

Econ 1A: Note for Chapter 3

Specialization and Trade: Example

Assumptions

- Two persons: Liz & Joe
- Resources: Liz: $R = R_m + R_s = 60$ min. Joe: $R = R_m + R_s = 60$ min
- Technology:
 - Liz: 1Qm every 2min, 1Qs every 2 min
 - Joe: 1Qm every 10 min, 1Qs every 2 min
- Production possibility
 - Liz: $Q_m = 60/2 = 30$, $Q_s = 0/2 = 0$; $Q_m = 0/2 = 0$, $Q_s = 60/2 = 30$
 - Joe: $Q_m = 60/10 = 6$, $Q_s = 0/2 = 0$; $Q_m = 0/10 = 0$, $Q_s = 60/2 = 30$

Liz's PPF

Qm	Rm	Qs	Rs
0	0	30	60
5	10	25	50
10	20	20	40
15	30	15	30
20	40	10	20
25	50	5	10
30	60	0	0

Joe's PPF

Qm	Rm	Qs	Rs
0	0	30	60
1	10	25	50
2	20	20	40
3	30	15	30
4	40	10	20
5	50	5	10
6	60	0	0

Liz's opportunity cost

Qm	ΔQ_m	Qs	ΔQ_s	$ \Delta Q_s / \Delta Q_m $
0		30	0	
5	5	25	5	1
10	5	20	5	1
15	5	15	5	1
20	5	10	5	1
25	5	5	5	1
30	5	0	5	1

Joe's opportunity cost

Qm	ΔQ_m	Qs	ΔQ_s	$ \Delta Q_s / \Delta Q_m $
0		30		
1	1	25	5	5
2	1	20	5	5
3	1	15	5	5
4	1	10	5	5
5	1	5	5	5
6	1	0	5	5

Liz

$|\Delta Q_s / \Delta Q_m| = 1 =$ Liz's opportunity cost of producing 1Qm is 1Qs

$|\Delta Q_m / \Delta Q_s| = 1 =$ Liz's opportunity cost of producing 1Qs is 1Qm

Joe

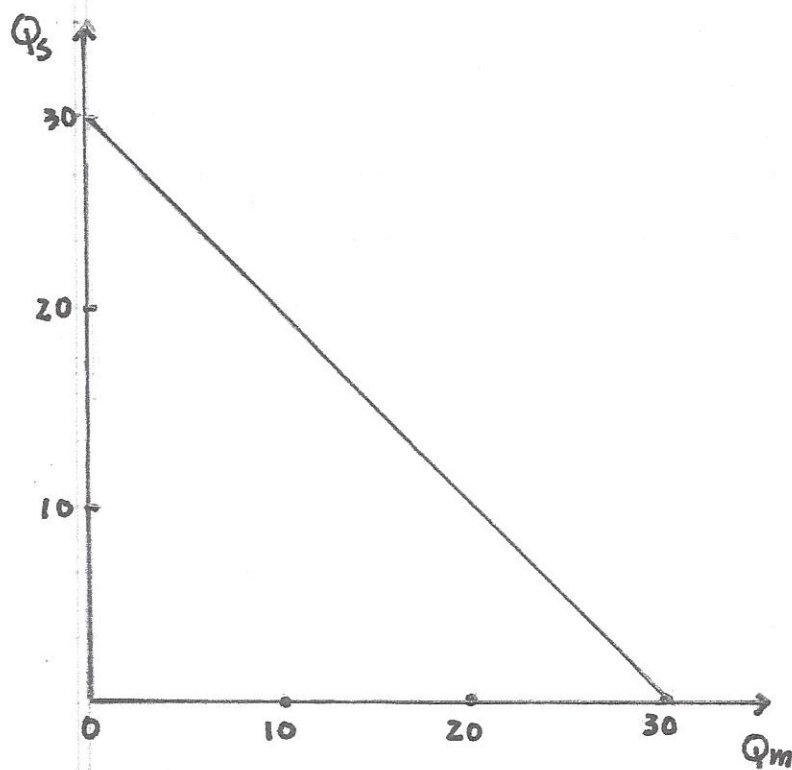
$|\Delta Q_s / \Delta Q_m| = 5 =$ Joe's opportunity cost of producing 1Qm is 5Qs

$|\Delta Q_m / \Delta Q_s| = 1/5 =$ Joe's opportunity cost of producing 1Qs is $(1/5)$ Qm

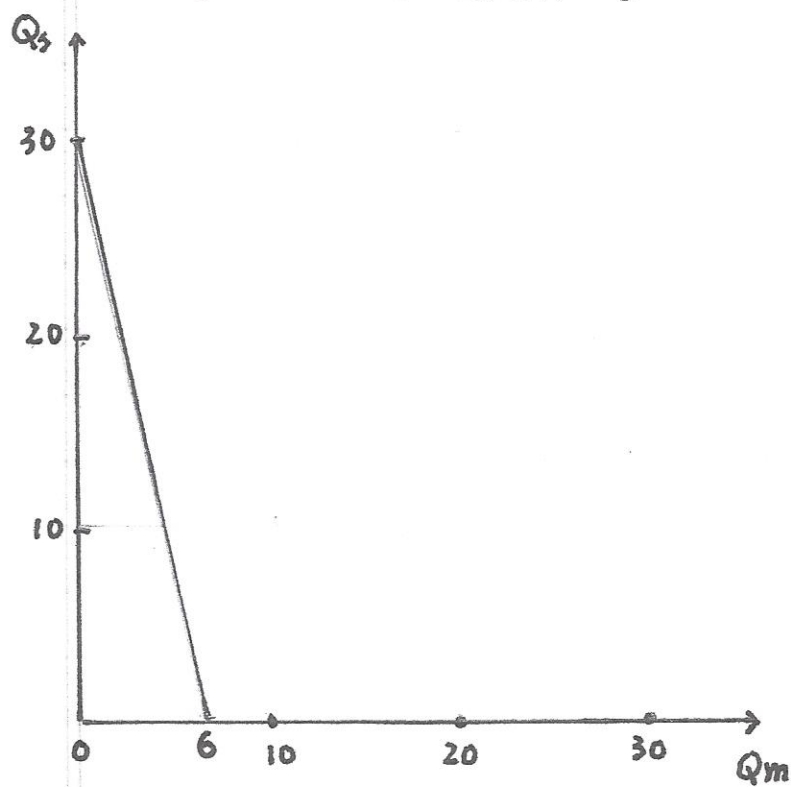
Comparative advantage (CA)

Liz has CA on Qm because $|\Delta Q_s / \Delta Q_m|$ (Liz) = 1 < $|\Delta Q_s / \Delta Q_m|$ (Joe) = 5

Joe has CA on Qs because $|\Delta Q_m / \Delta Q_s|$ (Joe) = $(1/5)$ < $|\Delta Q_m / \Delta Q_s|$ (Liz) = 1



Liz's PPF $|\Delta Q_s / \Delta Q_m| (Liz) = 1$. Constant opp. cost



Joe's PPF $|\Delta Q_s / \Delta Q_m| (Joe) = 5$. Constant opp. cost