

Problem Set 3

Exercise 1:

1.) LM Curve:

$$M^s \cdot V(r) = P \cdot Y$$

$$\frac{M^D}{P} = 2Y - 100r$$

$$\frac{1600}{1} = 2Y - 100r$$

$$800 = Y - 50r$$

$$Y = 800 + 50r$$

$$r = -16 + \frac{Y}{50}$$

2.)

$$800 + 50r = 1100 - 25r \quad \left| -16 + \frac{Y}{50} = 44 - \frac{Y}{25} \right.$$

$$75r = 300$$

$$r = 4$$

$$-800 + Y = 2200 - 2Y$$

$$3Y = 3000$$

$$Y = 1000$$

IS Curve:

$$T = 100$$

$$Y = C + G + I$$

$$Y = (150 + 0,6(Y - T)) + 150 + 200 - 10r$$

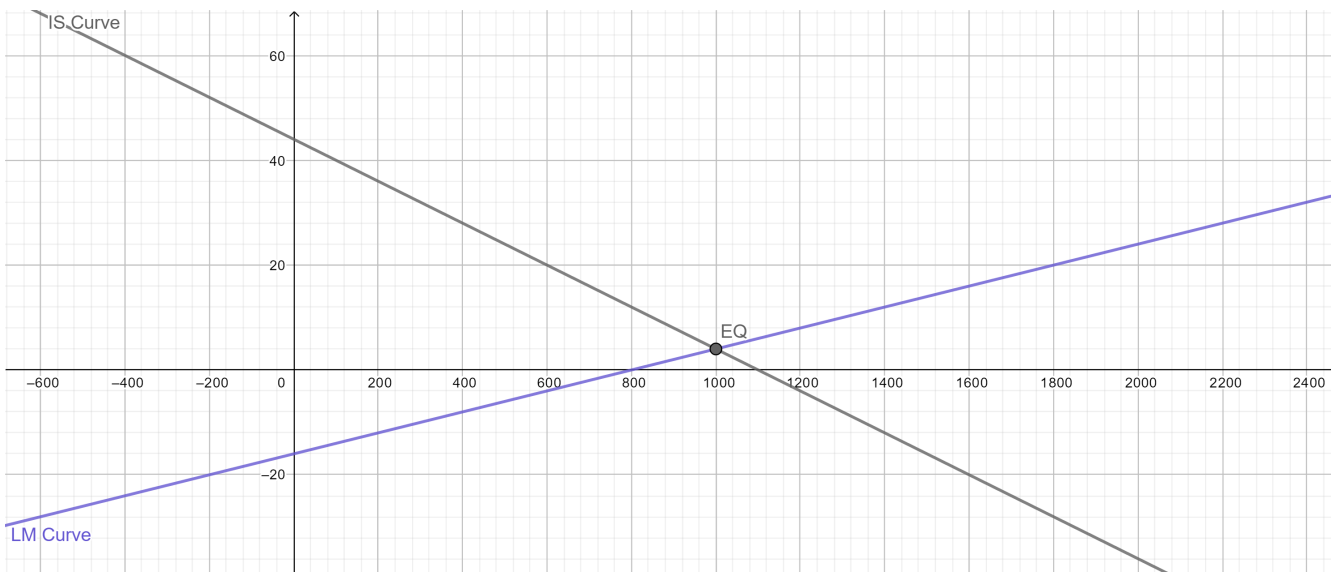
$$Y = (150 - 60 + 0,6Y) + 350 - 10r$$

$$Y = 440 + 0,6Y - 10r$$

$$0,4Y = 440 - 10r$$

$$Y = 1100 - 25r$$

$$r = 44 - \frac{Y}{25}$$



Exercise 2: $P=1$ $\bar{Y}=1000$ $I_{new}=170-10r$

1) IS Curve new: $Y=C+G+I_{new}$

$$Y=(150+0,6(Y-100))+150+170-10r$$

$$Y=(150+0,6Y-60)+320-10r=410+0,6Y-10r$$

$$0,4Y=410-10r \Rightarrow Y=1025-25r \Rightarrow r=41-\frac{Y}{25}$$

$$-16+\frac{Y}{50}=41-\frac{Y}{25}$$

$$-800+Y=2050-2Y$$

$$3Y=2850$$

$$Y_{new}=950$$

\Rightarrow Because of the deterioration of investor confidence, the new output is 50 less than the old one.

2) $800+50r=1025-25r$ $1000=150+540+G+170-30$

$$75r=225$$

$$r_{new}=3$$

$$170=G_{new}$$

$$\text{old } G=150$$

$$\text{new } G=170$$

3) $\frac{M^s}{1}=2000-300$

$$M^s=1700$$

$$\text{old } M^s=1600$$

$$\text{new } M^s=1700$$

Exercício 3:

$$1) Y = C + G + I$$

$$Y = 150 + 0,6(Y - 100) + 150 + 200 - 10r$$

$$Y = 440 + 0,6Y - 10r$$

$$-440 + 0,4Y = -10r$$

$$10r = 440 - 0,4Y$$

$$440 - 0,4Y = -\frac{160}{P} + 0,2Y$$

$$-\frac{3}{5}Y = -\frac{160}{P} - 440$$

$$Y = \frac{800}{3P} + \frac{2200}{3}$$

$$\frac{1600}{P} = 2Y - 100r$$

$$\frac{1600}{P} - 2Y = -100r$$

$$100r = -\frac{160}{P} + \frac{Y}{5}$$

3.) No it's not. Vertical AS curve would be. (Sorry 2 sentences)