Discussion Handout #13
Econ 102
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Goals for this session

- Complete our discussion of monetary policy and understand the full logic behind how the tools of the fed end up affecting the overall economy:
  - Tools available to the Fed
  - The Money Market
  - Investment effect
  - International Trade effect

Problems

1. Tools of the fed
   (a) List the Fed's Monetary Policy tools we have discussed in this class. Explain what they are, and how they affect the money supply:
      - Open Market Operations - Buy/Sell short term bonds (t-bills) from the public. Giving people cash (m2) for bonds (not m2), means Ms increases.
      - Quantitative Easing - Buy longer term assets (MBS). Same Ms affect as OMO but also target long term interest rates.
      - Forward Guidance - Communication about the likely future course of monetary policy. It helps people and businesses make decisisons about long term investments. For example if the fed pledges low interest rates for a while going forward people know they can get good financing to keep running their businesses.
      - Set Discount Rate - Discount rate is the rate banks can borrow from the Fed. The Fed is the "lender of last resort", so banks don't usually borrow from the fed, but in times of crisis they do. In reality the Fed never adjusts this discount window and banks usually just borrow from other banks. If the Fed were to lower the discount rate, it would make it easier for banks to borrow money so they would borrow more and proceed to lend it out increasing the money supply.
      - Pay Interest on Reserves - Federal reserve pays banks interest for keeping reserves. If they increase the interest paid, more banks will want to store reserves so that reduces the money supply. If the rate is lowered the opposite effect happens.
      - Set Reserve Requirements - Banks are required to keep a certain 'reserve ratio'. If the Fed increases the reserve ratio that means banks can't lend as much reducing the money supply. If the fed decreases the reserve ratio the opposite happens.

   (b) Which policy tools were created as a result of the great recession crisis and why?
      - Quantitative Easing - the federal funds rate was basically zero but because banks balance sheets were so hammered by the cratering MBS, they weren't lending because they needed to cover these bad assets. As a result the fed decided to

buy the MBS, injecting money into the banks so they could lend this money out instead of sitting on the MBS.

- Forward Guidance - used in harmony with QE. See above description on forward guidance.
- Paying Interest on Reserves - as a result of having MBS, the Fed needed more control to rein in money supply since they were injecting so much into the economy by using QE, which was going to be difficult to 'unwind' or get back. Therefore they started paying interest on reserves, so by increasing this interest rate, they could induce banks to lend less, thus reducing the money supply. This tool also gives the fed greater influence over the federal funds rate.

2. The Money Market

   (a) Draw the money market graph

   (b) Why is money supply vertical? Ms does not change with the interest rate. It changes due to fed actions. So it is INELASTIC with respect to interest rate, thus vertical.

   (c) What are the three reasons we discussed in class for money demand? Explain.

   - Transactions Demand - prices or GDP change cause shifts in money demand to meet changing needs in cash or bank holdings
   - Liquidity Demand - desire to buy things on short notice. Also for example if you plan to buy a house you build up liquidity.
   - Speculative Demand - If other assets get risky, people demand cash since it is safe.
   - Which two fall during recessions? Transactions Demand and Liquidity Demand Which one rises? Speculative Demand

   (d) The Federal Reserve direclty sets the federal funds rate. (True/False) FALSE - the 'federal' funds rate is a misnomer. It used to be regulated by the federal government but it isn't any longer, it is determined by the market. The Fed can only influence this rate, so they TARGET a specific federal funds rate they want to reach.

   (e) What is meant by the term 'pushing on a string' in describing a particular monetary policy scenario? Just because banks have money to lend, does not necessarily mean that banks will lend. In a case like the great recession where there is a lot of turmoil, uncertainty, and risk, even at very low interest rates people still aren't willing to make loans and lend money. This is where keynes argued fiscal policy can come in and stimulate the economy.

3. Effects of the changing interest rate

   (a) What are the two channels through which changing the interest rate affects aggregate demand? Explain.

   - Investment - lower interest rates mean that it is easier for people/businesses to borrow to buy new stuff i.e. investments. The opposite is true if interest rates are higher.
   - Net Exports - lower interest rates mean that foreigners are less likely to invest here. Therefore they demand fewer dollars. In turn the price of the dollar drops. Therfore it is cheaper for foreigners to buy our goods! And also harder for us to buy goods from abroad. So NX increases.

4. Putting it all together: Fill out the following table

	Fed makes open market purchases
Money supply shift	Right (out)
Interest rate	Falls
Investment	Increases
Foreign demand for US assets	Falls
Price of dollar	Falls
Exports	Rise
Imports	Fall
GDP	Rises