

Exam
Incentives in Organizations and Innovation
Summer Semester 2022

Please answer either **Question 1** or **Question 2**. If you answer both questions, we will only consider **Question 1!**

Question 1:

- (1) Interpret the crowding-out effect of extrinsic rewards with reasonable examples.
- (2) Discuss the role of risk attitude in the workers' choice between the performance pay and time rate sectors.

Question 2:

A principal hires two agents ($i \neq j$), who produce outputs $q_i = e_i + \varepsilon_i$ and $q_j = e_j + \varepsilon_j$. The efforts of the agents are given by e_i, e_j , and $\varepsilon_i, \varepsilon_j$ are the random shock effects with $E(\varepsilon_i) = E(\varepsilon_j) = 0$, $Var(\varepsilon_i) = Var(\varepsilon_j) = \sigma^2$ and $Cov(\varepsilon_i, \varepsilon_j) = \rho\sigma^2 > 0$. The principal can only observe outputs but not effort. The agents are offered the contracts with the wage $w_i = \alpha_{ii}q_i + \alpha_{ij}q_j + \beta_i$ and $w_j = \alpha_{jj}q_j + \alpha_{ji}q_i + \beta_j$. In which α_{ij} denotes the performance of worker i that depends on the performance of worker j and vice versa. The disutilities of productive effort are given by $C(e_i) = \frac{1}{2}e_i^2$ and $C(e_j) = \frac{1}{2}e_j^2$. The principal is risk neutral, whereas the agents are risk averse with a constant coefficient of absolute risk aversion of r . The reservation utilities of agents are given by \bar{u}_i and \bar{u}_j .

- (1) How does the principal set the individual performance-based wage component and the relative performance-based wage component?
- (2) Discuss the above results if the random shock effect on both workers (i and j) in a different way $\rho > 0$ and $\rho = 0$.