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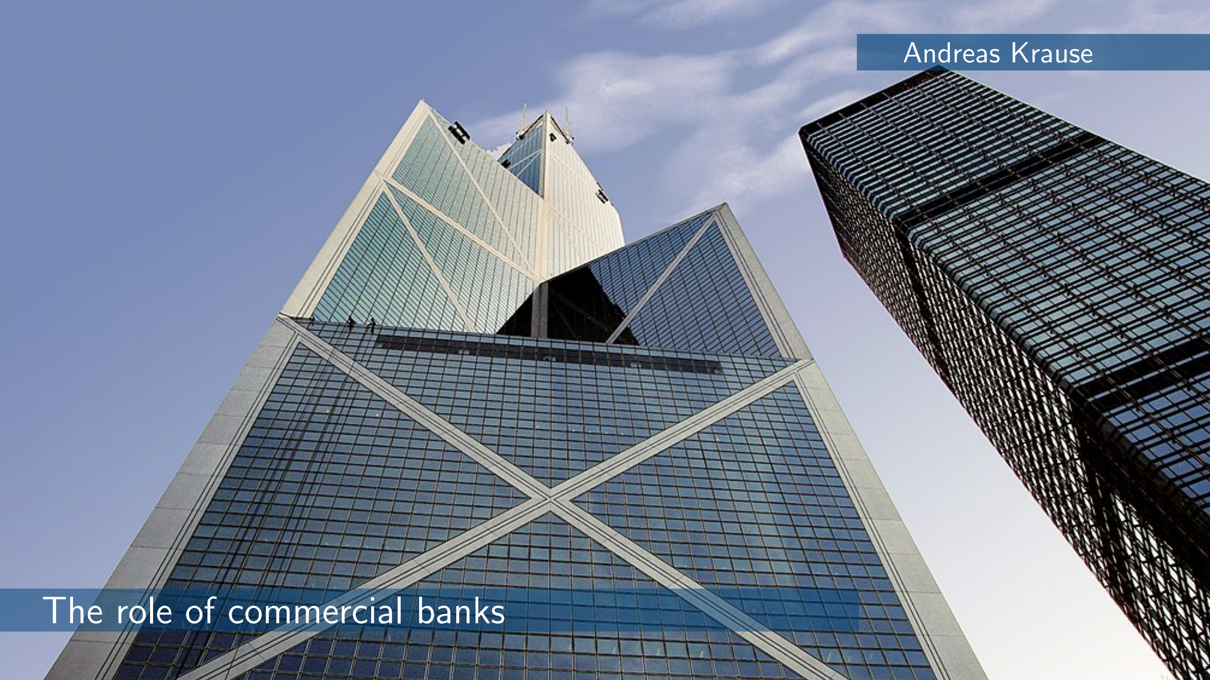

The role of commercial banks

- Banks are often seen as intermediaries that use the deposits they have obtained to provide loans.
- In such a view the bank acts as a market place that reduces transaction costs through increased efficiency for depositors and companies.
- We will see that banks play a more active role in the economy than merely act as a market place, namely by transforming short-term deposits into long-term loans, in additional to being efficient market places.

Banks as intermediaries

- Banks can be seen as a channeling excess funds, savings, in the form of deposits into loans for those that have a shortage of funds
- Using banks may be more efficient than each individual negotiating with a borrower separately
- Banks can do more than merely pass on deposits efficiently, they can transform short-term deposits into long-term loans
- This ability distinguishes banks from other intermediaries as they change the properties of the 'goods' they are 'selling'

Banks as intermediaries

→ Banks are intermediaries between savers (depositors) and investors lacking funds (borrowers), but we will see that they have to offer more than many other intermediaries.

- A very traditional view of banks is that they collect excess funds in the form of deposits and use these to provide loans to companies seeking to invest. In such a view banks are a market place where savers (depositors) and borrowers (companies) meet, rather than having to rely on individual encounters.
- It is seen that banks are more efficient as they can collect multiple deposits and bundle them into a single loan, reducing the number of individual loans agreements and reducing transaction costs. Banks may also diversify the investment of deposits as each deposit is exposed not only to a single loan but to the portfolio of loans the bank has given, reducing risks.
- However, banks do more than reduce transaction costs and risks, they fundamentally transform deposits that can be withdrawn at any time without notice into loans that do not need to be repaid for a long period of time. This would not be achievable with out banks, as we will see.
- This maturity transformation of deposits distinguishes banks from many other intermediaries, such as retailers. Banks change the properties of the short-term deposits by transforming them into long-term loans. This transformation is not achieved by other intermediaries.

→ banks act in part as ordinary intermediaries, matching depositors and companies, but in the process change the nature of the loan from short-term into long-term.

Negotiating with banks

- Borrowers could obtain loans directly, but would have to negotiate directly
- Alternatively, the depositor could negotiate with the bank and then the bank in turn negotiates with the borrower
- Banks have an advantage of having no negotiation costs and thus have an advantage over direct lending arrangements

Negotiating with banks

→ We first look at the role of banks as pure intermediaries by matching depositors and companies more efficiently.

-
  - Rather than using banks, depositors could provide loans directly to companies.
  - This would however require a direct negotiation between these two parties, which can be time consuming and costly, especially if either or both parties are not experienced in such transactions.
-
  - If a bank is involved, then there would be two negotiations, one with the depositor and the bank about the deposit.
  - The other negotiation would be the negotiation of the bank with the company about the loan.
-
  - We assume here that banks have the advantage that their negotiation costs are lower, or even absent due to their experience and knowledge, as well as the establishment of standardised contracts.
  - This should give banks an advantage over directly negotiating loans between depositors and companies.

→ We will see that while this is true in most cases, banks also seek to extract profits for themselves and this might give rise to situations where direct lending might be preferred by depositors and companies.

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Chapter 2.1

Negotiation costs

→ The model we are going to discuss is based on Chapter 2.1 of the book 'Theoretical Foundations of Banking'. A more detailed description of the model, additional steps for its solution, and a more in-depth discussion of results can be found there.

Discussion of model results

- Bank lending will dominate due to the lower negotiation costs of banks
- Direct lending can be sustained only in narrow ranges where the returns to borrowers are of intermediate value

? Banks have an advantage in negotiation costs, would this be only because banks are more efficient and experienced?

! In addition to experience and having systems set up for lending, banks are also better informed about borrowers, reducing adverse selection costs

Discussion of model results

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

- We have seen that in most cases the lower negotiation costs banks have will make bank loans and deposits the preferred way of investing and borrowing. The comparative advantage of banks in negotiation costs drives this result.
- In some cases direct lending can be sustained or can be the preferred form of lending and investing, hence with experienced depositors and high-risk companies some direct lending should still be observed.
- Efficiency is terms of the process and the experience of such agreements will give bank such an advantage, but are there other aspects that would give banks an advantage?
- Banks do not have these stated benefits, but they also have more and better access to information about companies, better knowledge how to evaluate information and assess the risks from such loans. This would reduce adverse selection and thereby the costs to any lender. These additional benefits are in addition to the reduced transaction costs from the negotiation process itself. These costs would accrue mainly to the depositor in direct lending.

→ Banks reduce transaction costs and allow a better risk assessment of companies, which can be summarised as banks reduce transaction costs. This is the main reason for their dominance in all but a few cases where direct lending can be observed. Of course, there are other constraints on bank lending, for example the size of loans required that would lead to direct lending, mainly through the bond market.

Banks enabling long-term loans

- Investments are mostly long-term and require long-term funding
- Depositors often seek access to their funds at short notice, but will not know this beforehand
- Banks can overcome this uncertainty by offering short-term deposits while giving long-term loans

Banks enabling long-term loans

- → As indicated, loans are typically given long-term for many years, while deposits can be withdrawn at short or no notice. We will see how banks address this imbalance in demands.
- ▶ Investments are in most cases long-term in that profits are only generated over long periods of time and loans need to reflect this as they cannot be repaid otherwise.
- ▶
  - Depositors will want to be able to access their funds without much notice, for example to make purchases or pursue other investments.
  - When they will need access to their funds even the depositors themselves do not know.
- ▶
  - Banks can offer a way that these two very opposite aims can be met simultaneously. They offer short-term deposits that can be taken out at any time
  - alert¡6¿At the same time they provide long-term loans using the same short-term deposits.
- → We will see how banks achieve this transformation of short-term deposits into long-term loans.

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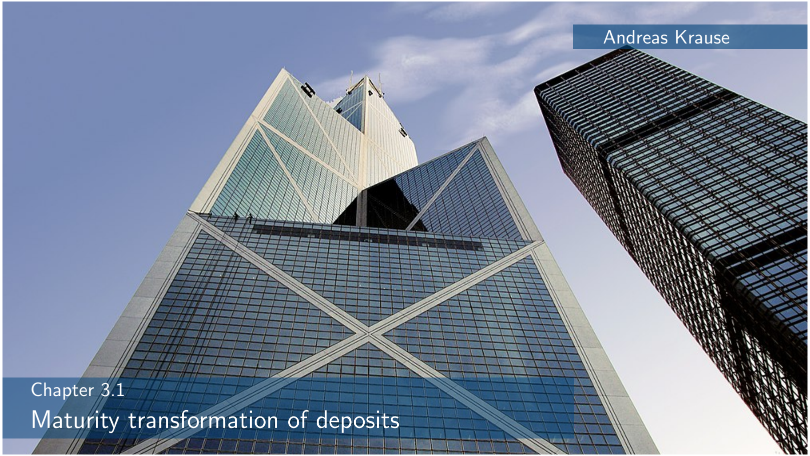
Chapter 3.1

Maturity transformation of deposits



→ The model we are going to discuss is based on Chapter 3.1 of the book 'Theoretical Foundations of Banking'. A more detailed description of the model, additional steps for its solution, and a more in-depth discussion of results can be found there.

Discussion of model results

- Banks retain cash to repay those depositors that withdraw their deposits early and from the remainder provide long-term loans
- Having a large number of depositors allows banks to achieve this result

? Would banks inevitably fail if existing depositors withdraw funds in large numbers from many banks?

! If more depositors are withdrawn than the bank holds cash, it would fail, but often deposits get merely moved between banks and the total deposits at a bank remain steady

Discussion of model results

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

-
  - Banks transform short-term deposits into long-term loans by retaining a small amount of cash to be able to repay those that withdraw funds.
  - The remainder is the lent out. In reality deposits get withdrawn and new deposits are made. Banks will have to account only for any such differences between withdrawals and new deposits. Deposits are rarely withdrawn from the banking system by demanding cash, but transferred between banks. Cash is only required to account for any such unexpected fluctuations in the amount of deposits available.
- Pooling a large number of depositors allows banks to rely on probabilities of early withdrawals and not the idiosyncracy of a single or a small number of depositors as in direct lending. This allows banks to achieve the social optimum.
- Large withdrawals can cause a bank to run out of cash reserves, but does this mean a bank will fail or have to sell its loans?
- Deposits are moved between banks, so banks can easily accommodate large withdrawals if they obtain large new deposits at the same time. Such high turnover can be observed at certain time, such as when salaries are paid at the end of a month and large amounts are transferred within the banking system.

→ Banks transform short-term deposits into long-term loans, but that makes them also vulnerable to banks runs. Thus banking systems are potentially fragile and expectations can cause a banking crisis.

Summary of key results

- Banks are efficient in providing loans and enable the maturity transformation of deposits
- Banks are acting as ordinary intermediaries if seen as reducing transaction costs
- Banks affect the quality of the deposits if the maturity transformation is considered
- Banks are more than mere intermediaries, they affect economic outcomes to a larger extend than ordinary intermediaries

Summary of key results

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

- • Banks provide benefits to the economy by reducing transactions costs when matching depositors and companies.
  • They also overcome the problem of the maturity mismatch between deposits and loans, allowing a socially optimal allocation of resources. Thus their benefits are manifold.
- In many cases banks can be seen as merely reducing transaction costs between depositors and companies; such a view is common in many macro-economic models where banks are used in this way, but also used to introduce friction by having different deposit and loans rates, making a profit.
- A more important role in the economy is the maturity transformation they achieve, It is only through this maturity transformation that long-term investment can be financed at such a large scale as we observe. It would be difficult to obtain the same amount of long-term funds if depositors had to commit to such long-term investments themselves.
- • Hence banks are more than just intermediaries in the classical sense of economic theory. They fulfill this role, but this is not their only benefit.
  • Banks affect economic outcomes much more profoundly through the maturity transformation of deposits. This effect is significantly larger than other intermediaries, for example retailers with their efficiency gains and economies of scale in distribution.

→ It was at the time of the industrial revolution with its demand for large-scale and long-term investment that modern banking become widespread, while direct lending dominated previously. The maturity transformation of banks will have played an important role in this process. Banks are at the centre of any developed and developing economy.

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