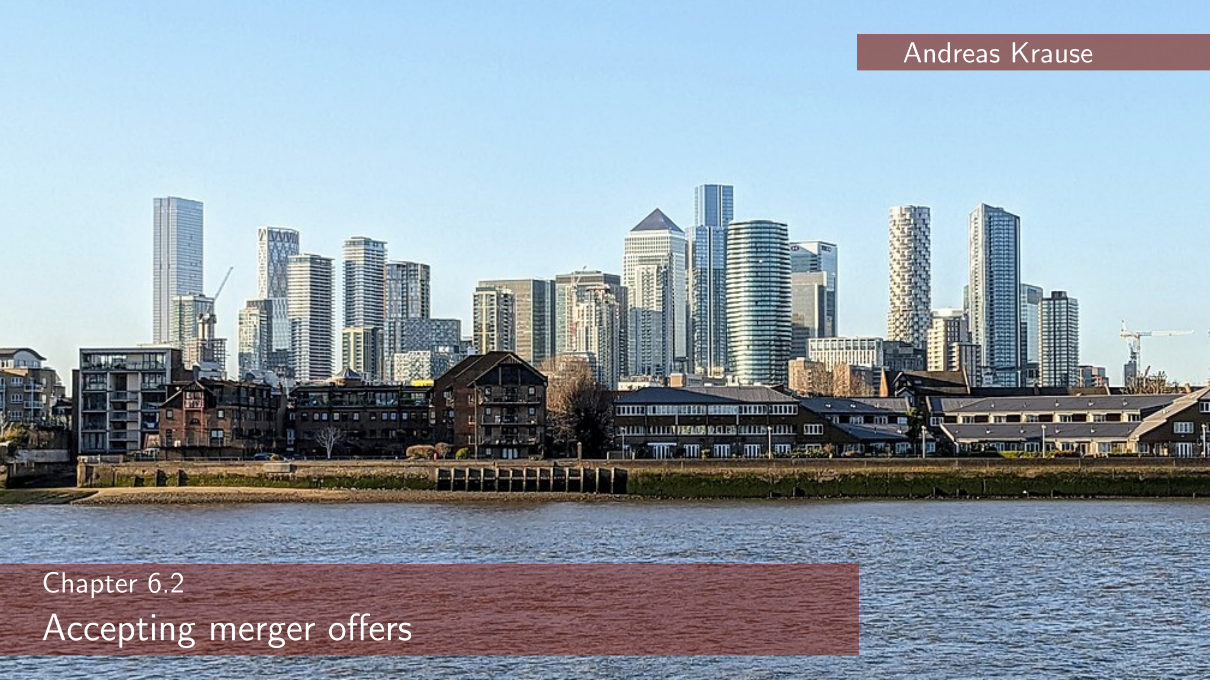

Andreas Krause

Chapter 6.2

Accepting merger offers

Outline

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

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

Investment banking advice

Investment banking advice

- Investment banks advice clients on whether to accept a merger offer being made to them

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

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

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

Merger offers

Merger offers

- Assume a merger offer to a target with their surplus being V_L has been made

Merger offers

- Assume a merger offer to a target with their surplus being V_L has been made and can be accepted

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

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

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

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

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

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

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

Investment banking cost

Investment banking cost

- If the current offer V_L is accepted investment banks have costs C^*

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 $C > C^*$

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

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

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

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

Client decision

Client decision

- Regardless of the decision of the client, the investment bank charges a fee F

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
- $V_L - F$

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

- $V_L - F \quad \pi V_H - F$

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
- $V_L - F \geq \pi V_H - F$

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
- $V_L - F \geq \pi V_H - F$

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

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
- $V_L - F \geq \pi V_H - F$

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

Investment bank advice

Investment bank advice

- For low offers, investment banks obtain the fee from their client and face their costs

- $F - C^*$

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

- $F - C^* \quad F - C$

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
- $F - C^* \geq F - C$

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

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 $\pi > \pi_C^*$

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 $\pi > \pi_C^*$

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

Client decision

Client decision

- A fixed fee F is only payable to the investment bank if the merger is completed

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

- $V_L - F$

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

- $V_L - F \quad \pi (V_H - F)$

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
- $V_L - F \geq \pi \left(V_H - F \right)$

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
- $V_L - F \geq \pi \left(V_H - F \right)$

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

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

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

Investment bank advice

Investment bank advice

- For low offers, investment banks obtain the fee from their client and face their costs

- $F - C^*$

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

- $F - C^* \quad \pi F - C$

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
- $F - C^* \geq \pi F - C$

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
- $F - C^* \geq \pi F - C$

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

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 $\pi_B^{**} > 1$

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

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 $\pi > \pi_C^{**}$

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

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

Client decision

Client decision

- Clients pay the investment bank a fraction of their surplus if the merger is completed

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

- $V_L - fV_L$

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

- $V_L - fV_L \quad \pi \left(V_H - fV_H \right)$

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
- $V_L - fV_L \geq \pi \left(V_H - fV_H\right)$

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
- $V_L - fV_L \geq \pi \left(V_H - fV_H\right)$

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

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

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

Investment bank advice

Investment bank advice

- For low offers, investment banks obtain the fee from their client and face their costs
- $fV_L - C^*$

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

- $fV_L - C^* \quad \pi f V_H - C$

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
- $fV_L - C^* \geq \pi f V_H - C$

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
- $fV_L - C^* \geq \pi f V_H - C$

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

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
- $fV_L - C^* \geq \pi fV_H - C$

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

- If $f\left(V_H - V_L\right) > C - C^*$, then $\pi_B^{***} < 1$

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

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
- $fV_L - C^* \geq \pi f V_H - C$

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

- 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 $\pi_C^{***} = \pi_C^* < \pi < \pi_B^{***} < 1$

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 $\pi_C^{***} = \pi_C^* < \pi < \pi_B^{***} < 1$

Minimum offers

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

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
- $V_L^C \geq \pi V_H$
  $V_L^B \geq \pi V_H - \frac{C-C^*}{f}$

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

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

Reduced conflicts of interest

Reduced conflicts of interest

- Fixed and conditional fee contracts would have the investment bank always advise to accept an offer

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

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

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

Investment bank incentives

Investment bank incentives

- Investment banks have limited incentive to wait for an improved offer

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

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

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

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

This presentation is based on
Andreas Krause: Theoretical Foundations of Investment Banking, Springer Verlag 2024

Andreas Krause
Department of Economics
University of Bath
Claverton Down
Bath BA2 7AY
United Kingdom

E-mail: mnsak@bath.ac.uk