Econ 3510

Problem Set #5

Answer Key

1. $Y = F(K, L) = 1200$

$Y = C + I + G + NX$

$C = 125 + .75(Y - T)$

$I = 200 - 10r$

$G = 150$, $T = 100$

a. $r = 10$

$C = 125 + .75(1200 - 100) = 950$

$I = 200 - 10(10) = 100$

$NX = Y - C - I - G = 1200 - 950 - 100 - 150 = 0$

Trade Surplus $= NX = 0$

Disposable Income $= Y - T = 1200 - 100 = 1100$

$S_p = Y - T - C = 1200 - 100 - 950 = 150$

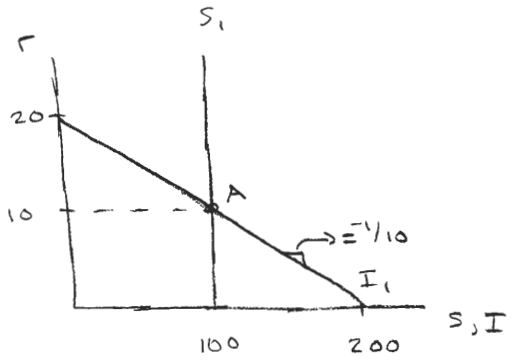
$S_g = T - G = 100 - 150 = -50$

$S = S_p + S_g = 150 - 50 = 100$

$S - I = 100 - 100 = 0$

Net Capital Outflow $= S - I = 0$

b.



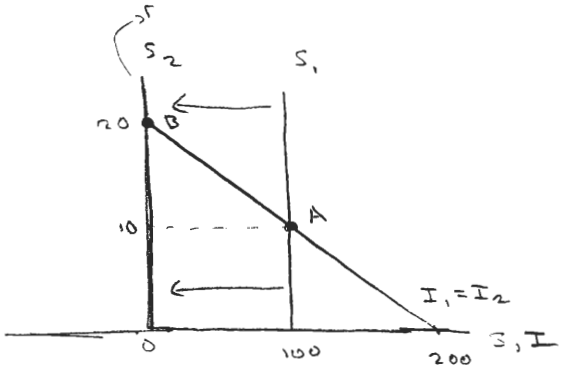
$I = 200 - 10r$

$r = 20 - \frac{1}{10} I$

c. $\Delta G = 100$

↳ S ↓ by 100 (shift left)

I would not change



d. zero, zero.

$r = 20$ for $I = 0$

e. $I = 100$ when $r^* = 10$

$S_2 - I(r^*) = 0 - 100 = -100$

$NX = S - I = -100$

fall by 100

f. increase, decrease

does not change

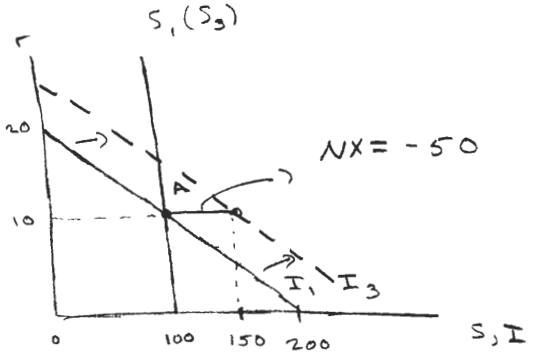
does not change

down, deficit

g. right, not at all.

net capital outflow = -50

$NX = S - I = -50$



h. $I = 200 - 10(15)$

$I = 50$

S would not change

$S - I = 100 - 50 = 50$

$NX = S - I = 50$

2. a.

e	P	exP	P*	P*/e
1.5	$10000	15000 €	15000 €	$10000
1.5	$12000	18000 €	15000 €	$10000

b. equal to
greater than
decrease

c.

e	P	exP	P*	P*/e
1.5	$10000	15000 €	15000 €	$10000
1.25	$12000	15000 €	15000 €	$12000

20 percent, 20 percent. remain equal. not change.

$\%\Delta e = \%\Delta \mathcal{E} + (\pi^* - \pi)$

$\pi^* = 0 \rightarrow \%\Delta e + \pi = \%\Delta \mathcal{E}$

$-20 + 20 = 0$ → no change in the real exchange rate ⇒ no change in NX

d. $\varepsilon = e \times P/P^*$

e	P	P^*	ε
1	\$ 10000	15000 €	2/3
1.5	\$ 10000	15000 €	1
1.25	\$ 12000	15000 €	1
1.5	\$ 12000	15000 €	1.2
2	\$ 10000	15000 €	1.33

e. EX will decrease

IM will increase

NX will decrease

ε increases when e increases, P increases, or P^* decreases

3. $Y = C + I + G + NX$

$Y = 5000$

$G = 1000$

$T = 1000$

$C = 250 + .75(Y - T)$

$I = 1000 - 50r$

$NX = 500 - 500\varepsilon$

$r = r^* = 5$

a. $NX = S - I$

$500 - 500 \times \varepsilon = 5000 - \{250 + .75(5000 - 1000)\} - 1000 - \{1000 - 50(5)\}$

$500 - 500 \times \varepsilon = 0$

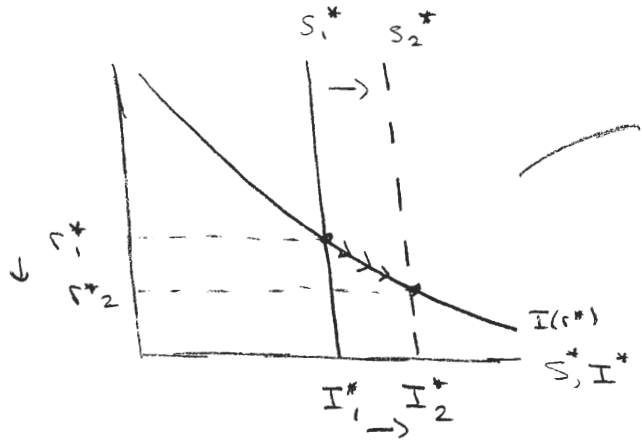
$500 \times \varepsilon = 500$

$\boxed{\varepsilon = 1}$ $\boxed{NX = 0}$

$\boxed{I = 750}$ $\boxed{S = 750}$

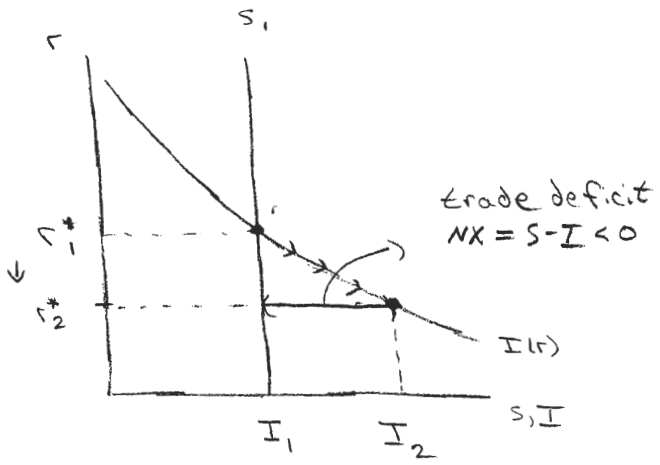
4.

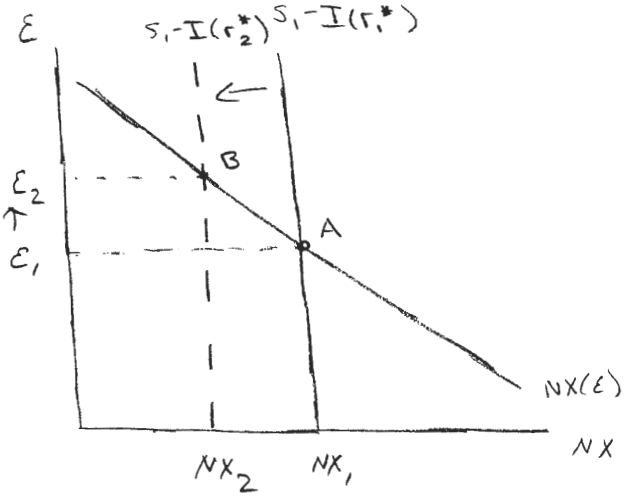
world financial markets



increased global saving causes a reduction in the world real interest rate

small open economy





A falling world real interest rate increases domestic investment while keeping saving fixed, causing net capital outflow to fall and opening up a trade deficit.

The fall in net capital outflow causes an appreciation of the real exchange rate, making domestic goods relatively more expensive and lowering the trade balance.

b. $G = 1250 \quad \Delta G = 250$

$$500 - 500 \times \varepsilon = S - I = 500 - 750 = -250$$

$$500 \times \varepsilon = 750$$

$\boxed{\varepsilon = 1.5}$ $\boxed{I = 750}$

$\boxed{NX = -250}$ $\boxed{S = 500}$

As G rises, net capital outflow (and the trade balance) falls, causing an appreciation of the real exchange rate.

c. $r^* = 10$

$$NX = S - I$$

$$500 - 500 \times \varepsilon = 5000 - \{250 + .75(5000 - 1000)\} - 1000 - \{1000 - 50(10)\}$$

$$500 - 500 \times \varepsilon = 250$$

$$500 \times \varepsilon = 250$$

$\boxed{\varepsilon = 1/2}$ $\boxed{S = 750}$

$\boxed{NX = 250}$ $\boxed{I = 500}$

As r^* rises, net capital outflow (and the trade balance) rises (b/c I falls), causing a depreciation of the real exchange rate.