

As GM consolidates its operations at reduced capacity levels, plants like Flint Manufacturing are likely to find their current lines of business that GM elects to maintain consolidated in a smaller number of plants. We see little hope that Flint Manufacturing might serve such a role. The general advantages to a Flint location -- and there certainly are many -- are outweighed here by the specific disadvantages of an old, multi-building complex. We expect to see this plant closed, perhaps surviving through 1990 in an orderly phase-out, with steadily reduced employment as it loses products to outside suppliers and, in some cases, to other GM facilities. All this work will probably not be lost to Genesee County, however, as the Coldwater Road plant strikes us as a strong internal candidate for some of this work.

Coldwater Road

The Fisher Guide facility at Coldwater Road originally was Turnstat, an

independent supplier absorbed by GM in the 1950s, when the GM strategy was keyed around high levels of vertical integration. It is ironic that the reversal of that strategy now probably is the most serious threat to this plant. The plant currently employs about 1400 hourly and 300 salaried workers, down significantly from the mid-seventies, and even from just a few years ago. The plant has just under two million square feet of space, but about 20% of it is currently empty. The plant is adjacent to 475, and has plenty of room to expand, although expansion is not an immediate issue.

Coldwater Road makes a variety of products, including rear-deck and door hinges, window regulators, headliners, steel moldings, and a variety of small stampings. The plant currently serves cars more than trucks, although it is attempting to build up the truck portion of its business. Hinges and window regulators constitute its major products. It has recently won new work in both of these product lines, including the window regulators for Saturn and the L-body Corsica/Beretta, work for the new GM APV Van, and hinges that had been assigned to the soon-to-close Fort Street plant in Detroit. The securing of new business for these products is somewhat surprising, since most analysts view them as easily and reasonably outsourced parts/components. Securing the Saturn business is particularly useful, since the publicity attendant to the Saturn purchasing policies and decisions provides the plant with extremely good "industry press."³⁶ The plant, however, failed to win the window regulator business for the W-body, and in view of the high volumes planned for that program, that is a serious disappointment.

The physical plant at Coldwater Road is good, but the plant has received little capital investment the past few years. The labor-relations climate appears to be good. This was one of two facilities that struck us as being noticeably different -- and we would argue, healthier -- in the labor relations described to us. An indirect indicator of this may be the fact that the issues described to us were specific, clear, and well understood by both sides. There are issues, to be sure, and some of them will be difficult; the utopia of no-conflict, consensual labor relations that some appear to expect has not arrived at Coldwater Road, nor anywhere else of which we are aware. But there was a noticeable lack of generalized and vague resentment, suspicion, and hostility; the disagreements and conflicts that exist were targeted to specifics, and the expectation that they would be worked out was clear.

³⁶Numerous articles have appeared in the trade press and the automotive sections of the Detroit newspapers in the past few months, ranging from Coldwater Road's new business to the labor relations climate at the plant.

Market.

The declining domestic build by GM will hurt demand for this plant's output, and its current lack of success in pursuing business outside GM is disappointing. But we see little in the market that suggests damage particular to Coldwater Road, and market success for the L-body and for Saturn could give it a healthy upturn in demand.

Productivity.

This plant has impressive productivity improvements over the past four to five years, and clear programs for further improvements. We suspect that the major job-losses to productivity improvements have already occurred here. There will be some further losses, but we think that they will be in the more normal range of 10% or so by 1990. That level of job loss can be more readily accommodated without large numbers of involuntary lay-offs, and the possibility that it can be covered by expanded production is quite real at this facility. The corporate-wide salaried reduction program may entail the loss of some 30-40 jobs at Coldwater Road by the end of the 3rd Quarter this year, and another 25 or so by the same period of 1988.

Coldwater Road has attained competitive levels of quality across many, if not all, of its product lines. It compares quite favorably with the internal GM competition.

Outsourcing.

Coldwater Road, as should any part/component plant in GM, must be primarily concerned with this job threat. The variety and number of parts produced make it difficult to believe that some will not be lost to outside suppliers. In contrast to Flint Manufacturing, Coldwater Road does seem to have core products that would provide a basis for focusing its own efforts. Moreover, the plant's record in quality and

productivity over the past five years suggests that it may pick up work from other GM plants that are closing or downsizing, as it already has from Fort Street. Nevertheless, it is possible that this plant will suffer downturns in productivity and increases in cost as it loses pieces of business to outside suppliers.

The available space and the track record of late at Coldwater Road makes it, in our view, a strong candidate to absorb work from Flint Manufacturing, should our somewhat pessimistic expectations for that plant be fulfilled. If that happens, we would expect to see a significant increase in Coldwater Road employment, although from Genesee's point of view this would only involve smaller total losses than if no Flint Manufacturing work were so transferred.

The biggest threat we see to Coldwater Road is that GM will decide to abandon the work it accomplishes in Fisher Guide in one stroke by simply divesting or closing the entire division. The division is not a stellar performer, and continues to present problems to GM. Coldwater Road may be the unfortunate loser if GM decides to solve these problems all at once. If that happens, however, Coldwater Road should be a good candidate for sale rather than closure. Such a sale would probably entail some job loss, and reduction in wages for continuing workers. Somewhat compensatory for the County, however, would be its continued existence as a non-GM manufacturing facility of some size (probably still above 1000 employees). Such a transition, if successful, may represent the best chance for Genesee to prove itself viable to the independent supplier community.

Summary.

This plant should survive through 1990, with some job losses due to productivity and outsourcing, some of which will be compensated by its securing new business. The plant seems to be doing quite well in the areas it has control over, although here, as elsewhere, those efforts can be negated by the dictates of corporate strategy.

Perhaps the most significant threat to Coldwater Road is that GM will decide that rationalization requires leaving the product areas that Coldwater Road concentrates in (window regulators and hinges), or simply to divest the entire division. In the later case we feel Coldwater Road has a better than even chance of being sold rather than closed.

CPC Engine

This engine plant opened in 1954 and has had a variety of products throughout its history. Its durable product is the V-8 engine, but it made some 4-cylinders that were resourced to Mexico in the early seventies, brought back 4-cylinders with the Chevette program, and ceased making them when that program ended last December. In 1982 it began to produce flywheels and water pumps, the beneficiary of resourcing from Saginaw.

The plant currently produces 5.0 and 5.7 liter V-8s, flywheels, and water pumps. The 5.0L serves a number of car programs, notably the B-, D-, and G-bodies, all RWD vehicles that are now extended beyond their normal termination, and hence must be considered tenuous. The 5.0L also is used in the F-body Camaro/Firebird, a relatively small volume program. The 5.7L is primarily used in full-size pick-up trucks and the Y-body Corvette, a stable but very small volume program. These engines are available in both the Suburban and Blazer, small volume programs that, as we saw in the discussion of Truck & Bus Assembly, are having bad market years. The flywheels and pumps are used for engines produced at CPC Engine, and also supplied to Tonawanda (NY) and Pontiac engine plants. The output of the plant is split roughly 50%-50% between cars and trucks. The plant has 28 customers for its products.

The plant has not received much in the way of capital investment since the beginning of the Chevette program, partly reflecting the grim future for V-8s expected during the 1980-1982 period, when such investment might have been normal. It has, however, pursued cost reductions in labor deployment and supplier relations with some success, to be discussed below.

This facility ran full blast from 1982 through 1986, operating three shifts a day, seven days a week. As already discussed, this creates problems due to fatigue of both capital equipment and personnel. The benefits of volume in the cost area are often eroded by the handicaps of pace in maintenance and deployment of labor. The plant is currently operating two shifts, and that level, with moderate overtime for a 5.5 day maximum week (working alternate Saturdays) might be the ideal mix of capital and labor utilization.

Local 659 represents the hourly workforce at CPC Engine, as well as at Flint Met Fab, Flint Manufacturing, and Warehouse. The labor relations climate appears to be reasonably good, with issues again being more targeted and defined than general and vague.

Market.

This plant is more than typically dependent on trucks, with about 50% of its products going to that end-use market, rather than the 30% of the light-vehicle market that trucks constitute. Our general scenarios suggest that this segment is growing, and it appears to be more effectively insulated from offshore competition. That means that the general market declines we expect should be buffered a bit for this facility. The V-8 engines produced here, of course, are unusually exposed to sharp increases in fuel prices or decreases in its availability, but few analysts expect either of those events in the foreseeable future.

The plant's market risks are spread over a variety of vehicles, so we would expect the general car scenarios to hold. There is, however, a qualification that must be kept in mind. All of the car-bodies that use the engines from this plant are small and/or declining in volume. The RWD cars, in particular, may be phased out on short notice at any time, although they are currently scheduled for production, albeit in declining volumes, through 1991. Our scenarios depict market performance, and this plant faces some decline in volumes within Corporate market scenarios that we view as quite optimistic. The effects of our market scenarios and GM production forecast are not necessarily additive: it may be that the market declines as we anticipate, but that sales of these specific vehicles are more resistant, following the more gradual, orderly reduction of GM's production forecast. They are, after all, more like the traditional vehicle, and hence may be less hurt by strengthened offshore competition.

On balance, the lower risks associated with trucks and the somewhat higher risks of planned reductions for these car programs suggest that this plant should be somewhat buffered from the full impacts of our market scenarios. The inevitable end of the G- and B-bodies, however, does emphasize this plant's need to secure replacement work. New engine programs are not likely to become available in the next four or five

years, so the plant must vie for work currently located elsewhere. That will not easily be secured in the context of the overcapacity generated by general market decline, perhaps requiring closure of another engine facility.

Productivity.

The plant's product quality and productivity have been improving, and the lowered volumes should provide the opportunity to accelerate this progress. The plant is engaging in quite a bit of training for its workforce, has reintroduced operator line-stops, and is working extensively with its suppliers.

Operator line-stop provides operators with controls permitting them to stop the line if they are having problems completing the work or detect quality problems in the workpiece. This plant originally introduced this practice on the Chevette line in 1982.³⁷ The importance of the procedure is that it vests control of and responsibility for quality in the worker, and its major benefit, besides improved quality, are cost reductions due to the elimination of repairs later in the process, and the decreased need for final inspectors. The deployment of this practice is not yet facility-wide, but that is the eventual goal.

CPC Engine has reduced its suppliers by about 25% over the past few years, and has certified roughly 40% of its remaining suppliers. Achieving certification requires the supplier to demonstrate high and reliable levels of quality. Once the supplier is certified, in-coming inspection reduces to an auditing procedure, the part moves right to the line, and the operator monitors the quality. This procedure forces quality to improve and reduces a number of costs. Engine plants typically have an even higher percentage of total cost in incoming parts and materials than stamping plants -- often as much as 75%. So work with suppliers is critical, both for the plant's end-product quality and for its own operating cost levels. This directly reflects the suppliers' share of cost and, indirectly, the impacts that supplier performance has on costs internal to the plant, such as scrap, repair, and inspection.

³⁷Most of the publicity about this technique focuses on NUMMI and claims that that is the first introduction of the procedure in GM.

The salaried workforce reduction program is on schedule, and the plant is likely to lose about 40-50 salaried jobs by the end of 3rd Quarter 1988. We also expect to see job losses within the hourly workforce, perhaps as much as 25% by 1990/91, but more likely on the order of 10% to 15%.

Outsourcing.

Outsourcing is a risk for the flywheel and water pumps made at CPC Engine. Both of these products could be readily made outside of, or elsewhere within GM. If they are lost, that would eliminate about 260 hourly and roughly 45 salaried jobs. Fortunately they involve a small portion of both workforces.

A bigger problem for CPC Engine lies with the uncertainty about GM's engine capacity requirements as the market shrinks, facility productivity increases, and the process of manufacturing engines may be reorganized. These general issues have already been discussed in regards to the BOC engine plant located in Buick City, and the reader is referred to that discussion.

CPC Engine is reasonably competitive in terms of cost and quality right now. Like other U.S. facilities, they face some cost disadvantage when compared to Canadian plants such as St. Catharines (Ont.). It is difficult to identify engine facilities that are more or less likely to close if capacity adjustment requires closings, as we expect it will. This is particularly the case with the uncertainty as to exactly how the work in engine plants will be allocated in the future across engine plants and other types of facilities.

Summary.

This appears to be another Genesee plant that is making reasonable progress in the areas under its control, but will suffer losses of employment as it continues to improve its cost-competitiveness. It may also suffer some losses due to market decline and outsourcing of its current work. We think CPC Engine is perhaps a bit better positioned than some other plants to survive, but this is based on little comparative information, and is therefore quite speculative.

Grand Blanc Stamping

Grand Blanc Stamping, or, less colloquially, Grand Blanc Metal Fabrication, is a Fisher Body plant that was assigned to BOC's Detroit Product Team after the reorganization. To provide Cadillac Motor Division more of a separate identity, a number of plants have recently been assigned to it. These plants, including Grand Blanc Stamping, still report to BOC. Originally built in 1942 to produce tanks, it was converted to metal fabrication in 1955 by Fisher Body.

The plant employs about 3,000 hourly rate workers and roughly 450 salaried rate. The hourly workforce is about 43% skilled, an unusually high proportion. This partly reflects the location of the Tooling Center at Grand Blanc, GM's only such facility since 1982. About 400 workers, almost all skilled, are assigned to this unit. The plant also has responsibility for Flint Tool and Die (Plant 38) located physically at Flint Manufacturing.³⁸

The presence of the Tooling Center means that this plant has two lines of business, an unusual circumstance. Its metal fabrication products include large exterior sheet metal parts like quarter panels, doors for both large and small cars, deck lids, and floor pans. Its tooling business includes tools, dies, jigs, and welding and checking fixtures. The plant has 28 customers for its fabrication products, including small amounts for Truck & Bus and Fisher Guide, with major shares of its output going to plants of the Flint Product Team (20%), Lansing Product Team (25%), and the majority to CPC plants. Grand Blanc currently has 28 customers.

The plant is in reasonable shape, although it has a high proportion of older equipment. There has been some recent capital investment, however, in newer production equipment, and the plant should be acquiring some newer transfer presses in the near future.

The plant is well located. We discussed the problem that has faced Flint Met Fab

³⁸Plant 38 employs about 400 hourly and 40 salaried workers. These workers are included in the Flint Manufacturing, not the Grand Blanc, total.

as the vehicle-producing Groups begin to source within their newer organizational identities. This should not be as big a problem for Grand Blanc. While it too might face the possible loss or erosion of its current major business at CPC, there are currently seven BOC facilities within about 75 minutes of Grand Blanc.³⁹ Presumably Grand Blanc would be the beneficiary of BOC's similar resourcing, although Lansing and Kalamazoo also have BOC stamping facilities.

The character of the business has probably changed more for stamping plants than it yet has for other types of automotive plants. The loss of the long product runs and huge volumes that characterized these facilities has required some major adjustments in their operations, and their efforts to improve quality and control costs must address the high portion of their cost and quality-dependence that is vested in their materials suppliers' control rather than their own. They are very dependent on both the cost and quality of their incoming materials, and as these two issues become more and more important, so will the capability of their supply-base and their relationships with that base. They also lack the broad and convenient access to offshore suppliers that some facilities have, largely due to the transportation costs that would entail. They also are unlikely to develop outside business. In those senses, they may have less influence over their own fate than all but parts and component plants that are dependent on red-lined products.

Management-union relationships at Grand Blanc reportedly have been improving, and probably should be considered an asset for the plant at this point. The hourly workforce is represented by Local 1292.

Market.

Grand Blanc faces the same general type of market issue that Met Fab does. It is not particularly dependent on one part or one customer, so its market risks are fairly broadly spread. But the market for its customers' vehicles is, we believe, heading down, and that means lower volumes for Grand Blanc. Here too we expect these impacts to reveal themselves first in sporadic short-term lay-offs to permit production and

³⁹Two of these – Flint Body Assembly [Fisher One] and Fleetwood/Clark Assembly in Detroit are scheduled to close, but that still leaves five.

inventory adjustment for specific models. Eventually this could lead to lower employment, although we believe that Grand Blanc will likely absorb work from reductions or closings at other facilities.

The relationship between Cadillac and Grand Blanc is promising. If the Cadillac nameplate continues its past performance patterns, this link should provide some cushion in an economic downturn. It should not be overemphasized, however, because it is doubtful that producing all the major stampings for Cadillac would constitute more than 25% to 30% of Grand Blanc's current work volume, and most of the work at Detroit-Hamtramck Assembly likely to be sourced from Grand Blanc already is.

Productivity.

Grand Blanc's quality has improved markedly in the past year or two, and now is near the top of GM metal fabrication plants. The plant has begun to work with its suppliers, recognizing its high dependency on them. They have reduced their number of major suppliers, and have experienced a good working relationship with the union in the quality area.

This plant has had a recent surge in productivity as well, reflecting automation and new processing methods. It is moving to implement JIT manufacturing with its suppliers, and already has made significant progress in implementing JIT with regard to its customers. Just as it would like to see a reduced supplier base, the plant would prefer a reduced customer base. While this might entail some risk with increased market concentration, it should provide efficiencies in manufacturing and coordination that would improve productivity.

This plant's experience with advanced manufacturing technologies has not been trouble-free, just as has been the case with other plants in Genesee, and throughout industry, for that matter. We do not have enough information to assess whether these problems reflect inappropriate technology selection, inadequate workforce training, expectations that are unrealistic, or some other factor.

Grand Blanc will lose jobs to productivity improvement between now and 1990, perhaps on the order of 10-15%. The salaried worker reduction program mandated by Corporate Headquarters will probably eliminate 60 or so jobs by the end of this year's

3rd Quarter, with another 30 or 40 eliminated by the same time next year. Some of these job losses will probably be covered by increased work, although this is more likely for hourly than salaried jobs.

Outsourcing.

Grand Blanc has already experienced one of the outsourcing risks for an internal supplier plant. Grand Blanc stamped all the doors for the Chevette and Pontiac T-1000. But these cars have been replaced not by a domestic program, but by GM's sourcing of vehicles for this segment abroad, largely from Isuzu and Suzuki. That of course means that the potential replacement work is lost to Grand Blanc along with the other plants that supplied materials, parts, and components for the Chevette program.

Grand Blanc is vulnerable to some risk of outsourcing of the specific parts it produces, but that risk is concentrated in the smaller stampings it may have. Few, if any, of its large stampings appear to be likely candidates for outsourcing.

The resourcing of products within GM in the face of declining capacity need is likely, in our judgement, to benefit Grand Blanc. This facility appears to have a good reputation, and its recent progress makes it a likely candidate to secure work from reductions and/or closings at other facilities.

Summary.

Grand Blanc Metal Fabrication looks to be a secure facility. It will probably experience some job loss by 1990 through combined productivity improvements and some minimal losses to outsourcing. The bulk of those losses, however, may well be covered by work secured from other facilities. If these facilities are Flint Manufacturing or the stamping operation at Buick City, for example, then Grand Blanc would only replace Genesee work; if they are other facilities, then Grand Blanc may cover its own losses, and, optimistically, cover some from other facilities.

Miscellaneous GM Activity

There is significant GM employment in the Genesee community beyond that found at the twelve facilities we have reviewed in detail. There is a significant warehousing function, that currently employs an estimated 1,000 workers. There are also significant headquarter activities located in Genesee. The Flint Product Team, the Powertrain Product Team, and the Buick Motor Division are located here. These operations employ an estimated 2,500.

We were not able to collect the detailed information on these activities that is available on the twelve production facilities, so our review is more cursory and speculative.

The warehousing functions are at risk, in our view. This is a necessary function, to be sure, but it is not one that needs to be accomplished within GM. That makes it a likely candidate for experiencing employment decline through outsourcing. In all likelihood, there will also be declining employment in warehousing as GM market share declines and as broad productivity improvements are implemented. There is an additional risk for warehousing. This is a support function, and as the levels of activity at other GM facilities falls, so too will the need for warehousing. There is no particular reason to expect this function to be transferred from Genesee if GM maintains it in-house. Genesee makes as much sense as other area locales that share its advantages, such as Pontiac. We do not see the transfer of the warehousing headquarters to Pontiac as especially significant in this regard.

The headquarters functions are likely to remain in Genesee, although their employment levels will erode in response to the announced 25% salaried reduction program. These activities are not likely to leave Genesee because there is no compelling reason for this to happen. To be sure, technical and managerial personnel present some recruitment problems because of the location. But the growth of the Detroit suburbs towards Flint makes this less of a problem, we suspect, than it may have been in the past. Many of these employees, of course, are not residents of Genesee, so the impact on the local economy and community residents of changes in the location of these functions is, in any case, smaller than in other GM activities.

Summary of Facility Reviews

Table Twelve presents a summary of these detailed facility reviews. It provides our ranking of the order of importance for each facility of the three major threats to employment. These are market factors, likely productivity improvements, and possible changes in GM sourcing patterns, whether to outside suppliers or to another GM facility. It also displays our estimates of the likely employment losses for each facility, both if there are no additional plant closings in Genesee before 1990, and if the three plants we think are most likely to close do so by 1990.

Genesee has been hit by the loss of Line #1 at Truck & Bus Assembly, and will lose Fisher #1 by December. If these estimates are reasonable, then another 8,000 jobs may be lost by 1990, reflecting the cumulative impacts of market decline, productivity improvements, and changes in GM sourcing patterns. Moreover, if Genesee experiences further plant closings, that total job loss could grow to about 12,500. Even if we are seriously in error, the job loss is indeed high. If we have overestimated these losses by 100%, Genesee still stands to lose between 4,000 and 6,250 more GM jobs by 1990.

What these job losses mean for the local community and economy are the topics of the next chapter.

TABLE TWELVE

1990 FACILITY PROJECTIONS:
RISK FACTORS AND IMPACTS

FACILITY	Market	RISKS			
		Factor Rank	Productivity	Sourcing	Impact: Job Loss
				No Close	Close
Buick City					
Assembly	2	1	3 ⁴⁰	1,285	1,285
BOC Engine	2 ⁴¹	3 ⁴¹	1 ⁴¹	1,175	1,175
Hydra-Matic	2	1	2	465	465
Axle-Forge	2	3 ⁴²	1	200	2,000
Delco	2	3 ⁴²	1	25	250
Truck & Bus					
Assembly	2	1	3 ⁴³	920	920
Met Fab	3	1	1	588	588

⁴⁰Stamping, plastics, and other work may move out of the complex. Resourcing could be to other area GM plants [Grand Blanc Stamping, for example], GM facilities elsewhere, or independent suppliers.

⁴¹As GM engine capacity requirements decline, there may be further losses as work is rationalized and its patterns of assignment among engine plants changes.

⁴²Productivity losses are likely only if the plant stays open; if the plant closes, GM is unlikely to attempt to improve its fundamental productivity, but will reduce costs through operating it at maximum levels and withholding capital investment.

⁴³This plant must be considered very high risk for closing when production of its current models ends, but this will occur after 1990.

TABLE TWELVE, continued.

1990 FACILITY PROJECTIONS:
RISK FACTORS AND IMPACTS

FACILITY	Market	Factor Rank	RISKS		
			Productivity	Sourcing	Impact: Job Loss
				No Close	Close
AC Complex	3	2	1	2,450	2,450
Fisher-Guide					
Flint Manufacturing	2	3 ⁴²	1	525	3,000 ⁴⁴
Coldwater Road	3	1 ⁴⁵	1	(110) ⁴⁵	(110) ⁴⁵
CPC Engine	3	1	2 ⁴⁶	456	456
Grand Blanc	3	1 ⁴⁷	1 ⁴⁷	0	0
TOTALS				7,979	12,479

⁴⁴We think it is likely that work involving as many as 1,000 jobs may be transferred to Coldwater Road in the event that Flint Manufacturing closes. Hence we estimate 3,000 of the 4,000 jobs at Flint Manufacturing will be lost to the Genesee community through closing of this facility.

⁴⁵Productivity improvements will probably involve the loss of just over 200 jobs at this plant. These losses, however, will be made up, in our view, by this plant securing work from other Fisher-Guide plants that have been or will be closed. We think that this plant is likely to gain just over one hundred jobs from resourcing.

⁴⁶Could lose flywheels and water pumps to sourcing. That would entail the loss of about 300 jobs not included in this estimate.

⁴⁷Productivity losses will be just under 400 jobs, however we think these are likely to be balanced by securing work from other GM facilities.

Chapter Four: The GM Impact Upon the Genesee Labor Economy

I. The Flint Labor Economy: An Historical Overview

The labor economy of the Flint Metropolitan Statistical Area (MSA) or Genesee County¹ underwent a series of important changes during the 1970-1986 period. Several major employment forecasts for this economy that have appeared in the last twelve months have featured the most important of these changes: a lessening commitment by the General Motors Corporation (GM) to Genesee county employment and income. Perhaps for the first time in Flint's economic history, local GM employment declined in a period of positive growth for the U.S. economy. This decline, as well as future employment reductions by the corporation in Genesee may also for the first time be permanent in nature. Other major changes, many of which can be directly connected to declining GM employment, include the following:

- A strong positive trend in the level of unemployed Genesee county residents and the rate of unemployment in Genesee.
- A negative growth rate for manufacturing employment and a falling share of such employment as a proportion of total employment in Genesee.
- A weak though positive growth rate in within county employment in the non-manufacturing sector, as well as an increase in the share of total employment attributable to this sector.

The following discussion of these changes is meant to provide an important backdrop and descriptive setting for subsequent sections detailing the likely impact of future General Motors decisions and fortunes upon employment patterns in Genesee County, and community and worker readjustment to those changes.

Recent Structural Change

The 1980 U.S. Census enumerated 450,449 residents in Genesee County; Genesee then being the fourth largest county in Michigan and the 102nd largest county in the United States in terms of population. At the time of the 1980 Census, 199,191 Genesee

¹All references to the Flint MSA refer solely to Genesee County unless otherwise noted.

residents participated in the civilian labor force. Also in 1980, about 27,200 Genesee residents, on average, 16 years of age and older were reported as unemployed and actively looking for work. In 1982 the Bureau of Labor Statistics of the U.S. Department of Labor (BLS) estimated that the civilian labor force of Genesee County had fallen to 193,843 and that the number of unemployed had increased to 40,856, resulting in an astounding local unemployment rate of 21.1%. This unemployment rate was twice the national average in 1982 and was at least five percentage points higher than that for the State of Michigan as a whole. Perhaps more striking than this single year figure is the fact that the Genesee annual unemployment rate during the 1980-1982 period averaged an almost incredible 18.0%. Genesee County has reached, in past auto recessions, similar levels of unemployment. The duration of high unemployment during the 1980-1982 period, however, exceeded by far that experienced in Genesee in any previous post-1960 recession.²

A consistent way to discuss patterns in the Flint area labor economy is to closely examine patterns in area employment by industry over time. Two sets of historical employment figures for the Flint MSA for the 1970-1986 period are presented in Table Thirteen. Except for the GM annual employment statistics, employment numbers presented in Table Thirteen and subsequent tables in this report were obtained from various data publications of the Bureau of Research and Statistics (BRS) of the Michigan Employment Security Commission (MESC).

The first four rows of Table Thirteen contain current (1986) and historical annual average statistics for the civilian labor force and number of Flint MSA residents employed for the 1970-1986 period.³ Resident employment is defined as the total number of Genesee residents employed on average during the year regardless of the location of employment. In other words, Genesee residents who worked at jobs outside of Genesee County are included in this employment figure. Important comparative trends during the 1980-1986 period include a relatively high rate of growth in the size of the Genesee civilian labor force as compared to the slower annual percentage growth in

²This level of unemployment may help to explain why Genesee's population has been declining at an annual rate of .7 % since 1980, reversing the 1980-1990 annual growth rate of 1.1%. Genesee's population has been estimated to be 443,637 residents in 1986. More detail concerning patterns in net migration in Genesee will be presented in the section below on Migration as a Response.

³These numbers were developed by the BRS using results from the U.S. Census Monthly Household Labor Status survey, benchmarked to decennial census information for the Flint area.

TABLE THIRTEEN

GENESEE LABOR ECONOMY 1970-1986
(Annual Data)

1970-1986

	<u>1986</u>	<u>MEAN</u>	<u>MAX.</u>	<u>MIN.</u>	<u>ANN. % GROWTH</u>	<u>MEAN % SHARE</u>	<u>ANN. % GROWTH IN SHARE</u>
CIV. LABOR FORCE	199.2	186.1	201.9	169.2	1.2%	-	-
RESIDENT EMPLOYMENT	180.4	164.2	180.4	147.2	.7%	-	-
UNEMPLOYMENT	21.5	21.9	40.9	10.7	5.3%	-	-
UNEMP.-RATE	10.6%	11.6%	21.1%	6.1%	4.1%	-	-
<u>WITHIN COUNTY WAGE & SALARY EMPLOYMENT BY INDUSTRY</u>							
Total Employment	173.3	166.1	185.4	149.0	.7%	-	-
Manufacturing	65.4	69.4	81.1	59.1	-.8%	41.8%	-1.6%
Durable	62.5	66.3	78.0	56.3	-.8%	39.9%	-1.5%
GM	62.6	65.7	76.9	55.4	-.6%	39.6%	-1.5%
Non-Durable	3.0	3.1	3.7	2.8	-1.2%	1.9%	-2.0%
Non-Manufacturing	107.8	96.2	107.8	82.8	1.7%	58.2%	1.1%
Construction	4.3	4.6	6.0	3.2	-2.2%	2.8%	-3.0%
Retail Tr.	30.3	26.0	30.3	22.0	1.9%	15.7%	1.2%
Wholesale Tr.	10.8	9.1	10.8	7.6	1.6%	5.5%	.9%
Finance	6.2	5.2	6.2	4.2	2.4%	3.1%	1.6%
Services	29.4	23.8	29.4	16.0	3.5%	14.3%	2.8%
Utilities	4.3	5.3	6.1	4.3	-1.1%	3.2%	-1.9%
Government	22.5	22.7	25.7	19.3	.9%	13.7%	.2%

All employment numbers in thousands. Total means may not equal sum of component means due to rounding.

the number of labor force participants employed.⁴ The difference between these two trends helps to explain the strong annual percentage growth in the number of Genesee residents unemployed and the area unemployment rate. It is also interesting to note that in 1986, Genesee reached a peak resident employment total of 180,400, and almost matched a peak in the size of its civilian labor force. In 1986, the average number of Flint MSA residents who were unemployed was 21,500, far below the 1982 maximum of 40,900.

A second group of period employment statistics presented in Table Thirteen concern employment *within* Genesee County, whether or not such employment was held by Genesee residents. In other words, the statistics included under the heading "Within County Wage & Salary Employment by Industry" refer to jobs located at public and private establishments in Genesee County.⁵ Total employment within Genesee County during 1986 averaged 173,300, or about 5,000 more jobs than the mean for the 1970-1986 period. In contrast to 1986 resident employment, however, within county 1986 employment was far below the historical maximum of 185,400 achieved prior to the 1980-1982 recession.

Total employment within Genesee County grew at an annual rate of .7% during the 1970-1986 period. This overall growth rate, however, masks important differences in employment growth rates by industry within the county. Manufacturing employment actually demonstrated negative growth for the seventeen year period, or -.8% per year, while non-manufacturing employment grew at an impressive 1.7%. The fastest growing sectors within non-manufacturing were services, retail trade and finance, a pattern characteristic of the entire U.S. labor economy during this period. Total manufacturing employment in 1986 in Genesee was 65,400, or almost 4,000 below the period average of 69,400.

The predominance of durable goods manufacturing employment as a proportion of Genesee employment can be clearly seen in Table Thirteen. During the 1970-1986 period, durable goods manufacturing accounted for an average of 40% of total county employment. This percentage share did decline over the period at an annual rate of

⁴These annual percentage growth rates are compound rates, computed using a logarithmic procedure and annual average levels.

⁵Since this includes wage and salary employment only, the self-employed and most types of agricultural are not included in these totals.

1.5% a year. The bulk of durable goods manufacturing employment may have been connected to General Motors since the two largest components of durable goods employment were in the transportation equipment and fabricated metals industries.⁶ Genesee GM employment in 1986 averaged 62,600, or about 3,000 less jobs than the period as a whole. The 1986 GM employment level was 14,000 jobs lower than the period peak, and an important question addressed below concerns the actual meaning of this historical difference in terms of permanent employment. GM employment as a proportion of total county employment also averaged about 40% for the 17 year period, although the percentage share did fall at a 1.5% rate.

The relative importance of durable goods manufacturing employment in the Flint area is assessed in a comparison with the state of Michigan as a whole in Table Fourteen. Durable goods manufacturing employment was responsible for 36% of total county employment in 1986, as compared to the 40% average for the 1970-1986 period, and the 21% share for Michigan in 1986. The size of this employment share is indeed remarkable even in comparison with Michigan, a state known for its heavy dependence upon manufacturing as an employment source. The fall in employment share for durable goods manufacturing employment in the Flint area may be the single most important structural change experienced by the local economy for the period. It is interesting to note that the Flint area in 1986 matched or exceeded Michigan in terms of the share of employment located in the retail and wholesale trade sectors of the economy. The Flint area did not match the overall state employment shares of a number of other industries, implying a pattern of future change in these employment sectors for the region.

An examination of income data supplied by the Bureau of Economic Analysis of the U.S. Department of Commerce underlines an even more striking difference between the Flint area and the State of Michigan comparing their relative dependence upon durable goods manufacturing as a source of earnings. In 1984, the most recent year available, durable goods manufacturing generated 62% of all non-farm earnings in Genesee County. This compares to a 34% share of non-farm earnings for the state. The share of total employment for durable goods manufacturing in Flint was 71% greater than for Michigan as a whole. The durable goods sector was also responsible for a 82% greater share of earnings than was the case for the overall state. Over half of

⁶The only other significant durable goods industry was the machine tool industry which averaged about 1,000 in employment for the period.

TABLE FOURTEEN

GENESEE LABOR ECONOMY

<u>INDUSTRY</u>	1986 Employment By Place of Work		1984 Non-Farm Earnings	
	<u>Genesee</u>	<u>Michigan</u>	<u>Genesee</u>	<u>Michigan</u>
Total Employment/Earnings *	173.3	3,580.8	\$ 4,485.9	\$81,471.2
<u>% Share by Industry</u>				
Manufacturing	37.8%	27.2%	63.8%	40.6%
Durable	36.1%	21.1%	62.3%	33.5%
GM	36.0%	-	52.4%	-
Non-Durable	1.7%	6.1%	1.5%	7.1%
Non-Manufacturing	62.2%	72.8%	36.2%	59.4%
Construction	2.5%	3.4%	2.3%	3.6%
Retail Tr.	17.5%	17.5%	7.2%	8.6%
Wholesale Tr.	6.2%	5.0%	7.8%	5.6%
Finance	3.6%	4.7%	2.3%	4.1%
Services	17.0%	21.7%	13.1%	17.7%
Utilities	2.5%	4.1%	3.3%	5.7%
Government	13.0%	16.4%	9.9%	13.9%

Employment numbers in thousands. Income in millions.

non-farm earnings in the Flint area in 1984, it should be pointed out, can be attributed directly to GM employment.⁷ As several recent studies have noted, perhaps no other regional economy of the size of the Flint MSA in the U.S. is as dependent upon the fortunes of a single industrial sector, not to mention the activities of a single firm within this sector.

Within county employment information for the 1980-1986 period can be split into two smaller consecutive periods to illustrate a remarkable change in Genesee employment patterns in the late 1970's. The same employment information contained in Table Thirteen is presented in Table Fifteen for the 1970-1978 period and in Table Sixteen for the 1979-1986 period. Major trend differences for the two periods are observable through a comparison of mean employment levels and growth rates of within county employment in Tables Fifteen and Sixteen. While annual percentage growth rates for total and manufacturing employment were positive in the 1970-1978 period, this was not the case for 1979-1986. Total employment within Genesee declined at an annual rate of $-.6\%$ during the 1979-1986 period, with a 1.9% annual decrease in manufacturing. While manufacturing's share of total employment was falling in both periods, this pattern accelerated in the latter period resulting in a 6 percentage point decline in the mean employment share for total manufacturing. Employment at GM actually increased at an annual rate of 1.5% during the 1970-1978 period, but declined at a 1.8% rate during the second period. GM employment for the 1979-1986 period averaged 6,000 fewer jobs than in the 1970-1978 period, and the GM employment as a share of total county employment fell by 5 percentage points.

An important comparison between the two periods can be made regarding annual growth in non-manufacturing employment. Overall growth in non-manufacturing was actually higher for the 1970-1978 period (2.4%) than for the 1979-1986 period ($.3\%$). This pattern of slow growth in non-manufacturing employment runs counter to the pattern exhibited in Michigan or the U.S. and carries with serious implications for the replacement of lost manufacturing jobs in the lower earnings service producing sector.

A key factor behind the differences in trends for the two periods is, of course, the failure of Genesee GM employment to achieve or even approach its pre-recession peak during the recovery period after the recent 1980-1982 recession. GM employment in

⁷Presumably the GM relationship was also responsible for a similar proportion of total income in the county when retirement pension monies, supplier and service contracts, taxes, and even GM-related unemployment benefits are fully accounted for.

TABLE FIFTEEN

GENESEE LABOR ECONOMY 1970-1978
(Annual Data)

1970-1978

	<u>MEAN</u>	<u>MAX.</u>	<u>MIN.</u>	<u>ANN. % GROWTH</u>	<u>MEAN % SHARE</u>	<u>ANN. % GROWTH IN SHARE</u>
CIV. LABOR FORCE	176.3	186.1	169.2	1.0%	-	-
RESIDENT EMPLOYMENT	159.9	171.0	147.2	.6%		
UNEMPLOYMENT	16.4	27.8	10.7	4.5%	-	-
UNEMP.-RATE	9.3%	15.9%	6.1%	3.5%	-	-
<u>WITHIN COUNTY WAGE & SALARY EMPLOYMENT BY INDUSTRY</u>						
Total Employment	162.0	182.1	149.0	1.8%	-	-
Manufacturing	72.1	81.1	63.5	1.1%	44.5%	-.7%
Durable	68.9	78.0	60.2	1.2%	42.5%	-.6%
GM	68.2	76.9	68.2	1.5%	42.0%	-.4%
Non-Durable	3.3	3.7	3.0	-1.4%	2.0%	-3.2%
Non-Manufacturing	89.9	101.1	82.8	2.4%	55.5%	.6%
Construction	4.9	6.0	3.8	-3.0%	3.0%	-.5%
Retail Tr.	24.0	27.1	22.0	2.3%	14.8%	.5%
Wholesale Tr.	8.3	10.0	7.6	-1.6%	5.2%	-3.4%
Finance	4.7	5.3	4.2	2.7%	2.9%	.9%
Services	20.7	26.1	16.0	5.7%	12.7%	3.9%
Utilities	5.5	6.1	4.7	.7%	3.4%	-1.1%
Government	21.8	24.4	19.3	2.7%	13.5%	.9%

All employment numbers in thousands.

TABLE SIXTEEN

GENESEE LABOR ECONOMY 1979-1986
(Annual Data)

1979-1986

	<u>MEAN</u>	<u>MAX.</u>	<u>MIN.</u>	<u>ANN. % GROWTH</u>	<u>MEAN % SHARE</u>	<u>ANN. % GROWTH IN SHARE</u>
CIV. LABOR FORCE	197.1	201.9	193.2	.6%	-	-
RESIDENT EMPLOYMENT	169.1	180.4	153.3	1.1%	-	-
UNEMPLOYMENT	28.0	40.9	17.2	-1.3%	-	-
UNEMP.-RATE	14.3	21.1	8.9	-1.9%	-	-
<u>WITHIN COUNTY WAGE & SALARY EMPLOYMENT BY INDUSTRY</u>						
Total Employment	170.7	185.4	159.2	-.6%	-	-
Manufacturing	66.4	79.9	59.1	-1.9%	38.8%	-1.7%
Durable	63.4	76.4	56.3	-1.9%	36.1%	-1.7%
GM	62.9	76.0	55.4	-1.8%	36.8%	-1.7%
Non-Durable	3.0	3.5	2.8	-1.4%	1.7%	-1.2%
Non-Manufacturing	104.3	107.8	100.1	.3%	61.2%	1.1%
Construction	4.2	5.7	3.2	-3.6%	2.4%	-3.4%
Retail Tr.	28.3	30.3	27.2	1.2%	16.6%	1.4%
Wholesale Tr.	10.0	10.8	8.9	2.8%	5.9%	3.0%
Finance	5.8	6.2	5.5	.1%	3.4%	.3%
Services	27.3	29.4	26.1	1.6%	16.0%	1.8%
Utilities	6.0	4.3	5.0	-3.9%	2.9%	-3.7%
Government	23.6	25.7	22.5	-1.8%	13.9%	-1.5%

All employment numbers in thousands.

Genesee has experienced a series of high and low multi-year periods since 1953. In Table Seventeen, at least 3 five-year periods can be identified during which GM employment in Genesee averaged higher than 70,000. An additional 3 five-year periods can be identified during which GM Genesee employment averaged significantly less than 70,000 jobs. Each of these low employment periods included a significant national recession during which auto sales and employment fell significantly throughout the U.S.. Periods II and IV were eventually followed by high-employment periods in which GM county employment reached or closely matched prior peak GM employment.⁸ Period V in Table Seventeen contained a peak GM employment peak of 76,933, a level that has been reached in Genesee in a number of previous years. Period VI contains employment levels for the second half of the 1980-1982 recession and the recovery period for the downturn. The GM employment peak in this period was about 11,000 jobs less than in period V. Current GM employment in Genesee was 62,500 in 1986 and the prospect for future levels, reviewed below, seems to indicate that Flint will never again achieve 70,000 plus levels of the past. For the first time since the Korean War, GM employment in Genesee may decline to average levels at or significantly below 60,000 without the occurrence of a national recession. This certainly constitutes a major structural change in the pattern of long-term GM employment in Genesee county, and a change not heretofore experienced by county residents, workers or officials.

⁸Period II was followed by an apparent 2-year transition interval during 1963-1964 when GM employment averaged about 68,000. 1970 was not reviewed in Table V because of the significance of the strike that year for UAW employment in Flint.

TABLE SEVENTEEN

Historical Pattern of GM
Genesee Employment
(Annual Data)

<u>Period</u>	<u>Years</u>	<u>Mean</u>	<u>Max</u>	<u>Min</u>
I.	1953-1957	73,431	82,186	67,259
II.	1958-1962	61,777	66,546	56,299
II.a.	1963-1964	67,705	68,093	67,317
III.	1965-1969	75,581	76,741	72,649
IV.	1971-1975	67,022	73,946	59,572
V.	1976-1980	71,205	76,933	62,200
VI.	1981-1985	60,724	65,738	55,359

II. Forecasting the Impact

The purpose of this section will be to present and explain a forecast of GM employment changes in Genesee County, and the impact those changes will have on the remainder of the county labor economy. The period of the forecast will be through the fourth quarter of 1990, or approximately two years farther into future than any other existing, comparable forecast for the area.

The impact of future GM employment changes in Genesee upon the total Genesee County labor economy can be separated into three distinct components. The first component is the direct effect in terms of changes in actual GM employment within the county. The second effect, or the indirect impact, concerns the loss of direct supplier employment connected to GM employment within Genesee. Finally, there is the induced effect, or the famous multiplier or "ripple" effect, upon the rest of Genesee employment. In this study, it will be assumed that the indirect effect is practically zero in the near term. This division of the total impact of changed employment by a major source of basic income within a region can be traced to the work of Charles M. Tiebolt who first adapted the Keynesian model of income and employment determination for use in the economic analysis of regional economies.

According to Tiebolt, income received by community residents from the export sales of goods and services produced within the community generates and supports all other income-producing activities within the community. Thus export sales for the community depend directly upon exogenous (outside) demand, while nonexport sales within the community depend indirectly upon the same exogenous demand. The "export-base" theory of community income and employment determination calls for first dividing all income and employment within a community into two classifications: Basic and Non-Basic. Basic employment and income is that community employment and income directly arising from export sales of goods and services produced within the community. Non-Basic employment and income within a community refers to all other employment and income that has not been classified as basic.⁹

⁹Tiebolt, Charles M., The Community Economic Base Study, Supplementary Paper No. 16, New York: Committee for Economic Development, New York, 1961, and "Exports and Regional Economic Growth," Journal of Political Economy, LXIV, April, 1965

Total income in the Tiebolt model can be presented as follows:

$$\text{Total Income} = \text{Export Income} + C_{\text{Local}}(\text{Total Income})$$

Or total community income depends upon the receipt of income from selling community goods and services outside of the region and consumption of goods and services produced within the region, which in turn depends upon total community income. Rearranging the above identity produces the following:

$$\text{Total Income} = \text{Export Income} \times \{1/(1 - C_{\text{Local}})\}$$

Or the greater the level of export income, the larger will be total community income. How much larger depends upon the value of C_{Local} or the proportion (in percentage terms) of local consumption of goods and services that is produced locally. The famous "ripple effect" or regional multiplier is nothing less than $1 + (1 / [1 - C_{\text{Local}}])$. It is standard practice in regional economics to roughly estimate this multiplier by substituting employment for income and estimating the following identity:

$$\text{Multiplier} = \text{Total Employment}/\text{Basic Employment}.$$

This procedure typically overestimates the multiplier for several reasons explained below.

The dominant source of export income and employment in Genesee County is clearly GM sourced employment and income. Very little of GM output (as a proportion) produced within the county is consumed locally. It is also true that Genesee produces relatively little of the goods and services that it consumes. This must be true since GM export employment alone produces 40% (1984) of total county income. The overall multiplier/employment creation effect of GM income and employment must be less than three as a result. This is characteristic of communities whose total employment is dominated by massive durable goods manufacturing.

To estimate the "induced effect" of changes in export employment upon local consumption employment, it is necessary to estimate the value of C_{Local} . Once this is known, it is only necessary to estimate the total "direct effect" of changes in export employment and income to measure the total effect of such change upon county employment and income. In this study, the direct effect will be estimated first; the multiplier will then be applied to this impact to generate the total induced and thus total effect upon the Flint MSA labor economy.

Estimating the Direct Effect

As discussed in preceding sections, GM employment will be reduced in Genesee County as a result of three major influences. First, several major employment locations will be shutdown in 1987 (Line #1 at Flint Truck & Bus, and Fisher One or G-Body stamping). In addition to these closures, several other major facilities are strong candidates for permanent shutdown in the next three years. Second, GM employment will be reduced at other facilities as part of the corporations announced and unannounced policies to improve labor productivity, either through increased automation or out-sourcing of production. Finally, employment losses will be suffered as the natural result of the loss of GM domestic market share. A primary concern for this forecast is to both estimate these employment changes for Genesee County and to relate them to non-GM employment.

Durable Manufacturing Employment as a GM Proxy

The latter concern is addressed by noting the strong relationship between Genesee GM and durable goods manufacturing employment during the 1970-1986 period. In Table Eighteen, results are presented from several "linear regression" analyses between annual Genesee GM employment and durable goods manufacturing employment levels. During this period, for every change of 1,000 jobs in GM employment within the county, durable goods employment changes in the same direction by about 996 jobs. The results of the double-log specification suggest that **during the 1970-1986 period, for every 1% change in GM employment, durable goods manufacturing employment within the county changed by about 1.1%**. Results from these analyses show that GM employment and durable goods employment in Genesee are almost synonymous in terms of employment measurement.

An estimation of the impact of GM employment changes upon non-GM employment changes in Genesee County is best carried out through the use of "quarterly" historical data, where quarterly refers to average levels for consecutive three month intervals during the year. In Table Nineteen, changes in Genesee durable goods manufacturing employment are compared to changes in all other wage & salary employment within the county during the three most recent automotive recessions. For example, just prior to the 1974-1975 recession, pre-recession peak employment in durable goods manufacturing in Genesee was 79,600 in the 4th quarter of 1973. All other wage & salary employment (not including durable goods employment) also peaked in the same quarter at 93,500. Both durable manufacturing and all other employment

TABLE EIGHTEEN

Relation Between GM and Durable
Manufacturing Employment
in Genesee
(Annual Data: 1970-1986)

Variable	GM	log(GM)
Constant	-.328 (-.13)	-.044 (-.27)
DURMAN	.996 (25.2)	-
log(DURMAN)	-	1.008 (26.5)
² R	.995	.979
SE	1.02	.015
F	636.1	704.5
n	17	17

Note: t-statistics in parentheses.

reached trough levels during this recession in the same quarter, 75:1. While durable goods manufacturing employment reached a post-recession peak by the 4th quarter of 1978, however, all other employment reached its post recession peak a full year later.

In regions heavily characterized by automotive employment, the 1979-1982 recession can be split into two separate recessions, occurring separately during the 1979-1980 and 1981-1982 periods. Once again during the 1979-1980 downturn, Genesee durable manufacturing and all other employment reached trough levels in the same quarter, 1980:3. The decline in durable manufacturing employment in this recession from peak to trough almost exactly matched that observed in the 1974-1975 recession, a loss of about 24,100 jobs. The major difference in the latter recession, however, was that the subsequent brief upturn only allowed the recovery of half of this employment loss before the onset of the second parallel recession in 1981-1982.

The sum effect of the 1979-1982 recessions upon durable manufacturing employment in Genesee was the loss of 16,300 jobs between the pre-recession peak of 78:4 and the post-recession peak of 85:4. In contrast, almost 4,000 jobs were gained in the rest of wage and salary employment between the pre- and post-recession peaks. Service-producing employment in Genesee is clearly growing despite the permanent decline in durable manufacturing. What the level of service-producing employment would have been in 1986 if the decline in durable goods manufacturing employment had not occurred is difficult to say and is related to the problem of forecasting the future impact of GM employment changes upon the entire labor economy.

What can be said on the basis of experience learned from the three most recent auto recessions in Genesee is that the level of all other employment in Genesee moves in the same direction as the durable manufacturing employment. About 95% of durable manufacturing employment in Genesee may be comprised by GM employment, with the remainder being directly connected through the first tier-supplier industry. GM employment in Genesee usually exceeds durable manufacturing employment by at least 5,000 on average. It is assumed that the bulk of this non-manufacturing GM employment is located in the wholesale trade sector.¹⁰ Durable manufacturing, then, employment will be used as a proxy for GM employment in Genesee in the estimation of the forecast impact model.

¹⁰GM has maintained up to 10,000 jobs in the parts and distribution warehouse areas of the Genesee GM complex.

TABLE NINETEEN

Genesee
Recession Employment Changes

1974-1975

	Durable Manufacturing		All Other Employment	
	<u>Employment</u>	<u>Quarter</u>	<u>Employment</u>	<u>Quarter</u>
Pre-Peak	79.6	73:4	93.5	73:4
Trough	55.4	75:1	88.3	75:1
Post-Peak	81.6	78:4	110.3	79:4
Peak-to-Trough	-24.2		-5.2	
Peak-to-Peak	+ 2.0		+16.8	

1979-1980

Pre-Peak	81.6	78:4	110.3	79:4
Trough	57.5	80:3	106.1	80:3
Post-Peak	68.1	81:1	109.3	80:4
Peak-to-Trough	-24.1		-4.2	
Peak-to-Peak	-13.5		-1.0	

1981-1982

Pre-Peak	68.1	81:1	109.3	80:4
Trough	53.1	82:4	99.6	83:1
Post-Peak	65.3	85:4	113.0	86:4
Peak-to-Trough	-15.0		-9.1	
Peak-to-Peak	-2.8		+3.7	

Note: All employment levels in thousands.

Future Loss of GM Employment

As noted above, future GM employment loss in Genesee will arise from three major sources: plant shutdowns, productivity and outsourcing cutbacks, and reductions due to loss of market share. The procedure for estimating these job reductions contained the following major components:

- **Currently Announced Plant Shutdowns.** It is estimated that 3,700 jobs were lost in the shutdown of Line 1 at Truck & Bus during the May-June period of 1987. An additional 2,700 jobs are expected to be eliminated by December, 1987 at Fisher 1 (G Body Stamping).
- **Productivity and Outsourcing Cutbacks.** A careful plant-by-plant analysis of such blue and white-collar reductions through 1990:4 was made on the basis of extensive interviews with company, union and industry sources. This methodology is reviewed elsewhere in the report. Cutbacks were estimated only for those plants not scheduled or expected to be shutdown. The total employment loss was spread across the forecast period through the use of a negative growth trend method.
- **Future Expected Plant Shutdowns.** In addition to the two currently announced plant shutdowns, three additional GM Flint facilities are expected to be strong candidates for closure. A second forecast of GM employment reductions through 90:4 was prepared by assuming the shutdown of these plants in 1989. The candidate facilities are BOC Axle-Forge, Flint Manufacturing and Delco Plant #3 at Buick City. Total additional shutdown employment loss from these facilities is expected to total 5,250.
- **Reductions from the Loss of Market Share.** As described in great detail elsewhere in this study, the traditional domestic industry is expected to lose significant market share to imports and transplants during the 1987-1990 sales period. In addition to these losses, GM is expected to lose share among domestics and to increase its number of captive imports. Both of these trends translate into far fewer traditional GM cars built and sold over the forecast period. The lower volume of GM sales is expected to further reduce GM employment in Genesee in a pattern all too familiar to local observers. The actual number of jobs lost as a result of share loss was estimated co-jointly with losses due to plant shutdowns and productivity cuts, and the specific methodology used is explained in greater detail

below.¹¹

Actual GM employment figures for Genesee County are only available on an annual basis. For the purposes of the forecast, it was necessary to substitute Genesee durable manufacturing employment as a proxy for GM employment to derive quarterly levels needed to estimate not only the direct effect of lost GM employment, but also the induced effect upon the remainder of the labor economy.

A forecast of Genesee durable manufacturing employment through 1990:4 was made through the use of the following estimation model:

$$\text{Dur. Manuf. Employ.}_{\text{Genesee}} = F(\text{GMAUTOSALES}, \text{SEASON}, \text{TIME})$$

Or, the level of durable manufacturing employment in Genesee is a direct function of the level of GM auto sales in the same quarter (GMAUTOSALES), seasonal factors (SEASON), and a logarithmic time trend (TIME). Quarterly levels of GM automobile sales during the 1970-1986 period were regressed upon levels of durable manufacturing employment in Genesee.¹² An important conclusion from the analysis was that over the 1970-1986 period for every 10% change in GM auto sales levels, durable manufacturing employment in Genesee changed in the same direction by about 5.8%.

The results of the auto sales estimation were used to forecast market share loss impacts on GM employment in Genesee. Forecast levels for quarterly GM auto sales for the 1987:2 through 1990:4 period, produced by the AUTOFUTURES model at ITI were used for the estimation. It was also important to include the estimated losses arising from productivity cuts and announced and expected plant shutdowns in a systematic way as well. Basically this involved increasing the historical negative growth

¹¹The bulk of these GM employment reductions are thoroughly reviewed in Chapter Three. For the derivation of employment losses due to productivity cuts and plant shutdowns, see in particular Table Twelve. There are some minor differences between figures presented in Tables Twelve and Twenty due to the smoothing process used to incorporate the employment losses into the forecast period.

¹²A "double-log" specification was used. Initial runs demonstrated the presence of positive autocorrelation according to Durbin-Watson test statistics. The final equation was run using the generalized differences method to correct for this problem. "R²" was about .81, and the t-stat for GMAUTOSALES was over 15.0. Additional runs using available data showed that the estimation could be significantly improved by including GM truck sales as an additional explanatory variable. Sales data, however, for this variable were not available at for the entire period at the time of the forecast. Also, the shutdown of Line 1, T & B might lessen this relationship in the future. Regression results are available to the funder upon request.

trend in durable manufacturing employment to a level consistent with the estimated total of employment cutbacks due to productivity for the period.¹³ Plant shutdown losses were also scheduled into the model in the quarters forecast for these closures. Market share employment loss was then estimated only after taking into account the scheduled losses for other factors. a

Table Twenty summarizes two separate forecasts for the loss of GM or durable manufacturing employment over the 1987:2 through 1990:4 period. Forecast I assumed that only the currently announced plant shutdowns will occur, while Forecast II assumes five shutdowns over the same period. In Forecast I, the major source of employment loss is due to productivity and outsourcing cuts (36.2%), with a total loss for the period expected to total 21,719. Forecast II, on the other hand, estimates that the major source of employment loss will be plant shutdowns (44.5%), with a smaller total for productivity cuts as a result.¹⁴ Total employment loss expected in Forecast II is 26,184 through 1990:4. Estimated levels of durable manufacturing employment in Genesee, as well as forecast GM auto sales levels, are presented in Tables Twenty-one and Twenty-two.

The Induced Effect

Given estimates of the loss of durable manufacturing employment as a result of the GM employment changes, it is only necessary to estimate the impact these changes will have upon the remainder of the labor economy to complete the forecast. Two variables will be initially forecast: all other wage and salary employment, besides durable manufacturing, within the economy, and the county unemployment rate, both through 1990:4.

An important assumption used here is that the remainder of wage and salary employment within the economy is entirely non-export in nature, consumption employment. This should be a fairly safe assumption in the case of Genesee. Because of the domination of GM employment as a proportion of total employment within the county, there is very little room for other export related employment in other industries. For example, it is assumed that the bulk of Genesee non-durable manufacturing

¹³This involved, however, a fivefold increase in this trend through 1990:4

¹⁴Employment cuts due to productivity and outsourcing were not expected to occur at plants expected to shutdown. Historically such plants demonstrate either steady or increased employment prior to shutdown as inventory is increased to smooth transition.

TABLE TWENTY

Summary of Durable Manufacturing
 (GM) Employment Loss Through
 1990:4

Forecast I

	<u>Employment</u>	<u>% of Total Loss</u>
Plant Shutdown Loss	6,400	29.5%
Productivity, Outsourcing Loss	7,870	36.2%
Market Share Loss	7,449	34.3%
	<hr/>	<hr/>
Total	21,719	100.0%

Forecast II

Plant Shutdown Loss	11,650	44.5%
Productivity, Outsourcing Loss	7,086	27.1%
Market Share Loss	7,448	28.4%
	<hr/>	<hr/>
Total	26,184	100.0%

employment is committed to producing goods meant to be consumed within the county (i.e. newspaper publishing or food processing). There is a school of regional economics that postulates the existence of certain "minimum requirements" in each industry for a region of a given size, needed to support basic local consumption. Genesee clearly is characterized by employment levels in non-GM sectors that are very close or even below estimates of these minimum levels for a county of its size.¹⁵ This assumption leads to two conclusions. First, all other employment in Genesee should be impacted by the loss of export income and employment as a result of the changes at GM. Second, the induced impact may be quite small since Genesee is already at a minimal level of locally produced consumption, importing, instead, many of the goods and services needed to support consumption.

The estimation of the induced effect will be based upon a statistical examination of the relationship between durable manufacturing employment and all other employment in Genesee over the 1970-1986 period. This relationship has been characterized by a special pattern, perhaps unique to regions dominated by U.S. auto employment.

A Benefits Exhaustion Model of the Induced Effect

The basic assumption underlying the Tiebolt regional impact model is that the loss of export employment within a region will affect other area employment because of the associated loss of export income that was spent on consumption goods and services produced locally. This process is expected to take on a special pattern over time in a community like Genesee because of the replacement income available to laid off auto workers that will mitigate, for a time, the induced impact of the loss of their employment.

Clearly it is true that income lost as a result of the loss of auto employment will be partially replaced by special compensation programs available to auto workers. This private and public compensation complex of programs is certainly complicated and difficult to estimate. An assumption made here is that workers laid off in the future will receive approximately the same benefits they have received in past downturns, with one important exception. Future GM layoffs will be permanent and there is the strong

¹⁵See, for example, Ullman, Edward L., Michael F. Dacey, and Harold Brodsky, The Economic Base of American Cities, Seattle, University of Washington Press, 1971, pp. 16-20., for estimates of these levels for Flint and other areas of the same size.

likelihood that except for the lucky few placed on GIS (Guaranteed Income Stream) or in the JOBS Bank, the majority of workers will exhaust their benefits. When and how many workers will exhaust their benefits over the forecast period are questions that will determine the course and size of the induced effect upon the rest of the labor economy.

The 1970-1986 period included at least three and possibly five auto downturns or parts of downturns. Changes in durable manufacturing employment was "regressed" on all other county wage & salary employment over this period in a special way designed to estimate the total combined impact of GM employment reductions and the various compensation schemes. A model known as the "distributed lag model" was used to measure the spacing and combined impact of downturns in GM employment in Genesee.

The initial version of this model showed that the major impact of the loss of GM employment upon all other employment occurred in the same quarter as the loss of auto jobs. At least three other major impacts, however, were present "downstream" from the initial loss of GM employment. Typically, additional significant losses of other wage and salary employment occurred at points two quarters, five quarters and six quarters after the downturn in GM employment. The explanation of this pattern is clear. A fairly significant reduction occurs in the same quarter as the GM employment reduction for two reasons. GM layoffs may reduce their consumption even just prior to their layoff, and even while they receive compensation since they expect future income to possibly fall as benefits are exhausted. Other employers may also expect a future falloff in consumption and begin to reduce employment in expectation of this eventuality. A large significant impact two quarters later occurs since a proportion of low seniority layoffs would have exhausted their state unemployment benefits (UI) at this point. Other significant impacts are felt over a year after the GM employment reduction occurs, as higher seniority workers exhaust their SUB benefits, or the fund itself is exhausted.

There is reason to believe that this pattern will be repeated for future GM layoffs in Genesee. Interview evidence reviewed below in the section on readjustment indicates that UI and SUB will still be the major source of compensation received by GM layoffs.¹⁶

A special version of the "distributed lag" model was used with 1970-1986

¹⁶The SUB fund itself has already begun to dwindle rapidly.

quarterly data to estimate the impact GM employment loss upon employment loss elsewhere within the county. Generally, the model was of the following form:

All Other Employment = F(DURMANEMP, DURMANEMPLAG, SEASON, TIME)

Or all other wage and salary employment is a function of current and "lagged" or prior levels of durable goods manufacturing employment, (DURMANEMP and DURMANEMPLAG respectively), seasonal factors including such special occurrences such as strikes and plant retrofits, and a time trend. Forecast levels of durable goods manufacturing employment were used to further estimate the levels of all other wage and salary employment in Genesee.¹⁷ Special results from the estimation (using all 68 observations for the 1970:1-1986:4 period.), was that the total impact of each GM job lost on all other employment in Genesee was eventually about .58 of an additional job elsewhere in the county. **Every 10 GM jobs lost permanently will result in the lost of 5.8 jobs elsewhere in the county. Another result was that about 4.6 quarters would pass before the full impact of the induced effect would be felt, or it would take almost five quarters after the loss of each GM job before the full impact of this loss would be felt in the rest of the labor economy.**

The results of the forecast are presented in Tables Twenty-one and Twenty-two. Estimates are presented for GM auto sales, Genesee durable manufacturing and all other wage and salary employment, by quarter through 1990:4. Forecast I refers to the GM loss scenario that includes only the currently announced, and not the expected, plant closings. Forecast II refers to the GM loss scenario that includes all five expected plant shutdowns. An important point to remember is that the full impact upon the Genesee labor economy of GM job losses that are expected through 1990:4 are not expected to occur until early 1992.

Another point is that the loss of all other employment in Genesee is not limited to the decline in actual employment apparent in Tables Twenty-one and Twenty-two. A comparison of the 1987:1 and 1990:4 levels shows the loss of only 6-8,000 current jobs in

¹⁷A special "Koyck transformation" version was used for ease of estimation. This meant the model was autoregressive. The computed h-statistic showed no presence of autocorrelation. The fit of the overall model was very good, with the R² over .98. The t-stat on durable manufacturing employment was about 7.0. Results are available to the funder upon request.

TABLE TWENTY-ONE

FORECAST I

<u>Quarter</u>	<u>Total GM Auto Sales</u>	<u>Durable Manufact. Employment</u>	<u>All Other Employment</u>	<u>Unemp. Rate</u>
(All sales and employment numbers in 1,000's)				
1987: 1	911	58.0*	116.9*	11.0%*
2	1,066	62.1	117.2	10.3
3	906	53.4	116.4	11.5
4	940	51.3	116.4	12.5
1988 1	852	48.0	112.3	16.5
2	997	51.1	113.2	16.1
3	847	47.1	111.7	17.4
4	879	47.6	112.6	17.8
1989 1	793	44.4	109.4	22.4
2	928	47.2	111.0	21.2
3	789	43.5	110.1	22.1
4	819	44.0	111.3	22.1
1990 1	733	40.8	108.4	24.6
2	858	43.3	110.2	24.2
3	729	40.0	109.3	25.7
4	757	40.4	110.7	25.8

* -Actual levels.

TABLE TWENTY-TWO

FORECAST II

<u>Quarter</u>	<u>Total GM Auto Sales</u>	<u>Durable Manufact. Employment</u>	<u>All Other Employment</u>	<u>Unemp. Rate</u>
(All sales and employment numbers in 1,000's)				
1987: 1	911	58.0*	116.9*	11.0%
2	1,066	62.1	117.8	10.2
3	906	53.5	115.5	11.5
4	940	51.5	115.4	12.6
1988 1	852	48.2	111.6	16.7
2	997	51.4	112.8	16.3
3	847	47.4	111.4	17.5
4	879	48.0	112.4	17.7
1989 1	793	44.8	109.4	22.3
2	928	47.7	111.1	20.9
3	789	38.8	109.3	24.0
4	819	39.2	110.0	25.6
1990 1	733	36.3	106.8	33.0
2	858	38.4	108.3	32.0
3	729	35.6	107.4	33.3
4	757	36.0	108.6	33.4

* -Actual levels.

all other sectors. The "apparent loss" understates the potential loss of all other employment. A significant positive growth trend was estimated in all other employment (particularly retail and services employment). With the heavy expected loss of export (GM) employment, however, all other non-export employment will decline despite the positive growth trend in these areas. The real dynamic loss is given by the multiplier itself. **Forecast I calls for the loss of 34,316 current and potential jobs in the Genesee labor economy by early 1992.** Forecast II estimates that a total of 41,370 total jobs will be lost in Genesee as a result of the forecast GM employment changes by 1992:1.) Both of these totals include the original GM employment losses, as well as losses in all other wage and salary employment in Genesee.

The Future Unemployment Rate

A similar distributed lag model was used to forecast levels of the Genesee unemployment rate through 1990:4. A major difference in this model is that estimated total wage and salary employment (presented in Tables Twenty-one and Twenty-two), instead of just durable manufacturing employment, was used as the major explanatory variable, along with seasonal and trend variables.¹⁸ In Forecast I, the unemployment rate in Genesee is expected to reach 12.5% by the end of 1987, but eventually rise to 25.8% by the end of 1990. Forecast II certainly presents grim expectations indeed, as the unemployment rate is estimated to attain a historical county high of 33.4% by the end of 1990.

Summary: The Unemployment Trap

The estimated employment totals and levels of the unemployment rate forecast in Tables Twenty-one and Twenty-two are dark numbers indeed. Forecast I projects a loss of 26,000 current jobs alone to occur by 1990:4. If the unemployment rate forecast for that quarter is applied to the lowest labor force total Genesee demonstrated in the 19801-1982 recession, the resulting estimate of the number of unemployed in the county in 1990:4 would total 49,100.¹⁹

Many observers would predict that Genesee will suffer a lower unemployment rate

¹⁸The overall fit of this autoregressive model was not as good as that for all other employment: an R^2 of about .75 was achieved.

¹⁹The stock of unemployed reached a maximum of 47,000 in Genesee in November, 1982.

because many of the unemployed will migrate/transfer, or will simply drop out of the labor force as discouraged workers. As explained in the following section, the likelihood of a significant GM transfer rate is very low given the overall decline in GM employment throughout the U.S.. Migration rates are likely to be very low as well for reasons also explained below.

Many discouraged job seekers will probably drop out of the active labor force in the years ahead in Genesee. Yet this dismal solution is likely to create the worst of all labor conditions, or the nightmare of every unemployment economist: an unemployment trap. Any significant job creation in the future Genesee labor economy will probably induce a larger number of returning labor-force-dropouts: **maintaining the unemployment rate at high levels for years to come.** In the last recession, the labor force declined very slowly, with strong "additional worker" (spouse market entry) effects present. This pattern will be multiplied in the coming decline, so that the Genesee labor economy resembles that observed in such economies as Puerto Rico or metropolitan areas of developing African nations. The prospects are serious indeed.

III. Worker Readjustment: The Migration Alternative

Overview: The Alternatives

The preceding forecast estimated a severe downward trend in the employment of both production and supervisory labor at GM facilities located in Genesee County. The future magnitude of private and social costs experienced in Genesee as a result of this massive displacement of auto labor will depend upon the degree to which these workers successfully adjust to the loss of their auto employment. The effectiveness of labor market or economic development programs designed to assist these workers will further depend on a correct understanding of the major barriers to readjustment, in the context of Genesee County, faced by displaced auto labor. A particular readjustment alternative, migration for the purpose of increased earnings, is a special issue addressed in this section, especially concerning the effect of such worker migration upon the Genesee labor economy.

The discussion of worker adjustment to layoff in this section relies upon information concerning displaced auto worker outcomes from three primary sources: Results of special surveys performed by the Bureau of Labor Statistics of the U.S. Department of Labor (BLS) concerning displaced workers during the 1979-1985 period; other outcome measures available from displaced worker program intervention efforts for such workers during this period; and available recent research on the subject of unemployment and out-migration at the county level.²⁰

Like any economic actor, the displaced auto worker must make choices subject to constraints. The literature concerning displaced workers has clearly outlined the range

²⁰The following published studies provided the bulk of information concerning displaced auto worker outcomes: McAlinden, Sean P., Economic Losses of Laid-Off Auto Workers, PhD. Dissertation, University of Michigan, Ann Arbor, 1986. Kulik, Jane, D. Alton, and Stromsdorfer, Ernst W., The Downriver Community Conference Economic Readjustment Program: Final Evaluation Report. A Report to the U.S. Department of Labor, Employment and Training Administration. Cambridge, Mass.: Abt Associates., 1984. Gordon, A. Avery F., Paul G. Scharvish, and Barry Bluestone, The Unemployment and Reemployment Experiences of Michigan Auto Workers: Report Submitted to the Office of Automotive Industry Affairs, U.S. Department of Commerce, Chestnut Hill, Mass.: Social Welfare Research Institute, Boston College, 1984. Flaim, Paul O. and Ellen Sehgal. "Displaced workers of 1979-1983: how well have they fared." Monthly Labor Review, June, 1985, pp.3-16. Horvath, Francis W., "The pulse of economic change: displaced workers of 1981-1985," Monthly Labor Review, June, 1987, pp.3-12.

of choices or options available to most laid off industrial workers. Subsequent to layoff, the typical laid off industrial worker can chose one of the " *Four R's*" or the " *S & W*" option, or any feasible combination of these choices. The " *Four R's*," of course, refer to retraining, relocation, immediate reemployment, and retirement. The " *S & W*" option refers to the option of sitting and waiting for either the fifth R of recall to former employment or for an improvement in local labor market conditions that may allow a more effective choice among the first four R's. A worker will sit and wait if personal circumstances/expectations make this choice the best option for him/her for a period of time.

Before examining in detail the information sources just named, however, it should prove useful to review the essential problem of the displaced auto worker and the alternatives open to him or her in the future Genesee labor economy.

The Essential Problem

If the experience of laid off auto workers in the 1979-1984 period can serve as a guide, the majority of to-be-displaced Genesee auto workers will suffer a drastic reduction in personal and household income lasting for some time into the foreseeable future. A summary of study results for two time periods, 1960-1971 and 1979-1984, is presented in Table Twenty-three. Table Twenty-four displays special results from a BLS 1985 study of displaced workers with at least three years of tenure on their old jobs, and Table Twenty-five presents detailed outcomes for a sample of laid off UAW-Ford workers in 1982. Displaced auto worker studies for the 1979-1984 period generally showed that by the second year of layoff, when the bulk of compensation income for most workers had been exhausted, average personal earnings loss ranged between 50-80% of prior auto earnings, with an average household take-home income loss of about 45% from former levels. **Even fully reemployed workers demonstrated an hourly earnings loss ranging between 12-38% of their prior auto wage, or an average loss of about 32%.²¹**

Translated to current annual earnings levels, a laid off blue collar auto worker in Southeast Michigan who had been earning \$28,000, can at best, hope to

²¹The average personal income loss range of 50-80% is derived when unemployed and nonparticipant laid off workers are included in the calculation of earnings loss. The 45% take-home income loss figure takes into account the influences of compensation, taxes, and increased household participation in the labor force. See the note above for the citing of the major information sources for these income loss figures for recent auto layoffs.

TABLE TWENTY-THREE
Displaced Worker
Study Summary on Earnings, Income Loss

	Avg. Weekly Earn. Decline %: Reemployed	Avg. Weekly Earn. Decline %: Tot. Sample	% Loss of Potential Earnings, Income
<u>1960-1971</u>			
Dorsey	.380 *	.549 *	.350 *
Stern	.168 *	.274 *	-
Blau & Kahn	.061 *	.460 *	-
Wilcock & Franke	.172 *	-	-
Folk & Hartman	.067 *	-	-
Jacobson, 1979	-	-	.434 *
Jacobson, 1984	-	-	.122 *
Simple Average (1960-1971)	.170	.428	.300
<u>1979-1984</u>			
AP Parts (McAlinden)	.207 *	.621 *	-
Boston Coll. Study: Worker Income Loss	.520 *	.899 *	.610 *
Household Income Loss			.420
Abt Assoc.	.387 *	.663 *	-
Mathematica	.271 *	-	-
BLS Displaced Survey	.170 *	.540 *	-
<u>Michigan Survey Study:</u>			
At Time of Interview:			
Historical Dollars	.123	.693	-
1/1984 Dollars	.208	.733	-
Regression Coeff.	.276	.746	-
Longitudinal Earnings Loss:			
1st Year	.307	.827	.933
2nd Year	.382	.819	.827
3rd Year	.377	.796	.741
1st Two Years	.343 *	.875 *	.878
1st Three Years	.273	.829	.833
Income Loss:			
1980-1982 Sample:			
1st Year	-	-	.714
2nd Year	-	-	.720
1st Two Years	-	-	.694
1982 Sample	-	-	.708 *
1982 Sample Household Take-Home Income Loss	-	-	.468
Simple Average (1979-1984)	.315	.720	.659

* Figure used in period averaging.

TABLE TWENTY-FOUR
BLS Displaced Worker Survey Outcomes
(Manufacturing)

<u>Sector, Industry</u>	<u>(1) Number of Job Losers</u>	<u>(2) Median Weekly Wage /Lost Job</u>	<u>(3) Number Reemployed 1/84</u>	<u>(4) % Reemployed</u>	<u>(5) Median Reemployment Wage</u>	<u>(6) Median Weekly Wage: Reemployed</u>	<u>(7) Earnings Loss %: Reemployed</u>	<u>(8) Earnings Loss %: Tot. Samp</u>
Manufacturing	2,483	\$309	1,474	.594	\$267	\$320	.165	.513
Durable Goods	1,675	334	980	.585	273	344	.206	.478
Trans. Equip.	354	392	222	.627	319	399	.201	.510
Automotive	224	391	141	.629	337	406	.170	.542

Note: Number of Job losers and reemployed in thousands.
Source: "BLS Reports on Displaced Workers," U.S. Department of Labor, Bureau of Labor Statistics, 1984.

TABLE TWENTY-FIVE
Michigan Study:
1982 Sample: Mean Earnings And Compensation
(Layoff > 52 Weeks)

	Total	Layoff Length: Yr.				To 10	Mean Local Unempl. Rate			Seniority	
		1-2 Yrs.	2-3 Yrs.	3-4 Yrs.	10-15		Over 15	<5 Yrs.	>5 Yrs.		
1) n	237	102	75	60	22	106	105	124	113		
2) Earnings	4,528	2,288	5,123	7,594	7,774	5,399	2,886	5,598	3,354		
3) UI/TRA	2,099	4,084	586	617	2,640	1,863	2,189	1,896	2,323		
4) SUB	104	185	37	50	0	118	116	31	185		
5) Other Compensation	569	689	692	211	446	628	556	587	548		
6) Total Compensation	2,772	4,958	1,315	878	3,086	2,609	2,861	2,514	3,056		
7) Earn. + Total Compensation	7,301	7,246	6,438	8,472	10,860	8,008	5,747	8,112	6,410		
8) Earnings %	.182	.090	.215	.299	.303	.218	.117	.221	.140		
9) Compensation %	.110	.193	.055	.121	.103	.113	.098	.122	.133		
10) Net Loss	17,363	18,138	17,082	16,396	14,283	16,598	18,889	16,757	18,028		
11) % Loss	.708	.717	.729	.665	.576	.678	.769	.680	.737		
12) Respondent's Income	8,061	7,840	7,181	9,536	11,591	8,731	6,581	9,017	7,013		
13) Total Household Income	13,122	12,784	12,920	13,952	18,318	14,669	10,496	14,290	11,841		
14) % Household Loss ((10)/((10) + (13)))	.570	.587	.569	.540	.438	.531	.643	.540	.604		

capture fulltime employment paying between \$12,000-\$15,000 per year in the non-union manufacturing or services employment sectors. This outcome reflects not only a decline in average weekly earnings, but also a decline in in hours worked per week, as well as weeks worked per year. Laid off auto workers fared worse after layoff in the 1979-1982 recession than in any previous recession since the Great Depression. These conclusions are based primarily upon the results of two major studies of economic outcomes of laid off Ford UAW workers residing and working, for the most part, in the southern portion of the Detroit and Washtenaw SMSA's during the 1979-1984 period. A large proportion of these Ford indefinite layoffs were not recalled to Ford employment, and were unemployed in a Michigan labor economy characterized by high auto dependence and chronically high local unemployment. In other words, no other group of recently studied displaced industrial workers are more similar to future Genesee GM layoffs than the Ford workers displaced in Southeast Michigan in the last recession.

The essential problem for displaced worker households then, and the communities in which they reside, centers upon the permanent loss of earnings accompanying displacement from auto employment. Considerable evidence also exists to indicate that the annual loss in earnings estimated above will be even more severe during the first two years of layoff, with the greatest loss in income occurring in the second year after layoff when available compensation has been exhausted. Earnings loss will also vary significantly with the levels of skill and formal education, and age of the laid off worker, as well as the state of the local labor market.

The total magnitude of earnings loss connected to displacement from auto employment can be measured financially in two ways. For example, information collected in interviews during the course of this study indicates that the typical UAW-GM worker in Flint is about 39 years of age with perhaps 10 years of company seniority. Assuming a flat future earnings stream over a remaining working life of 20 years, the total net loss in auto earnings would be amount to \$270,000 ($\$13,500 \times 20$). Discounted to the present at a rate of 6%, this loss would amount to \$154,875 in current dollars. An alternative measurement of this loss involves estimating the amount of investment needed to replace the annual loss of \$13,500. This amount can be totaled at about \$104,000 using the highest calculated rates on returns to human capital (education/training) measured in recent years (about 13%). Even more optimistic rates of return to training still generate impressive required investment amounts. It should

be remembered that these totals do not include additional monetary loss connected to the probable loss of benefits (particularly health), personal and family time and health, assets such as savings, and the possible loss of residential equity.

The essential task facing the displaced auto worker involves the self-selection of the most effective readjustment option or pattern that will reduce the loss connected to displacement to a minimum. If a worker must invest in either retraining or relocation, he/she must chose, with a limited set of resources, that investment or combination of investments that will yield the highest return for the expenditure of precious family resources. There can be no doubt that with the loss of auto employment, the affected white or blue collar GM worker loses a significant amount of earning power. The total community impact of the future employment changes in Genesee County over the next three years is largely comprised of the sum of of these individuals losses of the ability to generate earnings. This loss of ability will depend to a great extent upon the quality of the alternatives available to individual Genesee displaced workers. What follows below is a brief discussion of the first three R's and the option to wait, followed by a detailed analysis of the option to relocate.

Immediate Reemployment

It is somewhat surprising to note that the option to find and accept immediate local reemployment almost always exists for the displaced industrial worker. This option, however, is rarely exercised by the typical displaced UAW worker. In all three major studies of Michigan auto layoffs in the 1979-1984 period, 25% or less of the samples studied included individuals who found and accepted reemployment in the first two years of layoff. Two major and obvious reasons were identified as being responsible for this pattern. First the bulk of income compensation available to auto workers is only made available during the first several years of layoff. Workers who delay cashing in their SUB credits, for example, run the risk of delaying this form of compensation to a period when the SUB fund is exhausted. If a worker accepts reemployment of course, he/she immediately is disqualified for the bulk of state unemployment compensation, and perhaps SUB or Trade Adjustment Assistance payments as well.

The effect of compensation interacts with a second major reason for delayed reentry into the labor force by displaced workers. While employment of some variety can almost always be attained by displaced industrial workers, there is a strong likelihood that this reemployment will be characterized by very low relative levels of compensation and benefits, as well as high marginal costs of working in terms of

working conditions and commuting time. The typical first job taken by laid off auto workers in the 1979-1984 period paid a starting wage of about \$5.00/hr. with almost no additional benefits. While second and third jobs taken typically paid more (an average of about \$7.40/hr.), such higher wage employment usually wasn't attained until the third or fourth year of layoff, and even then only by workers with journeyman skill levels, or higher levels of formal education. A large proportion of available reemployment, in fact, will pay only minimum wage or lower levels of compensation.

An obvious question concerns why workers who earned in excess of \$13.00/hr. at their old auto employment earn significantly less at new reemployment. Once again there are two major reasons underlying this low level of reemployment earnings. First, the local labor market for non-union industrial labor is likely to attain a condition of severe excess supply for some time to come in Southeast Michigan, particularly in Genesee County. Forecast I estimated that some 21,000 current GM workers will be displaced by 1990:4. Perhaps one third of these workers are not current Genesee residents, leaving about 14,000 new displaced GM workers residing in Genesee. While a number of these workers will retire or transfer/migrate outside of the county over the next 3-4 years, another group of GM workers who live in Genesee will be displaced at plants located in Pontiac or Saginaw and return home to look for available work. Added to this group will be about 7,000 workers displaced from their jobs at in the non-GM employment sector of Genesee leaving the final total of new jobless at about 21,000, not counting spouses and other family members reentering the labor force to contribute to depleted household income.²² Also added to this total should be the the 1986 total of 21,000 existing unemployed, as well as perhaps 4-5,000 new labor force entrants graduating or leaving local area secondary and post-secondary education in the next three years.

The situation by 1990:4 could be the following: 47-50,000 unemployed looking for work in a county economy that has seen its total number of jobs reduced from 179,300 in 1987:2 to 151,100 by 1990:4 (Forecast 1). The major source of job openings may only be replacement demand created by current employees quitting, retiring, or leaving due to illness or death. The number of job openings due to replacement demand will never surpass more than 5% of annual total employment, or about 22,000 openings over three years. Many of these openings, it should be added, will be filled by job applicants from

²²A far larger proportion of these workers are expected to be Genesee residents compared to 66% of expected GM layoffs.

outside of Genesee, since the majority of the unemployed will not qualify for many of the occupations involved.

The replacement openings Genesee residents do qualify for will attract a large number of applicants for each job slot: a phenomenon observed frequently in the Detroit SMSA during the 1980-1982 period, resulting on a number of occasions involving better job postings in actual "job riots." Quite naturally, the pressure of so many job seekers applying for each opening will either depress wage rates or prevent them from rising in the future. The openings available to about 80% of displaced Genesee labor will generally be of low quality since displaced auto workers are generally perceived by non-auto employers as relatively skill-less in the context of non-manufacturing employment.

A typical laid off auto worker in the 1979-1984 period was found to have attained about 12.1 years of education, and about 3-4 years of non-auto employment experience outside of the armed services. About 80% of union auto workers can be classified as "unskilled" in terms of performing non-manufacturing employment, and perhaps for the bulk of non-auto manufacturing labor tasks as well. Work experience in the auto industry is very specific to the industry itself, requiring usually more in the way of mental and physical toughness than actual training. While auto manufacturers may have selected workers very carefully for the purpose of performing large-scale industrial labor, since average labor costs run over \$25/hr., there is no reason to believe that these auto-related traits will carry over significantly to work performance required in other occupations, particularly those in the most favorable employment sectors: services and retailing.

A recent major report on labor market outcomes of displaced workers has been published by the U.S. Department of Labor, Bureau of Labor Statistics. This report dealt with workers displaced from jobs on which they had at least three years of tenure during the 1981-1985 period, using information from a large sample of these workers in the January, 1986 Current Population Survey of U.S. households of the U.S. Census. Results from this study show that about 64% of workers displaced from employment in machine operators, assemblers and inspectors occupational category during the 1981-1985 period as employed in January, 1986.²³ Only 37% of those reemployed

²³The BLS estimates that 1.2 million workers in the machine operator, assembly, inspector occupational category with three years of tenure were displaced during the study period in the U.S..

layoffs were reemployed in the same occupational category at the time of the survey. About 18% of the reemployed operators and assemblers were currently working in so-called service occupations. In contrast, the BLS estimated that 69% of displaced workers in the precision production, craft and repair and 72% of displaced workers in the executive, administrative and managerial occupational categories were reemployed at the time of the survey. About 56% of the craft workers were reemployed in their old occupations, and neither of these two skilled groups demonstrated any significant tendency to work in service occupations.²⁴

The current BLS study results matches similar findings of studies of worker outcomes in the last recession. Skilled journeymen usually demonstrated superior reemployment outcomes to other workers, with less time unemployed and higher hourly wages. Such workers also went back to work sooner, presumably because not working cost them more in terms of lost wages. Skilled workers were also more likely to commute longer distances to attain employment, since the higher average wage available to them was more likely to justify the cost of commuting. The BLS did estimate that as of January, 1986, 70% of workers laid off in the American auto industry who had three years of tenure and who did not return to the auto industry were reemployed at the time of the survey.²⁵ The bulk of these workers were probably laid off three to four years prior to the survey. It is expected that a large majority of male auto workers under age 55 will eventually find reemployment regardless of the level of reemployment wage. The exhaustion of compensation and personal savings will force these workers to accept almost any available employment, especially if they are home owners with children as part of the household.

In conclusion, major barriers to immediate reemployment faced by laid off auto workers include their large numbers relative to available job openings, raising the cost of job search and lowering obtainable wage levels, and their lack of qualifications for openings that do exist. One popular solution to such barriers is the option of retraining, or qualifying displaced workers for employment outside of manufacturing or entry-level service sector employment.

²⁴See Table 12 in Horvath, p.12.

²⁵The auto workers included those laid off in all occupations in all areas of the country.

Retraining

Programs designed to retrain displaced auto workers for new occupations and employment did not appear to enjoy much success in the last recession. The overall participation rate of eligible workers for Trade Adjustment Assistance training funds in the 1979-1983 period was about 2%. The most successful of the special readjustment assistance intervention programs was the Downriver Community Conference Economic Readjustment Program, located in the southern portion of the Detroit SMSA in the 1979-1982 period. Evaluators connected to that project reported a notable lack of success in terms of placement, and then participation, once unemployment rates in the program area rose above the 12% level in 1980 (eventually reaching over 17% for the whole area).

Conclusions regarding the lack of success involving displaced worker retraining centered on the following major areas:

- It proved very difficult to determine what occupations to train workers for. Current, regionally oriented information concerning favorable occupations was difficult to acquire and a wide variety of occupations needed to be identified because of the large numbers of potential participants. Program administrators were slow to realize that perhaps there were actually "no local jobs to train for." Displaced workers were usually located in communities heavily committed to declining manufacturing employment. Non-manufacturing employment growth was usually located at quite a distance from these areas.
- Workers found it very difficult to commit the time and other resources needed to enter and complete training. The average displaced auto worker was in his/her mid-thirties with usually significant family responsibilities and few liquid assets. Older workers, quite rationally, could not see the future payoff of an expensive investment in retraining over the remainder of their working life. Workers were ill-prepared in terms of basic skills to successfully complete many specific vocational programs.
- Vocational education institutions remained committed to providing programs that were poorly designed for the time and financial constraints faced by displaced workers. Finally, income compensation programs usually enforced regulations that were at odds with worker participation in full-time retraining.

Recently a meeting was held at the UAW-GM Human Resource Center in Auburn Hills between Center staff responsible for administering the current Placement and

Training Program for Dislocated Workers and vocational program administrators of the majority of the 29 community colleges in the State of Michigan. The subject of the meeting was current Center programming directed towards current planned GM workers involved in plant shutdowns, as well as other future GM layoffs in Michigan. The UAW-GM Resource Center may represent the single most important source of retraining and readjustment counseling assistance available to future GM layoffs in Genesee. At this time, the current and poorly funded federal Trade Readjustment Assistance Program is in clear danger of being eliminated. The federal Job Training Partnership Program housed at the U.S. Department of Labor also suffers from low funding and doubtful status. The UAW-GM Center, on the other hand, receives contract determined revenues in the amount of \$300 million per year, a large proportion of which are earmarked for displaced worker assistance.

Center officials have recently announced a very active pre-layoff and post-layoff set of programs for the current UAW-GM workers affected by the recent and near-term plant shutdowns. The bulk of the announced programming, however, consists of pre- and post-layoff counseling, as well as local job placement assistance. Such counseling, unfortunately, cannot affect some of the more important barriers to worker readjustment after layoff. Counseling activities will be carried out at the local level by peer counselors apparently selected from affected plants. While the use of such individuals will undoubtedly improve the chance for rapport between affected workers and Center staff, there remains a strong concern regarding both the experiences and credentials of these individuals in these activities.²⁶

The most significant actual retraining benefit available to displaced GM workers may be financial assistance from the UAW-GM Center's Tuition Assistance Program. Workers at fairly low levels of seniority are eligible for up to \$5,000 per year in tuition grants to accredited vocational or educational programs. Center officials, however, are aware of the basic limitations of this program for displaced workers. Those experienced in the field of displaced programming know that the major cost of retraining is not tuition but foregone income or living expenses. Unless workers, who are generally in their thirties with families, receive additional income assistance to allow them to attend training, they will not make use of the tuition grants in large numbers.

²⁶The same might be said of Center administration. Those effectively in charge of programming for displaced workers seemed talented but very inexperienced in this area. The Center possesses a crucial need for detailed labor market analysis -- what training and occupations should be targeted for workers in special areas -- and this activity has been placed on the Center agenda . . . yet no evidence has been presented that such analysis has been performed.

This helps to explain why Center officials are stressing the use of retraining programs of short duration (less than 90 days), that can be more effectively matched with rapidly dwindling income maintenance funding. Two major problems arise with the use of this strategy. First, except for certain private vocational vendors, the majority of training institutions are not equipped to provide training programs of the short duration and intensity (40 hrs/week) requested by the Center. Second, it is not clear that training of such short duration will be of any particular benefit, no matter how well targeted. The strongest training need for displaced hourly GM workers may be in basic skills, needed to even qualify for more advanced vocational training. There exists some strong doubts about whether such skills can be imparted in 90 intensive days.

In fact, recent studies have shown that formal education to be the most beneficial form of training in terms of worker outcomes in the recent recession. Typically, studies have shown that displaced auto workers earned about \$500 for each additional year of formal education past 12 years. Workers with some years of college training demonstrated an ability to enter a wide variety of occupations, including both managerial and service.²⁷ Still, it is not clear how even this addition to human capital could benefit many workers in the Genesee labor economy through 1991. Given the large decline in manufacturing employment and the subsequent multiplier effect upon services and retailing employment detailed in the last section, it appears that **there will be few openings for workers to train for in the foreseeable future.** Yet, as explained more fully below, since there is little manufacturing employment growth elsewhere in the U.S. economy, workers who relocate to take service employment outside of Genesee must acquire the training needed to attain these jobs first. **In order to receive any benefit from retraining, displaced GM workers may have to migrate outside of Genesee to attain employment connected to such training; and in order to receive any benefit from migration, these workers may have to undergo retraining first, to qualify for openings at migration destinations.**

²⁷Very recent evidence has been presented on the benefits of retraining for the unemployed in Card, David, and Daniel Sullivan, Measuring the Effects of Subsidized Training Programs on Movements In and Out of Employment, Working Paper No. 2173, National Bureau of Economic Research, Inc., Cambridge, 1987. The authors used sophisticated statistical techniques to measure the effect of training provided to adult male participants of the 1976 CETA program. They found significant effects only for formal classroom training. Future earnings gains were estimated on the order of \$100-300 per year on an average (CETA) training investment of \$1,500.

The Option to Wait

There can be no doubt that tens of thousands of laid off auto workers in the 1979-1982 period elected to spend a considerable portion of their indefinite layoff literally waiting for recall. For many reasons their behavior appeared to make perfect sense at the time. In previous recessions, it had been estimated that at least 85% of indefinitely laid off auto workers were eventually recalled to their former auto employment, usually before compensation was totally exhausted. Investments by workers and their households in retraining or relocation, not to mention local job search, seemed to be poor alternatives given the eventual acceptance of almost certain recall. Unfortunately, such behavior may have proved to be quite harmful in the long run for thousands of Ford and Chrysler workers who found their indefinite layoff status eventually translated to permanency.

In contrast to their brothers and sisters at Ford and Chrysler, almost 80% of GM indefinite layoffs may have been recalled from layoff status in the 1983-1985 period. Numerous stories are related concerning GM workers who returned to Michigan after relocating outside of the state, or who left significant training programs when recalled to former employment at GM. In a contract sense, immediate permanent layoffs of UAW workers are unknown in the American auto industry, particularly GM workers. Almost all workers laid off from GM possess some form of contract determined recall rights. In the case of plant shutdowns, many workers would still possess "bumping" or transfer rights to other facilities. In the past, the process of bumping has resulted in an almost Byzantine displacement of the final job loss to low seniority workers located sometimes in distant unaffected facilities. It is expected that this process will be less intricate for the current and expected rounds of future layoffs. Almost every GM auto plant will experience labor force reductions in the near future. The option to transfer to nearby GM facilities through bumping will be severely restricted for GM layoffs in Flint, because of the concomitant plant shutdowns and layoffs in Pontiac, Saginaw, and Bay County.

There is reason to believe that available income compensation, allowing workers the option to wait for some form of recall, is already dwindling for current and future Flint layoffs. As mentioned, compensation from the Trade Adjustment Assistance Program of the U.S. Department of Commerce is now very restricted and in real danger of being eliminated. State unemployment compensation is now limited to a maximum of 26 weeks of eligibility. According to sources at the UAW-GM Human Resource

Center, worker SUB fund credits²⁸ are being cashed at a 1.25 rate. This rate is expected to be increased soon to 2.25, reducing total SUB funding per worker by 56%. There is also reason to believe that the SUB fund may be exhausted for low seniority workers by the end of 1987, when GM will have a minimum of 80,000 UAW workers on indefinite layoff.

Prospects for other income maintenance programs are more difficult to predict. For example, compensation payments are available to UAW-GM layoffs with over 10 years of seniority from the Guaranteed Income Stream benefits program. Workers with 10 years of seniority would receive 50% of their average take-home pay, and up to 65% of this amount at higher levels of seniority, through age 62. A worker on GIS, however, must accept any reassignment at any location the corporation may offer, or waive rights to GIS compensation as well as other contract rights. The availability of assignments to the JOBS program has been extremely difficult for many contract experts to predict. The JOBS program permits qualified workers to maintain full, straight pay for nontraditional work; primarily training targeted for future GM employment. The creation of an actual JOBS "bank" for a particular facility is an complex process involving joint union/company determination of the reason for job loss: i.e., whether outsourcing or technical change was primarily responsible. Once again, if a worker declines reassignment to almost any alternative GM employment, they would be disqualified from the program, as well as any further chance at recall.

Only strong rumors exist, at this point, concerning the eventual qualification layoffs from facilities in the Flint GM complex for reassignment to the JOBS Bank.²⁹ A recent forecast of the impact of the current round of GM shutdowns upon employment in Michigan by the Research Seminar for Quantitative Economics at the University of Michigan estimated that 20% of blue-collar workers affected would either be transferred within the state or placed in the JOBS bank. This percentage sounds reasonable for Flint Area workers in the near term. The remaining 80% of union layoffs it would seem, would qualify for less actual assistance than workers laid off in the 1979-1980 period. Sitting and waiting, then, may not be a long term option for the bulk of layoffs in Genesee County.

²⁸For those layoffs with less than 10 years of seniority.

²⁹Most notably, Flint Truck & Bus, as well as layoffs from BOC Engine.

Relocation or Migration of Genesee Auto Workers

The prospects for displaced auto workers within Genesee County through 1990 appear to bleak indeed, raising the wisdom of a final alternative, relocation, as an optimal readjustment behavior. It is the purpose of this section to estimate the number of laid off GM workers that may elect to leave Genesee in search of either employment or superior earnings at some distant location. This section will first review the recent pattern in outmigration experienced in Genesee County, as well as patterns in work commuting in and out of Genesee in 1980, the most recent year for which information is available on this activity. This discussion will be followed by a review of recent evidence concerning the relocation behavior of displaced workers since 1979. This discussion will be focussed to the case of displaced Genesee auto workers using the results of a special recent study of laid off auto worker migration completed last year by this researcher. Finally the overall effect of worker relocation upon the Genesee labor economy through the early 1990's will be assessed.

Recent Trends in Genesee Out-Migration and Commuting

Recent Outmigration

The total population of Genesee County increased by 19% between the dicennial Censuses of 1960 and 1980. Total county population increased by only 1.1% during the 1970-1980 period. The U.S. Census has estimated that the population of Genesee decreased by 3.7% in the recent 1980-1984 period. There is now evidence, however, presented by the demographer K. Gorwitz, that the actual percentage decline for Genesee in the 1980-1986 period was only 1.5%. Gorwitz based his figure on a special estimate of the 1986 Genesee population prepared by the Michigan Department of Management and Budget, and the 1980 Dicennial Census estimate of Genesee's population.³⁰ These numbers are presented in Table Twenty-six with selected county population estimates for other years. The population counts for the 1975-1986 period imply an interesting pattern in Genesee net out-migration.

The population counts in Table Twenty-six can be better understood by examining the basic components of change in regional population:

³⁰Gorwitz, Kurt, "A Profile of Genesee County's Residents," in The Michigan Economy, Vol 5, No.4, Bureau of Business Research, School of Business Administration, Wayne State University, July-August, 1986.

Change in Population = [Live Births - Deaths] + [In-migration - Out-migration]

There has been in fact, little change in the annual numbers of live births or deaths in Genesee since 1975.³¹ The excess of live births over deaths generally averages somewhat lower than 4,000 per year, contributing a like number to population growth. This rough average can be used to better comprehend the population change numbers presented in Table Twenty-six. For example, Genesee's population fell by 5,500 residents in the 1975-1977 period during which roughly 8,000 net live births occurred. This would mean that the number of out-migrants exceeded the number of in-migrants by at least 13,500. This total population loss was made up in the subsequent 1977-1980 period. Using a similar calculation, the number of outmigrants must have exceeded the number of in-migrants by about 6,500 during this period. An estimate of the number of actual out-migrants from Genesee during the 1975-1980 period can be derived from special U.S. Census of the proportion of Genesee residents who moved out of the county during this period. The Census estimated that 10.3% of Genesee residents living in the county in 1975 were living in a different county in 1980, or about 46,401 individuals out-migrated.³² Using the above estimates for net out-migration during this period, (13,500 + 6,500), this would mean that at least 26,000 individuals migrated into Genesee during the 1975-1980 period, at the same time that 46,400 were leaving.

The same pattern may have been repeated and reinforced in the 1980-1986 period. The U.S. Census estimated that Genesee lost 16,351 residents in the 1980-1984 period. This figure can be roughly translated to over 32,000 net out-migrants (the excess of total out-migrants over in-migrants). The actual number of total out-migrants may have been much higher. Perhaps one-third of these outmigrants were children, leaving total net out-migration of potential labor force members at about 21,000. Gorwitz's estimate of 1986 Genesee population, however, reflects an increase of 9,489 residents over 1984. Allowing a natural increase of 8,000 due to the trend in live births/deaths, this would be mean that net out-migration in the 1984-86 period amounted to -1,500, or **that more individuals moved into Genesee than left during 1984-1986: a complete reversal of trend.**

³¹There has been a slight decreasing trend in the number of live births and a slight increasing trend in the number of deaths since 1975: characteristics of a region with an aging population. These trends are expected to continue in the future.

³²This still represents only a 5-year migration rate, not corrected for return migrants.

TABLE TWENTY-SIX
GENESEE POPULATION CHANGE

<u>Year</u>	<u>Total Population</u>	<u>Change in Population</u>	<u>% Change in Population</u>
1960	374,313	-	-
1970	445,589	71,276	19.0%
1975	450,400	4,811	1.1
1977	444,900	-5,500	-1.2
1980	450,499	5,599	1.3
1984 *	434,148	-16,351	-3.6
1986 *	443,637	9,489	2.1
1990	441,400	-2,237	-.5

*- Estimates by K. Gorwitz; all other numbers supplied by U.S. Census.

Gorwitz did estimate that the total number of net out-migrants during the 1980-1986 period to be 28,742, or "That about 1 out of 15 county residents moved elsewhere during this period." Since Gorwitz's figures only refer to net out-migrants, the actual ratio of 1980 residents who moved to the total population may have been much higher than this. Gorwitz did present the following important conclusions concerning the recent pattern in Genesee out-migration:

Those leaving Genesee County can be divided into three major groups: (1) older residents (retirees) moving to the northern and western parts of Michigan's lower peninsula; (2) older residents moving to Florida and other southern and southwestern states; and (3) younger, working age residents moving to Texas and other southwestern and western states in search of employment opportunities. This last group represented the largest number of those who have left the county but now have decreased appreciably.

Gorwitz also makes several important additional points concerning recent Genesee out-migration:

- Net out-migration of whites from Genesee County in the 1980-1986 period was about 38,700; black net out-migration was zero, while a net 10,000 other non-whites in-migrated to Genesee during the period. The proportion of whites in Genesee is expected to continue to decrease in the county through 1990.
- Genesee still experiences a large scale out-migration of retirees which maintains the relatively low proportion of county residents who are over age 65 in the area.
- The out-migration rate in the City of Flint was much higher than for the county as whole. While in the past this may have just represented "white flight" to suburban Genesee communities, the current pattern for these migrants is to leave the county entirely.

In conclusion, what is known about recent Genesee out-migration can be put in a better perspective by comparing known or estimated county migration rates with known national rates. About 10.6% of Genesee residents migrated out of the county in the 1975-1980 period, in contrast to the national rate for such moves of 21.4%. This national rate for inter-county moves fell to 19.6% in the 1980-1985 period; a period it should be added, of higher unemployment across the majority of U.S. counties. Using an estimated ratio from 1975-1980 Genesee total and net out-migrations figures above applied to Gorwitz's estimate of 28,742 net migrants in the 1980-1986 period, it is possible to roughly estimate Genesee's total out-migration rate as 14.8%, far

below the national average for major metropolitan areas. Genesee residents do not possess a high overall propensity to move compared to the national average. There is a tendency reflected in the population data since 1975 for Genesee residents to move in large numbers just after an auto recession. This tendency does not last long, and may be overcome by a reverse tendency for many of these economic migrants to return to Genesee as conditions in the county improve. Such a pattern of return migration is characteristic of many depressed manufacturing regions, and for auto workers in particular and will be discussed below.

Commuting Patterns in Genesee

Genesee certainly qualifies as a net importer of non-resident labor. In 1984, over \$512 million of Genesee's \$5 billion of total earnings by place of work were paid to non-Genesee residents. Information concerning the number of non-Genesee residents who worked in Genesee, as well as the number of Genesee residents who reported commuting to jobs outside of the county was made available from special tabulations of the 1980 U.S. Census. While this information does not exactly match other totals of resident and within county employment in 1980, it can provide a rough estimate of the potential number of non-Genesee residents who work at GM employment in Genesee and the proportion of expected future GM layoffs that will actually be non-Genesee residents.

Table Twenty-seven presents Census information at the county level concerning non-Genesee individuals who reported working in Genesee, and Genesee residents who reported working outside of the county in 1980. Totals by county are presented for only those counties where at least 200 commuters workers reside. Even with this limitation, 18,597 workers from nine Michigan counties reported working in Genesee County at the time of 1980 Census interviews. In contrast, only 6,092 Genesee residents reported working outside of Genesee in Michigan counties where at least 200 Genesee residents commuted.³³ In 1980, then, at least 3 workers commuted to work into Genesee for every resident that left the county to work elsewhere in Michigan. The average annual salary of the in-commuters was roughly \$25,000, which indicates the presence of large number of GM in-commuters.

³³At the time of the 1980 Census, 165,106 Genesee residents reported themselves as active workers. Of this number, 150,996 reported the location of their place of work. 143,501 of this total (95%) reported their place of work as in Genesee County; 7,495 (5%) reported themselves as working outside (commuting) of the county.

TABLE TWENTY-SEVEN

1980 CENSUS
 GENESEE COMMUTING PATTERNS
 (For Counties with over
 200 Commuters)

County	In-Commuting By Non-Genesee Residents		Out-Commuting By Genesee Residents	
	Number	% of Total	Number	% of Total
Lapeer	3,951	21.2%	889	14.6%
Oakland	3,027	16.3	2,492	40.9
Macomb	-	-	208	3.4
Saginaw	2,921	15.7	1,189	19.5
Shiawasee	4,775	25.7	923	15.2
Wayne	-	-	391	6.4
Ingham	227	1.2	-	-
Livingston	1,066	5.2	-	-
Tuscola	2,128	11.4	-	-
Bay	299	1.6	-	-
Washtenaw	203	1.1	-	-
Total	18,597	100.0	6,092	100.0

It is assumed that the majority of the in-commuters to Genesee who reside in Oakland, Saginaw, Bay and Ingham Counties in 1980 were GM employees. These workers in 1980 are also likely to have been transfers from other GM plants in their home counties who used area hiring rules to bump into Flint GM facilities. As a result of accepting such transfer arrangement, these workers typically sacrifice their home location seniority rights and accept lower seniority rights at Flint facilities. They are prone, then, to additional layoffs at the Flint plants since they now possess low locational seniority. It is also probably true that many of the in-commuters from Lapeer and Shiawasee Counties were also GM workers. These workers, however, are less likely to be transfers from other GM plants. In 1980 it appeared that a number of Genesee residents were working at GM employment in Oakland and Saginaw Counties and that these workers also were transfers with low locational seniority.

Based upon the assumption made above, it is further assumed that a similar situation concerning cross-county commuting patterns still exists in Genesee.³⁴ If so then future GM layoffs will heavily affect both many in-commuters to Genesee from Oakland, Saginaw, Bay and Ingham Counties, and Genesee out-commuters to Oakland and Saginaw. Because of the larger number of in-commuters relative to out-commuters to counties with GM facilities, the impact of GM layoffs throughout the system will more result in larger number of in-commuters being laid off than out-commuters. It is assumed that 50% of the GM County in-commuters will suffer layoff through 1990:4 and only 20% of in-commuters from non-GM facility counties. The total of 5,661 in-commuters should be subtracted from the total Forecast I estimate of 21,719 GM layoffs through 1990:4 to yield a final number of 16,057 expected Genesee residents displaced from GM employment through this period. This total, of course, will not represent the actual number of new GM layoffs in Genesee. Applying the 50% layoff percentage to out-commuters from Genesee to Oakland and Saginaw Counties yields a possible 1,841 Genesee residents laid off from GM facilities located in nearby Michigan counties, or 17,898 total GM layoffs residing in Genesee through 1990:4.

The 1980 commuting data point out an additional reality connected the readjustment of future Genesee GM layoffs. The majority of counties that surround Genesee will also suffer a heavy impact from future GM employment reductions. As a

³⁴ Anecdotal evidence does exist to indicate the presence of a large number of Genesee residents who bumped into Ingham County GM employment, and who still make the long commute to these GM facilities.

result, the prospects for growth in their labor economies are very similar to that forecast for Genesee. The nearest source of real employment growth may be south Oakland County, or perhaps Livingston. The majority of these new jobs will be in services and retailing paying low levels of compensation. The benefits derived from such long-distance commuting may not justify the high costs of doing so for the majority of Genesee's future unemployed.

Relocation

The recent BLS survey study of displaced worker outcomes also contained results concerning rates of relocation, and reemployment outcomes for those who migrated. The results for all displaced workers are presented in Table Twenty-eight. It should be remembered that these results pertain to all workers displaced from employment on which they had at least three years of tenure, during the period January, 1981 through January, 1986.³⁵ The BLS estimated that about 14.4% of all displaced workers relocated to either a different city or county to take or look for another job. Overall, about 65% of displaced workers reported being reemployed at the time of interview in January, 1986. About 82% of workers who migrated, however, reported reemployment at his time, as compared to 64% of non-movers.

As can be seen in Table Twenty-eight, both rates of overall reemployment and relocation fell with the age of displaced workers.³⁶ Almost 76% of displaced workers aged 25-34 were reemployed at the time of the survey, and 18% of this group relocated to a new city or county for economic reasons. The majority of future GM Genesee layoffs, however, will belong to the 35-44 age cohort, and perhaps higher age groups. "Middle-aged" workers relocated at only a 13.7% rate, despite the fact that such migration apparently benefited such workers in terms of reemployment. Workers in the oldest age cohort, it should be noted, were unemployed at the same rate as those aged 25-34. About 57% of these workers though, reported non-participation in the labor market at the time of the survey; the majority of these electing to retire or to wait to do so.

³⁵The BLS estimated that there were 5.1 million such workers during the 1981-1985 period. 148,000 displacements were estimated to have occurred in the automobile industry.

³⁶Rates of reemployment and migration were also significantly lower for females versus males across all age groups.

TABLE TWENTY-EIGHT
 1981-1985 BLS Displaced
 Worker Study:
 Relocation and Reemployment by
 Age and Gender Cohorts

	<u>Total Sample</u>			<u>Non-Movers</u>		<u>Movers</u>	
	<u>% Employed</u>	<u>% Unemployed</u>	<u>% Relocated</u>	<u>% Employed</u>	<u>% Unemployed</u>	<u>% Employed</u>	<u>% Unemployed</u>
Total	66.9%	17.8%	14.4%	64.4%	18.9%	81.6%	11.4%
Age 25-54	73.9	18.1	15.7	70.5	19.4	82.5	11.3
25-34	75.7	15.4	18.5	73.9	16.6	83.8	10.3
35-44	74.1	18.9	13.8	72.5	19.9	84.2	12.6
45-54	64.7	21.6	13.6	62.6	23.1	78.2	12.0
55+	43.0	15.3	5.4	41.7	15.6	66.7	9.8
Males	70.9	18.6	16.6	68.3	20.1	83.0	12.0
Females	59.6	16.2	9.2	57.8	17.0	77.0	9.1

TABLE TWENTY-NINE

Michigan Study:
 Characteristics of Migrants, Non-Migrants
 (Total Sample)

(a)

Layoff Time To Relocation

n = 66 mean = 1.17 yrs.

	<u>1 yr.</u>	<u>1 - 2 yrs.</u>	<u>2yrs.</u>
Marginal%	59.1	18.1	22.7
Cumulative%	59.1	77.3	100.0

(b)

Characteristics of Migrants, Non-Migrants

Migration Rates:

Total	15.0%
Home Owners	10.3
Non-Home Owners	22.5

	<u>Migrants</u>	<u>Non-Migrants</u>
n	66	363
<u>Means</u>		
Layoff (wks)	146.7	107.0
Age (yrs.)	30.7	35.2
Seniority (yrs.)	4.9	6.3
Formal Educ. (yrs.)	12.6	11.9
#Children	1.4	1.5
1st yr.: U-Rate	10.3%	14.0%
1983: U-Rate	12.8%	14.9%
1st yr. Earnings*	\$2,195.	\$1,656.
Participants	5,916.	7,414.
Last yr. Earnings*	6,326.	3,962.
Participants	9,440.	8,189.
<u>Proportions (%)</u>		
Female	25.8	23.4
Married	56.1	62.1
Skilled	16.7	15.2
Spouse Working (82)	33.3	25.6
Home Owner	36.4	60.1
Participation:1st yr.*	37.1	22.3
Participation>Last yr.*	66.7	48.4

* - Earnings and participation rates for sample members laid off over 12 months at time of interview, or who had 12 months of more layoff prior to recall. Overall n = 344, migrant n = 62.

The BLS survey results concerning migration of displaced workers would seem to answer the question of concern addressed in this study. Given finer detail on the relocation behavior of workers displaced from the auto industry in at least the East North Central region of the U.S., by age cohort, and outcomes for such workers, it would be possible to make definitive statements about the propensity to migrate of future Genesee layoffs. Unfortunately such detail is not available from the current BLS displaced worker survey. Perhaps the most important set of questions deals with the "push" of high unemployment or worsening regional economic conditions upon the propensity of workers to migrate, and the negating effect of worker age and seniority upon this same propensity. These two issues are related to the most general model of economic migration: the cost-benefit model, which states that individuals will relocate for economic reasons if the economic gain to moving exceeds the economic cost of doing so. This simple model provides a natural outline for the remainder of this study's discussion of worker out-migration from Genesee.

The Gain to Relocation

The classic economic model of migration was first developed by L. Sjaastad.³⁷ Sjaastad made a strong statement concerning migration as an adjustment to change in the labor market:

If market forces reduce the relative wages of a particular occupation, practitioners of that occupation suffer a capital loss and are faced with the alternatives of accepting lower earnings or making additional investments in themselves to increase their earnings in a more favorable market. If the relative wages in an occupation are adversely affected locally, migration alone is sufficient; if the adverse effect is national, such as the earnings in agriculture, the entire occupational earnings structure is under stress and migration is only feasible if new skills are acquired by the migrant.³⁸

Sjaastad makes two important observations in this statement. First, there may exist an earnings gain to migration for workers who have suffered either the loss of employment or a portion of their earnings power due to a long-term change in the market for their occupation. Second and most importantly, an earnings gain solely to migration can only occur if the market change is not national in scope. Displaced

³⁷Sjaastad, Larry A., "The Cost and Returns of Human Migration," Journal of Political Economy Supplement 70, no.5, Oct., 1962, pp.80-93.

³⁸Ibid, pp.87-88.

manufacturing workers are not likely to either perceive or realize a gain to migration from depressed local labor markets, such as Genesee, if the national manufacturing sector as a whole is experiencing a concomitant downturn.

Sjaastad's point refers to the "pull" effect of economic conditions outside of the worker's local labor market upon that worker's propensity to migrate. Clearly the U.S. typically demonstrates a wide regional disparity in local unemployment rates. Yet the national outlook for manufacturing, and in particular manufacturing occupations attainable by displaced auto workers, does not appear to be favorable through the end of 1990. In fact, the BLS only projects a 10% increase in employment for the 1984-95 period in hand working occupations including assemblers and fabricators, and only 3.5% and 3% increases in the employment of machine setters and operators and precision metal workers for the same period. Employment in goods-producing industries overall is expected to increase by only 6% nationally in the 1984-95 period.³⁹ Displaced auto workers, however, either do not possess the training required for such occupations or will only qualify for the lower paid occupations within these broader categories of jobs.

There exists recent evidence on actual returns to migration for auto workers laid off in the 1979-1982 recession residing in Southeast Michigan. In a University of Michigan research study completed in 1986 by McAlinden, earnings gains to migration after layoff were estimated for a sample of 429 laid off UAW-Ford workers in Southeast Michigan.⁴⁰ These workers were indefinitely laid off from 19 Michigan Ford facilities during the 1979-1982 period, and were extensively interviewed in the 1984-1985 period. About 15% of this sample of auto layoffs had migrated for economic reasons in the period between layoff and when they were interviewed for the study. Table Twenty-five includes information concerning sample characteristics for both migrants and non-migrants interviewed in this study.

³⁹See Occupational Projections and Training Data: 1986 Edition, Bulletin 2251, U.S. Department of Labor, Bureau of Labor Statistics, April, pp.10, 117, 119, 120.} There is also considerable evidence that manufacturing employment pays significantly less, on average, outside of Michigan.

The projections of employment increases in manufacturing above should be compared with increases forecast for service and technician occupations in the 1984-95 period (19% for the former and 29.1% for the latter

⁴⁰The sample actually included 4 Ford workers residing in Genesee County.

Table Twenty-nine does include some interesting information on differences between auto workers who migrated out of their county of residence after layoff, and those that didn't. The majority of those that did move, moved in the first year of layoff, with the average time from layoff to relocation at about 58 weeks. The average migrant was about 5 years younger, and possessed about 1.5 years less seniority than non-migrants. The most important difference may have been based upon home ownership, and this status will be discussed in greater detail below.

As can be seen in Table Twenty-nine, workers who eventually migrated both earned more in their first year of layoff, and in the 12 months preceding their interview in the study than non-migrants. This difference was primarily due to a higher rate of employment for migrants, than due to higher wages for migrants versus non-migrants. The earnings differences in Table Twenty-nine, however, are biased because of important statistical interactions between worker characteristics that both determine reemployment earnings and generally inhibit geographic mobility. Table Thirty presents results of a special series of statistical estimations that correct for this inherent bias. In this table are presented estimates of actual increases in earnings for migrants and potential earnings for non-migrants, taking into account both what migrants would have earned if they had not migrated and what non-migrants would have earned if they had migrated.

Overall, laid off UAW Ford workers from Southeast Michigan possessed a potential return from migration of about \$1,580 per year compared to the alternative of non-migration. Estimated earnings gains, however, differed significantly by migrant and home owner status. Actual migrants in the sample were estimated to have gained about \$2,057 in earnings per year because of relocation; a figure that rises to almost \$2,700 for migrants that owned homes in their original location. The estimate of earnings improvement falls to only \$1,088 per year for migrants that were not home owners. Overall, workers that did not migrate would have only earned about \$1,457, on average per year, if they had migrated. Very significantly, non-migrating home owners sacrificed a potential gain of \$1,938 per year in earnings by not migrating, as compared to only \$867 for non-migrants that did not own homes.

The overall estimate of a \$1,580 annual earnings gain to migration is certainly not trivial when compared to gains estimated to be available through retraining for displaced workers. The pattern of earnings gains across mobility groups makes a great deal of sense. Laid off auto workers that did migrate tended to be those that would

TABLE THIRTY

Michigan: Study:
Estimated / Earnings Gain
to Migration, by Mobility
and Home Ownership Status

Total:	\$1,580
Migrants:	\$2,057
Home Owners	\$2,698
Non-Home Owners	\$1,088
Non-Migrants:	\$1,457
Home Owners	\$1,938
Non-Home Owners	\$867

gain the most in annual earnings improvement from doing so. Home owners also required significantly higher potential earnings in order to justify relocation. Home owners that did not migrate could have realized a \$2,000 per year gain from doing so. To understand this most important barrier to worker relocation, it must be placed in the context the full range of barriers to or cost of migration.

The Cost of Relocation

The cost associated with geographic mobility has received increased attention in the last ten years. This may be due to recent evidence on the geographic mobility of the American labor force suggests that it has continuously declined since 1965.⁴¹ A large part of this labor mobility can be traced to the impressive rise in the number of two-earner households in the United States. Another important source of immobility, however, may be an increasing trend in the level of housing equity costs connected to location. The rapid price inflation that occurred in the national housing market in the 1974-1979 period was characterized by uneven appreciation rates across regions and communities. This phenomenon has special implications for displaced workers residing in chronically depressed labor market areas such as Genesee.

Poor labor market conditions in the U.S. are often accompanied by relatively poor housing market conditions for the sale of existing homes. The special interrelationship between these two markets places the migration-choice problem of displaced workers in a frustrating context. Displaced workers who have the most to gain in terms of the restoration of earnings through relocation are often the same individuals who face the highest price for this mobility: the loss of home owner status.

The major costs connected to relocation can be grouped in the following major categories:

1. **Psychic Costs** or social costs which are now recognized to include the migration related loss of familial and social ties existing at the origin location. Relationships with family, friends, and familiar neighborhoods are seen as possessing value to the individual migrant and members of his/her household. These costs usually increase with the length of residency and the presence of school-age children in the household. They may be particularly large for those native to the origin location or to certain ethnic or racial groups.

⁴¹See for example, "American Workers Don't Get Around Much Any More," Business Week, 28 October, 1985, pp.94-95.

2. **Loss of specific Amenities.** Migrants who move primarily for the purpose of economic gain often pay a price in terms of the loss of specific locational amenities such as the level of community services or characteristics such as climate, a low crime rate, or the availability of location specific consumption goods.
3. **Information Costs** include search costs connected to finding acceptable employment and housing in a distant location. A wide variety of potential locations may be considered and searched before the optimal location is selected. Such costs are assumed to vary with the distance of location alternatives, the presence of family or social contacts at potential locations, and the skill of the searcher.
4. **Household Member Economic Loss** refers to the loss of current or potential economic earnings suffered by other attached household members as a result of the migrant's location. A working spouse or other family members may have to relinquish current employment and be forced to search for new employment at the migration destination. Aside from such search costs, the potential loss in other family earnings may be substantial if these wage-earners possess significant job-tenure in their current employment.
5. **Transportation Expenses** refer to actual "out-of-pocket costs involved in transporting family possessions and members to the migration destination. Transportation expenses can be assumed to rise with both the distance of the move and the size of the household.

In addition to the major areas of the cost of relocation listed above, there exists a special housing equity cost for home owners residing in depressed housing markets for used homes. Michigan communities with large proportions of total employment located in manufacturing are usually characterized by low relative sale prices for existing homes compared the U.S. market as a whole, and in particular, compared to regions with rapid employment growth. There can be no doubt that home prices in Genesee are some of the lowest, on average, of any metropolitan area in the United States.

Table Thirty-one presents a selection of metropolitan and regional median sale and owner valuation prices from two sources. Column 1 of Table Thirty-one gives median sale price figures for 1985⁴² published by the National Association of Realtors. The second column lists percentages of the overall U.S. level for the selection of

⁴²For several PMSA's, only 1984 figures were available.

metropolitan areas and regions. Information for Genesee (Flint MSA) was not available to this study and the Detroit PMSA should be substituted. In 1985, the median sale price of existing homes in the Detroit PMSA was only 69% of the national median and lagged behind that of every other statistical region (including those not listed) except Louisville MSA. Also in Table Thirty-one are median owner valuation results from the 1980 U.S. Census for the same regions and metro areas. At that time, Genesee median owner valuation was only 75% of the national average, once again lagging seriously behind other metro areas that would enjoy the strongest or steadiest rate of growth in employment.

This information is important in attempting to predict the relocation behavior of home owners since it concerns the possible loss of housing services or equity of such potential migrants. For example, it can be roughly estimated that for a Detroit PMSA home owner who relocated in 1985 to lets say the San Diego MSA, the loss in housing services or replacement equity would amount to about \$55,000. Since a similar home in San Diego sells for twice that in Detroit, the potential home owning migrant may be forced to sacrifice half the housing services currently held in Detroit, or the status of home ownership completely. There is reason to believe that homes in Genesee actually sell for less than the Detroit PMSA median. As the unemployment rate rises in the next several years, there is a strong likelihood that the housing market in Genesee will worsen, with both sales and price levels falling relative to almost any other area in the U.S.. In some cases, for some worker households, the attainable price they could receive for their home through 1991 may be less the amount of their remaining mortgage. These households will not then be in a position to sell their home and move. Such a housing trap is usually resolved through either foreclosure or an eventual upturn in the market.

About 59% of the laid off UAW-Ford workers studies in the 1979-1984 period were home owners. Their average age, however, was about 35, and their average seniority at Ford, 6.2 years. The future group of Genesee auto layoffs will be both older and possess greater seniority, about age 39 and 10 years respectively. These difference are important since age and seniority were powerful predictors of home ownership. Perhaps 70% of the Genesee auto layoffs will be home owners.

Future Genesee auto layoffs will possess high levels of every other category of relocation cost listed above except for perhaps local amenities. Since these workers are older they are more likely to be married, have a larger number of children, and to have

TABLE THIRTY-ONE

Existing Sale and Valuation
Prices: Selected U.S. Regions,
Metropolitan Areas

	1984, 1985 Median Sale Price (\$1,000s)	% of U.S. Median	1980 U.S. Census, Median Owner Valuation	% of U.S. Median
U.S.	\$75.5	100%	\$47.3	100%
Midwest	58.9	78	43.9	93
Detroit PMSA	51.7	69	43.4	92
Chicago PMSA	81.1	107	65.9	139
Cleveland PMSA	64.4	85	56.1	119
Indianapolis MSA	55.0	73	40.3	85
Flint MSA	-	-	35.5	75
Northeast	88.9	118	47.3	100
Boston PMSA	134.2	178	55.4	117
New York-New Jersey -Long Island CMSA	134.0	178	63.3	134
Philadelphia	70.8	94	41.8	88
Providence PMSA	67.5	89	46.4	98
South	75.2	99	39.7	84
Atlanta MSA	66.2	88	47.0	99
Miami-Hialeah PMSA	80.5	107	59.8	126
Louisville MSA	50.6	67	37.0	78
Dallas PMSA	87.7	116	49.0	104
Houston PMSA	78.6	104	54.0	114
West	95.4	126	71.2	151
Los Angeles-Long Beach PMSA	115.3	153	88.0	186
San Francisco-Oakland- San Jose CMSA	129.9	172	88.3	187
Salt Lake City MSA	66.7	88	61.8	131
San Diego MSA	106.4	141	91.0	192

lived longer in the communities in which they reside. Of special importance is the likely high proportion of the Genesee workers who are black. Black workers have historically demonstrated a low propensity to migrate from Northern communities to the Southern or Western regions of the U.S.. Black workers face a smaller range of migration alternatives and possess a stronger attachment to their neighborhoods. Gorwitz's recent survey of Flint residents generated the following conclusions:

Flint area residents are significantly more positive about their neighborhoods than the Flint area in general. In fact the findings suggest the possibility that many residents "adapt" to the Flint area by turning to their neighborhood or neighbors for providing a sense of identification and attachment.

Neighborhood satisfaction is quite high in Flint. Over half the respondents (56 percent) said they were "very satisfied" while an additional 34 percent said they were "somewhat satisfied" with their neighborhood.⁴³

Finally information costs about available employment outside of Genesee may be quite hard for the average GM layoff to acquire. Because of the nature of the occupations many of these workers have primarily engaged in throughout their career at GM, few contacts probably exist leading to distant markets, and fewer skills exist for accumulating and analyzing job market information at such a distance.

The Relocation Totals

Statistical results from the Michigan study of auto worker relocation were used in conjunction with assumptions about the characteristics of future GM layoffs in Genesee to estimate 1987-1991 migration rates.⁴⁴

Two estimations were used for displaced auto workers. For home owners the following function was fit using assumed mean values for the independent variables:

$$\text{Relocation \%} = F(\text{Net Age, Seniority, SpouseWorking, HousingEquityLoss})$$

Where Net Age equals average age (39) minus average seniority (10); spouseworking was set at 69% of households including a working spouse; and HousingEquityLoss set at an average value of \$20,000. An average migration rate of

⁴³Gorwitz, p.1

⁴⁴See McAlinden, pp.188-196, particularly Tables III-10 and III-11 for the coefficients used to estimate the probability of relocation.

6% was estimated for Genesee layoffs who are currently home owners. This proportion is forecast for the entire 1987-1991 period. The 6% rate forecast is lower than the 10.3% observed for home owners in the UAW-Ford sample during 1979-1984 because it assumes that Genesee home owning layoffs are older, possess greater seniority, and face a larger loss of home equity if they move than did the recent Ford layoffs. Finally an additional percentage point was subtracted for the likely larger proportion of black workers in the future GM population of layoffs.

A separate estimation was carried for non-home owning future Genesee layoffs. The function form used was the same as above, excepting that housing loss equity was set to a zero value. This procedure might contain an error in assumptions, since home non-owners are likely to be somewhat younger and possess less seniority than home owners. An average migration rate of 18% was forecast for non-home owning layoffs.

A migration forecast through 1990 for Genesee is presented in Table Thirty-two. The first component of this table represents an adjustment for the possible transfer of Genesee GM layoffs to GM facilities located outside of the county. The University of Michigan RSQE forecast team estimated that about 20% of Michigan GM layoffs would be either transferred or assigned to the JOBS bank. About half of this rate will be assumed to represent transfers to non-Genesee GM facilities that will require such Genesee residents to migrate out of the county. A 100% acceptance rate for this alternative will also be assumed. Earlier in this section, it was estimated that an actual total of 17,898 Genesee residents will be laid off from GM, under Forecast I assumptions, and after adjusting for commuting patterns. The 10% transfer rate was applied to this figure to yield a transfer/migration total of 1,790.

The 20% transfer/JOBS bank eligibility rate was also used to produce an estimate of the number of Genesee GM workers whose layoff can be considered permanent, and who would be candidates for relocation. This final figure of 14,318 Genesee residents was multiplied by 70%, the home ownership rate, and then by 6%, to yield the second component of future Genesee out-migration: laid off GM workers who own homes. About 600 such home owners are forecast to relocate from Genesee through the end of 1990.

The third component of future Genesee out-migration consists of laid off GM workers who do not own homes. Once again the resident total of 14,318 was used, this time multiplied by 30% or the non-home ownership rate, and the associated migration rate of 18%. About 773 non-home owning GM layoffs are expected to relocate from

TABLE THIRTY-TWO

Worker Migration Forecast
Genesee 1987-1990:4

(1)	GM Transfers = .10 X 17,898	=	1,790
(2)	GM Home Owning Layoffs:		
	.70 X 14,318 X .06	=	601
(3)	GM Layoffs (Non-Home Owners)		
	.30 X 14,318 X .18	=	773
			<hr/>
	Total GM Transfers, Migrants		3,164
(4)	Induced Effect Unemployed:		
	.144 X 12,597	=	1,814
			<hr/>
	Total Migrants		4,978

Genesee through the end of 1990. Combined with the two prior components, this estimate produces an overall figure of 3,164 total GM migrants, or an overall migration rate of 17.7%. The largest component by far are the assumed GM transfers.

Finally, a fourth component of Genesee migrants can be appended to the GM total. Forecast I assumes that 12,597 additional current jobs will be lost in Genesee through the induced or "ripple" effect of the GM employment reductions. If all of these jobs are currently held by Genesee residents (somewhat improbable), a proportion of these workers can also be expected to migrate from Genesee by the end of 1990. The overall BLS displaced worker study rate of 14.4% was applied to this total to yield an additional 1,814 migrants. This figure does not include migrants from two additional groups: the current stock of the unemployed, or future frustrated labor force entrants and reentrants. **The final migrant total is 4,978. If an average of two household members can be associated with each of these migrants, Genesee County will lose at least 15,000 residents by the fourth quarter of 1990 as a result of the GM employment reductions.**⁴⁵

The Impact of Migration Upon the Genesee Labor Economy

The impact of displaced worker relocation upon the Genesee labor economy may be small indeed. **The ripple effect will not be reduced by one dollar or one job as a result of worker relocation.** The income and thus local consumption spending of a worker who relocates to find new work or retire is just as lost to Genesee as if the worker remained in Genesee as an unemployed resident receiving no outside compensation. In fact, there is strong reason to believe that the loss will be even greater since unemployed residents must generate some income to maintain subsistence. If skilled blue and white collar workers, as well as young workers, find it easier to relocate and thus make up a relatively large proportion of migrants, **Genesee will suffer a skilled and youth labor drain with serious, negative impacts in the not too distant future, hampering recovery efforts.**

Migration will tend to lower the future unemployment rate in Genesee; at least in the short run. Earlier in this section it was estimated that the stock of resident unemployed in Genesee would reach 47,000 by 1990:4. At an unemployment rate for this period of 25.8% (Forecast I), this would translate to a labor force of about 182,170. The estimated total of 4,978 migrants would reduce both the stock of unemployed and

⁴⁵Or a final economic migration rate for those affected of $16.3\% = 4,978 / (17,898 + 12,597)$.

the county labor force by the same number. This would result in an unemployment rate of 23.7% in 1990.4. Another benefit would be a reduction in the demand on county social services related to 5,000 less unemployed. Finally, it is quite likely that the migrants themselves would be the largest gainers in terms of increased earnings, at least in the short run. This will depend heavily upon economic and employment conditions in regions outside of Genesee that workers can migrate to. If "pull" conditions are favorable, word will filter back to Genesee and migration of the unemployed may well accelerate.

The scenario just described has not been the case for Genesee in the past two recessions. Evidence indicates that workers return migrate to Genesee in large numbers as county economic conditions improve, or as migrants fail to find acceptable employment at their migration destinations. In other words, the migration alternative, or solution, hasn't worked in the past for Genesee, and is not likely to in the future. The American labor force over the last 15 years has become an increasingly immobile group, and no more so that in the Midwest, and for manufacturing workers in this region.

Genesee's best course will be to not rely on "natural" solutions such as worker mobility, but to instead, invest in the acquisition of new markets and new skills to employ the formerly productive labor force it has within its boundaries.

Chapter Five: Community Response Issues and Recommendations

Communities across the U.S. are facing increasingly complex arrays of economic and social problems. Unemployment, maintenance of current standards of living, funding and delivery of adequate public education, restricted capital availability, creation of jobs and business activity, and provision of social services all are issues for cities large and small, urban and rural, industrial and diversified. There are no geographic exceptions -- every section of the country has its own agenda of issues and sets of problems. There are no simple solutions -- complex issues must be addressed through carefully crafted responses. There are no formulas or solutions guaranteed to address automatically and effectively all problems facing a community, regardless of its circumstances. Communities are too diverse for such "off-the-shelf" responses to be feasible. Communities that are deemed relatively "successful" are not immune from problems, but have demonstrated the capacity to anticipate economic and social problems, identify root causes, isolate variables the community can influence, and channel community resources into the most efficient and effective responses.

Our analysis of the likely futures for automotive employment in Genesee County, and the implications of that analysis for the overall economic health of the community are grim indeed. A report such as this should identify not merely the parameters of the problems, but should also attempt to raise and discuss some of the possible responses to those problems. That is the purpose of this chapter.

We provide some limited material on general issues in economic development, together with the results of some interview material we gathered outside of Flint/Genesee in Appendix A. We interviewed a range of economic development leaders in two other communities, South Bend, IN and Youngstown, OH. The purpose of these interviews is to provide material on the efforts of these communities to respond to economic crises similar to what we think is likely in Genesee. It is our hope that this material will stimulate appropriate actors in Genesee County to consider the range of responses available to them, and will provide some guidance in the selection and implementation of those responses.

The material presented here draws on a number of sources. The interviews with GM managers and UAW officials that formed the core of our plant analysis of Genesee's automotive endowment contained a number of items focusing on the respondents' views

of the strengths and weaknesses of Genesee County as a manufacturing location. This material can serve as a starting point for a community evaluation, a necessary step for formulating pragmatic and realistic responses. Finally, we interviewed a few residents of Genesee that are, or have been active in local economic development efforts. These interviews served to provide us with background on past efforts in Genesee, and also serve to indicate some directions that the community should consider in its future efforts.

Preliminary Inventory of Genesee.

The interviews we conducted with GM management and UAW officials covered four topics bearing on Genesee's current situation and potential for economic development. We asked our respondents to indicate what they feel are the major advantages to GM of GM's current Genesee location, and a parallel question on Genesee's disadvantages. We also asked what the Flint/Genesee community might do to accentuate its advantages and decrease its disadvantages. Finally, we asked what they feel Genesee might do to replace those jobs that will inevitably be lost due to the shrinkage of GM activity in Flint/Genesee. These four questions all center on what we have called the development of a vision for Genesee. The first two target the "strengths and weaknesses" of Genesee for its major employment sector and its major employer. The third is designed to elicit suggestions for what can be done to improve the "attractiveness" balance sheet for this major sector and employer, and the fourth asks what might be developed to replace jobs and economic activity as that sector and employer decline in local activity levels.

We feel it is useful to provide this information from the viewpoints of two major sets of players in the Genesee economy. We do not, however, feel that this information can substitute for the kind that develops from a broader-based, continuing dialogue such as South Bend's Committee of One Hundred provided. The information we secured may represent an initial, useful starting point for such an activity, but cannot in any sense substitute for it. It is worth mentioning that we frequently wished that we could listen to our respondents discuss their views with each other, rather than simply collect those views in serial fashion. We honestly felt that some of the views, and the different emphasis and points stressed by respondents, would provide some fruitful exchanges for

the Genesee community. Those exchanges might well provide critical starting points for the community's efforts to respond to the economic dislocations that lie ahead of it.

We also interviewed four local residents that are, or have been involved in local economic development efforts. One of these is a retired GM manager, and two are former Genesee UAW officials. These few respondents are not representative of local players in the economic development arena in the same sense that the GM managers and UAW officials are. We present their responses here, however, because they are useful as indicators, however limited, of other points of view.

Community Advantages.

Table Thirty-three displays the advantages of a Genesee location mentioned by our respondents. We list them separately for UAW officials, GM managers, and local economic development interviewees, although we find few differences of note in how these three groups respond to our questions. The Table indicates the average rank-order of mention (first, second, etc.) and, in parentheses, the total number of mentions. The seven UAW officials mentioned 19 advantages and the nine GM officials mention 25, so each group averages just under three mentions per respondent. The four local economic development actors mentioned 10 advantages, or just over three per respondent.

TABLE THIRTY-THREE
Respondents' Views of
Genesee Advantages

<u>Interviewee</u>	UAW	GM	LOCAL
Workforce	3.2 (7)	1.8 (8)	1.7 (3)
Location: General	1.7 (3)	2.3 (3)	3.3 (3)
Location: Suppliers	2.0 (1)	2.5 (4)	2.5 (2)
Location: Customers	3.0 (2)	1.0 (2)	0.0 (0)
Transportation	3.3 (3)	5.0 (2)	4.0 (1)
Current Investment	1.0 (1)	1.7 (3)	2.0 (1)
Utilities/Water	3.5 (2)	3.0 (2)	0.0 (0)

The most frequently mentioned advantage is the workforce, with seven UAW mentions, eight GM mentions, and three local mentions. The officials stress the trained nature of the workforce, while the managers stress its skill-level, a difference that we see as more one of verbal form than substance. The relatively low average rank assigned to the workforce by UAW officials may be somewhat surprising. This is the result of "late" mentions by two officials that gave fairly detailed lists, and probably reflects their reluctance to mention early something that we might see as an obvious, unconsidered response on their part.

The next four advantages can be considered a cluster of locational advantages, but we present them separately to reflect the different emphases of the respondents, and because the information may be useful for targeting efforts and responses. The entire cluster receives nine UAW, 11 manager mentions, and six local mentions.

The general advantage of location -- without specifying what it is about the location that matters -- received three mention from each group. Managers stress proximity to suppliers somewhat more than UAW officials, mentioning it four times as opposed to once. Location near customers -- whether the vehicle market or other GM plants -- was mentioned twice by both officials and managers. Transportation facilities, a key mechanism for exploiting proximity, was mentioned by three officials and two managers.

The current investments in Genesee were mentioned by one official, three managers, and one local. This is a potentially important advantage for the GM endowment in Genesee overall, since the replacement costs for the entire complex are enormous. Unfortunately, it may not be very important in determining the individual fate of a number of plants, since those investment costs may have been written off, and, in some cases, restoring the current facilities to a reasonably competitive level would itself require major investments.

The presence of good utilities, particularly the abundant water required for many manufacturing operations, received mentions from two officials and two managers.

Genesee's location, especially with regard to supplier and GM customer plants is seen as a significant advantage. That may be especially important as GM moves to a JIT supply system because minimizing travel distances, and thus the uncertainties associated with transportation, is felt by many to be a key element in the successful implementation of JIT. Genesee's attempts to lure suppliers in response to Buick City's JIT efforts may have had relatively little success, but Genesee's proximity to so many GM customer plants for its products may provide some leverage for the retention of current GM work in the county.

The Genesee workforce certainly is an advantage in a number of ways. It is skilled, and quite adapted to the discipline of the industrial factory. A number of managers view it, moreover, as flexible and having a good attitude, as surprising as that may be in the light of its image in the community and within GM. There are, of course, disadvantages associated with the workforce, and those will be discussed in the next section.

Genesee Disadvantages.

Table Thirty-four provides the mentions of Genesee disadvantages mentioned by our respondents. The seven UAW officials mentioned only two disadvantages, since five of them indicated that they could not really identify any particular disadvantages to a Genesee location. The nine GM managers mentioned 16 disadvantages, and the four locals provided seven.

TABLE THIRTY-FOUR
Respondents' Views of
Genesee Disadvantages

<u>Interviewee</u>	UAW ¹	GM	LOCAL
Management-Union Relations	0.0 (0)	1.5 (6)	2.0 (1)
Workforce	1.0 (1)	1.5 (2)	1.5 (2)
GM Presence	0.0 (0)	1.3 (4)	3.0 (1)
Current Investment	1.0 (1)	0.0 (0)	1.5 (2)
Business Costs	0.0 (0)	1.5 (2)	1.0 (1)
Community Image	0.0 (0)	3.0 (1)	0.0 (0)
City Government	0.0 (0)	1.0 (1)	0.0 (0)

A cluster of issues about the relationship of GM management and the UAW form

¹Five of the UAW officials reported that they really could not think of any particular disadvantages to a Genesee location.

the core of the managers' views of Genesee's disadvantages. Two managers report that the dominance of the UAW within the community leads to abuses and a skewing of political issues to the UAW view. Two others focus on the difficulty of resolving labor issues, such as work rules, in a community so dominated by the union. Another sees a level of confrontation -- strike threats, for example -- that interferes with problem resolution and contributes to Genesee's image as a bad place to do business. Finally, one manager commented on the image of a recalcitrant union and workforce, even though he feels that this is not completely accurate.

The workforce was mentioned by one official, two managers, and two locals. The official sees this as a problem of a workforce that has learned to operate in a particular way, and now management wants a milder, less confrontational style. One of the managers stresses a general workforce and supporting community attitude that rejects conventional views of what constitutes a fair day's work for a fair day's pay. Another manager mentioned that absenteeism has been a problem, although it has been decreasing over the past few years. One of the locals sees a flip-side to the advantage of a skilled, industrially acclimated workforce: it is also a traditional workforce that may be slow to change. The other local respondent mentioned that the Genesee workforce is not particularly quality conscious, and the combination of this with GM's lack of engineering commitment to quality is deadly.

If the managers see UAW dominance as a problem, they also see GM dominance as a problem. Four managers report problems associated with this. One of these problems has been discussed in Chapter Two, and that is the view that the community relies too much on GM for too many activities. The other aspect to the problem of a large GM presence is the difficulty the managers have in doing anything unique or innovative within their jurisdiction. This partly reflects the constraints on the union officials of the large UAW presence, but it also constrains managers through the large GM managerial presence. It appears that both "sides" to such bargains are concerned about what their peers might think, and that this makes them quite cautious about attempting anything unusual. The local respondent mentioned that the community's dependence on GM makes it relatively easy to blame GM for anything. This in turn undercuts efforts to respond to problems.

If current investment represents an overall advantage for Genesee, for some of the Genesee facilities it represents a disadvantage. One official and two local respondents mentioned the age and condition of some of the facilities as disadvantages.

Two managers report concerns about business costs, one in the area of taxes, the other in the area of the "social wage" -- Worker Compensation and Unemployment Insurance. One local respondent also mentioned that Genesee is a high cost area, and that many of the facilities are themselves high-cost.

One manager reported that the community image is a real disadvantage in recruiting personnel for technical and managerial positions. The Genesee community simply does not offer the lifestyle that many attractive candidates wish to pursue. Finally, one manager reports that city government erects barriers everywhere and facilitates no efforts that a plant might undertake.

It does strike us that the unusually heavy GM/UAW concentration in Genesee represents a real difficulty for the officials and managers. The dominance of the local economy by GM, and the related political influence of the UAW are distinguishing characteristics of Genesee. Both managers and officials are in unusual situations because of the extraordinary GM presence. Managers and officials are both perhaps less independent of organizational pressure than they would be in communities with one or a few facilities of the same company. The ultimate impact of this, we suspect, is to make both groups somewhat conservative, reluctant to break out of the molds of the UAW and GM as they perceive them. This may be a bit more of a problem for the UAW officials, since the managers are somewhat insulated by different divisional affiliations and reporting relationships. We suspect, however, that the power of informal communication influences them as well. We noted elsewhere the low levels of information exchange among GM managers: that may partly be due to managers' reluctance to communicate nontraditional initiatives, lest informal peer opinion crush such efforts.

Once again, we note that most of these GM managers feel that the workforce and the relationship with the UAW at their own facilities is better than the typical Genesee situation. That is a plus for Genesee in terms of the individual facility's survival chances, to the extent that that depends on local views. It is a negative, however, in that it continues and reinforces the generally negative view of Genesee within the Corporation. Most of these managers are, on balance, negative about the Genesee location, except, in many cases, for their own plants.

The lack of comment on the current tax abatement debate somewhat surprises us. Those officials and managers that we asked about this issue were reluctant to discuss its specifics. But they saw it as a rough spot in a generally good relationship, and not a major indicator of an unhealthy relationship between the community and GM.

The disadvantages of Genesee, then, largely reflect the already large GM/UAW presence in the community. While this might discourage new investment in the community, the rate of new investment by GM will be low in any case for the next five to ten years. The important question for Genesee is whether this large presence will discourage GM replacement investments, and count against the community as GM reduces its current levels of investment nationwide. In our judgement, it is a factor that weighs against Genesee, but may be offset by the economies that such a concentration can provide.

Changing the Genesee Balance.

We asked our respondents what the Genesee community might do to enhance its current advantages for GM and mute its current disadvantages. The strategies suggested are displayed in Table Thirty-five.

TABLE THIRTY-FIVE
Suggestions for Changing
the Genesee Balance

<u>Interviewee</u>	UAW	GM	LOCAL
Community Attitudes	2.0 (1)	2.0 (1)	1.3 (3)
Independence of GM	1.0 (1)	1.0 (3)	1.0 (1)
Tax Abatement	1.0 (3)	1.0 (1)	0.0 (0)
Airport Improvement	1.0 (2)	2.0 (1)	0.0 (0)
Governmental Coordination	0.0 (0)	1.0 (1)	0.0 (0)
Media/Image	1.0 (1)	1.0 (1)	0.0 (0)
Repair GM Relationship	0.0 (0)	2.0 (1)	0.0 (0)

Improving community and workforce attitudes was mentioned by one official, one manager, and three local respondents. The official noted that this is not a good year to address workforce attitudes as recent events and coming contract negotiations hardly provide a conducive climate for such activities. The manager noted that unless the community and workforce develop more responsible attitudes there will be a continual erosion of the Genesee base. As an example of community attitudes that need to change he offered the example of doctors that knowingly endorse false injury and sickness reports.² Two of the community respondents stress the need for the community to exploit better its educational resources, both in terms of the enhancement of the workforce's general skill level, and as a source of information about the dimensions of the situation facing GM and Genesee. The third local respondent argues for the development of a centralized community commitment to develop a better "attractiveness" balance for GM, including the centralization of development efforts and the elimination of the current fragmentary and divisive economic development efforts within the county.

The other major strategy, mentioned by one official, three managers, and one community respondent, is to build Genesee's independence from GM, reducing the community's reliance on the corporation. This will remove some of the negative aspects of GM's large presence for the Corporation, and at the same time ameliorate some of the negative consequences for the community.

Tax abatement was mentioned by three officials and one manager. While the tax situation in Genesee is not seen as a major disadvantage (see above), the use of tax abatement as a method of enhancing the attractiveness of the community is one of the two most mentioned strategies.

Improvement and expansion of Bishop Airport was mentioned by two officials and one manager. These three respondents see an expansion of passenger and freight facilities and service at Bishop as important for two reasons. First, it provides immediate advantages for the local GM facilities as part of their transportation network. Second, it may contribute to a change in the Genesee image, since the current

²How widespread such attitudes and actions may be is uncertain; if as widespread as this manager feels, they indeed constitute a serious community problem.

state of the airport is viewed as unattractive and reinforcing the image of Genesee as a run-down town hanging at the edges of Detroit.

One manager was particularly concerned that the actions of state, county, and local government be more efficiently and effectively coordinated, while another stressed the importance of repairing the relationship of the community with GM, a relationship that has deteriorated over the years. Finally, one manager was concerned about the coverage of GM activities in the local media. He feels that this coverage is often quite slanted and frequently simply inaccurate. In his view, the image of GM and of the Genesee community are damaged by the type of coverage provided.

These suggestions span a wide range of concreteness. Some are goal statements, and others very specific, targeted suggestions. This, we think, is exactly the mix one would expect in view of the circumstances of the interviews. They do, however, provide some initial suggestions that the community needs to consider and refine. Some of these will eventually require implementation plans.

Replacement Activity for Genesee.

We asked our respondents to indicate what actions the community might undertake in order to replace the economic activity and jobs that will be lost as GM reduces its investments. Table Thirty-six displays the three UAW, ten GM, and seven Local mentions elicited by this question.

TABLE THIRTY-SIX
Respondents' Views of
Genesee Replacement Efforts

<u>Interviewee</u>	UAW	GM	LOCAL
Diversify	1.0 (2)	1.5 (2)	1.8 (4)
Maintain Base	0.0 (0)	0.0 (0)	1.5 (2)
Training	1.0 (1)	2.0 (1)	0.0 (0)
Suppliers	0.0 (0)	2.0 (2)	0.0 (0)
Pro-business Climate	0.0 (0)	1.5 (2)	0.0 (0)
Realism	0.0 (0)	1.5 (2)	0.0 (0)
Airport	0.0 (0)	1.0 (1)	1.0 (1)
Tourism	0.0 (0)	0.0 (0)	2.0 (1)
Medical	0.0 (0)	0.0 (1)	3.0 (1)

Officials and managers each mentioned diversification twice, and local respondents mentioned it four times. It is probably fair to say that few would disagree with the notion that Genesee should diversify its economy as it attempts to secure replacement jobs and economic activity for anticipated GM losses. Diversified economies are clearly less subject to the economic cycles that Genesee has experienced as local recessions, and are much less likely to experience the local economic depressions that Genesee may well face now. But the critical issues are *how* to implement a diversification strategy, and what areas to target for development. These respondents are well aware of that, and noted the failure of past attempts to diversify, and the uncertainties in the economy today that will influence the choice of targets and the success in achieving them.

These respondents noted a number of problems with diversification. The community probably needs to diversify within its manufacturing base, rather than away from it. There are two reasons for this caveat. First, manufacturing is the area where the Genesee community and workforce have identifiable advantages. Second, other jobs in manufacturing would likely involve lower income losses than replacement jobs in the service sector, and that is particularly true for the replacement jobs likely to be attainable by laid-off GM workers. But this in itself is a problem because it is unclear how much manufacturing activity is available for Genesee to secure. Moreover, even if it is available, Genesee has a highly paid, highly unionized manufacturing workforce, and that is a disadvantage in the eyes of most employers. If diversification is a necessity, and most feel it is, it must be recognized that, as one respondent put it, it is a strategy that is easier to say than do.

One official and one manager call for training the workforce, both to increase the possibility of maintaining current jobs, and to prepare for potential replacement jobs. In the same vein of building on existing resources, two local respondents suggest the importance of maintaining the existing manufacturing base, particularly existing businesses with growth potential.

Two managers mention the automotive supplier industry as a natural target for Genesee to pursue for replacement activity and jobs. The difficulty of this has been discussed, and the response to Buick City's attempts to attract suppliers is somewhat discouraging. Nevertheless, it is indeed a logical choice, and some of the GM facilities, if closed, might represent a powerful lure.

Four mentions, all by managers, focus on attitudinal issues. Two managers see the development of an attitude and an image of the community as pro-business as critical to the success of any diversification efforts. Two other managers are particularly concerned that the community develop a realistic attitude about its current situation and the options available to it.

Three targets, in addition to automotive suppliers, received mentions. The development of the Airport would lead to the creation of jobs directly, as well as its indirect, or multiplier benefits to the community, in the view of one manager. Tourism is recommended by a community respondent, although one official and one manager explicitly reject this area. The recent failure of Autoworld has left a negative feeling for possibilities in this sector. Finally, one community respondent suggested that the medical sector in Genesee simply provides services to a well-insured population, but that the level of that activity should support some diversification within the medical sector.

The task of identifying appropriate community responses to a shrinking economic base is indeed a difficult one. Diversification is important, but difficult, and it takes effort and time to devise a promising diversification effort. Our interviewees offered no quick fixes for Genesee's developing problems, nor did they feel they had.

We asked our community respondents from all three cities the following question: "Three strategies for economic recovery have been proposed for midwest towns facing severe loss of manufacturing jobs--towns like yours in the past and Flint in the near future. One strategy is simply to weather the storm, doing very little actively to steer or prime the economy. Another strategy would be to actively recruit replacement activity in the areas of local strength--the same areas where the community is losing activity. The third strategy relies on retraining the work force and selecting areas of emphasis in development activities that are at least somewhat different from the current problem areas. Which strategy, or what sort of mix of strategies would you recommend?" Almost all the respondents viewed the best strategy to be some combination of two and three tailored to the individual situation of the community. All categorically rejected the strategy of letting events take their course.

The mix of strategy two and three can result in recruiting replacement activity in areas of local strength to provide a quick, short term bridge to the longer term restructuring implied by the retraining strategy. Emphasizing only strategy two can provide returns that are relatively rapid and attractive on some measures. Unfortunately, this strategy typically involves competing for employers based on low wages, and thus the community faces a gradual decline in living standards, and the very real possibility of unstable employment. Emphasizing only strategy three can result in high short-term costs of unemployment and income loss. Genesee may be less disadvantaged than most communities in this regard, however, because of the relatively high benefits to laid-off GM workers and their relatively longer coverage periods.

Summary.

Genesee has two primary advantages, a skilled workforce and a strong location in relation to suppliers and customers. It has three major disadvantages, the relationship between GM management and the UAW, a traditional workforce that has been slow to

change, and its large GM presence; all of these disadvantages contain real elements and elements that are more issues of image. Suggestions of how Genesee might improve its "attractiveness" balance, and how it might replace threatened jobs and economic activity, span the range of statements of general direction and very concrete, limited efforts.

Perhaps the most striking comparison between Genesee and South Bend or Youngstown is the sense that Genesee is at a stage that these other cities were at *just prior to major closings*. Our interviews suggest that Genesee might well go through some of the same responses that these communities did. Certainly our interviewees are worried that the community will suffer a major attitudinal shock, concerned that the image of improvement lags the reality, and apprehensive that fragmented efforts will yield little in the way of fundamental success in recovery activities.

A major immediate challenge for Genesee, then, is to avoid the five or so years of "community depression and half-hearted response" that seems to characterize the experiences of both South Bend and Youngstown. We suspect that the experiences of South Bend and Youngstown do not so much suggest that such a period is inevitable, but that it is unless actions to avoid it are implemented.

Study Recommendations.

Our analysis predicts major economic dislocation for Genesee County through 1990. Employment losses at GM will be high, and the current economy unlikely to absorb them. Our recommendations suggest some steps that may lessen the extent, and hence the adverse impact of these GM reductions, and some approaches for developing other areas of the economy.

A major immediate challenge for Genesee is to avoid the five or so years of "community depression and half-hearted response" that seems to characterize so many other communities that have faced such extreme dislocation. We suspect that the experiences of these communities do not so much suggest that such a period is inevitable, but that it is unless actions to avoid it are implemented.

Care must be exercised that the presence of two such dominating players as GM and the UAW does not convert economic development efforts into simply another forum

for these two players to pursue issues in their relationship, or freeze out the legitimate interests of other stakeholders. The representation of these organizations across different levels (e. g. divisions, facilities, and locals) in economic development efforts may mute the first, but risks the second.

These recommendations are organized around the threats, challenges, and opportunities they present. Particular attention must be paid to the retention of current GM facilities, the generation of replacement activity, and maintenance of impacted workers. Community efforts must strike a balance between the targeted and focused efforts and those that are broader and more diffuse. We have tried to identify those areas where the Mott Foundation might play a particular role, either in enabling or implementing a specific recommendation.

Genesee needs to begin to develop a broad-based, consensual vision of the targets and means for its economic development activities. South Bend's Committee of One Hundred might provide a model for these activities, and the Genesee Area Focus Council, Inc., a logical framework for its development. It is imperative that this activity be pursued aggressively now; delays associated with the community's lack of a sense of imminent crisis will only make that crisis worse when it inevitably arrives.

The community must develop better coordinated, focused efforts. Focused efforts should be balanced between efforts targeted to the retention of existing employment and the attraction of new employment and coordination of the many economic agencies in Genesee is essential. Careful evaluation of current agencies and their charters should provide guidance in reducing their numbers and improving their coordination. South Bend's Project Future might be an appropriate model, and the Confederation of Area Municipalities for Economic Opportunity, Inc. an organizational structure.

The community must balance targeted, focused "projects" with broader, more strategic programs. Current efforts to expand services at Bishop Airport makes sense in terms of the patterns of population shift from Detroit, providing service to the Troy/Rochester population base, in addition to improving services for local facilities of GM. The community should also assess its realistic options for pursuing replacement activity in the manufacturing sector and diversification into other economic sectors. The strategy of simply weathering the storm seems fated to incur greater costs and provide lower payoffs.

Both broader and more focused efforts must address two facets of the community's endowment. Genesee has numerous positive attributes, and these must be developed and accentuated in efforts aimed at attracting new and maintaining current employment. Genesee's negative attributes must be recognized and steps initiated to ameliorate them.

The community must strike a balance between longer-term development efforts and efforts to address the immediate needs of residents directly affected by the dislocation. The "safety-net" provided by GM and the UAW provides Genesee an unusual cushioning of immediate adverse income effects. The exact parameters of these benefits must be identified, and their existence reflected in community economic development efforts. These benefits may offer Genesee unusual options for structuring the workforce retraining that will be critical to diversification efforts.

The community must apprise itself of what actions GM will or might pursue to assist the community through its period of adjustment. The community needs to discover what kinds of investments and/or payments GM considers possible, to determine what the likely schedule of those may be, and begin to build this information into its responses. This activity should be pursued jointly with GM, so that various possibilities can be explored, critiqued, revised, and implemented.

The community needs to exploit further both the University of Michigan-Flint and GMI as resources for analysis and expert assistance. These are potentially extremely valuable resources for a wide variety of economic development efforts. They also may in themselves constitute attractions for certain kinds of employers. The study currently underway to determine the viability of a high technology center in Flint is an initial opportunity to develop these institutions as local resources.

We recommend that appropriate officials from either the Mott Foundation or the Flint community [or both] remain in contact with our interviewees in South Bend and Youngstown. A continued information exchange network will likely benefit all three communities. Flint, in particular, may benefit from the experiences of South Bend and Youngstown in responding to some of the problems it will soon face.

The unusually heavy GM/UAW concentration in Genesee requires some

unusual responses on the part of both organizations. It is difficult to envision what this might be, because the non-parallel structures of the UAW and GM in Genesee provides no ready meeting ground. But this is a problem, and some work towards its resolution is clearly indicated. Three possibilities come to mind:

- GM might create an office with area-wide responsibility for Genesee;
- GM might assign an "area responsibility" for Genesee to a current high-ranking GM executive; or
- the active participation of both GM and UAW leaders in economic development organizations, or the creation of a joint UAW-GM committee on economic development, might provide an opportunity for informal resolution of some of these problems. These activities should, of course, provide benefit to the community as well.

GM should take a stronger, better coordinated stand in community development. Key GM executives are frequently rotated through the area and many do not live in the Genesee area during their stay. This retards the development of community understanding and effective contribution during their stay and in their later careers.

The UAW must be key in supporting long-term economic development efforts for Genesee. As with GM, the UAW needs to present better coordinated positions on key issues. In particular, the UAW must be brought into activities beyond simple retention of existing UAW jobs, and provide support for retaining and attracting other jobs for the local economy.

Flint/Genesee must identify what the community can and should do to assist plants in securing work, as well as efforts to address more broadly based problems, such as "community attitudes." For this to be accomplished effectively, GM cooperation must be secured, and a mechanism for plants to make the community aware of their situations and needs must be established. The community must be aware of specific threats/opportunities to the plants, including:

- information on potential outsourcing decisions, so that "packages" or combinations of Genesee facilities can be marshalled;
- when current products are available for internal bidding within GM; and
- when potential new products are available.

Steps must be taken to ensure that Genesee suffers its proportional loss of GM activity, rather than a disproportionately high share. Because of the age of its facilities, the large concentration of its employment in the "supplier" divisions of GM, and the dispersed responsibility for those facilities, Genesee might suffer more losses than necessary as individual decisions are made. The community must make GM aware of the potential impact of those discrete decisions, so that some close-calls might go for, rather than against Genesee. Flint/Genesee must take steps to ensure that GM's consideration of the future of local operating facilities reflects:

- specific evaluation of those facilities, not an automatic application of general policy to a negatively stereotyped Genesee location;
- appropriate consideration of these facilities as sources for new or re-sourced products; and
- the possible reconfiguration and relocation of GM activities within Flint/Genesee, including the expansion of functions such as engineering and marketing where necessary for facility survival. A "Truck City" might be worth consideration, and its establishment might make Genesee more successful in attracting suppliers than Buick City alone has been.

The community should perform a realistic assessment of the potential of facilities that are slated to be closed by GM. The community should identify the options they might support for attracting either replacement employment in manufacturing or supporting employment opportunities in other sectors. The availability of these facilities should be ascertained.

The community must identify opportunities for replacement activity, both in non-GM automotive, and in nonautomotive manufacturing. The strength of Genesee has been manufacturing, and that strength has been tied to the automotive industry. While diversification away from both the automotive industry and manufacturing has some attractions, it must be combined with a strategy that rests on Genesee's strength. To make these options feasible, the community must preserve its skill-base through the dislocation period, and establish a process for monitoring such opportunities.

Flint/Genesee must realistically consider the level of effort that should be devoted to pursuing three types of automotive replacement activity: Ford, traditional suppliers, and transplant suppliers. All of these are objectively low probabilities of success, but success at any would be immediately beneficial and

probably generate further success. Japanese transplants in particular are reluctant to locate in highly urbanized and unionized areas with high minority percentages in the workforce. They are, however, under pressure to do so, and the increase of such suppliers to serve Mazda in Flat Rock offers a window of opportunity for Genesee. GM's assistance might be instrumental in securing transplant suppliers to GM and its Japanese partners at NUMMI, Izuzu, and Suzuki. Ford and traditional suppliers would probably resist an area so dominated by GM, but readily available capacity and workforce may overcome that reluctance.

**APPENDIX A:
RESPONSES OF TWO
PARALLEL COMMUNITIES**

APPENDIX A: RESPONSES OF TWO PARALLEL COMMUNITIES

This appendix contains material on the experiences of two similar, though not identical communities, South Bend, IN, and Youngstown, OH. Both these communities have been hard hit by major closings and shrinkage in their traditional employment base. Both have implemented a variety of responses to these situations, and the material we gathered may be of some use to relevant Genesee actors as that community faces those developments.

Rankings of Economic Potential

Various organizations have attempted to define what makes an attractive business environment and to classify or rank communities on how they compare on the proposed criteria. There is much debate about the validity and the real significance of these indicators; that is not surprising, in view of the enormous stakes involved in the cumulative locational decisions they might influence. Our purpose here is not to resolve that debate, nor even to review it thoroughly. Rather, we hope to indicate the range of such indicators, the breadth of interpretation attached to them, and suggest the significance of some of them, not only to the likely success of economic development efforts, but to the choice of those efforts.

One study that presents a broad and comprehensive scope of regional economic capacities was performed by SRI International for The AmeriTrust Corporation.¹ That study focused on the following criteria:

1. *Accessible Technology.* Emerging product and manufacturing technologies depend highly on a continual flow of basic and applied research. Ready access to this technology is important to both large and small firms. Large firms may supplement their research and development activities through consortia based in the independent setting of universities, gaining access to

¹*The AmeriTrust/SRI Study on Indicators of Economic Capacity: First Report.* Cleveland: The AmeriTrust Corporation and SRI, December, 1986.

basic research of a network of academic and industry researchers. Small firms will most likely gain from leveraging their product and manufacturing engineering staffs with technology and business research of a more applied nature. Since a majority of basic and applied research occurs in academic settings, the AmeriTrust/SRI study judged the following specific characteristics:

- quality of science and engineering faculty;
- research articles per faculty member;
- science and engineering Ph.D. graduates;
- total R&D in universities;
- state and local R&D in universities;
- industry's own R&D;
- number of patents issued; and
- university-industry initiatives.

2. *Skilled and Adaptable Labor.* To judge future economic potential it is important to evaluate not just present work force qualities against current demands, but to determine future skill demands and judge a work force's ability to adapt to these new demands. The relative starting point of skill level is current education level, and the availability and use of education and training institutions are good indicators of the type of progress the current labor force can make in meeting new workplace demands. The study focused on these seven indicators:

- percentage of population over 25 with various education levels (grade eight or less, at least four years of high school, at least four years of college);
- expenditure per pupil;
- state and local total educational expenditure;
- average SAT score;
- average ACT score;
- percentage of state's college students attending within state; and

- the number attending various institutions (noncollege vocational, two-year college, four-year college or university) as a percent of those 16 to 24 years old.

3. *Capital Availability.* The rate of modernizing current manufacturing capacities or creating new business ventures is significantly dependent upon the availability of capital. The AmeriTrust/SRI study categorized capital availability in three areas: potential availability of capital from financial institutions; state regulation of capital markets; and state initiatives. These key attributes were identified by the following specific indicators:

- total equity capital in commercial banks;
- size of venture capital fund;
- no interest rate ceiling;
- allow branch banking;
- state equity and venture capital funds;
- state loan guarantee program; and
- state sponsored business incubators.

The study concludes that: "Overall, the AmeriTrust/SRI Indicators reveal regional strengths and weaknesses often overlooked by more traditional business climate indexes. The Midwest, for example, ranks much higher overall because of its strong showing on most of the labor force indicators and several of the accessible technology measures." Other areas, such as the West North Central, scored consistently low on many of the AmeriTrust/SRI indicators. A study such as this, of course, reveals *regional* strengths and weaknesses that may be more or less applicable to any given state or community within the region. They are, nevertheless, important in defining the broader assets and debits conferred on a local community by virtue of its regional and/or state membership.

These results are contradictory to many economic strength and "ability to do business" surveys that typically rank states such as North and South Dakota, Iowa, and Kansas as among the best places in nation to conduct business, and states such as

Michigan among the worst.² Many of these studies are based strictly on the cost of doing business (wage rates, workman's compensation rates, taxes, utility costs, etc.) While these factors cannot and should not be ignored, they do not provide complete information that permits a sound investment decision. It may be that investors that emphasize these "current business costs" in selecting locations are more likely to represent temporary or transient job opportunities for a community, as their location decision is revised every few years. We certainly see the capacity of a community to support adaptation to changing circumstances and competitive business environments as extremely important, if the community is to retain investors over a longer period of time.

INC. magazine conducted its own survey to determine the "hottest" cities in the U.S. for business growth.³ The measures of performance were: significant new start-up companies as a percentage of the business census; percentage of start-ups experiencing high growth; and overall growth in employment. Based on these criteria, South Bend, Indiana ranked 24th, Detroit 50th, Flint 136th, Youngstown, Ohio 139th, and Saginaw/Bay City 142nd out of the 150 cities surveyed. Both South Bend and Detroit performed better than expected on these criteria, while Flint, Youngstown, and Saginaw/Bay City performed at about the level expected of the rust-belt.

This study makes an important point: ". . . cities dominated by a single industry or company -- even one that is robust -- are not conducive to entrepreneurship and small business growth. In these places, the big companies tend to crowd out the smaller ones for capital, employees, land, and attention."⁴ For Flint, the historical truth of this statement is well documented.

Community rank on these differing measures of economic potential is clearly a source of concern, since these rankings influence, to some unknown degree, the investment decisions of the business community. But these rankings may also serve

²Probably the best known of these types of evaluation reports is that issued annually by Alexander Grant. The controversy surrounding these rankings perhaps accounts for the wide recognition it has received, and certainly indicates the importance that state and local economic developers attach to such ratings.

³"Metro Report -- Hot Spots: INC.'s List of the 50 Fastest Growing U.S. Cities," in INC., April, 1987, pp. 50-52.

⁴ibid., p. 50.

useful purposes in the development and direction of community economic responses. First, they provide an inventory of performance indicators for a variety of relevant domains. Some of these domains are probably negatively related, and therefore suggest choices a community may need to make. It is difficult to conceive of a stable situation such that a community scores well on an adaptable labor index such as SRI's, and also scores well on an Alexander Grant wage attractiveness measure: highly trained, skilled, and flexible labor forces do not work for very long at low wages. Second, once choices are made (or, at any rate, development activities begin to move in a particular direction), they can provide useful indicators of progress, either over time within the community, or comparatively with other communities.

Implementing Community Responses

Although the exact meaning and importance of these economic indicators and is hotly debated, it does appear that there are a few basic elements, mechanisms, or systems that a community needs to implement so that it is prepared to identify and address particular problems. Richard H. Bradley, President of the International Downtown Association, identified at least nine tasks or issues that a city needs to address in order to respond to emerging social and economic problems:⁵ speech. We have taken the liberty of treating these as tasks or issues, rather than reflecting the attribute emphasis of Mr. Bradley's presentation.

1. *Vision*. A shared vision for the city must be developed before any consensus-based strategic plan can be developed. Such a vision delimits the basic parameters of what the city hopes to be, and becomes the basis for coordinating efforts and assigning priorities to efforts.
2. *Cooperation among the many public and private sectors*. This does not imply a substitution of private activities for public, but suggests a greater involvement by all parties that can contribute resources to solving problems. This permits coordinated, efficient targeting of those resources.

⁵Bradley, Richard H. "Civic Problem-Solving for Economic Development: the New Civics of Public/Private Partnerships." Washington, D.C.: International Downtown Association, n.d.

3. *Power sharing leadership.* Implementation of decisions is smoother if the decisions are made inclusive of all interested parties. There is a need to create structures and processes that provide decision-making roles to all legitimate interests in a community. The leaders of these new institutions can use their positions and authority to implement and coordinate efforts that may require collaboration and multi-party agreements.
4. *Conflict management.* The various agencies, institutions, and groups within a community must develop methods for resolving conflicts between organizational self-interest and the overall interest of the community.
5. *Consensus decision-making.* As issues become more complex and the number of interested parties more numerous, traditional formal, central authorities become less effective in identifying and correcting problems. The need to develop sound decisions will require development of more consensual decisional structures.
6. *Informal planning.* As consensus decision-making becomes more prevalent, the mechanisms to allow more input may call for informal town meetings, retreats, and other methods that informally solicit input and ideas.
7. *Alternative structures.* As formal structures and existing methods are questioned as to their ability to address new issues, public-private partnerships, not-for-profit development corporations, and other "blends" of resources must be envisioned.
8. *Public entrepreneurship.* Existing governmental organizations are being compared to private organizations (i.e., for fire protection, ambulance service) for effectiveness and efficiency of operation. The public sector must become more driven by these criteria, and more innovative and proactive in its efforts.
9. *Economic linkages.* A city's generation of cash flow, creation of new businesses, and creation of new jobs are critical. Cities that understand the linkages of their current economies (i.e., which sectors create and support other economic sectors), will be better able to develop and strengthen these linkages. Such understanding will enable them to target new economic areas and linkages for development that will allow them to build a more solid and stable economy.

These nine issues or tasks are important because their successful resolution enhances a community's capacity to respond to the changing social, economic, and political environments that impact its citizens. The tasks are tightly interrelated, both conceptually and operationally. Although they appear to be somewhat sequential,

moving from one to nine, they should not be viewed as a time-ordered progression. Since they are interrelated, a community will derive the greatest benefit when as many of these tasks as possible are undertaken in a coherent, coordinated manner. For the most part, that means that communities will be addressing all of these tasks all of the time: the emphasis will shift, but only rarely will any of them be completely dormant.

Two Parallel Communities

To illustrate how these issues may be addressed and the types of results that can be achieved, we chose to investigate two cities: South Bend, Indiana and Youngstown, Ohio. Each city has experienced a substantial economic and social crisis. We feel that the cities provide rough approximations to Flint's past, current, and future economic and social situation. We chose these two specific cities because they seem to be at different points on their recovery path: South Bend has been recently identified as a "come back city" and Youngstown is perceived as a city that is still mired in misfortune, a long way from recovery. We do not suggest that everything South Bend has done has been a success and that all of its problems have been resolved; nor do we suggest that Youngstown is without its achievements and completely lacking in progress. It does seem, however, that at this point of time the two cities are at different points on the "recovery scale."

Our six interviews in Youngstown and five interviews in South Bend included business, government, and other community leaders. In each city we tried to get a representative view of the city's history and its economic development efforts. As with the Genesee County GM plant interviews, we faced scheduling difficulties and were subjected to a possible problem of double filtering—we gained information on the questions we decided to ask and that the respondents answered. The interviewees in both communities were very candid and frank in their discussion of community issues, potential methods of response, and their own community's successes and failures.

The presentation of the information from these interviews will be organized around five of the key community issues described above: vision, power sharing, consensus-based decision making, alternative structures, and economic linkages. These five are selected because they incorporate many elements of the other four, and seem to

us to be perhaps more fundamental than the others. Moreover, South Bend's "success" seems to be associated with a strong commitment to accomplishing these five tasks, and South Bend has used them as a foundation for its overall community development efforts. It also appears that many of the "frustrations" in economic development efforts reported by Youngstown officials are linked to a less successful (to date) resolution of these five issues.

To better understand the current position of each city, a little history and a few facts on each city are needed.

South Bend.

South Bend is a community of 110,000 persons, located in St. Joseph county, a county of 245,000 persons. The minority percentage is approximately 18 to 20 percent in the city and 7 to 8 percent in the county. The city offers major regional medical service, 26 educational institutions within 30 minutes (including Notre Dame), and is a major transportation and distribution center. The city is very similar to Flint in that it made a successful transition from carriage to automotive manufacturing. Like Flint, South Bend became significantly dependent upon the economic cycles of the automotive industry: its two major employers were Studebaker, the carriage and motor vehicle manufacturer, and Bendix Corporation, a major automotive, aerospace, and defense manufacturer. Unlike Flint, South Bend's economy was also supported by other large companies (both automotive and non-automotive related) such as Torrington Bearing, Singer Sewing Machines, and Uniroyal. Its supplier base was also larger, including many tool and die manufacturers and metal forming operations.

The identifiable crisis point for South Bend came in 1963, when Studebaker closed its operations. Peak employment had been about 25,000 employees; however, by the time of the final closing, Studebaker employment had fallen to roughly 6,000. Although the phase out of Studebaker's operations occurred over a long period of time, the psychological reactions and pressures were very similar to what Flint is reportedly experiencing: the community experienced a feeling of failure, and a concern that it would never recover. That impression and attitude was so strong that some community leaders felt public opinion in the early 1970's would suggest that Studebaker closed only a year earlier rather than ten. Ten years after the closing the community still had not accepted the loss as an economic reality nor fundamentally recovered from the shock.

South Bend was fortunate that Studebaker closed during a period of overall U.S. economic prosperity. In fact, the South Bend officials were very careful to point this fact out: there were no "magic formulas," South Bend was in the right place at the right time, with needed labor skills, excess industrial capacity, and a developed infrastructure. This capability allowed the impact of the Studebaker closing to be softened: at one point approximately 28 firms were operating out of the old complex and the unemployment rate was lower some 12 to 18 months after than it had been just prior to the closing.

South Bend has also been impacted by the subsequent closings of Torrington Bearing, Singer, and Uniroyal. Bendix, through a series of restructurings and mergers, has become a key component of the automotive operations of Allied-Signal Corporation. The company's operations in South Bend have been greatly reduced, including the loss of the world headquarters. Community officials indicate that South Bend's lack of major corporate headquarters is somewhat of a hindrance in retaining manufacturing operations, in that there is no sense of local identity or loyalty.

An image problem still remains in South Bend. Most interviewees referred to the outside perception of a "rust-belt city," militant labor and poor union-management relationships (the UAW was actually organized in South Bend and the first sit down strike occurred at Bendix), and a blue-collar, smokestack community. Like Flint, many of these perceptions are exaggerated. But perception is reality in terms of the mindsets of persons external to the community.

South Bend has made significant progress in shifting its economy from the manufacturing sector to a more diversified base. It has experienced some population decrease (under 4%) since 1980, enjoyed a 36% increase in median household income, and an unemployment rate between 5.5% and 5.9%. Its downtown has not recovered as a retail center, continuing to lose activity to malls, but has had some success in conversion to office usage.

Youngstown.

Youngstown, Ohio, is a city of approximately 105,000, located in Mahoning County. Its minority percentage is approximately 35%, somewhat higher than the

County as a whole. Youngstown is located roughly one and one-half hours from both Pittsburgh and Cleveland, and perhaps for this reason lacks the strong educational, medical, and cultural resources of South Bend. On the other hand, it has served as a central "hub" for many of the region's steel companies.

Youngstown is similar to Flint and South Bend in its one-industry orientation. Steel mills and fabricating operations were the significant source of income to the Mahoning Valley (comprised primarily of the cities of Warren, Niles, and Girard in Trumbull County and Youngstown, Struthers, and Campbell in Mahoning County) through the 1950s and 1960s. The automobile industry is also an important component of the area economy, not only as a customer of the mills, but as an employer. General Motor's Packard Electric Division, GM's primary source of engine and main body wiring harnesses, is headquartered in Warren and the Company also has a major car assembly plant, Lordstown Assembly, located approximately ten miles northwest of Youngstown.

The city is also like Flint and South Bend in its lack of corporate headquarters. As the result of mergers, Youngstown lost its local identity or loyalty over a period of years ten years. Youngstown Sheet and Tube Company merged in 1970 with Lykes Steamship to form Lykes-Youngstown, with major control of the operations resting with the existing Lykes' management. This merger was followed in 1979 by an additional merger of Lykes-Youngstown in the LTV Corporation -- the parent of Jones and Laughlin Steel. Youngstown Sheet and Tube lost its entire identity as Jones and Laughlin took over the ownership of all Youngstown Sheet and Tube property. Another operation in Youngstown, Republic Steel's welded pipe operation, was merged into LTV in 1984 to form LTV Steel Corporation. The other large steel processor in the area, U.S. Steel, has its headquarters in Pittsburgh, Pennsylvania.

Youngstown was devastated during the period of 1978 to 1981 by a series of plant closings. The major impact took place within the steel operations of Youngstown Sheet and Tube, U.S. Steel, and Republic Steel. Youngstown Sheet and Tube idled 6,200 employees in 1978 when it closed its Brier Hill Steel and Campbell Works plants. These closings were announced on what is known as "Black Monday," September 19, 1977. Although the symptoms of trouble existed for several years, the Company did not offer the community much time to respond, announcing that the plants were to close by the end of 1977. Within one year all the jobs were eliminated.

Major job losses continued to mount in the Mahoning Valley. Shortly after Youngstown Sheet and Tube announcement, U.S. Steel announced the intended closing

by mid-1980 of its Ohio and McDonald Works plants. These plants were closed by the end of 1980 eliminating 3,500 jobs in the valley. The third major "single" closing occurred in 1981 when Republic Steel closed its Warren Manufacturing Division operations. This 1,000 person operation brought the total three year job losses at just these three companies to approximately 11,000. It is estimated that the entire Mahoning Valley had a net loss of over 23,000 jobs between 1978 and 1984.

Youngstown is hampered by a poor image. Like Flint and South Bend, images of the rust belt, poor management-union relations, smokestacks, and blue-collar environment hinder the city's efforts to attract new businesses to the area. The city does have many assets to build upon; however, it is in competition with many other cities that also have excess physical space and skilled labor resources. Unlike South Bend, Youngstown's major economic dislocations occurred before and during a major national recession.

Recovery in Youngstown lags South Bend. Since 1980, Youngstown has lost about 8.5% of its population. Its unemployment rate has risen from 8.3% to 10.6% and it has a high percentage of residents categorized as not in the labor force (about 47.5% in 1980). These factors suggest that the 28% gain in median household income it has experienced since 1980 may primarily indicate an increasing division of the of the community into haves and have-nots, rather than a broad-based improvement. There is some evidence of a gradual shift towards the service sector, and to smaller employers within the remaining manufacturing base.

The elements of community response.

Vision.

The starting point for any community, organization, or corporation undertaking economic development is the collective forging of a vision. Goals and objectives that the community identifies -- both at an abstract and a concrete level -- create a focus for a wide variety of initiatives and evaluation of progress. This effort may be the most difficult and frustrating part of the entire development effort. It requires that the community admit problems exist, make a realistic assessment of its assets and liabilities, and define "who we are and what we want to be."

Because it is the most difficult exercise, it requires support from the other primary building blocks (especially power-sharing and consensus-based decision making) and is likely to require the longest period of time for adequate development. South Bend officials feel that it has only been within the last five years that the elements of identification of problems, coordination of efforts, and a consensus on the city's future have begun to emerge in a concrete fashion. One interviewee feels that only in the last three years (over twenty years after the closing) has any major progress made on dispelling the "Studebaker mentality" that hindered a positive attitude among the residents. Most importantly, the community leaders stress that a city must not wait until true desperation before initiating this "soul search." By that time it may be too late to revive. Unfortunately, it is usually desperation that provides the recognition of the need to change and the discipline required for change.

South Bend went through very exhaustive studies by external and internal resources to define the city's assets and liabilities. A critical part of this process was the identification of factors that were simply outside the city's control (ie, the national economy, etc.). Given these parameters, the city, working with others in the county, sought to be at the forefront of their region in providing a quality living and working environment. They began to build upon their strategic location for manufacturing and distribution and sought to serve the region from a relatively low cost position. Overall goals became business attraction, small business creation, business retention, and generation of a positive cash flow for the city's economy.

There seems to be a sense of genuine enthusiasm for the current efforts in South Bend.⁶ The community leaders do understand that there needs to be continual improvement in all of their efforts and services. Most importantly there seems to be a sense of overall accomplishment such that conflicts of priorities are resolved. The following is one example of this type of resolution. South Bend has spent large sums of money to develop the river front area throughout the city. This includes parks, historic building restorations, and new civic activity centers. On one hand it could be said that this money does not provide the direct generation of cash flow that, for example, a new industrial park would create. Nor does it directly provide revitalization of the traditional, retail downtown center. However, the need to improve the quality of life for the residents — a superordinate objective — supports the decision to invest this money

⁶All of our respondents closely identify with these efforts. Whether this is evidence of broad community support, or simply reflects the biases of the people identified for our interviews is impossible to say.

along the river front rather than in a number of alternatives. The indirect benefits across a number of areas are simply held to be more important *overall* than the benefits that might derive from more targeted, traditionally narrower economic projects.

Youngstown appears to be struggling with the issue of generating a broad-based vision for the city. Beyond this, it has been difficult to persuade many of the need to develop a wider perspective, centered on the development of the entire Mahoning Valley area. The community has accepted that steel will never again play the leading role that it once had within the community. But this has come about only after numerous attempts by various community groups soon after the closing announcements to keep the plants open. Although these attempts were well-intended, in retrospect, these efforts resulted in little economic change; if anything, they may have actually hindered significant progress by raising unrealistic expectations and channeling resources away from more practical directions.

Some leaders indicate that there is frustration from too many people trying to solve too many problems, or trying to solve the same problem in too many ways. There has been no major independent organization or individual who has stepped forward to coordinate the various activities within the Valley area. Another problem faced several times by the community is the disappointment of development projects that are publicized not wisely, but too well, early in the development phase. If the program fails or the result is less than expected, the residents become critical of the effort and again question the city's ability to attract new business.

Youngstown is trying to develop economic activity around its strengths of geographic location, skilled workforce, and transportation resources. Progress has been made identifying and accepting the major problems that face the community. There are initial efforts to seek solutions and implement strategies. There is beginning awareness and understanding that teamwork and cooperation will be necessary to improve.

Youngstown, to be sure, is eight to ten years into its major restructuring, and, indeed, sounds quite a bit like South Bend at the same chronological point of its experiences. The challenge for Flint will be to overcome the initial reluctance to change, acknowledge the serious problems that face the community, and reach consensus on responses. Hopefully, the decade or so that South Bend required to accomplish this can be abbreviated, and the decade or so that Youngstown has invested in attempting to reach this goal avoided.

Power Sharing.

There is a positive impression of openness to new ideas and commitment to teamwork throughout a fairly large network of influential people in South Bend and Mishawaka. An important aspect of this is the recognition that these cities need to coordinate their development activities. Once quite separate, even hostile communities, the two major cities of St. Joseph County are now involved and cooperatively working on every major economic development program and marketing effort.

Just as power is being shared across community lines, so too it is being shared across a broader constituency of institutional representatives. This emerging broad base of leadership is an important development because civic and economic activities were traditionally dominated by key executives of Studebaker, Bendix, and Singer. Power and status within the community was automatically conferred upon these executives as they moved through the corporation. With these corporations' key activities relocated elsewhere, there was a real need to develop replacement leadership within the community. The response to that need has been, it appears, a shift to more reliance on public sector and less traditional private sector personnel, away from the more traditional reliance on personnel from key employers. Personnel from key employers are still involved, to be sure, but their impact has been thinned by the increased roles of many other actors.

Perhaps the most significant result of this power sharing has been the development of Project Future, which will be discussed more fully in the section on Alternative Structures, below. Project Future is the primary agency charged with new business attraction. Business attraction used to be the nearly exclusive charge of the South Bend Chamber of Commerce. The Chamber maintains South Bend's business retention activities. The effective coordination of these activities can be achieved only if necessary support is channeled from all the various groups, institutions, and corporations. These two groups and the Department of Economic Development of the City of South Bend, the other key coordinating body within the city, play this crucial role. These three groups appear to work well in coordination with each other, based on a well understood, flexible, relationship.

Youngstown, on the other hand, seems still to be struggling with an inability to break down the traditional barriers between the traditional development agencies and

the *ad hoc* agencies and organizations that have been emerged in recent years. These groups sometimes seem to reflect a spirit of competitive rather than of cooperative economic development. We do not believe that Youngstown is markedly different from most cities in its difficulty in lessening this individualistic and self-interested orientation. Once a program or agency is created it is very hard for its staff to believe that it may be necessary to dissolve it or merge its activity with other agencies to make the city's development activities more efficient or effective. Recalling point one above, the city must first have a clear vision of what must be accomplished before people -- even economic development professionals -- recognize that that a particular change may be necessary for the overall good of the community.

Youngstown has faced great difficulty in sharing power. It has been especially difficult to develop strategies and implement programs across county lines, on a Mahoning Valley basis. There is significant conflict between the two major cities, Youngstown (Mahoning County) and Warren (Trumbull County), located about fifteen miles away. One interviewee reports that the news agencies of the two cities routinely fail to cover activities in the other city, not because they lack news-worthiness, but simply because of the geographic source. The political and social distance between the two cities looms much larger than their geographical proximity. Many in the Valley feel that Youngstown exerts too much influence in any cooperative efforts, so that other communities and their groups and institutions are alienated. Thus they are unwilling to cooperate. Most interviewees stress the need to develop a regional effort that balances the strengths of a number of communities' against their individual weaknesses.

Consensus Decision-Making

Building upon the spirit of power-sharing, consensus decision-making brings together all the entities of the community so that the decisions are made with high degrees of diverse input and consideration. This serves to create ownership and sponsorship of subsequent action plans. Consensus decisions will not guarantee success; however, personal involvement frequently results in personal commitment, and that attitude may be necessary if not sufficient for progress.

South Bend created the environment for consensus decision-making by holding a

"community retreat". Held in early 1980, this retreat was attended by influential representatives of all the various institutions, groups, corporations, and other entities that made up the fabric of the South Bend community. Originally this was not a cohesive group, including businesses (large and small), labor and union, government, education, ethnic groups, public works, financial/banking, real estate, accountants and lawyers, utilities, civic groups, neighborhood groups, and transportation services. Dubbed the "Committee of One Hundred," the group broke into task forces that identified problems in specific areas requiring community-wide efforts for solution. The focus was not on fixing responsibility for past failures, but on identifying common interests within the community, making an effort to work out differences, and marshalling resources to solve problems for the benefit of the entire community. The committee was well aware that it could not solve all problems, and work was carefully directed to problems the community could realistically impact. However, the committee was challenged to step outside of existing political barriers, attitudes, and conventional development mechanisms. These three key elements usually define (and limit) the parameters of what an individual or community can impact.

The problems identified, of course, could not be solved through that one retreat. The task forces met for the next 18 months identifying root issues and plans for improvements. This was a relatively low profile activity with little press or publicity. The group wanted to make all the progress it could without creating unrealistic expectations about what could be accomplished. An interesting aspect of the committee's process was that no substitutes or "second lieutenants" could substitute for these task force meetings. If the chairman of the board was a member of the task force, then it was the chairman that participated in the meetings, not a deputy. This was done in the interest of developing sponsorship and hence increasing the chances of effective implementation.

The outcome of this "Committee of One Hundred" was a broad consensus on the city's assets and liabilities and the core problems facing it. The group then created and funded one institution that would coordinate the majority of the activities that were proposed by the task forces. Again, this institution was designed, created, and funded through input from the wide variety of groups which made up the city (and to some extent the county). The primary agency created from this exercise was Project Future (described below). Interviewees made a point of identifying Project Future as a "creature of all;" that is, it is not identified with the Chamber of Commerce, the

Mayor's Office, or any other particular organizational or institutional player. Even so, there is some feeling in the community that it perhaps reflects more of a management orientation to development issues, and that this is sometimes at the expense of a labor view of the issues.

Clearly the work of the Committee could be seen as primarily an exercise in developing the community vision. We discuss it here because the balance of its work focused more heavily on forming a consensual base for a broad range of more operational decisions. The fact that it could be treated as an example of either the vision or consensus decision-making element (or, for that matter, power-sharing) only emphasizes the interconnections among these elements. They can not be neatly separated and treated as lock-step tasks.

Our interviews in Youngstown did not provide a sense of the same scope of community participation and involvement. There have been efforts to look at the entire Mahoning Valley or the Warren/Youngstown SMSA. However, this total-community approach has not yet been developed. In the opinion of some of our interviewees there are a large number of players that are competing for dominance and trying to force their own agendas, and, as a result, are pulling in a variety of different directions.

Although Youngstown has not been able to coalesce a wide variety of interest groups around common community goals, some limited success has been achieved in linking business, labor, and government agencies. These development agencies will be discussed in the next section. At the risk of sounding repetitive, Youngstown appears to be little different from most other cities in this regard: initial responses are limited in their scope and involvement, tied typically to only one company or plant or sector of the economy or community. It is typical that the long and painful requirements to build consensus within the community are passed over for more immediate returns. But it is only through this broad-based consensus that teamwork can be built and the community can establish an ongoing mechanism to respond not just to today's issues but to future issues as well.

Alternative Structures.

The initial activities of vision formulation, power-sharing, and consensus decision-making are the cornerstones for the development of alternative economic and social development structures. It is important that these organizational structures reflect the definition of community needs, since traditional economic development organizations or approaches may not be appropriate or effective for today's community issues. The capacity to approach issues with an open mind is the result of a clear community vision that relates efforts to common interests and resolves or at least submerges factional divisions within the community. This vision, in addition to the collective sponsorship and insight gained through power-sharing and consensus decision-making enhances the effectiveness of the actual implementation of community development activities.

Project Future (PF) is perhaps the most significant alternative structure to be developed from South Bend's "Committee of One Hundred" effort. The group was formed in 1982 after eighteen months of task force work by the committee. The Project was initially funded for seven years, with funding of \$4.2 million. There are executive committee meetings monthly and policy meetings quarterly, and the composition of these groups reflect the broad and diverse interest groups that participated in the original Committee efforts.

Business attraction and new business startups are the primary tasks for PF. Since job creation *and* retention were the primary goals of the community, PF was originally designed to centralize and implement South Bend's business retention and attraction programs. Both of these activities had been housed at the South Bend/Mishawaka Area Chamber of Commerce. This does not imply that the Chamber was ineffective in its approaches; but for years, with solid Studebaker and Bendix presence, economic development was not a priority. The effort expended by the Chamber matched the need perceived by the community, and that was a fairly low priority. When the situation, the perceived need, and the priority changed, so did the structure required for successful effort.

The total centralization of both business attraction and retention efforts was not as successful as the Committee hoped it would be. Problems, issues, and subsequent responses are often different enough for the two tasks that South Bend eventually decided to split the two activities: responsibility for business retention reverted to the

Chamber and PF was charged solely with business attraction. This form of specialization seems to have served the county's best interest.

We do not have any information on how smoothly or effectively this assignment and reassignment of tasks actually progressed, but the descriptions provided us suggest it did not involve a high degree of rancorous conflict. It is clear, however, that whatever the dynamics may have been, the current arrangements seem quite satisfactory, so any conflict the changes may have engendered appear to be resolved. The development and restructuring of PF is an impressive example, in our view, of the kinds of changes and experiments that communities may need to pursue in tailoring broad strategies and initiatives to their own situations. The fact that these changes were implemented without a major legacy of unresolved conflict and in-fighting speaks well of the effectiveness of South Bend's approach. Consider that the Chamber initially "lost" two major, high visibility activities to a new organization, and that that organization subsequently "lost" one of those activities to yet another new organization under the aegis of the Chamber. Whether this process represents cold, rational planning or adroit political compromise is impossible to say. But that it occurred without a serious residue of conflict and hostility is impressive indeed.

PF's activities center around three key areas: community economic analysis, marshalling resources for new business startup, and marketing. All interviewees in South Bend stress the professional skills of the PF staff. The staff sees itself as a source of information for business decisions, and as such provides detailed and correct information about South Bend, but also other "competing" communities. It is through these analytical resources that South Bend markets itself in a rational, well-grounded manner vis-a-vis other communities or regions.

The professionalism of the staff allows PF to offer itself as a broad resource for business development and effectively to coordinate additional activities through the City's Department of Economic Development, the Chamber of Commerce, and other not-for-profit corporations such as the Industrial Foundation. PF's staff provides and/or coordinates assistance for business plan development, Small Business Administration loans, financing assistance, SCORE participation, student internships, volunteers, investment networks, venture capital, and consulting assistance.

Besides commenting on the professionalism of the PF staff, interviewees indicated the commitment to human resource development for other economic development staffs is a major community asset. Establishing programs and organization without proper

staffing can seriously jeopardize economic development progress. A number of the interviewees see the training and development investments in the economic development staffs as a major key to South Bend's successful efforts.

There appears to be a real spirit of respect and cooperation among all these primary development agencies. Channels of communication are in place, with identified liaisons and linkages through cross-board memberships. Responsibility, authority, and operating parameters are well enough defined, but at the same time flexible, so that duplication of effort exists primarily at the fringe of each groups' responsibilities where one group's responsibilities end and another's begin. There is little conflict or effort duplication reported within the core activities of the different groups. It is through a concerted communications effort and cooperation among the groups that businesses and individuals are directed and assisted in the most effective manner.

There is increasing coordination between and participation in the city's development efforts by the various local schools and universities, such as Notre Dame and Indiana University-South Bend. This city-university involvement is being strengthened to support not only economic development, but South Bend's quality of life efforts. It appears that South Bend benefits greatly from these local universities, whose staffs have a high commitment to the research and other activities. During our visit we attended an excellent presentation on changes in the employment profile of St. Joseph's County to the South Bend Economic Development Agency by three staff members from IU-SB. The topic, audience, and presenters symbolize the broader view, degree of professional development, and marshalling of resources that seems to typify much of South Bend's approach to economic development.

Economic development activities in Youngstown have been fairly traditional. Through 1977 the Youngstown Chamber of Commerce was the primary agency charged with economic development. There were other agencies located within the Mayor's Office but, as was true in South Bend, the strength of local industry reinforced a relatively low priority for these agencies. There was sector of the Chamber that focused on regional growth; however, as indicated above, the regional emphasis on economic development was generally weak.

Spurred by the initial mill closings, the activities of the regional growth section were transferred to the Mahoning Valley Economic Development Corporation (MVEDC), a not-for-profit private/public corporation which developed through a partnership of public, business, and labor officials. MVEDC operated a state- and

federally-funded revolving loan program. Several projects were undertaken, including the development of two commercial parks and the support of railroad spurs to maintain existing business operations. Additional similar organizations and programs were established for economic development. It appears that the primary emphases centered on worker retraining, interest rate subsidies (three percentage points), Urban Development Action Grants, state grants, and similar programs. These types of activities are attractive because they put money to work immediately, and promise quick returns. However, in Youngstown they did not grow from the kind of broad-based community initiative that South Bend developed. Because these efforts have been generally fragmented rather than part of a regional, coherent effort, each project has developed its own particular interests and goals and the sum of the projects do not seem to support the overall progress of the Mahoning Valley. The community does not appear to have the same level of coordination among its various economic development entities, nor does it appear that there is any division of labor (as far as business retention, business development, etc.) among the key groups within Mahoning County (Youngstown) and certainly not across the entire Valley area. Such a situation promotes effort duplication and conflict between the agencies.

There are a number of activities that are encouraging. The Chamber has created the Regional Growth Association which has been charged with the formulation of an overall economic development plan for the Mahoning Valley. To a great extent, these efforts are being coordinated through the Center for Urban Studies at Youngstown State University. It appears the University offers the talent to develop such area-wide studies and the neutral location to bridge political and personality barriers. As was true of South Bend's early experience, it is unfortunate that these types of development plans and consensus decisions and actions were not better developed before the city's viability was severely threatened. Perhaps it is human nature not to change until forced.

Economic Linkages

Economic development must create or stimulate growth in sectors of the economy that are likely to support a large number of additional jobs in the community and be viable in the long-term (or at least significantly transferable to those sectors which will

be viable). Understanding these economic linkages or interrelationships is important because it permits a community to evaluate the total benefits of various business retention and attraction strategies. This evaluation is very important as cities create and select among multiple strategic options. For example, a city might select a strategy of pursuing only high wage employment at reduced employment levels, or low wage employment at higher employment levels. The city must calculate the total level of income, project the standard of living, and make other similar calculations to determine which strategy is best for the community.

The city of South Bend is currently evaluating the progress and success of its efforts. From 1970 to 1987 the mix of employment within the city shifted from one-third manufacturing and one-fourth service to one-fourth manufacturing and one-third service. There has been a gain in employment of 13,000 jobs during this period, but because of the sectors which grew, there has not been a significant increase in the income level. Because of the types of jobs created (service vs. manufacturing and lower vs. higher wages), the income and employment multipliers are significantly lower than they were in the past.

South Bend has tried to build its new service industries around regional medical care, education, data processing, finance and insurance, and distributing, warehousing, and transportation. A number of these service sectors tend to be in the upper quartiles of income level. There have also been major substitutions in the manufacturing sectors, such as plastic molding for metal forming, automated for manual assembly, and so forth. Interviewees feel that in the long-run these changes will be beneficial to the community since the newer operations will be more efficient and productive and will operate in markets which are more stable.

South Bend, then, is making the transition from a heavily manufacturing economy (roughly 50% of jobs in the late 1950s) to a more diversified economy. Force of circumstances has required this change, and it is certainly a mixed blessing. The lower income associated with the jobs in the new South Bend has to be balanced against the hoped-for greater stability and insulation from economic shocks they provide. It must also be recognized that South Bend has been fortunate in developing relatively well-paying service sector employment. Many cities facing this transition will face more severe income losses as the service sector replaces manufacturing as a source of employment.

The exact outcome of many of South Bend's efforts is yet to be determined.

However, it appears that the building blocks are in place for restructuring its economy. More importantly, the city is committed to monitoring the progress of the economy (through local University and outside consulting assistance as well as traditional county and city agencies), checking this progress against community goals, and adjusting efforts accordingly. It is unlikely that every goal will be achieved. However, the city seems to be well-positioned with the proper resources. It seems likely that it will progress in a predictable manner, with acceptable approximation of its specific targets.

Youngstown has made some incremental, although very important, improvements in its economy. In place of the large steel mills, small "mini-mills" and metal fabricators have begun modest operations. These operations do not have the income or employment multipliers of the old mills; however, they are providing an initial base (and perhaps more stable) employment and capital investment. Packard Electric has also expanded its operations in the area adding 700 to 800 new jobs.

Direct automotive-related employment has also increased in Youngstown Commerce Park, an industrial park built on land donated by the Edward J. DeBartolo Corporation, a Youngstown headquartered firm that is one of the nation's leading shopping mall developers. Located conveniently to the GM Lordstown assembly plant, the park's first tenant was ASC Corporation which provides convertible conversions for GM's J-body cars and employs approximately 300 employees.

Youngstown will also gain some automotive employment soon because Avanti Motor Company recently announced that it would establish an assembly facility there. Avanti, recently the beneficiary of heavy investment by a Youngstown businessman, will convert a portion of an old steel mill for this purpose. This is somewhat ironic, in view of our general impression of South Bend's greater success, because Avanti's current facilities are located at the old Studebaker complex in South Bend, and they could simply have been expanded.

Like South Bend in the 1960s, Youngstown is in a position to broker the large physical facilities that remain vacant on highway, water, and railroad frontage. Some of these properties are in very good repair and are being marketed by USS Realty Development, a division of USX Corporation and Castlo, a not-for-profit community development corporation which is operating from the former Youngstown Sheet and Tube facilities in Struthers. Many other facilities are beyond repair and should be torn down to allow development of property with existing utility and transportation services.

Many of Youngstown's efforts in job training, interest rate subsidy, and tax abatements have resulted in job creation and capital investment. It would be unfair, based on our limited investigation, to predict the long-term success of these efforts or how well they will fit into an overall improvement of the Valley's economy. It appears, however, that the interviewees spoke more of individual success stories that, while very significant to an area as depressed as the Mahoning Valley, do not suggest a coherent overall plan for restructuring of the community to meet its future economic and social environment.

Summary.

Both South Bend and Youngstown have experienced a mixture of successes and failures in their efforts to recover from sharp, sudden economic dislocations. That is to be expected. The timing of the dislocations -- in the middle of an economic expansion for South Bend, of a contraction for Youngstown -- had tremendous influence upon the success of their attempts to meet the immediate needs of their populations. At the same time, it is clear that longer-term efforts must be implemented as soon as possible so that a community can take advantage of favorable developments in the broader economy and insulate itself, as much as possible, from unfavorable developments.