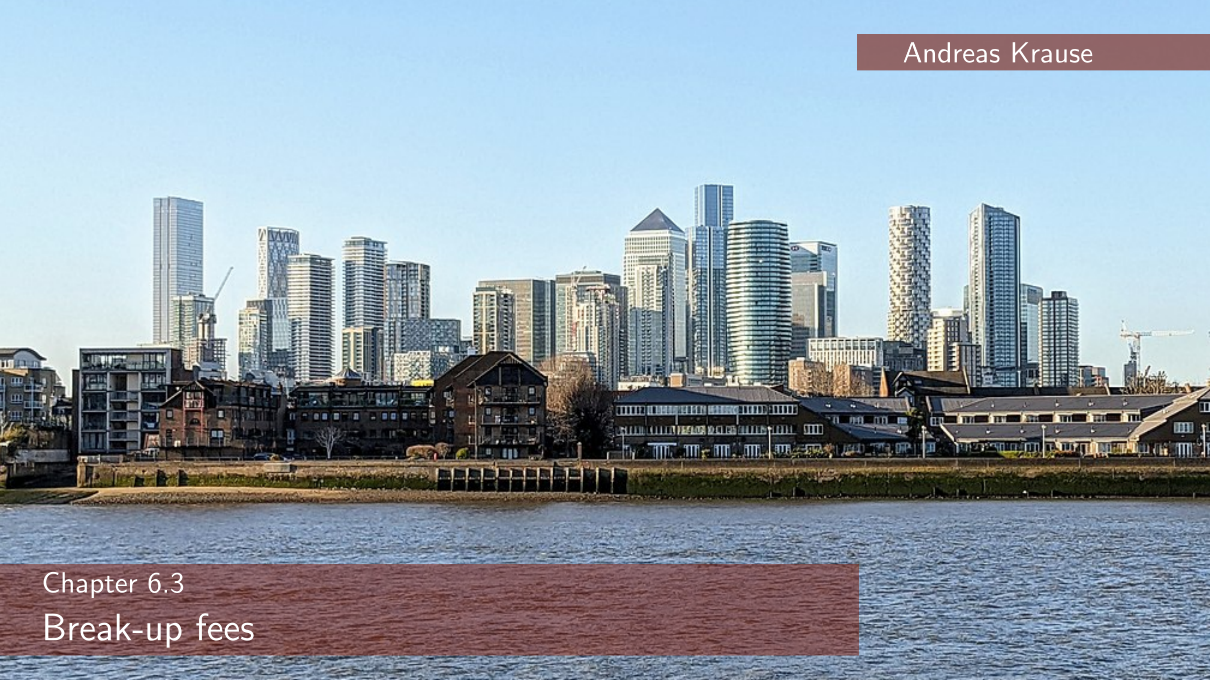

Andreas Krause

Chapter 6.3

Break-up fees

- Investment banks are typically paid through contingent fee contracts, where the fee depends on the merger value and is only paid if the merger is completed
- With this contract, the client is able to abandon a merger and not face any costs of doing so. This might provide incentives to explore mergers and then abandon them at no cost. We will see how a break-up fee that is paid if the merger is abandoned addresses such a problem.

Fees for abandoned mergers

Fees for abandoned mergers

→ Investment banks charge a fee for their advice in mergers and acquisitions. While most of the fees are charged only if the merger is completed, companies are liable to some fees even if the merger is not completed. This is commonly referred to as a break-up fee.

- A key part of the advice investment banks give their clients is whether to go ahead with a merger. They will consider the offer received and advise whether the conditions, incuding the offer price, are acceptable. For the bidder, they would advise on the conditions that should be offered. If the offer conditions are not satisfactory, or an offer by a bidder is unlikely to be accepted, the investment banks might advise to abandon the merger.
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  - At this point in the merger process, investment banks have incurred significant costs from assessing the companies involved, gaining information on the market reaction, and similar tasks investment banks complete.
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  - How much the investment bank should be paid at this stage needs to be resolved. The break-fee might cover the incurred costs fully, might cover these costs only partial, or might allow the investment bank to make a profit. This model will address the size of the break-up fee and investigate the incentives its presence has on the advice given to companies.

→ Investment banks should advise to abandon a merger if it is not profitable for their client to proceed. However, with the contingent fee contract they would not be paid, giving strong incentives against giving such advise. The introduction of a break-up fee might alleviate this conflict of interest to some degree.

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- Investment banks advise on mergers and acquisitions, including conditions for transactions and whether to go ahead

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- Investment banks advise on mergers and acquisitions, including conditions for transactions and whether to go ahead
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Fees for abandoned mergers

- Investment banks advise on mergers and acquisitions, including conditions for transactions and whether to go ahead
- Investment banks face costs even if transactions are not going ahead, such as due diligence investigations

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- Investment banks are paid if a transaction is completed

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- Investment banks advise on mergers and acquisitions, including conditions for transactions and whether to go ahead
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- Investment banks are paid if a transaction is completed, if it is abandoned, how much should they be paid?

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Costs and fees

→ We will now look at the costs investment banks incur in the process of advising their client, as well as the fee they are charging. We will slit the costs into two components, one to explore the merger and the other to complete it. Similarly, we split the fee into two comparable components.

- The contract with the investment bank is agreed at the beginning of the merger process, often before a suitable target has been identified. At this stage the merger value will be unknown as will the probability that any merger will eventually be completed. Only once the investment bank commences with its evaluation of the companies, will they gain a better understanding of these parameters.
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→ We focus our investigation on the break-up fee and its impact on the advice investment banks provide to their clients.

Costs and fees

- Merger value and probability of a merger being completed are unknown

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- Merger value V has distribution $G(V)$, probability of merger π has distribution $H(\pi)$

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Costs and fees

- Merger value and probability of a merger being completed are unknown
- Merger value V has distribution $G(V)$, probability of merger π has distribution $H(\pi)$
- Investment bank has fixed due diligence costs C_0 for any initial work

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- F_0 is the break-up fee

Costs and fees

→ We will now look at the costs investment banks incur in the process of advising their client, as well as the fee they are charging. We will slit the costs into two components, one to explore the merger and the other to complete it. Similarly, we split the fee into two comparable components.

- The contract with the investment bank is agreed at the beginning of the merger process, often before a suitable target has been identified. At this stage the merger value will be unknown as will the probability that any merger will eventually be completed. Only once the investment bank commences with its evaluation of the companies, will they gain a better understanding of these parameters.
-
    - We assume though that the investment bank and the company know the distribution of the merger value; this might be derived from experience by the investment bank from advising on similar mergers.
    - In the same way, we assume that the probability with which a merger is completed also has a known distribution. Again, this might be the result of experience by the investment bank, which they share with their client.
-
    - Merger negotiations will commence for a certain period before abandoning the merger would be advised. During this time the investment bank will conduct an assessment of the companies involved, as well as due diligence of the other company. This will impose costs on the investment bank.
    - Once the merger goes ahead, there will be additional costs to the investment banks. These costs might include the communication of the merger to investors, but also additional due diligence investigations.
-
    - We assume that if the merger is abandoned after the initial evaluation by the investment bank, the client pays its investment bank a fee to cover their costs of the work they have conducted so far, at least partially.
    - Should the merger ho ahead, the full fee is payable to the investment bank.
- This fee F_0 is knows as the break-up fee and will be the focus of out investigation in this model.

→ We focus our investigation on the break-up fee and its impact on the advice investment banks provide to their clients.

Costs and fees

- Merger value and probability of a merger being completed are unknown
- Merger value V has distribution $G(V)$, probability of merger π has distribution $H(\pi)$
- Investment bank has fixed due diligence costs C_0 for any initial work, if the merger goes ahead, additional costs incurred are C
- Clients pay a fee F_0 if the transaction does not commence, and a total of F_1 if it commences
- F_0 is the break-up fee

Costs and fees

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→ We focus our investigation on the break-up fee and its impact on the advice investment banks provide to their clients.

Advice to commence merger after due diligence

Advice to commence merger after due diligence

→ We first look at profits and advice of the investment bank after the initial evaluation of the merger has been completed. At this point the probability of the merger completing and its value are known.

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  - Initially the bank does not know the merger value and the probability with which it can be completed, it will only learn this once it commences its evaluation, which is after the contract with their client has been signed.
  - At the point the investment banks learn this information, they will have completed their initial due diligence investigation and already have incurred costs. It would only be at this point that they could advise their client to abandon the merger.

- Assume that the investment bank recommends to continue with the merger.
  - The investment bank now knows that with probability π the merger will be completed and it will obtain the full fee.
  - If the merger is not completed, it will obtain the break up fee.
  - At this point, the initial costs C_0 have already be incurred, they are sunk costs, and do not affect the decision. The investment bank will, however, consider the additional costs C that are incurred if the merger is continued beyond this point.
- *Formula*
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  - If the investment bank makes profits from advising to continue, it will advise to do so. It is implicitly assumed here that if the investment bank advises to abandon the merger that it is not entitled to the break-up fee. Hence the break-up fee is only payable once the merger has passed the initial evaluation by the investment bank.
  - The investment bank would advise their client to proceed with the merger if the chances of success are sufficiently high. This threshold will also depend on the fees, which we seek to determine. The additional fee income $F_1 - F_0$ has to cover the additional costs, C.

→ We now have established the profits of the bank once it has completed its initial assessment of the merger and we also know at that stage whether it would advise their client to continue with the merger. What we need to establish next is the profits when signing the contract as at that point, the investment bank doe snot know the probability of the merger being completed nor the merger value.

Advice to commence merger after due diligence

- Investment bank learns π and V after the contract is signed

Advice to commence merger after due diligence

- → We first look at profits and advice of the investment bank after the initial evaluation of the merger has been completed. At this point the probability of the merger completing and its value are known.
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  - Initially the bank does not know the merger value and the probability with which it can be completed, it will only learn this once it commences its evaluation, which is after the contract with their client has been signed.
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Advice to commence merger after due diligence

- Investment bank learns π and V after the contract is signed and due diligence costs C_0 are already incurred

Advice to commence merger after due diligence

- → We first look at profits and advice of the investment bank after the initial evaluation of the merger has been completed. At this point the probability of the merger completing and its value are known.
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  - Initially the bank does not know the merger value and the probability with which it can be completed, it will only learn this once it commences its evaluation, which is after the contract with their client has been signed.
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Advice to commence merger after due diligence

- Investment bank learns π and V after the contract is signed and due diligence costs C_0 are already incurred
- Profits of investment bank are the fee if the transaction commences

Advice to commence merger after due diligence

→ We first look at profits and advice of the investment bank after the initial evaluation of the merger has been completed. At this point the probability of the merger completing and its value are known.

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  - The investment bank now knows that with probability π the merger will be completed and it will obtain the full fee.
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Advice to commence merger after due diligence

- Investment bank learns π and V after the contract is signed and due diligence costs C_0 are already incurred
- Profits of investment bank are the fee if the transaction commences, alternatively the fee if it is abandoned

Advice to commence merger after due diligence

→ We first look at profits and advice of the investment bank after the initial evaluation of the merger has been completed. At this point the probability of the merger completing and its value are known.

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  - Initially the bank does not know the merger value and the probability with which it can be completed, it will only learn this once it commences its evaluation, which is after the contract with their client has been signed.
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Advice to commence merger after due diligence

- Investment bank learns π and V after the contract is signed and due diligence costs C_0 are already incurred
- Profits of investment bank are the fee if the transaction commences, alternatively the fee if it is abandoned, less the additional costs

Advice to commence merger after due diligence

→ We first look at profits and advice of the investment bank after the initial evaluation of the merger has been completed. At this point the probability of the merger completing and its value are known.

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- Initially the bank does not know the merger value and the probability with which it can be completed, it will only learn this once it commences its evaluation, which is after the contract with their client has been signed.
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Advice to commence merger after due diligence

- Investment bank learns π and V after the contract is signed and due diligence costs C_0 are already incurred
- Profits of investment bank are the fee if the transaction commences, alternatively the fee if it is abandoned, less the additional costs
- $\hat{\Pi}_B = \pi F_1 + (1 - \pi) F_0 - C$
- Investment bank advises to continue if $\hat{\Pi}_B \geq 0$

Advice to commence merger after due diligence

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- Investment bank advises to continue if $\hat{\Pi}_B \geq 0$, or $\pi \geq \pi^* = \frac{C-F_0}{F_1-F_0}$

Advice to commence merger after due diligence

→ We first look at profits and advice of the investment bank after the initial evaluation of the merger has been completed. At this point the probability of the merger completing and its value are known.

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  - Initially the bank does not know the merger value and the probability with which it can be completed, it will only learn this once it commences its evaluation, which is after the contract with their client has been signed.
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Investment bank profits

Investment bank profits

→ We now look at the investment bank profits at the time the contract is signed and where the probability the merger completing and its value are not yet known.

-
  - With the probability of completing the merger and its value not known, we will have to use their distributions rather than their specific value when assessing the overall profits.
  - Investment banks only recommend the merger to be completed if the probability of this completion is sufficiently high and its is only these high probabilities that will generate any profits to the investment bank. For lower values of the probability the investment bank would recommend to abandon the merger and will not receive any payment.
- Investment banks will also take into account their initial due diligence costs.
- *Formula*
- If we have perfect competition between investment banks, then their profits will be zero. Investment banks competing for new clients will of course compete on more than only the fees they charge as the level of expertise might differ between investment bank, but we neglect such considerations here.

→ We have now determined the profits investment banks make at the time the contract with their client is agreed. We will now turn to the profits of their client.

Investment bank profits

- Ex-ante π and V are not known
- $\Pi_B = \qquad \hat{\Pi}_B dH(\pi) dG(V)$

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Investment bank profits

- Ex-ante π and V are not known, and profits are only made if the merger commences
- $\Pi_B = \int_0^{+\infty} \int_{\pi^*}^1 \hat{\Pi}_B dH(\pi) dG(V)$

Investment bank profits

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- Investment banks also have to cover their initial due diligence costs
- $\Pi_B = \int_0^{+\infty} \int_{\pi^*}^1 \hat{\Pi}_B dH(\pi) dG(V) - C_0$

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Investment bank profits

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- $\Pi_B = \int_0^{+\infty} \int_{\pi^*}^1 \hat{\Pi}_B dH(\pi) dG(V) - C_0$
- Perfect competition implies $\Pi_B = 0$

Investment bank profits

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→ We have now determined the profits investment banks make at the time the contract with their client is agreed. We will now turn to the profits of their client.

Client profits

Client profits

→ We can now turn to the profits of the company seeking to merge.

-
  - The company obtains the merger value, provided the merger is completed.
  - From this merger value it has to pay the full fee to the investment bank.
  - If the merger is abandoned, then the company doe snot realise the merger value and has to pay the break-up fee.
- *Formula*
- Companies also do not know the merger value and the likelihood of completing the merger, so will also have to form expectations based on their distribution. We also know that investment bank will suggest to abandon the merger for low success rates and if we assume that companies follow their advice, they will only obtain any profits if the success rate is sufficiently high.
- *Formula*
- Clients want the merger to be continued after the initial due diligence only if it is profitable to them, which gives us a minimum threshold for the success rate. The client needs to be able to recover the higher final fee from the value of the merger, compared to the break-up fee if the merger cannot be completed.

→ Having obtained the investment bank and client profits, we can now proceed to determine the optimal fees that are to be agreed between the investment banks and its clients at the beginning of the merger process.

Client profits

- If the merger commences the client gets the merger value
- $\hat{\Pi}_C = \pi \left(V \qquad \right)$

Client profits

→ We can now turn to the profits of the company seeking to merge.

- - The company obtains the merger value, provided the merger is completed.
  - From this merger value it has to pay the full fee to the investment bank.
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- Companies also do not know the merger value and the likelihood of completing the merger, so will also have to form expectations based on their distribution. We also know that investment bank will suggest to abandon the merger for low success rates and if we assume that companies follow their advice, they will only obtain any profits if the success rate is sufficiently high.
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- If the merger commences the client gets the merger value, less the fee paid
- $\hat{\Pi}_C = \pi \left(V - F_1 \right)$

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Client profits

- If the merger commences the client gets the merger value, less the fee paid, and if the merger does not commence pays the break-up fee
- $\hat{\Pi}_C = \pi (V - F_1) - (1 - \pi) F_0$

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- Clients want to commence a merger if $\hat{\Pi}_C \geq 0$, which gives $\pi \geq \pi^{**} = \frac{F_0}{V - F_1 + F_0}$

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Maximizing profits

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→ We can use the fees obtained so far to look at the threshold which the success rate of mergers needs to meet for investment banks to recommend to continue with the merger and compare this with the threshold clients would choose.

- We had obtained before that the investment bank recommends to continue with the merger if the probability that the merger will be completed exceeds the threshold π^*.
- Similarly, we had obtained that the company would like to continue with the merger if the probability of the merger being completed exceeds the threshold π^{**}.
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  - In both cases we can insert for F_1 from the previous result and we find that the two thresholds are identical.
  - If investment banks recommend continuing with the merger exactly when it is optimal for their clients to continue and to recommend abandoning the merger exactly when it is optimal for their client to do so, there is no conflict of interest between the investment bank and their client; the investment bank provides advice that is consistent with the preferences of their client.

→ The introduction of a break-up fee aligns the interests of investment banks and their clients. A merger not completing imposes costs in form of the break-up fee on the company and this will increase the threshold at which it wants to continue with the merger. At the same time, the additional revenue from the break-up fee in case the merger is not completed, makes the investment bank more willing to recommend to continue with the merger.

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- Investment bank advises to commence if $\pi > \pi^* = \frac{C-F_0}{F_1-F_0}$

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No conflicts of interest

- Investment bank advises to commence if $\pi > \pi^* = \frac{C - F_0}{F_1 - F_0}$
- Clients want to commence if $\pi \geq \pi^{**} = \frac{F_0}{V - F_1 + F_0}$

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- → We can use the fees obtained so far to look at the threshold which the success rate of mergers needs to meet for investment banks to recommend to continue with the merger and compare this with the threshold clients would choose.
- ▶ We had obtained before that the investment bank recommends to continue with the merger if the probability that the merger will be completed exceeds the threshold π^*.
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Optimal break-up fee

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    - As mergers continue only if $\pi > \pi^*$, we only consider these values for π, this makes $\frac{\pi}{\pi^*} > 1$ and hence the integrant negative and therefore the whole second term will be negative.
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→ We have seen that a breakup fee is optimal to maximize the joint profits investment banks and their clients make from the merger. This break-up fee is to be charged if the merger is abandoned after the initial assessment of the investment bank recommends to continue pursuing the merger, but it will not cover the full costs investment banks have incurred, provide the additional costs to complete the merger are not too high.

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- Using $\Pi_B = 0$, the optimal break-up fee is $F_0 = C + \frac{C_0}{\int_0^{+\infty} \int_{\pi^*}^1 \left(1 - \frac{\pi}{\pi^*}\right) dG(\pi) dH(V)}$

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- If $C < C_0 \left(1 - \frac{1}{\int_0^{+\infty} \int_{\pi^*}^1 \left(1 - \frac{\pi}{\pi^*}\right) dG(\pi) dH(V)}\right)$, then $F_0 < C_0$
- If the full costs are not too high, investment banks will not recover their initial fixed costs from break-up fees

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- If $C < C_0 \left(1 - \frac{1}{\int_0^{+\infty} \int_{\pi^*}^1 \left(1 - \frac{\pi}{\pi^*}\right) dG(\pi) dH(V)}\right)$, then $F_0 < C_0$
- If the full costs are not too high, investment banks will not recover their initial fixed costs from break-up fees
- If the full costs are sufficiently high, banks will recover their initial fixed costs

Optimal break-up fee

→ So far we could only obtain the relationship between the full fee and the break-up fee. We will now use the condition that investment banks cannot make losses to obtain an explicit expression for the break-up fee.

- If we assume perfect competition between investment banks, they will make no profits. Using the relationship between the full fee and the break-up fee, we can find an expression for the break-up fee.
-
  - As mergers continue only if $\pi > \pi^*$, we only consider these values for π, this makes $\frac{\pi}{\pi^*} > 1$ and hence the integrant negative and therefore the whole second term will be negative.
- The break-up fee does not depend on the merger value, it is thus not a contingent fee. But as it is only paid if the merger is not completed, it is a conditional fee. In contrast to that, the full fee is a contingent fee.
- If the break-up fee is less than the full costs of the investment bank, we easily see that the full fee is larger than the break-up fee. Thus if abandoning the merger, the company pays the investment bank a smaller fee than if it were to continue with the merger. Of course, the company will not obtain the value of the merger; similarly, the investment bank will not incur the additional costs of continuing to provide advice for the merger.
- We can now show that if the additional costs for the investment bank to continue with the merger are not too high, then the break-up fee does not cover the initial costs fully. Note that the term in brackets is above 1 as the second term is negative as outlined before. Hence the additional costs can be larger than costs for the initial assessment of the merger and this relationship will still be valid.
- With this assumption, investment banks will not recover their full costs from the breakup fee. This provides investment banks with some incentive to continue with the merger as abandoning the merger would impose a certain loss on them.
- It is only if the additional costs are substantially higher than the initial costs, that the initial costs are recovered fully.

→ We have seen that a breakup fee is optimal to maximize the joint profits investment banks and their clients make from the merger. This break-up fee is to be charged if the merger is abandoned after the initial assessment of the investment bank recommends to continue pursuing the merger, but it will not cover the full costs investment banks have incurred, provide the additional costs to complete the merger are not too high.

Reasons for break-up fees

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→ Break-up fees help to align the incentives of investment banks and their clients.

- If investment banks recommend to continue with a merger, they would make a loss if the merger is subsequently abandoned and the final fee is not payable as in contingent fees; therefore they would be very reluctant to recommend continuing with a merger unless the success chances are very high as they fear incurring these additional losses without adequate revenue.
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  - A break-up fee allows them to recover at least some of their costs, even if only partially. This makes them much more willing to recommend continuing with the merger and incur the additional costs.
  - This willingness to continue with the merger sees their recommendations much more aligned with those of the company. The company will lose the merger benefits if not continuing and will therefore be more willing to continue. However, the break-up fee reduces this willingness to continue as in the cases the merger gets abandoned they are liable to this fee. The breakup-fee is set such that these two effects are such that incentives align perfectly.
- If the full costs are low, the prospects of obtaining the full fee might induce the investment bank to recommend continuing with the merger too often. Obtaining a substantial breakup-fee would provide strong incentives to recommend continuing with the merger as the investment bank would obtain fee income regardless of the outcome of the merger. Having a small break-up fee that does not cover their costs fully, would still induce a loss on the investment bank and thus limit their incentives to recommend the continuation too freely.

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→ We have seen that break-up fees align the incentives of investment banks and their clients to continue with a merger.

- We assumed here that when agreeing the contract, that neither the investment bank nor their client knows the characteristics of the merger precisely. It is this uncertainty that causes break-up fees to emerge.
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  - Their value is determined such that the incentives of investment banks to recommend continuing with mergers is increased due to the additional revenue if the merger is abandoned.
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→ Break-up-fees play an important role in addressing a conflict of interest between investment banks and their clients. Their introduction eliminates any such conflicts and can be seen as a contractual feature that is attractive to clients seeking unbiased advice. Offering contracts with a break-up fee can be seen as a competitive advantageand will therrefore lead to the dominance of such contracts.

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→ The inclusion of break-up fees improves the advice given by investment banks, but also affects the incentives of their clients.

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→ Break-up fees have become a standard feature in contracts with investment banks advising on mergers and acquisitions. One reason might be that they achieve and alignment of incentives between investment banks and their clients on the commencement of the merger. Break-up fees improve on the reduction of conflicts of interest as observed from contingent fee contracts.

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