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Chapter 8.2
Obtaining future investment banking business

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Competition
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Optimizing companies
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Summary
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Outline

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■ Competitive investment banks

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Accuracy and future business

- ▶ Financial analysts provide forecasts about the future performance of the securities of companies, mostly shares

- ▶ Precise forecasts increase reputation and income as this can attract investors to the investment bank

- ▶ The investment bank will also seek future business from the company, the more positive the coverage the more likely they gain this business

- ▶ Financial analysts have to balance forecast accuracy and the attraction of companies

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Competing investment banks

- A company is covered by N investment banks
- Future investment banking business from this company is worth V_B to the investment bank
- Each financial analyst receives a noisy signal about the true value $s_i = P + \varepsilon_i$
- Analysts publish a forecast $\hat{P}_i$ which has a bias $b_i = E\left[\hat{P}_i - E\left[P|s_i\right]\right]$

Forecast error

- Forecast error: $E\left[\left(\hat{P}_i - P\right)^2 \middle| s_i\right] = b_i^2 + Var\left[P|s_i\right]$

- Bayesian learning gives $Var\left[P|s_i\right] = \frac{1}{\frac{1}{\sigma_P^2} + \frac{1}{\sigma_i^2}}$

- This gives $E\left[\left(\hat{P}_i - P\right)^2 \middle| s_i\right] = b_i^2 + \frac{1}{\frac{1}{\sigma_P^2} + \frac{1}{\sigma_i^2}}$

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Investment bank profits

- An investment bank obtains the future business V_B of the company with probability p_i

- Banks loose income from investors if the forecast error increases

- The importance of investor income is α_B

- Profits: $\Pi_B^i = p_i V_B - \alpha_B E\left[\left(\hat{P}_i - P\right)^2 \middle| s_i\right]$

Competitive bias

- If investment banks compete, then $\Pi_B^i = 0$
- This gives a bias $b_i = \sqrt{\frac{p_i V_B}{\alpha_B} - \frac{1}{\frac{1}{\sigma_P^2} + \frac{1}{\sigma_i^2}}} > 0$
- The more important future business is, the higher the bias
- The more important investor income is, the lower the bias

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Company profits

- Companies prefer a positive bias and derive utility from the average bias, giving it importance α_C
- Costs of providing information to financial is increasing in the precision of the signal
- $\Pi_C = \alpha_C \frac{1}{N} \sum_{i=1}^{N} b_i - \sum_{i=1}^{N} C_i$
- Companies allocate the investment banking business to investment bank i with probability p_i, such that $\sum_{i=1}^{N} p_i = 1$

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Optimal bias

▶ Companies maximize profits over the allocation of investment banking business and precision of information they provide

▶ Objective function: $\mathcal{L} = \Pi_C - \zeta \left(\sum_{i=1}^{N} p_i - 1 \right)$

▶ $\frac{\partial \mathcal{L}}{\partial p_i} = \frac{\alpha_C V_B}{2Nb_i} - \zeta = 0$

$\frac{\partial \mathcal{L}}{\partial \frac{1}{\sigma_i^2}} = \frac{\alpha_C}{2Nb_i} \left(\frac{1}{\frac{1}{\sigma_P^2} + \frac{1}{\sigma_i^2}} \right)^2 - \frac{\partial C_i}{\partial \frac{1}{\sigma_i^2}} = 0$

▶ This gives $b_i = \frac{\alpha_C}{2N} \frac{1}{\frac{\partial C_i}{\partial \frac{1}{\sigma_i^2}} \left(\frac{1}{\frac{1}{\sigma_P^2} + \frac{1}{\sigma_i^2}} \right)^2} > 0$

▶ Setting this and the competitive bias of investment banks equal, we get the precision of information and the first condition solves for p_i

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Properties of the bias

▶ The more important the bias is for the company α_C, the higher it is

▶ More financial analysts reduce the bias as each investment bank has less influence and less likely to obtain the investment banking business

▶ Investment banks compete for a larger share of the investment banking business by biasing their forecasts

▶ They forego investor revenue to gain investment banking business

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Seeking additional revenue

▶ Companies value positive analyst coverage and will reward investment banks with other additional revenue

▶ Investment banks compete for this revenue by biasing their forecast

▶ The extent of this bias will depend on the relative importance of the bias to companies and the importance of reputation to investment banks

▶ More financial analysts covering a company will reduce the bias

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Implications

▶ The focus of financial analysts on gaining investment banking business will cause upwardly biased recommendations

▶ Policies that limit the ability to financial analysts to attract additional revenue, higher α_B, will reduce the bias

▶ If financial analysts are not profitable, there will be less financial analysts, increasing the bias

This presentation is based on
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