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**Employee Participation Rights in Corporate Governance:
An Economic Rationale, a Test of a Leading Theory, and Some Initial Policy Proposals**

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100-word Abstract.

This paper examines roles of mandated Employee Participation Rights (EPRs), such as works council legislation, in corporate governance. Links between employment and corporate relationships are stressed. Market failure arguments are developed, predicting that EPRs, and the *interaction* between EPRs and investments in skills, can positively impact productivity; preliminary evidence from German establishments is generally supportive. A qualitative appraisal concludes EPRs have not harmed economies that adopt them. Policies to expand EPRs in the US are introduced: jointly encouraging skill development and employee decision-making participation, full rights for employee stock ownership plans (ESOP) participants, legal regulation of terms such as “participation,” and EPR extension services.

1. Introduction

This paper examines the nature of Employee Participation Rights (EPRs) and considers their role and potential impact in corporate governance. Works councils of the type that have become the norm in Europe are a key example of EPRs. The economic literature on EPRs is reviewed, with an emphasis on market failure analysis as to why EPRs might raise efficiency, and yet be underprovided by the market. Then, a simple test of a leading theory of their purpose and effect is presented: do EPRs enhance investment in skills at the workplace, so that performance is improved? Theories of the role of EPRs in corporate governance, as developed by Smith (1991) and Blair (1995) among others, are argued to imply that EPRs, as well as the *interaction* between EPRs and investments in firm specific human capital or skills more broadly, should have a significant positive impact on productivity.

The theory is then tested with data from a sample of firms from Germany; though there are some qualifications, the predicted impacts are generally found. In particular, in small and medium enterprises with less than 100 workers, with controls for size and industry effects in place, and while also controlling for the *individually* positive productivity effects of works councils and training as stand-alone determinants of performance, the *combination* of training with works council is observed to raise net sales by a strikingly high 37%. Although the case for EPRs does not rest solely on productivity improvements, these results suggest that they may provide efficiency gains.

The paper then presents a brief qualitative appraisal of whether countries with EPRs have been paying any economic price, or realizing any economic or social benefits, from their presence. In particular, whether the EU performs worse than the US economically, and if so whether EPRs might be a factor. The conclusion is that there is no evidence of any net economic cost and some evidence of net social benefit, and possible accumulating long-run economic benefit, of EPRs.

Finally, some modest policy proposals are offered to expand EPRs in the US economy. The proposals center around encouraging both skill development and genuine employee decision-making participation through what are termed Human Capital Partnership plans. Incentives would include preference criteria for government contracts. The proposals also address requiring full ownership rights for employee stock ownership (ESOP) participants, legal regulation of the use of terms such as “participation,” and development of and public support for extension services to spread what is known about which types of participation institutions are most effective. The proposals are designed to get the largest positive impact with the least intrusive regulations. The policy path proposed in this paper is challenging, but some reorganization of the workplace is essential to ensure a more efficient and more democratic American capitalism.

The paper begins by defining EPRs, providing examples of them, and then considering the economic case for mandating or providing incentives for establishing EPRs.

2. What are EPRs?

I define employee participation as the expectation that employees will have a measured say and stake in the quality and stability of their jobs. Employee participation rights (EPRs), as I define them, are more specific. They are legal or contractual guarantees of rights of employees to consultation, or veto power, and or joint design and implementation of specific workplace decisions and practices. EPRs have legal and contractual meaning; the more general term “participation” does not. But neither term generally extends to bargaining over baseline remuneration.

In any given economy, the level of EPRs may differ across firms, within any one firm from workplace to workplace, and across types of decisions--such as the size and arrangement of work cubicles, organization and speed of an assembly line; layoffs, dismissals and hiring; pollution, and occupational health and safety; investments, relocations and plant closings--and training. EPRs may result from privately negotiated contracts, from administrative regulations, or from legal mandates. They generally include individual rights, such as to due process in cases of dismissal, but are exercised collectively, by some recognizably democratic process, usually through elected employee representatives. Their common feature is their ultimate enforceability in courts of law, such as in labor courts in the case of Germany.

2.1. Examples of EPRs.

The most important examples of EPRs have been found in the EU, where they have emerged primarily from legal mandates. Public policies aimed at requiring managers to share authority with employees were introduced in many European countries in the postwar period. In Germany employees have the legal right to such participation through two legally mandated structures: the Betriebsrate, or works councils, which provide for participation in the immediate workplace, and Mitbestimmung, or codetermination (CD), which provides for employee representation on the board of directors.ⁱ Under CD laws, half of the supervisory board members of large firms (over 2000 employees) and one-third in medium size firms (500-2000 employees) are elected by employees,ⁱⁱ while stockholders usually appoint the tie-breaking chairman in large firms. The German works council system was established under the *Betriebsverfassungsgesetz*, or Works Constitution Act (WCA); this is the form of EPRs examined empirically in this paper. Under the WCA, firms with more than 5 employees must establish management-employee works councils to arbitrate most aspects of workplace decision-making. In practice, the creation of councils depends on the initiative of the establishment’s employees; and the legal mandate is only enforced when employees request the councils and management is slow to establish them.

ⁱ The two components are often collectively termed codetermination, though this is not strictly accurate from a legal standpoint. Note also that German company law provides for a "management board" composed of professional managers who run day-to-day operations, and a "supervisory board" composed of elected representatives of shareholders and, under the codetermination system, of elected representatives of employees. The supervisory board appoints and dismisses the management board and supervises important strategic company decisions.

ⁱⁱ This may be done indirectly through a kind of electoral college.

Nationally, about 46% of all companies in Germany have a works council, but they cover 66%-75% of all employees;ⁱⁱⁱ thus they are more common in larger than in smaller firms. Members of the councils are elected for a term of 4 years.^{iv} The councils are very popular in Germany, and seem almost universally accepted by owners, management, and unions, as well as employees. In fact, in 2001 the rights of works councils were strengthened, over only limited opposition.

Councils negotiate over a bundle of interrelated company policies. On some issues, they have the right to information and consultation, in others a veto power over management initiatives, in still others the right to co-equal participation in the design and implementation of policy. Their rights are strongest in social and personnel matters such as the introduction of new payment methods, the allocation of working hours and the introduction of technical devices designed to monitor employee performance. Works councils in Germany are institutionalized bodies of worker representation that have functions distinct from those of unions. They do not have the right to strike. Moreover, the WCA does not allow wage negotiations; the aim is to restrict distributional conflicts on the establishment level. Rather, works councils are designed to increase joint establishment surplus. They are tied to the obligation to cooperate with management 'in a spirit of mutual trust ... for the good of the employees and of the establishment.'

Norway, Denmark, Sweden, Austria, the Netherlands and Luxembourg have analogous laws while Italy and most of the remaining European OECD countries (excepting Britain) mandate councils for employee participation at the workplace, though not on the board. In France, employees also send non-voting representatives to the board^v (see Rogers and Streeck, 1995).

In June 1994 the European Union reached agreement on a directive that requires works councils as part of its Social Charter. The directive required companies employing over 1000 workers in any of its member countries, or over 150 workers in at least two countries, to establish works councils. The directive stated that councils must be consulted on relocation plans, job changes, investment and "any proposal creating serious consequences for workers' interests." After a two-year voluntary phase, starting in 1996 these councils became mandatory, though with some loopholes; after 1999, some of these loopholes were closed. Implementation was delayed in the UK until 2000, because it had previously opted out of the EU Social Charter. These multinational councils have less power and have so far not been as active as national councils in Germany and some other European countries. Surveys by Bain and Hester (2000) show that while over 500 European works councils had been established by 2000, almost three-quarters of such councils met only once per year. They also observed that at this early stage, employee representatives are still getting up to speed, and can be overwhelmed with large volumes of data presented at the last minute. However, the precedent for extending works councils to

ⁱⁱⁱ See Buchtemann, 1989, cited in Sadowski and Decker, 1992, and Muller-Jentsch, in Rogers and Streeck (1994).

^{iv} A full account is found in Ministry of Labor and Social Affairs, 1991, 1992.

^v For details see Rogers and Streeck (1995). Earlier discussions are found in Summers (1980, 1982), Kuhne (1980), Aoki (1984), Kolvenbach (1978, 1982), Carby-Hall (1977), and IDE (1981)).

international activities of firms has been clearly set (Stirling and Tully, 2004). U.S. and other non-European firms operating in Europe are affected by the rules-this is giving U.S. firms growing experience with working with works councils (see e.g. Marginson 2004), and some are realizing that EPRs can bring significant benefits of a culture of workplace trust and cooperation.

3. What is the economic case for EPRs?

The economic case for EPRs rests on the need to correct a set of market and organizational failures. The most widely accepted economic rationale for EPRs is the protection of investments in firm-specific human capital. This argument was first advanced, although indirectly, by Dow (1987), and developed by Smith (1991), and Blair (1995, 1999).

The general problem is that relationship-specific investments (Williamson, 1975, 1985) are subject to holdup. That is, whatever the understanding and agreement prior to making investments, bargaining power changes after one party has made commitments that are of value to one particular relationship-such as purchasing specialized machinery and otherwise gearing up to supply a firm as an outsourcer, a joint venture- or an employment contract. At that point, the other party has the incentive and the means to try to force a renegotiation. For example, once one party has built or paid for, installed, and moved up the learning curve with specialized machinery, that party is stuck with the investment- it is a sunk cost. Certainly a specialized machine may have at least some value on the second-hand market, but generally this will be substantially below than the value of the full investment. Of course, to a degree legal contracts can help mitigate such holdup problems, but such contracts can never foresee all contingencies, and in any case legal enforcement is costly. Thus, this problem can cause otherwise valuable relationship-specific investments never to be undertaken, or to be scaled-down. Although some investments may still be undertaken, these may be of lower quality, if effort is withheld or the parties fail to commit their best resources. Worse, the returns on these investments may be dissipated in legal battles.

There are various institutional ways around such holdup problems; in the case of two firms, one of which supplies the other, an option is vertical integration, with the result that both firms are owned by the same investors (Grossman and Hart, 1986). Many acquisitions in the U.S. economy continue to be of this type. At the same time, outsourcing is increasingly widespread. It would be valuable to know whether legal innovations have emerged that enable firms to better circumvent holdup problems in outsourcing in recent years. But reputation effects may be helpful here as well: usually, outsourcing with relationship-specific investments are done by large firms which expect to be repeat buyers in the market for years if not decades to come. If a major buyer (an auto company, for example) becomes known as a firm that reneges on suppliers after they make dedicated investments, it may be difficult to convince other suppliers to make similar investments in future periods.

An analogous problem emerges with firm-specific human capital (FSHK). By definition, capital is an accumulated flow of investment, which provides a stream of expected returns over an extended period. Human capital means education and skills paid for in time and money, and accumulated by employees and firms, which is also expected to provide a stream of income

returns. Economists favor the term because of the formal analogy between these two types of investment. General human capital, like literacy and numeracy, increases the employee's value at any firm, and so is generally paid for by the employee. Investment in firm-specific human capital, or skills of value to one firm but not others, is normally modeled as shared, through wage adjustments, by firm and employee. Clearly, there is no absolute line between general and specific human capital; there are often shades of gray, measured by mobility costs, broadly construed.

It may be helpful to consider some examples of firm-specific human capital:

- skills for operation of specially designed equipment, type of machinery
- proprietary or otherwise unique technical knowhow
- other skills for unique production processes
- skills for specialized management systems, software, accounting, etc.
- knowledge of corporate "culture"
- knowledge of who in organization has certain skills, contacts, experiences
- knowledge how to work best with specific company employees, or whom to best work with on a project
- knowledge how to best serve long-term customers with special needs or requirements
- knowledge of how to anticipate emerging needs of the company and its regular customers (reinforced as other companies have increased FSHK)

Analogous to relationship-specific capital investments, the problem is that after employees invest in such FSHK, management has an incentive to renege and not pay employees the return they were implicitly promised on their human capital investments. While firms usually pay for training, workers accept lower-than-market wages until their FSHK has been developed. The workers then expect higher wages in the future, but generally have no power to insist on this. The problem is that by definition, FSHK is useful in that one firm, but not in any others.

Clearly, this problem cannot be solved by vertical integration, because one cannot purchase labor due to the prohibitions on involuntary servitude. Moreover, the possibilities for solving this problem through the impact on reputation are far more limited in the case of FSHK. The problem was addressed by Dow (1987, p. 24): "who monitors those in positions of authority, in order to ensure that their self-interest does not threaten collective interests?" In the presence of firm-specific human capital and other transaction costs exit or its threat is insufficient. Dow concluded that "the unaided market cannot accomplish" the creation of managerial monitoring by employees "in part because asset idiosyncrasy is often substantial on both sides of the authority relationship, and in part because the relevant information is unlikely to pass easily across organizational boundaries (Teece, 1982), thus disabling reputational protections which might emerge via the managerial labor market."

Blair (1995) doubts that workers will believe that reputation matters to firms. She draws on Shleifer and Summers (1988) to argue that when a market for corporate control is active, return on FSHK may be shifted to raiders. Clearly this prospect would severely limit the effectiveness of reputation costs as a guarantor that management will hold to its implicit agreements with workers. Worse, I would argue that the threat is endogenous: the more workers in a firm are realizing a return on FSHK, the more raiders will want to take over the firm. In part as a result,

there is no reason to believe that this problem is limited to “declining” industries. Finally, it may be pointed out that there is active turnover of management across firms; the manager may be in another company when an agreement she made is renegeed upon; I return to this time-horizon problem shortly.

Thus workers and unions would prefer in general to develop general human rather than specific human capital. This is in part because they are more protected from opportunism; but in part because it raises bargaining power. If workers' skills can be used in other firms, this raises their opportunity cost, and thus makes a higher "threat point" more credible in bargaining with employers. Employers similarly like to undermine workers' bargaining power, such as by finding alternative ways of organizing production, including technical innovations designed for this purpose (Dow, 1993).

These problems also give workers an incentive to look for opportunities for what I have termed quasi-specific human capital (Smith, 1988). This is human capital likely only useful in one firm at the time it is created, but able to be brought out of the firm in an entrepreneurial fashion as a start-up, that may compete with the original firm. The firm, in its turn, wishes to devise constraints to keep this from happening. The result can be considerable distortion in the organization of the firm, including strategies to prevent employees from gaining skills that could reveal company secrets. Finding ways to make FSHK work better is potentially in everyone's interest-but getting there involves solving a collective action problem, as described later in this section.

Blair (1995) makes the important point that workers with FSHK are in effect among the residual claimants of the enterprise. Since their FSHK is useless anywhere else, if the firm goes bankrupt, workers share last place in line with the company owners to recoup their investments-which is their FSHK, useful only in that one firm and only if it is operating at all. If after all parties who are owed tangible bills by the company are paid, and then the net worth of the company is negative, employees lose all of their FSHK. In fact, it might be further argued that workers are even behind the owners in line, because the owners might recoup part of their investment (such as through the sale of plant and equipment) even as the firm shuts down. Moreover, the owners, who make the decision about whether to stay in business, count returns to FSHK as part of labor costs, rather than as part of the firm's economic rents. As a result, as Blair points out, workers with FSHK are subject to the risk of the residual claimant just as shareholders are-perhaps more so. Indeed a significant fraction of Fortune 500 firms disappeared from the economic landscape in the past decade, through bankruptcies and various takeovers that can put FSHK at risk. Thus, there is as much of a case for granting decision-making rights to workers with FSHK as there is for investors, from the point of view of designing law to maximize the creation of net social wealth.^{vi}

The legal protection of EPRs, by decreasing the risk that management will renege on agreements with employees, increases employee confidence in their investments in the firm. It would be difficult to achieve this employee confidence without such legal intervention (Streeck, 1984, p.417). This would in turn promote incentives for employees to take a more long-term view of

^{vi} For an intriguing and potentially applicable alternative starting point that might also be applied to the analysis of EPRs in the context of protection of FSHK, see Rajan and Zingales (1998, 2001).

the firm's interests, decreasing their incentive to opportunistically seek out short run benefits.

It may also be asked, if EPRs have benefits, why do firms not set up such a structure on their own, without an external legal framework? The transaction costs for an individual company to set up credible guarantees without an overall legal framework may simply be too high; by analogy consider the lower value of voluntary disclosure of financial information without government auditing and sanction authority. With a clear legal and standardized framework already in place, legal costs for establishing a credible agreement are kept low.

The analysis in the literature has stressed firm specific human capital, but as a practical matter the arguments also largely apply to investments in general human capital.^{vii} This is for two interrelated reasons: 1) general and specific human capital investments are often efficiently bundled together and 2) vocational learning that has an experiential component--such as on-the-job training--tends to be more effective than out-of-context classroom learning. The advantage for experiential learning will apply to more general as well as to more specific skills. And if learning firm-specific skills also entails learning general skills, it will often be advantageous to learn both on-the-job, whether we are considering further training within a particular job or formal job upgrading associated with a certificate of skill. This is because of the general pedagogical value of combining theoretical education with experiential content and the particular experiential value in that the skills to be learned are to be applied at that workplace. There are also advantages to be gained from returns to scale in the learning process. Learning always entails "set up costs," and it is more efficient to learn related subjects at the same time to avoid having to employ separate instructors, each using their own method, to independently set up the context for similar learning exercises.^{viii} In US practice, training inside the firm usually has some general human capital content. In the 1990s there were regular reports in the business press of firms engaging in remedial education alongside training for specific job skills for new workers.

The need for EPRs is magnified because of the role of management in a modern corporation. There is an incentive for managers to take expanded authority in the firm not just because and only when it is efficient, but when they have the power to do so and it benefits the manager. It is well known that there are incentives and opportunities for managerial opportunism towards shareholders, as the industrial organization, management, and economic behavior literatures examine in detail (Williamson, 1975, 1985). But there are also incentives and opportunities for managerial opportunism towards employees. There are at least four major incentives for

^{vii} General training can be identified with programs that provide general certification schemes, covering general rather than firm-specific qualification gradations. In theory, the comparative advantage in managing general training would seem to lie in an educational institution or perhaps a company specializing in training, rather than on-the-job training in a firm with EPRs; but this conclusion may be reversed when there are economies of scope between the two types of training coupled with experiential learning advantages. I would like to thank Dieter Sadowski for helpful discussions on the dimensions of bundling general and specific training.

^{viii} While I make these claims on the basis of subjective experience as a university professor rather than a vocational skills instructor, and they would need to be tested empirically, these principles should if anything operate all the more strongly in vocational education.

management to distort the organization of work away from that which would maximize profits. These distortions would decrease the level and quality of training and lower the returns on FSHK and quite likely the returns on equity as well. However, there is a potentially offsetting role for EPRs to blunt the impact of these incentives for opportunism (the following draws on Smith, 1991):

i. *Credit-taking Opportunism.* Managers may often find that to maximize their own rewards in an organization, they should design and implement an organizational structure that does not maximize company profits. Management has an incentive to make it appear that innovative ideas originate with the managers rather than their employees; and that they are otherwise more productive than their subordinates. This impression justifies high salary as well as promotions and bonuses. The ability of managers to create the impression that they are more often the source of productivity and innovation will depend on the organization of the workplace, which is designed by managers who have an incentive to consider their own private benefits and costs before those of the enterprise as a whole. Considerable distortions will be possible before the manager's private costs resulting from any overall damage to the firm equal or exceed his private benefits from a more efficient organization, which might, among other things, credit the manager less for its successes.^{ix} For example, employees often complain that they are "forced to train their bosses," who may be a management trainee or recent transfer. The manager faces obvious disincentives against pointing out the subordinates responsible for his success. The circumstances may lead employees to withhold valuable training or other information, useful for innovation or organizational development, from their supervisors. Thus too little training of both higher and lower level employees may result; EPRs might reasonably lessen the impact of such organization failures.^x The results of a distorted organizational structure may include reduced incentive for employees to develop and put forward innovative ideas^{xi}; and false information, or "signals," to higher authorities about the distribution of abilities in the organization. EPRs provide employees with a regular grievance channel to higher-level managers or ultimately to owners; even if not used often their existence may deter management opportunism.

ii. *Time horizon opportunism.* In the US, management careers typically involve working sequentially for a number of companies. Further, senior executives tend to be relatively close to retirement age, and thus the time horizon of management can be shorter than either that of owners or other employees. Managers' rewards will be based on perceived performance during their tenure. Since in many cases the median age is lower and expected tenure is higher for nonmanagerial employees, one valuable "balance" that EPRs can offer is to reduce management

^{ix} Since the same set of incentives hold for all managers, the owners of the firm may be able to do little about the problem merely by dismissing management (Dow, 1987, p.24), and in any case micro-monitoring of managers by shareholders is impractical (Coffee, 1986).

^x Other opportunistic promotion and organizational design incentives are developed in Smith (1991).

^{xi} See Smith (1988, 1994) for further discussion of incentives for employee contributions to innovation.

time horizon opportunism.^{xii} Managerial actions taken with a short-term view to increase management rewards at the expense of the long run viability of the company violate implicit labor contracts as well as managers' contract with shareholders. By the time that information on the ability or actions of top management becomes clear to the market in the absence of EPRs, penalties for management may be otherwise outweighed by private benefits of their opportunistic behavior. Knowledge of these structural incentives may reduce investors' willingness to make financial investments, but particularly reduce employees' willingness to make specific human capital investments. The latter disincentive is apparent in the U.S. downsizing movement, which may have gone much farther than optimal from a long-run perspective, lowering investments in R&D and in employee training.^{xiii} EPRs have slowed downsizing in Europe, and this has some inefficient features. But these firms continue to invest in training and have been seeking other methods of adapting to increasing international competition that may place them in a better position for the long run. Managers are inhibited from taking a longer time perspective by the need to keep share prices high enough to avoid a hostile takeover (Schleifer and Summers, 1988). Some hostile takeovers may have been motivated to essentially strip workers of their rights to returns from their FSHK. While there is a role for the market for corporate control, excessive ease of takeovers may reduce incentives for specific human capital investment. So it is a two-edged sword. Employees do not necessarily benefit from either incumbent management or outside contenders. EPRs would reduce but not eliminate these problems.

iii. *Information flow opportunism.* Management has an incentive to provide a less than optimal flow of information, among employees and between owners and employees, for example. Since bargaining power is generally correlated with information, centralization of information, without access to it when necessary, can lead to its hoarding and misuse. EPRs carry some risks of slower decision-making (or informational inefficiency). But in a second-best world in which agents may have the incentive to behave opportunistically, its potentially slower decision-making may produce a superior average result by offering an internal quality control mechanism over management decisions.^{xiv} The firm may not introduce EPRs voluntarily because they may be costly to individual managers, who make decisions about internal organization. Although managers may benefit from ensuring that employees receive credible information, they may fear that other functions of EPRs, including quality control over management decisions, represent a threat to their jobs. Board membership for employee representatives, for example, is a two-way information channel; the reverse channel from employees to owners may be the one management

^{xii} Jensen and Meckling (1979) and Furubotn (1985) have implicitly assumed a first best world in which management is the perfect agent of capital when they argued that codetermination might have *negative* time-horizon implications by involving employees with finite horizons in decisions. Moreover, the time horizon of stock markets in the US has become increasingly viewed as surprisingly short, from the perspective of traditional efficient market theory.

^{xiii} For a review of the arguments see Steven Pearlstein, "As Firms Go 'Lean and Mean,' Benefits, and Dangers, Emerge. Economists Fear Restructurings in '93 May Have Gone Too Far," Washington Post, Sun., Jan 2, 1994, pp. H1, H16.

^{xiv} For a full discussion of first and second best authority structures in the presence of transaction costs and uncertainty, see Smith, 1991.

is concerned about. Thus, the presence of local workplace decision making requirements, and even non-voting employee board members deprived of full information, could lead to improved efficiency. Employees and owners, as well as managers, have incentives to withhold certain information. But EPRs are likely to reduce these problems by revealing some information and suggesting to perceptive participants where other information is being distorted or withheld.

iv. *Authority-hoarding opportunism.* In part because of the incentive to create opportunities for management opportunism, and in part due to the direct managerial utility from authority, EPRs are preferred "workplace characteristics" in systematic undersupply, adding to the firm's compensation costs.^{xv} Research findings show that the incidence of stress is highest among workers who are rated as having little control over their jobs, other things held constant. Medical studies show that men whose jobs combine high psychological demands with little control over their work face heart attack risk twice to three times as great as other male workers, other things held constant (Karasek, et al, 1988). A survey of 600 US workers^{xvi} found that 34% of respondents considered quitting due to job stress, and 14% did so; 46% of workers called their jobs highly stressful. The study concluded that lack of control over one's job is the central cause of job stress, which in turn reduces productivity and causes more turnover, absenteeism and illness than previously believed. In the UK, the Health and Safety at Work Act requires firms to minimize job stress, and in 2003 a legal action was initiated against a hospital that failed to adequately address workplace stress.^{xvii} As jobs become more complex, greater control over one's work may be necessary to reduce stress--another source of the EPR-productivity linkage--and promote effective training. Conversely, increasing required participation levels of employees, for example through teams, without accompanying this with genuine authority, training and other resources, is likely to increase employees' levels of stress (cf Batt 1993). This is another reason why merely creating teams in companies, without providing real EPRs, is unlikely to be as productive as when credible EPRs are in place. Key managers will often resist EPRs even when they know they would benefit the firm. Klein (1984) found that even first-line supervisors are strongly resistant to "employee involvement" programs: "most revealing, perhaps, is the finding that although nearly three-quarters (72%) of the supervisors view these programs as being good for their companies and more than half (60%) see them as good for employees, less than a third (31%) view them as beneficial to themselves." Among other causes, Klein's surveys point to supervisors' fear of loss of status and power in the workplace. Any disadvantage firms with EPRs might face in competing for entrepreneurial talent would be limited if they were legislated for all firms (Putterman, 1982, p.157). And there is some evidence (Wever, 1993) that German managers now feel they benefit from codetermination.

^{xv} This is a market failure for which policy may be a necessary corrective. For a general equilibrium analysis see Dreze and Hagen (1978) and Dreze (1976).

^{xvi} The study was conducted by Northwestern National Life Insurance, reported in the Wall Street Journal, May 7, 1991, p.1. This finding has been confirmed in subsequent research, some of which is reported at <http://www.hazards.org/workedtodeath>, website accessed March 2, 2004.

^{xvii} See for example the BBC reports at <http://news.bbc.co.uk/1/hi/health/2993116.stm> and <http://news.bbc.co.uk/1/hi/health/3124783.stm>, websites accessed March 2, 2004.

Further, coordination failures may be present (Smith, 2003). For example, if EPRs are distributed throughout the economy, employees will encounter similarly empowered counterparts in joint ventures, sales, or other market activities, maximizing the benefits of such decentralized authority (Levine, 1996).^{xviii} Moreover, some process innovations may fit with the organizational comparative advantage of firms with EPRs, such as non-Tayloristic operations utilizing knowledge and skills impacted in the work team, that is, unobservable to management. Such innovations would be selected against when workers have an incentive to shirk. But if workers represented by works councils may overcome this problem through appropriate and verifiable bargaining, that includes a combination of direct financial incentives of ownership, augmented by the incentive for mutual peer monitoring, then these innovations may be efficiently used in firms with EPRs; the more such firms present, the greater the incentive to invest in such innovations.^{xix}

In all of this, note that some performance-related pay, which provides incentives to share and use new knowledge and innovation acquired by employees, seems to go hand in hand with EPRs.

There might be a concern that employees with EPRs could exercise them in a way that would lead the firm to behave in an excessively risk-averse manner. While this is theoretically possible, I would argue that in fact US firms (which lack EPRs) have been acting in an excessively (socially costly) risk-loving manner in the last two decades. It has been widely noted that US stock markets have shown a tendency to speculate on corporate cash flows (see e.g. Shiller, 2000). Moreover, incentive stock option schemes carry some moral hazard risk; with little of their own paid-in capital at risk, executives have an incentive to enter the corporation into highly speculative activities in the hope of windfall capital gains. EPRs could play a constructive role by partially counterbalancing this tendency to risk-loving behavior. However, the impact of attitude toward risk would in any case be rather muted, because works councils are generally exercised at the workplace level, while corporate strategy is designed and implemented at a higher level.

Other market failures that EPRs may help to address include problems in occupational health and safety, and environmental protection. For example, when workers have EPRs, which should facilitate tradeoffs between various types of benefits, the firm may pollute less or cause fewer negative externalities, because workers live in the community near the plant (Vanek, 1971; Askildsen, Jirjahn, and Smith, forthcoming). Evidence from Germany not only demonstrates a robust relationship between works councils and investments in pollution abatement, but also indicates that these investments tend to be employee-led.^{xx}

^{xviii} For a detailed discussion, in the context of high-performance workplaces, see Levine (1996).

^{xix} For an applicable formal model, see Dow (1993). For an examination of a variety of related issues, in the somewhat different context of cooperative firms, see Smith (2003).

^{xx} See Askildsen, Jirjahn, and Smith, forthcoming.

4. Some evidence on the impact of EPRs and skill development

The theoretical framework developed in the previous section predicts a positive effect of EPRs on productivity. The theory also stresses the relationship between EPRs on the one hand, and development of FSHK on the other; these two factors interactively are predicted from the theory to have a positive effect on firm performance, other things equal. In this section, a simple and preliminary test of this theory is presented, examining the relationship between EPRs, training and efficiency in a production function analysis. There is growing evidence that works councils lead to increased productivity at the establishment level (see e.g. Hubler and Jirjahn 2003, Zwick 2004, Schank et al 2004). But these gains are not necessarily universal or robustly measured, as some studies show no (positive or negative) impact; (see e.g. Schank et al 2004). One reason for the ambiguity may be the failure to account for interactive effects with skill development; the approach used in this section represents a first step toward addressing this.

The firm survey data used in the regressions cover 723 manufacturing firms in North Rhine-Westphalia, Germany's most populous and most heavily industrialized state. These firms were divided into nine major industry groups as reported in Table 1.^{xxi} The data set includes information on our three variables of interest: works councils, training, and firm performance.

Analysis of these data shows a statistically significant positive correlation between training, EPRs and net sales (or alternatively sales per worker). A range of controls was used to ensure that results were not driven by firm size. The results in the following regressions may be interpreted as a production function analysis with industry dummy and interactive variables controlling for capital stock and variations in missing material use as a proportion of net sales.

In Table 2, firm output in the full data set of 695 observations is examined.^{xxii} The dependent variable is log of net sales. The log of the labor force, as well as the log of labor force squared as an extra control for firm size, are introduced as independent variables; both are statistically significant, the former with a t-ratio of about 4.5 and the latter at about 1.9. To control for industry specific effects, intercept dummies for 8 of the 9 industry groups are introduced, most of which are highly significant and all of which are at least marginally significant.^{xxiii} Then, to allow for industry specific labor elasticities, slope dummies are introduced, termed SLOPE1 through SLOPE8 in Table 2, most of which are statistically significant. Again, each of these two types of industry variables is also intended to help control for the missing data on capital use and

^{xxi} The survey was undertaken by the Institut Arbeit und Technik (IAT, or Work and Technology Institute) in Gelsenkirchen in 1991. Industry groupings were formulated by IAT researchers. I am indebted to the IAT, particularly Matthias Knuth, for making the survey available to me in electronic form for this analysis, and for their hospitality during my visit there.

^{xxii} This is the number of firms remaining after deleting the firms with relevant missing variables.

^{xxiii} Of course, only 8 of 9 industries can be introduced into the regression to avoid perfect multicollinearity. The last industry dummy, dropped to prevent multicollinearity, is that of the food processing industry (see Table 1); it also turns out this is the most productive of the industry groups by this measure (hence the many reported negative coefficients on the industry dummies).

further control for firm size effects. Then, the labor variables may be interpreted as inputs in a translog production function, with industry data and other controls partially acting as proxy for unobserved capital data.

With these several controls, BETRIEBS, the existence of a Betriebsrate, or works council, is positive and significant at the 5% level with a t-statistic of about 2. Net sales are some 15% higher in such firms, other things equal. Thus, even controlling for firms size, industrial sector, and industry specific production processes, and training, works councils have positive effects on productivity, at least in this data set.

A limitation of the data set is that no quantitative information on time in, and financial expenditures on, training is available. But the data set does contain some information that serves as a proxy for significant training as defined in section 2. In Table 2, the variable TRAINING refers to the existence of significant training activities in the enterprise and is constructed as follows. Managers were asked if the firm conducts worker training of duration longer than one day. If they indicated yes, they were then asked to indicate whether this training was to train employees to "perform a higher function within the enterprise" or just to function better at the same level. The former is chosen as the available variable most closely conforming to the predictions of the theory of the relationship between FSHK and EPRs set out in the previous section. The data limitations lead to some measurement error, but if anything lead to attenuation bias, making it more unlikely that the hypothesized relationships will be discerned in the data.

The 19 percent of firms in the sample that both offered longer duration training, and then indicated the "higher function" intent of training, were then assigned a training value of 1; all others were assigned the value of 0. In the regression as reported in Table 2, this variable is positive but not statistically significant. The term labeled "INTERACT" captures the interaction between the presence of a works council and the presence of significant training as defined above; this interaction applies to some 11% of the firms in the sample. The coefficient is also positive but not statistically significant,^{xxiv} but as we will see, results are far sharper when only smaller firms are considered.

In the sample, 55% of firms had a works council, while 45% did not. Of 443 firms in our sample with less than 100 employees, just 136 have a works council, while amongst the 274 firms with more than 100 workers, fully 251 have a works council. Probit analysis in our sample on the incidence of a works council confirms that the probability that a works council is present is a statistically significantly increasing function of firm size, measured by labor force size and sales.^{xxv} Thus there may be some remaining concern that what is being picked up is a size effect, in which larger firms are more likely to be productive because of scale economies, but are also more likely to have both councils and training. It is at least possible that results could remain

^{xxiv} Training, like other investment activities, is an inherently intertemporal investment, and our data offers only a one-time "snapshot" of the firm. Because of the lack of time series data, it is impossible to know if these were investments that later paid off more substantially.

^{xxv} With a full range of controls, the chi-square significance levels are .0015 for the log of labor and .0278 for log of sales. The full probit analysis results are available from the author.

biased for this reason, despite the fact that the (log of) labor force size, its square, and several industry and interaction variables correlated with size appear in the regressions. As a final control for this possibility, the sample was split between large and small firms. Focusing on the smaller firms also has the benefit of providing greater variability in the presence of works councils.^{xxvi}

In Table 3, firms with 100 or more workers are omitted and the effect of presence of a works council, training, and the interaction of these two variables are considered only among the smaller firms. All controls for size and industry effects are retained in this new analysis; the coefficient on log of labor squared becomes insignificant in this smaller and more homogeneous size range. The effect of works council presence remains positive, and at least marginally significant with a t-ratio of 1.5, with a predicted increase in net sales of some 13%. Training remains positive but not statistically significant. But now, the interaction effect between training and the presence of a works council becomes positive and statistically significant at just above the .05 level. More important, it is economically highly significant, with the coefficient estimate indicating that, with the full range of control variables in place, and already controlling for councils and training as stand-alone determinants of performance, the *combination* of training with works council raises net sales by a strikingly high 37 percent.

In sum, links between firm performance and EPRs-by itself and interactively with training-are at least tentatively confirmed by these data. Although the data set has important limitations and available evidence is still insufficient to draw firm conclusions about the efficiency of EPRs in fostering further training in Germany, or the precise effect of this training on productivity, the direction of the findings is clear. This data set has significant limitations however. The next step is to apply this type of analysis to data sets that examine firms over more than one year, and provide a wider range of observations on the firms, including more precise training, capital, and value added measures.

5. An Appraisal of Recent Trends in EPRs

Do EPRs help or hurt economies that make them mandatory? Earlier in the paper it was noted that there is growing evidence that works councils lead to increased, or at least do not lead to

^{xxvi} This raises the question of whether the presence of councils should be treated as an endogenous variable. However, since works councils generally address a far broader set of decision areas beyond training matters, a request for a works council by employees is generally separate from subsequent bargaining over the degree of training. Demands that a council be established come from a small number of workers or union representatives, but the councils themselves are elected by secret ballot by all covered employees. Although it is still possible that council presence is endogenous in a way that affects the findings, no plausible instruments are available for council presence. Even in this case, I would argue that it is a valuable and new piece of information to know the conditional expectations even if council presence, for example, is endogenous. For an exploration of determinants of council presence using a different data set with a set of variables well suited for that purpose, see Jirjahn and Smith (2003).

decreased, productivity.^{xxvii} But could their presence have negative effects not captured at the firm level? This is a large issue, which cannot be answered in full at this stage, let alone in a short article. But in this section, I will raise some questions and offer some hypotheses for further analysis.

5.1. Do economies with EPRs perform differently?

Worker participation, particularly legally mandated EPRs, may seem under assault throughout the world, battered by twin forces of globalization and technological change. Though often underestimated, in most parts of the developed world, substantial worker participation was well-established a quarter-century ago, and continued to evolve in the 1980s as new forms, notably employee stock ownership, rose to greater prominence. Forms of worker participation varied around the world but included the lifetime job in Japan, union membership in the US, and works councils and codetermination in Western Europe. The emergence of increasingly broad-based stock options in high-tech and other innovative firms in the US in the mid-1980s offered another potential channel for employees to gain decision-making as well as financial participation in the operations of the firm. Through economic forces, collective bargaining, and government regulation, the role of worker participation and its development as EPRs appeared to be on an inexorable rise.

In recent years, however, unions have been in decline; in the wake of Enron and similar scandals employee stock ownership and options has come to be perceived as carrying more risk and less upside potential; and the lifetime job is turning out to be of shorter than expected duration in Japan and in companies in other countries where it was practiced, with rhetoric of the “virtual corporation” and the realities of outsourcing seeming to signal a secular rise in bargaining power of capital, and at least contributing to a defensive posture for labor.

However, in the EU works councils seem if anything to be growing in prominence as the EU-wide works councils have been mandated and steadily implemented. Unions are much less in decline in some European countries than in the US. Although the newly established European councils have less power than some of the national councils, particularly in the case of Germany, still the trend appears different in Europe than North America or Japan, where EPRs were never well established, and works councils and codetermination in particular were never mandated or widespread.

What are the underlying causes of these shifts, and what are their long-run economic and social consequences? This paper cannot fully address this large research agenda. But in this section, I will address in a preliminary way the question of whether the evidence warrants the conclusion that the US and other economies without EPRs are doing better than those with such rights, and if so, whether EPRs could be playing a negative role.

Japan has been thought of in the literature as a key economy with considerable participation of

^{xxvii} For example, Addison et al 2001, Hubler and Jirjahn 2003, Zwick 2004, and Schank et al 2004. The first of these papers observes higher wages and lower profits with works councils, but these estimates, while interesting, are less convincing.

employees in company affairs. After decades of rapid growth, since 1990 Japan has endured an extended period of relative stagnation. But for the arguments advanced in this paper, the critical point is that Japanese participation, to whatever degree it is or is not found in typical firms, remains informal; it carries no legal rights. The lifetime job had at best extended through the third of the economy that is the core, leading sector. The remaining two-thirds of jobs have been characterized as a kind of second-class economic citizenship. Unions are sometimes quite weak, company-union type organizations (Aoki, 1984). More recently, the dramatic decline of the concept of the lifetime job in Japan has not seemed to help the country to recover from its ongoing economic problems. Other rising East Asian economies also lack EPRs. But all of these economies are still growing by means of adapting technology from abroad. The theory of the role of EPRs in FSHK suggests that mandated works councils should be especially effective in companies whose competitive advantage rests in continuous innovation. Japan is doing relatively poorly without EPRs, and the US is (arguably) doing relatively well without them. How is the EU doing comparatively, given its relatively strong EPRs?

The US has far less formal worker participation than the EU. The prevailing view is that in the dozen years since the single common market was forged, the EU-particularly the countries in the Eurozone- has barely grown while the US has forged ahead. The free market economy of the US, with its ease of hiring-and-firing, is often claimed, for example in editorials in the *Wall Street Journal*, to explain the difference. But this view is far too simplistic, as a recent analysis by Kevin Daly shows.^{xxviii} It is true that the Eurozone countries have a lower income per person than the US in purchasing power parity terms-approximately 30% lower. But this gap has not widened in the 1993-2003 period. Although US GDP has grown some 1% faster than that of the EU eurozone countries, the difference is explained by labor force growth-and that, largely resulting from immigration to the US and faster population growth. GDP per head has grown about 1.8% per year in the US, and by a nearly identical rate of 1.7% per year in the Eurozone. And the labor productivity gap has actually been closing between the US and the Eurozone in this period-and that is the measure most relevant to the theories examined in this paper. Output per hour worked is now just 4% lower in the Eurozone than in the US; and in some leading economies with EPRs such as France, per hour productivity is higher than in the US. Based on this productivity change, Daly suggests that asset prices should grow no more slowly in Europe and the US, and in fact they have moved quite closely over the last ten years. Thus, the presence of EPRs has not hurt the return on capital investments in the aggregate.

The difference between the per-worker income and the per-population income is explained first and foremost by the fact that US employees work longer hours than their European counterparts. Eurozone employees worked an average of 15% fewer hours than US workers. The remaining 28%-lower labor utilization in the Eurozone may be explained by the smaller share of the adult population in employment. Some of this difference is explained by higher payroll taxes and other indirect costs in the EU than the US; but the per-worker cost of works councils is a tiny fraction of these costs. In recent years, the German economy has struggled, but it has several other special macroeconomic problems and dislocations to contend with, particularly the extremely large costs of adapting to unification. This does not seem to have anything to do with EPRs. In

^{xxviii} These observations are based on OECD data, and are nicely summarized and analyzed in Daly (2004).

fact, works councils and codetermination may plausibly have facilitated the needed social and economic adjustments. Moreover, there is a growing incidence of employee voice in the US through ESOPs that feature employee voting rights and other forms of participation that begin to take on the character of genuine EPRs. The incidence, determinants, and impacts of this phenomenon needs further research, but nascent EPRs via participatory ESOPs could have already made a modest positive contribution to recent US productivity growth^{xxix}.

Moreover, recall that although EPRs are generally mandated in Europe, they are not uniformly observed or applied. But where works councils *are* observed, higher, or at least not lower, productivity is observed *ceteris paribus*, as results in the previous section indicate.

There are some other differences between the US and the EU that, while they have not manifested themselves in economic performance, have clear social implications and may yet have measurable economic effects. The EU countries have far fewer layoffs, either temporary or permanent. This means less loss in FSHK. They have fewer plant closings, which in addition to smaller loss of FSHK also means greater protection of social capital. The fact that people work shorter hours hardly seems a harsh indictment. Given the high level of wealth of both the EU and the US, taking some of that wealth in the form of higher leisure does not seem an unreasonable choice. At the same time, in part because leisure is not observable or valued in markets, the quest for positional goods and status may lead to too much work and too little leisure without regulation from the social point of view (for a review of some of the key arguments see Frank, 1987). Although a higher overall rate of labor force participation is probably desirable, it is unclear how a reform of EPRs would result in such a change. Further, in light of the analysis of time-horizon opportunism presented in section 2, any apparently superior U.S. investment performance may well be fundamentally short-term in nature.

Finally, there is no expectation that the specific forms of EPRs are at this stage optimally designed in Germany or elsewhere in Europe. It is plausible that some problems with rigidity and uniformity of the structure and regulation of EPRs in these countries exist and could be improved upon. This is taken into consideration in discussing policies below.

In sum, there is no decisive evidence that economies with EPRs perform better than those without. But neither is there any evidence that these economies are hurt or perform less well, and in a number of characteristics, European economies and individual companies with EPRs are performing well on economic and social indicators.

5.2. Why are EPRs particularly relevant to the emerging economy of the 21st century?

The organization of the firm and its employment relationships is likely to play a central role in determining productivity growth in the coming decades. In the emerging economy a more democratic capitalism should strongly benefit both efficiency, and social cohesion and equity. High trust and a mutual commitment to long-term cooperation between owners, managers and employees is an integral component not only of competitiveness today, but also of the capacity

^{xxix} For relevant evidence, see e.g. Gates 1998, Blasi, Conte, and Kruse, 1996; Blasi, and Kruse, 1991, and Jones and Pliskin 1991.

for innovation and productivity growth to build competitiveness for the future.^{xxx} And with the importance of firm-specific human capital, the very distinction between labor and capital in the enterprise is already breaking down, while both share a role as residual claimants. It might be countered that these observations typically apply to highly educated, skilled employees. But perhaps for this very reason they may be indicative of future trends in advanced economies.

It is also plausible to argue that the US has more informal participation, made possible by increasingly flexible organizational structures; and that employee ownership is far more widespread in the US. Cheap telecommunications and computing have enabled a much more flexible and decentralized work organizations in many sectors, which almost by definition has transferred more decision making autonomy to workers, while eliminating layers of bureaucracy. If worker participation can be measured in part by how few layers of authority lie between a worker and the top decision maker, worker participation may be judged to have increased.

Of course, having their work downsized and outsourced is little comfort to the millions of factory workers and cubicle-dwellers who have learned overnight that they have lost their jobs after years of work for the same employer. White-collar outsourcing to India and elsewhere has caused understandable concerns.^{xxxi} But despite the growing opportunities for productivity gains from flexible teams not just within corporations but also across corporate and national boundaries, it is a safe prediction that a majority of the economically active labor force will continue to work for corporations. Independent contractors and consultants typically accept such positions only after a layoff as a transitional arrangement before returning to conventional employment. Efficient firm boundaries and workplace employment levels may be changing, but is not plausible that they will disappear, and this implies that the efficiency case for some forms of EPRs will endure. Indeed, EPRs may help make needed ongoing adjustments in tasks in establishments without losing FSHK that continue to be relevant.

6. Policy: Considering Flexible Incentives to Create EPRs through “Partnership Workplaces” in the US

^{xxx} This may be thought of a cooperative game outcome (Aoki, 1984; Smith, 1991); sociologists such as Wolfgang Streeck have considered the same issues and reached analogous conclusions from an industrial sociology viewpoint in using the term "high trust."

^{xxxi} Commentators in leading newspapers have downplayed the significance of white collar outsourcing: for example Robert Samuelson in the Washington Post, Jan. 14, 2004, and Christopher Caldwell in the Financial Times, Feb. 7/8, 2004. Arguably, a significant fraction of the jobs going to India are the type of positions on their way to being sufficiently routinized to be fully replaced with computers, such as through web-based applications and artificial intelligence (Levy, 2004). Of course, this does not apply in the case of some higher skill software and research applications now increasingly done in India (Friedman, 2005). Nor is additional education always the answer-some of the jobs being outsourced to India require professional or masters degrees. However, there are major retraining and market repositioning issues, and EPRs may help with the needed adjustments.

In this section, I develop some policy proposals to promote EPRs that could raise the productivity of American workers, in a way that extends beyond the elite to the mainstream workforce, and (and hence ultimately to the standard of living), and improve the long-run performance of American firms. such changes could help to reverse the dramatic increases in inequality of recent years and help to ensure a more democratic American capitalism. Despite such potential benefits, such changes are emerging slowly if at all, and policies to encourage them have not been followed.^{xxxii} The reasons for this slow emergence include market and organizational failures, the short time horizon of American companies in recent years (which itself results from several interlinked causes), a threat to management prerogatives, lack of information, and simple organizational inertia. The case for a government role may be summarized in seven categories.

1. The creation of basic knowledge resources is a key element of the plans outlined in this paper; the government generally has a significant role to play in creating such public goods. The most immediate knowledge resource is information about participation plans and what it takes to make them work effectively. There are also knowledge resource benefits that would be created by the more innovative economy, with the natural attendant cross-industry spillovers, that these programs are designed to engender.
2. The government has a key role in promoting education; the Human Capital Partnership Plan is concerned directly (and the other plans indirectly) with education and skill levels of the public.
3. Society's attitude toward income risk is likely to differ from the individual's. Although the economy as a whole might be made more productive by the proposals in this paper, individuals' concern for income stability may lead to failure to accept them unless there is some compensating incentive. Thus government support for the package can help bring about what is in essence a public good.
4. Government action can be efficacious because the programs are strictly analogous to other efforts in which government has made critical contributions, especially agricultural extension programs.
5. Even though all firms might be made more profitable in the long run if each made investments in achieving "internal cooperative solutions," these investments are not equally valuable at each point in time. If one firm discontinues these investments during periods of rapid growth, when they are less needed, it may be able to earn higher short-term profits and take market share from

^{xxxii} I developed an early version of some of these proposals in an unpublished report for the Progressive Policy Institute in 1991 (revised 1992), which in turn served as a background paper for the Democratic Leadership Council Cleveland Proclamation, specifically its resolution on "meeting the global challenge" by supporting "workers efforts to become more competitive" (http://www.ndol.org/documents/cleveland_proclamation.pdf). Although the proposals were not taken up by the incoming Clinton administration, now may be a good time to revive and develop these proposals for public debate, given the scandals over employee ownership such as Enron, new concerns about job outsourcing to developing countries-now extending to some of the very types of employment thought in 1992 to be the skilled jobs of the future-and the growing concern over steadily increasing inequality in American society. Meanwhile, works councils in Europe have proven themselves over the past dozen years to be remarkably durable and effective institutions even under heightened competition from the US and developing countries, and the considerable stresses of EU enlargement.

firms that continue them. This may doom the investing firm in the competitive marketplace before the value of its investments is revealed during a time of adversity. This is a classic prisoner's dilemma; government incentives may help to ensure cooperative solutions.

6. Decision making participation may be threatening to managerial power and perquisites. Klein found that even first-line supervisors are strongly resistant to "employee involvement" programs: 72% of supervisors view these programs as being good for their companies and 60% see them as good for employees, but only 31% view them as beneficial to themselves." Top management may be reluctant to risk supervisors' alienation even to gain participation that offers a "favorable bet" that productivity will rise. In addition, unchecked authority of management creates inherent problems of opportunism, as described in detail in Section 3. The problem is structural: if managers are replaced, management in general retains the motive and the means to organize production in an opportunistic way.

7. Workers with FSHK are in effect among the residual claimants of the firm, as Margaret Blair has argued. If the firm goes bankrupt, workers share last place in line with the company owners to recoup their FSHK investments, which are useful only in that one firm and only if it is operating at all. If the net financial worth of the company is negative, employees lose all of their FSHK. In fact, it might be further argued that workers are last in line, because owners might recoup part of their investment (such as through the sale of plant and equipment) even as the firm shuts down. Moreover, owners count returns to FSHK as part of labor costs, rather than as part of the firm's economic rents. As a result workers with FSHK are subject to the risk of the residual claimant just as shareholders are--and perhaps more so. Indeed a significant fraction of Fortune 500 firms disappeared from the economic landscape in the past decade, through bankruptcies and various takeovers that can put FSHK at risk. Thus, there is a case for sharing decision-making rights with workers with FSHK from the point of view of designing law to maximize net social wealth.

Each policy developed in this section has been designed to minimize government interference in firms. Thus each policy is designed to ensure a cost-effective return in public benefits from the publicly supported programs consistent with enabling participating firms to retain substantive freedom of choice over the details of partnership workplace plans. These policies are specifically designed to respond to the analysis earlier in the paper, and structured to improve workplace training and organizational development through influencing firms to treat more employees as a long-term resource and effective partner in the firm--and employees to think of the long-term requirements of their companies.

Profit and Gain Sharing Programs. First, the incentive to use the rights to participate in decisions--and to use them productively-- will be greater if there is explicit sharing of the resulting gains with employees. The economic literature shows that profit and gain sharing programs (see Box 4) offer several positive workplace incentives; and the empirical results are almost unanimous in their confirmation.^{xxxiii} Perhaps the most important of these is the incentive for employers and employees to make investments-- primarily in specific skills -- necessary for more rapid productivity growth and the long-term health of individual enterprises (the building blocks of industry competitiveness). In this sphere the need for new mandates or tax breaks is not

^{xxxiii} See e.g. Kruse and Blasi (1997), and several contributions in previous volumes in this Series.

clear, especially because so little is known about which types of incentive programs are most effective. Thus, new forms of "extension services" to promote the growth of knowledge and disseminate information about what is and is not effective as it becomes available is probably the most important policy at this time.

Employee Stock Ownership Plans. Second, employee stock ownership plans (ESOPs) have a role to play in providing ordinary employees with a stake in their firms and in the American system. But most plans that were established during the ESOP boom were not designed primarily for purposes of organizational development. Instead, they have mostly been used as a cheap source of capital. But the evidence is that ESOPs only achieve productivity objectives when combined with an effective system of employee participation in decision-making.^{xxxiv} Moreover, when employee-owners do not have the rights to information and decision making that other major owners could expect, and when they lack EPRs more generally, ESOPs have been subject to considerable abuses. The case of Enron was only the most widely reported debacle for employees who had counted on their ESOP shares for retirement or other needs. This experience shows that passive or even partially voting ESOPs are not enough; there is a need for legally mandated EPRs to be attached to ESOPs, particularly those that have been established with the benefit of tax incentives.

Thus, firms could be required to commit themselves to introduce at least some decision-sharing features to receive any new benefits under the weakened but still available tax breaks now in force. Moreover, ESOPs might not be the only benefiting form of employee ownership under more flexible guidelines giving more discretion to firms while ensuring that public policy objectives are met.

The conditioning of future tax benefits on genuine employee participation in decision-making could be designed in various ways. This would have to be verified for firms to be eligible for public assistance such as tax breaks; but an important objective in designing the policy would be to minimize paperwork and other costs to firms. Three measures that are clearly beneficial and easy to establish and verify are 1) direct employee voting rights on stock, 2) employee board membership and 3) workplace joint decision-making committees with clear authority in relevant areas. There may well be other effective measures that cannot be fully anticipated. Other proposals by companies about ways to achieve this goal suited to their particular circumstances could be given reasonable consideration. A Human Capital Partnership Plan, with its provisions for decision sharing (discussed further below) would help qualify the firm on grounds (2) and (3). Firms might, for example, be expected to institute two of the three possibilities in an easily verifiable manner in order to receive additional tax benefits or other incentives. Each represents an aspect of what are generally understood to be the basic entitlements of ownership; ESOP firms will have earned their tax breaks and accomplished the public purpose when they show evidence of having extended full rights of ownership to their employees. Though the ESOP lobby may resist this change, in the end it will probably be necessary to protect any tax benefit for employee ownership.

A strong advantage of these eligibility criteria is that they may be verified with minimal intrusion

^{xxxiv} See Jones and Pliskin (1991), Levine and Tyson (1990), and Kruse and Blasi (1997).

and paperwork. Initial qualification would only require a simple, one-time documentation that 1) employees have direct voting rights on stock (as indicated at the ESOP charter), 2) there is employee voting board membership (given in the board by-laws) and/or 3) there are workplace joint decision-making committees with clear authority in relevant areas (look at the appropriate employment contract agreement, committee charters or, where relevant, the HCP Plan). This could be done without any government official ever setting foot in a plant. No more paperwork would be involved than photocopying the relevant documents, such as explanations for employees about how the programs work, which will likely have been prepared in any event by any firm serious about employee partnership. After that, enforcement could be done on the basis of employee complaints. There would be no need for surprise or mandatory on-site inspection. But if such employee complaints were received that met certain credibility tests (such as numbers of complaints), the company would have to agree to a special review or administrative hearing, perhaps binding arbitration. Possibly a stronger version of arbitration would be required for a firm to keep its special status and benefits.

The ESOP changes are necessary to make sure tax breaks do lead to an increase in real, effective employee partnership. To the degree that these changes reduce the number of firms that can take advantage of tax breaks or other incentives, any savings could support extension of credits to other firms which might choose to introduce genuinely participatory forms of employee ownership appropriate to their own organizational characteristics but not corresponding to the tax supported ESOP form. Or, they could help fund extension services on other aspects of EPRs. More flexible guidelines would give firms more discretion in creating the system of employee ownership most suitable for their internal environment, while in the participation dimension, guidelines would be "tightened" to ensure that firms were complying with the real public policy objectives in return for public benefits. For some firms, for example, voting ESOPs will not be as appropriate as direct ownership, broad-based stock options plus employee seats on the board, or long-term profit sharing (perhaps through simulated shares^{xxxv} with less downside risk) plus management-employee workplace partnership committees. Some firms may wish to propose their own unique forms of participatory ESOPs.

Unlike previous ESOP legislation, requirements for participation would become a condition for receiving tax or other benefits. But also unlike current ESOP legislation, benefits would not be limited to too narrow a choice of specific organizational forms. The fact that the ESOP is today the most common form of employee ownership is in large measure due to the cumulative incentive of the tax breaks they have conferred, especially in previous periods. Employee ownership is in itself a worthy goal of democratic capitalism, provided it does not result in employees putting too many of their assets in one "basket."

The policies are intended to promote a longer-term American corporate perspective, high total productivity, innovativeness, quality orientation, better and more flexible industrial relations, and-- centrally-- to help get an urgently needed upgrading of Americans' workplace skills

^{xxxv} Simulated shares are not tradable claims to ownership but are instead accounting devices which offer gain or profit sharing to employees based on the performance of the company's stock rather than some other measure such as current declared profits. See for example Meade (1986, 1991).

underway. Among the options for accomplishing these objectives, this strategy has the worthy feature of helping to promote a more democratic capitalism.

Human Capital Partnership Plans. Third, it is proposed that one of the criteria for selecting government contractors be whether a firm has developed what is termed here a Human Capital Partnership Plan (HCP Plan). The intent of the plan is to provide a stake in company decisions to employees who develop skills relevant to building the firm's innovativeness and capacity for high quality, or develop other abilities needed for high total productivity of that firm. The details would be left to the individual firm, but the plan would normally include one of several mechanisms for partnership decision-making at the workplace level or seats on the board of directors of the firm elected by these participating "human capitalists." "Participation" would be defined legally, just as terms such as "business opportunity" are. When a company claims to offer employees the chance to participate in decisions, this claim would be required to have a concrete definition, primarily to encourage "investors' (i.e., the employees') confidence" in the development of specific skills. Benefiting firms would also be expected to develop a plan, suited to their own special circumstances, to help less skilled workers "graduate" to "human capitalist" status; there might be separate incentives for doing so.

The plan would offer a distinctly American version of works councils and codetermination, aimed at maximizing the productivity benefits while minimizing the potential drawbacks of that system. It would focus on one of the aspects of codetermination and or works councils for which there is a clear economic rationale, the building of firm specific skills and assets. The plan would encourage all workers to become more highly skilled and all firms to have an interest in training them. In these respects, the plans can help to reverse the dramatic increases in inequality between high and low skilled workers that have opened up in the last quarter century. After experience had been gained with alternative arrangements, research may determine which types had proven most effective, and incentives for selecting these forms could be considered.

Firms that have implemented serious, ongoing training programs, with improved job security and genuine decision-making partnership, have typically improved their productivity.^{xxxvi} An integrated strategy involving these three elements is increasingly vital to company success. For example, long-term employment relationships are widely considered to be a prerequisite for participative employer-employee relations. Yet despite the presence of a few heralded examples, relatively few American companies have followed this path, and on a rather limited scale; perhaps these changes are perceived as too risky and threatening to the status quo. If anything, employment security in particular has become even more tenuous in recent years. Public inducements and guidelines have an important role to play in a general, effective campaign to transform the American workplace.

The HCP Plans would be designed to encourage employees to develop skills specific to the firms in which they work, to in effect make investments in the long-term health of their employers. These investments might include some form of employee ownership or other financial participation as well as human capital specific to the needs of the firm. In return, firms would

^{xxxvi} (Levine 1995). Note that in a period in which job stress and hours of work (even to the extent of "voluntary" give-backs of vacation days) are increasing, the health-improving and stress-reducing characteristics of employee empowerment are also potentially significantly welfare-enhancing, but are beyond the scope of this study.

offer a long-term employment understanding; the new partnership and understandings would be validated and supported by the firm sharing specific decision making rights with their new "human capitalist" partners. The role of employees with FSHK as de facto residual claimants would be formally recognized.

Some form of incentive for employees to work toward the long-term competitiveness and profitability of the firm, plus the participation that will provide the channels for employee ideas to be put into practice, are natural complements, and appropriate incentives can encourage firms to create this mix. On the other hand, these are guiding principles rather than sharply defined specific policies that clearly dominate all similar policies. Companies' own judgments and the marketplace can help sort out which specific combination of programs make sense in which industries. If government were to be involved with implicit micromanagement of the details of this choice, the program could fail through firm or union resentment or resistance, if not outright policy errors on the part of government. And at the same time, a claim by management that employees will participate in decision-making must mean something concrete if it is to secure the firm specific investments it is intended to achieve.

Thus, the HCP Plan would have to meet broad guidelines to receive public benefits or incentives (or at some point possibly mandates), but these would not include highly detailed, specific procedures; details would be left up to the firm (a framework similar to that proposed above for ESOPs would apply). Moreover, firms would be given the leeway to evolve the plans in consultation with the appropriate employee representatives as they acquired more experience with them.

It is legitimate to ask how employment security may be enhanced at a time when flexibility has become so critically important to companies, and competition has grown ever sharper, including from companies that outsource from India. So far, only a small fraction of jobs have been outsourced. But manufacturing jobs have been decimated, with more than two million lost in the US since 2000 alone. Moreover, although white-collar outsourcing, particularly to India, has been modest so far, it may accelerate.

First, employment security need not be offered to all workers, or offered upon employment, but may be limited to those who satisfy certain criteria, and may be of more limited scope than traditional tenure. Professors know that some colleagues awarded tenure respond by working harder, such as in tackling far longer-term and risky research programs with potentially high payoffs; and by making more relationship-specific investments, such as by directing unique academic programs. There is also a potential for abuse, which is why the tenure decision is made so carefully and only after an extended period of observation and professional development, and there are limits—tenure is revocable for incompetence or contractual violations. Some qualitatively similar arrangements could be established in business if some basic organizational designs were available. Such arrangements have long been common in the professions; and even though partnerships are in decline as a form, this does not mean that forms of job tenure should be unattainable. This model becomes more relevant as more jobs take on a professional character.

More generally, there could be an explicit agreement that when outsourcing is under discussion,

the works council or other representative body is consulted first, and given a reasonable time to find alternative strategies that would lead to comparable savings or quality, and or to work together strategically to find alternative niches for which the workforce has a continued or emerging comparative advantage.

There are substantial benefits to be gained from encouraging such arrangements, and these can be achieved without mandating highly specified procedures. Through developing alternative forms of human capital partnership programs each company can become increasingly like a small laboratory seeking improvements in competitiveness. This in turn may lead to an accelerated adoption of other improvements in workplace organization and productivity complementary to high skills and employee involvement. Over time favorable practices would spread to other firms in the economy, and inevitably, some of these improvements would also get transferred abroad. Continuous improvement will of necessity become a fundamental part of the way business is done in advanced economies.

Kanter (1997) suggests that part of the answer is “employability security.” She is sober about its limits, but proposes reasonable remedies to them. As she argues^{xxxvii}:

“Employability security has become a catchphrase at some companies. Sometimes it is used to mask brutal intentions, such as preserving the right to cut employment at any time and with little notice. But done correctly, with the right values and intentions, employability security can actually enhance long-term loyalty. By offering ongoing learning to upgrade skills and by spreading the power to innovate, companies help employees to perform better, which allows the companies to perform better, which in turn preserves and expands jobs. Such practices also ensure that current employees continue to be important contributors who are valued by their employers and offered opportunities to continue to grow.”

Kanter also has a proposed an “Employability security contract” [in “A New Human Resources Agenda” on pages 190-194.] Her model contract reads as follows:

“Our company faces competitive world markets and rapidly changing technology. We need the flexibility to add or delete products, open or close facilities, and redeploy the work force. Although we cannot guarantee tenure in any particular job or even future employment, we will work to ensure that all our people are fully employable-sought out for new jobs here and elsewhere. We promise to:

- recruit for the potential to increase in competence, not simply for narrow skills to fill today’s slots.
- offer ample learning opportunities, from formal training to lunchtime seminars-the equivalent of a moth a year.
- provide challenging jobs and rotating assignments that allow growth in skills even without promotion to “higher” jobs.
- measure performance beyond accounting numbers and share the data to allow learning by doing and continuous improvement.
- retrain employees as soon as jobs become obsolete.

^{xxxvii} Kanter, 1997, pp. 133, 190-194.

- recognize individual and team achievements thereby building external reputations and offering tangible indicators of value.
- provide three-month educational sabbaticals or external internships every five years.
- find job opportunities in our network of suppliers, customers, and venture partners.
- tap our people's ideas to develop innovations that lower costs, serve customers, and create markets-the best foundation for business growth and continuing employment."

This is one possible strategy that could be made to fit within the HCP concept. The issue once again is whether it will have contractual force, and how it will be enforced. A HCP committee, such as a works council or similar arrangement, could be charged with codetermining its implementation. The agreement may be made part of the employment contract and constituted in such a way that it would be enforceable legally, but at the same time, set up in such a way as to facilitate and encourage internal resolution of any disputes in the overwhelming majority of cases. And it would need to spell out the most important practical issues. For example: If the company is offering security, under the HCP the company may be expected to agree to pay and help the employee to actually get the new job that is supposed to be securely available. But the employability security notion is one starting approach to adapting these ideas to the changing realities of the workplace. Clearly, this can either be done in a superficial way that only creates cynicism and lack of genuine workplace partnerships or with real empowerment that has substantive impact.

In this regard, one modest but potentially highly significant and broadly applicable public step would be to restrict the use of terms like employee participation to clearly understood, substantial meanings. Indeed, such terms will need contractual weight if they are to elicit the full competitiveness benefits expected from the partnership workplace. As these concepts continue to catch on among businesses and employees, their importance as a selling point in company recruitment efforts is likely to grow. To cite one relevant precedent, in more than half of the states, the term "business opportunity" has been defined in a legal statute, and its use is regulated by state agencies. Thus in order to take advantage of whatever incentives are offered for providing participation plans, a firm would be required to commit itself to a legal concept of what participation will mean, which gives appropriate security, including information disclosure, to affected employees.

Tax benefits may be used to encourage HCP plans. However, it may be more appropriate to use preference criteria in procurement. Like other preference criteria for government contracts, such as generally offered for veterans or for firms with minority participation in FCC licensing decisions, the presence of an HCP Plan would be made only a part of the decision (and so would not be required). This approach would minimize the intrusion and paperwork demands for firms for which such a plan might prove of less immediate benefit.

One advantage of using preference criteria instead of tax breaks or other fiscal inducements is that it would not reduce government revenues or increase expenditures in face of the recent record budget deficits. It would thus reduce the risk that firms would find a way to take advantage of government largesse without adhering to the public policy purpose. And we do not wish to undermine needed macroeconomic adjustment, as the twin deficits have returned with a vengeance, while encouraging the needed organizational adjustment. On the other hand, a strictly

mandatory requirement would probably be premature if not unworkable in the American context. But this policy strategy may be expected to build up a growing sector of the economy experimenting with different versions of the plan, from which the most effective form(s) of the plan could later be determined. At that time, tax incentives might be added. Finally, even persuasion and exhortation by appropriate public officials as part of a national competitiveness and democratic capitalism campaign might be enough to tip the balance in some cases.

In sum, the policy goal is to give a stake in company decisions to those employees who build skills relevant to the firm's innovativeness and capacity for high quality, or acquire other abilities needed for high total productivity of that firm. Firms would also be expected to develop a plan to help less skilled workers "graduate" to "human capitalist" status; separate incentives for doing so are envisioned, as part of an integrated national human capital strategy. The details could be left to the individual firm and the collective bargaining process where applicable, but unless the firm proposes a reasonable alternative, would normally include one or more of the following: seats on the board of directors of the firm elected by these participating "human capitalists," mechanisms for joint decision-making at the workplace level, and or expanded and well-understood company information flow procedures.

The HCP Plan would represent an American version of European codetermination and works councils, without its potential drawbacks; it would focus on the specific human capital aspect of codetermination and works council law, the aspect for which there is the clearest economic rationale, and now, given the results in this paper, some supporting evidence. This approach would work well in the American environment, offering a more flexible and voluntaristic as well as more finely honed policy instrument.

The slow emergence of such arrangements is not for lack of employees wanting such a plan. Even in the 1980s, A US Chamber of Commerce-commissioned poll showed that 84% of the American workforce would like the chance to participate in management decisions, while a survey by Peter Hart Associates showed that two-thirds of Americans would prefer to work in a firm with employee ownership.^{xxxviii} A 1994 EBRI/Gallup national poll found employees more likely to prefer an ownership share in company than having a larger paycheck; and 80% said employers should be allowed to contribute company stock to fund the retirement plan (Kruse and Blasi, 1999). Although the Enron debacle may lead to greater caution on employee ownership, the desire for a say in decision-making to protect firm-specific human capital as well as employee ownership shares may be stronger than ever. But new polling could help to design such instruments in ways that would be most acceptable and effective.

7. Concluding Remarks.

This paper has examined Employee Participation Rights- legal or contractual guarantees of rights of employees to consultation, or veto power, and or joint design and implementation of specific workplace decisions and practices; German works councils are a key example. It was shown that in theory EPRs might raise workplace efficiency by enhancing the quantity and quality of

^{xxxviii} Jones, 1987, p.493.

investment in skills at the workplace. Among other empirical findings, in Lower Saxony, Germany, among small and medium enterprises with less than 100 workers, the interaction of training with works council presence raises net sales by a statistically and economically significant 37 percent. The case for EPRs does not rest solely on productivity improvements, and there are data quality limitations for the current study, but these results suggest that EPRs may provide efficiency gains. The paper proposed modest incentives, such as preference criteria for government contracts, for US firms to provide specialized EPR agreements (termed Human Capital Partnership plans). Other policies would require full ownership rights for ESOP participants, legally regulate the use of terms such as “participation,” and develop workplace “extension services” regarding the state of knowledge about EPRs and related institutions.

The policy path proposed in this paper is challenging, but some reorganization of the workplace is essential to ensure an efficient and dynamic, and more democratic, American economy. New policies are needed to reduce the exposure of employees to investment risks-particularly firm specific human capital- over which they have no control. They are also needed to address the growing job stress facing American workers. The result of the policies, particularly the human capital partnership programs, would be a real stake for employees, particularly those who continuously upgrade their skills. There may be resistance from managers who feel their prerogatives threatened by these changes, unions that have long resisted partnership in responsibility for the firm, employees who are not used to continuously upgrading their skills, and stockholders who fear expanded employee participation or profit sharing could slow dividend growth. The HCP proposal is targeted at the point where competitiveness can be most affected: the building of firm specific human capital skills. This is where partnership with employees and sharing management decision-making in the company is needed both for efficiency gains and for a more democratic capitalism.

The package of labor market adjustments discussed in the paper, most notably human capital development compacts (see Box 2), risk and gain sharing, greater employee ownership, employment security for human capitalists, shared decision-making, and probably a guaranteed minimum income, are among those most critical to the efficient and fair functioning of the emerging economy.

Jack Orsburn and his colleagues^{xxxix} draw from wide experience with implementing participation programs a familiar pattern that they call the Algernon syndrome, after the Flowers for Algernon ("Charley") story about a retarded man who participates in an experiment raising his intelligence and creativity to the highest levels, but later sinks back to his earlier state. "Like this unfortunate man, mature teams will regress--feeling betrayed, frustrated and hostile--if management fails to meet their needs out of neglect or because of some unadvertised motive for implementing teams (to reduce headcount, say, or to excise managers, cut costs, or create "happier employees")... ulterior management motives or lack of tangible support usually surface and often precipitate a steep decline in team productivity."^{xl} This helps explain the temporary nature of gains in some of

^{xxxix} Orsburn et. al. (1990). The authors detail an 8-stage process for a conventionally managed company to reach fully self-directed work team organization, starting with information sharing, dialogue, several stages of group problem solving and expanding self-direction.

^{xl} 1990, p. 143, 157.

the experiments. The problem, seen in the lens of the analysis of this paper, is that participation has lacked real basis in a permanent and verifiable company commitment-or genuine employee participation rights.

These unfortunate experiences underscore the need for serious, long-term policies like those outlined in this paper. Employee investments of all kinds will need at least the same protections that financial securities receive, or underinvestment, of human capital, and complementary physical capital, will be the likely result. These policies will be needed to ensure both the economy's efficiency and its fairness, as the need for workers and workplaces to steadily improve skills in the developing knowledge economy.

In sum, the partnership workplace plan can help raise long-run productivity and incomes, while helping to build a more equitable American society.

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Table 1: Definitions of Industry Groups

IND1 Chemical, refining
IND2 Plastics, rubber
IND3 Stone and clay
IND4 Metal fabricating and Metalworking
IND5 Steel, machinery, motor vehicle manufacturing
IND6 Electrotechnical, precision engineering
IND7 Pulp, paper, printing
IND8 Leather, textiles, clothing
IND9 Food, tobacco products

Table 2. Dependent Variable: Log of Net Sales

Variable	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > T
INTERCEPT	-0.225465	0.38077919	-0.592	0.5540
IND1	-0.877647	0.45717008	-1.920	0.0553
IND2	-0.969965	0.43103727	-2.250	0.0248
IND3	-0.936180	0.57751612	-1.621	0.1055
IND4	-1.121792	0.36000613	-3.116	0.0019
IND5	-1.039577	0.34738559	-2.993	0.0029
IND6	-0.990431	0.38303838	-2.586	0.0099
IND7	-1.461102	0.37450942	-3.901	0.0001
IND8	-1.260835	0.52701987	-2.392	0.0170
BETRIEBS	0.146723	0.07341364	1.999	0.0461
TRAINING	0.008985	0.10271169	0.087	0.9303
LOGL	0.615697	0.13557326	4.541	0.0001
SLOPEL1	0.203031	0.10069849	2.016	0.0442
SLOPEL2	0.144407	0.10032918	1.439	0.1505
SLOPEL3	0.201358	0.14749181	1.365	0.1726
SLOPEL4	0.164825	0.08443990	1.952	0.0514
SLOPEL5	0.144157	0.08191450	1.760	0.0789
SLOPEL6	0.114449	0.08984239	1.274	0.2031
SLOPEL7	0.249691	0.08968667	2.784	0.0055
SLOPEL8	0.231317	0.12250512	1.888	0.0594
INTERACT	0.076824	0.13322036	0.577	0.5644
LOGLABSQ	0.023280	0.01219481	1.909	0.0567

N=695

Adjusted R-square: 0.8241

Table 3: Dependent Variable: Log of net sales
Firms with less than 100 employees

Variable	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > T
INTERCEPT	0.218365	1.07904043	0.202	0.8397
IND1	-1.681894	0.89129628	-1.887	0.0599
IND2	-0.333548	0.80146585	-0.416	0.6775
IND3	-1.053234	1.22545703	-0.859	0.3906
IND4	-1.526940	0.71486053	-2.136	0.0333
IND5	-1.461165	0.68011147	-2.148	0.0323
IND6	-1.141280	0.71972503	-1.586	0.1136
IND7	-1.224034	0.71601586	-1.710	0.0881
IND8	-1.263729	0.97275764	-1.299	0.1946
BETRIEBS	0.131468	0.08754576	1.502	0.1340
TRAINING	0.011840	0.10859217	0.109	0.9132
LOGL	0.436322	0.58938209	0.740	0.4595
SLOPEL1	0.448555	0.25741650	1.743	0.0822
SLOPEL2	-0.042417	0.23089781	-0.184	0.8543
SLOPEL3	0.257235	0.37331669	0.689	0.4912
SLOPEL4	0.294503	0.20935645	1.407	0.1603
SLOPEL5	0.288268	0.19820715	1.454	0.1466
SLOPEL6	0.177492	0.20834627	0.852	0.3948
SLOPEL7	0.178093	0.21221423	0.839	0.4018
SLOPEL8	0.242210	0.27104186	0.894	0.3721
INTERACT	0.366275	0.19148100	1.913	0.0565
LOGLABSQ	0.031558	0.08418410	0.375	0.7080

N=427

Adjusted R-square: 0.4744