

# Banks

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## A story about where banks came from

- Banks actually arose in different ways at different times, but this story is not far off for certain places and times.
- Suppose there is an economy with farmers and bakers. Farmers buy bread from bakers and then, one period later, have a grain crop available, which they sell to bakers, who use it to produce, one period later, more bread, and so on forever.
- When the farmer buys bread, she has no grain, and when the baker buys grain, he has no bread. Without money or banks, bakers would have to locate farmers with grain still unsold and get them to agree to a contract in which bread would be paid later.

- With commodity money, say gold, the bakers can pay with gold for the grain, and the farmers can use the gold next period to buy bread, etc. The farmer no longer needs to worry about whether the particular baker he's dealing with is trustworthy, and vice versa.
- But, commodity money always requires tying up something (gold) which would have other uses, in the role of facilitating transactions, and gold is costly to transport.

## The goldsmith banker

- Suppose there is a goldsmith in town with facilities to store gold securely. He could offer to store people's gold and to issue them a paper certificate in return, documenting how much gold was on deposit. The certificate, assuming it is trusted and not easy to counterfeit, could function as well as gold in transactions and would be much easier to transport between bakers and farmers. This would be a paper currency with 100% commodity backing. It is what is usually meant by a "gold standard".
- Suppose a new farmer arrives on the scene, who has no gold but would like to eat this period so she can produce grain by next period. The goldsmith might offer to print up a gold certificate for this farmer, even though she has not deposited any gold. The farmer would simply promise to return a gold certificate next period, after her crop has come in.

- If the goldsmith does this, he will have more gold certificates outstanding than he has gold on deposit. But once the gold certificates have become the medium of exchange, no one has any reason to get gold out of the vault, so it just sits there. The goldsmith would see no risk that issuing some extra certificates, which also would circulate, would cause any problem.
- The goldsmith, now a banker, has made a loan to the new farmer. The loan is an asset on his balance sheet.

## The balance sheet

Assets	Liabilities
Loans	Deposits
Gold	

## Should banks be able to “print money”?

- In making the loan to the farmer, the bank prints up an unbacked gold certificate.
- So long as the certificates keep circulating, this is no problem, and there seems to be no limit to how much money a bank could create by making loans.
- Is there something wrong with this? (There are websites where it is claimed that this is immoral and should be illegal.)
- By standard accounting rules, the bank is **solvent**, meaning it has assets whose value matches or exceed the value of its liabilities.
- The loan is an asset that balances the liability created with the issue of the new gold certificate.

## Maturity mismatch, maturity transformation

- The gold certificate is a demand, or call, liability. Whoever holds it can at any moment show up at the bank and ask for gold in return for the certificate.
- Its **maturity** is zero.
- The loan, on the other hand cannot be cashed in with the borrower, except by waiting one period. The loan has a maturity of one period.
- The fact that the gold certificate is a demand liability makes it easy for the farmer to use it immediately to buy bread. The baker knows that the certificate is equivalent to gold, since it can be instantly turned into gold.



- Without the loan, the bank with 100% backing for currency has assets (gold) and liabilities (certificates) that are both maturity zero.
- Once loans are on the balance sheet, the balance sheet shows **maturity mismatch**. The bank has engaged in **maturity transformation**, and this is useful to its customers.

## Bank runs

- Though the ability of the public to trade a term liability (a one-period loan) for a demand asset (the gold certificates) is valuable, as it facilitates transactions, it creates a potential problem if the certificates are not fully backed — that is if the asset side of the balance sheet contains loans as well as gold.
- The banker may know that only a few people ever show up asking for gold in return for certificates in any period, and that he has plenty of gold on hand to satisfy these few.
- But if most of the depositors showed up at once to demand gold for their certificates, the bank would not have enough gold.

- This creates the possibility that if some depositors believed that many other depositors were going to demand gold suddenly, then these depositors would themselves demand gold suddenly, for fear of not getting it before the bank ran out.
- Thus a bank can be unable to satisfy its depositors' demands for gold (or, in the modern world, currency) because of an initially false rumor that depositors were going to make large withdrawals. This kind of rumor could be a "self-fulfilling prophecy".

## Wildcat banking

- During some periods of American history there was no federal regulation of banking. States had various rules for banking and varying degrees of rigor in their enforcement of rules.
- Any bank could issue “bank notes” — zero-maturity liabilities meant to circulate as cash. But these notes were obviously not uniform. Businesses did not treat all such notes with the same face value equally. Notes from more distant banks, whose financial condition was more difficult to verify, traded at a discount to those of better known local banks.

## Wildcat banking, cont.

- Despite the discounts, there was an incentive to set up a bank in a remote location, create a balance sheet with “assets” consisting of loans to friends or associates that were unlikely to be repaid, and for those friends and associates to spend the money in other, distant locations where takers of the notes might not be able to detect the fraud.
- Such banking schemes occurred often enough to be given a name, “wildcat banks”, referring to the fact that they tended to be founded off in the wilds of places like Michigan (then the far west).
- Wildcat banks represented fraud. Runs on banks arose, and still sometimes arise, without any actual fraud; but they can be set off by rumors of fraud.

# Prudential Regulation

- The threat of fraudulent note issue and of bank runs has been recognized as long as banks have existed, and have led to the most common regulatory devices.
- Prudential regulation requires that banks open their books to inspectors — bank examiners, as they are called in the US — who verify that their loans are sound and that they have enough liquidity to meet likely fluctuations in net deposit flows.
- The inspection may result in public reports on bank balance sheets, and it may be backed by enforcement action when banks deviate from specified standards for their balance sheets.

- Prudential regulation aims at preventing fraud and at assuring the public that banks books are in order, thereby indirectly reducing the likelihood of runs.

# Deposit Insurance

- Deposit insurance guarantees that bank deposits, usually up to a certain size limit, will retain their value even if the bank becomes insolvent.
- That is, even if there is a bank run and the bank's assets are insufficient to allow it to pay all depositors, the insurance agency will pay them.
- This kind of institution greatly reduces the likelihood of a run, since depositors do not fear that a sudden spate of withdrawals by others could leave their own deposits valueless.
- It can in principle be provided privately, and in some periods has been provided by banking industry consortiums.



- Private or state government deposit insurance funds always have limited assets, however. They can handle scattered cases of insolvent banks and thereby prevent such cases from becoming a system-wide pattern of bank runs.
- But private or state funds will not be big enough to assure depositors if they fear that the whole banking system may be subject to a run.
- In the US, and in most other countries now, there is deposit insurance at a national level provided by a government that can sell nominal debt. This is much more stable than private or state deposit insurance, as the national government can supply cash in unlimited amounts if that is necessary to stem a bank run.