Andreas Krause

Chapter 8.2

Obtaining future investment banking business

Outline

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- Financial analysts are supposed to assess the prospects of companies and the securities they have issued. Doing so should be based on their expertise and knowledge about the company.
- However, selling analysts reports is not very profitable as only few investors would be willing to pay for such reports and recovering costs is difficult.
- Analyst reports can also be used as a show-case for the ability of an investment bank to assess companies and hence to provide advice. In this case the analyst report is an advertising to attract future business from the company they cover or other, similar, companies.
- We will look at what implications it has for the quality of analyst reports if investment banks are seeking future business.

Outline

- We will look at how investment banks compete with other by providing analyst reports. This will induce a positive bias into the published report of financial analysts to be more attractive to companies.
- We will then see how companies optimize their provision of information to investors.

- Problem and model assumptions
- Competitive investment banks
- Optimizing companies
- Summary

- We will investigate how investment banks may bias their analyst reports in order to gain additional revenue from attracting investment banking business.

Accuracy and future business

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→ Financial analyst coverage is not a profitable business line of investment banks. They therefore use financial analysts to attract future business and we will look at what the implications are for the accuracy of forecasts.

- The role of financial analysts is to assess the future prospects of companies; based on these prospects they then provide a forecast about the performance of the security, usually their shares, in form of a target price some time in the future.
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  - If their forecast is accurate, this increases the reputation for their competence.
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  - We assume that the investment bank wants to obtain future business from the companies they are covering and use their coverage as a means to achieve this.
  - Companies prefer a positive coverage, so are more likely to provide this additional coverage if the analyst report attests the company good future prospects.
- We now assume that financial analyst seek to gain reputation for accuracy, but also value the future business their reports can bring. Hence they will provide a strategic forecast that takes these two aspects into account.

→ We can now look at modelling this relationship between accuracy of forecasts and the attraction of future business.

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

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- The investment bank will also seek future business from the company

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

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- The forecast error is the difference between the published forecast and the actual price that is realised. The forecast error is usually taken as the square of this difference, given the information (signal) the analyst had. We can express this term using the bias and the variance of the price itself.
- The variance of the price, given the signal, can be determined using Bayesian learning and we get this as a combination of the variance of the price without a signal, σ_P^2, and the uncertainty of the signal, σ_i^2.
- This variance can now be inserted into the forecast error.

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- We can now determine the optimal bias that investment banks will choose to gain business from the company.

Investment bank profits

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→ We can now determine the profits of investment banks, taking into account the potential revenue from the company, but also losses from having forecast errors.

- As there are multiple investment banks competing for the business of the company by providing analyst reports, the company will choose amongst them and we assign this as a probability the a specific investment bank is chosen and obtains the entire revenue from the company.
- As accuracy of forecasts increases an investment banks reputation, we assume that the larger the forecast error, the smaller the benefits are to the investment bank. This might be due to lost revenue in brokerage or asset management.
- The expected revenue from the business of the company is thus reduced by the forecast error with some factor that accounts for the relative importance of these two aspects.
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- As accuracy of forecasts increases an investment banks reputation, we assume that the larger the forecast error, the smaller the benefits are to the investment bank. This might be due to lost revenue in brokerage or asset management.
- The expected revenue from the business of the company is thus reduced by the forecast error with some factor that accounts for the relative importance of these two aspects.
- *Formula*

→ These profits can now be used to determine the optimal bias for investment banks.

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

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Competitive bias

Competitive bias

→ We can now use the profits of the investment bank to obtain the bias in their recommendations.

- If we assume that investment banks are competitive, then their profits are zero.
- We can use the requirement to have zero profits to determine the bias which is compatible with this condition by inserting for the forecast error.
- What we see is that the more important future business is relative to the forecast error, a lower α_B, the bias increases. This is obvious as the forecast error increases in the bias and the lower α_B requires a larger forecast bias to retain the zero profits.
- Reversely, the more important the income from investors making use of the analyst reports, the lower the bias will be.

→ The optimal bias of the investment bank still depends on the probability that it obtains the future business from the company, p_i. We will therefore now investigate the decision of the company in allocating their future business to an investment bank.

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- Companies are not passively waiting for investment banks to show a positive bias in their forecasts to gain additional business.
- They make an active decision who to provide this future business to and also they decide how much information to provide.
- We will now see how this will affect the bias investment banks have in their forecasting of the stock price.

Company profits

Company profits

→ Companies benefit from a positive bias, but they face costs providing information to financial analysts.

- Companies prefer positive recommendations as this usually boosts the share price and thereby the payment to senior managers which are commonly linked to the share price; hence a positive bias is preferred by companies. With multiple investment banks providing their forecasts, the benefits arise from the average bias shown.
- The relative weight assigned to the value of the bias is α_C.

- Companies need to provide information to the financial analyst. This information will increase the precision of signal financial analysts obtain, thus the variance σ_i^2 reduces. Providing such information is costly, in providing the information in the first place, but also as it might reveal information competitors might find useful. Hence there are costs for providing information to each of the financial analysts.
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Optimal bias

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→ We can now maximize the company profits by choosing the allocation of future business and the information precision optimally.

- Companies seek to maximize their profits by optimally allocating their investment banking business.
  - In addition they also decide on the precision of information they provide. Companies will maximize these two aspects simultaneously.
- Thus companies maximize their profits, subject to the probabilities of allocating their future business to investment banks summing up to one.
- The first order condition for the optimal allocation of future investment banking business can easily be derived after inserting for the bias that ensures investment banks make no profits.
- Similarly the optimal information precision can be obtained. Here $\frac{1}{\sigma_i^2}$ can be interpreted as the information precision.
- Combining these two conditions, and noting that probabilities add to 1, we can solve for the optimal bias. It is easy to see that this bias is positive.
- If we set this expression equal to the bias investment banks have if no profits are generated allows us to determine the optimal precision of information.
  - Using this result and inserting this into the first order conditions here, will also give us the probability an investment bank obtain their future business. We are, however, not much interest in these aspects and focus on the bias.

→ We can now provide some more analysis of the bias investment banks will have in their forecast of companies' prospects.

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

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

- This gives $b_i = \frac{\alpha_C}{2N} \frac{1}{\frac{\partial C_i}{\partial \frac{1}{\sigma_i^2}} \left(\frac{1}{\sigma_P^2} + \frac{1}{\sigma_i^2} \right)^2} > 0$
- Setting this and the competitive bias of investment banks equal, we get the precision of information

Optimal bias

→ We can now maximize the company profits by choosing the allocation of future business and the information precision optimally.

- Companies seek to maximize their profits by optimally allocating their investment banking business.
- In addition they also decide on the precision of information they provide. Companies will maximize these two aspects simultaneously.

- Thus companies maximize their profits, subject to the probabilities of allocating their future business to investment banks summing up to one.
- The first order condition for the optimal allocation of future investment banking business can easily be derived after inserting for the bias that ensures investment banks make no profits.
- Similarly the optimal information precision can be obtained. Here $\frac{1}{\sigma_i^2}$ can be interpreted as the information precision.
- Combining these two conditions, and noting that probabilities add to 1, we can solve for the optimal bias. It is easy to see that this bias is positive.
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  - If we set this expression equal to the bias investment banks have if no profits are generated allows us to determine the optimal precision of information.
  - Using this result and inserting this into the first order conditions here, will also give us the probability an investment bank obtain their future business. We are, however, not much interest in these aspects and focus on the bias.

→ We can now provide some more analysis of the bias investment banks will have in their forecast of companies' prospects.

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- The more important the bias is for the company α_C, the higher it is
- More financial analysts reduce the bias

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- More financial analysts reduce the bias as each investment bank has less influence

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- Problem and model assumptions
- Competitive investment banks
- Optimizing companies
- Summary

- We can now derive some conclusions from this model and discuss its implications for analyst recommendations in general.

Seeking additional revenue

Seeking additional revenue

→ Providing financial analyst reports solely for the benefit of investors is not profitable, therefore investment banks use analyst report to attract other business, most notably from the company they are covering.

- Positive analyst coverage should increase the value of the stocks of a company and this in itself is beneficial as it prevents hostile takeovers and makes mergers when using shares to pay for the merger more attractive; in addition the management compensation is often linked to the stock price and hence management benefits from this being high, too.
- Companies are more likely to choose investment banks that are positively inclined towards them as the positive bias gives them the share price increase that benefits them. They use this mechanism to induce the positive bias in analyst recommendations.

- Investment banks are very competitive and will seek to obtain any business a company might provide in the future. Traditionally it is assumed that this competition is based on the price for such services or their quality.
- Here we find another way of competing for investment banking business, namely by providing a positive bias in analyst reports.

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- More financial analyst means more competition, but also smaller chances of obtaining the future business, which limits the benefits of the bias, which will therefore reduce.

→ We see that investment banks compete for the business of companies by providing analyst reports that are positively biased.

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

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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

Seeking additional revenue

→ Providing financial analyst reports solely for the benefit of investors is not profitable, therefore investment banks use analyst report to attract other business, most notably from the company they are covering.

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- Positive analyst coverage should increase the value of the stocks of a company and this in itself is beneficial as it prevents hostile takeovers and makes mergers when using shares to pay for the merger more attractive; in addition the management compensation is often linked to the stock price and hence management benefits from this being high, too.
- Companies are more likely to choose investment banks that are positively inclined towards them as the positive bias gives them the share price increase that benefits them. They use this mechanism to induce the positive bias in analyst recommendations.

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- Investment banks are very competitive and will seek to obtain any business a company might provide in the future. Traditionally it is assumed that this competition is based on the price for such services or their quality.
- Here we find another way of competing for investment banking business, namely by providing a positive bias in analyst reports.

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- The more important the bias is to companies, the larger the actual bias will be; This is because investment banks competing for the future business from companies will be selected more strongly on their bias by the company and they react more strongly to this incentive by competing with other investment banks showing a larger bias.
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▶ More financial analyst means more competition, but also smaller chances of obtaining the future business, which limits the benefits of the bias, which will therefore reduce.

→ We see that investment banks compete for the business of companies by providing analyst reports that are positively biased.

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
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- As all investment banks will face the pressure to show a positive bias in their recommendations for all stocks, we will generally see that financial analysts' recommendations are positively biased.
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Andreas Krause
Department of Economics
University of Bath
Claverton Down
Bath BA2 7AY
United Kingdom

E-mail: mnsak@bath.ac.uk