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MANG0209

Investment Banking

Lecture Notes

Lecture 1: Overview and History of Investment Banking

In this introductory lecture we will see what investment banking is about, what the current market situation is and finally how the UK market has evolved over the past decades.

We will address the following questions in this lecture:

1. What is investment banking ?
2. Who are the main investment banks and how important are the different activities ?
3. How did the investment banking industry in the UK develop ?

What is investment banking ?

- Investment banking has increased its typical areas of business in recent years, so that we now can say that it includes all transactions with respect to capital markets and their aim is to facilitate these transactions. E.g. trading, IPOs, derivatives, M& A

- In contrast commercial banks take deposits from the public and give loans to private and corporate customers. Investment banks only have a marginal role, they act mostly as agents rather than principles (except for underwriting as we will see later in this course). The limits between investment and commercial banking are blurring, however.

- Any principal positions investment banks take are short-term, i.e. a few days (except in the non-core business of venture capital through subsidies), while the principal positions taken by commercial banks are long-term (up to several years).

- Business areas include services to investors as well as issuers of securities:
  - Investors
    - Brokerage
    - Asset Management
    - Market making
    - Financial engineering
  - Issuers
    - Underwrting
    - Advisory in M& A and corporate restructuring
    - Financial engineering
    - Market making

  - Propriety trading

  We will touch various aspects in this course in more detail.

- In the light of these services we find various business areas that coincide with the above services provided:

  - Underwriting new equity offers
  - Advisory in mergers & acquisitions and corporate restructuring
  - Venture capital
  - Brokerage / Financial advisory
  - Clearing and settlement
  - Asset management
  - Financial engineering
  - Propriety trading

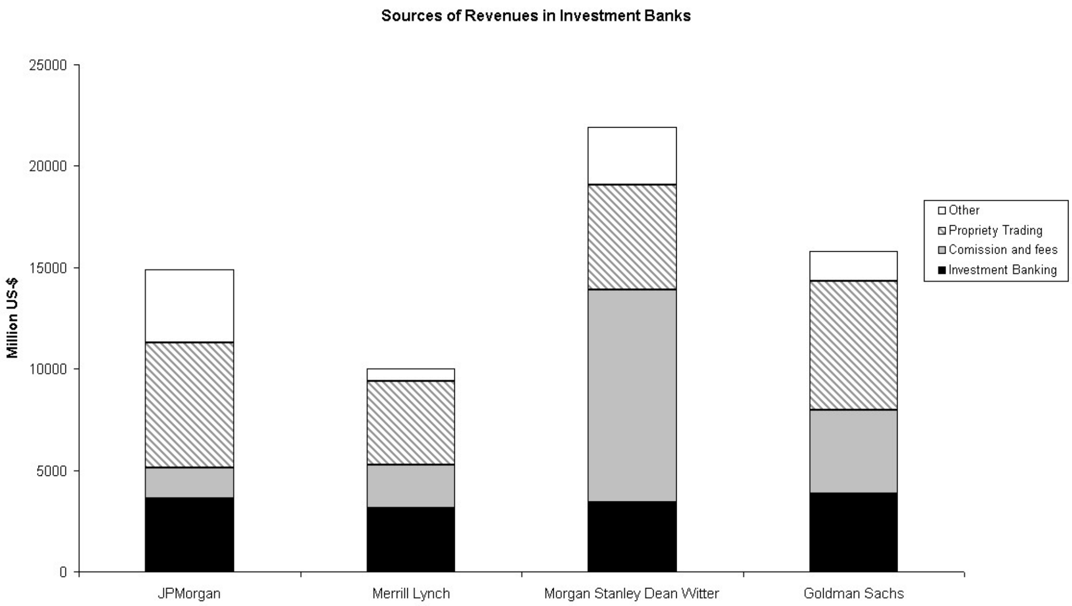
  In this course our primary focus will be on M& A, Underwriting, and financial advisory

Who are the main investment banks and how important are the different activities ?

- The differences between commercial and investment banking have become blurred more and more in recent years. In Europe most banks are commercial as well as investment banks, the biggest are
  - Germany: Deutsche Bank (Morgan Grenfell), Dresdner Bank (Kleinworth Benson, Wasserstein Perella)
  - Switzerland: Credit Suisse (First Boston), UBS (Warburg)
  - France: BNP Paribas, Societe Generale
  - Japan: Nomura
  - United Kingdom: HSBC (Merill Lynch, discontinued), Barclays, Rothschild, ING Barings, Cazenove,
  - USA: Goldman Sachs, JPMorgan (Chase Manhattan), Schroder Salomon Smith Barney (Citigroup), Morgan Stanley Dean Witter, Merill Lynch
- The recent trend has been that European banks buy more and more smaller investment banks (in England there are now only two really independent investment banks: Cazanove and Rothschild) and for investment banks to merge with each other. In the last lecture we will discuss some of these recent trends.
- In the USA until 1999 investment and commercial banking was separated by law (Glass-Steagall Act), but this has been lifted effectively since then and we observe a similar trend in the USA as in Europe.
- The typical investment banking activities are underwriting and M& A advisory, which we will include in the following as revenue from investment banking. Commission and fees are primarily from asset management and brokerage, propriety trading from their own trading activity and other is in most cases net interest

earned (from investing assets, rather than trading and from loan to customer for trading, e.g. short sales, the only loans given typically by investment banks).

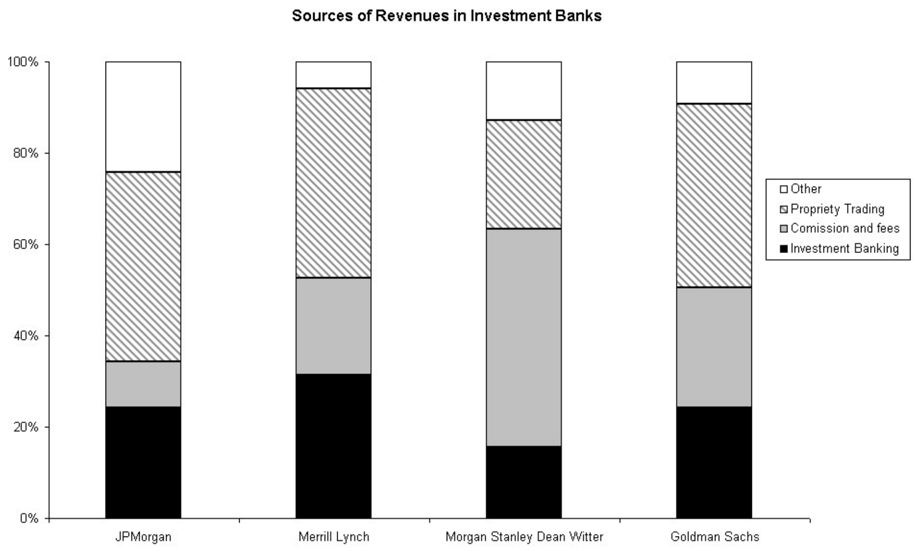
- The graphs show how important the individual areas are for the leading American investment banks (as the European investment banks are part of other banks figures, if available, are not comparable). data for 2001, but proportions remain similar.



- We see at first that the revenue generated by investment banks is considerable, as are the profits. On the other hand we see the trend in recent years that the traditional investment banking makes only small fraction of the revenue, 10-25%, with the majority coming from brokerage and even more important propriety trading.

- We will see how the revenue splits between Underwriting and M&A Activities (the most prestigious areas) in the following lectures.

- staff cuts in recent times have only shed about 10% of the total workforce, but a much larger proportion in M& A and underwriting.


Sources of Revenues in Investment Banks
100%
80%
60%
40%
20%
0%
JPMorgan
Merrill Lynch
Morgan Stanley Dean Witter
Goldman Sachs
Other
Propriety Trading
Comission and fees
Investment Banking

How did the investment banking industry in the UK develop ?

- Currently American investment banks dominate the market, with Continental European banks as runner up. While in most countries local banks can still have a substantial impact in their respective market (although not overseas), this is not true for British investment banks. Their impact in the city is marginal and the market is dominated by American and German/Swiss banks. We will in the remainder of this lecture explore the reasons for this situation.

- Continental European investment banks are usually part of universal banks, i.e. their activities include commercial banking.

- US investment banks, on the other hand, have usually been organized as private partnerships until the 1970s. A limited capital basis and the increasing size of the business gave rise to the need of attracting new capital. They reacted by becoming public companies (the last was Goldman Sachs in 1999)

- Investment and commercial banking in the US has been strictly separated in the US until 1999. In the 1920 investment and commercial banking was for the only time in American history combined. Huge losses in the securities business in the 1929 stock market crash and the following depression led to the near bankruptcy of many banks and led to the Glass-Steagall Act of 1933 that separated the two businesses. This law, slowly interpreted less and less strict, was finally waived in 1999.

- In the UK the investment banking business was divided into three separate part until 1983:

  - Brokers

    They are routing the order of customers to the stock exchange, give financial advise on investments (research) and often complement their business with asset management.

Brokers were not allowed to take principal positions in stocks they act as brokers for (single capacity).

- Jobbers

  Market makers on the LSE that could only trade with brokers, but not the general public, i.e. offer no brokerage services (single capacity).

  Jobbers take principal positions in their stocks.

- Merchant banks

  Commercial banks that also provided M& A advisory, underwrote offers, etc. There was no separation between commercial and investment banking.

  Merchant banks cooperated with brokers, but did not own them.

- Until 1983 foreign banks were present in the City, but the stock market was a closed club, such that they had no important role.
- Brokerage was seen as the key part as it connects buyers for trading, but also buyers and issuers.

  Furthermore the access of brokers to companies for information gave them access to the board that could, if allowed, lead to valuable other contacts for underwriting etc. of merchant banks.
- Brokers and jobbers were usually small companies with very closely defined functions, jobs were not very complex and the job mobility was extremely low (high company loyalty), enforced by a strict seniority system for promotions rather than qualifications. Old schoolboy networks very important to get a job and being promoted.
- The Thatcher government saw the business as not competitive, especially compared with the US market. To avoid direct government intervention the industry agreed on 22 July 1983 on implementing the following measures until 27 October 1986 (*Big Bang*):

  - Abolition of fixed commissions to increase competition
  - Dual capacity, i.e. allowing jobbers to offer brokerage services and merchant banks to own brokers etc., i.e. an integrated investment bank.

  The aim was to increase competition, while government regulation was minimal as the system relied on self-regulation.

- The US had deregulated commission fees in 1975 giving American banks a competitive advantage as they were more experienced in working in this environment.
  The regulation was also much less strict than in the US (SEC), e.g. with respect to qualifications, operational aspects, corporate control, etc., giving UK banks not much guidelines to get experience in this new framework.
  These aspects should be central in the failing of UK banks.

- Merchant banks and also purely commercial banks (clearing banks) saw the Big Bang as a chance to get into brokerage and jobbing and thereby become fully integrated investment banks. To prepare for the Big bang all big UK merchant and clearing banks bought brokers and jobbers between 1983-1986.
  Brokers saw the increased competition ahead and were therefore willing to give up their independence in order to ensure their survival.

- American banks saw the new opportunities ahead and increased their engagement in the City, but kept a low profile with a cautious expansion, mostly building on their own experience rather than buying.

- The combination of businesses made the organizations more difficult to manage due to increased complexity. The management had not the experience to deal with these issues properly (not used to complexity given the easy structure before and a lack of understanding of the other businesses).
  Additionally different cultures (merchant/commercial banks vs. brokers/dealers)

clashed in the new organizations and loyalty of employees reduced consequently as strict seniority could no longer be maintained.

- After the big bang the market conditions became more difficult: the crash of 1987 and the lack of confidence thereafter reduced the profits or caused losses. Cultural differences became more pronounced in this situation.
- American banks also experienced a slump in profits and in order to reduce profits cut back their operations, especially in London.
- In the early 1990s the market continued to be volatile and so were the results of investment banks. Wrong decisions due to a lack of managerial experience in complex organizations aggravated the problems and resulted in sometimes huge losses (bought the wrong broker and followed a wrong expansion strategy), increasing cultural tensions to increase further.
- American banks did not concentrate on brokerage as their UK competitors, but returned to the City in the early 1990s with a strong position in M& A advisory and underwriting, concentrating their activities on these fields, neglecting brokerage.
- In 1995 many banks failed under the pressure of reduced profitability:
  - Barings: Rogue trader and incompetent management
  - Warburg: Huge losses from wrong expansion strategy
  - Kleinwort Benson
  - Schroders (1999), but started in 1995 with problems in their expansion in the US

  The clearing banks faced similar problems and rescaled their operations.
- The high cost base due to increased competition for employees from US banks was exposed to volatile revenues and mismanagement.

- The boom in the US market in the mid-1990s was bigger than in Europe, such that the huge profits of US banks in their domestic market allowed them cross-subsidize their operations in Europe and the City. This was reflected in high salaries and a brain drain from UK to US banks, increasing problems for UK banks.
- The failure of UK banks was due to
  - Ambitions higher than financial and managerial resources
  - Shareholders did not approve the situation and forced clearing banks to withdraw or to sell merchant banks to competitors.
  - Only a few independent UK banks survived in investment banking: Cazenove, Lazard, Rothschild with niche strategies and low ambitions.
- The success of US banks is due to
  - Large financial and management resources from the domestic market
  - Huge profits that enabled them to cross-subsidize their activities in Europe
  - Their size gave them advantages in customer acquisition by offering global services (higher underwriting capabilities, world wide presence), i.e. economies of scale.
- It was the combination of these aspects that made UK banks negligible, while in other countries domestic banks are competing with their US competitors on a more or less equal footing.
- The lack of preparation and proper regulations giving banks guideline on their actions may have made the problem worse.

Lecture 2: Mergers and Acquisitions

This lecture will evaluate the contract between an investment bank and a company, either as bidder or target in a deal.

We will address five topics in this lecture:

1. Why use investment banks as advisors ?
2. Which conflicts of interest are in the contracts ?
3. How is the market share of investment banks determined ?
4. Why are the severest incentive problems the most important determinants of market shares ?
5. How can we overcome the incentive problems in the contracts ?

Why use investment banks as advisors ?

All of the following factors are confirmed empirically, with the transaction costs being most important, followed by contracting and asymmetric information.

- *Transaction cost hypothesis*
  Investment banks are more efficient in evaluating a deal because of
  - economies of specialization (superior knowledge)
  - economies of scale for information acquisition
  - reduced search costs for information and potential targets

  Of special importance are the compexity of a deal and the prior experience of the company in deciding whether to use an investment bank or not.
- *Asymmetric information hypothesis*
  Investment banks reduce asymmetric information between bidder and target, especially if different industries are affected (special form of transaction costs). The target (and bidder) will not reveal negative aspects which are difficult to detect (due diligence).
- *Contracting hypothesis*
  Investment banks certify the value of the transaction, this signals quality to investors rather than relying only on the management.
  The reputation of investment banks should ensure a fair value.
  Commercial banks can have additional information on the company from their lending relationship, but also information on entire industries due to their activity, investment banks may have this through coverage as analysts for listed companies (independence?). So provide a certification for the target (own commercial bank).

The actual performance is not affected by whether an investment bank is chosen or not. In the choice of first or second tier investment banks, only transaction costs are relevant.

The contracts between companies and investment banks have incentive problems that may prevent companies from getting the best advice.

Which conflicts of interest are in the contracts ?

- The fee usually depends on the value of the transaction
- The fee usually depends on the completion of the deal

These aspects create conflicts of interest.

Bidders

- Interest in completing the deal, even if not beneficial for the company; even search for a deal the company never wanted
- Interest in a high, rather than low price to be paid by the bidder

Targets

- Incentive to complete the deal, even if not beneficial for the company
- In order to ensure a deal, a not too high price is proposed

Both

- Information leakage as more people are involved (*Chinese Walls* are not perfect as infos on bids etc. become known)
- If commercial banks are the advisors, the transaction. could increase the ability to pay back debt (high cash flows or liquidity), although it does not add to the value of the company, but the certification effect dominates this conflict of interest.
- The bank may loose business if it opposes a hostile takeover and the deal is completed anyway (lending, but also future underwriting, advising etc.)

With these problems, the question is now how do (investment) banks get deals ?

How is the market share of investment banks determined ?

The market share increases with

- Share of the fee contingent on the completion of the deal
- Share of past deals completed
- The performance of past deals has no effect. On the contrary, high market share corresponds to poor performance.

Completion is the most important factor. This structure exactly causes the incentive problems mentioned before.

Why are the severest incentive problems the most important determinants of market shares ?

The contract that benefits investment banks at most are the ones usually chosen, why do companies do not insist on other contracts ?

- Companies are not aware of the incentive problem
- Need to establish and maintain reputation prevents banks from exploiting their position
- Conflict of interest between management and shareholders is more important than between management and investment bank
- Companies do not rely on the evaluation of investment banks, they only confirm their evaluation and provide more technical details
- Market power of the few big players enable them to impose those contracts and given the market share mechanism other follow them in their strategy
- Marketing trick along the lines of "no win-no fee".

The question of course is, is there an alternative to this form of contract ?

How can we overcome the incentive problems in the contracts?

- No contingent fee, only depending on the value of the shares at the end of the process
  $\Rightarrow$ the value after completion is usually higher, hence the incentive for completion remains

- Flat fee not depending on the value
  $\Rightarrow$ no incentive for investment banks to do anything (principal-agent problem)

- Contingent fee subject to board approval of the deal
  $\Rightarrow$ board may change position to avoid higher fee (not really relevant for listed companies due to the small size of the fee ($< 1\%$), but for privately held reasonable)
  $\Rightarrow$ information asymmetry between company and investment bank may cause the bank to convince the board, although it is not in their interest $\Rightarrow$ This clause is sometimes found

- Contingent fee for the bidder decreasing with offer price
  $\Rightarrow$ may disclose information of the bidding strategy id reveled (has not to be according to current regulation)
  $\Rightarrow$ Incentive for completion is still there, although not at the highest possible price

Why these modifications are not used is discussed above.

Lecture 3: Syndicates in IPOs

In this lecture we look more closely into the underwriting syndicate and the choice of the lead underwriter.

The questions addressed are:

1. Why do investment banks form syndicates ?
2. Why do issuers want investment banks to form syndicates ?
3. How does a company chooses a lead underwriter ?

Why do investment banks form syndicates ?

The classical theory suggests that investment banks form syndicates because of their limited underwriting capacity:

- The risks of underwriting large offers, worth billions of US-$, exceeds the capacity of a single underwriter
- A syndicate has more power to place the issue due to more contacts, especially with institutional investors and so ensures a wider distribution and a higher price

At least the risk sharing argument cannot be sustained any longer due to the relatively low risks involved and the large size of the investment banks, so there has to be another reason, which we will explore now.

Why do issuers want investment banks to form syndicates ?

Companies typically choose the lead underwriter, who gets the majority of the fees, which then in turn chooses the co-underwriters. But why do companies not only want to have a single underwriter instead of dealing with the complexity of an entire syndicate?

Companies cannot perfectly monitor how well investment banks work for their course, i.e. how well they evaluate their value to get the highest price and market it to the investors for distribution.

If a syndicate is chosen the same problem, how much effort do the individual members put into the issue, prevails. The composition of syndicates remains relatively stable over different IPOs, whereas the lead underwriter constantly changes.

Reputation (see lecture 6) restricts market entry, such that competition between investment banks or syndicates allows for non-competitive fees to be sustainable.

- Paying higher fees increases the size of the syndicate due to the high returns to be earned, but not reducing the number of investment banks; this enables a wider spread of the issue and a higher price due to higher demand.
- This trade-off of higher revenues for issuers and higher costs gives an optimal size of the syndicate that is larger than 1, in general.
- By choosing a lead underwriter and letting him to choose the syndicate members, he has an incentive to monitor their behavior, hence their effort level increases in order to be selected as member again (reputation effect) and gaining excess returns.
- By choosing a lead underwriter, he will also put more efforts into the issue as he gets a larger share of the fee and increases his reputation for selection as

future lead underwriter. The company can monitor him better than altogether and delegate the further monitoring to him.

- It is optimal for the issuer to select a lead underwriter and let him form a syndicate, exactly the form that is found in IPOs, i.e. the internal sanctions work.

- The larger the issue, the higher the incentives for the issuer to employ this contract type and the total excess fee increases, whereas the underwriting spread is decreasing, as found in real IPOs, until it approaches a flat rate.

We now have seen that the issuer wants to select a lead underwriter, who then forms a syndicate. What now remains to be addressed is how is the lead underwriter chosen by the issuer.

How does a company chooses a lead underwriter ?

General theories imply that the best way to determine the lead underwriter and then the syndicate is to conduct an auction and employ the syndicate offering the best conditions (bidding process). In reality, however, this is rarely used, instead issuers negotiate with a single lead underwriter/syndicate. How can we explain this observation ?

For the issuer, the process has two variables: the proceedings he receives for his shares and the fee charged by the syndicate. While the bidding process would give him the lowest fee, it may not give the highest price for his issue, leaving him overall worse off than with negotiations.

- The lead manager approached at first has to evaluate the issue, e.g. determine the approximate offer price. To do this he has to determine the demand for the issue by contacting potential investors; he finds these investors among his own clients, but also by contacting other investment banks asking them to join him in the syndicate and opening their customer base. This search is costly.
- When in an auction (bidding) it is uncertain whether the syndicates bid will succeed. This causes the optimal search to be reduced and hence the expected revenues for the issuer are smaller. When having negotiated, the search is more intensive, i.e. the syndicate larger and the issuer receives a higher price for his shares. However, the fee may also be higher due to the reduced competition.
- With a divided market, i.e. lead underwriters having no access at all to some parts of the market, this problem is aggravated and negotiation increases the search even more.
- In a bidding process, investors (through their co-underwriters) are bound to a certain syndicate. This syndicate may not be chosen, although they were

willing to pay a higher price than given by the winning syndicate (*trapped bidders*). They are excluded from the issue and hence the revenue generated for the issuer could be increased by including him. In negotiations he could be included (if the search process has detected him).

- Against this higher revenue, we have to look at higher fees charged by investment banks due to the lack of competition. This must not outweigh the benefits. The small fee, however, makes this very unlikely.

Lecture 4: The Underwriting Spread in IPOs

The last lecture showed why syndicates are formed and how the issuers negotiate with the lead underwriter. In this lecture we will focus on the underwriting spread charged by investment banks.

There has been a controversy about the finding that for medium-sized US-IPOs the underwriting spread is in nearly all cases 7%. We will focus on this debate here by addressing the following questions:

1. What are the costs of IPOs for investment banks ?
2. Are investment banks competing for IPOs ?

What are the costs of IPOs for investment banks ?

An underwriting spread of 7% has been said to be too high to be justified only by costs. To explore this we investigate the costs an investment bank faces.

Investment banks face direct and indirect costs when conducting an IPO. The direct costs are

- The risks of firm commitment underwriting, i.e. the risk of not selling all shares at the designated price and suffering a substantial loss. Hence investment banks need a certain capital base for their activities to absorb any risks, causing them capital costs.

- The costs of analyzing and administering the issue.

The indirect costs are much less visible, but often more important.

- Analyst coverage
  The aim of the issuer is not only to raise money for the company but it is also required to have a continuous analyst coverage to induce buyers after the IPO to buy shares of the company, e.g. to enable managers to sell their shares. To get analyst coverage is difficult for smaller companies that are not part of a major index. With their IPO they buy this additional service, causing the investment bank additional costs.
  In the same way a good analyst reputation serves as a barrier of entry to new competitors.

- Underwriter prestige
  Underwriters certify the value of a company at the IPO, similar to M&A, and

investors trust this certification in their investment decision due to the reputation of the investment bank.

To achieve this reputation investment banks have to invest heavily in this intangible asset. This investment has to be compensated adequately, causing higher costs for investment banks.

The willingness of foreign companies to use US investment banks, despite their higher underwriting spreads shows evidence that this reputation is rewarded by issuers due to their higher quality service.

This higher quality service also means that the underpricing of US investment banks is significantly lower, causing no discount for the lack of reputation.

- Syndicate formation

  Competition between investment banks is primarily to become lead underwriter. The other members of the syndicate receive a much lower compensation. However, to induce them participating, the fee has at least to match their costs, such that the fee for the lead underwriter has to be higher to ensure an efficient syndicate formation as discussed in lecture 3.

- Price support

  Investment banks usually support the issue in the direct aftermarket to ensure a minimum of liquidity and prevent a price slump due to some investors selling their allotment. These activities impose costs on the investment banks, increasing the necessary fee.

  Alternatively the could increase the underpricing, imposing other costs on the issuer as we will discuss below.

- Signalling

  The quality of the service of investment banks cannot easily be verified by issuers and investors. A high fee may in this sense signal the quality of the service. A low fee would raise doubt on the willingness to act as analyst or giving price support.

All these aspects give a rationale for investment banks facing larger than expected costs, it does however not justify a common spread of 7%. We will therefore now explore the question whether investment banks compete at all for IPOs.

Are investment banks competing for IPOs ?

Explanations for the presence of the 7% underwriting spread have usually centered around collusion, either explicit or implicit:

- Explicit collusion

  There is virtually no evidence on the formation of a cartel.

- Implicit collusion

  Taking the long-term relationships in which investment banks compete with each other into account, it can be that it is not profitable to undercut the current fee and cause a price war to emerge that in the long-run reduces the profits for all investment banks. 7% are used as a focal point to easily identify defectors from this rule.

  Empirical evidence suggests that the market concentration is not sufficient, market entry - especially from foreign investment banks - is not too restricted and evidence for excessive profits are not found, supporting that the above mentioned costs account for most of the spread.

Investment banks do not necessarily compete on the fee as their are other dimensions they may compete in:

- Underwriting spread

  This is classical form of competition usually considered.

- Underpricing

  Underpricing imposes costs of a similar size on issuers than the underwriting spread, such that a higher or lower underpricing increases or decreases the costs for the issuer.

  Although investment banks cannot benefit directly from underpricing as they are not allowed to sell their over-allotment at a price above the offer price, they can indirectly benefits from giving certain customers preferred access to such shares, who then reward them with other business.

- Reputation

  An investment bank can compete with the reputation it builds up and from which the issuer then benefits as the certification of the value makes their issue easier to sell at a higher price, i.e. the discount for the risk is lower.
  Similar arguments hold for analyst coverage or price support.

- Placement efforts

  Investment banks can differ substantially in their efforts to place the issue, i.e. their marketing effort. Higher efforts ensure a higher price and/or a more convenient shareholder structure.

All these dimensions serve as substitutes as they affect the overall costs of the IPO faced by issuers.

The explanation of observing an underwriting spread of 7% is know that this is an efficient contract form. By fixing one component of the contract, competition continues in the other dimension. This fixture is done in order to reduce the complexity of the entire negotiation process.

- Unknown costs

  The simplest explanation is that investment banks do not know their costs due to the high complexity of the entire process and all the different costs mentioned above. They charge an average fee that on average covers their costs, regardless of the actual costs for an individual transaction.

- Informational asymmetries

  Investors know the true value of a company even less than the investment bank

with their widespread experience, knowledge and information. A high underwriting spread could be interpreted as evidence of a small underpricing or unwillingness to stabilize prices, although it reflects the higher risks. In the same way it may be interpreted by companies as guaranteeing a good analyst coverage.
To end all interpretation of this part of the agreement a fixed underwriting spread has been set and the issuers as well as the investors can concentrate on the other direct aspects affecting them.
In this sense a fixed fee reduces the complexity of the contract that has to be analyzed by one dimension.

- Moral hazard
  The spread may affect the efforts of the investment bank to place the issue as this effort is virtually impossible to be monitored by the issuer. A lower spread may be an indication of less effort, but as before other aspects may be the real reason.
  Again it is simply a reduction in the complexity of the entire transaction.

- Contracting costs
  The negotiations include the fees and the offer price, but are also driven by reputation. Reaching an agreement for a contract with so many dimensions can be very difficult, especially as all factors depend on each other.
  Using a fixed fee of 7% has become a standard that facilitates the bargaining and negotiation process.

Empirical evidence supports the efficient contract hypothesis. Companies with an offer size of US$20-80m are usually very risky as being small technology companies where not only substantial risks are imminent, but more important here the value is difficult to determine and hence the other major cost component, underpricing, is difficult to determine *ex ante*. In this sense the contract simplifies.

The size of 7% simply has emerged over time as a convention, i.e. focal point as traditionally suggested, although not as a focal point for implicit collusion but efficient contracting.

Underpricing has been mentioned many times as the second major cost in IPOs, besides the underwriting spread, in the next lecture we will therefore have a closer look at this issue.

Lecture 5: Underpricing of IPOs

We observe significant positive first day returns of IPOs implying that the issue was underpriced. The company could have chosen a higher offer price and thereby saved a huge amount of costs associated with the underpricing.

In this lecture we will learn why it is beneficial for issuers and the investment bank to have underpriced IPOs.

The main questions in this lecture are:

1. Why do investment banks underprice an issue ?
2. Why do companies accept underpricing ?

Why do investment banks underprice an issue ?

Standard explanations for the underpricing of IPOs are

- Information asymmetry
  Investors have less information on an IPO than the issuer and investment bank. In the roadshow and marketing investment banks of course mainly present the positive aspects of the company, but in a fair pricing they have also to take into account the negative sides. As these points are initially not seen by investors the price increases after the IPO.
- Valuation uncertainty
  Investment banks can, despite their experience, not value the issue exactly, what is especially true for high-tech companies whose prospects are difficult evaluate. Furthermore, investors may come to a different conclusion. To guarantee the success of an IPO the investment bank chooses an offer price at the lower end of the range. This also reduces its risk (in firm commitment) that they cannot sell the issue at the designated price and make a loss.
  Hence we should expect a higher underpricing for issuers whose value is difficult to determine, what is confirmed empirically.
- Risk of lawsuits
  A negative return is more likely to trigger lawsuits from investors claiming that the prospectus was full of errors and omissions. These additional costs are reduced with a lower offer price.

Besides these aspects there are other reasons for underpricing originating from the incentives of investment banks:

- Underpricing causes a windfall gain for those investors who have been allocated stocks.

- If the issue is underpriced, this usually means that it is oversubscribed and the investment bank has discretion (within certain guidelines) on how to allocate the shares. They can give their affiliates a larger proportion and hence favoring them.

- By allocating stocks to close affiliates (institutional investors, mutual funds,...) investment banks can expect that they reward the bank with other business as a courtesy.

Another way to create income for the investment bank is by inducing stock flipping.

- When an issue is underpriced, investors who do not value the company high have been allocated shares, while others valuing the company higher did not receive any shares.

- This demand of the latter causes the price to rise and the former sell their shares, hence trading activity will be high.

- From this trading activity the investment bank benefits twofold: If the investors hold their shares with the investment bank (what they often do to receive the shares) it generates commission fees; the other source of income is from market making. Investment banks usually act as market makers for their IPOs. By this trading activity induced through underpricing they than make additional profits. Furthermore, no stabilizing is really necessary, reducing the costs (see below).

- The investment maximizes their total profits from the underwriting spread (reducing the higher the underpricing) and the other income sources (increasing in the underpricing), obtaining the optimal amount of underpricing.

- Other costs of the investment bank, like the possibility of costly price stabilization or the risk of not selling the entire issue, are also reduced by underpricing and should be taken into account.

- The higher the underwriting spread the more important the loss in revenue from underpricing becomes and underwriting reduces. Therefore, as empirically confirmed, a higher spread corresponds to less underpricing.

It is now obvious that investment banks benefit from underpricing. Neglecting the problem of moral hazard in the relationship of the investment bank and the issuer, there also have to be reasons for the issuer to accept the costs underpricing. we will explore this issue now.

Why do companies accept underpricing ?

Companies also benefit directly from underpricing and stock flipping.

- The stock flipping assures a liquid market and a not too high volatility of the stock, increasing the value of the company through a lower risk premium to adjust for illiquidity, and makes it easier to raise new funds in the future.
- Investors will be more willing to subscribe to a new issue of shares, hoping for another windfall gain.
- The oversubscription associated with underpricing allows the strategic allocation of shares to investors. This allows the investment bank to choose a stable ownership structure with a focus on the long-term, besides a certain amount of stock flippers. By introducing this stability, together with their monitoring efforts they increase the value of the company in the long-run. The investment bank has to find the right balance between the two types of investors.

These aspects show that it is beneficial to have a certain dehree of underpricing. But there is also another reason for accepting underpricing, based on the costs.

The degree of underpricing can also be affected most prominently by the choice of an underwriter with a high reputation. This choice, together with the underwriting spread and the effort of the investment bank can be summarized as the costs of going public.

The issuer therefore faces two costs: the costs of underpricing and the fees (in relation to the efforts etc. made). These two costs have again opposite signs; the cost of underpricing increase with underpricing, while the other fees reduce underpricing and hence the costs. The issuer therefore has to find the optimal combination of underpricing and fees that minimizes the total costs.

The owners of the company before an IPO face the costs of going public as this reduces the profits of the company, but the costs of underpricing they only face on those shares they sell in the IPO, not those shares newly issued, as the price increases after the IPO.

This gives the following reasoning for the costs:

- If the owner sells only a small fraction of his shares, his loss from underpricing is small, hence his attention to underpricing is reduced. The other costs are spread over all shares he then still owns, hence he will pay more attention to these costs.
  $\Rightarrow$ If the owner sells only a small fraction of shares in the IPO, the underpricing will be higher.
- If a large number of new shares are issued with the IPO, the dilution effect also affects the owner. An underpricing reduces the value of the existing shares, hence these costs become more important. In the same way the fees are spread over a larger number of shares, the owner has to bear only a small fraction of these costs. Hence his focus will be on the underpricing costs.
  $\Rightarrow$ If more new shares are issued with the IPO, the underpricing will be lower.

These two costs, depending on the other parameters (sale of shares, dilution), determine the degree of underpricing. In the course it will be optimal to accept a certain degree of underpricing in order to reduce the overall costs.

In the final lecture on IPOs we will have a closer at how market share is determined in the IPO market. We have already addressed many of these aspects, but will have a more detailed look at those issues.

Lecture 6: The Market Share in IPOs

The previous lectures showed how the direct and indirect costs of IPOs affect the issuers. The choice of the underwriter is not only determined by the fee, but also by additional factors like analyst coverage, underpricing etc. In this lecture we will see how these factors affect the choice of the underwriter and hence the market shares. This will then enable us to derive recommendations for new investment banks how establish themselves in the market.

The questions looked at in this lecture are:

1. How do investment banks gain or loose market shares ?
2. What makes issuers change their underwriter ?
3. How can new entrants establish themselves in the IPO market ?

How do investment banks gain or loose market shares ?

The quality of the services of an investment bank cannot be measured, as the costs are difficult to determine *ex ante*. Issuers therefore have to rely on the reputation of an investment bank for their decision. A high reputation consequently corresponds to a high market share, its is thus self-reinforcing.

The reputation cannot be measured directly, but it can be approximated by market share with the foresaid.

The factors that have been found to be important are:

- Precision of pricing
  Underpricing imposes costs on the issuers by *leaving money on the table*. Investment banks with a high underpricing will not be very popular with issuers and hence loose market share.
  Overpricing is also not beneficial for investment banks. The role of investment banks is also to certify the value of the shares for investors. When overpricing this certification has failed and investors will in the future be reluctant to buy shares offered by this investment bank.

- Prospects of the company
  Part of the certification role of investment banks is also the evaluation of the long-term prospects of a company. Investors will be reluctant to buy shares from investment banks frequently offering shares of companies with no long-term prospects.
  The recent dot.com boom and the fall in the prices of most of these companies has already severely damaged the reputation of investment banks, especially those heavily involved in those issues.

- Underwriting spread

A low fee can give incentives for issuers to use this investment bank, despite other, higher costs, based on the overall cost evaluation of the issue. This strategy works for less well established investment banks.
Reputable investment banks, however, charge high fee in order to show strength and confidence in the value of their reputation, which is put at risk with each offer. We should therefore expect adverse effects of such a bank reducing its fee as it can be interpreted as having lost its reputation.

- Industry specialization
  Experience is central for evaluating companies, specialization can therefore increase the precision of pricing and other aspects of the offer due to information spill-overs from other issues. For well established investment banks, however, a specialization reduces the amount of business that can be acquired and therefore the bank has to give up this strategy, although an emphasis may be still visible.

- Analyst coverage
  The possibility of a high level analyst coverage in the aftermarket is central for the success of an IPO. Future analyst recommendation are an additional certification of the value of the shares. Having a high level analyst reputation will increase the market share.
  The analyst reputation was found to be one of the most important factors.

- Withdrawn offers
  Withdrawals of offers, for whatever reason, damage the reputation of an investment bank and hence reduce its market share. The initial certification is withdrawn, making investors reluctant to any future issues and issuers do not want to be associated with these events.

What makes issuers change their underwriter ?

Another way to look at the importance of factors influencing the market share of investment banks, is to investigate reasons for companies changing the underwriter for a secondary offering. The companies will build on their experience from the IPO in making this decision.

It was empirically found that companies were generally not dissatisfied with the way their IPO was handled, but that changes are the result of other factors.

The possible factors for a change are:

- Pricing
  The investment bank left too much money on the table and the issuer wants to avoid this situation to happen a second time, or the issue was overpriced and a new underwriter should ensure investors that this will not be that case again.
  The empirical result was that the decision to switch was not so much the fact of underpricing but the comparison of the actual proceeedings with the expected. A high return was then attributed to the quality of the roadshow.
  In general the companies were satisfied with this service.

- Placement strategy
  The allocation of shares was not according to the companies preferences (mix of long-term investors and stock flippers, types of investors etc.)
  Companies were also satisfied with this strategy and it was not found to be an important factor.

- Aftermarket support
  The investment does not provide sufficient liquidity and/or other price support for the shares, e.g. market making.
  This aspect was found to be relevant, but dwarfed by the following two factors.

- Analyst coverage
  The research of the bank did not cover the company sufficiently, i.e. the frequency of reports were too low. The issuer would like to extent that coverage by choosing another underwriter. It was not found empirically that companies wanted to buy more favorable coverage, although it can be expected to be the case.

- Reputation
  The companies want to use an investment bank with a higher reputation as they have grown in the mean time and are now in a position to be able to afford this step and the new investment bank to be interested.

The last two factors are the most important determinants for the change of the underwriter in a secondary issue.

We can now use these results to derive some conclusions on how new market entrants can gain market shares in the IPO market.

How can new entrants establish themselves in the IPO market?

From the above analysis we can derive the following possible strategy:

- Given the initial lack of any reputation, it is central to establish a certain name in the market. Given the importance of the above factors, it would the best to do so through high quality research (analyst coverage), i.e. brokering activities, and market making.
  This would establish the name in the market, although at first they would not be acting as underwriter. Only after a certain name has been established the underwriting activities commence.

- Specialising in a certain sector gives high expertise, that cannot be guaranteed for the entire stock market given the limited resources available at the beginning; and allows to attract first customers. Charging low fees as a *sweetener* will facilitate this process. Later on the fees can be increased and underwriting being diversified into other sectors.

- Building on the acquired expertise in the sector a good pricing of the issue is essential as is to underwrite only issues of companies with good long-run prospects, i.e. not to underwrite everything just to gain market share as the reputation will suffer from this strategy.

Despite the importance of general reputation, the analyst coverage seems to be the most important factor for the market share of an investment bank. The next lecture will therefore have a closer look at the interaction of analysts and the underwriting (as well as M&A) department of an investment bank.

Lecture 7: Conflicts of Interest for Analysts in Investment Banks

In the previous lecture we saw that analyst coverage is a key element to attract underwriting business, the same can be expected for M&A activities. As companies prefer positive comments on their shares, there is a potential conflict of interest between the investment recommendations of analysts and the underwriting business.

In this lecture we will explore these conflicts of interest in more detail by addressing the following questions:

1. What are the conflicts of interest between analysts and underwriters ?
2. What are the consequences of the conflict of interest ?
3. How can these conflicts of interests be reduced ?

What are the conflicts of interest between analysts and underwriters ?

Investment banks usually also have a brokerage division which employs analysts giving recommendations to investors regarding buying and selling shares. The goals of the brokerage division and the underwriters are different:

- Underwriters work in the interest of issuers. They are concerned to receive analyst coverage for their issues and furthermore to receive positive recommendations. With this positive coverage he wants to keep the customer for future issues and attract new customers. It also reduces the necessity for costly price stabilization operations.
- Analysts work in the interest of investors, who want an unbiased analysis to base their investment decisions on. Sell-side vs. Buy-side analysts
- Obviously the two aims, positive vs. unbiased coverage, create a conflict of interest between the two groups.

As long as the two departments are operated completely independent, no problem arises for investors from this conflict. However, this is not the case and the conflict can have an impact on the behavior of analysts for the following reasons:

- Pressure from underwriters to cover and give positive recommendations of companies recently helped to conduct an IPO.
- Analysts are more and more involved in the evaluation of IPOs and M&As to make use of their expertise. Hence the separation of duties has become blurred.
- The closer insight into IPOs and M&As on the other hand could lead to better recommendations due to the larger amount of information available.

- The compensation of analysts is only partly based on the quality of their research, but also on their engagement in the underwriting and M&A business, i.e. their *helpful* assistance as the salary is linked to the bank performance.
- The importance of relative performance leads to an orientation on the benchmark for risk averse analysts.
- This benchmark can even become the reason for herding, by following the crowd or more senior analysts.

If these conflicts of interest are present, the question is whether they have significant consequences for the work of analysts.

What are the consequences of the conflict of interest ?

The results from the above conflicts of interest are:

- The recommendations are on average more positive than from non-affiliated analysts.
  This result is apparently visible in the very small number of sell recommendations and negative comments, which are usually nicely packed such that they at least appear to be positive (neutral = sell).
  Also analysts not affiliated with an issue are likely to be biased, as negative comments reduces the chance that the next issue of the company will be underwritten by this investment bank, or negative comments on the sector spoils the chance to attract business from there.

- A poor performance of the stock is followed by a positive recommendation (undervalued) in order to boost the price. Usually the analysts follow a positive price development set by a few very well informed insiders (trend followers, following the market movements).

- Investors know the bias of affiliated analysts and the effect on positive recommendations should be much less pronounced, whereas negative coverage should have a more severe impact, because it shows a really extreme situation.

- The performance of stocks with positive coverage of affiliated analysts should be worse than those recommended by independent analysts.

There are other possible explanations for the bias in analysts recommendation, although it is a widespread belief in the industry that the conflict of interest is the more important factor:

- A cognitive bias of companies recently underwritten; because the underwriter managed the IPO, the company must have good prospects as they would not have done so on a negative evaluation. This additional piece of information, with the belief of the high skills of the colleagues in other departments, causes the observed bias.
- Companies choose underwriters whose analysts are in favor of the company or industry, hence we observe a selection bias from the companies.
- coverage only of good companies in the first place, as they are only attractive for attracting commission from brokerage.

The example of JP Morgan shows that the role of analysts and their influence on the underwriting business is an issue for investment banks, here analysts had to get approval before publishing their results (often from the investment banking division).

How can these conflicts of interests be reduced ?

The optimal solution to resolve the conflicts of interest would be to have only independent analysts not affiliated with any underwriter. This proposition, however, is not realistic given the structure of the industry, so we discuss measures how to reduce the effects for investors.

- codes of conducts have been issued to address some of these problems
- Information of customers on the potential conflict of interest
- Longer quiet period than the current 25 days in the U.S., e.g. 1 year, but would reduce the amount of reaserch
  A complete prohibition of analyst coverage for many years is not realistic through the involvement in syndicates, such that nearly no high-level coverage of leading companies would be possible.
- To ensure independence also with respect to potential clients of the underwriting department, the compensation should only be based on their research rather than be affected by the underwriting department in any way and they should not be involved in any of these businesses.
- Strict division of responsibilities between underwriting and analysts (proposed and partially started).

There exist other conflicts of interest from the analysts, first of all to the traders, who could be willing to exploit a forthcoming recommendation. Self-regulation and laws are here much more strict than in the conflict discussed above (insider trading).

Also the information generated by the underwriters on the companies are the knowledge of forthcoming M&A activities could be beneficial to traders. Passing on this information is prohibited by law (*Chinese walls*) as is the use of such information (insider trading).

In the next lecture we will leave this area and continue with another part of the activities in investment banks: the creation of new financial instruments.

Lecture 8: Financial Engineering

Financial engineering and its special form securitization encompass the development of new financial products. The last 25 years have seen a surge in these activities, as can be seen from the vast number of newly created derivatives.

In this lecture we will investigate under which conditions investment banks introduce new products and discuss an actual example of how to create such an innovation.

The question addressed in this lecture are:

1. Under which conditions are investment banks most innovative ?
2. How can a new financial product be developed ? - An example

Under which conditions are investment banks most innovative?

A central feature of financial innovations is that they cannot effectively be protected from imitation. Their characteristics have to be made public upon offering them to customers and competitors are free to offer identical products. The result of this property is that the substantial costs of developing the product have to be recovered in a very short period of time, before competitors offer an imitation.

- Large market

  If an investment bank has a large market share, i.e. many potential clients that are interested in the innovation, it can more easily generate sufficient revenue to recover the costs. We will therefore expect large investment banks to be more innovative.

- Delays

  Customers could delay the adaptation of the product until the arrival of imitations has reduced the price. If this waiting for imitations is very costly for the clients, the revenue for the investment bank is higher, increasing the incentives for innovations.

  Volatile market conditions impose high costs and the instant demand for hedging instruments is high. Also the exploition of loopholes in the regulation or tax laws that are likely to be closed creates great incentives not to delay the adaptation. We therefore expect most innovations in such an environment.

- Phased introduction

  The phased introduction of innovations allows to create multiple revenues before imitations hit the market, provided competitors do not start to introduce these innovations themselves. This behavior we would expect more in market where imitations are more easy.

- Switching clients

  Smaller investment banks are more likely to introduce substantial innovations rather than phase them, because this may induce customers to switch their business to this bank.

  To avoid customers switching the investment bank, they are likely to develop new innovations constantly as a *customer service* to deepen the relationship.

- Difficult imitation

  If the imitation is much more difficult due to the complexity of the product, e.g. a lack in the knowledge of pricing the innovation, we would expect more innovations.

- Sharing innovations

  Small investment banks miss the customer base to recover the costs of their innovations. They are therefore much more likely to cooperate with larger investment banks in the introduction and development of such innovations in order to increase their revenue.

- Reputation

  Financial innovations can also be used to show the competence in the market and thereby increase the overwhelmingly important reputation of the investment bank.

We see that financial innovations are an important factor in keeping and attracting customers and they have created substantial direct and indirect revenue (e.g. market making, commission fees).

However, it is often difficult to develop these products, not least because of the legal problems. we will know discuss an example how to come up with an idea for a new product.

How can a new financial product be developed ? - An example

We will here not look at the development of catastrophic risks, but address another problem, that recently has been solved through a new product. We will develop this product step by step together; the real process may have been different, but it could have taken place the same way.

- The problem

  I have a pub in London suburb on a middle class housing estate. There are 38 places in the pub and a further 64 places are available on the terrace and in the garden during the summer. My main business is on Friday and Saturday evening.

  Last summer the business did not go well, the pub was half empty and the outside places hardly used. It was just too cold and wet.

  I fear that another year like the last would ruin me, can you help ?

- The idea

  The problem is the temperature and rain. As both are strongly correlated, let us concentrate on the temperature. What I need is a higher revenue if it is cold. If I bought an option that would pay me a certain amount if it is cold, I would suffer no losses.

- Wider application

  Before creating such an option or other products, it has to be checked whether there is a potential market for this product, i.e. whether other customers are also interested.

  Other interest would come from

  – Pubs, garden restaurants, indeed the entire leisure industry: hotels, tourist attractions, tour operators, clothing industry, ice vendors,...

  - The farmers are also affected by the weather, especially temperature and rain
  - The energy sector sees its sales depend on the temperature: oil, gas, electricity...

- Contract specification

  Now that we know that there is a potential market, we have to standardize the contract specification. It has to be determined how, where and when temperature has to be measured.

  We also have to decide on the strike price: temperature on a certain day, average temperature, number of days below/above a certain temperature,... and how much is paid out.

- Launch of the contract

  Once these aspects have been cleared, we have a final thing to do before launching it (besides the legal aspects): What is the value of the option ? We have to find a method of pricing it such that we get a fair price. This is often the most difficult part of the process and involves physicists and mathematicians with high level quantitative skills. Once this is done, we are ready to launch our product.

Lecture 9: Relationship vs. Transaction Banking

Relationship banking is characterized by banks obtaining customer specific information over a large number of transactions, either through the repeated use of the same product or the concurrent use of different products by the same banks. This information is not shared with competitors, e.g. through including it into analysts' recommendations.

Transaction banking on the other hand concentrates only on a single transaction, which the bank does with a large number of customers. It receives information from the interaction with various customers.

Relationship banking is usually only discussed for the lending of commercial banks, but it is also applicable to investment banks. Investment banks can also achieve a relationship with their customers that can be used to generate information:

- Repeated underwriting of shares or bonds
- Repeated M&A advisory or other consultancy work
- The use of financial products, e.g. for risk management
- Continued analyst coverage
- Investments into the stock, bank or money market
- for universal banks with lending activities the relationship extends to investment banking

Through all of these activities information is generated that can be used by the investment bank in future transactions.

In this lecture we will therefore explore relationship banking in more detail by considering these questions:

1. What are the benefits and costs of relationship banking ?

2. Will increased competition wipe out relationship banking ?

What are the benefits and costs of relationship banking ?

The benefits for investment banks and their customers from long-term relationships are:

- Customers are more likely to reveal sensitive information and the bank is more willing to analyze this information carefully and take it into account. Hence customers do not get a standard service, but one that takes their specific circumstance much better into account.
  From this information sharing, which reduces the asymmetric information between the investment bank and the company, both sides can benefit: the bank can set much more precise terms for the transaction (e.g. an IPO or M&A), which increases their reputation and the success of the transaction in the market.

- Long-term relationships allow for a certain flexibility in interpreting contracts or engaging in potential transactions, as there are less incentives to exploit this. Furthermore renegotiations of the terms are possible.
  An investment bank could e.g. give the informal advice to wait some time for an IPO instead of declining the underwriting or doing it at much less favorable terms. Furthermore any changes to the contract can easily negotiated if the circumstances change.

- Sticking to formal and more importantly informal agreements increases the trust for future transactions, hence it reduces the transaction costs as not every detail has to be checked.

- Some contracts that are beneficial to the customer may not be profitable for the investment bank, e.g. to develop a new financial product for the need of this company. However, as a part of a long-term relationship the investment bank can easily recover the lost revenue in later transactions. In the same sense a customer may accept less favorable terms of contract that he could get elsewhere.

It makes sense for both sides to engage in these transaction for the sake of long-term profits ("keep the customer happy").

These benefits of relationship banking come at a price, however:

- Banks or customers may be forced into transactions that are not beneficial, maybe for both sides, for the sake of the relationship. Or contracts are not thoroughly enforced and worsen the situation, e.g. increase the losses.

  An example would be that a customer convinces his bank to form the counterpart of a transaction in derivatives that may cause huge losses without getting an adequate compensation are having the ability to bear the risk. this could have devastating effects for both parties.

- The conditions offered by the not be competitive as the information required suggests a smaller fee, e.g. due to lower risks. The information monopoly of the bank, however, prevents competitors to offer better terms, the customer is *locked in*his relationship.

  Having multiple relationships, as it is common nowadays, reduces this problem at least partially.

Overall empirical evidence shows that relationship banking generates additional value for both, investment banks and customers; benefits exceed costs.

Will increased competition wipe out relationship banking ?

Competition between investment banks has increased in recent years. The current market downturn and excess capacities, especially in the underwriting business, is likely to increase this trend. We will explore now how this does affect relationship banking.

We can identify two possible effects on relationship banking, one increasing and one decreasing relationship banking:

- The central element of relationship banking is the long-term view and hence the investment into the relationship. Banks are willing to engage in transactions that are not profitable to recover their losses in later transactions and they are willing to actively gather information about their clients.
  With increased competition, customers are more willing to change the bank for a transaction if this bank offers more favorable conditions. Therefore banks are less willing to invest into a relation due to the reduced life-span or reduced transactions. This then induces customers even more to change the bank in search for better conditions.
  This effect causes relationship banking to vanish and transaction banking to flourish.

- On the other hand, increased competition makes information on the customers even more important. Margins are falling and the risks of transactions etc. have to be much better evaluated to avoid losses that can hardly be recovered from other transactions, either with the same or other customers. E.g. the risk of an IPO for the reputation of an investment bank has to be considered much more carefully as issuers and investors react much more sensitive to any changes.
  With relationship banking the bank can differentiate itself from competitors and avoid a too high exposure to price competition. It can do so by tailoring

their service to the needs of the customer, for which they need information they only get through long-term relations.
This effect benefits relationship banking over transaction banking.

The increased competition has more effects on transaction banking as being mainly a price competition, while relationship banking allows for differentiation. Hence the total effect will be that relationship banking becomes more important, but the profits are reduced through the increased competition.

In the coming lecture we will the focus on how modern technology has changed relationship banking, but also the nature of investment banking.

Lecture 10: New Technologies in Investment Banking

The new information technologies, most notably the internet, are said to change the nature of any business.

In this lecture we will explore how these changes have affected or will affect in the near future investment banking:

1. How do new technologies affect the relationship with clients ?
2. How can new technologies affect IPOs ?

How do new technologies affect the relationship with clients ?

The central role of investment banks is to gather information on their clients and in the case of IPOs or M&As certify the value of the company to the public. Especially in IPOs this information has to be communicated to investors.

The typical way of communicating this information is in roadshows and analyst conferences. The investment banks had to rely on their network of relationships with institutional investors to pass this information on, a direct communication with private investors was not possible due to prohibitive high communication costs. With the spread of the internet this has changed. A large number of private investors can be reached by posting documents or even presentations on the internet.

The network of relationships to institutional investors, the reason for companies to use investment banks, has become less important. The problem of institutional investors not revealing their true preferences due to the small number and their effect on the price could be overcome by broadening the investor base.

As investment banks do not necessarily have to rely on their network for placing an IPO, it has become less important. But also for investors it is less important as they can get access to IPOs by other means than a close relationship to an investment bank. The privileged access to information has been replaced by access to the general public.

Hence to maintain the relationship on both sides has become costly, i.e. more perks have to be offered. On the other hand communicating information to the general public has become cheaper. Both effects together decrease the importance of relationships, despite all attempts of differentiating the products.

Companies could now easily offer shares directly to investors without the use of investment banks, as some already have done. However, the certification role of investment banks are unlikely to become redundant. Despite the large amount of information available, the problem is to identify the relevant information and analyzing this information. This process is most likely to cause severe difficulties to investors as well as issuers.

The management of relationships has become much more easy with the computer technology. All relevant information can be stored in a single database and accessed without problems from any place.

How can new technologies affect IPOs ?

The internet can be used to facilitate the distribution of new issues:

- Companies can rely on investors signing up for shares directly without the help of an investment bank.
  This is very uncommon and the lack of publicity may cause severe problems. As does the absence of a certification role of investment banks.

- The pricing and allocation (book building) is not very transparent and usually biased towards institutional investors; whether by demand of the issuer is doubtful.
  A more transparent system would also overcome the problem of spinning IPOs (allocation to favored clients in the hope of getting business back later) and should reduce underpricing (required for this free allocation).

- *Internet* or *online IPOs* use a special *internet-based investment bank* to market their IPOs

- the internet can be used to disseminate information about this much more easily to private investors, who become more informed.

- The elimination of the intermediary (*disintermediation*)as in brokerage may be the ultimate result, but it is unlikely given the nature of the business.

Such online IPOs have these characteristics:

- Internet-based investment banks are usually part of a more traditional syndicate in which they receive a very small share of the entire allocation (¡ 5% typically).

- The price is determined via an auction process with limits on what a single investor can get (typically 10%, but can be lower).

- Companies using internet IPOs are usually larger than traditional IPOs (able to afford the additional spread of shares ?), younger CEO (more open to new technology and often in internet business themselves), they use more reputable underwriters additionally (probably to overcome the low reputation of internet-based investment banks and the fear of investors being ripped off or more risky to them).
- Underpricing is not much reduced really, probably because only a small fraction is offered online to private investors.

There are several implications emerging from the market entry of internet-based investment banks:

- The market becomes more competitive with these new players from outside the traditional area. Although not charging lower spreads, they may put pressure on the traditional banks due to their lower costs.
- Less reputable traditional underwriters are most likely to suffer the worst.
- Traditional investment banks as well as online investment banks have to take the characteristics of the companies and managers into account, offer types are less important.
- With the end of the internet boom and the death of many company (virtually no IPOs), it has to be seen whether online IPOs can actually survive or are just another fad.

Lecture 11: Organization and Culture of Investment Banks

This lecture will provide a quick overview of how investment banks are organized and some remarks on the culture within investment banks as well as their remuneration policies and their implications.

1. What is the organizational structure of investment banks ?

2. What is the remuneration policy of investment banks ?

What is the organizational structure of investment banks ?

Investment banks offer a wide range of services, most of which are not really profitable. The key business areas are M&A and underwriting (IPOs). These businesses offer high profit margins on each deal with relative low costs. But this business is very cyclical and given the high salaries profits vary widely, i.e. the business is much more risky. Thus the risk premium is higher and the returns have to exceed that of commercial banks.

Many business areas have much lower margins or are even loss-making. Often these areas provide an entry to gain more profitable business in the future (relationship banking). They can also support the profitable business, e.g. financial analysis and brokerage (relationship to institutional investors for distributing IPOs).

For large investment banks the potential fees (net of costs) generated from a client is more important than its size, which is important for smaller investment banks. Smaller investment banks hope to keep customers as they grow and so enter the market for large business. Pressure on the revenues causes large investment banks also to accept smaller business, thus increasing the pressure on the smaller investment banks.

The more important a client is for the bank the more senior the manager he deals with. This ensures that important clients think they get the appropriate attention. This is part of the all important *relationship management*, which differs substantially from commercial banks.

The focus of commercial banks is on individual products and thus employees specialize. The increased sophistication and complexity of products and services in investment banking would suggest a similar structure. But several investment banks have chosen a different route by having an *integrated client relationship*.

This requires a close collaboration between various specialists, coordinated by the relationship manager, who is the contact for the company. It is this contact which holds the key to success and future deals, hence it is very much personality driven. If the personalities of the investment banker and the company does not work properly, this can be the end. Whereas in a commercial banks many contacts exist and thus problems can be much more easily be resolved.

The advantage of this approach is obviously the increased ability for cross-selling products as the relationship manager will look at all aspects and not only his product range.

Given this approach and the complexity as well as speed of changes, investment banks are hardly organized hierarchically, but have a very flat structure. Top-down approaches in management are very much limited, but individual people are given a wide range of autonomy. Even a general strategy is often missing or formulated much lower down the hierarchy.

This autonomy has the problem of potential being unable to coordinate. This is solved by an internal network of people that work together (despite internal competition). This networks covers different specialism, but also goes across hierarchical levels, it includes information sharing. As in consultancy it is important for any employee to establish such a network; only this ensures that he is involved in important deals and establishes himself in the company. This is important for the bonus as well as promotions; furthermore it gives access to companies, important when becoming a relationship manager.

the network structure also becomes visible in the fact that in many cases it are not individuals who move, but entire teams of people working together. Hence it has become common to chase teams rather than individuals from other banks (e.g. the team of Frank Quattrone was chased from Deutsche Bank to CSFB). The lack of loyalty (except to money as one banker put it) and frequent changes of people, has also blurred the different cultures of the various investment banks. They have become more or less a melting pot of all the cultures people grew up in.

This structure is fundamentally different from commercial banks, where the hierarchy is much more important. This cultural difference caused several of the problems for UK merchant banks entering investment banking (perceived lack of "discipline"), together with the volatility in results (not following rules and producing losses).

Lets look deeper into the way investment banks are managed:

- *Strategy*: Broad guidelines from the top management, with great flexibility further down the line (commercial banks: little room to manoeuvre).
- *Structure*: Flat, flexible network across hierarchies (commercial banks: rigid hierarchy).
- *Control systems*: Measurement of aggregate revenue/profit (commercial banks also at unit/product and customer level)
- *Relationship management*: All levels heavily involved, diverse role according to needs of customer, senior people not restricted to supervision, but includes attracting business (commercial banks senior people not involved, only product responsibility down the line, senior people only supervisory role)

What are the requirements for a leader in investment banking?

This type of culture and organization in investment banks requires very different skills than for other organizations, including commercial banks.

Investment bankers are often very eccentric, egomaniac people with larger egos than their boots. This is reiterated by the large amounts of money they earn (see below) and the number/value of deals they succeed in. The key is that someone is needed who can guide them to form a unique team. High pressure for formal cooperation would be, however, likely negative.

An outsider is unlikely to become a leader. Besides a sound understanding of the business, the culture has to be understood. And most importantly the leader must be able to talk with the investment banker, the same language (even rude remarks) helps a lot.

Another important part is that people have to have the trust in the leader. This he gets much easier as an insider, which everyone knows. The big problem is the great autonomy for individuals, nothing can really be forced through (and if, it would go against the entire culture in investment banking).

All these aspects make it virtually impossible for an outsider to succeed.

What is the remuneration policy of investment banks ?

The remuneration is key to attracting and keeping employees in a company. Usually high pay is the compensation for long and very stressful hours (18 hours a day in the key stages of a deal can be "normal", weekends do not exist).

The problem with the high incomes is that it becomes a fixed cost in a downturn, unless bonuses can be reduced. But in order to attract staff in boom times, these bonuses are often guaranteed for some years (and thus no real bonuses anymore), thus aggravating the losses further. The bonus makes a substantial part of the total pay, often much more than the fixed salary. Thus it is very important, in contrast to commercial banks, where bonuses are much lower, thus further causing a clash of cultures. Such profit sharing is then often a problem with many (European) commercial banks acquiring investment banks as this is not accepted.

To avoid such a problem, the traditional system of a partnership sees a revival. All profits (or that fraction which is to be paid out) are pooled and then distributed to those eligible. The criterion is how much an individual has contributed to this "pot".

This process is very subjective and in contrast to commercial banks done by senior managers. It involves a full review of one's performance (including own input, from colleagues, senior managers, comments from clients,...) and should in the end be a fair compromise. In reality a very difficult process as many things have to be taken into account, e.g. market condition s (simple to have many deals in good years, but much more difficult in bad years).

A feature of the bonus system in investment banking is that the bonus does not depend on the position in the hierarchy (although there is likely to be a strong correlation). Senior managers do not necessarily get a higher bonus (unlike in commercial banks). This reflects the flat structure and the great autonomy given to individuals.

Through this system the old partnership that were dissolved are revived in principle. But the fixed payouts from guaranteed bonuses jeopardize this process. A way out could be to use shares for payment, which also saves cash. This would then also bind the bonus to the (future) performance of the bank. This also increases the loyalty and motivation for future years and taking a more long-term view.

This focus and importance of the bonus, despite the incentives for a long-term view, gives strong incentives to "make deals", even against the interest of the client. This policy thus increases the conflicts of interest as we have discussed in previous lectures.

Lecture 12: Costs and strategies of investment banks

The final lecture will look at the cost structure of investment banks and their strategies for success. We have covered many aspects in throughout this course, including the last lecture, but will bring things together here and add a new perspective, e.g. on how they can be effectively managed. We will also look at the strategies followed by the leading investment banks at the moment. Finally an attempt is made to identify future trends in investment banking.

1. What are characteristics of the costs in investment banking ?
2. What are the business models of investment banks ?
3. What does the future change in investment banking ?

What are characteristics of the costs in investment banking ?

The main costs of investment banks are salaries and bonuses. In recent years investment into IT has contributed significantly to the costs. Hence the main cost drivers are IT and people. IT costs are fixed costs and thus not reducible in a downturn, hence the only possibility to adjust costs is on the people side, which is difficult enough.

Salaries etc. typically make about 50% of the revenue (this is a common benchmark for cost control as it is difficukt to set up more sophisticated cost management systems), 15% on IT and another 15% on other costs. This leaves on average a profit margin of about 20%. Allocating to individual products is very difficult given the interaction and cross-subsidization in an investment bank.

During the boom-time the revenue grew much faster than the cost base, making cost control not an issue, but the recent downturn has reversed this trend and costs have been reduced much less than revenue, causing profits to tumble.

With base salaries and IT costs fixed, a way to tackle the problem of costs is to try and maximize the variable part. A natural start would be the substantial bonuses, who should be reduced. But in many cases bonus are either explicitly fixed (guaranteed bonus) or implicit as it is difficult to cut them. Competition for good people may then cause them to change employers. hence bonuses are not that variable in the end.

The entire back-office (mostly IT-related costs), as order processing, HRM or IT maintenance, is also a fixed cost. Many companies, including commercial banks, have outsourced these functions and made the costs thus variable. This trend is very limited in investment banking. The main reason is the reluctance to share facilities with competitors for fear of loss of control, regulatory standards and generally lack of control on the quality of the service. hence in reality outsourcing is not an acceptable alternative. This leaves the only way to control costs on the wage bill.

Investment banking is very much revenue driven, costs considerations are secondary, except in bad times. Some banks try to manage costs very simply by requiring that not more than 50% of the revenue goes into compensation. This limits firstly the number of people hired to generate the revenue as well as the bonuses paid to them.

When revenue drops, staff has to be laid off to control costs. With bonuses not that flexible this is the only way to reduce the total costs. We therefore see the periodic lay-offs in investment banks. This "hire-and fire" mentality on the other hand does not increase the loyalty of employee, who are treated more like a commodity and behave accordingly. Hence it becomes part of the culture in an investment bank.

Of particular concern is the loss of good people. In a general cull you simply have to lay-off a fraction of the people currently employed, even if you think they are all quite good. More profitable is it to undertake a review continuously and root out poor performers. This means that regularly underperformers are laid off (the McKinsey approach), even in good times where they are still "worth their money". This should enable the investment bank to go into a downturn with the best people, maintaining more revenue and thus being hit less hard. But even with such an approach it is unlikely that the entire employees can stay, massive lay-offs are even then unavoidable given the scale of downturn.

Another possibility to reduce costs is to shut down non-profitable business areas. this is, however, not that easy as many are essential as an entry point for clients into more profitable business areas. Culling them would severely damage the standing of the investment bank. Also the need to offer the full range of services (one-stop shopping) makes this one very difficult to achieve.

Generally cost control in an investment bank will be very difficult in this revenue driven environment. there will always be good reasons for expanding here and not cutting back there. The fast changes in the environment makes it imperative that investment banks must at the cutting edge of everything so that it does not miss the next big trend. And market share, just being there and being there big is essential for the reputation.

Large investment banks can operate on a high cost basis as they generate high revenue. Attracting staff with high salaries (and so increasing the costs of others) can in the long run pay off (*operational leverage*) as smaller players exit that business area.

What are the business models of investment banks ?

Recent years have seen many investment banks merging (sometimes with commercial banks), the aim was usually to increase the market share and realize synergies.

In many cases the market share did not increase as expected. This can be attributed to the fact that some clients choose not to continue the relationship or move some of their business somewhere else (multiple relationships). A problem on realizing synergies is that many functions will be overlapping rather than being complementary.

As developments in investment banking are very fast, players have to react fast. Hence the integration has to be quite fast, too. In a "merger of equals" a lengthy negotiation process on how to adjust the structures would follow. This would take too long and therefore usually one partner takes the leading role and the transaction becomes an acquisition. It is this leader who then determines the future format of the investment bank.

Synergies can particularly be generated in the front office (one relationship manager needed instead of two for the same company), but given the very competitive environment each one will fight for his job. In this process the bank can loose exactly those high performers it wants to keep, often because they do not like the changes to be implemented. Synergies can only be obtained (given the pay) at this end rather than the back office (as in commercial banks). Complementary business areas help, but a cultural fit could become more an issue in that case.

For these reasons the desired synergies in many cases do not realize as anticipated (as with most mergers, but as investment banks they should know better) or problems emerge at other points.

What does the future change in investment banking ?

Currently the business models of the leading banks in the key business areas of M&A and IPOs are very much the same. This means that they are directly competing with each other. As long as the business was booming this enabled all of them to grow, but now in a much more subdued market this increases competition.

In *merger & acquisitions* they will try to attract business for debt underwriting and from there to attract them to their M&A business. Increased use of the balance sheet (loans) to finance these transactions makes them more attractive (one-stop shopping) and the tie-up with a commercial bank may even allow a longer relationship.

In *IPO*s they all build on a strong research basis (financial analysts), attract client via loans (balance sheet), attract venture capitalists and build additional business from there.

In order to survive this competition investment banks have to think about how they can differentiate themselves. Reputation will not do as the leading investment banks all have a similar (good or bad?) reputation. They must change by offering some unique features. I also do not have the solution, but that's the job of those actually working there.

This competition does not necessarily mean that smaller investment banks will be swallowed up. There will always be niches available (certain industry sectors, specialist products) that are too small to get the full attention of the large players. If small investment banks do not have the ambition to be a "full player" - as most do - they can easily survive in this niche.

Despite the importance of a balance sheet (loan facilities) the trend to a universal bank may not be inevitable. The cultural differences would make it very difficult to work, although it has been done (Citigroup, JP Morgan Chase), but the experience of UK banks shows that it can go wrong. A problem is also the low margins in commercial banking (for loans), this business is not attractive and the reputation for investment banker of this business is low, it is commodity, something they claim not to offer, but tailored products.