Economics 470
Fall 2008
Midterm 2 Solutions

I. Definitions

1. The velocity of Money is defined as $\frac{PY}{M}$, i.e. nominal GDP divided by the money supply. It measures how many times a dollar changes hands in a given time period.

2. The expenditure multiplies ($\frac{1}{1-mpc}$ in its simplest form) tells us how much output changes for a given change in expenditures. That is, $\Delta Y = (\text{multiplier})(\Delta \text{exp})$
   ↳ e.g. ΔG or ΔI.

3. The IS curve is all pairs (i, y) that are an equilibrium in the goods market

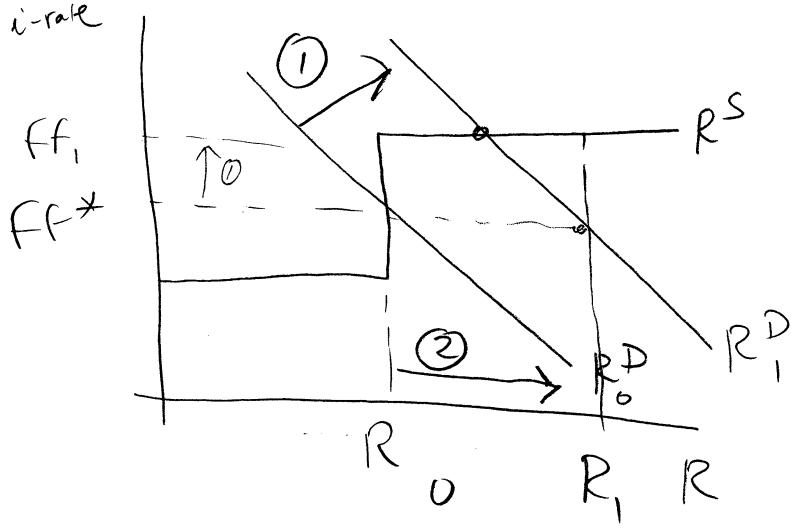
4. Crowding out: This occurs when an increase in government spending increases the deficit, the demand for funds to finance the deficit → i-rate ↑, and the ↑ in the i-rate causes Investment (Private spending generally) to fall. So, G↑ "crowds out" I.

Part II

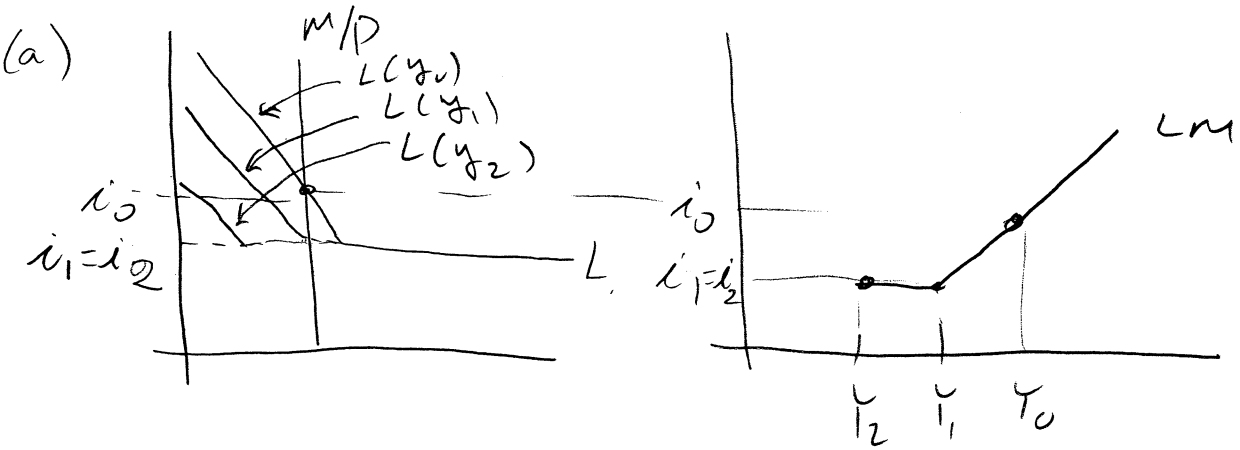
① (a) Reserves are held to satisfy required reserves, and as insurance against deposit outflows that are unexpected. When the ff-rate ↑, the opportunity cost of insurance goes up → less reserves held as insurance. Thus, FF ↑ → R^P ↓.

(b) Risk ↑ → demand ↑ to R^P_1 [see ①]

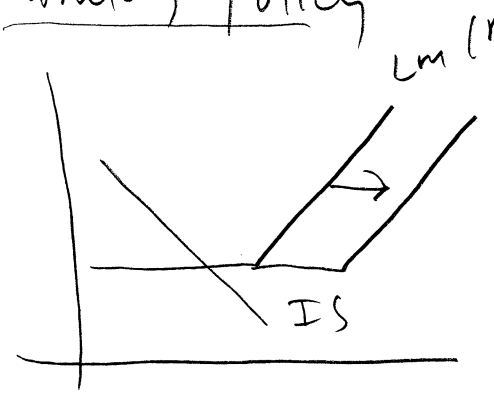
Since Demand ↑, FF ↑. To offset FF ↑, Fed uses open-mkt operations to ↑ non-borrowed reserves. This is shown as ② in the diagram.



(2) (a)



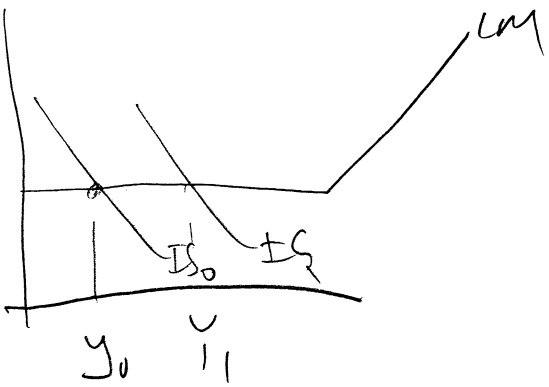
(b) Monetary Policy



M↑, no change in y.

why? $\frac{M}{P}\uparrow \rightarrow \frac{M}{P} > L$, but, in liquidity trap, no change in i [does not fall as usual]. Since i unchged, I and NX also unchged → no chg in Y And policy is ineffective

Fiscal Policy



Fully effective. why? No crowding out.

Y↑ → md ↑ → [i↑ and I↓, NX↓ → y↓] usually.

But, since no chg in i, no crowding out

③ (a) When $r_D \uparrow$, banks must hold more of each demand deposit in the safe. Since they are holding more, less is lent out at each stage in the multiple deposit creation process → multipliers smaller

(b) When $c/D \uparrow$, people hold more cash, less is put into checking accounts. Since less money is in checking, less is lent out, and this causes the multiple deposit creation process to be smaller.

(c) $ER/D \uparrow$ has the same effect as $r_D \uparrow$ in (a). More is held in safe, loans are smaller, and since loans are smaller, the multiple deposit creation process yields less money.

Who controls?

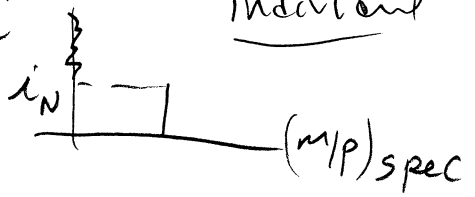
r_D → Fed sets this

c/D → households make this choice

ER/D → mostly banks, but if demand for loans small, ER↑, so can also be determined by consumers.

(4) In Keynes' speculative demand theory, each person has in mind a normal rate of interest. When Actual $i >$ i normal [Say $i > i_N$ for shorthand], expect $i \downarrow$, so expect $P_{Bonds} \uparrow \rightarrow$ hold Bonds, not money. When $i < i_N$, expect $P_B \downarrow \rightarrow$ hold M, not bonds (have to actually look at net outcome including coupon payment on bond, but "switch point" close to i_N, will abstract from this).

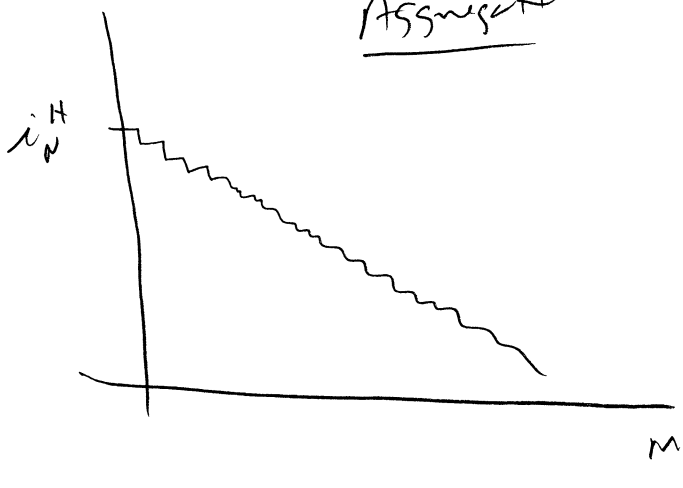
Individual



Gives

In aggregate, everyone has different i_N. Start at highest i_N, call it i_N^H, and let $i \downarrow$. As $i \downarrow$, begin crossing i_N^s of different people, and each time we do, $M/P \uparrow$. Thus in aggregate, as $i \downarrow$, $\frac{M}{P} \uparrow$ c/o and bis jumps (if a lot of people in market).

Aggregate



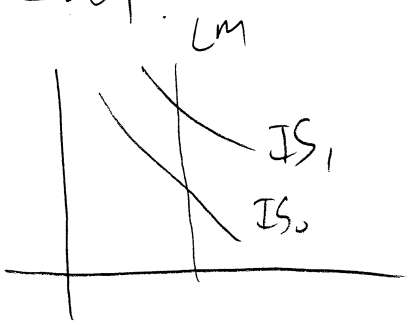
(5) (a) To get the m^d curve, start with the equation $MV = PY$. Then, solve for m:

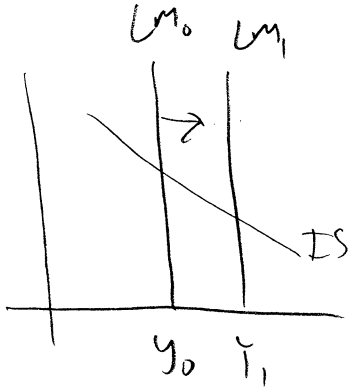
$$m^d = \frac{1}{V} PY = kPY$$

(b) The LM curve is vertical.

The money market has no i-rate, equil. is when $M = kP\bar{Y}$, so, given M, k, P, Y determined, and get the same y for every i. That is, equation $M = kPy$ still true whether $i = i_0$ or $i = i_1$.

(c)





i falls more when LM steep (Need it a lot to clear money market when steep)

fiscal: Not effective.

Why? Complete crowding Out: $G\uparrow \rightarrow y\uparrow \rightarrow L\uparrow \rightarrow i\uparrow \rightarrow \underset{NX\downarrow}{I\downarrow} \rightarrow y\downarrow$

Net $y \rightarrow 0$

monetary: effective

Since $M\uparrow \rightarrow i\downarrow \rightarrow \underset{NX\uparrow}{I\uparrow} \rightarrow y\uparrow$.

[$i\downarrow$ as much as possible $\rightarrow y\uparrow$ as much as possible]