Economics 470/570
Fall 2007
Midterm 1
Solution

Part I

(1) A fractionally backed currency has less than a dollar of assets, e.g. gold or silver, backing each dollar in circulation

(2) The discount window is where banks take out discount loans, ie loans between the Fed (formally the District bank) and banks

(3) A Type C director is one of the three types of directors guiding each of the twelve district banks. There a three type C directors, they are appointed by the Board of Governors and are charged with protecting the public interest

(4) The ff rate is the rate banks charge each other for overnight reserve loans. This is the rate the Fed targets when doing policy

(5) A margin requirement of, say, 10% means that you must put up 10% of the value of an asset in order to control it.

(6) Bank reserves are defined as currency inside the bank plus deposits held with the Fed.

Part II

(1) It should be

easily standardized, easy to verify value (lowers transaction costs)

widely accepted (no offensive pictures, e.g.)

divisible so you can make change

Easy to carry for convenience

Storable/durable so savings don't "rot"

Controllable supply to maintain value

(2) The ex-ante real rate is based upon expected inflation ($r_{ex\text{-}ante} = i - \pi^e$), while the ex-post real rate is based upon actual inflation ($r_{ex\text{-}post} = i - \pi$). Since the ex-post cannot be calculated until after loan contract is completed, it does not influence economic decisions. The ex-ante real rate, which is the rate at the time the loan papers are signed, is the rate that affects economic decisions.

(3) The Federal Open market Committee Consists of

7 - Members of Board of Gov.
1 - NY Fed representative
4 - representatives of other 11 district banks, positions rotate annually

12 members

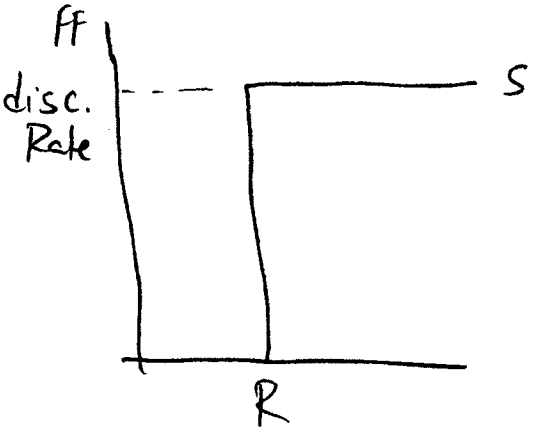
- meets eight times per year
- decides monetary policy until the next meeting
- Effectively decides discount rate and reserve req., though not formally set by FOMC.

(4) (a) The D-curve slopes downward because

1. As FF ↑, in general all i-rates ↑ → DD ↓ (particularly business firms). Since DD ↓, need less reserves and Demd falls.

2. As FF ↑, cost of reserve insurance, which is excess reserves, ↑. Then excess reserve demd ↓ → reserve demand ↓.

(b) The shape is



When FF < disc. Rate, Supply of Res. is Fixed. When FF hits disc. rate, Fed supplies as many reserves as desired at that rate, so, Supply becomes horizontal.

The Fed is fairly free from Political Pressure because

1. 14 year, non-renewable terms for governors. The term is longer than president who appointed them, and since it cannot be renewed, they won't change policies in an attempt to get reappointed
2. Independent financially. The Fed holds securities, makes billions per year. From these earnings it can finance itself completely and still have funds left over (which it gives back to Treasury at end of year). So, it cannot be pressured financially by Congress

[cont.]

[cont.]

(1)

3. Can refuse audits by GAO (General Accounting Office, the Govs "watchdog") giving it further financial independence

Factors Against Independence:

1. Congress can still pass legislation to take away independence so freedom not unlimited
2. Chair appointed by president, Testifies before congress, and is subject to political pressure.
3. Public Opinion. If, everywhere they go, parties, store, etc., the public expresses their displeasure with policy, then this can affect board members

[cont.]

[cont.]

(1)

For Independence

1. Subject to less political pressure, less temptation to pursue SR objectives which are costly in LR. E.g., a recession may be good in LR if inflation falls, but bad in SR. A politician may only care about SR.

2. Avoids Political Business Cycles, i.e. avoids manipulation of economy to get reelected (Create boom today → reelection, but inflation in LR).

3. Less temptation to monetize debt.

4. Cross-country studies show that Less independence is associated with higher Inflation.

[cont.]

(1) Against Independence

1. Monetary policy too important to be in the hands of non-elected officials free of public accountability. Should be in control of elected officials who will pursue the public interest. Elected officials make LR decisions all the time, there is nothing special about monetary policy.

2. Difficult to coordinate Monetary and fiscal policies

3. Book adds that Fed has made mistakes

(2) The first stage in barter. Barter is generally feasible for very small economies with few people and few goods, but as economies grow the search time involved with barter grows until it is too time consuming. At that point, some good generally begins serving as money (e.g. gold/silver) and commodity money emerges.

Often commodity money comes in the form of gold/silver which are inconvenient in that they are so heavy. Thus, transporting wealth (money) becomes difficult, and it is also hard to keep safe

Because of this, it was customary to leave gold and silver with local metalsmith, and receive an "IOU" on paper for the deposited gold/silver.

People then realized that it was

easier to trade the paper than the gold/silver it represented, and paper money comes to the forefront

Initially, the pieces of paper that are traded function like checks. They instruct the metalsmith to, say, move gold from the buyer's Account to the storeowner's account. But eventually people also begin trading general IOU's without anyone's name on it (Pay to bearer) and we have paper money arising.

At first, it is fully backed. But, once metalsmiths begin using excess gold (part in safe in no danger of being with drawn) to make loans, the money supply

expands according to the multiple deposit creation process, and we end up with fractionally backed currency.

Finally, once people are willing to accept money (paper) in transactions and they have faith everyone else will too, we go to fiat money which is money not backed by anything (as we have today).

(3) The Board of Governors consists of seven members appointed by president with the advice and consent of the Senate

It is:

- Head of System
- Serve 14 year terms, cannot be reappointed
- One gov. term expires every other Jan
- must come from diff. Fed Districts
- Chair is one of seven Board members, Appointed by Pres for four yea term, can be reappointed.
- Chair testifies before Congress, advices pres.
- Board is a majority of Fomc (7 of 12), so, if unified can dominate mon. policy
- effectively sets res. req., discount rate, sets margin requirements

1. Center of Power has shifted over time
2. intended to be a highly decentralized System of 12 cooperating banks
3. No role for stabilizing economy - that comes later
4. Only one tool to control m^s initially, discount loans. Open market operations not well understood, not used.
5. discount rate determined jointly by banks and board of Gov., Share equally in mon. Policy decisions
6. Changed during Great Depression. Power Centralized in Board of Gov, given control of Res. Req. (r_D), Open mkt. Open. (Banking Acts of 1933, 1935).
7. Over time, Power of Board of Gov. has increased, member banks have little power.
8. Today, functions as a system with main bank in D.C., 12 branches. Power is not shared. Control, effectively, r_D, open mkt. open., disc. rate, Appointments of bank directors + presidents (usually suggested by Board of Gov).

(4) The multiplier is:

$$m = \frac{1+c}{r_D + c + e}$$

c → determined by public's choice of how much cash to hold

e → determined by banks' decision on how many loans to make, public's choice of how many loans to demand

r_D → the reserve ratio is determined by the Fed

So, multiplier is a joint decision of the public, banks, and Fed. In the SR, a day, a week, even a month, it's fairly unstable, but over longer periods, a quarter or more, it's fairly stable

The Monetary Base can be written as

$$MB = MD_N + DL$$

MD_N ↓ Non-borrowed portion of MB. Fed controls this precisely

DL ↳ Borrowed Reserves, depends upon banks' decisions

So, Fed only controls part of MB. Fortunately for control of M^S, it's fairly predictable.

Overall, the M^S can be written as

$$M = \left(\frac{1+c}{r_D + c + e}\right)\left(MB_N + DL\right)$$

Since the Fed does not control the mult and DL, then must be predicted. As noted above, predicting multiplier is the SR is a difficult task, So the Fed's control of the Money Supply is correspondingly imprecise.