Chapter 6.2

Accepting merger offers

Outline

- Problem and model assumptions
- Fixed fee contract
- Conditional fee contract
- Contingent fee contract
- Summary

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Outline

- One of the key roles of investment banks is to value companies involved in mergers and ensure that the merger price is set such that their client benefits from it.
- Investment banks do not only provide valuations, they also make suggestions on whether a target should accept an offer they have received or what price a bidder should offer.
- These suggestions, although informed by the valuation they have conducted, will also have to take into account whether better offers might emerge in the future, or whether a lower offer would be accepted.
- We will be looking at this advice by investment banks to their clients and see how investment banks that are seeking to maximize their own profits will be making recommendations and hw they differ from what is optimal for their client.
- We will see that a conflict of interest emerges and look at different ways investment banks are paid for their advice and how this affects the conflict of interest.

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Outline

- We will look at three different type of fee contracts, one in which the investment bank obtains a fixed fee, regardless of the outcome of the merger, one in which the investment bank is paid a fee only if the merger is completed, and finally a contract in which the investment bank is paid according to the merger value, but only if the merger is completed.
- We compare the conflicts of interest between these contracts and will establish which contract shows the lest conflicts of interest.

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- We will be looking at the incentives of clients to accept merger offers or make merger offers and compare this with the investment bank's advice, assuming that their advice is always followed.
- To this effect we will compare the profits investment banks and their clients make when accepting or declining an offer, or making one type of offer instead of another type of offer.

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Investment banking advice

- Investment banks advice clients on whether to accept a merger offer being made to them
- Investment banks advice clients on making merger offers for companies they want to acquire
- This advice might be biased in order to maximize the profits of investment banks rather than the surplus of clients

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Investment banking advice

→ The role of investment banks is limited to providing advice to the companies involved in mergers; investment banks do not take any active role in a merger.The advice covers many facets of the merger process, from strategic considerations, identifying suitable partners, and tactics to secure a merger goes ahead as well as tactics to prevent an unwanted merger to be completed. A key part in this plays the determination of the price at which the merger commences, either the purchase price for cash offers or the exchange ratio in share offers, or a combination of those.

- Given an offer price, and neglecting other factors here, investment banks provide advice whether an offer received should abe accepted. An offer consists not only of a price, but also the payment form, cash or shares typically, and other arrangements concerning the future leadership and governance of the joint company; these additional aspects we will neglect in our considerations. Companies will commonly yield to the advice of the investment bank and accept their recommendations as they are assumed to have better information than their client.
- If the company is making an offer to purchase another company, investment banks will advice on structuring this offer. Again, this will extend beyond the price which is offered and their clients usually follow the advice of investment banks closely.
- Investment banks seek to maximize their own profits and not necessarily that of their clients. This might lead to a conflict of interest between the interests of the client and the investment bank; advice given might be biased towards the interest of the investment bank to the detriment of their client.

→ While merger offers are more complex than merely offering a specific price, whether in cash or shares, we will focus on this aspect only. However, similar considerations can be made for other aspects of the merger agreement, although they would be more difficult to quantify and model.

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Merger offers

- Assume a merger offer to a target with their surplus being V_L has been made and can be accepted
- A better offer with surplus $V_H > V_L$ can happen with probability π if the original offer is rejected
- A merger offer by a bidder with surplus V_L is considered and it is certain the target will accept this
- Alternatively, an offer with surplus $V_H > V_L$ can also be made, but it will only be accepted with probability π

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Merger offers

→ Focussing solely on the offer price of a merger, we can now look at the impact that accepting such an offer has on the company. The criteria will be the surplus a merger creates to the client. Surplus in the joint company is generated from synergies, stronger market positions, and other strategic advantages of the merger. If purchasing another company at a higher price, the surplus to the client will reduce as he has to pay more for the same synergies; a higher price for the target in a merger will be beneficial as they obtain a higher price and the surplus will be the difference between the price they are offered and the current value of their company.

- ▶
  - An offer has been made to a target which to them generates a surplus V_L, thus the offer price exceeds the current value of the company by this amount.
  - The investment bank can now simply suggest to accept this offer and assuming the company follows this advice, the merger will be completed.
- ▶
  - However, the target company might get a better offer which gives them a higher surplus. This might happen if another bidder emerges and makes a higher offer or the current bidder increases its offer. Such an improved offer is not certain to emerge, though.
  - Such an improved offer will only materialise if the lower offer is rejected. Once an offer has been rejected, it will not be revived if a better offer does not emerge. Therefore the merger might never be completed.
- ▶
  - If the client is a bidder, they can make an offer that generated them a low surplus due to the high offer price this required.
  - A high offer will, however, be accepted with certainty and the merger will be completed.
- ▶
  - Instead of a high offer, the bidder could make a low offer, which generates them a higher surplus.
  - This lower offer may not be accepted and the merger may not go ahead.

→ We have a situation in which a merger with a low surplus is certain to go ahead and a merger with a high surplus is only going ahead with some probability π. For an optimal decision, companies would have to weigh up the certainty of a low surplus against an uncertain high surplus. With investment banks providing advice and the acceptance or not of an offer as a target, or the offer price for a bidder, their considerations will drive the decision of the company.

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Investment banking cost

- If the current offer V_L is accepted investment banks have costs C^*
- If the offer is rejected, the costs increase to $C > C^*$
- We investigate the optimal decision of clients to accept or reject V_L
- and the optimal advice of investment banks

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Investment banking cost

→ We now consider the incentives of the investment bank providing advice in mergers. They will not be concerned about the surplus their clients obtain, but their own profits.

- Investment banks face costs when advising clients, such as the time they spent on advising their client and analysing offers. If the initial offer is accepted, investment banks face a certain cost C^*.
- If an offer is rejected, investment banks need to work on a revised offer or consider another offer that is being made, which will increase their costs to C. These costs cover the additional time needed in dealing with the subsequent offers or structuring another offer.
- What we are interested in is to look under which conditions, clients would accept or make the offer which generates the low surplus.
- We then contrast this with the advice given by investment banks who maximize their own profits.

→ We will look at different types of remuneration for the investment bank; this allows us to assess the degree of conflicts of interest between clients and their investment bank and thereby determine which contract is best suited to minimize and such conflicts of interest.

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- We will first look at a contract in which the investment bank is paid a fixed fee, regardless of the outcome of the merger.
- Such a contract implies that the investment bank is paid a fee for providing advice, but has no interest whether the merger goes ahead or whether it generates a high or low surplus.

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Client decision

- Regardless of the decision of the client, the investment bank charges a fee F
- Clients accepting the low offer, obtain the low surplus and pay the fee to the investment bank
- Clients holding out for a high offer, obtain the high surplus only if such an offer is made and pay the fee regardless of the outcome
- They prefer the low offer if the net surplus is bigger
- $V_L - F \geq \pi V_H - F$

$\Rightarrow \pi \leq \pi_C^* = \frac{V_L}{V_H}$

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Client decision

→ We will first look at the decision of their client whether to accept a merger offer or make an offer with a low surplus.

- With a fixed fee contract, the investment bank charges a fee F, which is not dependent on the outcome of the merge.r
- If a low offer is made or received, the client will obtain the low surplus and from this they will pay the fee to the investment bank.
- Rejecting this low offer and waiting for an offer with a high surplus or having such an offer accepted, only happens with probability π, but the fee to the investment bank has still to be paid.
- The offer with the low surplus is preferred if the surplus net of the fee is larger.
- *Formula*
- [⇒] This can easily be solved for the maximum probability that a better offer is forthcoming or accepted. If this probability is sufficiently low, the offer with a low surplus is preferred. As the fee to the investment bank has to be paid regardless of the outcome of the merger, it is not relevant in the considerations.

→ We have now the optimal threshold for their clients and can compare this with the optimal threshold for the investment bank advising them.

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Investment bank advice

- For low offers, investment banks obtain the fee from their client and face their costs
- For high offers, investment banks obtain the fee from their client and face their costs
- They prefer the low offer if the net surplus is bigger
- $F - C^* \geq F - C$
- As $C > C^*$ the investment bank would always advice accepting the low offer
- A conflict of interest emerges if $\pi > \pi_C^*$

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Investment bank advice

→ We can now compare the profits of investment banks in the case of a low offer being accepted and it being rejected to wait for a better offer.

- If the low offer is accepted, the investment bank obtains its fee and incurs their costs.
- In case the low offer is rejected, the fee investment bank still obtains the same fee, but will now face higher costs.
- The offer with the low surplus is preferred if the surplus net of costs is larger.
- *Formula*
- As we had assumed that the costs when rejecting a low offer are increasing, it is obvious the investment bank would always advise to accept the offer. Their fee does not increase if a better offer is made, but its costs increase. Therefore investment banks seek to minimize costs by advising to accept the lower offer.
- If the probability of receiving a higher offer is above π_C^*, the threshold for their client to accept the low offer, the advice given by the investment bank is not optimal for their client. We have a conflict of interest between the interests of the investment bank, to accept the low offer, and the optimal decision of their client, to wait for a better offer.

→ Having established a conflict of interest if investment banks charge a fixed fee, we can now look at other forms of contracts and see how they compare.

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- In mergers and acquisitions advice fixed fees to investment banks are not common. A common construct is that a fee is only payable if the merger is completed. While certain costs might have to be borne by the company in case a merger never is completed, these costs are often negligible compared to the fees that are paid on completion of a merger and are neglected here.
- We can then compare the conflict of interest between investment banks and their clients of these so-called conditional contracts and the fixed fee contract.

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Client decision

- A fixed fee F is only payable to the investment bank if the merger is completed
- Clients accepting the low offer, obtain the low surplus and pay the fee to the investment bank
- Clients holding out for a high offer, obtain the high surplus only if such an offer is made and pay the fee only in this case
- They prefer the low offer if the net surplus is bigger
- $V_L - F \geq \pi \left(V_H - F\right)$

$\Rightarrow$ $\pi \leq \pi_C^{**} = \frac{V_L - F}{V_H - F} < \pi_C^{*}$

- The offer is less likely to be accepted than with fixed fees as the fee is not payable if the merger does not commence at the higher surplus

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Client decision

- → We again look first at the decision of the client and under which conditions accepting the low offer is optimal.
- ▶ With a conditional contract, the fee to the investment bank is only payable if the merger is completed. Hence, if the low offer is rejected and a high offer never arrives, the company does not have to pay the investment bank a fee.
- ▶ If a low offer is made or received, the client will obtain the low surplus and from this they will pay the fee to the investment bank.
- ▶ Rejecting this low offer and waiting for an offer with a high surplus or having such an offer accepted, only happens with probability π and the fee to the investment bank is onyl paid if such an offer materialises.
- ▶ The offer with the low surplus is preferred if the surplus net of the fee is larger.
- ▶ *Formula*
- ▶ [$\Rightarrow$] The likelihood of a better offer to arrive has to be lower than with a fixed fee. This is because if rejecting the low offer, the company doe snot need to pay the fee unless a better offer arrives. This makes rejecting a low offer less costly than in the case of the fixed fee.
- ▶ Consequently, we see that with conditional fees, lower offers are more likely to be rejected. This is because there are no losses to the company, the fee is not payable in this case.
- → Once again, we will compare the optimal decisions of their client with the advice the investment bank would give.

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Investment bank advice

- For low offers, investment banks obtain the fee from their client and face their costs
- For high offers, investment banks obtain the fee from their client if a better offer arrives and face their costs
- They prefer the low offer if the net surplus is bigger
- $F - C^* \geq \pi F - C$

$\Rightarrow$ $\pi \leq \pi_B^{**} = 1 + \frac{C - C^*}{F}$ and hence $\pi_B^{**} > 1$

- The investment bank would always advice accepting the low offer
- A conflict of interest emerges if $\pi > \pi_C^{**}$ and as $\pi_C^{**} < \pi_C^*$ the conflict of interest covers a wider range

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Investment bank advice

→ We can now compare the profits of investment banks in the case of a low offer being accepted and it being rejected to wait for a better offer.

- If the low offer is accepted, the investment bank obtains its fee and incurs their costs.
- In case the low offer is rejected, the fee investment bank still obtains the same fee, but will now face higher costs.
- The offer with the low surplus is preferred if the surplus net of costs is larger.
- *Formula*
-
  - We find that investment banks would advise their clients to accept a low offer if the chance of a better offer is sufficiently low.
  - This threshold is above 1, as $C > C^*$.
- Therefore investment banks would want their clients to accept the low offer. The reason is that if a better offer does not arrive, the investment bank loses its fee income and faces higher costs. They seek to avoid such a situation by advising clients to accept the low offer. As the fee income does not increase with a higher offer, there is no incentive for the investment bank to accept the risk of not obtaining their fee income.
-
  - As with fixed fees, we have a conflict of interest in that for high likelihoods of better offers to emerge, companies would prefer to wait fr a better offer, but are advised against doing so by their investment banks.
  - The threshold for the conflict of interest is increased, however. The threshold at which the company would wait for a better offer is lower, due to them not paying the fee if no such offer emerges. Therefore the conflict of interest covers a wider range of probabilities π, a conflict of interest is more likely.

→ Having clients pay a fee for the advice only if the merger is completed will increase the conflicts of interest between the investment bank and their clients and is therefore not a contract that can be interpreted as being superior. A key feature of both contracts looked at so far has been that investment banks do not benefit from a better offer. We will therefore look at such a contract next.

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- In contingent fee contracts the fee paid to the investment bank will be a fraction of the value of the transaction, and this will only be paid if the merger is completed.
- Here the investment bank will benefit from a better offer, but on the other hand will not obtain any fee income if such a better offer does not materialise.

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Client decision

- Clients pay the investment bank a fraction of their surplus if the merger is completed
- Clients accepting the low offer, obtain the low surplus and pay the fee to the investment bank
- Clients holding out for a high offer, obtain the high surplus only if such an offer is made and pay the fee only in this case
- They prefer the low offer if the net surplus is bigger
- $V_L - fV_L \geq \pi \left(V_H - fV_H\right)$

$\Rightarrow$ $\pi \leq \pi_C^{***} = \frac{V_L}{V_H} = \pi_C^*$

- Clients have the same threshold for accepting a merger offer than with fixed fees

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Client decision

- → We again look first at the decision of the client and under which conditions accepting the low offer is optimal.
- We assume that clients pay a fraction of their surplus as a fee to the investment bank. While it is more common to determine the fee as a fraction of the merger value, it is more convenient to define it this way; by adjusting the relative fee, we can easily transform the fee as defined here into a fee which is defined as a fraction of the merger value. This fee is then only payable if the merger is completed.
- If a low offer is made or received, the client will obtain the low surplus and from this they will pay the fee to the investment bank.
- Rejecting this low offer and waiting for an offer with a high surplus or having such an offer accepted, only happens with probability π and the fee to the investment bank is onyl paid if such an offer materialises.
- The offer with the low surplus is preferred if the surplus net of the fee is larger.
- *Formula*
- [⇒] The threshold in the likelihood of accepting the low offer is identical to the case of fixed fees.
- The threshold is identical to that with fixed fees as companies retain a fraction $1 - f$ of their surplus, regardless of the surplus obtained. With fixed fees, the surplus was reduced by this fee and in both cases these reductions are equivalent.
- → Yet again, we will compare the optimal decisions of their client with the advice the investment bank would give.

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Investment bank advice

- For low offers, investment banks obtain the fee from their client and face their costs
- For high offers, investment banks obtain the fee from their client if a better offer arrives and face their costs
- They prefer the low offer if the net surplus is bigger
- $fV_L - C^* \geq \pi f V_H - C$

$\Rightarrow$ $\pi \leq \pi_B^{***} = \frac{V_L}{V_H} + \frac{C - C^*}{f V_H}$

- If $f\left(V_H - V_L\right) > C - C^*$, then $\pi_B^{***} < 1$ and the investment bank does not always advise to accept the initial offer
- The conflict of interest is reduced as $\pi_C^{***} = \pi_C^* < \pi < \pi_B^{***} < 1$

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Investment bank advice

- → We can now compare the profits of investment banks in the case of a low offer being accepted and it being rejected to wait for a better offer.
- If the low offer is accepted, the investment bank obtains its fee and incurs their costs.
- In case the low offer is rejected, the fee investment bank still obtains the same fee, but will now face higher costs.
- The offer with the low surplus is preferred if the surplus net of costs is larger.
- *Formula*
- We obtain a threshold for investment banks that is higher than for their clients, thus a conflict persists as investment banks will advise too readily to accept a low offer.
-
  - Provided the differences between the low and high offer is sufficiently large, the threshold will be below 1.
  - This implies that clients are not always advised to accept a low offer. This is because investment banks benefit from a higher offer by increasing their fee and are willing to take the risk of not obtaining any fee if such a higher offer does not materialise.
- In this case, we observe a conflict of interest if the probability of obtaining a better offer is between the thresholds of the client, π_C^* and the investment bank π_B^{***}. This is a smaller area than in the case of fixed fees and we can thus interpret this result as contingent fees reducing conflicts of interest. If the likelihood of obtaining a better offer is sufficiently high, only with a contingent contract will the investment bank advise to reject a low offer.
- → Using contingent contracts, which are the normal form of contracts in mergers and acquisitions advice, reduces conflicts of interest, but it does not eliminate it; as $\pi_B^{***} > \pi_C^*$ some conflict of interest remains. The use of contingent contracts can be seen, however, as an attempt to minimize these compared to other alternative contract forms.

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Minimum offers

- Re-arranging the minimum probabilities for clients and investment banks we get the minimum offers that would induce clients to accept an offer and investment bank to advise to accept
- $V_L^C \geq \pi V_H$
  $V_L^B \geq \pi V_H - \frac{C-C^*}{f}$
- Investment banks would advise to accept offers with lower benefits than is optimal for their clients

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Minimum offers

→ It is unusual to discuss merger offers and their acceptance in terms the probability with which a better offer is made. The more conventional way would be to express these threshold at which offers are accepted in terms of the offer that has been made.

- We can now rearrange the threshold for the probability of obtaining a better offer into the minimum surplus required to accept the lower offer.
- If we do this we obtain a threshold at which the client would accept an offer
- [] and the threshold at which the investment bank would advise to accept an offer.
- We see clearly that investment banks would advise clients to accept a lower offer than clients would like to accept. This difference takes into account the increased costs of the investment bank, $C - C^*$ and the lost fee, f, if a better offer does not emerge.

→ Companies following the recommendation of their investment bank, might too readily accept a low offer. Companies cannot easily take this conflict of interest into account and adjust their reaction to investment bank advice as the investment bank is more informed about the better offer itself, the V_H, but also about the likelihood of obtaining such an offer, π. It will therefore not be easy for a company to reject the advise of their investment bank by taking nto account that they recommend accepting an offer to easily.

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- We can now summarize the key model results and look at some implications this model has.

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Reduced conflicts of interest

- Fixed and conditional fee contracts would have the investment bank always advise to accept an offer
- Contingent fee contracts distort the advice given by investment banks the least
- Investment banks will recommend clients to accept offers that provide too small surplus

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Reduced conflicts of interest

→ We have seen that investment banks advise accepting low offers too readily, but we have also seen that the way investment banks are remunerated is affecting the degree of this conflict of interest.

- We saw that if investment banks charge fixed fees, payable in all circumstances or only payable if the merger is completed, leads to a situation in which investment banks recommend to accept a low offer. In this context any offer that is made, would be recommended to be accepted. This was because investment banks would not benefit from a higher offer, but will face higher costs and in the case of conditional fees the uncertainty whether they will receive any fee income.
- Letting investment banks participate in a higher offer by paying a higher fee if such an offer is received, will distort the advice they provide the least. Wile the advice given is not completely aligned with the interest of their client, its use has minimised the distortion. We can therefore interpret the widespread use of contingent fee contracts as an attempt to align the interests of investment banks and their clients; by offering a contingent fee contract, the investment bank would signal that they are offering advice that is more aligned with the interest of their client and this would give them a competitive advantage in the market over investment banks offering different contracts.
- Despite the use of contingent fee contracts, investment banks will recommend to accept merger offers with lower surplus than is optimal.

→ Investment banks would recommend to accept offers at a lower price than the target company should accept. Similarly, they would advise to make offers that exceed the offer price their client would find optimal.

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Investment bank incentives

- Investment banks have limited incentive to wait for an improved offer
- The higher surplus has to be weighed against the uncertainty of the merger commencing and the higher costs
- This causes investment banks to advise accepting offers that are giving low surplus

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Investment bank incentives

→ The conflict of interest between investment banks and their client has its origins in the way the profits of the investment bank are obtained. It is in particular the increased costs after rejecting an offer and waiting for an improved offer, or making a low offer and then working on an improved offer if this is rejected, that make investment banks recommend to accept the first offer that is made.

- Facing such higher costs, investment banks will face only slightly higher revenue, assuming the difference in an improved offer is not too large; combined with the uncertainty of such an offer being made or being accepted, they prefer the lower but certain profits from a low offer.
- Investment banks weigh up the higher income derived from clients having a higher surplus against uncertainty and higher costs and in many cases these are dominant.
- The result is that investment banks are advising to accept offers that would not be optimal for companies to accept.

→ The advice investment banks give on accepting an offer, or the conditions for making an offer, is driven by their own profits and not their client's profits. This results ina conflict of interest. Given the informational advantage of investment banks it is difficult to assess how big the distortion in their advice is; it follows that not accepting the investment bank's advice to accept an offer may not be an optimal decision. It is, however, always optimal to follow the advice of an investment bank to decline an offer or to mae a high offer to another company. The conflict of interest manifests itself only in advice to accept low offers or make high offers.

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