



Chapter 18.2

Delegation of decision-making

Outline

- Problem and model assumptions
- Delegated decision-making
- Centralised decision-making
- Summary

- Problem and model assumptions
- Delegated decision-making
- Centralised decision-making
- Summary

Ideas and their implementation

- ▶ Investment banks give staff significant responsibilities in providing advice to clients
- ▶ It is usually the team working with a client that develops advice and then seeks to implement it for their client
- ▶ In many other organisations, ideas are developed by managers and then implemented by employees

Signals about clients

- ▶ Assume the investment bank decides whether to accept a new client, the probability that it will generate surplus is $p = \frac{1}{2}$
- ▶ Managers and employees obtain a signal with precision $\rho_i > \frac{1}{2}$
- ▶ Bayesian learning gives the probability of the client generating a surplus after receiving the signal as $\hat{p}_i = \frac{p\rho_i}{p\rho_i + (1-p)(1-\rho_i)} = \rho_i$

Remuneration of employees

- ▶ Employees are working with the client and have to exert effort to generate surplus, which costs them C
- ▶ Managers do not exert effort as they are not involved in working with the client
- ▶ Employees are paid a wage w_S if surplus is generated and $w_F \leq 0$ if no surplus is generated
- ▶ If no surplus is generated, the negative wage can be interpreted as losing a bonus
- ▶ Managers are rewarded through the profits they generate

- Problem and model assumptions
- **Delegated decision-making**
- Centralised decision-making
- Summary

Employees exerting effort

- ▶ Expected wage: $w = \rho_E w_S + (1 - \rho_E) w_F$
- ▶ If no effort is exerted, no surplus is generated and the employees receives w_F
- ▶ To exert effort, we need $w - C \geq w_F$, or $w_S \geq w_F + \frac{C}{\rho_E}$
- ▶ To be an employee, we need $w - C \geq 0$, or $w_S \geq -\frac{1-\rho_E}{\rho_E} w_F + \frac{C}{\rho_E}$
- ▶ As $w_F \leq 0$, the latter is more restrictive and $w_S = -\frac{1-\rho_E}{\rho_E} w_F + \frac{C}{\rho_E}$
- ▶ We then get $w = C$ and the employee breaks even

Investment bank profits

- ▶ Investment bank profits are the revenue, if the client generates such, less the wages paid to employees
- ▶ $\Pi_D = \rho_E V - w = \rho_E V - C$
- ▶ Managers are paid out of these profits

- Problem and model assumptions
- Delegated decision-making
- **Centralised decision-making**
- Summary

Learning from two signals

- ▶ If the manager decides to accept the client, the employee has two signals: his own and that of the manager
- ▶ The signal of the manager is positive as else he would not have accepted the client
- ▶ The employee would update his beliefs in the probability the client produces surplus
- ▶ If the employee also receives a positive signal, we get $\pi_H = \frac{\rho_E \rho_M}{\rho_E \rho_M + (1 - \rho_E)(1 - \rho_M)}$
- ▶ If the employee receives a negative signal, we get $\pi_L = \frac{\rho_M(1 - \rho_E)}{\rho_M(1 - \rho_E) + (1 - \rho_M)\rho_E}$
- ▶ We find that $\pi_H \geq \pi_L$

Wages of employees

- ▶ Expected wage: $\hat{w} = \pi_i \hat{w}_S + (1 - \pi_i) w_F$
- ▶ Exert effort if $\hat{w} - C \geq w_F$
- ▶ This gives $\hat{w}_S \geq w_F + \frac{C}{\pi_i}$
- ▶ To ensure the employee exerts efforts regardless of his signal, we set wages such that this is fulfilled for $\pi_i = \pi_L$
- ▶ This gives us $\hat{w} = \rho_M \hat{w}_s + (1 - \rho_M) w_F = w_F + \frac{\rho_M C}{\pi_L}$

Investment bank profits

- ▶ We have $\Pi_C = \rho_M V - \hat{w} = \rho_M \left(V - \frac{C}{\pi_L} \right) - w_F$
- ▶ To choose delegated decision-making we need $\Pi_D \geq \Pi_C$
- ▶ This requires $\rho_M \leq \rho_M^* = \frac{\rho_E(1-\rho_E)V - (1-2\rho_E)C + (1-\rho_E)w_F}{(1-\rho_E)V - (1-2\rho_E)C}$
- ▶ If the manager's signal is not too precise, then delegated decision-making is optimal
- ▶ This is always fulfilled if employees have more precise signals $\rho_E > \rho_M$

Delegation even if managers have more precise signals

- ▶ We have $\rho_M^* > \rho_E$ if $w_F > (1 - 2\rho_E)C$
- ▶ Delegated decision-making is preferred if $\rho_E < \rho_M \leq \rho_M^*$
- ▶ Even if manager's signals are more precise, delegation might be preferred
- ▶ This is because employees having negative signals, see low prospects of the client producing surplus
- ⇒ This requires larger incentives to exert effort
- ⇒ Higher wages are paid, reducing profits of investment banks

- Problem and model assumptions
- Delegated decision-making
- Centralised decision-making
- **Summary**

Optimal delegation of decisions

- ▶ Delegation of decisions is optimal if employees are better informed
- ▶ Even if they are not better informed, delegation might be optimal
- ▶ If employees receive negative signals on the prospects of the client, they are more difficult to incentivise to exert effort
- ▶ If these required additional incentives are large enough, then profits of investment banks are higher with delegation

Delegated decisions in investment banks

- ▶ Investment banks rely on the knowledge of their staff and need to motivate them to use this knowledge
- ▶ Imposing decisions that employees disagree with, is costly and can reduce profits
- ▶ Often it is preferable to delegate decisions to maintain incentives to exert effort even if managers are better informed
- ▶ Investment banks typically delegate decisions more than many other organisations



This presentation is based on
Andreas Krause: Theoretical Foundations of Investment Banking, Springer Verlag 2024
Copyright © 2024 by Andreas Krause

Picture credits:

Cover: The wub, CC BY-SA 4.0 <https://creativecommons.org/licenses/by-sa/4.0>, via Wikimedia Commons, https://commons.wikimedia.org/wiki/File:Canary_Wharf_from_Greenwich_riverside.2022-03-18.jpg
Back: Seb Tyler, CC BY 3.0 <https://creativecommons.org/licenses/by/3.0>, via Wikimedia Commons, https://commons.wikimedia.org/wiki/File:Canary_Wharf_Panorama_Night.jpg

Andreas Krause
Department of Economics
University of Bath
Claverton Down
Bath BA2 7AY
United Kingdom

E-mail: mnsak@bath.ac.uk