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Firm Size and Capital-Labor Substitution

Most people would agree that working for IBM is much different than working for Joe's Pizza. But why is there a difference? The late Nobel laureate George Stigler suggested that one reason is that larger firms face a greater cost in gathering information about their work forces than do smaller firms. After all, if you work for Joe's Pizza, Joe is likely to observe your on-the-job performance, but it is unlikely that the chair of the board would be your supervisor if you worked for IBM. To counter this increased labor cost, we would expect large firms to economize in their use of labor by using more capital and thus substituting capital for labor. In addition, large firms may try to hire more qualified workers, substituting quality for quantity. Similarly, they may offer more training to workers to increase worker productivity.

A recent study by three economists concluded that larger firms do indeed use more capital per worker. The study found that a 10 percent increase in the size of the firm resulted in a 1.2 percent increase in capital used per worker. In addition, it found that larger firms were more likely to offer training to their work forces, spend more resources per applicant in evaluating potential employees, and offer higher starting wages than did smaller firms. The necessity of observing the on-the-job performance of workers increases the cost of labor and thus induces firms to substitute toward more capital and higher-quality workers.

Sources: George J. Stigler, "Information in the Labor Market," *Journal of Political Economy* 70 (June 1962), pp. 95–105; John M. Barron, Dan A. Black, and Mark A. Loewenstein, "Employer Size: The Implications for Search, Training, Capital Investment, Starting Wages, and Wage Growth," *Journal of Labor Economics* 5 (January 1987), pp. 76–89.