

## Optimal Long-term Contract with Dynamic Information Structure

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### Abstract

We investigate the impact on optimal reward contract when the agent gains the information advantage throughout the process. The contract is signed at the beginning of the process and the reward is based on the final output of the process. At the beginning of the process (period 1), the principal and the agent has the same information; then, the agent learns the underlying information and gains an advantage for the rest of process (period 2). The agent can choose costly effort to boost the final output in both period 1 and in period 2. To provide sufficient incentive to induce a high effort in period 1, the optimal contract incorporates a very high incremental reward for the superior outputs. It might also be optimal for the principal to induce a greater-than-first-best-optimal effort from the agent. The steep reward structure provides a rationale for “up-or-out” employment contract.

### Biographical Sketch

*Leon Yang Chu(Zhu) is an assistant professor of Information and Operations Management at the University of Southern California's Marshall School of Business. Prior to this, he spent one year as a PostDoc at the IEOR Department of the University of California-Berkeley. Leon holds a PhD in Industrial Engineering and a MA in Economics from the University of Florida. His papers have been published or accepted in journals including the American Economic Review, the Journal of Economic Theory, Management Science, and Operations Research. Leon's current research interests include contract theory and mechanism design.*

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