

Lecture 27

Money and Banking, Econ 345

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Preventing panics

- Assumptions so far:
 - cannot borrow from others
 - cannot identify depositor's type
- Ways of preventing panic:
 - Interbank lending
 - Identifying unnecessary withdrawals
 - Suspension of withdrawals
 - Government Deposit Insurance
- Note: in all cases bank run may never occur in the first place, because Type 2 depositors have no incentive to withdraw even if they believe that others will!

Second reason for bank failures

- We looked at bank runs stemming from shocks to liabilities (deposit withdrawals due to panic)
- Today: shocks on assets
 - assets are risky investments (random return)

Protecting against asset risk

- Hold large fraction of asset portfolio in safe assets
- Hold "bank capital" (net worth) coming from shareholders
 - shareholders can claim a "share" of bank's value after paying depositors
- Depositors have priority to their claims over shareholders' claims
 - unexpected loss to bank's assets is subtracted from net worth first
 - shareholders exposed to more risk than depositors
- If shareholders are risk averse, bank capital reduces incentives to invest in risky assets

A Bank's Balance Sheet

Assets		Liabilities	
Reserves	γH	Deposits	H
Interest-bearing assets	$(1 - \gamma) H + W$	Net worth	W
Total assets	$H + W$	Total liabilities	$H + W$

A Bank's Balance Sheet

Assets		Liabilities	
Reserves	<i>\$ 2M</i>	Deposits	<i>\$ 20M</i>
Interest-bearing assets	<i>\$ 22M</i>	Net worth	<i>\$ 4M</i>
Total assets	<i>\$ 24M</i>	Total liabilities	<i>\$ 24M</i>

Bank's Balance Sheet: \$1.1 loss due to loan defaults

Assets		Liabilities	
Reserves	<i>\$ 2M</i>	Deposits	<i>\$ 20M</i>
Interest-bearing assets	<i>\$ 20.9M</i>	Net worth	<i>\$ 2.9M</i>
Total assets	<i>\$ 22.9M</i>	Total liabilities	<i>\$ 22.9M</i>

Deposit insurance

- Asset risk makes it harder to attract investors (depositors or shareholders)
 - bank must choose portfolio safely
- Insurance against losses: deposit insurance by the government
 - if deposits are insured, depositors interested in highest rate of return
 - highest rates are provided by riskier assets
 - incentives for banks to take greater risks in asset investment
- **Moral hazard**: insurance against losses removes incentives for the insured to take safe actions

Preventing excessive risk-taking

- Bank regulation:
 - limit banks legally to safer assets (but many assets are risky)
 - make insurance premiums depend on bank's risk (but not easy to assess risk precisely)
 - impose capital requirement: tie net worth to be a certain fraction of assets
 - Bank of International Settlements requires 8% of capital-to-asset ratio
- Example with figure: will risk averse shareholders want to invest in asset of \$4 million with loss (50%) or gain (50%)?
 - No on Figure
 - Yes, if net worth was smaller (e.g., \$1M), because if gain - get \$4M, if loss - lose only \$1M
 - Depositors will pay the remaining \$3M (or government if deposit insurance is in place)