

An Experimental Study on the Ratchet Effect in Teams: The Impact of Inequity Aversion and Learning

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Abstract

Prior literature on target setting finds that targets are often determined based on past performance (Dekker et al., 2012; Murphy, 2000) and such a target-setting method is called the target ratcheting (Indjejikian et al., 2014b).

Nevertheless of its prevalence in practice, target ratcheting can cause an incentive problem, i.e. the ratchet effect (Weitzman, 1980). When targets are determined based on target ratcheting, then once the good performance is recorded then the next period's targets will be revised to be difficult. If an employee understands this relationship, he may have an incentive to limit his performance to keep enjoying an easy target.

Since arising the ratchet effect implies that firms' performance is lower than a performance level that could be attained if every employee exerts their best capacity level, prior literature discussed how managers can overcome this problem (e.g., Aranda et al., 2014; Baron and Besanko, 1984; Cardella and Depew, 2018; Charness et al., 2011; Indjejikian et al., 2014a; Indjejikian and Nanda, 2002).

However, team settings are not well considered in this literature. Prior literature on the ratchet effect mainly discussed a situation where a single employee or multiple employees work independently¹. By contrast, teams are characterized by an interdependent workplace environment in terms of the indivisibility of the output (Holmstrom, 1982).

This study aims to provide the first empirical evidence on the ratchet effect in teams. Since it is difficult to detect the occurrence of the ratchet effect using field data, this study uses a laboratory experiment as many prior studies do (e.g., Cardella and Depew, 2018; Chaudhuri, 1998; Charness et al., 2011). In addition, this study tests the effectiveness of a new method to mitigate the ratchet effect.

Theoretically, there are two opposite predictions on whether the ratchet effect arises in teams or not. On one hand, based on the assumptions of the traditional self-oriented individuals who care only their own utility, the ratchet effect is expected to arise in teams as same as in an independent work environment. On the other hand, based on the assumptions of the other-regarding individuals who care about not only their own utility but also their counterparts' utility, the ratchet effect is expected not to arise in teams. This study tests which prediction is supported by using clean data from a laboratory experiment.

Moreover, in teams, managers may cope with the ratchet effect differently compared to an

¹ No matter whether it is a team setting or an independently working setting, the multiple agents' situation itself is not still sufficiently discussed in this literature (Matějka, 2018).

independent work environment. Koyama (2020) analytically shows that if an agent's ability grows over time and a low ability agent grows more significantly than a high ability agent, then a principal can mitigate the ratchet effect by setting targets considering not only past performance but also the ability growth. Also, Hamilton et al. (2003) provide empirical evidence that can imply such ability growth could be arising in teams. Since Koyama (2020) is an analytical study, this study empirically investigates whether such learning actually works to mitigate the ratchet effect or not.

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