The Four Prices of Money

- Generic bank balance sheet
  - Assets: loans, securities, and cash
  - Liabilities: deposits, other borrowing, net worth
- Solvency: is the net worth greater than 0?
- Liquidity: can the bank pay its depositors with cash reserves, get cash from somewhere, or sell their loans?
- Shadow bank balance sheet
  - Assets: RMBS (residential mortgage backed securities - loans that are like bonds), IRS (interest rate swap), CDS (credit default swap)
  - Liabilities: money market borrowing
  - Shadow bank are not regulated as much
- The four prices of money:
  - Par (price of money in terms of other money right now)
    - Central bank money and private money is priced differently in a financial crisis
  - Interest rate (price of money today in terms of money tomorrow)
  - Exchange rate (price of domestic money in terms of foreign/word reserve money)
  - Price level (price of money in terms of commodities)
- "All banking is a swap of IOUs"

The Natural Hierarchy of Money

- Hierarchy of financial instruments (for the gold standard):
  - Gold is at the top (is actually money)
  - National currency is below that (promises to pay gold)
  - Bank deposits is below that (promises to pay currency)
  - Securities is below that (i.e. credit)
  - Which of the levels count as money and which count as credit depends on the situation
- Hierarchy of financial institutions (for the gold standard):
  - The central bank holds gold and issues national currency
    - Central banks are market makers for the exchange rate between domestic currency and international currency
  - The banking system hold national currency and issues deposits
    - Banks are market makers for the bid-ask spread of money (i.e. par - trying to maintain a one-to-one relationship between national currency and deposits)
  - The private sector (i.e. security dealers) hold deposits/securities and issue securities

        - Security dealers are market makers for the price of securities (i.e. the interest rate)
- The monetary system goes through expansions and contractions
    - In an expansion, the supply of money and credit increase, and credit looks much more like money
    - In a contraction, the supply of money and credit decrease, and it becomes evident that credit is worse than money
- Two opposing principles that dictate the monetary system:
    - Currency principle - the scarcity of (ultimate) money: the amount of gold in the world is limited
    - Banking principle - the elasticity of (derivative) credit: credit looks like money in an expansion
        - It is easy to expand credit by just agreeing to an IOU
        - Citizens can't expand the money supply without the help of the banking system
    - Both principles are correct, but don't show the full truth by themselves
        - Which one is true at any given time is based on the situation
- In a financial crisis, there are no market makers, so it becomes impossible to go from one level of money to another on the hierarchy
- Some financial institutions are focused on profit maximization, others are focused on economic stability
    - Central banks can accept securities to expand the money supply to increase economic stability
- What do central banks do?
    - Maintain the exchange rate
    - Maintain par (help the banking system to do so)
    - Try to increase economic stability (at one point in time, people thought that the central bank might be able to eliminate the business cycle)
- Term structure of interest rates: graph of interest rate vs maturity (from 1 day to 30 years)
    - The policy rate is on the far left and the market rate is on the far right
    - There is a theory that the market rate should be the policy rate rolled over the next 30 years (this has been empirically proven wrong)
    - Ultimate scarcity is when the policy rate is higher than the market rate
- Monetary policy is about creating an artificial hierarchy of money