Managerial Discretion, Business Strategy, and the Quality of Jobs: Evidence From Medium-Sized Manufacturing Establishments in Central New York*

by
Derek C. Jones
and
Takao Kato
and
Adam Weinberg

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Jones is Morris Professor of Economics, Hamilton College, Clinton, NY 13323 and Research Associate, Davidson Institute, University of Michigan. Email: djones@hamilton.edu.
Kato is Professor of Economics, Colgate University, Hamilton, NY 13346 and Research Associate, Center on Japanese Economy and Business, Columbia Business School and TCER. Email: tkato@mail.colgate.edu
Weinberg is Associate Professor of Sociology, Colgate University, Hamilton, NY 13346. Email: weinberg@mail.colgate.edu

I Introduction

This paper draws on ten case studies of manufacturing firms in central New York to examine two key questions. First, are managers in mid-sized establishments that employ workers with limited formal education and that are located in an economically depressed geographic region able to exercise discretion with respect to the business strategy they adopt? And second, do the strategies that managers implement matter greatly for worker outcomes?

Some economic theorists argue that firms that operate in competitive labor and product markets, especially those subject to global competition, have very little discretion in setting wage, employment and human resource management practices. Consequently, these practices are predicted to be broadly similar across firms in similar situations. However, we find clear and compelling evidence that medium-sized establishments in central New York offer and sustain practices that differ in important respects.

We reach three main conclusions. First, the establishments in our study vary widely in their workplace and labor relations practices. Second, plants are consistent in the practices they adopt. Thus firms that make use of teams and incentive pay schemes are more likely to provide greater amounts of training as well. Indeed, differences among the establishments in our study in wage and employment practices, use of teams and incentive pay, and training and job content are sufficiently large that we discern three strategies, which we label high road, low road and middle road. Finally, these varying management strategies matter for workers because they lead to differences in important worker outcomes such as empowerment, satisfaction, commitment, trust, communication, and work effort.

The chapter is organized as follows. In the next section we overview the case study establishments and their environment. In sections three and four we draw on our case study data to explore how and why firms pursue different management strategies. In the fifth section we examine the impacts of these strategies on workers. We focus in particular on high performance work practices (HPWP), [1] and conclude that HPWPs may provide important benefits to both employees and firms. In the final section we summarize our findings and offer some concluding comments.

II The Case Study Establishments

The establishments in this study operate in a depressed region of the country that has shared few of the economic gains of the last ten years. They are located in central New York in Oneida, Onondaga, Herkimer and Madison counties. While the population of the average U.S. county grew by 35% during the period 1969-1999, these counties have either flat or falling populations, and in the case of Oneida county, population fell by more than 15%. These counties are more homogeneous (and white) than is the norm in the U.S. despite a decade or so of modest rates of immigration from countries including Bosnia, Russia and Viet-Nam. Two of the four counties are more than 96% white, compared to a U.S. average of about 75%. While the proportion of high school graduates tends to slightly exceed the nation average, the percentage of college graduates typically is below the national average.

With the exception of Madison County, employment growth over the last three decades has lagged behind the rest of the country. In the 4-county area in 1998 there were only 538 establishments that provided at least 100 jobs and employment continues to depend heavily on manufacturing.[2] However, the postwar period has witnessed continuing capital flight and only limited success in maintaining highly paid manufacturing jobs in the region. Partly as a consequence, average wage and salary disbursements in the counties (in 1998 dollars) were about the same or lower in 1998 than in 1969, in contrast to U.S. counties in general in which these disbursements rose over this period (Figure 1). The region is geographically large and

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diverse. The challenges facing employers and employees within the more isolated rural parts of the region are arguably different from that confront their counterparts both in smaller towns such as Utica and in the larger metropolitan area of Syracuse.

A total of 118 medium-sized manufacturing establishments operate in the 4-county region. A key concern in selecting establishments for this study is that they primarily employ workers with limited education. The typical production worker in the case study establishments is a high school graduate.[3] In a few instances, employees had earned an associates degree.[4] To highlight the effect of differences in local

labor markets, establishments in the study vary in terms of location in a rural, urban or metropolitan labor market. The establishments also differ in terms of type of ownership, unionization, and the incidence of HPWPs. We are not always able to match establishments in terms of the product lines they produce. However all of the case study establishments engage in light manufacturing operations,[5] and employers were competing for workers with broadly similar skills.

Several types of data were gathered for this study. Lengthy interviews with diverse personnel, including managers and union representatives where relevant, were conducted. Questionnaires were completed using responses from human resources (HR) personnel. For three of the plants, worker shadowing exercises were done over periods of one to three months. Finally, for three establishments we collected survey data from individual employees – more than 500 surveys, with an average response rate of more than 80%. [6] The worker survey data are used to investigate the impact of HPWPs on a broad range of worker outcomes. We also examine less studied practices and outcomes, such as peer monitoring and absolute and relative worker effort.

Some of the key features of the ten establishments in this study are summarized in Table 1. Both

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publicly traded and private firms are represented as well as firms with and without local headquarters. In most cases, control was based in the U.S. and, indeed, in central New York. Most establishments were part of larger multi-plant organizations. While some firms had just over 100 employees, others were rather larger. Plants differed widely in terms of age, with some quite new while one plant had been in existence at this site for 200 years (making it one of the oldest continuously operating plants in the U.S.).

There were also stark differences in the financial situation of the plants and in managers' perceptions of the nature of the product markets and competitive pressures they faced. Some establishments indicated they had established a solid market niche, and sales data for several plants show that they recorded sustained growth over the past few years. In the main, such plants tended to face mainly domestic competition. More typically, managers perceived that they faced rapidly changing markets, that sales tended to be cyclical, and that profit margins were quite thin. These plants operated in

markets in which competitive pressures were growing, in some cases from overseas competitors. The metropolitan plants faced a somewhat different situation. Two of them have aggressively entered emerging product markets such as wireless and broadband. Employment at these firms grew at an extraordinarily rapid clip between 1994 and 1999, and both firms had strong profit positions. However, some executives at these companies expressed uncertainty about whether these new markets would be sustainable over the long haul – a view that unfortunately proved to be far-sighted.

III Management Strategies

The latter half of the 1990s was a period in which fortunes reversed dramatically for many manufacturing establishments in central New York. As one HR manager put it in early 2000:

"If you said to me what is the number one issue your organization is facing, it is retention."

All the HR managers we interviewed express similar sentiments, though labor market pressures were perhaps especially strong for the metropolitan plants. This heightened need to recruit and retain employees inevitably affected firm personnel policies, especially concerning compensation and employment, workplace and labor relations practices.

Notwithstanding the fact that managers of medium size manufacturing in central New York face broadly similar market pressures, we find clear and compelling evidence that managers do have discretion in their employment practices and wage polices. Indeed, differences among our firms are sufficiently great that we discern three sets of strategies, which we label high road, low road and middle road. In the rest of this section we present evidence on the existence of managerial discretion for our cases in three broad policy areas, namely: (i) wage and employment practices (and associated features of internal labor markets); (ii) the use of HPWPs ; and (iii) skill, training and job content (also see Tables 2-3).

The High Road Strategy

Broad differences exist across cases concerning wage and employment practices (and associated features of internal labor markets). In general we find indications that in plants adopting a *high road strategy* starting wages compare very favorably with other firms in that local labor market, and that more flexible wage and employment policies are evident including job rotation and peer participation in

performance. In addition, HIGH ROAD establishments tend to have rates of turnover that are unusually low compared to other plants in that area.

Important components of a HIGH ROAD STRATEGY include basic wage and employment policies that place the establishment in the top tier of plants in the relevant labor market. Thus while starting wages for unskilled, inexperienced workers range from about $6.00 to $9.00 an hour in central NY, establishments pursuing a HIGH ROAD STRATEGY tended to pay above average (Table 2). Unsurprisingly, initial wage rates tend to be higher in metropolitan locations. For example, MACHINE PARTS pays $9.00 (and $10-12 for

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those with 720 hours of local vocational high school, BOCES). In IT PARTS, a new entrant without work experience or obvious skills, ordinarily would start at $7.50 an hour. She would work in a semi-skilled job such as a utility operator or on the line assembling products in one of the feeder shops. Most likely this would be in the business unit that produced the least complicated final products. Starting pay at MATERIALS and LARGE METAL are also well above average for comparable cases, although the latter case is less surprising since it is a unionized firm.[7]

Another potential pillar of a HIGH ROAD STRATEGY is a no layoff policy. However, only one firm (MATERIALS) advertised a no layoff policy to its labor force. In all other instances, while informal reassurances concerning employment security had been given when labor markets were tight, these had tended to be downplayed or even forgotten following the rapid and largely unexpected onset of the current recession. Indeed, five cases were forced to introduce layoffs during 2001. However, no layoffs appear to have occurred in MATERIALS.

The available evidence indicates that, in general, turnover rates are quite low in cases that have adopted a HIGH ROAD STRATEGY. However, typically turnover is somewhat higher on average in metro areas (where, until recently, alternative employment options were more readily available than in rural locations.)

Besides the aspects of wage and employment policies described in Table 2 and for which

information is available for all cases, additional evidence is also available for some firms in related areas. For example, in IT PARTS, entry-level, inexperienced workers receive their first formal evaluation after a year. However, supervisors were authorized to increase wages (usually by 25 cents an hour) ahead of this schedule for workers judged to be superior performers. For jobs in that division, promotion to positions with higher grades was based mainly on recommendations of supervisors in that business unit. But employees were able to bid on jobs elsewhere in the firm. Arrangements in ELECTRICAL PARTS had subtle differences from those in place in IT PARTS. In ELECTRICAL PARTS essentially the system was one of seniority wages within entry-level grade jobs (and wages topped out at $14.00 an hour in that grade, twice the starting wage). Also the initial formal evaluation took place earlier (after 3 months). Normally workers were eligible to bid for a higher-grade job after one year. As in IT PARTS, job-ladders were based on merit rather than seniority. The norm in most other firms is for traditional assessment arrangements to prevail, usually annual assessments conducted only by the immediate supervisor. For example, MACHINE PARTS recently introduced a formal job evaluation program, though it is not used for pay determination. However the system for performance evaluation differed quite a bit at MATERIALS with that firm making active use of peer evaluations and it also provided possibilities for entry-level workers to receive rapid and sizeable increases in pay as well as job reassignments.

Marked differences also exist among firms concerning job rotation. Again MATERIALS was unusual in having a formal policy of job rotation, though MACHINE PARTS also rotates production workers rather extensively to make them multi-skilled. The HR manager of MACHINE PARTS stressed the benefit of having multi-skilled workers, especially in reducing employee absenteeism. But IT PARTS was more the norm in not having such a policy in place. However, if supervisors in different business units saw that encouraging this kind of cross-training was in the firm's interests, then they were encouraged to seek employees with matching interests.

A second important area of managerial discretion concerns the extent to which establishments adopt HPWPs. We find strong and clear support for our assertion of the coexistence of multiple strategies among managers concerning the adoption of HPWPs (see Table 3). In cases that pursue a high road

strategy typically the incidence of HPWPs is well above average compared to other plants in comparable labor markets.

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As is evident from Table 3, five cases are classified as "high-road" and each has adopted several HPWPs. This "high-road" category includes all of the firms located in the metropolitan area. In all three metro cases there is at least one mechanism such as teams for employees to become involved in enterprise activities as well as some provision for financial involvement. For example, MACHINE PARTS has a comprehensive list of HPWPs. An Employee Stock Ownership Plan has been in place since the firm started in 1949. After working for 30 days, all employees become eligible for the ESOP. An amount equal to each employee's contribution to his/her 401K plan (up to 4 percent of his/her pay) is contributed to the employee's ESOP account. Nearly all employees participate in the ESOP and many employees take advantage of the full 4 percent contribution. Thus, employees with long tenure tend to have a substantial number of shares in the ESOP. The share price, which has been fluctuating in recent years, is evaluated annually by outside evaluators who base their evaluation mostly on the share price of a comparable publicly-traded firm. When an employee leaves the firm, the ESOP will buy back all shares at the most recently evaluated price. The HR manager at MACHINE PARTS stressed that the ESOP has been instrumental in keeping employee turnover relatively low in the past.

In 1994, the Board of Directors of MACHINE PARTS decided to introduce a discretionary profit sharing plan on top of the long-standing ESOP. The Board sets a profitability target every year and, based on whether the target is realized and, if so, how much actual profitability exceeds the target, the Board decides whether to give a profit sharing bonus to each hourly employee. The amount of bonus is the same for all hourly employees. For 1994 and 1995, each hourly employee received $100 as a profit sharing bonus whereas in 1999, due to weak firm performance, no bonus was given.

In addition MACHINE PARTS stresses the importance of the team approach and most work is carried out in teams. However, teams are clearly led by line supervisors who often dictate, and thus are not yet full-fledged self-directed teams. In addition, MACHINE PARTS introduced TQM largely at the

request of its main customer. For information sharing, MACHINE PARTS has quarterly all-employee meetings for about half an hour over lunch. Since nearly all employees are shareholders through the ESOP, confidential information is shared during these meetings. In fact, recently a disgruntled employee at MACHINE PARTS leaked such information to a third party and the firm needed to engage in some damage control. During these meetings, the company provides all employees with a casual lunch.

Amongst metro firms perhaps the most developed set of HPWP policies is in place at ELECTRICAL PARTS. Concerning financial participation, the firm provides incentives for employees at all levels to purchase company stock at subsidized rates. This is a part of a company-wide scheme that was introduced primarily to link rewards to company performance. This scheme is complemented by an extensive set of programs that nurture and promote employee involvement. The firm is organized into a series of mini-companies, each with separate financial accounts and governance structures. An important part of these arrangements, which exists at this plant though not throughout the company, is provision for each mini-company to have a network of teams who report to a salaried production manager. While this manager determines basic decisions such as production targets, in practice teams have considerable discretion in other areas, such as scheduling tasks. During our visits to this firm we became aware of many examples of successful team initiatives. Many of these decisions, including simple tool changes and redesign of production layouts, led to the process of production becoming easier and error rates in production falling. The principal HR professional glowingly described one example of a team success as follows:

> "…in a matter of three days, a team redesigned their line."

Team members and especially team leaders receive extensive training, teams had frequent and regular discussions (at least weekly) and only modest rewards were provided (e.g. shopping vouchers or complementary tickets for sporting events.) Complementing these arrangements for teams are several mechanisms, including monthly meetings, at which information is shared with employees.

The comparable programs at IT PARTS are much better developed in the area of financial

participation. A profit-sharing scheme has existed for about three years and provides production workers with an average payout of about 3.5% of wages. Interestingly this is distributed in cash in the summer at the end of a day during which all employees participate in community service activities. During the period when we visited this firm there was an exciting innovation in the area of financial participation—a plan to provide stock options to all employees was about to be introduced. While the exact details were still being worked out, the CEO was very excited about the potential for this plan and declared: "…this is the last missing link in the overall compensation scheme". Arrangements for employee involvement, however, were not nearly as advanced in this firm as, for example, in ELECTRICAL PARTS. In IT PARTS there were only elements of self-directed work teams. But there was an interesting scheme whereby the CEO and the HR director met with small groups of workers (usually about 12) over coffee for an hour or so each week. In less than a year all employees would be expected to meet the CEO this way. These meetings were believed to be quite productive. For example, a proposal to introduce a broad-based employee stock option plan was first voiced at such a meeting by a production worker. IT PARTS also has other related practices in place, including monthly meetings, at which real information appears to be shared. But, for the most part, arrangements for employee involvement were much more informal and much less cohesive than in other high-road firms such as ELECTRICAL PARTS.

Two other firms, MATERIALS and LARGE METAL, are also classified in this category. However, in fact some of the broad range of participatory practices that exist in LARGE METAL do not work very well. Thus many workers do not perceive that teams are, in fact, self-directed and neither the employee ownership nor the bonus schemes are highly evaluated. Also while team meetings take place during regular hours, this means that participants receive only their base wage for their time spent at a team meeting and have no opportunity to earn individual incentive bonuses (piece rates) during this period. Hence in practice LARGE METAL might be better assigned to the middle road category.

Perhaps the best example of a high-road firm is MATERIALS. Self-directed teams have existed there for more than 10 years and team leaders rotate among team members on a monthly basis. Each team meets weekly and meetings last an hour during regular hours. Forty hours of training concerning teams is

budgeted per person per year. Teams tackle a wide range of problems including working out scheduling and task assignments, workplace reorganization and tool innovation. This firm also has had a profit sharing scheme and a bonus plan in place for more than 10 years. The profit sharing plan is based on firm profitability. During the last decade this has averaged about 6-8% of average wages and is added to the employees' 401K plan. A bonus pool based on firm profitability is also distributed to employees in cash and based on an employee's performance evaluation. The performance evaluation consists of: (i) peer review by other team members (50%); (ii) evaluation by customers (25%); (iii) evaluation by the supervisor (25%). A final part of the set of HPWPs at MATERIALS is information sharing. This takes place primarily through an all employee meeting each month. The HR director reports that she believes that confidential information (e.g. new products, new strategies) is sometimes shared with employees during these meetings. While (as Table 3 indicates) monthly meetings are a fairly common practice, we were unable to find another instance in which the provision of information was as frank and as commercially valuable as at MATERIALS.

The third and final set of policies we examine for evidence of managerial discretion concerns skill requirements. Managers in plants gravitating to a high road tend to be more concerned than are managers of other establishments with enhancing employees' skills. For example, one of the least complex products was made by MATERIALS. However, some positions in that plant involved the most job content and also required substantially higher standards for skills and more comprehensive training programs than were mandated in other cases. Since the situation at MATERIALS contrasts sharply with other cases in which products were more complex (and concerns with employee skills were much more limited) there appears to be nothing inherent in the product that explains these differences.

Worker shadowing exercises, interviews and worker surveys at MATERIALS paint a rich picture of the ways in which these themes played out at this firm. At MATERIALS most employees, managerial and non-managerial, were aware that work is simple. A human resource manager states: "operations consist of basically filling, which is actually putting the product pieces in pairs, production, which make the products, and the label department." She goes on to state, "there is just nothing really complicated

about what we do. But, we want it done well and we want it done efficiently. That makes it more challenging."

However, this firm (and other high road firms including ELECTRICAL PARTS) view this as a problem to be overcome. At MATERIALS cross training and teams are being used as a way to increase the job content and skill level, and hence the level of training. Human resource personnel and managers talked about the need for employees to feel that the company was making a commitment to them, and that they (the employee) could develop by staying at the firm. A human resource manager states, "the company philosophy, the unwritten and unspoken, is that when we make a commitment to people we want it to be a genuine commitment." She goes on to explain, "we want people to feel that they can continually grow as people and be rewarded for it."

High road firms are increasing the skills needed in simple production process by giving workers more control over how the tasks are done, thereby increasing the soft skill content. At MATERIALS a manager states, "people do and are in charge of their work." Another manager at the same firms states, "we don't want supervisors everywhere. We want people to be in charge. We want people to take the responsibility of being leaders, and we teach leadership skills here."

Firms in this category have developed elaborate training programs to help workers master the new soft skills content of their jobs. A manager at MATERIALS explains it this way: "We do leadership training that talks about team skills and all those things." She goes on to explain that they have been aggressively working on a formalized, sequenced training program. Each month every worker gets some sort of formal training. It might start with hands-on skills and then move to more leadership training as people are in the company longer. Even people who have been in the firm for 20 years are getting new skills. She then states:

> "So again, it's (training) very important, and what we are trying to do this year which is a little different is looking within that 40 hours that we need to train people is to do it at three levels. First is the corporate level, what are those skills that we need everybody to know organization wise, whether it's leadership or whatever. And the next level would be what

> does people within a given department need to know, whether it's finance or what are those skills that uses your people to make everybody help. And the next level is the individual. Individual development plan, what you want to do, what is your career goals."

The firm (MATERIALS) pays for all of the training with some classes being offered by a local community college in the factory. When asked one worker says, "Of course. That is how things are done around here." When asked about control, a worker states, "The team constantly redesigns and reengineers parts of the production process…workers who use the machines every day can make any innovations in how the machines are used."

This awareness becomes clear through the shadowing in the way workers describe their jobs and their relationship to the firm. Our fieldworker at MATERIALS notes that:

> "…they want a factory full of workers who make suggestions, help each other, and improve the overall process inside the company. The system of appraisal is carried out entirely by coworkers, not bosses. The review system requires that each worker fill out a review of his peers."

When we push the human resource manager to explain, they are explicit that the peer reviews are not overly helpful to the company. In other words, this is not driven by the quality of peer review but rather, "it's a chance to let our employees do something challenging. It's another way for us to make the work a little more demanding…. Then we provide them with some training to learn how to do it."

Evidence for other firms in this category is less rich and derived mainly from interviews (rather than observation or employee interviews). Nevertheless the picture that emerges for other high-road firms on skills is broadly similar to that observed for MATERIALS. Thus at ELECTRICAL PARTS, opportunities were given to interested employees for training in order to attain the skill level required in higher-skilled jobs such as testing. At IT PARTS, comparing individual skill sets with the evolving needs of the various departments would result in individual development plans being formulated. These plans would then be implemented by working with BOCES to devise appropriate training programs.

The Low Road Strategy

In contrast with policies in high road cases, in *low road* plants (such as SMALL MACHINES), starting wages tend to be below average, job rotation is largely unknown, and systems of performance evaluation and compensation (pay grades) are traditional and quite bureaucratic, and job ladders have few rungs. In low-road firms turnover tends to be above average.

A good example of an establishment paying lower starting wages than other plants in that labor market is SMALL MACHINES. That case is also marked by a situation whereby it appears that even informal job rotation is discouraged. In MEDIUM FABRICATION, most wage and employment policies seem dated and replete with unnecessary rigidities. However starting rates compare favorably with other local firms and thus, in this respect, SMALL FABRICATION apparently is an exception to plants following a low road strategy. However, in fact this situation does not reflect managerial choice but rather its unionized status (and unsurprisingly, starting rates tend to be higher in unionized firms.) One consequence of collective bargaining is a "two-tier" system of wages prevails in this plant. This practice dates back to a labor conflict that, in many workers' minds, still exerts a powerful and mainly adverse influence on attitudes. In all cases there were examples of workers who had worked at the firm for many years and/or were approaching normal retirement age. For these workers with high rates of seniority hourly wages sometimes exceeded $25.00 an hour. However, there do not appear to be obvious differences between earnings for these workers who are approaching retirement in unionized and non-unionized firms.

Sharp differences exist between establishments following high-and low-road strategies concerning the incidence of HPWPs. In the low road category are firms in which such practices seldom occur or when they do they are implemented quite poorly. Amongst our cases the best examples are SMALL FABRICATION, SMALL MACHINES and MEDIUM FABRICATION. Thus in SMALL FABRICATION (a long established unionized firm) and SMALL MACHINES, there is little evidence of either formal structures or informal practices that provide for employee involvement. SMALL FABRICATION attempted to introduce QC circles in 1994 yet they never took off. In addition workers

receive time rates of pay and there are no mechanisms such as gain or profit sharing for workers' rewards to be linked with enterprise success. There has been some talk between SMALL FABRICATION and its union over the introduction of profit sharing/gain sharing. However, the HR manager at SMALL FABRICATION was quite pessimistic about the prospects of such plans being introduced in the near future. Analogously, in the case of MEDIUM FABRICATION there was no mechanism in place for financial participation. In addition, the only device for employee involvement that was apparent was a monthly information meeting.

Striking differences also exist with regard to policy choices concerning skill and training. Firms gravitating towards a low road have structured work to minimize the level of skills needed and the amount of training provided. To do so, they have planned work with narrow job content. Worker shadowing exercises at one case, SMALL MACHINES are very informative on these matters. As one human resources manager summarized:

> "We have a what you might refer to as a 'boot in the backside' approach to management. Our markets are getting very competitive. ** and ** have bought most of the competition. We need to cut costs and get more from our employees."

As noted earlier, workers in this firm tend to be men with only high school education. Most workers grew up in the area and commute less than 20 minutes to work. They were recruited to the firm through a family member or friend and took the job because they needed work and this was the first opportunity that came along. They were hired because they had typical farm skills. One worker described his co-workers as follows:

> "The reason many of the workers can settle for the sort of pay and work that they are given at (SMALL MACHINES) is they used to be farm workers. They didn't own their own farms but worked on them. When farms in the area began to fail these farm boys turned to factory work

instead. Since, they were only making about $200 a week on the farm- if they were lucky- the pays seems better than it is. They are also used to hard work which translates into factory work."

Hence they bring decent mechanical skills, can fix an engine or machine, can work with tools and they have good basic soft skills (e.g. work ethic).

The work tends to be some sort of assembly production. Of the 120 employees, 90 were in assembly production. Of those 90 workers, 20 worked in fabrication, 20 worked in wielding, 40 worked in assembly, and 10 worked in finishing. Work is organized discretely by task and tasks tend to be simple. The welding was a hard weld that did not require meticulous welding skills or sophisticated tools. The assembly was putting finished pieces together with simple tools.

As such, there was little training in this firm. Typical of worker comments is the following:

"(training is) nothing formal. We just get a crash course introduction to where all of the parts are and pick up on things as we go along." Another worker stated, "It you need more skills for a job you are expected to do that after work. Go to (the local junior college), but you have to do it on your time and you have to be able to pay for it."

Given the aversion to training, there is also little cross training. When asked, a manager explains:

"…we don't do any cross training for workers. It's too expensive. We don't really want to put that sort of investment in workers. We can't really. So we try to hire people with good skills who are used to working around machines. They fix things on the farm or they work on cars…. We want them to be able to learn their job with a little training from a supervisor and get to work."

Similarly, work is organized so that workers do not need soft skills. Work is highly controlled with lots of supervision. A worker describes the shop floor manager as:

> "…he is extremely serious and doesn't really have much of a sense of humor. It makes it really nerve-wracking to be around him because you're walking on egg shells… ** is very strict and has seemingly senseless rules."

Based on our interviews with the HR director and the plant manager, these features of limited skill requirements, limited job content and low training were also evident in another case, namely MEDIUM FABRICATION. For example, during the last three years only about 3% of production workers on average received formal training of any kind.

The Middle Road Strategy

Remaining cases are classified as *middle- road.* These establishments have a mixed picture concerning the issues we are examining. Consider, for example, matters relating to general wage and employment policies. At SMALL PARTS, the initial wage rate tends to be especially low (close to $6.00). However, this plant has never laid any workers off. Indeed, in past downturns in demand for its product, occasionally it would dispatch workers on a fixed term basis (6 months) to neighboring firms. Nevertheless SMALL PARTS has experienced a serious retention problem and only tends to retain 30% of new hires for more than one year. And while MEDIUM MACHINES has a system of pay grades that is quite simple and comparable to similar sized cases, it appears to have an above average turnover rate.

Turning to the incidence of HPWPs two firms, MEDIUM MACHINES and SMALL PARTS, are assigned to this middle road category. This signifies that, while there have been some innovations in HPWPs, the formal set of practices that has been introduced is either not well balanced (Ben-Ner and Jones, 1995) or is not functioning well in some important respect(s). Thus MEDIUM MACHINES operates quality circles, has regular meetings to share information with employees and operates an individual incentive pay plan. However, teams have not yet been introduced in spite of a production

process that would facilitate teams. Moreover, neither profit sharing nor employee ownership is present in this case. Similarly SMALL PARTS has very limited mechanisms whereby employees have opportunities for financial participation–in fact the main system is for a $500 discretionary bonus which is contributed to each employee's 401K plan each year when awarded. However, SMALL PARTS has also introduced a system of teams: in "A" teams, usually eight workers constitute a cross functional team, while "B" teams consist of only managers and supervisors who may approve suggestions coming from "A" teams. While participation in these teams is voluntary teams meet weekly for 30-45 minutes during regular hours. Team projects at SMALL PARTS include workflow improvements. While team participants do not receive compensation, team participation is evaluated at annual performance evaluations. Besides teams, SMALL PARTS also has a system whereby information is shared with all employees each month. As explained in more detail below, however, teams in SMALL PARTS are still in their infancy. Also, information sharing tends to be more brief and less substantial than in high road firms, and many employees tend to fail to see the link between their bonus and firm performance.

With respect to skill and training policies, it is also apparent that plants gravitating towards a middle road are stumbling forward. Consistent with other firms, they face increased competition. One manager (in SMALL PARTS) states:

> We are driven by specific products and markets. We have been challenged because profit margins have become very thin. The industries that we serve are competitive. For example: (a large retail discount chain is putting lots of pressure on (final product manufacturers) to lower prices. This pressure gets passed along to supplier of parts like us.

He goes on to state that this makes training hard but essential. They need to keep costs low and training is expensive. However, quality control is also important which means they need good trained workers who will stay.

Generally, these firms are trying to use cross training and teams to increase the content and

skillfulness of the work. Consistent with the high road firms, the teamwork requires more soft skill development. But, these firms have typically done this in a stunted manner. The stuntedness is two fold. First, only some workers are involved. For example: SMALL PARTS introduced eight teams and about one third of all hourly employees are involved. While there are plans to expand the teams, the process is slow. Best estimates by mangers were the addition of 2-3 teams per year.

Second, the teams often have limited control that undercuts worker commitment to the training. For example: one company appears to be serious about soft skill development. They have hired a professional consultant to work full time on the factor floor to provide training to workers so they can work in the teams. Hence they have a formal soft skills training program. Each team has a minimum of 15 hours of classroom training. The consultant has a well-developed series of three modules that combine different styles of classroom work and include textbook. Watching these modules during the shadowing, our fieldworker describes it as:

" (A manager) lectured about flow, speed, quantity and quality. He illustrated on the whiteboard and made flow charts, interacting with the workers. He said things like, "work is not productivity." And "This is work. This is equal to making parts."

However, the commitment to training is being undercut as workers realize the limited extent of decision-making. In other words, they were asked to get more training so that the job content could be increased. By moving to teams, the workers would have more control. They would also be able to develop new projects that enhanced their work. However, it is clear to workers that there is only a moderate amount of control being ceded to them. All decisions have to be approved by a B team of managers before it actually gets to a level of decision makers. For example: in one meeting a plan is discussed to buy a bargain product tester. The team decides that this would be a good project. However, the facilitator informs them that the B team has already decided that there are not funds available to purchase it. This results in the team members being frustrated. They feel as though their time has been wasted, feel that they are powerless and thus express frustration and want to stop meeting.

Thus, it does appear that the middle road cases are trying to increase the content and skill level of

the work. However, in the main their attempts are meeting with only limited success and they are struggling. Hence, we might argue that they are stumbling forward.

IV. Why Do Managers Use Different Strategies?

In accounting for the co-existence of distinct strategies amongst managers, one obvious answer could be structural insofar as the product line being produced could somehow shape the type of managerial choice available. However, our data do not substantiate that claim. In both the shadowing and interviews, it became clear that in most firms the inherent nature of the products being produced places a ceiling on the hard skill content of the work. Even more complex products, including small machines for eventual sale to consumers, required only simple subassembly. The more complex parts (e.g. the engine) were produced elsewhere. Hence, the skill level required of workers in this firm has never moved beyond basic welding and requires little precision or use of sophisticated technology. Similar observation can be made for other firms. For example, welders at MACHINE PARTS appear to be more specialized than those at the plant that assembles machines for sale to consumers, and yet they are still operating under rather traditional technology. The HR manager at MACHINE PARTS described the situation as follows:

"This is not high-tech operation. We are welding and painting. It is hard to automate."

In other words, the basic hard skill content in each of the firms is low. Workers are mostly engaged in simple forms of assembly or subassembly production using basic tools to engage in standard tasks that they had mostly mastered as teenagers working on farm equipment and cars. As one worker summarized, "we are farm kids. We knew how to do this stuff before we came to (SMALL MACHINES). I grew up fixing tractors and racing cars." In our shadowing exercises (for SMALL PARTS, MATERIALS and MEDIUM FABRICATION), we noted an almost complete lack of computers or sophisticated tools being used in the production processes in these firms, though observations for other firms paint a slightly differing picture.

But the key differences among firms appear to come from how they are dealing with this skill

ceiling. The high road firms use job rotation and teamwork to increase the content and skillfulness of a particular job. They also had elaborate training programs. In addition, in some cases these differences in strategies reflect factors that have been stressed in the institutionalist literature such as the ability of key actors to initiate change. This was clearly the case at MATERIALS and IT PARTS where the CEO apparently has played a key role in shaping a whole range of policies concerning labor.

The firms gravitating towards a lower road organize work into jobs with limited content and low skill levels. New workers had virtually no formal training, though sometimes they were expected to learn the more skilled aspects of a job by informal training from more senior workers. In other words, the low road firms use the low skill level requirements as a cost saving advantage and thus see no reason to enrich the job content and skill level by HPWPs and training. On the contrary, the firms gravitating to a high road see the limited skill needs and the simple nature of production as an obstacle to overcome. In high road firms there is a conscious effort to develop creative ways to increase the content of the jobs and the skills being used. There were comprehensive formal training programs, both in established needs as well as in some cases in newer areas required by the new information technologies. In addition, formal training programs were complemented by arrangements that enabled informal training of newer workers by established workers. A variety of HPWPs are also used.

The firms gravitating towards a middle road are struggling. They wanted to structure work to make it more skillful and meaningful, and to provide training. But, they are apprehensive for how this altered the flow of revenues and power within the firm. As such, they are stumbling forward.

For us, this raises a vexing question about managerial choice. Why did different managers approach the "skill ceiling" problem differently. We believe that firm location does play a significant role in explaining this outcome. It appears that employers and employees in the more isolated and rural parts of the region seem to face a set of problem and challenges that are arguably rather different than those that confront their counterparts both in smaller towns (such as Utica) and in the larger metropolitan area of Syracuse (Salant and Marx, 1995; Ramsay, 1996; and Flora and Sharp, 1997).

First, we believe that is harder for managers in non-metropolitan firms to innovate than for their metropolitan counterparts**.** One key difference in the HR personnel we interviewed was that for firms located in metropolitan labor markets, HR personnel tended to be active members of different professional organizations (e.g. in MACHINE PARTS and ELECTRICAL PARTS). This was much less apt to be so in other cases, and especially for those located in rural areas. Managers of firms in rural areas do not have easy access to local trade associations, active Chambers of Commerce, or even informal business associations. Since rural managers do not have these sorts of networks, it appears that they may have much more difficulty than do urban managers in learning new practices from other managers.

This is compounded by the lack of new managerial talent coming into the area. In our interviews, we were struck by the lack of new managers coming from other firms where they might bring new ideas. Our rural firms seldom (or never) get new professionals (with MBAs or equivalent qualifications) who come with "the latest ideas." Again, this diminishes the chances that managers will even be aware of or be thinking about new management practices. Third, isolation means that managers do not have easy access to universities and other institutions that tend to facilitate the discussion of new ideas, for example by arranging for one-day seminars. Fourth, rural firms tend to develop long-term relationships with managers and managers sometimes become complacent and lack incentives to be "up on the latest techniques." They are not being pushed by others or even expected to be innovative.

Second, ruralness also tends to effect workers. Workers tend to have *fewer employment options* than their urban counterparts and that, in turn, shapes labor relations. Thus, compared to SMALL PARTS (which is at best a middle road firm), workers in MATERIALS spend less time commuting and are much more apt to continue to live and work in the area in which they were born. It is important to remember that our rural counties are geographically large and transportation costs for low-income workers are a major expense. This is compounded by the low education and skill level of employees. Together, this means that we found substantial regional immobility of labor, with most native-born workers remaining close to the areas in which they were born or, in the case of immigrants from overseas, remaining in the

area in which they initially arrived. Labor market experience is limited and usually restricted to one line of activity. These factors combine to create less incentive for firms to offer workers HPWPs. To be blunt, they can get away with not offering them. Workers perceive themselves as having no place else to go.

Of course, there are other possible reasons for multiple strategies used by our firms. For example, the ability of some firms to implement extensive participation and training and to bear the costs of investing in participation and training is consistent with such firms having strong market niches and less pressure on profit margins (MATERIALS). Despite this, we believe that our data raises two important issues: (1) managerial choice does exist, and (2) the rural location of some firms seems to place a set of additional challenges and obstacles to selecting a high road strategy.

V. Do HPWPs Matter For Worker Outcomes? [8]

Our discussion thus far indicates that a key feature of a high road strategy is the more extensive use of HPWPs. In this section, we use evidence derived from worker surveys to see if the varying incidence of HPWPs has implications for outcomes for workers. We conclude that the strategy chosen by firms matters greatly for a variety of worker outcomes.[9] In turn, the use of HPWPs by high road firms may offer important points of hope for both workers and firms in economically depressed areas.

To develop these claims, we undertake three exercises (and present findings in Tables 4-6). First, we compare worker outcomes in two of our rural manufacturing establishments. Both are rural and quite comparable except that HPWPs are much more developed in MATERIALS than in SMALL PARTS. By comparing those two cases, we attempt to discern the possible gains from HPWPs in medium-size firms in rural America. Second, we compare worker outcomes between MATERIALS and LARGE METAL (an urban manufacturing case with considerable experience of HPWPs). We show that the high road rural plant compares well with the urban case. Third, we compare worker outcomes between participants and non-participants in self-directed teams within case studies. This enables us to study the impact of teams on worker outcomes, having controlled for firm heterogeneity.

An Overview of The Three Establishments

Before examining the evidence we begin by recalling key features of MATERIALS, a privately owned manufacturing firm that employs 120 employees, 75 of whom are hourly employees. There were no layoffs of hourly workers during the 1990's and the starting wage currently is $8.25. In the summer of 2000, we conducted face to face employee surveys on site with 71 of 75 hourly workers responding (a response rate of 95 %).

Self-directed teams have existed at this single-plant firm for more than ten years and nearly all employees participate in teams. Teams are quite active and participatory with team meetings occurring weekly and lasting an hour during regular hours. In addition, team leaders rotate among team members. Team activities are quite extensive and every month each team works out scheduling and task assignments. Also, QC activities (including workplace reorganization, tool innovation and new tool/equipment purchase) are often conducted in teams. A further indication that the firm seems to be quite serious about teams, is that 40 hours of training are budgeted for each team member each year.

The firm has an equally long history of financial participation. Based on firm profitability the firm contributes a certain percentage of each employee's pay to her 401K plan. During the last decade this has varied from 6 to 8 %, and applies uniformly to all employees. As well as this form of profit sharing pay, and again based on firm profitability, each year the firm decides on the size of a bonus pool. This is distributed in cash amongst employees and is based on their performance evaluations. The most important component in the interesting performance evaluation process is peer review by other team members. Peer reviews are given a weight of 50% in the overall assessment. Other input comes from customers and supervisors whose views are each given a weight of 25% in the evaluation process. Individual bonuses range from $200 to $1800.

The firm tends to share information with all employees widely and openly. In particular, the firm holds all-employee meetings every third Thursday of each month. Typically these meetings last two hours and take place during regular hours. Examples of shared information include new products, new strategies and financial statements. According to our interview with the HR director of the firm, confidential information is sometime shared during these all employee meetings. In addition, employees occasionally

suggest potential customers during the meetings.

Our second case, SMALL PARTS, is also privately owned though it is a subsidiary of a multinational firm. The plant currently employs 275 employees, including 200 hourly workers. In the summer of 2000 we conducted on-site face to face employee surveys and 174 of 200 hourly employees responded (a response rate of 87%). Since the annual retention rate of new employees is only 30%, a key concern of management is retention of employees. Hourly workers typically start at $6, though normally within a year they will be earning $7.50 an hour. As with MATERIALS, this firm had never laid off employees during the decade preceding our study although occasionally the firm had dispatched workers on a fixed term basis (6 months) to neighboring firms.

After the introduction of teams by the parent firm, (reflecting a newly-discovered interest in employee empowerment), teams were introduced at this plant in 1998. There are two types of teams, A-teams and B-teams. A-teams are cross-functional and each A-team consists of on average of eight team members including one engineer. By contrast, B-teams consist of only managers and supervisors and their main function is to decide whether to approve suggestions made by A-teams. Teams are formed for specific themes, such as workflow improvement, and meet for 30 to 45 minutes during regular hours. While nearly all members of the first two A-teams were hand picked, participation in the subsequent 6 A-teams has been on a voluntarily basis. There is no compensation for team participation, although team participation is evaluated as part of the annual performance evaluation process.

As in MATERIALS, this firm holds a monthly all-employee meeting (in fact on the second Thursday of every month, pay day). Unlike MATERIALS, however, the meeting lasts only 30 minutes and there are rarely questions and answers and confidential information is not shared. Finally, during the last four years the firm has been contributing $500 each year to each employee's 401K plan as a discretionary bonus. Employees seem to expect to get this unless the firm has a particularly bad year.

The third case, LARGE METAL, is a unionized private firm. Currently it employs 505 employees, 365 of whom are hourly employees. Again we conducted face-to-face, on-site employee surveys. In this case surveys were team based. In part because different workers worked multiple shifts at

different times, this required our making more than 30 separate visits to the firm at times ranging from 6.a.m. to 11.p.m. With 269 of 365 hourly employees responding, the response rate was 74%.

On paper, LARGE METAL is an impressive high road establishment with "self-directed teams" in existence for nearly a decade. Before introducing self-directed teams, the firm hired a full-time consultant for two years and invested much money in the new practice. To become trained for the implementation of teams, all managers spent one full day a week for six months in training programs. During the subsequent six months, each hourly employee received training for one full day each week. All employees were then divided into over 40 teams, based mostly on their jobs and each team elected its team leader from among their members. These teams are combined with financial participation, not only through profit sharing (based on company performance, with each employee receiving the same amount of cash bonus) and an employee stock ownership plan (with each hourly employee being given 1000 shares after working for the firm for five years). Also, the firm has all-employee meetings each quarter. These meetings last one to two hours and are a mechanism for sharing information.

Through our on-site, face-to-face surveys and meetings with team members, we were able to meet the majority of team members. Also, we often chatted with team members after administering the surveys. Based on these meetings as well as interviews with HR managers, it appears that many teams have been stagnating during the last few years. There appear to be a number of possible reasons for this. Perhaps most important, during the last few years the overall relationship between management and union has deteriorated. Second, some team members have been discouraged because management has rejected their suggestions. Third, unlike original team members, workers who were hired after the introduction of their teams never received extensive team training. In turn, this fall-off in the effectiveness of some teams has led many employees to suggest that the whole system of HPWPs has become less successful.

A Comparison of MATERIALS and SMALL PARTS

Since the existence of major differences in worker characteristics might be associated with differences in worker outcomes, it is instructive to compare worker profiles before examining the evidence on worker outcomes. From Table 4 we see that MATERIALS' workers are more community-

based than are workers in SMALL PARTS with 75% having grown up in the area and commuting an average

"Table 4 here"

of only 15 minutes (with corresponding figures for SMALL PARTS of 57% and 26 minutes). Also, MATERIALS' workers are younger and less likely to be married. However, in terms of key characteristics, such as general and firm-specific experience, education, gender, and race, workers in MATERIALS and SMALL PARTS are quite similar. Also, both firms hire their workers mostly from their respective, rural local labor markets. Unsurprisingly in view of the relative homogeneity of workers in both firms and the nature of their local labor markets, average hourly wages are also comparable.

The relevant columns of Tables 5A and 5B compare various worker outcomes between the two firms. In the reported findings we focus on differences that are statistically significant at least at the 5 percent level.[10]

"Tables 5A and 5B here"

We find that MATERIALS' workers consider themselves more empowered than do workers in SMALL PARTS. Concerning communication, compared to SMALL PARTS' workers, MATERIALS' workers sense that more information is shared by management. Also they communicate more often with workers outside of their work groups or teams within the firm, and communicate less often than do SMALL PARTS' workers with technical experts outside of their work groups or teams within the firm. Workers in MATERIALS are found to put more relative effort into their work and are more aware that their effort affects their pay. Our findings also indicate that workers in MATERIALS are more likely to help their fellow workers and to engage in peer monitoring. Furthermore, for all three areas we examine, MATERIALS' workers display stronger organizational commitment and also consider themselves to be treated more fairly by their firm. Finally, employees in MATERIALS are more satisfied with their jobs and are more positive about the use and contributions of their knowledge and skills.

A Comparison of MATERIALS and LARGE METAL

From Table 4 it is clear that there are important differences between workers in these plants. Compared to MATERIALS' workers, LARGE METAL's workers have much longer general work experience and tenure with the firm. Also they are much older and better paid. Since LARGE METAL is a long-established unionized firm located in an urban area that hires its workers from its urban labor market, some of these differences are unsurprising. By contrast, MATERIALS is a relatively new non-unionized firm located in a very rural setting that hires its workers from its rural labor market. Also LARGE METAL's workers are more apt to be male and married and less likely to have a dependent child or a working spouse.

Worker outcomes between the two firms are compared in Tables 5A and 5B. MATERIALS' workers clearly consider themselves to be more empowered than do workers in LARGE METAL. When issues concerning communication are examined, MATERIALS' workers sense that management shares more information. These workers also communicate more often with managers within their work groups as well as with workers outside of their work groups though within their firm. Employees in MATERIALS are found to work harder at their jobs and are more aware of a link between their effort and their pay. They also miss fewer days than do LARGE METAL's workers. In addition MATERIALS' workers are more likely to help their fellow workers and are more likely to engage in peer monitoring.

Workers in MATERIALS display stronger organizational commitment. Not only do they consider themselves as being treated more fairly by the firm, but they also trust management more and consider labor-management relations to be better. Importantly, MATERIALS' workers are more satisfied with their jobs. In addition they are more positive about the use of and contributions made by their knowledge and skills, while they are no more stressed on the job than are workers in LARGE METAL.

Comparisons within Firms

Finally, we compare outcomes within a given firm between participants and non-participants in self-directed teams. Such comparisons help to separate the effects on worker outcomes of participation in self-directed teams from other unobserved firm characteristics that may affect worker outcomes. We begin with an analysis of SMALL PARTS. Since only about one third of its labor force participated in a

team, in principle this presents the ideal case for such intra-firm comparisons. [11]

First, when we compare basic characteristics of participants and non-participants we find that in all key respects (including age, tenure and education) these are quite similar. The only exception is that non-participants are more likely to have a second job. This absence of key differences in the characteristics of team-participants and non-participants is important since it means that differences in outcomes between the two groups can be more persuasively attributed to "teamness" rather than differences across workers.

In Tables 6A and 6B selected outcomes between participants and non-participants are compared. One clear

"Tables 6A and 6B here"

finding is that, as expected, participants consider themselves more empowered than do non-participants. Consistent with expectations we also find that, compared to non-participants, participants sense that managers share more information with them. In addition, we find that participants communicate more often with managers and supervisors within their work groups or teams and communicate more often with workers outside of their work groups or teams. Participants are also found to put more effort into their work and, on average, to work more than two hours longer per week than do non-participants.

When organizational commitment is investigated some evidence is found for participants displaying stronger loyalty to their company as well as more trust in management. In addition, participants are more satisfied with their work and, insofar as they are more positive about the use made and contributions of their knowledge and skills at their workplace, participants appear to have more intrinsic rewards.

Next we undertake a similar analysis that uses data from LARGE METAL. However, the analysis is more complicated since for high road firms (MATERIALS and LARGE METAL), nearly all employees *formally* participate in teams and thus it does not appear to be feasible to compare outcomes for participants and non-participants within these firms. Nevertheless, we believe it is worthwhile to determine if employees in these firms actually perceive that they do in fact participate in a self-directed

team, i.e. a team in which employees supervise their own work and make their own decisions about pace, flow and, occasionally, the best way to get work done. And when this question was asked, most interestingly we find only 54 percent of LARGE METAL's workers responded that they did participate in a self-directed team.[12] Hence, for high road firms we choose to compare worker characteristics and worker outcomes for workers who do and do not consider themselves to be participating in self-directed teams. The observed differences in worker outcomes between the two groups are interpreted as the effects of belonging to a *well-functioning* self-directed team.[13]

When basic characteristics of workers who believe that they do and do not participate in well-functioning "self-directed teams" at LARGE METAL are compared, some interesting differences are revealed. Thus participants have shorter tenure, own more ESOP shares and are more likely to have a working spouse than are non-participants. But for all other basic characteristics, participants and non-participants are similar. In particular, we observe that there is no difference in wages between participants and non-participants. Considering the shorter job tenure of participants, this means that participants are paid more than are non-participants with comparable tenure.

Tables 6A and 6B contrast worker outcomes for participants and non-participants. As expected, we find that participants consider themselves to be more empowered than do non-participants. Also the evidence indicates that participants communicate more often with managers within their work groups as well as with managers, workers, and technical experts outside of their work groups or teams. However, no statistically significant difference was found for the sense of open communication with management. Participants were found to put more absolute and relative effort into their work and to work longer hours. Consistent with the greater effort levels exerted by participants, participants were found to be much more aware of the possible link between their level of exertion and their monetary rewards.

Tables 6A and 6B also reveal that participants are more aware of the team nature of their work and the benefits of teamwork. In tandem with this finding, we also establish that participants are more willing to engage in peer monitoring. Also participants are found to have stronger organizational commitment and to display more trust in management. In addition, participants are happier with their

jobs, and are more optimistic about the use of and contributions made by their knowledge and skills. There is no evidence that stress levels differ for the two groups.

We also asked a series of questions concerning how the two groups assess the major features of the HPWP system at this firm. In all respects we found strong and persuasive evidence that participants evaluate HPWPs, such as teams, bonuses, profit sharing plans,, ESOPs, quarterly meetings and monthly letters, much more positively than do others.[14]

In sum, the evidence presented in this section provides strong additional support for the general hypotheses that HPWPs are associated with better worker outcomes. All of our analyzes indicate that when workers participate in HPWPs, they develop stronger sense of empowerment, achieve more intrinsic rewards from their jobs as well as higher levels of job satisfaction. In turn, these empowered and more satisfied workers tend to trust management more and develop stronger commitment to the firm. These attitudinal changes are accompanied by behavioral changes. When workers participate in HPWPs they tend to have more open and frequent communication with management (as well as with their coworkers), exert more effort (shirk less) and engage in more peer monitoring (or horizontal monitoring). Finally, HPWPs are not associated with increased stress. As such HPWPs appear to offer a strong point of hope, even in firms located within a depressed region.

Also we find some evidence in support of our hypotheses concerning the importance of location. Compared to their metropolitan (and even their urban) neighbors, typically firms that are located in rural regions are at a disadvantage in introducing and sustaining high road policies in the area of HPWPs. This is clearly shown in the experiences of SMALL PARTS, SMALL FABRICATION and SMALL MACHINES. At the same time, the extraordinary achievements of MATERIALS indicate that the disadvantages posed by a rural location need not be binding. In appropriate circumstances, these disadvantages can be overcome.

V. Conclusion: Findings and Implications

Based on our ten case studies of manufacturing plants in central New York and multiple data sources for these establishments, we are able to draw some firm conclusions. First, we find that industrial and labor relations practices vary widely in our cases. In particular, there are sharp differences in the broad areas on which we focus, including skill and training and the use of HPWPs. These differences exist not only across our cases but also between firms in different labor markets, whether they are urban, rural or metropolitan. Second, establishments are consistent in the sets of practices that they adopt. Establishments that tend to encourage skill formation amongst workers with low levels of formal education are also more likely to adopt group based incentive pay schemes. In contrast to these firms that pursue a "high road" strategy we uncover examples of other firms that choose other polices. Thus some select "low road" strategies whereby minimal attention is paid to employee training and there is an aversion to implementing practices that provide for employee involvement or incentive compensation. The third clear and compelling finding is that HPWPs can yield favorable worker outcomes in medium sized firms, making workers more empowered, satisfied, committed, trusting, communicative, and more hard-working. Based primarily on evidence derived from worker surveys, this finding is strongly established for workers in both rural and urban locations. Relatedly it appears that worker outcomes are greater when more workers participate in employee involvement and when HPWPs have been in place a long time.[15]

In important respects these findings largely complement those emerging from other studies. Thus many previous researchers have provided evidence of diversity in employment outcomes (e.g. Doeringer and Piore, 1971). The changing nature of "work in America" as well as the uneven character of these developments has been spotlighted by many.[16] By now there is a large body of evidence suggesting that, when properly introduced, HPWPs may have beneficial effects.[17] But it is important to recall that the firms and workers that we investigate tend to be different from those covered in most of the existing literature. Thus our study is one of the first to report findings on these diverse issues when workers have low levels of formal education and plants are medium sized and are located in labor markets in a

depressed area.[18] It is reassuring to find that the hypotheses in the received literature, which were largely based on firms and workers with other characteristics, also carry over to our cases. Moreover, our findings also provide some support for our hypotheses concerning the importance of local labor market conditions --for example, the role of geographical isolation in accounting for differences in the incidence of HPWPs. Finally, in investigating relationships between HPWPs and particular worker outcomes, notably absolute and relative work effort and peer monitoring, our approach arguably includes measures that improve over those used in most previous studies.

We believe that our findings have several implications not only for central New York but also for firms and workers located in similar communities. The evidence suggests that a range of managerial choice is possible. For light-manufacturing firms to survive and flourish in central New York, the evidence does *not* suggest that the pressures arising from the need to compete in increasingly globalized world markets imply that only a single policy configuration-low road strategy-exists. Indeed the evidence suggests that while choosing a low road strategy may be understandable in the short term, over the long haul this may represent a low equilibrium trap. By contrast our findings on the beneficial effects of HPWPs have potentially important implication for rural community development or rural revitalization.[19] The real question for community development is *jobs*. Communities tend to do better when they increase the stock of jobs both quantitatively and qualitatively. An economic development strategy for rural and depressed communities such as those in Central New York ought to consider a potentially important role that HPWPs might play in rural revivals. Bringing in more HPWPs into rural and depressed communities such as those in Central New York may mean more "good jobs" (better pay and benefits, skills enhancing, meaningful, stable) to Central New Yorkers. It is also important to introduce strategies that enable HPWPs to be nurtured even as the environment facing firms becomes more difficult. Given the ability of employers to adopt diverse employment strategies, it is important that firms and employees be made aware of the beneficial effects of high road policies, including HPWPs. Arguably consideration should be given to public policy that promotes the dissemination of information concerning best business

practices such as HPWPs and, as with financial participation, to fiscal policy such as tax incentives for the adoption of particular HPWPs. In this process, as some have argued (e.g. Weinberg, 1999, 2000) universities that are based in rural areas potentially may play important roles.

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Notes

[1] The HPWPs examined in this chapter are incentive pay (profit sharing, employee stock ownership, other), teams, quality circles, total quality management (TQM) and information sharing**.**

[2] Data on size and industrial distribution of establishments in central NY are for 1998 and are obtained form the US Bureau of the Census. See also Jones, Kato and Weinberg (2002), Table 2.

[3] High school graduation was required for employment in some firms (e.g. ELECTRIC PARTS) though not in others (e.g. IT PARTS).

[4] However, in three cases, almost half of production workers had some college experience (though very few had even an associate degree).

[5] Our confidentiality agreements with each firm prohibit us from identifying specific products produced by each firm.

[6] The research is part of a broader research project that is investigating diverse hypotheses concerning the *nature and determinants* as well as the *outcomes* of employment practices in Central New York. In the larger project we are also making use of two other kinds of data. First we are surveying all for-profit establishments in local counties in central New York as well as a sample of establishments in other counties in central New York. Surveys stress HR matters and seek some financial information for several years. The other key data source is four waves of the first random sample telephone survey of adult residents in the Upstate region of NY. These surveys provided an opportunity to ask respondents several questions on workplace practices. For findings based on the first waves of this survey see Jones, Kato and Weinberg (2001).

[7] SMALL FABRICATION pays higher wages in spite of their low road strategy. That the establishment is unionized may explain the higher wages to some extent.

[8] We also have other kinds of evidence (besides worker surveys) for cases other than the three examined in detail in this section. For example, for IT PARTS the introduction of the broad based employee stock option plan was clearly welcomed by production workers. In addition, we have other kinds of evidence for the three cases examined in this section. For example, interviews with managers at LARGE METAL broadly corroborated the findings that are reported for this firm that is derived from worker surveys.

[9] We consider diverse worker outcomes, including not only outcomes directly in the interests of the workers (such as job satisfaction, intrinsic rewards, and stress) but also outcomes directly in the interests of the organization (such as organizational commitment, trust, effort, peer monitoring). See, for example, Appelbaum, et. al. (2000)

[10] Our list of measures includes not only standard gauges used in prior work but also measures used for the first time in the literature on HPWPs, notably assessments of absolute and relative work effort and peer monitoring.

[11] The firm provided us with a list of team participants and we were able to successfully match that list with our survey data.

[12] There are two possible interpretations to this apparent anomaly. First, within a particular high road

firm, it may be that some teams are functioning as self-directed teams whereas others do not function as such. Second, all teams may be genuinely functioning as self-directed teams yet some employees do not perceive their teams in this way. Interviews with HR managers and workers, as well as worker shadowing, tend to support the first interpretation. For example, the HR manager at LARGE METAL admitted that the 40 teams that they have fall into several categories. These include eight "star" teams and ten "OK" teams. But of the remainder, 10 are "more or less functioning" teams while 12 are "non-performing" teams.

[13] At MATERIALS 66 % of workers answered that they participated in self directed teams. We also conducted a similar analysis at this firm and found only a few statistically significant differences between participants and non-participants. This may well be due to the weak power of statistical tests since MATERIALS has a relatively small sample size to begin with and that it ends up with a very small number of non-participants. The results for MATERIALS are available upon request from the authors.

[14] For all questions, differences between the views of the two groups are statistically significant at the 1 percent level.

[15] As such these findings tend to complement those reported in Jones, Kato and Weinberg (2001). Those surveys of individuals provided strong evidence that HPWPs tend to occur in clusters. Also the finding that financial participation HPWPs were less prevalent in rural locations supports the hypothesis of the role of geographical isolation. In addition we found that all forms of HPWPs were associated with individuals receiving higher pay.

[16] This includes work by Appelbaum and Batt (1994), Blair and Kochan (2000), Cappelli et al., (1997), Kochan and Osterman (1994), Levine (1995), and Osterman (1988).

[17] For the U.S. studies include those by Appelbaum et al. (2000), Black and Lynch (1997), Freeman et al. (2000), Helper (1998), Ichniowski et al. (1997), Levine and Tyson (1990), MacDuffie (1995), and Neumark and Cappelli (1999). For the interesting case of Japan see Jones and Kato (1995) and Kato (2000).

[18] However there is an important and emerging literature concerned with employment policies for workers who have low levels of education (e.g. Freeman and Gottschalk, 1998; Holzer, 1996).

[19] For broader discussions of rural revitalization issues see, for example, Audirac (1997).

Table 1: Summary Characteristics of Cases

CASE	STRATEGY	LOCATION	AGE	OWNERSHIP	PART OF LARGER ORGANIZATION	EMPLOYMENT	COMPETITORS	MARKET
MATERIALS	HIGH	Rural	1980	Private, local HQ	No	120	Few	Stable growth
LARGE METAL	HIGH	Urban	1801	Private, local HQ	Yes	505	Few	Cyclical
MACHINE PARTS	HIGH	Metro	1949	Private, local HQ	Yes	130	Many (domestic)	Highly cyclical
ELECTRICAL PARTS	HIGH	Metro	1945	Public, HQ overseas	Yes	450	Few	Very uneven; recent sharp contraction after rapid growth
IT PARTS	HIGH	Metro	1970	Public, local HQ	Yes	450	few	Steady growth and rapid contraction
SMALL FABRICATION	LOW	Rural	1816	Private, HQ elsewhere	Yes	490-505	Few	Cyclical
SMALL MACHINES	LOW	Rural	1986	Private, HQ elsewhere	Yes	120	Many	Stable growth
MEDIUM FABRICATION	LOW	Urban	1989	Private, local HQ	Yes	117	Few	Steady growth
SMALL PARTS	MID	Rural	1981	Private, HQ overseas	Yes	275	Many and growing	Cyclical
MEDIUM MACHINES	MID	Urban	1988	Private, local HQ	Yes	115	Few	Steady growth

Table 2: Labor Force, Compensation and Employment Practices

CASE	RESIDENCE LABOR FORCE	TURNOVER	AVERAGE AGE	% MINORITY	% FEMALE	INITIAL HOURLY WAGE	PAY GRADES	2-TIER WAGES	LABOR UNION
MATERIALS	Local	Low	34	5%	57%	$8.25	Few	No	No
LARGE METAL	Mainly in that town	Modest	48	<1%	<1%	$7.23/$7.63	Many	Yes	Yes
MACHINE PARTS	Some more than 30 miles	6%	N/A	2%	<1%	$9 ($10/12 with 720 hours of BOCES)	Few	No	No
ELECTRICAL PARTS	Some more than 30 miles	13%	35	2%	<1%	$7	6	No	No
IT PARTS	Some more than 30 miles	10%	35	15%	<1%	$7.5	8	No	No
SMALL FABRICATION	Local	Low	N/A	2%	<1%	$8.22-$8.99	6	Yes	Yes
SMALL MACHINES	Local	Modest	28	1%	18%	$7	Few	Yes	No
MEDIUM FABRICATION	Mainly in that town	5%	38	<1%	<1%	$7	Few	No	Yes
SMALL PARTS	Local	Stable core; rest high	38	2%	56%	$6	11	No	No
MEDIUM MACHINES	Mainly in that town	10%	40	<1%	20%	$7	Few	No	No

Table 3: HPWPs

CASE	PROFIT SHARING	EMPLOYEE STOCK OWNERSHIP	OTHER INCENTIVE PAY	TEAMS	QC	TQM	INFORMATION SHARING
MATERIALS	Yes	No	Hybrid of profit sharing and individual incentive pay	Yes	Combined with teams	No	All employee monthly meeting
LARGE METAL	Yes	Yes	Individual incentive pay	Yes	Combined with teams	Yes	All employee quarterly meeting
MACHINE PARTS	Yes	Yes	None	Yes	No	Yes	All employee quarterly meeting
ELECTRICAL PARTS	No	Yes	None	Yes	Yes	Yes	All production employee monthly meeting
IT PARTS	Yes	No	None	Yes	No	Yes	All employee monthly meeting
SMALL FABRICATION	No	No	None	No	No	No	All employee meetings twice a year
SMALL MACHINES	No	No	None	No	No	No	No
MEDIUM FABRICATION	No	No	None	No	No	No	All employee monthly meeting
SMALL PARTS	No	No	None	Yes	Combined with teams	No	All employee monthly meeting
MEDIUM MACHINES	No	No	Individual incentive pay	No	Yes	Yes	All employee monthly meeting

Table 4 Basic Worker Characteristics

	SMALL PARTS	MATERIALS	LARGE METAL
	Mean	Mean	Mean
Total labor market experience (years)	16.12	14.81	29.52***
Tenure (years)	4.47	4.30	21.77***
Age	37.96**	34.38	47.97***
hourly wage (dollars)	10.36	9.79	13.07***
Commuting time (minutes)	25.51***	14.72	20.69***
	%	%	%
Proportion male (%)	43.68	42.25	97.74***
Proportion with at least some college (%)	47.31	47.14	43.56
Proportion white (%)	97.70	95.77	94.23
Proportion with extra job (%)	30.54	36.62	27.78
Proportion married (%)	59.88***	39.44	72.62***
Proportion married with working spouse (%)	77.98	90.00	64.25***
Proportion with a dependent child (%)	44.58	53.52	30.74***
Proportion of workers who grew up in the area (%)	57.32***	78.87	87.22*
Number of respondents	174	71	269

Note: ***the difference between SMALL PARTS and MATERIALS or between LARGE METAL and MATERIALS statistically significant at the 1% level **the difference between SMALL PARTS and MATERIALS or between LARGE METAL and MATERIALS statistically significant at the 5% level *the difference between SMALL PARTS and MATERIALS or between LARGE METAL and MATERIALS statistically significant at the 10% level.

Table 5A Worker Outcomes: Inter-firm Comparison

	SMALL PARTS	MATERIALS	LARGE METAL
	Mean	Mean	Mean
Empowerment			
I have a lot to say about what happens on my job	2.52***	2.04	2.51***
"My job allows me to take part in making decisions that affect my work."	2.40***	1.86	2.47***
Communication			
"Management is usually open about sharing company information with employees at this company."	2.16***	1.89	2.91***
	%	%	%
"How often do you personally communicate about work issues with managers or supervisors in your work group or work team?" *Proportion of employees who replied "at least weekly"*	85.09	88.73	73.51***
"How often do you personally communicate about work issues with managers or supervisors outside of your work group or work team within the firm?" *Proportion of employees who replied "at least weekly"*	49.11	39.44	36.60
"How often do you personally communicate about work issues with workers outside of your work group or work team within the firm?" *Proportion of employees who replied "at least weekly"*	57.52**	71.83	40.38***
"How often do you personally communicate about work issues with technical experts outside of your work group or work team, such as engineers, technicians, accountants or consultants within the firm?" *Proportion of employees who replied "at least weekly"*	47.32***	25.35	20.45
Effort			
"How much effort do you put into your work beyond what your job requires?" *1=None, 4=A lot*	3.49	3.55	3.28***
Relative effort=(Effort put into a typical hour of work - Effort put into a typical hour of watching T.V.) *0=Hardly any at all, 10=All your energy*	5.09***	6.51	4.13***
Days missed in the last year	10.90	11.56	18.32***
Hours worked per week	40.24	41.01	41.72
"My effort at work affects my pay."	2.09***	1.69	2.28***
Teamwork/Peer monitoring			
"I help my co-workers when they need it."	1.54***	1.35	1.74***
"To what extent have other employees at this company taught you job skills, short cuts, problem solving, or other ways to improve how you work?" *1=To a great extent, 4=Not at all*	2.02	1.87	2.10**
"My effort at work is affected by the effort of my co-workers."	2.19	2.21	2.30
"The work of my co-workers affects my pay."	2.79	2.89	2.37***
"If I saw a co-worker slacking off, I would say something to that worker."	2.44	2.30	2.92***
Proportion of workers who have ever said anything to a co-worker when they saw that worker slack off (%)	57.23*	68.57	41.51***

Table 5B Worker Outcomes: Inter-firm Comparison

	SMALL PARTS	MATERIALS	LARGE METAL
	Mean	Mean	Mean
Commitment			
"I am willing to work harder than I have to in order to help this company succeed."	1.90***	1.50	2.14***
"I would take almost any job to keep working for this company."	2.74**	2.48	2.90***
"I would turn down another job for more pay in order to stay with this company."	2.96***	2.55	3.22***
Trust			
"I am treated fairly by the company."	2.17**	1.88	2.43***
"To what extent do you trust management at this company?" *1=To a great extent, 4=Not at all*	2.25	2.41	3.07***
"In general, how would you describe relations in your workplace between management and employees?" *1=Very good, 5=Very bad*	2.46	2.66	3.19***
Job satisfaction			
"All in all, how satisfied would you say you are with your job?" *1=Very good, 5=Very bad*	2.13*	1.99	2.26***
Intrinsic rewards			
"My job makes good use of my knowledge and skills."	2.45***	2.09	2.38***
"What I do at work is more important to me than the money I earn."	2.90	2.76	3.21***
Job stress			
"My job is stressful."	2.14	2.22	2.25
Number of respondents	174	71	269

Note: Unless otherwise indicated, each respondent is given four choices: 1=Strongly agree; 2=Agree; 3=Disagree; and 4=Strongly disagree.

***the difference between SMALL PARTS and MATERIALS or between LARGE METAL and MATERIALS statistically significant at the 1% level. **the difference between SMALL PARTS and MATERIALS or between LARGE METAL and MATERIALS statistically significant at the 5% level. *the difference between SMALL PARTS and MATERIALS or between LARGE METAL and MATERIALS statistically significant at the 10% level.

Table 6A Worker Outcomes: Intra-firm Comparison between Participants and Non-participants

	SMALL PARTS		LARGE METAL	
	Participants	Non-participants	Participants	Non-participants
	Mean	Mean	Mean	Mean
Empowerment				
"I have a lot to say about what happens on my job"	2.26***	2.68	2.34***	2.69
"My job allows me to take part in making decisions that affect my work."	2.14***	2.54	2.29***	2.68
Communication				
"Management is usually open about sharing company information with employees at this company."	1.93***	2.29	2.87	2.94
"How often do you personally communicate about work issues with managers or supervisors in your work group or work team?" *Proportion of employees who replied "at least weekly"*	91.07*	78.57	78.01*	68.60
"How often do you personally communicate about work issues with managers or supervisors outside of your work group or work team within the firm?" *Proportion of employees who replied "at least weekly"*	53.57	43.64	42.14**	29.41
"How often do you personally communicate about work issues with workers outside of your work group or work team within the firm?" *Proportion of employees who replied "at least weekly"*	65.45*	48.21	46.43**	32.77
"How often do you personally communicate about work issues with technical experts outside of your work group or work team, such as engineers, technicians, accountants or consultants within the firm?" *Proportion of employees who replied "at least weekly"*	49.09	43.64	26.09**	15.00
Effort				
"How much effort do you put into your work beyond what your job requires?" *1=None, 4=A lot*	3.66***	3.38	3.39***	3.15
Relative effort=(Effort put into a typical hour of work - Effort put into a typical hour of watching T.V.) *0=Hardly any at all, 10=All your energy*	5.32	5.00	4.70***	3.42
Days missed in the last year	10.48	9.79	18.18	18.54
Hours worked per week	41.95***	39.38	42.41*	40.91
"My effort at work affects my pay."	1.98	2.15	2.10***	2.50
Teamwork/Peer monitoring				
"I help my co-workers when they need it."	1.49	1.54	1.67	1.81
"To what extent have other employees at this company taught you job skills, short cuts, problem solving, or other ways to improve how you work?" *1=To a great extent, 4=Not at all*	1.93	2.05	1.92***	2.28
"My effort at work is affected by the effort of my co-workers."	2.18	2.21	2.18**	2.40
"The work of my co-workers affects my pay."	2.93	2.75	2.21***	2.56
"If I saw a co-worker slacking off, I would say something to that worker."	2.40	2.46	2.78***	3.05

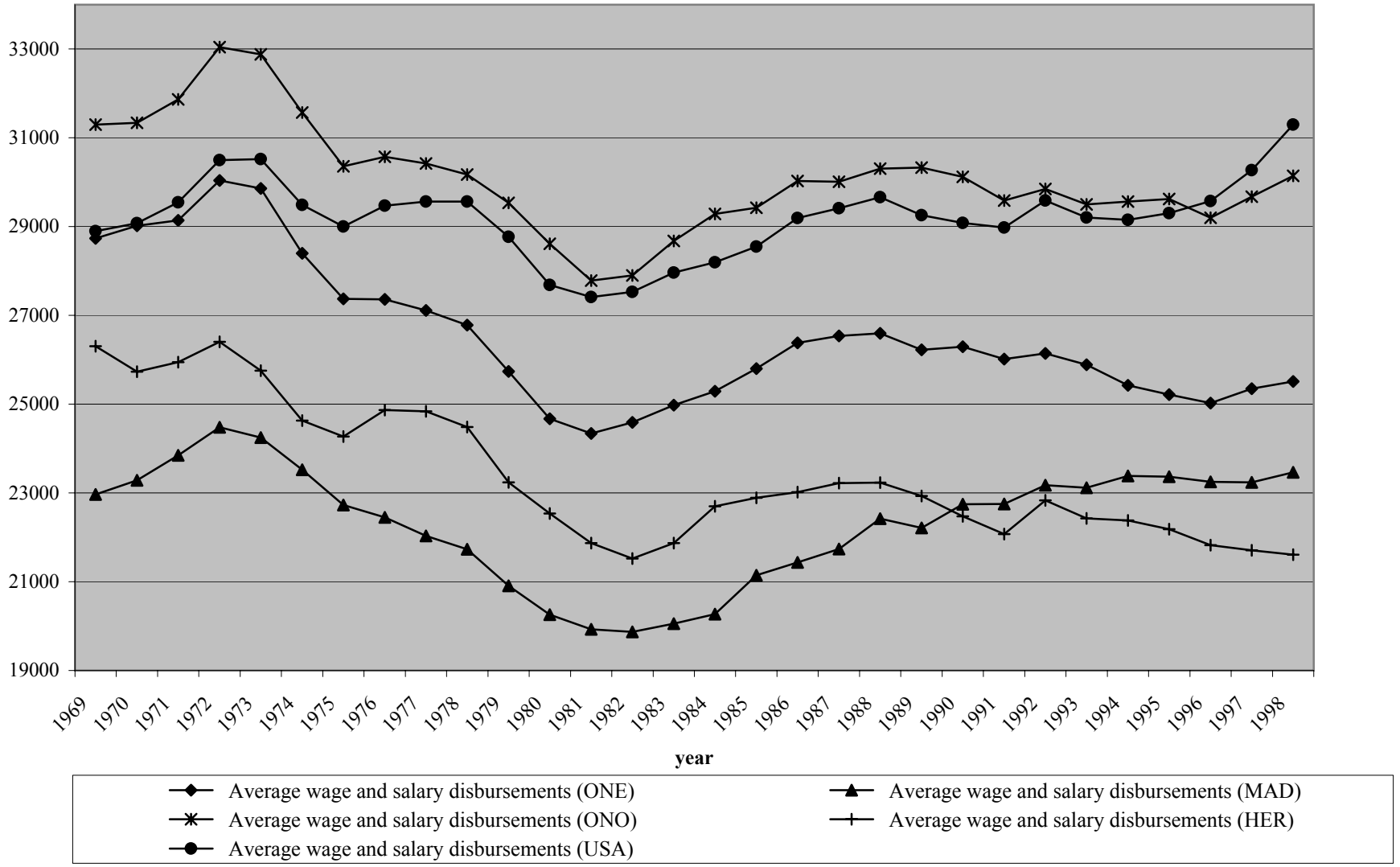
Table 6B Worker Outcomes: Intra-firm Comparison between Participants and Non-participants

	SMALL PARTS		LARGE METAL	
	Participants	Non-participants	Participants	Non-participants
	Mean	Mean	Mean	Mean
Proportion of workers who have ever said anything to a co-worker when they saw that worker slack off (%)	57.89	56.36	43.17	41.18
Commitment "I am willing to work harder than I have to in order to help this company succeed."	1.82	1.95	2.00***	2.25
"I would take almost any job to keep working for this company."	2.61*	2.84	2.75***	3.06
"I would turn down another job for more pay in order to stay with this company."	2.89	3.03	3.08***	3.38
Relative knowledge=(knowledge on the job and the firm minus knowledge on favoriate TV show *0=Hardly any knowledge, 10=Complete knowledge*			1.95	1.50
Relative interest=(interest in the quality minus interest in favorite TV show *0=Hardly any interest, 10=total interest*			2.91	2.26
Trust "I am treated fairly by the company." *1=Strongly agree, 4=Strongly disagree*	1.96***	2.31	2.33**	2.56
"To what extent do you trust management at this company?" *1=To a great extent, 4=Not at all*	2.07**	2.36	2.96**	3.18
"In general, how would you describe relations in your workplace between management and employees?" *1=Very good, 5=Very bad*	2.37	2.54	3.08**	3.33
Job satisfaction "All in all, how satisfied would you say you are with your job?" *1=Very good, 5=Very bad*	2.00**	2.22	2.15***	2.39
Intrinsic rewards "My job makes good use of my knowledge and skills."	2.23**	2.59	2.27**	2.52
"What I do at work is more important to me than the money I earn."	2.81	2.98	3.07***	3.37
Job stress "My job is stressful."	2.13	2.10	2.23	2.28
Number of respondents	57	111	141	121

Note: Unless otherwise indicated, each respondent is given four choices: 1=Strongly agree; 2=Agree; 3=Disagree; and 4=Strongly disagree.

***the difference between SMALL PARTS and MATERIALS or between LARGE METAL and MATERIALS statistically significant at the 1% level. **the difference between SMALL PARTS and MATERIALS or between LARGE METAL and MATERIALS statistically significant at the 5% level. *the difference between SMALL PARTS and MATERIALS or between LARGE METAL and MATERIALS statistically significant at the 10% level.

Figure 1 Changes in Average Wage and Salary in 1998 dollars in Oneida, Madison, Onondaga, and Herkimer Counties: 1969-1998



Note: Data were obtained from U.S. Bureau of Economic Analysis