Assignment 2: War games
Order & Violence

Due:April 17, 2020 (upload to Canvas)

Medellin is known as Colombia's industrial and commercial heartland. Less well known is that it has one of the densest and organized criminal structures in the world. Nearly every low- and middle income neighborhood in the city has a street gang known as a combo. There are over 300 combos in Medellin. Each controls a small neighborhood, where they run the local drug trade, extortion rackets, debt collection, and other criminal markets.

The city also has about 12 larger mafia-like organizations called "razones". Each combo owes its allegiance to a razon, and is prepared to fight on its behalf. Thus razones have clearly defined territories with invisible but well-known borders. Together these 12 razones control most organized crime in the city.

You would think that with nearly 400 criminal organizations, all competing for territory and criminal rents, that Medellin would be a violent place. At times this has been true. In the last 30 years, there have been two or three times when Medellin has become one of the most violent places in the world. But most of the time that is not true. Medellin can be a surprisingly peaceful place. Today the homicide rate is lower than many American cities, including Chicago.

On the northern edge of the city, the area known as Bello has two major razones, Pachelly and Los Chatas. The head of Los Chatas goes by the alias Tom, and today he is the most powerful crime boss in the city. Pachelly and Los Chatas are longtime rivals, and have had their skirmishes over the years. But they have never gone to full scale war. The conflict theories we have been learning in class can help us understand why.

Today, however, tensions between the two razones is stronger than ever. Pachelly has been declining in power and Los Chatas and Tom are rising. Why or why not will they go to war? What can civil society or the government do about it (if anything)? Can conflict theory inform policy?

Setup

Imagine Bello as a pie worth $400. That's the value of controlling all the drug, extortion and debt markets. At the outset, suppose that Pachelly controls the majority of Bello: $250 of the $400 pie. Los Chatas control $150.

War is an all-or-nothing affair. The winner gets the whole pie, the loser gets nothing. Pachelly's chance of winning is $p\%$. Tom and Los Chatas' chance of winning is $1 - p$.

The leaders of Pachelly and Los Chatas recognize that war comes with costs. No one buys drugs in the middle of a gang war. Perfectly good combo soldiers get killed. And the police and prosecutors take notice and start to crack down on gangs and arrest leaders. Let's call the cost of war to each group C.

As an alternative to fighting, Pachelly and Los Chatas can bargain peacefully. Each razon can cede territory or pay tribute worth x to the other side if they so choose. There is no additional cost C to these peaceful transfers, other than the transfer itself. Note that the razones can also choose neither to fight nor to transfer anything (i.e. x can equal 0).

Questions

You may consult and collaborate with classmates on this assignment, but you must each submit your own work and answers.

1. **Bargain or fight?:** As noted above, suppose Pachelly starts by controlling $250 of the territory. Also, suppose that Pachelly believes it has a 75% chance of winning a war. That is, $p = 0.75$. Los Chatas has perfect information about Pachelly's strength, and agrees that it would only win the war with a probability of $1 - p = 0.25$.

   (a) Write each side's expected value of war

   (b) Suppose the cost of war to each side is C=\$90. Does either side prefer war to the status quo? Why or why not?

   (c) Suppose the cost of war to each side is C=\$30. Does either side prefer war now, or does a peaceful equilibrium exist? What do you expect to happen to the shares of territorial control in Bello?

   (d) Suppose the cost of war to each side is still C=\$30. Also, suppose that something prevented Los Chatas and Pachelly from transferring territory or tribute to one another. Would this change your answer to the previous question?

   (e) Now, suppose that C=\$30, and unlimited transfers are allowed. But Pachelly (what start with a $250 share of Bello) see their military power drop precipitously. The government swoops in and arrests senior Pachelly leaders and seizes weapons. Pachelly's chances of winning a war plummet to 25%. Do you expect war or a bargain, and why? What is the range of possible peaceful bargains now?

   (f) The Mayor and federal prosecutors are planning a major crackdown on extortion in the region. This could shrink the size of the pie well below $400. In the simple world where war is costly and there are no limits on transfers between gangs, is a sudden fall in the value of the pie a source of war?

   (g) Can you think of reasons to worry that this sudden shrinking of the pie could in fact lead to war? Describe your reasoning and whether or not it fits into the causes of war discussed in class.

2. **Unchecked Leaders:** Think about Tom, the leader of Los Chatas. Suppose he cares about his fellow gang members as much as himself. He wants to maximize the amount

of rents the gang controls, even if he doesn't get all those rents himself. And any costs of war to his fellow gang members hurts him as much as it hurts them. He fully internalizes the costs of war C. However, Tom seeks glory and power and a name in the history books. If Tom fights a war and wins, he derives some private benefit $b > 0$ from victory. Assume $p = .75$.

(a) Write Pachelly's and Tom's expected values of war.

(b) What is the maximum value of b such that peaceful agreement still exists?

(c) Now imagine that Tom does not care about glory. That is, $b=0$. But he no longer internalizes all the costs of war. He only bears a fraction of the costs of war, $0 < a < 1$. Discuss whether or not $0 < a < 1$ has a similar effect as $b > 0$ on the likelihood of war. What happens as a falls to zero?

(d) Are there actions or policies that civil society or the government can take to influence a or b? Discuss your ideas.

3. **Commitment problems and preventative war:** Now let's consider the incentives for Los Chatas and Pachelly again when there are multiple periods and the dynamics over time.

In Year 1, Los Chatas and Pachelly are evenly matched: both of them have an equal probability of winning the war ($p = .5$). They also begin with equal shares of the pie, $200 each.

Now, imagine the situation where both sides expect Pachelly to become weaker in Year 2 (that is, both sides expect Pachelly's probability of winning will fall to $p = 25\%$). Perhaps they have advance warning of a government crackdown on Pachelly. Or they have advance warning of Los Chatas concluding an alliance deal with the Clan de Golfo, a powerful international drug cartel.

The pie is still worth $400 and the cost of war is C=$50 to each side. Assume this is a one-time cost of war, incurred only in the year war is waged.

(a) What is each side's total expected value (across both year 1 and year 2) from waging a war in year 1?

(b) What would be the range of values (bargaining range) for Pachelly in year 1 and year 2 in which they would prefer peace over war? Similarly, find the bargaining range for Los Chatas.

(c) Suppose that every year they strike a peace deal separately and the deal falls in middle, what would be expected benefit from peace for Pachelly across two years? What would be the expected value of peace for Los Chatas across two years?

(d) Given your calculations in part (a) and (c), (i.e. compare overall expected benefits from waging a war (a) with overall benefit from peace (c)) do you think war option would always be preferred over peace?

(e) Is there any scope for a mutually beneficial transfer from Chatas to Pachelly that would ensure peace? What would be the minimum value (x) of transfer that Chatas need to make to prevent war?

(f) How would your answer change as the fall in p increased. For instance, in the above example, p shifted from 0.5 in Year 1 to 0.25 in Year 2. What if p was falling from 0.75 to 0.25? How do larger power shifts affect the likelihood of finding a deal? Why?

(g) Why do you think economists call this a commitment problem? In what sense is that a description of the problem? Why do you think some economists argue that we should call this a problem of limited transfers?

(h) Medellin has a powerful criminal cartel called La Oficina. All the major razones in Medellin, including Pachelly and Los Chatas, have a seat at the table in this cartel. If Pachelly and Los Chatas start a major war, it has costs for every criminal organization in the city. Thus La Oficina has an incentive to help Pachelly and Los Chatas avoid war. If you were the boss of La Oficina, what actions could you take to avert war? Try to describe several different courses of action in terms of the parameters above.

(i) What kinds of things can the federal or municipal governments do to mitigate the risks of war from commitment problems between razones?