Spring 2009 ECON 3224

Problem Set 3 Solutions

MCQ Solutions

1. 4
2. 5
3. 4
4. 2

Chapter 13, Q1

Given: table that shows amount of forex per $

(a) Find $e_{\$/Y}$ given $e_{\$/Y}$ = # of Yen that buys $1 = 117.40

$e_{\$/Y} = 1/ e_{Y/\$} = 1/117.40 = \$0.008515$ in 2006

$e_{\$/Y} = 1/ e_{Y/\$} = 1/117.57 = \$0.008506$ in 2005

$e_{\$/C\$} = 1/ e_{C\$/\$} = 1/1.128 = \$0.8865$ in 2006

$e_{\$/C\$} = 1/ e_{C\$/\$} = 1/1.190 = \$0.8403$ in 2005

(b) Value of $ between 2005 and 2006

% change in value of $ relative to Yen $= [(e_{\$/Y}^{2006} - e_{\$/Y}^{2005})/ e_{\$/Y}^{2005}]*100$

$= [(0.008515-0.008506)/0.008506]*100$

$= 0.1058\%$

% change in value of $ relative to Can$ $= [(e_{\$/C\$}^{2006} - e_{\$/C\$}^{2005})/ e_{\$/C\$}^{2005}]*100$

$= [(0.8865-0.8403)/0.8403]*100$

$= 5.498\%$

Chapter 13, Q7

Given: In 180 days, you expect to receive ¥40 million

Current $e_{\$/Y} = 0.0100$

(a) Suppose 180 days later, $e_{\$/Y}$ is still 0.0100,

Then you will receive a $ amount of ¥40 million*$e_{\$/Y}$ = ¥40 million*0.0100 = $400,000

(b) Suppose 180 days later, $e_{\$/Y}$ =0.00909,

Then you will receive a $ amount of ¥40 million*$e_{\$/Y}$ = ¥40 million*0.00909 = $363,600

Hence, you lost $36,400 just due to currency fluctuations.

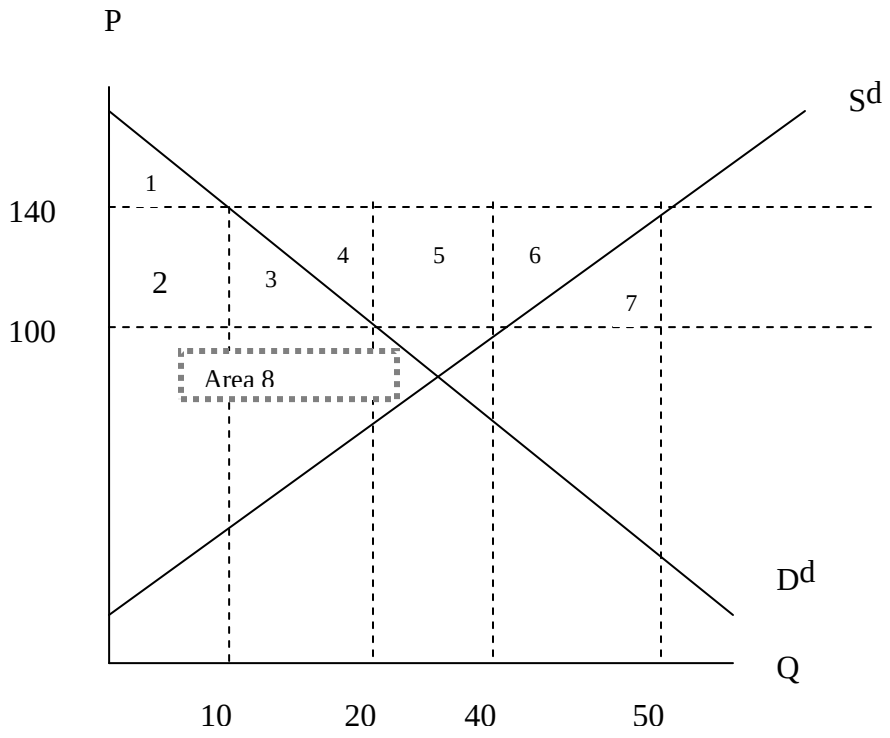
Chapter 10, Q3

Given: small country exporter

P^W=$100 Export Qty=20 tons

Subsidy = $40 only on exports

(a) After export subsidy is imposed, the world continues to pay $100 but domestic producers receive $140. From the graph, the distance between demand and supply at a price of $140 is (50-10) = 40 units



(b) Effect on welfare

	Free Trade	Subsidy
CS	Area (1+2+3)	Area (1)
PS	Area (8)	Area (2 through 6) + Area (8)
Revenue	0	- Area (3+4+5+6+7) (See Note)

Note: 2 important things

(1) The negative sign means money is <u>leaving</u> the government

(2) Rev = Subsidy * <u>New</u> exports after subsidy

(c) New Welfare Change

ΔCS	- Area (2+3)	Loss = $600
ΔPS	+ Area (2+3+4+5+6)	Gain = $1,800
ΔRev	- Area (3+4+5+6+7)	Loss = $1,600
ΔWelfare	- Area (3+7) → Dead Weight Loss	Loss = $400

ΔWelfare = - $400

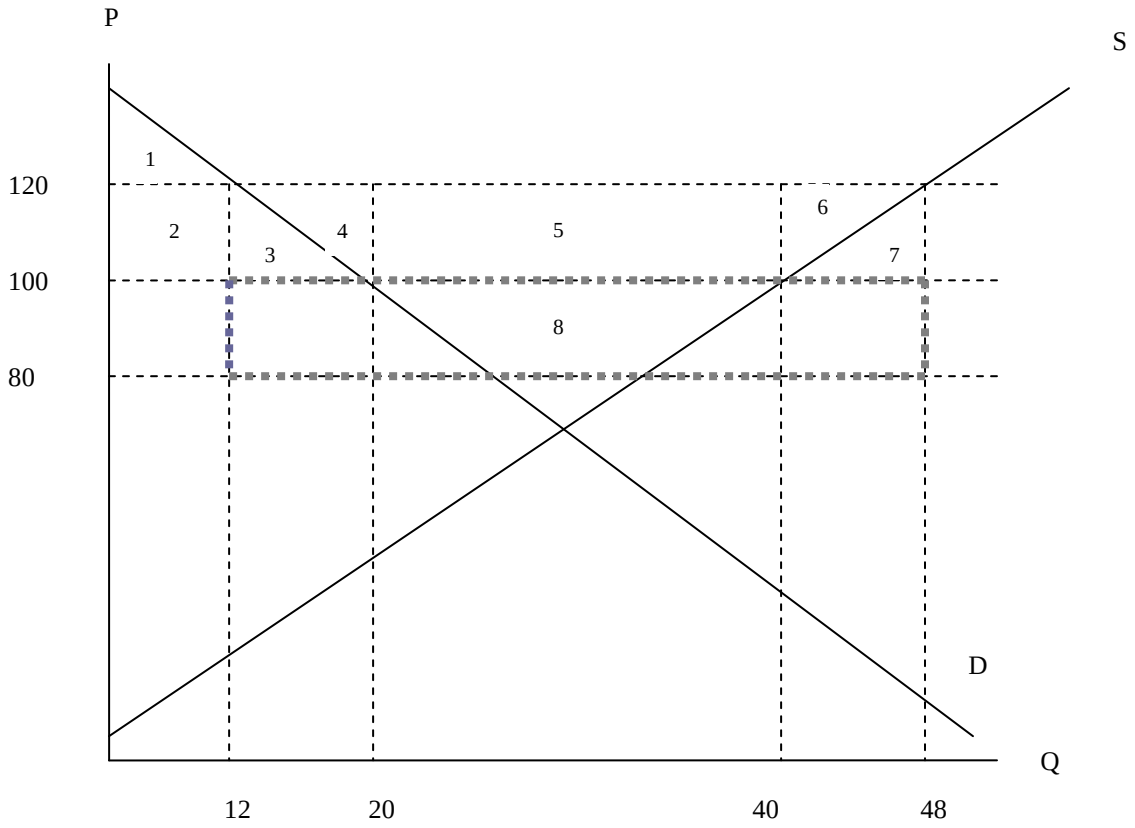
Chapter 10, Q4

Given: large country exporter

Free Trade P^W=\$100 Export Subsidy = \$40

But subsidy leads to more exports i.e. more supply in world market → World price falls to P_{New}^W=\$80. This means that domestic producers receive $P^d = P_{New}^W$ + Subsidy.

Therefore, new equilibrium domestic price = P_{New}^W + Subsidy = \$80 + \$40 = \$120.



(b) ΔCS = - Area (2+3)

= - (Rectangle 2 + Triangle 3)

= - [(12*20) + (1/2*8*20)]

= - (\$240 + \$80) = -\$320 or Loss=\$320

(c) ΔPS = + Area (2+3+4+5+6)

= Rectangle (2+3+4+5) + Triangle 6

= (40*20) + (1/2*8*20)

= $800 + $80 = $880 (Gain)

(d) ΔRev = Subsidy * New Exports

= - Area (3+4+5+6+7+8)

= - [$40*(48-12)] = - $1,440

(e) ΔWelfare = ΔCS + ΔPS + ΔRev

= - Area (2+3) + Area (2+3+4+5+6) - Area (3+4+5+6+7+8)

= - Area (3+7+8)

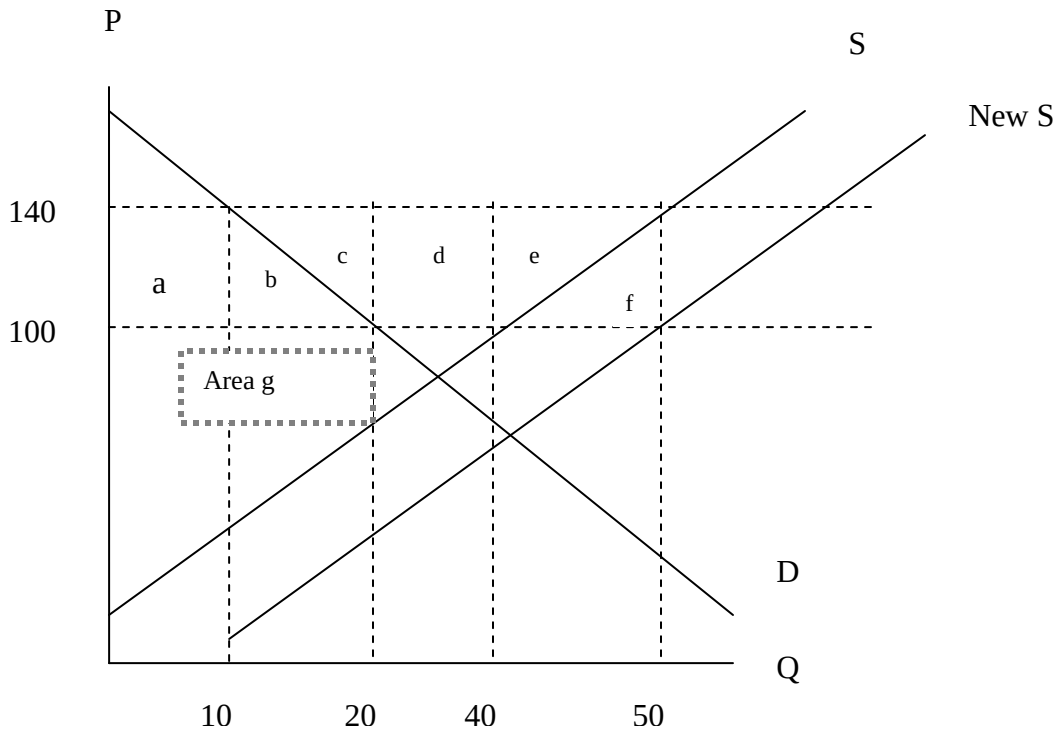
= -$320 +$880 - $1,440

= -$880 or Loss=$880

Chapter 10, Q5

Given: small, exporter country Govt production subsidy = $40 per unit

- Remember the definition of supply: each point on the supply curve shows the minimum price at which the producer wants to sell that quantity → to sell 50 units, the producer must get $140 per unit to sell.
- With the subsidy, $40 per unit is paid by the govt so the producer is willing to sell 50 units at price $100 per unit → Supply curve shifts to the right.



(a) After production subsidy, domestic consumption = **20 units** (since consumers continue paying $100)

At world price = $100, domestic production = **50 units** (since $40 extra are coming from the government) → Exports expand to **30 units**

(b) Δ in CS = $0 (same price, same consumption level as without subsidy)

Δ in PS = + Area (a+b+c+d+e) = + $1,800

→ Without subsidy, PS = Area (g)

With subsidy, PS = Area (a+b+c+d+e+g)

Why? This is because the producer's actual underlying cost structure has not changed. Without subsidy, the producer received $100 per unit and produced 40 units. With subsidy, he can produce 50 units with total cost = $140 (just that $40 comes from the govt). That is, even with the subsidy, we use the original supply curve S to determine the producer surplus triangle (PS).

Δ in Rev = - (Subsidy * New Production) → Since it is a production subsidy

= - Rectangular Area (a+b+c+d+e+f) = - $2,000

(c) Overall welfare change = $\Delta CS + \Delta PS + \Delta Rev$

= \$0 + \$1,800 - \$2,000

= - \$200

Chapter 16, Q3

(b) US Current Account EX=+\$100

US Fin Account IM_A = \$100 (since the tourist used \$100 to buy a Yen deposit i.e. import of foreign asset)

(c) US Fin A/C EX_A = +\$500m (sale)

IM_A = \$500m (purchase of £-deposit)

(d) US Current A/C NFIA = -\$10,000 (income paid to foreign capital services)

US Fin A/C EX_A = +\$10,000 (because the foreign investors used the dividends to buy a \$-deposit)

(f) US K.A. KA_{out} = -\$50m

US Fin A/C Ex_{Assets} = +\$50m (since US reduced its foreign asset holdings → the debt)

Chapter 18, Q3

IS Curve: $Y = C(Y) + G + I(i) + X(e,Y^*) – M(e,Y)$

LM Curve: Demand (i,Y) = Supply

(a) ↓ in Y* → Exports ↓ → IS shifts inward

Eqbm Y – decrease

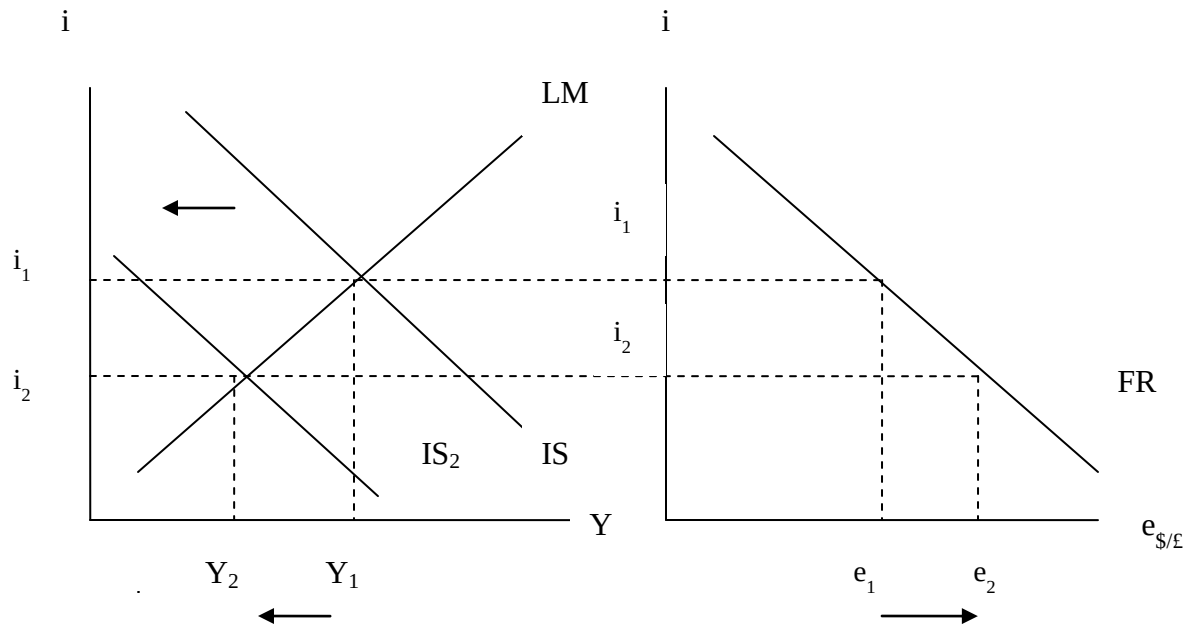
Eqbm i - decrease

Eqbm $e_{\$/£}$ - increase → \$ depreciated → exports are cheaper and imports are more expensive

Eqbm TB – increase (since (X-M) ↑)

Eqbm I – increase since i fell

Eqbm C – decrease since Y fell



(b) Investors expect $e_{\$/£}$ to rise tomorrow

→ excess demand for £

→ FR curve shifts out → ↑ in $e_{\$/£}$ (price of £)

→ ↑ in (X-M)

For each i, Y must rise to accommodate more exports

→ IS shifts out (C,G,I unchanged)

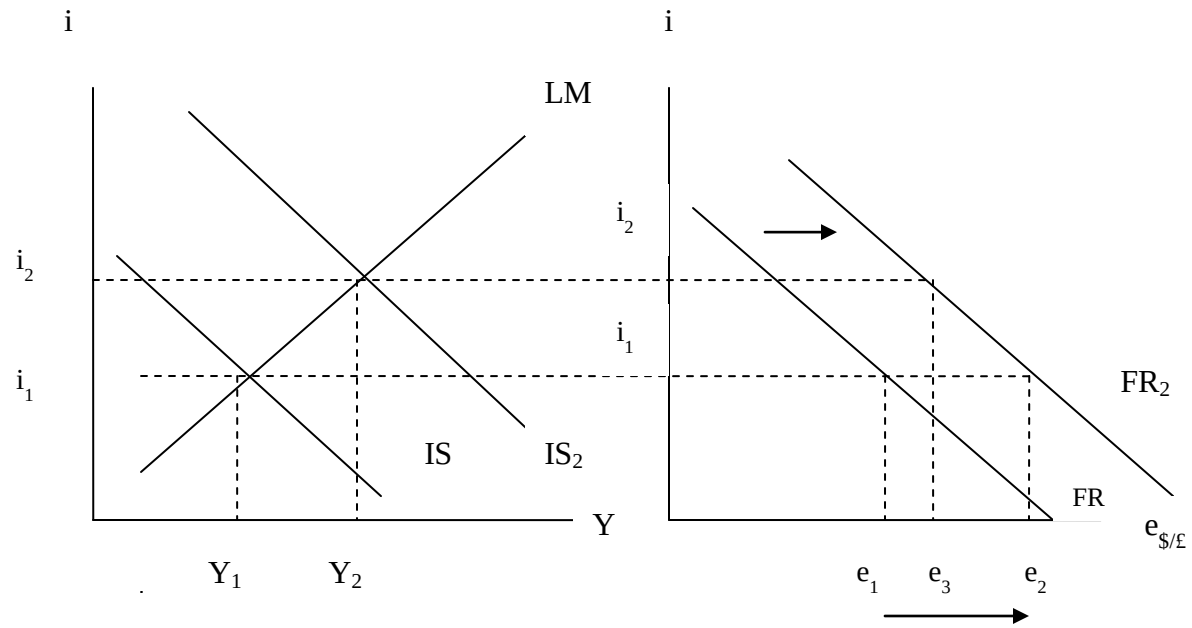
Eqbm Y rises → Eqbm C rises

Eqbm i rises → Eqbm I falls

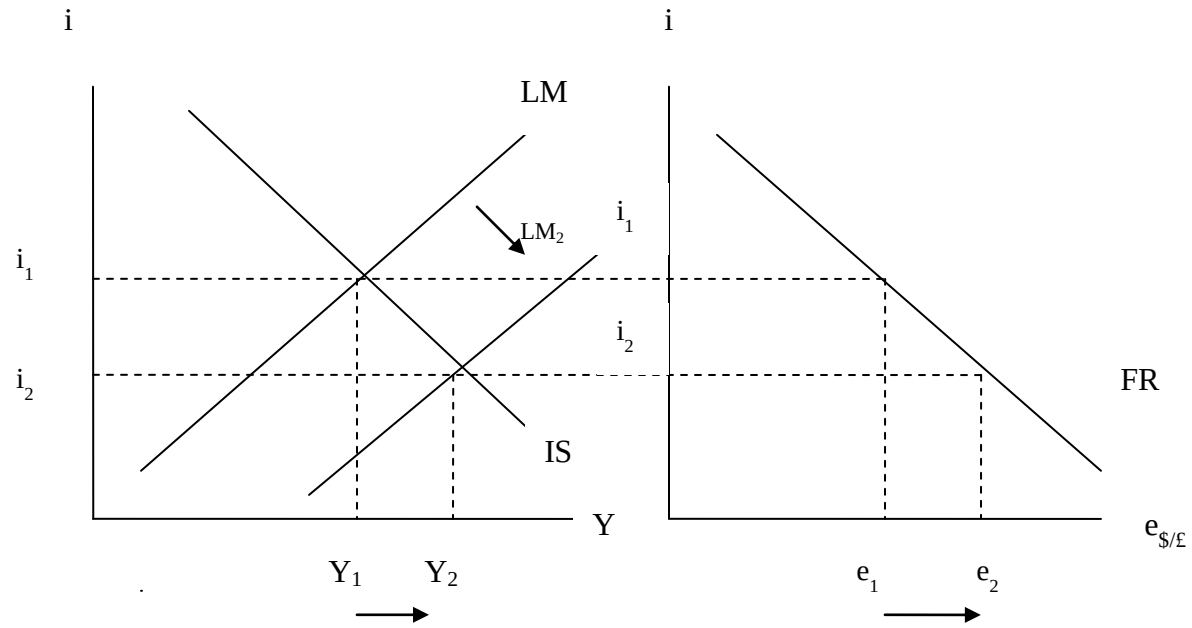
Eqbm TB rises

Eqbm e rises to e_3

Note the difference between immediate impact on C,G,I and the equilibrium impact on C,G,I

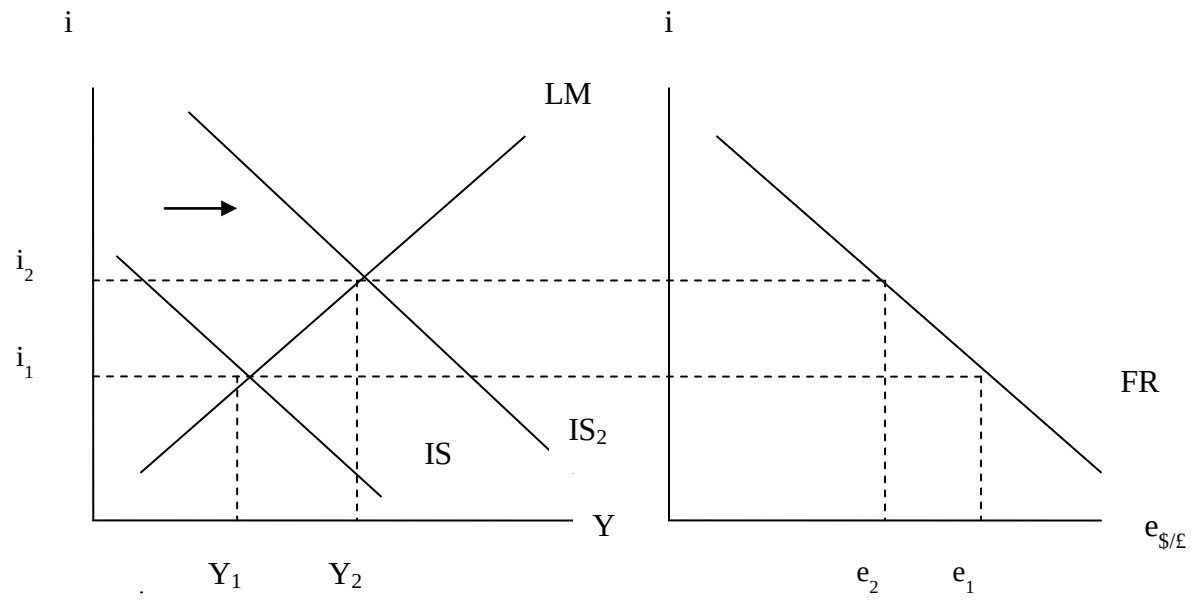


(c) Money supply rises → in order to induce economic agents to hold cash, the rate of interest must fall for each Y → LM shifts down (out/to the right)



eqbm Y_2 rises, eqbm I falls, eqbm $e_{\$/£}$ rises, eqbm TB rises, eqbm C rises

(d) Govt spending rises → for each i, Y must rise to meet the extra demand → IS shifts to the right



Rise in Y and I, which leads to a fall in $e_{\$/£}$ → lower TB (X-M), eqbm C rises, eqbm I falls.