Higher School of Economics

**Center for Institutional Studies**

# Lecture 9
# Agency theory - Moral hazard

# Transaction cost and opportunism

## Adverse selection

- Opportunism ex ante

## Moral hazard

- Opportunism ex post

## Transaction costs

- Search costs
- Bargaining costs
- Contract-making costs

- Monitoring costs
- Enforcement costs

# Moral hazard: definition

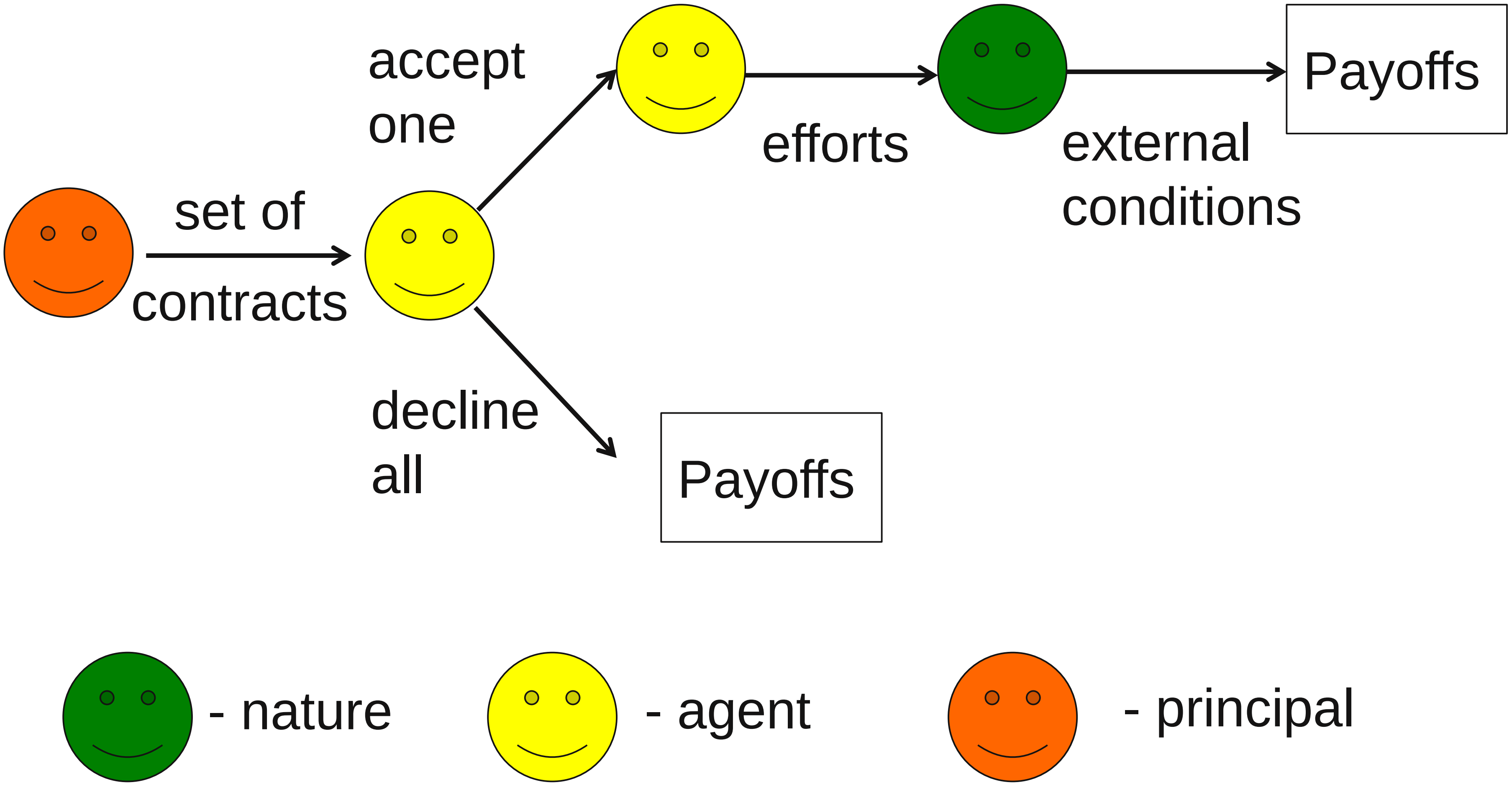
**Moral hazard** is unfair behavior of the agent generated by informational asymmetry about important variables (e.g. agent’s efforts, their realizations or other events)

Hence, the principal aims to create such motivation schemes, which encourage the agent to make actions in accordance with principal’s interests

# Moral hazard: reasons

- Different aims of contracting parties
- Non-zero costs of monitoring
- Limited agent’s responsibility for his/ her actions or decisions

# Moral hazard with hidden actions



set of contracts

accept one

decline all

Payoffs

efforts

external conditions

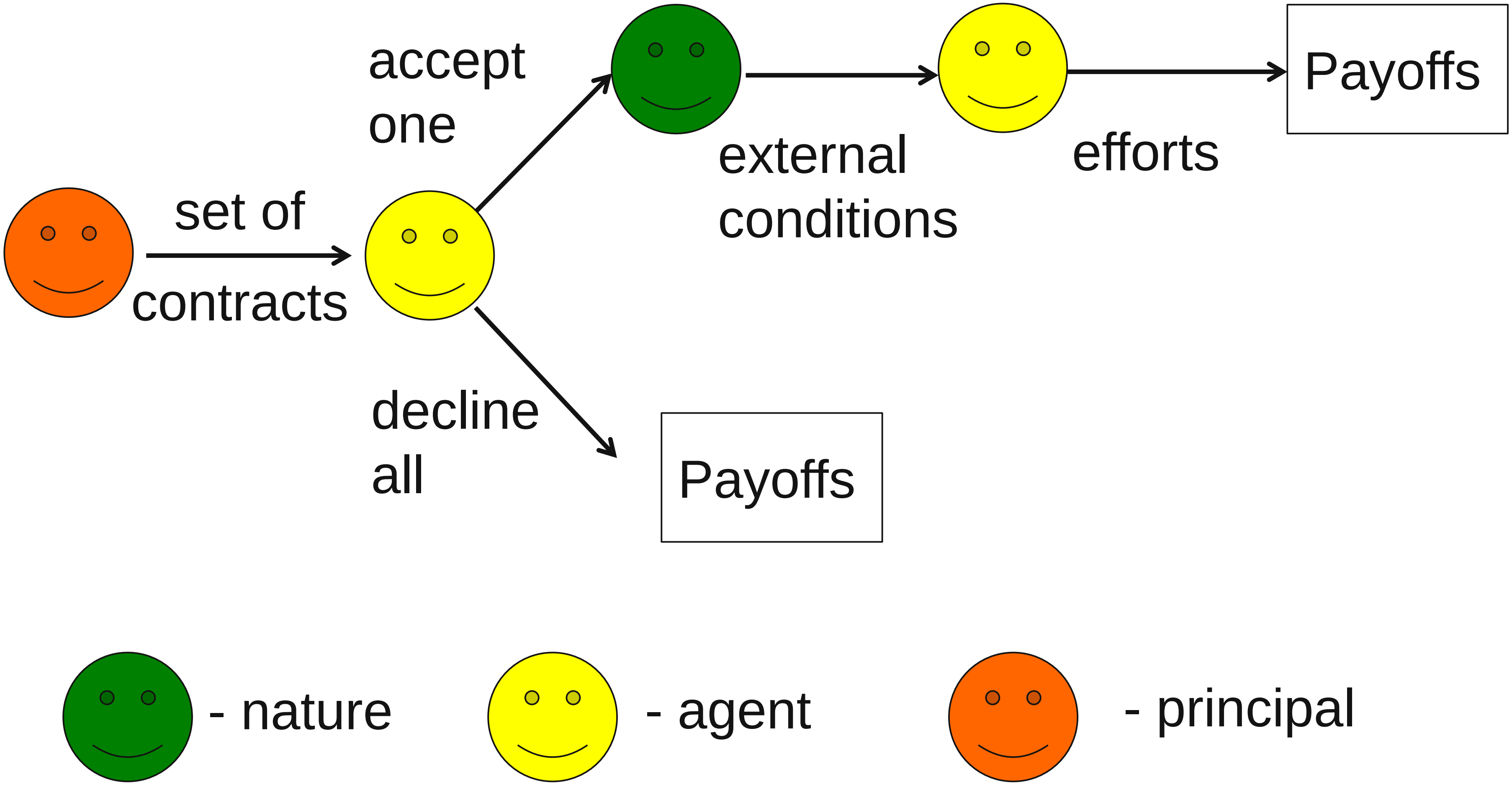
Payoffs

- nature

- agent

- principal

# Moral hazard with hidden information



set of contracts

accept one

decline all

external conditions

efforts

Payoffs

Payoffs

- nature

- agent

- principal

# Moral hazard in the open corporation

- Relationships “shareholder– manager”
- Property rights are fully separated from control
- Professional management
- Delegation of authority
- Possibilities of manager’s opportunism

# Examples of opportunism by managers

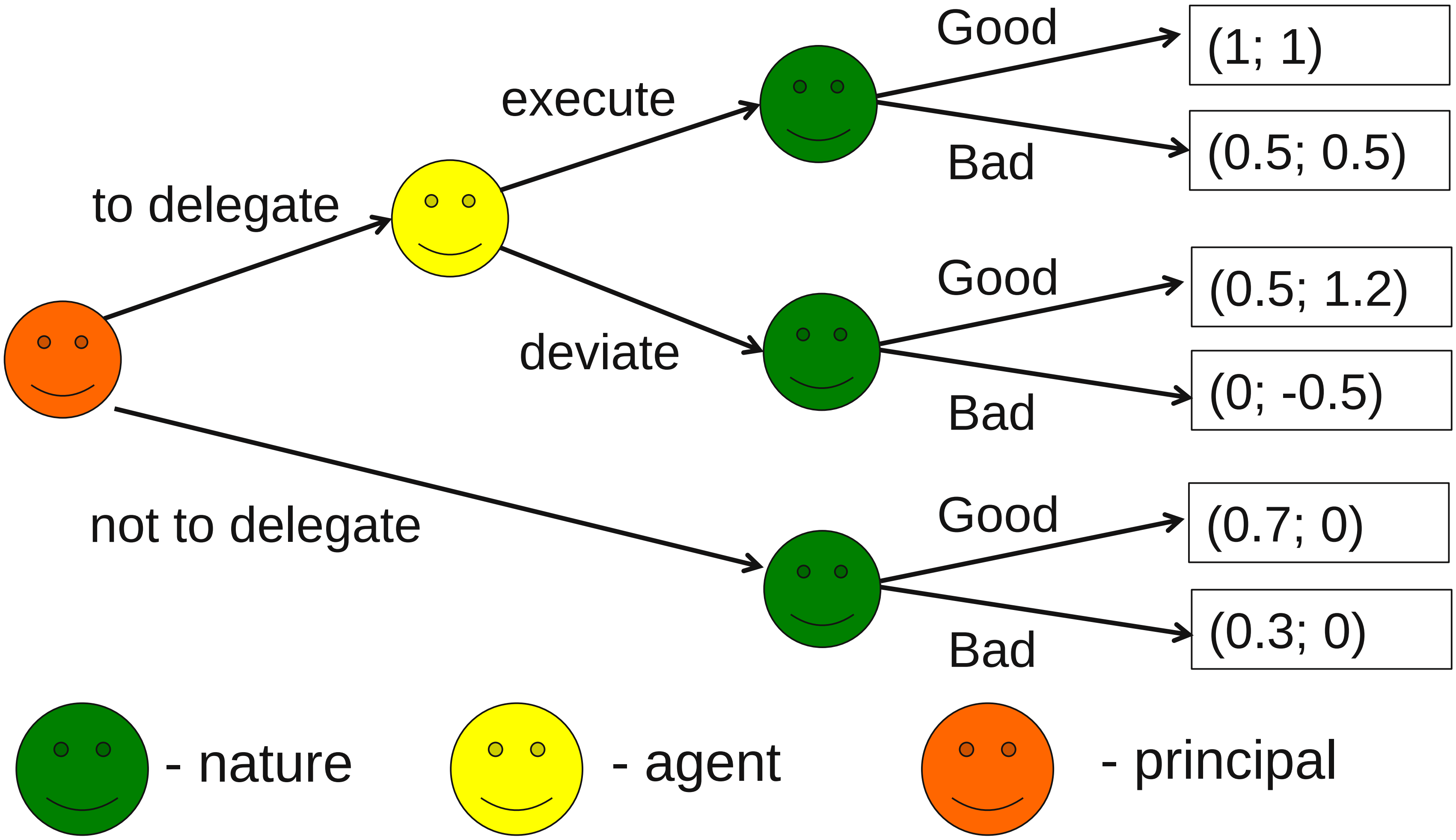
- Consumption at the workplace
- Distortion or concealment of important information
- Participation in transactions involving excessive risks
- Entering into costly long-term projects with immediate expansion of administrative resources
- Delay with technological or structural restructuration

- What are the consequences of moral hazard?
  - Fall of the company's value
  - Bankruptcy

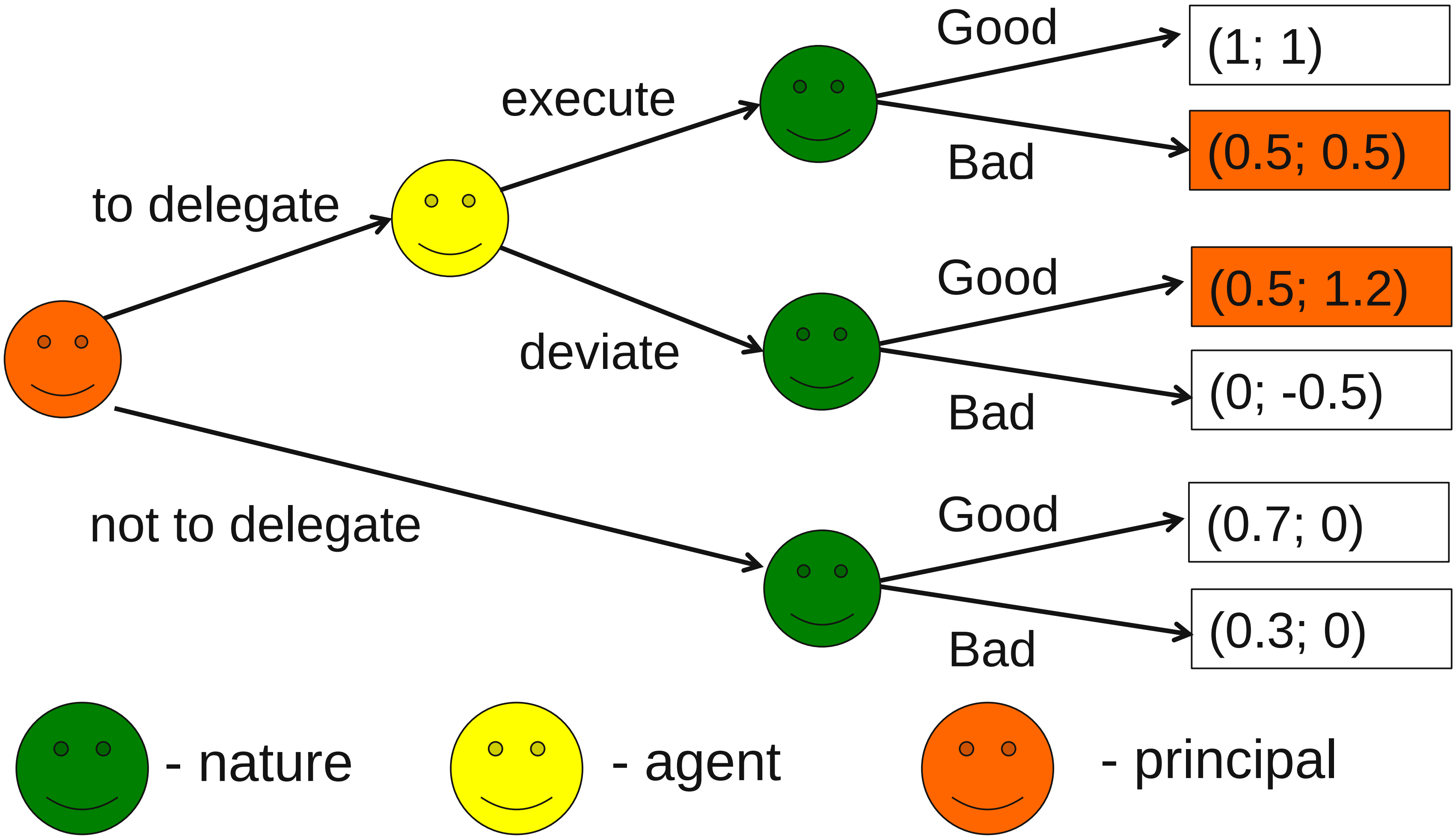
# What are agency costs?

- Agency costs are costs caused by delegation
- Benefits of specialization ←-----→ Agency costs

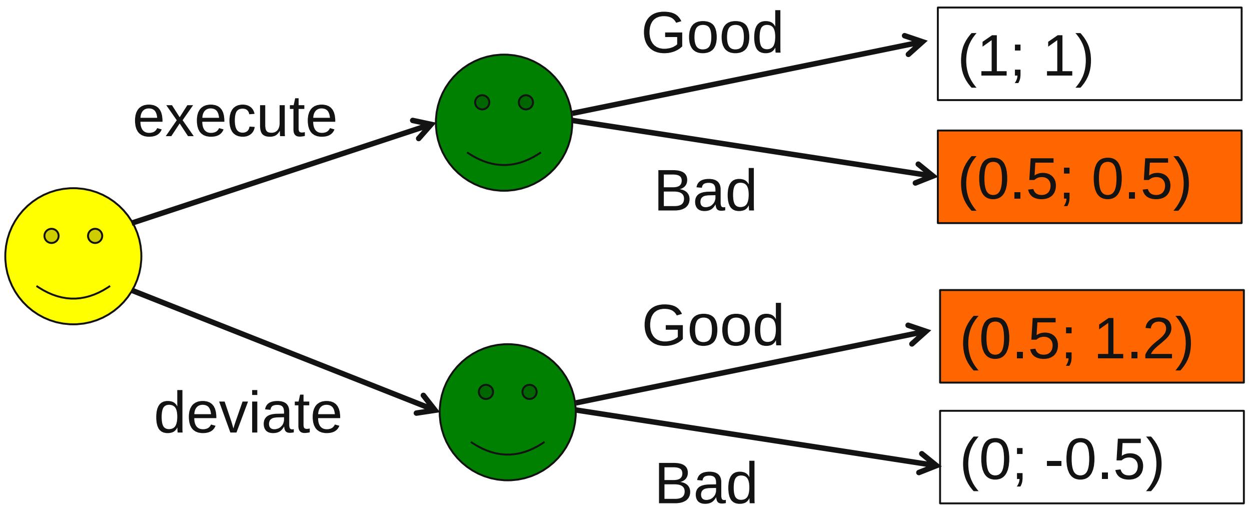
# To delegate or not to delegate?


to delegate
execute
Good
(1; 1)
Bad
(0.5; 0.5)
deviate
Good
(0.5; 1.2)
Bad
(0; -0.5)
not to delegate
Good
(0.7; 0)
Bad
(0.3; 0)
- nature
- agent
- principal

# To delegate or not to delegate?


to delegate
not to delegate
execute
deviate
Good
Bad
Good
Bad
Good
Bad
(1; 1)
(0.5; 0.5)
(0.5; 1.2)
(0; -0.5)
(0.7; 0)
(0.3; 0)
- nature
- agent
- principal

# To delegate or not to delegate?


Good
(1; 1)
execute
Bad
(0.5; 0.5)
Good
(0.5; 1.2)
deviate
Bad
(0; -0.5)

- Agent’s actions depend on external conditions

# To delegate or not to delegate?

- Agent’s choice

| | | | **Agent** | |
|---|---|---|---|---|
| | | | Execute | Deviate |
| **Nature** | Good | *p* | **1** | **1.2** |
| | Bad | *(1-p)* | **0.5** | **- 0.5** |

$$p*1 + (1 - p)*0.5 \geq p*1.2 + (1-p)*(-0.5)$$

=> $p \leq 5/6$

# To delegate or not to delegate?

- Principal’s choice

| **Agent deviates** | | | **Principal** | |
|---|---|---|---|---|
| | | | Delegate | Not |
| **Nature** | Good | *p* | **0.5** | **0.7** |
| | Bad | *(1-p)* | **0** | **0.3** |

| **Agent executes** | | | **Principal** | |
|---|---|---|---|---|
| | | | Delegate | Not |
| **Nature** | Good | *p* | **1** | **0.7** |
| | Bad | *(1-p)* | **0.5** | **0.3** |

# To delegate or not to delegate?

Delegation game: equilibrium

$$\begin{cases} p > {}^{5}\!/_{6} & \text{- the principal doesn't delegate, the agent deviates} \\ p \le {}^{5}\!/_{6} & \text{- the principal delegates, the agent executes} \end{cases}$$

The higher the probability of the favorable scenario is, the higher the probability  that the principal will not delegate

# Monitoring as a way to fight MH

Monitoring is an internal mechanism of reducing moral hazard

It is widely used in the labor market

What are the results of monitoring?

And what are the drawbacks of it?

# Monitoring - group loan model

**Grameen Bank of Bangladesh**

Moral hazard – misuse of credit

Lender

→ gives a loan

Borrower

→ takes a loan for specific purposes

Borrowing group

→ control the use and the return

Stiglitz, J. E. (1990). Peer monitoring and credit markets. The world bank economic review, 4(3), 351- 366.

Varian, H. R. (1990). Monitoring agents with other agents. Journal of Institutional and Theoretical Economics (JITE)/, 153-174.

# Monitoring - group loan model

**Evidence from Eritrea**

*The Saving and Microcredit program* since 1996

Group size – 3-7 people

Accumulation of 10% of the loan amount

Loan sizes – $70-$710

Number of participants – 14 000 (2002)

*The Southen Zone Saving and Credit Scheme* since 1994

Group size – 3-7 people

Accumulation of 5% of the loan amount

Loan sizes – $70-$570, first one < $150

Number of participants – 6250 (2001)

Hermes, N., Lensink, R., & Mehrteab, H. T. (2005) Peer monitoring, social ties and moral hazard in group lending programs: Evidence from Eritrea. World Development, 33(1), 149-169.

# Monitoring - group loan model

**Evidence from Eritrea**

- Return level - 98%
- The role of the leader - difference from the Grammen bank model
- Social relations and monitoring by the group leader reduces the likelihood of moral hazard in a group
- Only the leader monitors and uses his connections for monitoring
- The remaining members of the group are shirking, since monitoring is costly and they expect that the leader will perform monitoring activities

# Incentive contract with manager

**Incentive contract:** remuneration is determined depending on the target (observed) performance indicators of the company: revenues, profits, etc.

Compensation of efforts of the manager, depending on market performance indicators of the company:

- Solving the problem of control efforts and problem of horizon
- Options for the purchase of company shares
- BUT: incentives to invest in high risk projects and increase the amount of debt

# Incentive contract with manager

Compensation of the manager's efforts, depending on the indicators of internal audit evaluation of his subdivision’s activities in the company:

- Bonuses based on the results of internal audit evaluation of the unit, department or project team of the manager
- Important for stimulating middle management
- The possibilities to disaggregate the results of the company's activity by separate subdivisions

# Incentive contract and its efficiency

- Switching of the manager to the observed indicators
- The manager's efforts do not fully influence the company's observed performance indicators
- Managers are not prone to risk, and at the same time they are shifting uncertainty associated with the volatility of the company's performance indicators

- Dilemma “risk – incentives”

# Example: airport performance

- **Problem**: queue at check-in in the airport
- **Solution**: pay for performance

*"Imagine that all people who stand in line have an inscription on forehead: 2 rubles. 10 kop. It's very simple: if you serve them, money will go to you. Otherwise your colleague will earn it.”*

Source: Elena Gorelova, The Taming of the Lazy // Vedomosti of 02.11.2011, No. 207 (2973)

# Example: airport performance

- Results for 2009 vs. 2011
  - Waiting for registration: 40 minutes vs. 20 minutes
  - Registration time: 90 seconds vs. 45 seconds
  - Number of agents: decreased by 12%
  - Passenger flow: increased 56%

- Negative effects:
  - Competition and quality
  - Decreased incentives for cooperation

**Solution**: Fine = amount earned for 10 passengers

# Institutions and MH

**Relationships “owner – manager”:**

In addition to monitoring and incentive contracts

- Reputation in the market of agents (managers)
- The threat of absorption or bankruptcy
- The competition in the market of the final product

# Conclusions

- The asymmetry of information between contract parties leads to opportunistic behavior: before and after the conclusion of the contract
- Institutions can play an important role in reducing risks of opportunism and preventing the fiasco of markets
- Mechanisms for opportunism prevention are costly
  - There is a connection between adverse selection and moral hazard
  - If the parties do not take any action to reduce costs before the conclusion of the contract, they minimize ex ante costs, but face the problem of adverse selection
  - If the parties do not take any action to reduce costs after the conclusion of the contract, they minimize ex post costs, but face the problem of moral hazard