Measuring Ratchet Effects within a Firm: Evidence from a Field Experiment varying Contractual Commitment

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Abstract

We present results from a field experiment designed to measure the importance of managerial commitment to a contract within a firm that pays its workers piece rates. In the tree planting industry the piece rate paid to workers is determined as a function of the difficulty of the terrain to be planted. During the experiment, firm managers told a crew of tree planters that the piece rate had yet to be determined on a particular block of land. The manager further told the workers that he would start them at a trial piece rate, but would revise the piece rate upwards if, after a few work days, average production levels were below those observed on similar land (on which he paid a piece-rate equal to the trial piece-rate). We compare worker productivity during the observation period (the two days without commitment) with productivity on the control land used by the manager, and planted by the same workers. Our results suggest that worker productivity decreased substantially during the observation period; in the order of 20\%, giving empirical support for the importance of commitment to a piece rate. Moreover, the reduction in productivity was less pronounced when workers had less time to benefit from any subsequent increase in the piece rate. The later provides support for models of worker turnover as a means to overcome ratchet effects.