

Check px is a BR (e\*)

Venus' payoffs 
$$L \to 50(.6)_{7} 80(.4) \to .62$$
 $R \to 90(.6)_{7} 20(.4) \to .62$ 

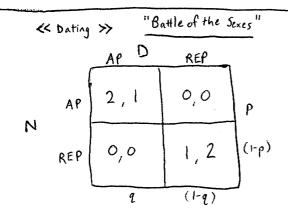
Venus' payoffs

from p\*  $\to$  (.7)[62] +(.3)[.62]  $\to$  = [.62]

We can see that Venus has no strictly profitable pure-strategy deviation.

ex this implies there's no strictly profitable mixed - strategy deviation, either >>

Lesson: We only ever have to check for Strictly profitable pure-strategy deviation



pure-strategy «(Nosh Eq.)» (AP, AP) (REP, REP)

Find a mixed NE of this game ...

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To find NE q, use Nina's payoffs  $N \quad AP \Rightarrow 2q + O(1-q)$   $REP \Rightarrow 0q + 1(1-q)$   $\begin{cases}
1 - q = \frac{1}{3} \\
(1-q) = \frac{2}{3}
\end{cases}$ To find NE p, use Davids payoffs  $D \quad AP \Rightarrow 1p + O(1-p)$   $REP \Rightarrow 0p + 2(1-p)$   $\begin{cases}
1p = 2(1-p) \\
(1-p) = \frac{1}{3}
\end{cases}$ 

Check that 
$$\rho = \frac{2}{3}$$
 is  $\beta R$  for Nina

N  $AP \rightarrow 2(\frac{1}{3}) + O(\frac{2}{3})$ 
 $REP \rightarrow O(\frac{1}{3}) + I(\frac{2}{3})$ 
 $P \rightarrow \frac{2}{3} \left[\frac{2}{3}\right] + \frac{1}{3} \left[\frac{1}{3}\right] = \frac{2}{3}$ 

Kno strictly profitable pure deviation.

expayoffs are low because they fail to meet sometimes >  $Prob(meet) = \frac{2}{3} \frac{1}{3} + \frac{1}{3} \frac{2}{3} = \boxed{\frac{4}{9}}$ 

<<meaning Prob(not
meet) = 5q, over half the time! >>

K Interpretations of mixing probabilities

1. People literally randomizing
2. Beliefs of others' actions (that make you indifferent between things you'd do).

3. ··· Proportions of Players "

taxpayer H C							
Auditor	Α	2,0	4,-10	P			
	N	4,0	0,4	]1-p			
$<<$ No pare NE $>>$ $\begin{bmatrix} 1-q \\ A & N & H & C \end{bmatrix}$ Find (mixed) NE here $\begin{bmatrix} \left(\frac{2}{7}, \frac{5}{7}\right), \left(\frac{2}{3}, \frac{1}{3}\right) \end{bmatrix}$							
And $A \rightarrow 2q + 4(1-q)$ $N \rightarrow 4q + 0(1-q)$ $\uparrow \qquad \qquad$							
Tax $P \rightarrow 0 = (1-p)$ $Y = 14p$ $P = \frac{2}{7}$							

So think of  $\frac{2}{3}$  as proportion of people being honest on their taxes. >>

Policy Lets raise the fine to -20

		H	С	
And	A	2,0	4,-20	, <b>p</b>
	N	4,0	0,4	م-ا
		2	1-9	·

What happens to tax compliance 9?

Aud 
$$A \Rightarrow 2q + 4(1-q)$$

$$N \Rightarrow 4q + 0(1-q)$$

$$T \quad H \Rightarrow 0$$

$$C \Rightarrow -20p + 4(1-p)$$

$$P = \frac{1}{6} < \frac{2}{7}$$

(but will cheat with same Equilibrium ] rate)

 To get higher compliance rate;
 Change payoffs to auditor
 make it less costly to do an audit - give a bigger gain forcatching a cheater or set audit rates higher, by Congress - but Congressmen are wealthy and may have a conflict of interest >>

Lesson 1: Can interpret proportions of people playing

Lesson 2: Check only for pure deviations

Lesson 3: Row v. column payoffs + incentives

Next time: evolution ...

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