Andreas Krause

Investment banks as information providers

- We interpret investment banks as intermediaries between market participants
- Unlike many other intermediaries, investment banks are informed and we will consider the impact this might have on the decisions of other market participants
- It will be a recurring theme in many of the models we consider that investment banks are better informed than their clients or the general public
- This informational advantage of investment banks will impact the decisions of their clients, but knowing they are better informed will also affect investment banks themselves
- In this topic we will look at the incentives of investment banks to sell their information, as well as the information to be bought, and how the better information of investment banks affects the decision of security issuers

Investment banks as intermediaries

- Investment banks facilitate the issuing and trading of securities
- They act as an intermediary between the seller or issuer and a buyer
- It is commonly assumed that intermediaries are uninformed
- Investment banks are often better informed than their clients

→ Investment banks do more than bring buyers and sellers of securities together

→ Investment banks take a limited active role in securities markets, they primarily offer advice to buyers and sellers of securities. In this sense their role as intermediary is much more limited than retailers, for example, who purchase goods and then seek to sell them to individuals.

- Through their advice, investment banks nevertheless facilitate the buying and selling of securities; through the information they hold, they advise their clients and this reduces asymmetric information between buyers and sellers, or increases it to the benefit of clients. This advice is often given to the issuers of securities, most commonly companies, who seek to sell securities to the public. The facilitation of trading also includes the purchase or sale of large stakes in companies in mergers & acquisitions.
- Investment banks act as an intermediary through providing information to their clients seeking to buy or sell (issue) securities. Their role as intermediary is not that they purchase the securities and subsequently sell them to different clients, only in securities underwriting and market making might such purchases occur, but they are quickly reversed. Investment banks therefore are different from most other intermediaries.
- In many cases it is assumed that intermediaries are uninformed about the goods they purchase and sell, they are only reacting to market demand. This is very different with investment banks, who are informed about the values and qualities of the securities.
- Not only are investment banks informed, they are commonly better informed than clients. Their expertise in the valuation of securities and knowledge of the market allows them to provide valuable advice to their clients. Investment banks generate this information through their expertise, but also by having access to other market participants who are willing to provide them with information. Hence, investment banks are not always the best informed market participants, but better informed than most of their clients.
- [⇒] Investment banks are more than a market place where seller know they will more easily find a buyer and buyers are confident to find a seller. The information they hold will affect the decisions of buyers and sellers alike and ultimately affect prices.

→ It will be a recurring theme that investment banks are better informed than their clients, but also that this might lead to a conflict of interest as the interests of investment banks and their clients are not well aligned. Many features in the contracts between investment banks and their clients will be the result of this moral hazard and the contractual arrangements seek to align interests.

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Investment banks providing information

- If investment banks are informed, their information cannot be verified
- Their own actions will reveal whether they hold this information
- The information must be sufficiently valuable to justify its price
- Clients will only purchase information if it is valuable and they can verify it is truthful

Investment banks providing information

- → Investment banks are generally said to be well-informed, but they could use this information themselves to buy or sell securities rather than providing the information to their clients. In order for investment banks to provide advice, they need to be willing to sell their information, either instead of or in addition to making use of the information themselves. The willing ness to sell information is the topic of the first model we consider in more detail.
- When selling information, a problem arises from its very nature: it cannot be verified that information exists and that the information provided is actually true. An investment bank could claim to hold information and then obtain the proceeds from its sale, only for it then to be revealed that it does not exist. An inspection of information is impossible as this would necessarily reveal the information prior to purchase, making the purchase itself impossible.
- Purchasers need to seek a different way to confirm that the information actually exists; this confirmation can come from the actions the investment bank itself takes, for example any trading it does using its own funds. Investment banks not holding the information might be able to copy the actions of an investment bank holding information, therefore it must be ensured that such a strategy is not profitable to them.
- While investment banks must be willing to sell the information, thus the price must be sufficiently high to compensate them for revealing their information rather than using it exclusively themselves, it also cannot be too high as it must be beneficial for the purchaser to pay this price.
- [⇒] The requirement to have a price that is high enough to make it profitable for investment banks to sell information, to have a price that is low enough for purchasers to find obtaining the information profitable, and to ensure investment banks only sell information they actually have obtained, will provide constraints on the feasibility of selling information.
- → The coming model will look at the conditions that need to apply for such a sale and purchase of information to occur.

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Chapter 3

Selling information

→ The model we are going to discuss is based on Chapter 3 of the book 'Theoretical Foundations of Investment Banking'. A more detailed description of the model, additional steps for its solution, and a more in-depth discussion of results can be found there.

Discussion of the model results

- Investment banks can provide information to market participants, but only negative news can be verified easily from the actions of the investment bank
- Negative news are seen as more reliable as they are only sold by informed investment banks, hence market prices should adjust more to negative news
- Will investment banks sell information they do not hold?
- Concerns about their reputation would limit their ability to sell non-existent information

Discussion of the model results

→ Now that we have derived the main results of the model, as far as relevant for us, we will briefly discuss some implications as well as limitations of this model. This will allow us to interpret the model in its context of the initial problem and enables us to apply it appropriately in a realistic context.

- We found that investment banks can only provide negative news to market participants as positive news could not easily be verified. Thus investment banks providing positive news i much less reliable, as other investment banks without any information would be able to adjust their actions such that they are consistent with the information they seek to sell, only for negative news would this be too costly.
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    - If negative news is sold, and verified, the purchaser can be sure to have obtained the information from an investment bank that holds it. For positive news, the information might have been provided by investment banks that do not hold this information; hence it can be seen as much less reliable. Purchasers will therefore put a much larger weight on negative news than positive news.
    - This will result in stronger reactions to negative news than positive news and prices will adjust more to negative news than positive news.
- [?] We have identified that investment banks can only sell negative news as positive news cannot be verified. However, investment banks frequently sell positive news, and their financial analysts are even biased towards providing overly positive news. Even though this information cannot be verified, will investment banks sell positive news even if they do not hold this information?
- [!] Information might not be verifiable at the time of purchase, but if investment banks do not hold the information they sold, their information will not be found to be correct very frequently. This will over time reveal over time that the investment bank is selling information they do not hold, or information that is very unreliable, and the value of their information will reduce. Investment banks rely on their reputation of being informed and selling non-existent information will lower their reputation. It is therefore not in their long-term interest to sell information they do not hold.

→ The model shows from a purely monetary perspective under which conditions the sale of information is profitable and under which conditions this information is bought. In common with models, it only considers one aspect of a problem, but does not address other aspects that will affect a decision. Here the reputation of investment banks when selling non-existent information has been neglected. When analysing real problems, we cannot neglect these additional aspects, but for a complete analysis have to include them. Thus models we discuss, and in general, might only give you a partial answer; it will often be necessary to combine multiple models, both formal models as presented here or informal models like the consideration of reputation.

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- [!] Information might not be verifiable at the time of purchase, but if investment banks do not hold the information they sold, their information will not be found to be correct very frequently. This will over time reveal over time that the investment bank is selling information they do not hold, or information that is very unreliable, and the value of their information will reduce. Investment banks rely on their reputation of being informed and selling non-existent information will lower their reputation. It is therefore not in their long-term interest to sell information they do not hold.

→ The model shows from a purely monetary perspective under which conditions the sale of information is profitable and under which conditions this information is bought. In common with models, it only considers one aspect of a problem, but does not address other aspects that will affect a decision. Here the reputation of investment banks when selling non-existent information has been neglected. When analysing real problems, we cannot neglect these additional aspects, but for a complete analysis have to include them. Thus models we discuss, and in general, might only give you a partial answer; it will often be necessary to combine multiple models, both formal models as presented here or informal models like the consideration of reputation.

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- Investment banks can provide information to market participants, but only negative news can be verified easily from the actions of the investment bank
- Negative news are seen as more reliable as they are only sold by informed investment banks, hence market prices should adjust more to negative news
- Will investment banks sell information they do not hold?
- Concerns about their reputation would limit their ability to sell non-existent information

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→ Now that we have derived the main results of the model, as far as relevant for us, we will briefly discuss some implications as well as limitations of this model. This will allow us to interpret the model in its context of the initial problem and enables us to apply it appropriately in a realistic context.

- We found that investment banks can only provide negative news to market participants as positive news could not easily be verified. Thus investment banks providing positive news i much less reliable, as other investment banks without any information would be able to adjust their actions such that they are consistent with the information they seek to sell, only for negative news would this be too costly.
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Investment banks affecting security properties

- If investment banks are affecting the information investors have, this will affect the behaviour of issuers
- Issuers of securities might change the characteristics of their securities
- They might increase their efforts to generate profits, or reduce risks they take

⟹ Using investment banks can affect the quality of securities offered

→ Investment banks provide information about existing securities as well as securities companies are seeking to issue. The information will affect investor behaviour and thus prices. If issuing securities, the information provided by investment banks will influence the proceeds the company can obtain from their issue, which will affect their ability to make investments. Even if not selling securities, companies are interested in the value of their securities; often they give an indication for the health of the company, managers are often rewarded using stocks, and a high valuation also deters unfriendly takeovers of the company. Companies therefore have an interest in the value of their securities.

- Given this influence of the information investment banks provide on the value of securities, there are incentives for issuers to ensure that investment banks can provide positive information. This will be the case for issuers planning to issue new securities, but also for those issuers whose securities are already traded.
- There may be an incentive to exert costly effort change the characteristic so the security so that investment banks can provide more positive information. Of course the benefits of doing so have to exceed the costs of this increased effort.
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    - The characteristics could be changed through an increased effort by management and other employees to increase profits. This might be achieved through increased work efforts, such as a focus on reducing moral hazard by employees and management, reducing errors, a better coordination of activities, expansion of the business into more profitable markets rather than those favoured by management for personal reasons, or hiring more competent employees.
    - An increase in value, and hence positive information, can also be obtained when reducing risks. Attention to risks, their pro-active management, the hedging of risks, a change of strategy by expanding into less risky business areas, are all able to reduce risks.
- [⇒] The presence of investment banks does not only affect the information investors have access to, but it will also affect the behaviour of the issuing company. Unlike many other intermediaries, investment banks affect the quality of the securities. Most intermediaries will have no or very little influence on the quality of the products they sell. Investment banks are different in this respect and their influence on the market is more profound.

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- There may be an incentive to exert costly effort change the characteristic so the security so that investment banks can provide more positive information. Of course the benefits of doing so have to exceed the costs of this increased effort.
-
    - The characteristics could be changed through an increased effort by management and other employees to increase profits. This might be achieved through increased work efforts, such as a focus on reducing moral hazard by employees and management, reducing errors, a better coordination of activities, expansion of the business into more profitable markets rather than those favoured by management for personal reasons, or hiring more competent employees.
    - An increase in value, and hence positive information, can also be obtained when reducing risks. Attention to risks, their pro-active management, the hedging of risks, a change of strategy by expanding into less risky business areas, are all able to reduce risks.
- [⇒] The presence of investment banks does not only affect the information investors have access to, but it will also affect the behaviour of the issuing company. Unlike many other intermediaries, investment banks affect the quality of the securities. Most intermediaries will have no or very little influence on the quality of the products they sell. Investment banks are different in this respect and their influence on the market is more profound.

→ The model here will look at the conditions under which the quality of a security increases due to the presence of investment banks and under which conditions the quality of securities actually reduces.

Andreas Krause

Chapter 4.2

Quality of securities issued

→ The model we are going to discuss is based on Chapter 4.2 of the book 'Theoretical Foundations of Investment Banking'. A more detailed description of the model, additional steps for its solution, and a more in-depth discussion of results can be found there.

Discussion of the model results

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- ! Reduced security quality occurs if the company is difficult to value, posing substantial risks to the investment bank, which they might seek to avoid as they lack expertise

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- The presence and use of investment banks affect the incentives of companies to adjust the characteristics of their securities to maximize their own profits
- Investment banks are more than a traditional intermediary, they do provide information and affect the characteristics of securities

Summary of key results

→ We can now summarize the key results we have obtained about the influence of investment banks in markets.

- - Investment banks find it profitable to sell information they have obtained, in addition to acting on this information themselves. With their ability to sell information, the costly acquisition of such information will generally be beneficial to investment banks.
  - Information cannot directly be verified, forcing purchasers of information to rely on other indications of its existence, the actions of the investment bank. We have seen that its actions can only be seen as certainly reflecting their information truthfully if the information is negative. However, we have also discussed, that reputational concerns by investment banks would limit their willing ness to sell information they do not hold.
  - Purchasing information is only profitable if the information is sufficiently different from what the purchaser already knows, requiring even more negative information for it to be purchased.
- - Investment banks do not only provide information, but with investors acting on this information, they will indirectly affect the incentives of companies. With investment banks providing more information, the reaction of investors will be stronger than if they relied on their own assessment of companies, providing more incentives for companies to adjust their behaviour and take into account this additional information.
  - The reaction of companies is to adjust the quality of the securities investment banks analyse. Companies will take into account the information provided by investment banks and in order to maximize their own profits adjust their profitability or risks, taking into account their own costs for doing so.
- Investment banks are not a traditional intermediary which has little or no information about the products they sell. Investment banks sell information, but in doing so, they also affect the behaviour of companies. Their presence has a profound impact on the issuers of securities and the securities themselves. Overall, this effect improves the quality of securities.

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- - Investment banks do not only provide information, but with investors acting on this information, they will indirectly affect the incentives of companies. With investment banks providing more information, the reaction of investors will be stronger than if they relied on their own assessment of companies, providing more incentives for companies to adjust their behaviour and take into account this additional information.
  - The reaction of companies is to adjust the quality of the securities investment banks analyse. Companies will take into account the information provided by investment banks and in order to maximize their own profits adjust their profitability or risks, taking into account their own costs for doing so.
- Investment banks are not a traditional intermediary which has little or no information about the products they sell. Investment banks sell information, but in doing so, they also affect the behaviour of companies. Their presence has a profound impact on the issuers of securities and the securities themselves. Overall, this effect improves the quality of securities.

→ Investment banks play an important role in the market, providing information to investors and companies, but also affecting the market characteristic itself.

Summary of key results

- Investment banks find it profitable to sell information, while also acting themselves on this information, but this is only verifiable for negative informationand investors find it only profitable to purchase information that is sufficiently negative
- The presence and use of investment banks affect the incentives of companies, who adjust the characteristics of their securities to maximize their own profits
- Investment banks are more than a traditional intermediary, they do provide information and affect the characteristics of securities

Summary of key results

→ We can now summarize the key results we have obtained about the influence of investment banks in markets.

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  - Investment banks find it profitable to sell information they have obtained, in addition to acting on this information themselves. With their ability to sell information, the costly acquisition of such information will generally be beneficial to investment banks.
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