

Pushing for Compliance: On the Emergence of "Extreme" Incentives

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Agenda

- ▶ Motivation
- ▶ The Model
- ▶ Results
- ▶ Conclusion

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- ▶ At the same time it is often argued that very high incentives may trigger undesirable behaviour by agents.
- ▶ In our model we will show that it is exactly the possibility of undesirable behaviour that makes "extreme" incentives optimal.

The setting

- ▶ Two possible profits of the firm: $\{\underline{\pi}, \bar{\pi}\}$.
- ▶ Principal and agent are risk-neutral, agent has limited liability.
- ▶ The agent can increase the probability of high profits by q if he exerts effort. His effort cost is given by $C(q)$.
- ▶ He can also increase the probability by some constant d if he exerts undesirable behaviour at a (stochastic) cost of δ .
- ▶ The principal discovers illicit behaviour with probability p .
- ▶ He suffers negative long-term consequences of K .
- ▶ We restrict attention to short-term contracts.

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Assumption (iii) is specific to our model and states that the convexity of effort cost is non-increasing in q .

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- ▶ If the agent decides not to comply his utility is

$$U^n = \underbrace{G(w(1-p))w(1-p) - C(G(w(1-p)))}_{\text{information rent}} + \underbrace{d(1-p)w - \delta}_{\text{violation rent}}$$

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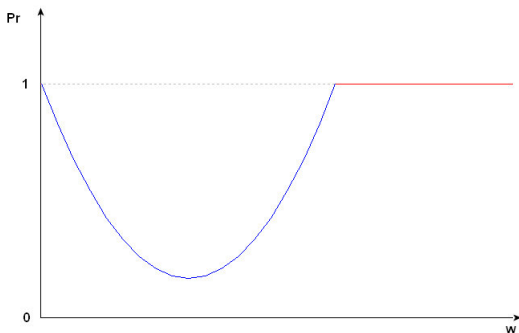
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- ▶ The information rent from the effort-dimension is increasing in w .
- ▶ Therefore the higher w , the more fiercely the agent can be punished in case of non-compliance.
- ▶ But when increasing w the gains from undesirable behaviour also become larger.
- ▶ Initially the second effect dominates, but as w increases the first effect becomes more important.

The probability of compliance

- ▶ Since the cost of undesirable behaviour δ is stochastic, ΔU governs the probability of compliance.



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- ▶ Taking Pr^c as endogenous, the FOC becomes

$$0 = Pr^{c'} (\pi^c - \pi^n) + Pr^c \pi^{c'} + (1 - Pr^c) \pi^{n'}$$

which implies that incentives will be more extreme than in the benchmark with equal Pr^c .

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- ▶ This is indeed optimal as long as

$$\pi^c - \pi^n > \frac{1}{(1-p)d\sigma} \pi^{n'} \quad \forall w : \pi^{n'} \geq 0 > \pi^{c'} \quad (1)$$

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- ▶ Since both instruments can be used to achieve a given Pr^c they only differ in their effect on w .
- ▶ If effort is sufficiently important punishing the principal will result in a higher bonus and higher social surplus.
- ▶ Punishing the agent has ambiguous effects on the bonus w set by the principal.

Conclusion

- ▶ The model offers an explanation why incentives are typically "extreme".
- ▶ Furthermore it gives some intuition where undesirable behaviour is most likely to emerge.
- ▶ A policy maker may have an interest not to resolve this agency problem directly in order to lower distortions in the effort-dimension.