Competing Racketeering Policies: A Simulation

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Summary

- Introduction
- IntERS Model
- Experiments
- Future Work
Introduction

- Extortion Racket Systems (ERSs) are highly dynamic and complex systems

  - Intimidate
  - Negotiate
  - Demand
    - Periodic
    - Protective
    - In Cash

(FRAZZICA et al., 2013)
Introduction

Objectives

• Propose the **IntERS** (Internal Dynamics of Extortion Racket System) model aiming to:

1. Reproduce the **effect of competition** among different Racketeering Policies

2. **Generate extortion dynamics** similar to the ones observed nowadays in the **Sicilian/Palermo’s Mafia**
Introduction

Hypotheses

1. The **competition** among ERSs leads to social **order** being established after and through the initial warfare

2. It **gradually** allows for the relatively **most sustainable system**, among those competing, to be selected
Introduction
Why Simulation?

• Because it allows us
  – To reproduce phenomena in a controlled environment
  – To test different policies
  – To collect information
  – To validate hypothesis and to answer question
IntERS Model

Extorters

Targets
IntERS Model

(Inspired on (AXELROD, 1995))

Extorters

Targets
### Racketeering Policy Dimensions

<table>
<thead>
<tr>
<th>Punishment Severity</th>
<th>Demanded Extortion</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Low/Low (LL)</td>
<td></td>
<td>High/Low (HL)</td>
</tr>
<tr>
<td>High</td>
<td>Low/High (LH)</td>
<td></td>
<td>High/High (HH)</td>
</tr>
</tbody>
</table>

**Table 1 – Extorters’ Policy dimensions**
IntERS Model

Extorters

Targets

Examples
Shopkeepers, Entrepreneurs, Construction Companies, Professionals, etc
IntERS Model

Extorters

E1

E2

Demand
Extortion

Targets
IntERS Model

Extorters

E1

E2

E2 attacks E1

Ask for Protection

Targets
IntERS Model

Extorters

E1 fight back E2

Targets
IntERS Model

Extorters

Pay extortion

Targets
A set of experiments was carried out to fulfill our aims of

1. Reproducing the effects of competition
2. Generating the extortion dynamics
Experiments (1)
Scenario

Low-Low (LL) Policy
Extorters: 15
Low Extortion: 10%
Low Punishment: 40%

Low-High (LH) Policy
Extorters: 15
Low Extortion: 10%
High Punishment: 80%

High-Low (HL) Policy
Extorters: 15
High Extortion: 20%
High Punishment: 40%

High-High (HH) Policy
Extorters: 15
High Extortion: 20%
Low Punishment: 80%

60 Extorters
2000 Targets
Experiments (1)  
Results

Most Successful  
Low Extorters

Fig. 1.a – Number of Extorters per Policy (10%-20% Extortion)
Experiments (1)  
Results

Low and High Extorters are very successful extorting

High Extorters fight and punish more than Low Extorters

Fig. 1.b – Percentage of Successful Extortions

Fig. 1.c – Violent Activities
Experiments (1)
Results

Proportionally, High Extorters spend more wealth on violent activities than Low Extorters.

Low and High Extorters provide the same percentage of protection.

Fig. 1.d – Percentage of Lost Wealth on Violent Activities
Fig. 1.e – Percentage of Protection
Experiments (1)  
Results

Proportionally, High Extorters spend more wealth on violent activities than Low Extorters.

Low and High Extorters provide the same percentage of protection.

Low Extorters are more efficient than High Extorters.

**Fig. 1.d** – Percentage of Lost Wealth on Violent Activities

**Fig. 1.e** – Percentage of Protection
Experiments (1)
Summary

- Racketeering Policies demanding Low Extortion are more successful than High Extortion policies
  1. Survives longer
  2. Accumulates more wealth and targets
  3. Uses less violence
     a. Looses less wealth in fight and punishment
     b. Less visible to the State
Experiments (2)
Objectives

Another set of experiments was carried out in order to **test the plausibility** of the **combination of specific values** used to characterize the Extorters’ policies.
Experiments (2)
Scenario

- 180 simulations were carried out by combining different attributes values:
  - Demanded Extortion
  - Punishment Severity
  - Tolerance to Punish
  - Enlargement Probability

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
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<tbody>
<tr>
<td>Demanded Extortion</td>
<td>[10 / 20], [20 / 40], [30 / 60], [40 / 80], [50 / 100]</td>
</tr>
<tr>
<td>Punishment Severity</td>
<td>[20 / 40], [30 / 60], [40 / 80], [50 / 100]</td>
</tr>
<tr>
<td>Tolerance</td>
<td>10, 40, 80</td>
</tr>
<tr>
<td>Enlargement</td>
<td>10, 40, 80</td>
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Table 2 – Extorters’ Policies values
Experiments (2)
Results

• Examining the results with respect to the last surviving Extorter’s Policy considering Demanded Extortion, we could identify 3 different types of patterns
Experiments (2)  
Results

Type 1  
Demanded Extortion [10 / 20]

Most Successful  
Low Extorters

Fig. 2 – Number of Extorters per Policy (10%-20% Extortion)
Experiments (2)
Results

Type 2
Demanded Extortion [20 / 40] or [30 / 60]

Fig. 3.a – Number of Extorters per Policy (20%-40% Extortion)

Most Successful
High Extorters
Experiments (2)
Results

Low and High Extorters increase their number of violent activities

Low Extorters use most of their extortion on violent activities

![Graphs showing number of violent activities and percentage of lost wealth for different Extorter Policies: LL, LH, HL, HH.]

Fig. 3.b – Number of Violent Activities
Fig. 3.c – Percentage of Lost Wealth on Violent Activities
Experiments (2)

Results

Low Extorters are **not able to accumulate wealth**

Low Extorters are **less capable to protect its domain**

**Fig. 3.d – Accumulated Wealth**

**Fig. 3.e – Percentage of Protection**
Experiments (2)
Results

Type 3
Demanded Extortion [40 / 80] or [50 / 100]

Most Successful
Low Extorters

Fig. 4.a – Number of Extorters per Policy (40%-80% Extortion)
Experiments (2)
Results

High Extorters are **not** successful extorting

High Extorters are **unable** to provide protection

**Fig. 4.b – Percentage of Successful Extortions**

**Fig. 4.c – Percentage of Protection**
High Extorters cannot accumulate wealth

High Extorters cannot accumulate targets

Fig. 4.d – Accumulated Wealth

Fig. 4.e – Number of Targets
## Experiments (2) Summary

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</tr>
<tr>
<td>% Successful Extortions</td>
<td>High</td>
<td>High</td>
<td>High (LL/LH) Medium (HL/HH)</td>
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Table 3 – Comparison among the pattern types
## Experiments (2)
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<td><strong>Conclusions</strong></td>
<td>• Coexist with Legal authorities</td>
<td>• Too visible to the police</td>
<td>• Use too high extortion values</td>
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<tr>
<td></td>
<td>• Similar to the Sicilian Mafia</td>
<td>Plausible, but easier to fight against</td>
<td>• Extorters die of starvation</td>
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**Most Plausible**

Table 3 – Comparison among the pattern types
These results support our hypotheses that competition among Racketeering Policies leads

1. To social order
2. To the selection of the most sustainable system
Interestingly, the **Low extortion policies** have features similar to the ones indicated by Franchetti and Sonnino (1877):

“If the villains made use of their destructive abilities to an extreme degree, they would soon lack the very matter from which to steal” (p. 126).
Future Work

1. Include a new entity representing the State/Police
2. Model and implement the Extorters and Targets using a normative cognitive architecture
3. Allow the transmission and enforcement of norms (legal and social) favouring the identity and cohesion of the extortive group
4. Add information propagation, such as experiences and reputation information
5. Allow Extorters and Targets to dynamically adapt to varying external conditions
References


Thank You !!!