National Income and Factor Demand

1. Immigration reform is one of the key issues facing the U.S. Congress and President. This is a complicated issue partly because there are competing interests that will lose and benefit from any reform. This question walks through some of these issues. The presumption here is that immigration reform would lead to a one-time increase in the labor-force in the United States.

   a. Using the framework developed (factor supply diagram and factor demand diagram) in class, describe how a change in immigration reform would affect the real wage.

   b. How would immigration reform affect aggregate, real GDP?

   c. As an investor who receives returns from the ownership of capital, would immigration reform affect the returns on your portfolio? Why or why not?

   d. Do these answers depend upon the assumption that the supply of capital is fixed. Why or why not?

2. Burma is currently a closed economy and does not allow the free flow of capital (in or out). However, they are contemplating opening up their country to international capital flows.

   a. If Burma's current rental rate of capital is 25 percent and the world equilibrium rental rate of capital is 10 percent, how would you expect capital to flow in or out of Burma---if at all?

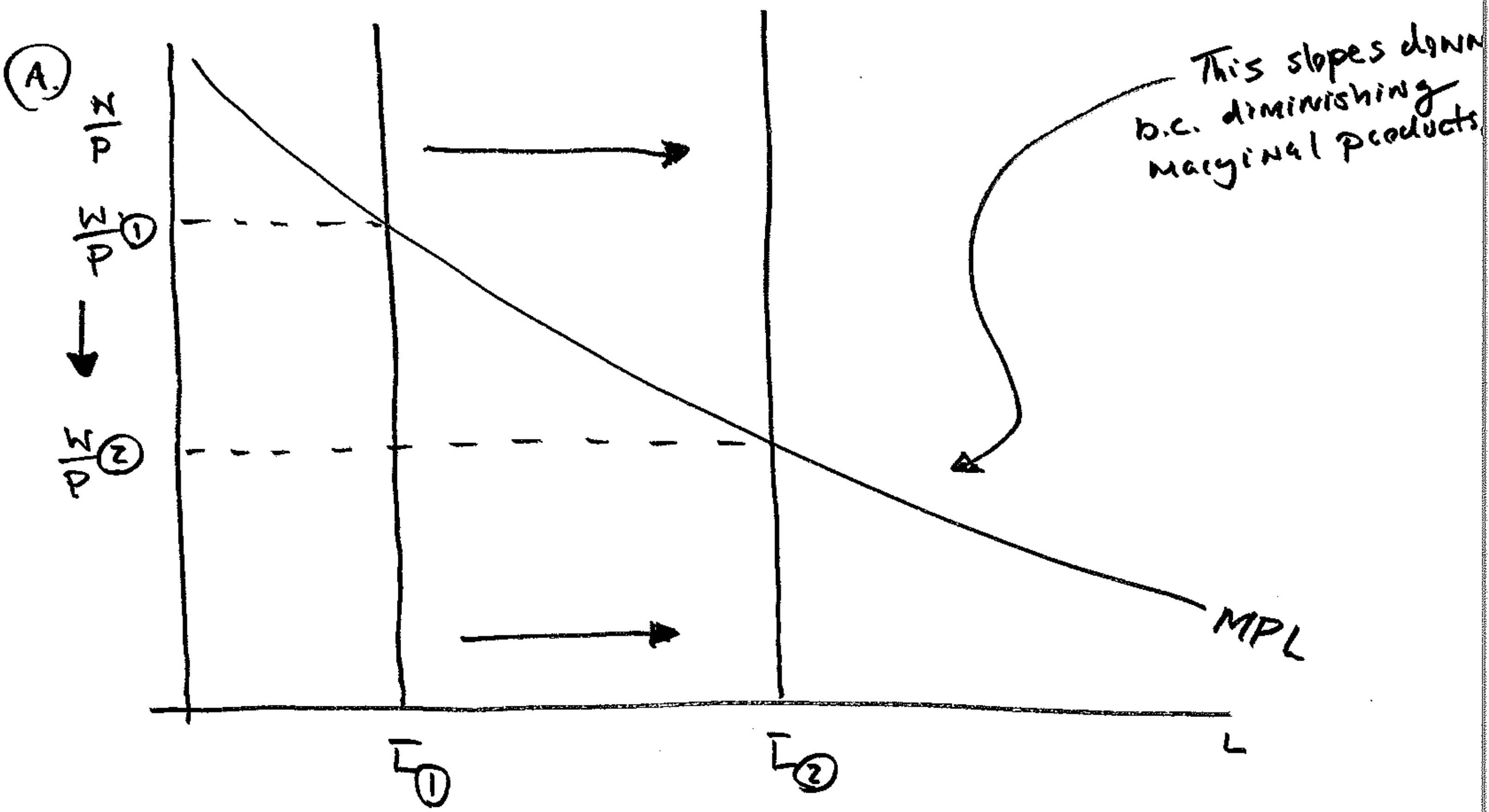
   b. Depending upon your answer to a., how would you expect the returns on capital in Burma to change overtime?

   c. Suppose that Burma is expected to experience rapid total factor productivity growth for the foreseeable future. Would this affect your analysis of the flow of capital out of or into Burma?

Question #1

Solutions to Inclass
Week of 02/08, 02/10

(A.)



As the supply of labor increases from $\bar{L}_{①}$ to $\bar{L}_{②}$, the real wage declines from $\frac{W}{P}_{①}$ to $\frac{W}{P}_{②}$. Simple idea, as the supply of labor increas, the price that labor gets paid (i.e. the real wage) should decrease.

(B) Very simple.... More inputs $\Rightarrow$ more output. So having more workers will increase output/real gdp.

$$Y = F(K, L)$$

More L $\Rightarrow$ More Y.

2c) Ok, so you own k and recieve $\frac{R}{P}$ for it.

Does immigration reform affect you??? Yes! It raises the real rental Rate...

* To see this, recall that $\frac{R}{P} = MPk$ from the firms optimization problem. So to rephase the question, does $L\uparrow$ affect the MPk?

Yes, to see this note that with the cobb-Douglas production function we have...

$$MPk = \alpha \frac{Y}{k}$$

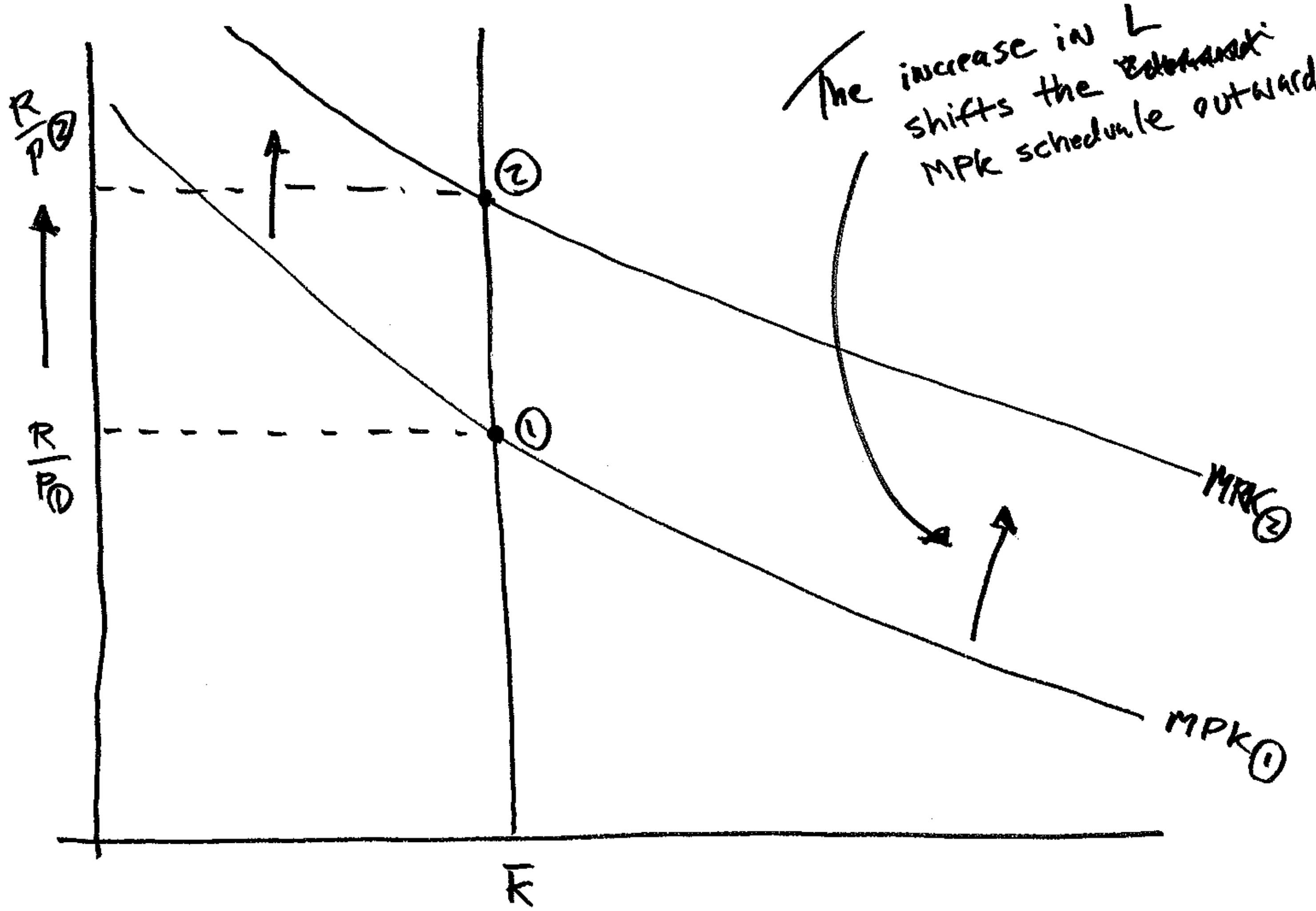
$Y = F(\bar{K}, L)$, $L\uparrow$, so $Y\uparrow$

This is fixed

Because $Y\uparrow$, this implies $MPk\uparrow$, and $\frac{R}{P}$ is going up. So as a capitalist, you benefit!!!

* Graphically, you can illustrate this in the following way

2c



Intuitivly, what is going on here is having more workers make capital more valuable. Thats why the "demand curve" for capital is shifting out in this way. Now that capital is more valuable, this should raise the price that capital recieves.

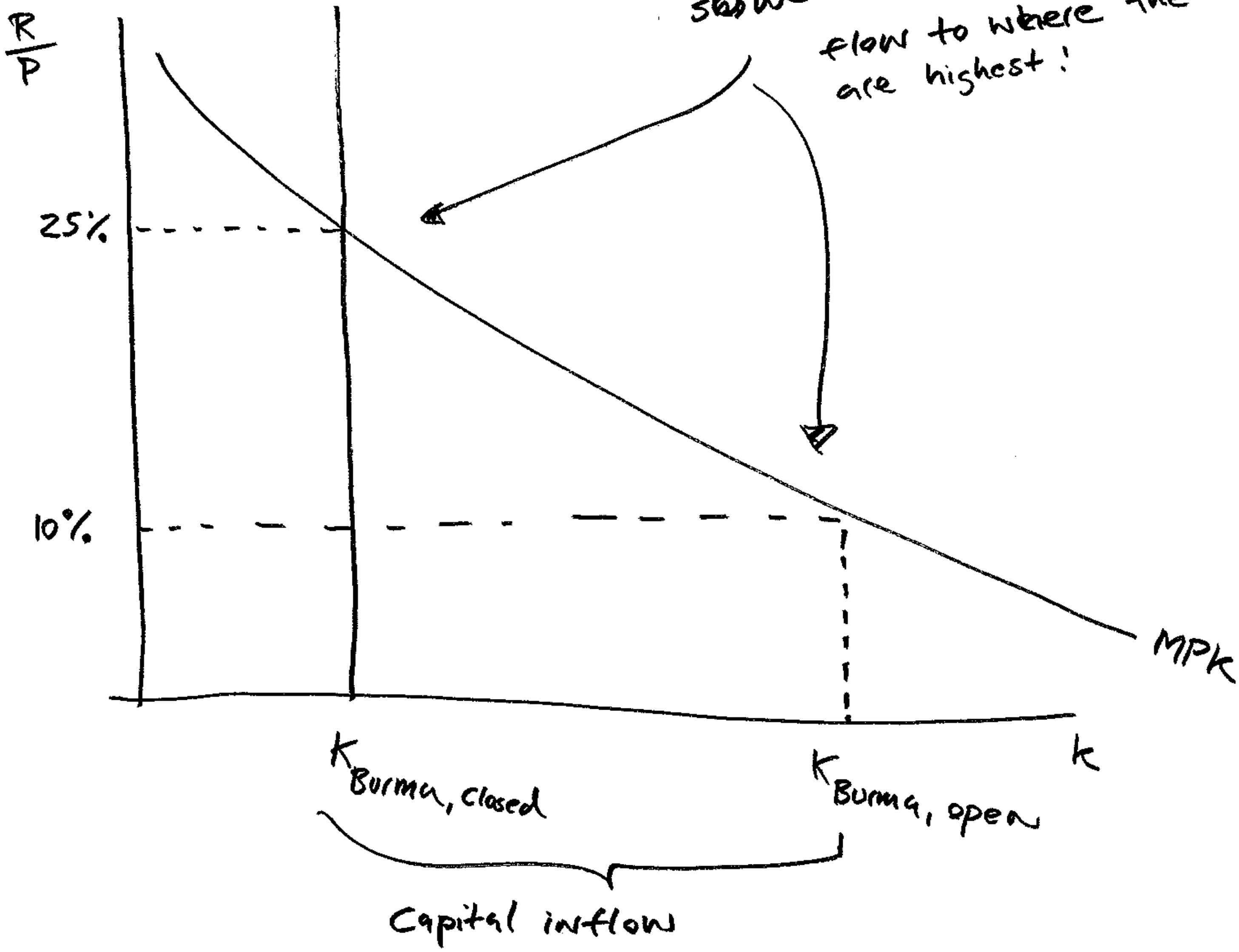
2d Yes. If capital can be accumulated, you should suspect two things.

1. As K ↑, this should increase MPL and real wages offsetting the effects described in (a)

2. As K ↑, returns on capital will go back down as we move <u>along</u> the new MPK scheduale.

(3a) Flow in to Burma.

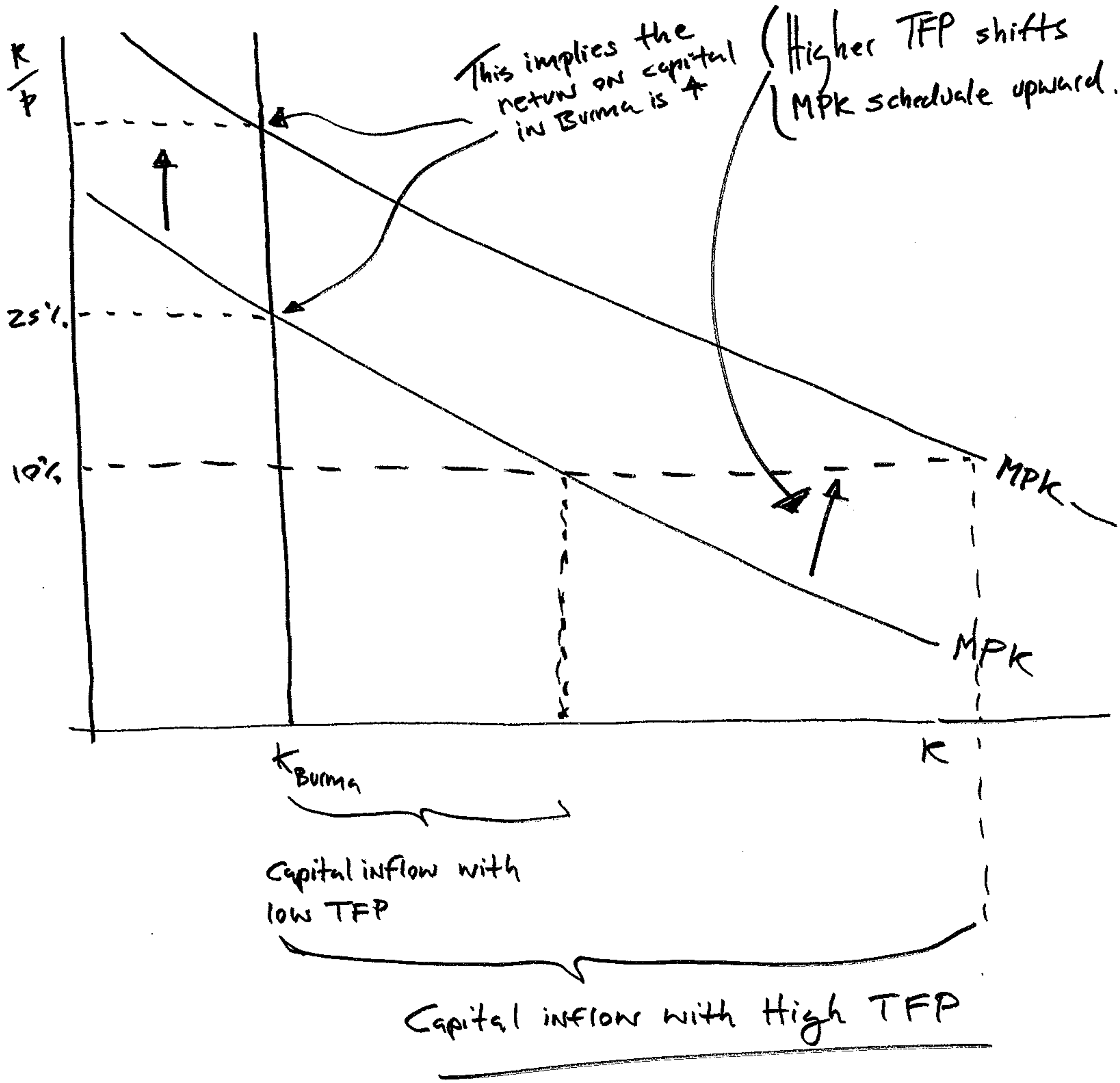
Capital on the world market can earn 10%, in Burma 25% so we should expect capital to flow to where the returns are highest!



* So capital flows into Burma until the Returns on capital in Burma is equalized with the world rate at 10%

This answers 3b

3c) TF just increases the returns to capital in Burma, and thus makes it look like a more attractive investment opportunity. Thus more capital flows in.



Why does MPK schedule shift out???

So recall $MPK = \alpha \frac{Y}{K}$

$$= \alpha \frac{A K^{\alpha} L^{1-\alpha}}{K}$$

Where A = Total Factor Productivity.

Now notice, if $A \uparrow$, this raises the MPK at any level of capital.

In other words, this makes capital much more valuable at any level of capital in the economy, hence the curve shifts out.

Note... this almost the exact same argument in 2c. An increase in L (in that case) raises the MPK at any level of capital, and thus is represented by a shift in the MPK schedule.