

## 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: 1 $Q_m$  every 2min, 1 $Q_s$  every 2 min
  - Joe: 1 $Q_m$  every 10 min, 1 $Q_s$  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**

$Q_m$	$R_m$	$Q_s$	$R_s$
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**

$Q_m$	$R_m$	$Q_s$	$R_s$
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**

$Q_m$	$\Delta Q_m$	$Q_s$	$\Delta Q_s$	$ \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**

$Q_m$	$\Delta Q_m$	$Q_s$	$\Delta Q_s$	$ \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 1 $Q_m$  is 1 $Q_s$

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

#### Joe

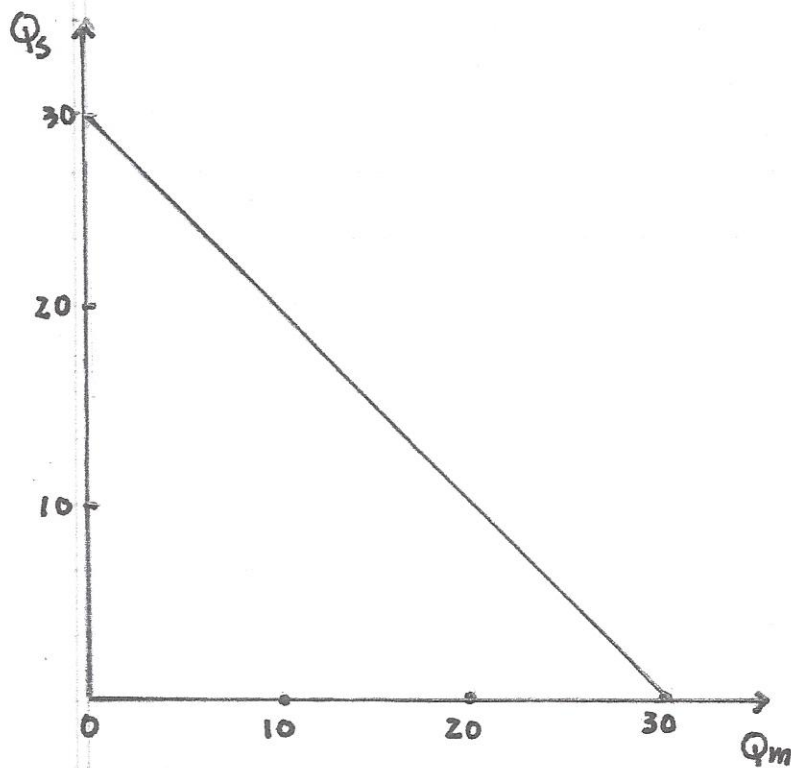
$|\Delta Q_s / \Delta Q_m| = 5 =$  Joe's opportunity cost of producing 1 $Q_m$  is 5 $Q_s$

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

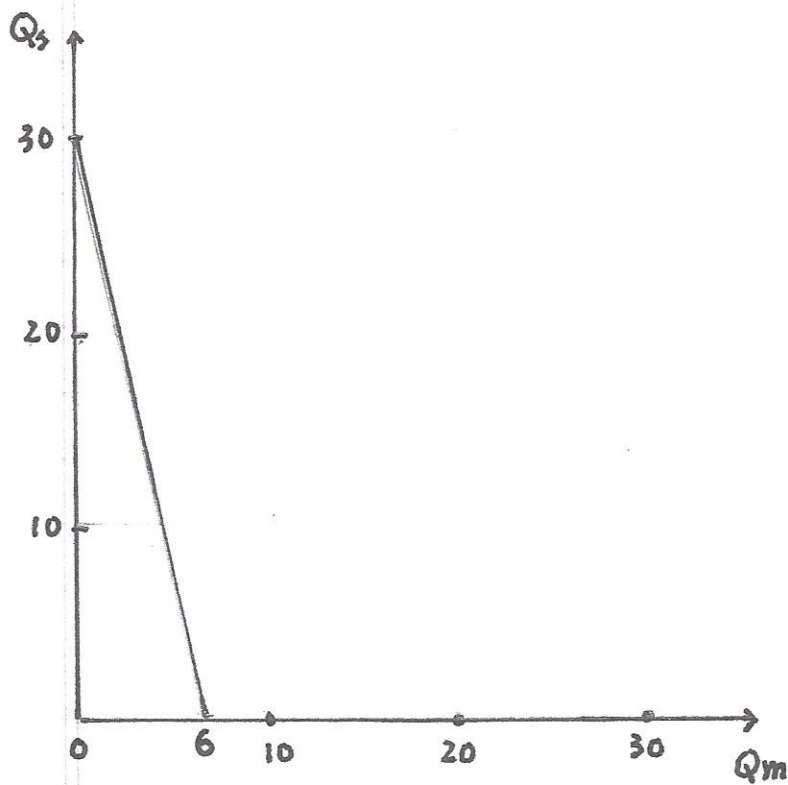
#### Comparative advantage (CA)

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

Joe has CA on  $Q_s$  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