Understanding a Cartel as a Prisoner’s Dilemma

> Key Concepts:

- A **cartel** is an oligopoly in which the members try to collude to behave as a monopoly by setting prices and output to maximize the collective profit.
- The outcome for a cartel is a **prisoner’s dilemma** with a **Nash equilibrium** with each member doing the best it can, given the behavior of the others.

### The CARTEL as a case of the Prisoner’s Dilemma

**In this example, Venezuela and Nigeria have created an oil cartel. If they cooperate, the potential profit is $10 million dollars, evenly divided. If they both cheat, the maximum profit is only $8 million.**

<table>
<thead>
<tr>
<th></th>
<th>Venezuela</th>
<th>Nigeria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cheat</td>
<td>4, 4</td>
<td>3, 6</td>
</tr>
<tr>
<td>Co-op</td>
<td>6, 3</td>
<td>5, 5</td>
</tr>
</tbody>
</table>

**Assume:**
- If both countries cooperate they can earn a total of $10 million.
- When both countries cheat the maximum profit they can earn is $8 million.

### The CARTEL as a case of the Prisoner’s Dilemma

**Although cooperation is the best outcome, there is a strong incentive to cheat to take advantage of the monopoly price.**

**Examine the matrix on the left from Venezuela’s perspective:** Venezuela’s optimal strategy is to cheat, regardless of what Nigeria does. If Nigeria cheats, Venezuela should cheat to get $4 million in profit; if Nigeria cooperates, Venezuela could get $6 million in profits.

### The CARTEL as a case of the Prisoner’s Dilemma

Nigeria faces the same choices as Venezuela so its best strategy is also to cheat. The best outcome is in the lower right hand box of the matrix. This, however, is not a stable outcome.

**The outcome is indeterminate except that it will be a Nash equilibrium.**