ECON 3510 - Intermediate Macroeconomic Theory

Fall 2015

Mankiw, *Macroeconomics, 8th ed.*, Chapter 20

Chapter 20: The Financial System - Opportunities and Dangers

Key points:

- What do financial institutions do?
- Six common features of financial crises
- Policy responses to financial crises
- Policies to prevent financial crises

What does the financial system do?

- DRAW the investment and saving part of the circular flow model. Show both financial markets and intermediaries and how they channel savings into investment. Note that financial intermediaries can act through markets or directly.
- Financial markets
  1. Bond market
     - Where bonds are bought and sold
     - Firms sell bonds (borrow money) to finance investment
     - This is called debt finance
  2. Stock market
     - Where stocks are bought and sold
     - Firms sell stock (issue equity) to finance investment
     - A stock represents a share of ownership in the business
     - This is called equity finance

  - Financial markets facilitate direct or indirect investment by the household
- What are financial intermediaries?
  - Businesses that help manage savings and channel it to investment
  - Include:
    * Commercial banks
    * Investment banks
    * Hedge funds
    * Mutual funds
    * Pension funds
    * Insurance companies
- Why use financial intermediaries?
  - Risk management
    * When you make an investment, you are assuming some of the risk in the business

    * 2 types of risk:
    * 1. Idiosyncratic risk - risk specific to a particular business or sector
    * 2. Systemic risk - risk faced by all businesses
    * Diversification can help to mitigate idiosyncratic (but not systemic) risk
    * Example:
    * Financial intermediaries help individuals diversify savings (e.g. mutual fund buys a pool of assets)
  - Mitigate effects of asymmetric information
    * Asymmetric information: when one party in a transaction knows more than another
    * e.g. the business making investment knows more about its risk than the shareholder/lender
    * 2 problems:
    * 1. Adverse selection
    * → Businesses with worse risks are more likely to seek external funding (either debt or equity)
    * 2. Moral Hazard
    * → Business managers may not monitor investments well if they are not bearing all of the risk
    * Financial intermediaries help by:
    * 1. Examining investments before loans are made/equity purchased to determine risks
    * 2. Monitor business to ensure that it uses investor money productively

Financial crises:

- A major disruption in the financial system
- Larry Summers: like a power outage
- 6 common features:
  1. Asset price boom and bust
     - People call this a "bubble"
  2. Insolvencies at financial institutions
     - e.g., bank failures
     - Precipitated by asset price declines
     - If assets < liabilities, insolvent
     - Amplified by leverage
  3. Falling confidence
     - Lenders/investors not sure if other financial institutions will fail or asset prices decline more, so sell off assets
     - Sale of assets pushes down asset prices further, so more pushed towards insolvency
  4. Credit crunch
     - Financial institutions cut back on loans to preserve capital
     - Now hard for business to get loans to financing investment or for consumers to borrow to finance consumption
  5. Recession
     - Economic downturn
     - Less lending means lower C and I which means a shift inward of IS curve, which means a shift inward of the AD curve which means lower GDP
  6. Vicious cycle

  - The recession further depresses asset prices and reduces business profits
  - ⇒ more insolvencies, back to step 1 and 2

- DRAW the flow chart for a financial crisis

<u>The 2008-2009 financial crisis</u>:

1. Asset price boom and bust
   - Centered around home prices
   - See graph of home prices - they fell about 30% from peak in 2006
   - Why did prices increase so much?
     - Demand for housing went up
     - Why?
     - People thought home prices would keep rising (a self-inflating bubble)
     - Lower loan standards
     - Lower mortgage rates b/c of:
     - → Federal reserve policy
     - → Fannie and Freddie
     - → Securitization (rise of MBS)
2. Insolvencies at financial institutions
   - Fall in home prices means that some homeowners owe more than their house is worth
     - e.g., say you buy a $200k house and put 20% ($40k) down - you are borrowing the remaining $160k
     - Now assume that home prices fall 30%.
     - Price is now $140k < $160k that you owe
     - So you are better off not paying mortgage, letting bank claim house and then buying it or a similar house
   - So an increase in mortgage defaults
   - Because of price declines, bank gets house that is worth less than loan was - so they take losses
   - These losses worsen their balance sheet and pushes them towards insolvency
   - Same thing also going on with MBS (which most mortgages part of)
     - Value of an MBS depends upon the expected, discounted value of all mortgage payments for the mortgages in the pool behind the MBS
     - As people default, less money coming in to MBS so its price falls
     - As prices of homes fall, expectations about future declines increase and therefore price of MBS falls
     - As prices of MBS fall, institutions holding MBS take hits to balance sheets, pushed towards insolvency
   - Leverage is important
     - Many homeowners had little equity in home - not 20%, sometimes zero or negative equity
     - Many financial institutions were leveraged 40 to 1 or more (in this case, if assets fall by 2.5% then bankrupt)
   - Failures:
     - Lots of small banks - 492 FDIC insured banks failed
     - Some huge financial institutions failed (this is where all assets are):

- → Countrywide, January 2008
- → Bear Stearns, March 2008
- → AIG, March 2008
- → Fannie Mae, September 2008
- → Freddie Mac, September 2008
- → Lehman Brothers, September 2008
- → Washington Mutual, October 2008
- → IndyMac, October 2008
- → National City, November 2008
- → Wachovia, December 2008
- → Many others close to failure: Goldman Sachs, Morgan Stanley, Merrill Lynch all become commercial banks (they were investment banks)

3. Falling confidence
   - Huge failures lead many to wonder - who's next?
   - Exacerbated by complex financial arrangements and many products traded "over the counter" so hard to determine market prices
   - Leads to spike in interest rates for banks and other businesses to borrow at
   - Higher interest rates reflect lower prices for corporate debt - so more asset prices fall, pushing more towards insolvency
     - On September 16, 2008, the Reserve Primary Fund, the oldest Money Market Fund, "broke the buck"
     - This means its shares went below $1, which means that investors in the fund lost money
     - Upset financial markets because MMFs thought to be ultra safe investments
     - Caused a run on MMFs
4. Credit crunch
   - Run on MMFs cut off important supply of lending to banks and other businesses
   - Also, banks need to preserve capital, so cut off lending but tightening standards and charging higher rates
5. Recession
   - Declines in consumption and investment spending result from credit rationing
6. Vicious cycle
   - Some of this, but largely curtailed by aggressive fiscal and monetary policy and "bailout" programs

Policy responses to a financial crisis:

1. Conventional monetary and fiscal policy
2. Lender of last resort functions
   - The Federal Reserve or the Federal Government steps in to lend money to businesses (usually financial institutions) in credit crunch
3. Injections of government funds
   - The Federal Reserve or the Federal Government steps in to buy assets or invest capital in businesses (usually financial institutions) that are near insolvency

    - Usually only want to do this if assets being sold at "fire sale" prices (i.e., prices that are low due to panic, but will recover in the longer run)

- DRAW the flow chart for a crisis and where these fit in

<u>Policy responses to the 2008-2009 financial crisis</u>:

1. Conventional monetary and fiscal policy
    - Fiscal
        - Bush stimulus checks: $168 billion
        - Obama stimulus: $787 billion
    - Monetary
        - Federal Reserve lowered the Fed Funds rate from 5% to 0.25%
2. Lender of last resort functions
    - The Federal Reserve sets up a bunch of lending facilities (TALF, CPFF, AMLF, MMIFF)
    - Focus on "shadow banking"
3. Injections of government funds
    - The FDIC limit on deposit insurance raised from $100k to $250k
    - The Troubled Asset Releif Program (TARP) - $430 billion to buy assets of, or inject capital into, financial institutions
        - Money also extended to GM and Chrysler
    - Guarantees on the portfolios of some of banks that were purchased in private sales (e.g. Bear Stearns) by Fed or Government
    - Federal reserve starts to purchases MBS and other risky assets (traditionally they only held Treasuries)

- Problems with the response?
    - Injections of government funds:
        - Not too much government money actually lost
        - Real problem is that we may be sowing the seeds of future crises
        - → Do large banks now have an increased perception they will be bailed out?
        - → If so, this will increase moral hazard
        - → i.e., since these banks don't bear all the risk of failure, they will take larger risks and so financial crisis more likely
    - Fiscal policy
        - How much did it help? Economy still lagging...
    - Monetary policy
        - How will the Fed shrink its portfolio back to normal range?
        - Can it control inflation going forward?
        - Is it creating another asset price bubble with these years of very low interest rates?

<u>Policies to prevent financial crises</u>:

- Restrictions on bank size
  - Don't want a single bank so big that its failure causes a large disruption to the economy
  - Goal is to limit the impact of a failure
  - Problems:
    - Economies of scale in banking
    - Larger banks may be able to diversity risk better and provide lower rates to borrowers, higher rates to depositors
- Restrictions on bank risk taking
  - Try to limit what assets banks can invest in
  - Goal is to limit the likelihood of failure
  - Problems:
    - How measure risk? People thought MBS very safe - AAA ratings on many
    - Will banks be more complex to hide true risk but look safe on financial reports?
- Better regulatory structure
  - Currently have FDIC, OCC, Fed, SEC, state regulators
  - Lots of groups, layers, not all working together
  - Would it be better to have one group look over all financial institutions?
  - Problems:
    - Who? How? What would they look at?

<u>The Future</u>:

- Certainly will be another financial crisis
- While they share commonalities, usually cause is slightly different - it won't be housing next time
- Will it be sovereign debt?
  - Europe makes this look likely
  - Banks like that gov't debt is usually given very safe rating so doesn't affect reported risk much
  - But some countries at/near default
  - Solutions? These countries/banks bigger - maybe "too big to fail", but also "too big to save"