Determinants of land-conflict in indigenous lands in southern Chile

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Introduction

• The conflict for indigenous land in Chile has deep historical roots
• It started with the Spanish colonization,
• Then continued the so called “war of Arauco”
• Then, peace treaties (Parley of Quillin on 1641) that defined a border for the Mapuche territory.
• By the time of the independence of Chile, the indigenous Mapuche territory was very well delimited in most of what we know today as “Región de La Araucania” (Araucanía Region) (including south of Biobio region and north of Los Rios Region)
Introduction

• While the independence war, the attention was put on the conflict Chile-Spain.

• However, once defeated, remnants of Spanish army retried to the South where attempted to even make alliances with some commoners against Chile (just for a couple of years).

• The indigenous conflict / colonization was cooled down after Chile earned its independence (1818), until second-half of 1800s.
Relationship between Chile and its Indigenous People

• Long Story

• Story in not different from colonized people in America
  - Abuse,
  - Usurpation of land,
  - Transformed culture, language
  - Assassination and invasion

• In summary and to be elegant, a very disadvantageous and asymmetric relationship
Relationship between Chile and its Indigenous People

• 1989, Chile had democratic elections and the opportunity to return to democracy

• “La Concertación” (Political coalition) and Patricio Aylwin defeated Augusto Pinochet (head of State for 19 years (1973-1989), in democratic elections on December 1989.

• In 1993, Chile enacted the new Act on Indigenous Affairs, in which property on indigenous land was one of the main topics addressed by the new legislation.
Relationship between Chile and its Indigenous People

• This included land restitution and/or land compensations which involved a quite large scale land-purchasing program through the newly created “Fondo de Tierras” (State land trust in charge of land acquisition and later distribution to commoners).

• The new Act (Law 19.253) was a result of negotiations carried out between Mapuche commoners and the new democratic coalition (La Concertación), on the late-1980s and was part of the compromises acquired by who became the Democratically elected Patricio Aylwin.
So-called Mapuche conflict

• All indicated, there was a happy ending story.

• However, problems were ready to begin

• ENDESA started the construction of a MEGA hydroelectric project, consisting in 6 dams in the Biobio River (1997).

• Part of the project involved Pehuenche land (of Mapuches from that territory).
Relationship between Chile and its Indigenous People

• After an initial agreement between the company and the local communities (involving compensations land and money), activists, and some voices from more radical commoners (the CAM) were opposed to the agreement and the project (CAM = Coordinadora Arauco Malleco).

• All indicates this event triggered a new relationship between Mapuches and the democratic government, since, it was seen from Mapuche side as an explicit support to mega companies with a government turning away to Mapuche demands.
Relationship between Chile and its Indigenous People

• Started a series of protests against the project and any company intervention involving indigenous land.
  – Protests involved rather violent confrontation
  – Torching of forestry machinery & logging trucks
  – “illegal” occupation of colons owned farms
  – Road blocking
  – Violent confrontation between commoners and policy force
  – Mapuches accused as terrorists
  – Human losses in those confrontations
Objectives

Explain the occurrence of violent events related to the “Mapuche conflict” in southern Chile (Araucania Region) using a panel data model

**Specific Objectives.**

- Assemble a panel data of events of conflict at municipality level
- Identify and estimate an econometric model.
Data

• Data panel:
  - 30 municipalities
  - Period 1990-2008

Dependent Variable:
- Number of events per year per municipality

Explanatory variables:
- Socioeconomic variables at land aggregate level
- Area afforested per municipality per year
<table>
<thead>
<tr>
<th>Variable</th>
<th>Minimo</th>
<th>Maximo</th>
<th>Media</th>
<th>Desv. Estandar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eventos de Conflicto (N°/Año/Comuna)</td>
<td>0</td>
<td>8</td>
<td>0.21</td>
<td>0.95</td>
</tr>
<tr>
<td>Poblacion Rural Mapuche (%Hab./Comuna)</td>
<td>1,42</td>
<td>59,61</td>
<td>23,14</td>
<td>15,52</td>
</tr>
<tr>
<td>Densidad de Poblacion (Hab./Km2)</td>
<td>2.3</td>
<td>281.54</td>
<td>28.79</td>
<td>45.65</td>
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<tr>
<td>Porcentaje de Pobreza (%Hab./Comuna)</td>
<td>9.39</td>
<td>58.8</td>
<td>36.07</td>
<td>8.81</td>
</tr>
<tr>
<td>Porcentaje de Cesantia (%Hab./Comuna)</td>
<td>3.42</td>
<td>20.26</td>
<td>12.55</td>
<td>4.01</td>
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<tr>
<td>Porcentaje de Alfabetismo (% Hab/Comuna)</td>
<td>78.25</td>
<td>97.01</td>
<td>87.59</td>
<td>3.82</td>
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<tr>
<td>Stock Plantaciones Forestales (Hectareas/Comuna)</td>
<td>96.06</td>
<td>58452.24</td>
<td>13861.55</td>
<td>13823.63</td>
</tr>
</tbody>
</table>

Numero de Muestral (N) = 420
Study Area

Distribution of Indigenous reductions, South of Chile (Araucania region and beyond)
Study Area

Distribution of forestry plantations, Araucania Region
Study Area

Number of cumulated events, Araucania Region. Source: FUDEA 2016.
Model

• Poisson model
  (discrete non-negative outcome, 0,1,2,3,4, ...)

• Binomial Negative.

• Both models previously used to explain event of conflict (e.g., Moore et al. 1996, used Poisson model to study political conflict events both in Chile and Philippines as explained by agrarian reforms).
# Preliminary results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Poisson</th>
<th>Binomial - Negativo</th>
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<tbody>
<tr>
<td>Cesantía</td>
<td>0.2809728</td>
<td>0.1949087 *</td>
</tr>
<tr>
<td></td>
<td>(0.5881395)</td>
<td>(0.0925437)</td>
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<tr>
<td>Porcentaje de alfabetismo</td>
<td>-0.571064 **</td>
<td>0.0577738</td>
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<tr>
<td></td>
<td>(0.1671541)</td>
<td>(0.0921987)</td>
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<tr>
<td>Plantaciones Forestales</td>
<td>0.0022251 **</td>
<td>0.0004744 *</td>
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<tr>
<td></td>
<td>(0.0004942)</td>
<td>(0.0001977)</td>
</tr>
<tr>
<td>Cons</td>
<td>-</td>
<td>-16.09834</td>
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<tr>
<td></td>
<td></td>
<td>(8.745018)</td>
</tr>
<tr>
<td>Test Wald Chi-cuadrado</td>
<td>27.99</td>
<td>10.81</td>
</tr>
<tr>
<td>Log likelihood</td>
<td>-85.082684</td>
<td>-93.911623</td>
</tr>
</tbody>
</table>

Nota: * $p < 0.05$, ** $p < 0.01$. Errores estandar entre parentesis.
Discussion

• Level of literacy:
  
  – The Higher level of literacy in the municipality lower occurrence of event of conflict.
  
  – Municipalities with lower level of literacy are Collipulli, Ercilla, Galvarino, Traiguén and Vilcún. They conflict is centered in these municipalities.
  
  – In opposite way, municipalities with higher level of literacy do not account for events of conflict, i.e., Pitrufquén, Pucón, Toltén, Villarrica and Loncoche.
Discussion

• Afforested area (tree plantations):

  – The higher is the area of plantations higher the level of conflict.

  – This occurs in municipalities of Angol, Collipulli, Ercilla, Traiguén, Lumaco and Victoria.

  – The afforested area is key relevant to understand the recent conflict, because, from a land conflict, it switched to “fight the forestry companies” conflict.
Discussion

• Fighting forestry companies became iconic because their expansion on Mapuche territory represent a repetition and confirmation of the colonization process over the territory, in all senses (Culturally by switching a subsistence agricultural oriented local life to forestry (nothing else to do for a living) economy.

• Plantations represent a process which runs against the direction of the agrarian reform.

• Plantations obligate household to evacuate and migrate (and it is seen as a forced migration)
• Plantations occur over degraded and abandoned cropping land; however, it has involved direct conversion from native forests to plantations.

• Aggregation of the property ownership also has created a negative sentiment against forestry companies by no indigenous population (it is seen as opposite to solving the income distribution problem in the country)
Discussion

• Higher rates of water consumption by fast growing plantations have created environmental problems at local level.

• This situation is increased in the coastal dry range and dry summer season.
Conclusions

• Most of the indigenous conflict for land restitution may be explained by historically unsolved injustices that have resulted from an asymmetric and quite abusive relationship between the State of Chile and the indigenous people.

• The historical margination of indigenous people has resulted in lower levels of income and access to education and services from the State, which has, at the same time, resulted in poverty.
(preliminary) Conclusions

• The attempts of the State of Chile have created an opportunity to solve an historical problem (Law 19.253); however, market forces, wrong policies and unintended impacts of market oriented policies have challenged that process,

• e.g., the expansion of plantations over indigenous territory under a permissive State that have turned against indigenous people (as terrorists) while on the other side subsidizing the expansion of plantations.

• In spite other unobserved variables, socioeconomic determinants and the expansion of plantations can explain part of the conflict