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Workplace Practices and the New Economy

Since the second half of the 1990s, the growth rate of labor productivity has been faster than at any time since the 1960s, especially in the manufacturing sector. This turnaround in labor productivity had led many to wonder whether there is something “new” going on in the U.S. economy, and, if so, whether it is sustainable.

The productivity growth surge is commonly associated with significant investments in capital, especially in information technology (IT) equipment and software. But, in fact, there is more to the story than just capital investments. Another part of the story is innovations in workplace practices. Over the past decade, more firms have adopted work processes in which non-managerial workers are involved in problem solving and identifying opportunities for innovation and growth.

This *Economic Letter* looks at how increased managerial focus on employee involvement, quality management, continuous innovation, and incentive-based compensation has boosted labor productivity and draws out some implications for future productivity gains. The research summarized here indicates that the combination of investment in new technology along with workplace innovation has had especially high payoffs to U.S. firms in the 1990s, and, with the continued reorganization of firms, high productivity growth may continue into the future.

Workplace innovations

Based on earlier empirical literature on workplace innovation, Black and Lynch (forthcoming) describe four broad components of this type of innovation that are associated with productivity and wages. These components include employee voice, work design, workforce training, and incentive-based compensation.

Employee voice includes organizational structures that give workers, especially non-managerial workers including lower-level production workers, a voice in making decisions about the design of the production

process, as well as greater autonomy and discretion in the structure of their work. As employee voice increases, firms are better able to tap into the knowledge of non-managerial workers. The means of increasing employee voice can range from the employee suggestion box to self-managed teams of production employees.

Work design innovation includes using cross-functional production processes, so that managers can have more flexibility in allocating and reallocating labor in the firm. Some examples include reengineering efforts that reduce the number of workers per supervisor or the number of levels of management within the firm, self-managed teams, and introducing or extending job rotation and job share arrangements.

As work design innovations, such as teamwork, are put into place, employees need additional training to help them work effectively in a more interactive group environment.

Finally, incentive-based compensation plans, such as stock options, profit sharing, and bonuses, play an important role in firms' ability to reorganize their workplaces. By increasing the proportion of total compensation that is “at risk” and is linked to firm performance, employers hope to help realign workers' interests towards those of shareholders. In addition, such compensation plans give non-managerial workers an incentive to come forward with ideas that would improve the production process but put their own jobs at risk.

Research has shown that these broad components of workplace innovation have important links and synergies. For example, Boning, Ichniowski, and Shaw (2001) find strong evidence of complementarities between employee voice and incentive-based compensation; that is, each component enhances the effectiveness of the other. Bresnahan, Brynjolfsson, and Hitt (2002) find evidence of complementarities among the level of technology, organizational changes, and the level of worker skills.



CSIP NOTES

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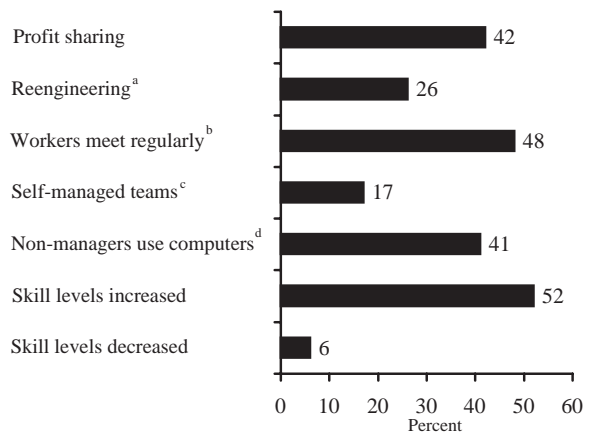
Black and Lynch (2003) show that, by the mid-1990s, many U.S. employers reported using a variety of practices that would fit this description of workplace innovation. Figure 1 summarizes the evidence. For example, in 1996, almost half of all U.S. employers reported that three-quarters or more of their employees were involved in regular meetings to discuss workplace issues. In addition, over 40% of employers had some form of profit sharing or stock option plan for employees, and 17% reported that a quarter or more of their employees worked in self-managed teams. During the 1990s, many employers revamped their organizational design; more than a quarter reported that they undertook significant reengineering of their workplace over the period 1993–1996. The figure also shows that employers are investing in computer technology, with over 40% reporting that three quarters or more of their production or frontline employees used computers in their job. Given all the changes in workplace practices and investments in new technology, it is not surprising that the majority of employers reported that the skills required to perform production or support jobs at an acceptable level increased between 1993 and 1996; only 6% reported that skill levels fell.

Boost to productivity

Researchers have examined the impact of workplace innovation on productivity using several approaches. One involves conducting detailed studies of firms within an industry and comparing the productivity of firms that use these innovations to the productivity of firms that do not. Such intraindustry studies avoid many of the problems associated with underlying differences in production processes. Some of the most careful work in this area is by Ichniowski, Shaw, and Prennushi (1997). The authors examine the relationship between workplace organization and productivity in the steel industry. Their findings are consistent with those of other intraindustry studies, namely, that productivity levels are substantially higher in firms that adopt a coherent system of new management practices, such as flexible job definitions, crosstraining, and work teams, along with extensive reliance on incentive pay, than they are in firms that follow more traditional management practices (less flexibility, close supervision, hourly pay).

To explore the impact of workplace innovations on productivity for the broad economy, rather than only for one industry, Black and Lynch (2001) use an alternative approach and examine a more representative sample of firms. The data used are from the Educational Quality of the Workforce–National Employers Surveys (EQW–NES), two comprehensive and representative surveys of U.S. establishments conducted in 1994 and 1997 by the U.S. Bureau of the Census. The information from the 1994 survey on manufacturing estab-

Figure 1
How widespread are workplace innovations in the U.S.?



Weighted data on U.S. establishment practices in 1996.

Source: Black and Lynch (2003).

^aEmployers with any reengineering efforts between 1993 and 1996.

^bEmployers reporting 75% or more of employees meet regularly to discuss workplace issues.

^cEmployers reporting 25% or more of their employees are in self-managed teams.

^dEmployers reporting 75% or more of their employees use computers.

lishments includes a variety of workplace organization measures, worker characteristics, and establishment-level investments in IT, and the authors merge this with longitudinal information on past establishment employment, output, and capital investments from 1988–1993. Using this approach, the authors can estimate the impact of workplace practices on labor productivity while controlling for a wide range of other factors, including capital investments like IT. The results highlight an important feature of workplace innovation: it is not what an establishment reported it did, but how it actually did it, that matters in terms of productivity. For example, in some cases, firms claimed to adopt a “Total Quality Management” system (in which the firm uses a formal system to change the corporate culture or organizational structure), but, in fact, did not implement important components of the program, such as involving a high fraction of non-managerial workers in regular decisionmaking within the plant; in such cases, the impact on productivity was insignificant or even negative. In addition, although the proportion of managerial workers who use computers had no impact on labor productivity, the proportion of non-managerial workers who use computers did have a significantly positive effect on productivity.

The impact of workplace innovation also varies depending on the type of relations between labor and management within the plant. Within the manufacturing sector, the results show that firms having more traditional unionized labor-management relations and a traditional workplace structure with little or no employee participation in decisionmaking had

significantly lower labor productivity than unionized establishments that had adopted the kinds of workplace innovations discussed here. In fact, those unionized firms that did adopt such workplace innovations had higher productivity than even the non-unionized firms with those innovations. This finding may be due in part to the job security unions provided that enabled the workers to speak freely about potential improvements in the production process without fear of losing their jobs. These results suggest that management practices that encourage workers to think and interact in order to improve the production process, combined with the job security guaranteed by unions, are strongly associated with increased firm productivity.

In a follow-up study, Black and Lynch (2004) explore the possibility that these results may be driven by factors not previously accounted for, such as managerial quality. For example, if establishments with more workplace innovation also happen to have better managers, it may appear that the innovations are the source of higher productivity when in reality the source is better managers. That study uses two waves of data on workplace organization for manufacturing plants, and it looks at changes in workplace organization to see how they are related to changes in productivity. If managerial quality and any other omitted characteristics do not change over time (in this case, three years), then the possibility that the earlier results are biased will be eliminated. If, however, significant unobserved time-varying characteristics of firms that are related to productivity are present, then it is not possible to control for this remaining potential bias.

After estimating the impact of changes in workplace organization on labor productivity, while controlling for changes in the capital stock, materials, IT investment, and employee characteristics, the original conclusions remain relatively unchanged. The proportion of non-managerial workers using computers is still positively related to labor productivity, again suggesting that IT is important. In addition, workplace organization continues to have an impact; firms that reengineer their workplaces experience higher labor productivity, even after controlling for any time-invariant establishment effects. Finally, the results continue to show synergies between workplace practices and labor-management relations; as before, the firms that perform best are those that are unionized and that have adopted greater employee participation in decisionmaking.

Conclusion

The results described here, along with those from many detailed industry-level studies, suggest that there has been a dramatic change in the organization of workplaces and that these changes are associated with increased labor productivity. Whether these gains in labor productivity are sustainable, however, is still an

unanswered question. Our results suggest that what matters for productivity is the extent to which workplace innovation has been integrated into the daily operations of a firm. In particular, as more workers are involved in problem solving, productivity improves. We speculate that this type of employee involvement will not necessarily have just a one-time impact on productivity. Given the capacity for firms to continue to restructure their workplace and learn from their employees, these results suggest that productivity gains could persist into the future. This may be what is “new” about our so-called new economy.

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