Economics 470/570
Winter 2014
Midterm 2

① The quantity Theory of money begins with the definition of velocity, $V \equiv PY/M$. This can also be written as $PY = MV$ (Nominal GDP equals money times velocity). This is an identity. It is not falsifiable so it isn't a theoretical statement. If we assume $V = \bar{V}$, which is falsifiable (it might not be true), then $M\bar{V} = PY$ is the Qty-Theory of money. This equation can also be written as $M = kPY$, where $k \equiv \frac{1}{V}$. This is the classical m^d curve. The m^d curve also illustrates the essential difference between the Cambridge and classical views. For the classical economists, $m^d = kPY$ was the transactions demand for money (m^d is a fraction of total spending, PY). Cambridge economists recognized that money was used both for transactions and

(1) [Cont.] as a store of wealth. They believed that some fraction of wealth would be held as money, i.e.

$$M^d_{\substack{\text{Store of} \\ \text{Wealth}}} = k_2 W \quad (W \equiv \text{Wealth})$$

and that wealth was proportional to income, i.e. $W = k_3 PY$. Putting this together gives $M^d_{\substack{\text{Store} \\ \text{Wealth}}} = k_2 k_3 PY$.

They also believed that as $i \uparrow$, opportunity cost of holding money $\uparrow$, so less wealth stored as money. Thus, $M^d_{\substack{\text{Store of} \\ \text{wealth}}} = k_2(i) k_3$

$\hookrightarrow i \uparrow \Rightarrow k_2 \downarrow$.

For the transactions demand, they agreed with classicals, i.e. $M^d_{\text{Trans}} = k_1 PY$.

Then total money demand can

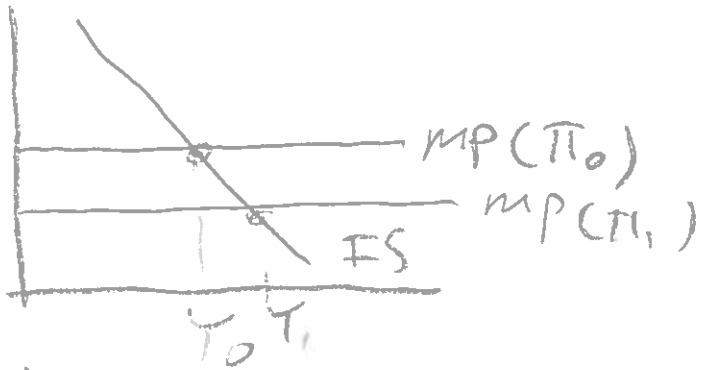
① [cont.] $M^d = M^d_{Trans} + M^d_{Store\ of\ wealth} = k_1 PY + k_2(i) k_3 PY$

$= (k_1 + k_2(i) k_3) PY = k\, PY$, where $k = k_1 + k_2(i) k_3$. So, the form is just like classicals, but for Cambridge economists, k was a function of i (so Cambridge economists added i to M^d function)

② (a) Graph

(Can also use ↑ slope is MP, doesn't matter)

↳ Specified in problem

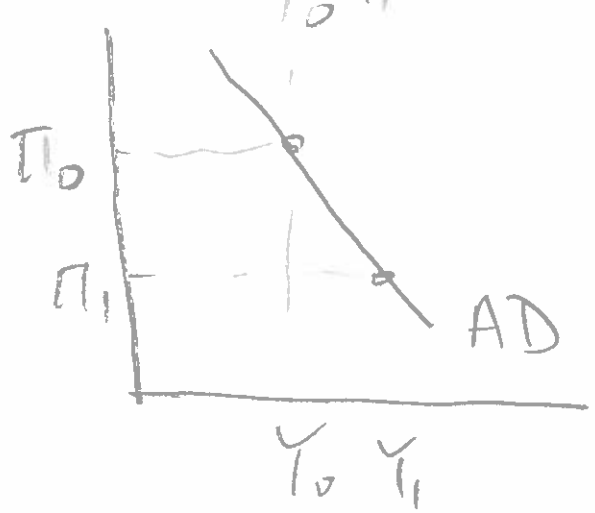


Start at Y_0, π_0.

Let $\pi\downarrow$ to π_1

$\rightarrow Y\uparrow$ to Y_1,

So, neg. related



(2)(a) [cont.]

Math: $Y = C + I + G + NX$

$= \bar{c} + mpc(Y - \bar{T}) + \bar{I} - d(r + f) + \bar{G}$

$+ N\bar{X} - \chi r$

$Y - mpcY = [\bar{c} + \bar{I} + \bar{G} + N\bar{X} - df - mpc\bar{T}) - (d + \chi)r$

$Y = \frac{1}{1-mpc}[\ \cdot\ ] - \frac{d+\chi}{1-mpc} r$

now sub for r

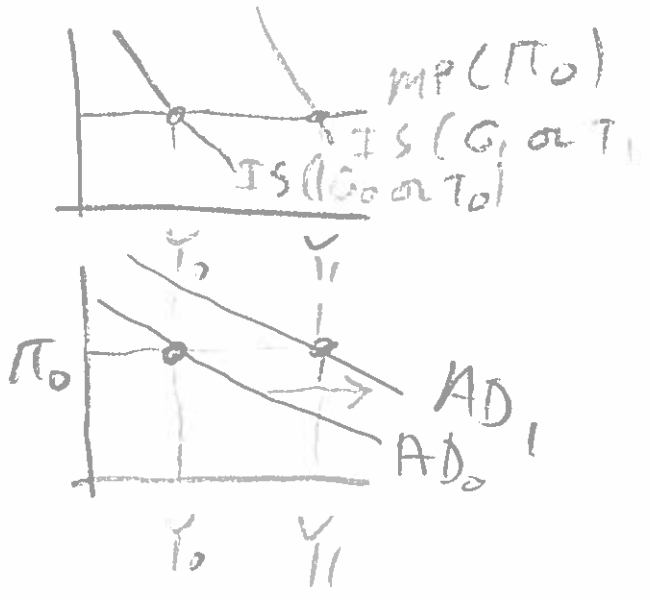
$r = \bar{r} + \lambda\pi$

$Y = \frac{1}{1-mpc}[\ ) - \frac{d+\chi}{1-mpr}(\bar{r}) - \frac{(d+\chi)\lambda}{1-mpc} r$

That is AD curve.

(2) Let G↑ or T↓.

Then Y↑, π unchanged, so AD must shift out.

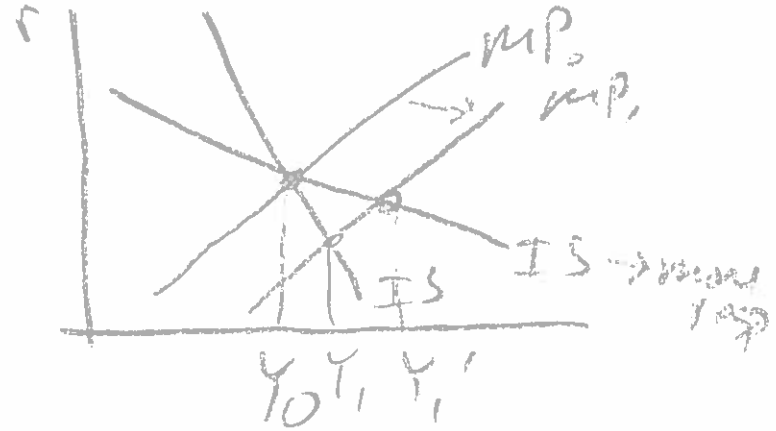


(3) When I or NX become more responsive to the i-rate, IS is flatter.

Monetary

Y↑ more when more responsive.

Why?

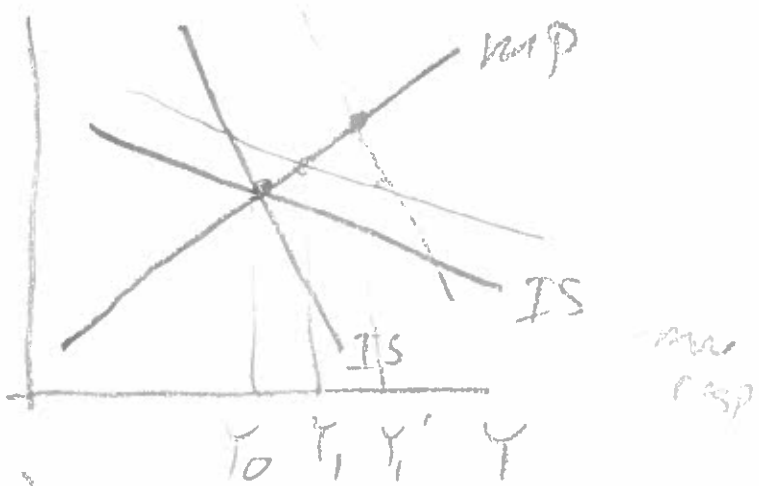


$\bar{r}\downarrow \xrightarrow{\text{x,ĉ}} \underset{NX}{I}\uparrow \rightarrow Y\uparrow$

↳ when more resp, this is larger, so change in Y is larger as well

Fiscal

Y↑ more when less resp. when:



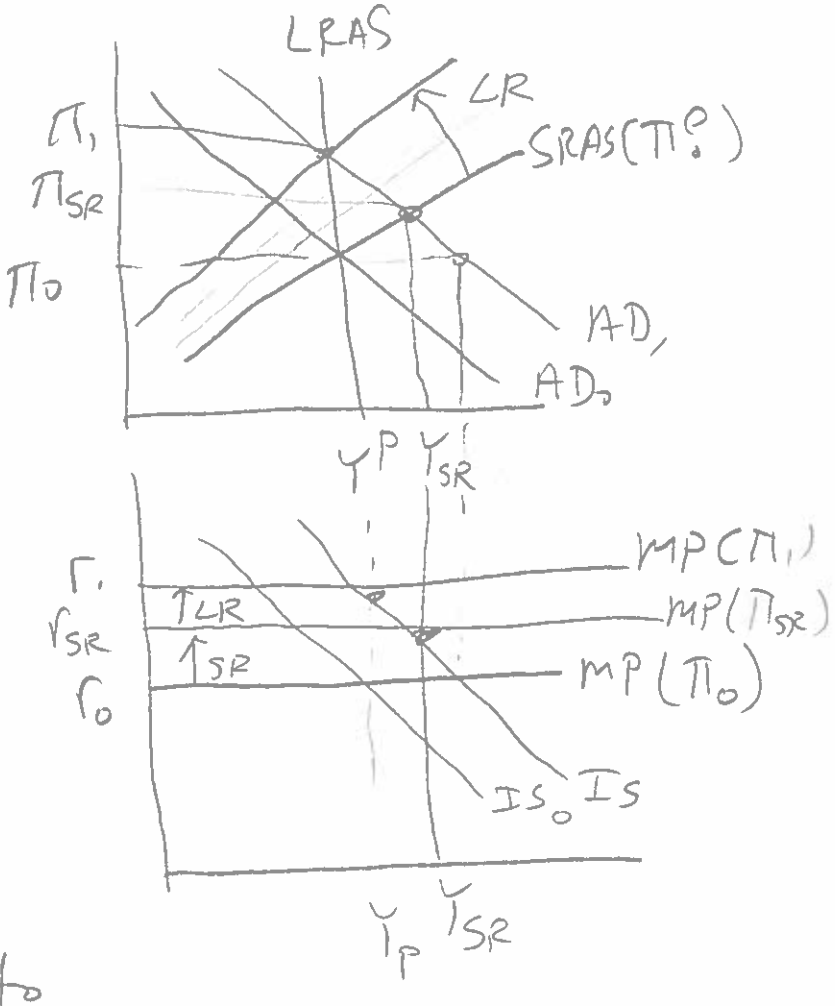
$G\uparrow \rightarrow Y\uparrow \rightarrow r\uparrow$

$\rightarrow \underset{NX}{I}\downarrow \rightarrow Y\downarrow$ (offset to Y↑).

↳ when more resp, this is larger and offset to Y↑ also larger.

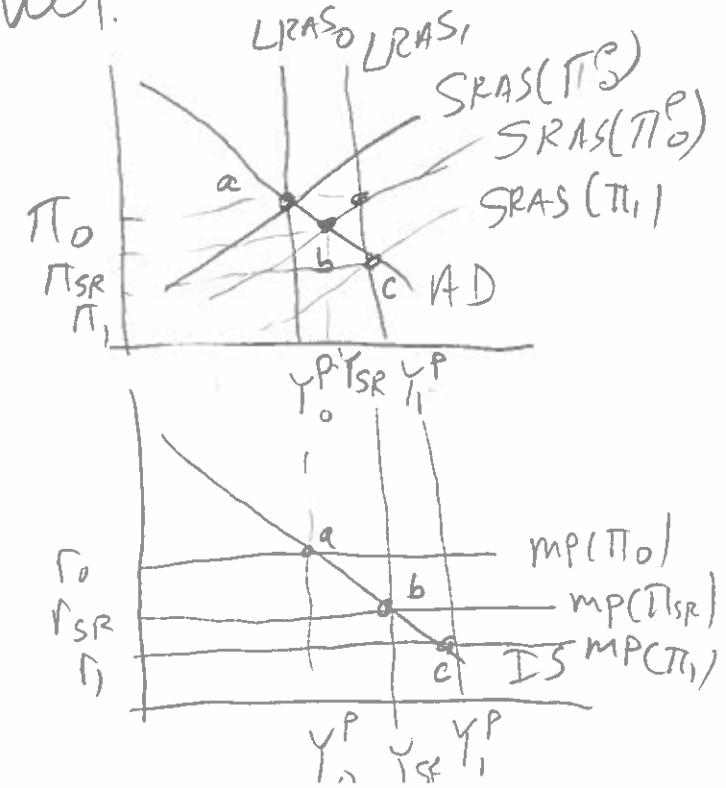
(4) (a) Confidence ↑ → IS shifts out.

This causes Y ↑ to Y_{SR}, π ↑ to π_{SR}, And ↑ in π shifts mp up.

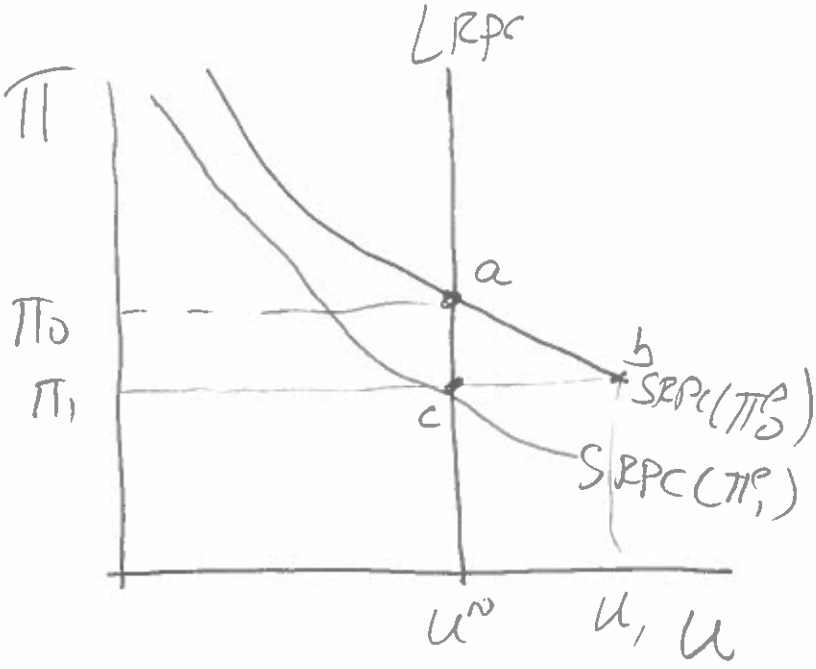


In LR, SRAS shifts back, π goes up more to π_1, r ↑ more to r_1, and Y returns to its initial level.

(b) When tech ↑, both LRAS and SRAS shift out. This causes π ↓ to π_{SR}, r ↓ to r_{SR}. In LR, SRAS adjusts, Y ↑ to Y^P_1, r ↓ more to r_1, π ↓ more to π_1 so mp shifts again.



(5) Suppose we start at a relatively high rate of inflation, call it π_0,



and we want to lower it to π_1. So Fed announces its intentions. If it has no credibility, it won't be believed, and economy will move from a → b, lots of unemployment (so costly). Eventually, people will see that Fed was serious, that π actually fell, expectations will adjust, and we move from b → c.

With credibility, when it announces intention to ↓ π from $\pi_0 \rightarrow \pi_1$, expec. Adjust immediately, move almost directly from a → c. Unemp ↑ much less (if at all). So, fighting π much less costly with credibility than without.