

Topic 10 Extra

Game Theory (Chapter 14)

A simple way to think about NE

NE is a situation where
you are doing your best given what the other player is doing AND
the other player is doing his/her best given what you are doing.

NE is a “profile” of strategies (S_1 and S_2), with S_1 is for Player 1
and S_2 is for Player 2, such that
 S_1 is the best response of Player 1 when Player 2 uses S_2 ,
AND S_2 is the best response of Player 2 when Player 1 uses S_1 .

NE way of thinking...

I know that you know that I know that you know...

Dominant and Dominated Strategies

Dominant Strategy

IF a player has a dominant strategy which means that it always gives higher payoffs than ALL other strategies,

THEN that dominant strategy must be played in the NE.

Dominated Strategy

IF a player has a dominated strategy which means that there is AT LEAST ONE strategy that is better than it,

THEN that dominated strategy can be eliminated.

(a)

	a	b	c
A	2,12	1,10	1,11
B	0,12	0,10	0,11
C	0,12	0,10	0,13

(b)

	a	b	c
A	1,1	-2,0	4,-1
B	0,3	3,1	5,4
C	1,5	4,2	6,2

(c)

	N_2	C_2	J_2
N_1	73,25	57,42	66,32
C_1	80,26	35,12	32,54
J_1	28,27	63,31	54,29

(d)

	a	b	c	d	e
A	63,-1	28,-1	-2,0	-2,45	-3,19
B	32,1	2,2	2,5	33,0	2,3
C	54,1	95,-1	0,2	4,-1	0,4
D	1,-33	-3,43	-1,39	1,-12	-1,17
E	-22,0	1,-13	-1,88	-2,-57	-3,72

Ans

(A,a)

(A,a), (C,a)

(J,C)

(B,c)