

E: The principal-agent problem

Principal-agent problem

Arises when **principal (P)** hires the **agent (A)** to do something and:

1. P and A have **different interests** (utility functions), and
2. A's **action** difficult to observe

Many, many examples:

Principal	Agent
Employer	Employees
Stockholders	Managers
Voters	Elected officials
Elected officials	Civil servants
Donors	NGO managers

Abstractly:

A: chooses **effort, E**

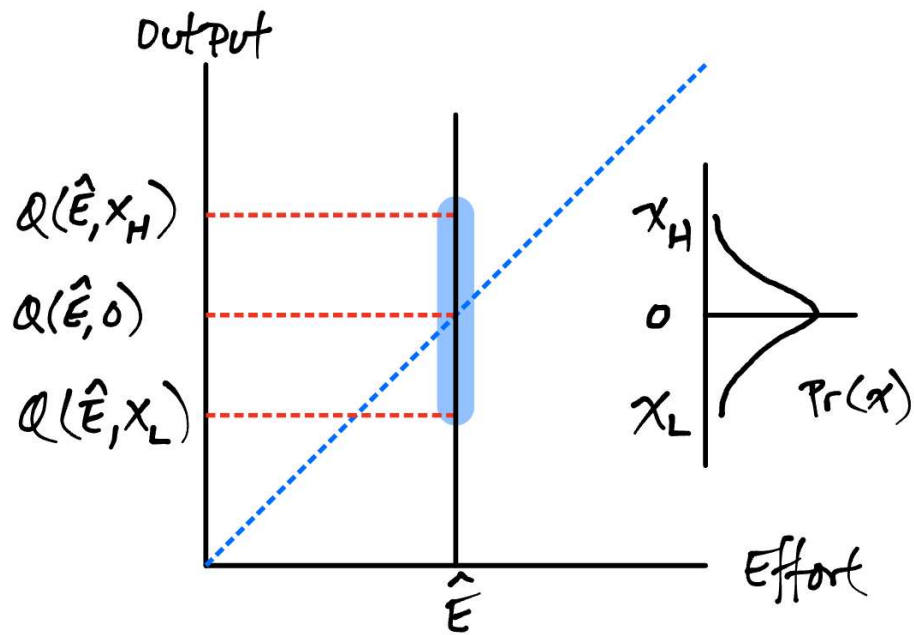
P: sees **output, Q**

Q depends on **E** and random event (luck) \tilde{x} :

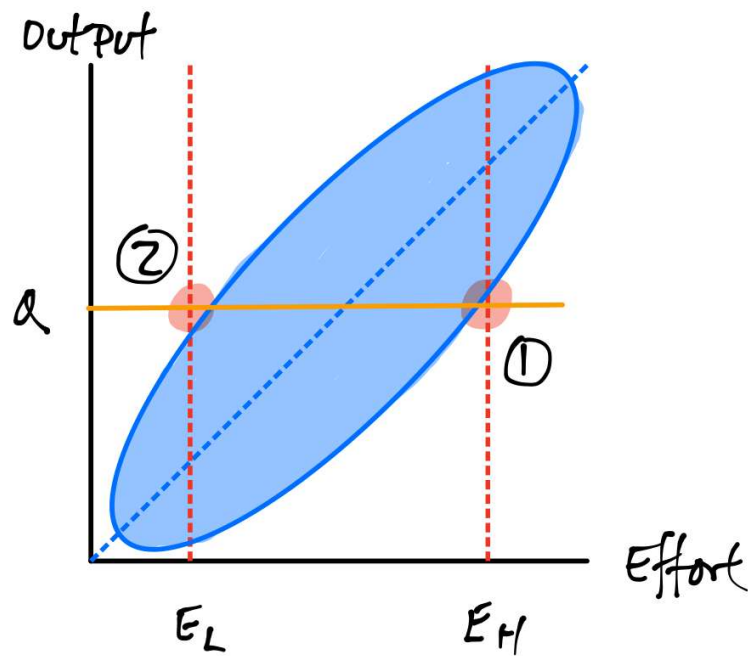
$$Q = f(E, \tilde{x})$$

Graphing:

- Agent chooses effort \hat{E} but Q uncertain:



- Principal sees Q but E is uncertain:



Outcomes 1, 2 look the same to P:
"Observationally Equivalent"

Dilemma:

- **P** would like to pay based on **Q** (what they care about)
- But, **Q is uncertain** so A's **pay is uncertain**:
 - Shifts **much of the risk** of x to **A**
 - Inefficient if A is risk averse
 - May violate participation constraint

Solutions:

- Better monitoring
Pay based on E, **P** bears the risk
- Efficient contracts
Provide incentives for high E but with limited risk