



Chapter 7.3.4

Security flipping

- Investment banks generate income from the underwriting spread and it could be assumed that they seek to maximise this income.
- However, investment banks have also other sources of income from which they can benefit. In the context of underwriting, this is the trading of the security after the securities have been allocated to investors.
- We will investigate how investment banks trade off these two sources of income and how this will lead to investment banks finding some degree of underpricing optimal.

Inducing trading in the security

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- Underwriting encompasses the sale of securities to investors. While private placements can be found, in many cases the securities are subsequently traded on an exchange. Investment banks are also offering brokerage services and thereby benefit from securities being traded. We will explore how the trading of securities might affect the pricing decision of investment banks in the underwriting process.
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 - Investment banks earn the underwriting fee from the issuer of a security.
 - Once the security is trading on an exchange, it will also generate income by traders submitting orders through the brokerage division of the investment bank.
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 - Those investors that have been allocated securities will often be clients of the underwriting investment bank. Given that the investment bank discretion over the allocation of securities with underpricing, they will prefer allocating securities to their own clients.
 - These clients will then most likely use this investment bank's brokerage division if they sell the security and the bank earns its brokerage commission from the trade.
 - ▶ This implies that investment banks want more trading in the security, especially more trading by their own clients, such as those they have allocated securities to.
- We will now look at the connection between trading and underpricing.

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Excess demand

- If we observe under pricing, there will be excess demand and we seek to characterise this excess demand here.
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 - If an issue is underpriced, it implies that there is more demand for the security at that price than there are securities sold. This is the reason the price will rise, there is excess demand compared to the number of securities issued.
 - *Formula*
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 - In the allocation of securities the total demand needs to be rationed and only a fraction of the demand at this price can be met. How this rationing occurs is secondary here, it could be that some investors obtain their full allocation, while others receive none, or it could be that every investor receives a fraction of their demand; any combination of these extremes are also possible.
 - This then implies that a fraction of the demand remains unmet. There are investors who are willing to purchase the security at that price, but are not able to do so due to the rationing.
 - ▶ We assume that at the equilibrium price to which the security jumps after trading commences is the one in which demand equals supply, where supply is the total number of securities issued.
- Having determined the excess demand, we can now use this to derive the trading demand and the profits of the investment bank.

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Investment bank profits

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 - The income from underwriting is a fraction of the proceeds the company obtains; this consist of the number of securities sold at the offer price.
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 - As the offer price increases, the demand will reduce. We will need to take this into account when maximising the profits of the investment bank.
 - For this purpose we define the demand elasticity.
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 - We now maximize the profits of the investment bank by choosing the optimal offer price.
 - The first order condition for this maximum has to be met.
 - Solving this conditions gives us the result obtained here, where the optimal offer price will be a fraction of the market clearing price.
- We have now obtained the optimal offer price in relation to the market clearing and can continue to analyse its property.

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Investment bank profits

- ▶ Investment banks charge an **underwriting fee** on the **proceeds** of the issue and a **brokerage fee** on any **trading activity**
- ▶ Profits: $\Pi_B = fS\hat{Q} + \hat{f}(1 - \gamma)\hat{Q}S^*$

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Underpricing

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Summary

- We can now summarize the benefits of underpricing to the profits of investment banks through increased brokerage income.
 - ▶ As the allocation of securities requires rationing, some investors who value the security highly will not be allocated the security. At the market clearing they are still willing to purchase the security as they believe it to be valued higher; they will want to buy the security.
 - ▶ Investors allocated the security might think that it is worth more than the offer price, but less than the market clearing price. This will induce them to sell the security at the market clearing price as they believe the security to be worth less.
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 - The resulting trade generates brokerage income for the investment bank.
 - The issuer of the security makes a loss from underpricing as their proceeds are less than they could have achieved at the market clearing price. Thus, issuers are making a loss so that investment banks can increase their profits.
- We have seen how investment banks can use underpricing to incite trading of securities at the expense of the issuers of securities. We therefore have a clear conflict of interest between the interests of the investment bank to obtain the maximal revenue from the underwriting and the issuer seeking to obtain the highest possible proceeds of the issue.

Summary

- ▶ Investment banks will **underprice** issues to generate **demand** from traders not allocated the security but valuing it above the offer price

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Summary

- ▶ Investment banks will underprice issues to generate demand from traders not allocated the security but valuing it above the offer price
- ▶ Those allocated the security will include some who value it **below** the equilibrium price and sell

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