

## **Three Essays on Behavioural Contract Theory**

### **ABSTRACT**

We first formulate a simplified principal-agent model with discrete outcomes and continuous effort choices. The optimal incentive contract is calculated for self-regarding principal and agent as a benchmark case. It is found that for lower outside option, principal optimally shares the gross payoff equally if the project succeeds when both are self-regarding. For higher outside option participation constraint binds and the success wage increases with increased outside option of the agent. Then the principal is assumed as spiteful and agent is assumed to be self-regarding. It is found that the wage offered and the optimal effort will be lower than the self-regarding benchmark setup. A self-regarding agent is weakly better off with a less spiteful principal. Then principal and the agent both are considered to be other-regarding in nature. Under this structure optimal wage is weakly decreasing with respect to principal's spitefulness. The optimal wage is positively related with the inequity averseness of the agent. This success wage is compared with the previous two cases and it is found that this success wage lies between the benchmark case (both self-regarding) and only principal other-regarding case. When the principal and the agent have exactly opposite other-regardingness, we get the self-regarding benchmark results. A few other alternative specifications for the other-regarding function are done as extensions and the main results qualitatively remain same. A more generalized structure with continuous output level is also formulated. The principal is other-regarding in nature. Here we have considered two types of other-regardingness: inequity-averseness and status-seeking (spiteful). Under this setup it is found that if the principal is non-linearly other-regarding then the optimal contract wage schedule is unlikely to be linear when effort is contractible. It is also found that the wage offered by a status-seeking principal will be less than the wage offered by a self-regarding principal which will be lesser than the wage offered by a spiteful principal. When effort is non-contractible, optimal contract for risk-averse

agent is strictly increasing even if when the principal is spiteful. It is also found that given the output level, the wage schedule is decreasing with respect to the spitefulness parameter of the principal and increasing with respect to the inequity averseness parameter of the agent. An agent with infinite concern regarding the inequity-averseness will be offered an equal share of the success output by the principal. If the output contains any component which is not an indicator of effort choice of the agent, then the optimal wage should not be dependent on that part. This sufficient statistics result hold when both the principal and the agent have exactly opposite other-regarding preferences with same other-regarding functions. Otherwise, optimal wage schedule contains non-relevant information regarding the effort choice. We have also formulated a multi-agent extension or a generalization of the entire structure where two agents are hired for working in two separate projects. Both the principal and the agents are assumed to be other-regarding. The principal is other-regarding vis-à-vis the agents. The agent is inequity-averse vis-à-vis the principal and also vis-à-vis the other agent (peer comparison). The analysis suggests that with not so high cross wage effect, a not so high status seeking principal or an inequity averse principal will offer a contract which is increasing with respect to its own output. It has been observed that 'team contracts' is optimal with self-regarding or inequity averse principal and other-regarding agents if own wage effects are not so high and projects are technologically independent. With a sufficiently status-seeking principal a relative performance contract can be optimal if the agents' wages are far apart and if own wage effects are not so high. It is also found that the wages offered to the agents rise when the agents are more concerned about their payoff difference vis-à-vis the principal. If the agents are not highly concerned about their payoff difference vis-à-vis the principal, then an increase in status-seekingness of the principal will lower the wages for both the agents. Agents are better off with a more inequity-averse principal. It has also been shown that the principal optimally removes the entire payoff difference between the agents by offering the agents equal wages if the agents

are too much concerned about their own payoff differences. With an increase in peer comparison, the wage gap of the two agents is optimally reduced by the principal. In the final model the principal compares between individual production and team production. The principal has a choice to hire one agent (individual production) or two agents (team production). Our findings suggest that an inequity-averse principal dealing with an inequity-averse agent will prefer team production over individual production even without synergy if and only if both of their inequity concerns are not very low. The principal having a high inequity-aversion and the agent having a very low inequity aversion will not suffice for the optimality of team production over individual production. It is also found that with a sufficiently high project outcome, the optimal wage increases with a rise in inequity-averseness parameter of the agent(s). The analysis is done for static and dynamically repeated framework both. The repeated interaction throws some light on how the contract performs in the long run. It is observed that the principal is better off under repeated setting than under the static setting. The wage offered in the repeated setup is comparatively lower than the wage offered under static setup. It is also observed that under repeated interaction the principal is more likely to choose team production over individual production irrespective of the fact whether the team has synergy or not.