

ABSTRACT:

We consider the problem of providing incentives over time for an agent with constant absolute risk aversion. The optimal compensation scheme is found to be a linear function of a vector of N accounts which count the number of times that each of the N kinds of observable events occurs. The number N is independent of the number of time periods, so the accounts may entail substantial aggregation. In a continuous time version of the problem, the agent controls the drift rate of a vector of accounts that is subject to frequent, small random fluctuations. The solution is as if the problem were the static one in which the agent controls only the mean of a multivariate normal distribution and the principal is constrained to use a linear compensation rule. If the principal can observe only coarser linear aggregates, such as revenues, costs, or profits, the optimal compensation scheme is then a linear function of those aggregates. The combination of exponential utility, normal distributions, and linear compensation schemes makes computations and comparative statics easy to do, as we illustrate. We interpret our linearity results as deriving in part from the richness of the agent's strategy space, which makes it possible for the agent to undermine and exploit complicated, nonlinear functions of the accounting aggregates.

faculty.fuqua.duke.edu

[

](<https://faculty.fuqua.duke.edu/~qc2/BA532/1987%20EMA%20Holmstrom%20Milgrom.pdf>)

[1987%20EMA%20Holmstrom%20Milgrom.pdf](https://faculty.fuqua.duke.edu/~qc2/BA532/1987%20EMA%20Holmstrom%20Milgrom.pdf)

2.53 MB