

# The Law of the Taxi: Informal Property Rights Institutions in the Uninhibited State\*

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## Abstract

We use the private protection institution we discovered while interviewing taxicab drivers in Trujillo, Peru, to illustrate a theory of clubs. This institution incentivizes joint production of security by taxicab companies. Historic episodes of such private institutions abound, and they are increasingly important in developed countries today where public police are underfunded and often unreliable. Unlike in developed countries, where private security providers usually operate legally and often collaborate with public law-enforcement agencies, private security in the developing world is often extralegal and not officially sanctioned. We contribute to the literature on private enforcement mechanisms by providing an example of a private protection institution that exists in the developing world today.

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*JEL Codes:* P5, O0, D7

*Keywords:* private enforcement mechanisms, policing, Peru, taxicab companies, protective-tier entrepreneurs

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\* We thank Brent Crosby for research assistance and translation.

## **I. Introduction**

The fact that functioning legal institutions are required for economic development has been widely discussed in the economic development literature (Boettke 1994; Hall and Jones 1999; de Soto 2000; Acemoglu, Johnson, and Robinson 2001; Acemoglu and Johnson 2005; Kerekes and Williamson 2008). However, the mere formalization of property rights or contracting institutions, as promoted by Hernando de Soto (2000) and others, does not seem to be sufficient for good economic outcomes. Williamson and Kerekes (2010) show, for example, that land titling does not result in the same benefits associated with secure property rights. They argue that when formal enforcement of *de jure* rights is weak or absent, the economic benefits of secure property rights will remain elusive even with efforts to formalize those rights.

An obvious alternative to formal enforcement of contracts and property rights is enforcement through private security, protection, and courts (Besley 1995). Historic examples of such private mechanisms for the enforcement of rules, rights, and regulations abound (Greif 1989, 1993; Anderson and McChesney 1994; Anderson and Hill 2004; Milgrom, North, and Weingast 1990; Zerbe and Anderson 2001; Stringham 2002, 2003; Leeson 2006), and private enforcement mechanisms are becoming increasingly important in developing countries today as public police are underfunded and often unreliable (Benson, Rasmussen, and Kim 1998; Pastor 2003; van Steden and Sarre 2007).

Private mechanisms of property-rights enforcement often emerge from the organizational structures of clubs. Successful clubs have both formal and informal institutional arrangements to provide the effective enforcement of property rights while also drawing revenue from the goods and services offered (Buchanan 1965). The provision of property-rights enforcement is a costly endeavor and susceptible to free riding, where individuals consume the service without paying for it. For this reason, this service is generally considered a public good and is provided by the state. Club structures, however, can align incentives appropriately to overcome these constraints.

This paper contributes an example of a private protection institution that exists in the developing world today. Unlike in the case of developed countries, where private security providers usually operate legally and often collaborate with public law-enforcement agencies, private security in the developing world is often extralegal and not officially sanctioned. The private protection institution we

discovered while interviewing taxicab drivers in Trujillo, Peru, specializes in providing the incentives required for joint production of security by taxicab companies. Taxicab companies, rather than just specializing in taxi services, also provide protection of their property for drivers who are members of a company. This private institution for the protection of property is extralegal to the extent that some of its services are illegal in the context of existing government institutions.

Our example provides evidence for Leeson and Boettke's (2009) theory of two-tiered entrepreneurship, which suggests that when governments in the developing world cannot or do not protect their citizens against private predation, institutional entrepreneurs will develop private mechanisms to protect property rights. They call this type of entrepreneurship higher-tier entrepreneurship, as distinct from lower-tier or productive entrepreneurship. Additionally, the private enforcement mechanism within the Trujillo taxicab community highlights the benefits of club-like mechanisms for the private provision of public goods in smaller, developing economies.

We begin by reviewing the literature on private institutions for policing and protecting property and the club structures from which they emerge. Section 3 describes the private property rights enforcement regime we discovered among taxicab drivers in Peru. Section 4 describes the club structure allowing for the taxicab companies' success, and section 5 concludes.

## **II. Literature**

Leeson and Boettke (2009) suggest that lower-tier or productive-tier entrepreneurs can operate effectively in a society where property rights are well established and where they have recourse to a formal legal system to resolve contractual disputes or theft. When adjudicating disputes within the formal legal system is costly and time consuming, however, property owners cannot rely on it for protection. In such cases, lower-tier entrepreneurship is more difficult. Instead, entrepreneurship is relegated to a higher level of institutional innovation.

When formal property rights are weak, entrepreneurs have an incentive to devise their own informal means of protecting their property rights through private security. These informal institutions allow them to compensate for ineffective formal institutions. More specifically, entrepreneurs can operate at two distinct tiers: a productive or lower tier and a protective or higher tier. When

property rights institutions are strong, productive-tier entrepreneurs discover new technologies that expand production. When property rights institutions are weak, productive-tier entrepreneurship is ineffective.

In this case, entrepreneurship is relegated to a higher level of institutional innovation. Entrepreneurs at this higher tier discover informal ways of protecting property. Protective-tier entrepreneurs can provide property protection when government is either too weak or too strong. A weak government cannot adequately protect property, while a strong one can engage in excessive expropriation, which weakens property rights. In both instances, it is profitable for private entrepreneurs to discover techniques that can protect property against either private or public predation.

Greif's (1989, 1993) Maghribi traders provide an excellent example of the importance of higher-tier entrepreneurship in the absence of effective formal property rights enforcement. International trade during the tenth and eleventh centuries was characterized by much uncertainty and great informational asymmetries between merchants and their overseas agents. In the face of this general contractual uncertainty, a group of Jewish merchants, known as the Maghribi traders, developed a closed network to facilitate each other's trading activities in different locations around the Mediterranean without relying on the existing legal system in any specific location.

Strong social bonds allowed for the development of reputation and trust sufficient to facilitate long-distance trade relationships among the coalition. The Maghribi traders were able to develop an information-transmission mechanism that performed better than any other existing mechanism for communicating information regarding an agent's reputation. By creating a coalition, traders could transmit information between members about agents' honesty. All members of the coalition would punish a dishonest agent, which increased the cost of defection. The likelihood of being punished by the entire Maghribi trader coalition made it more profitable for an agent to be honest in his dealings with members.

Private or informal enforcement mechanisms are not just of historical significance, however. Ellickson (1986) shows that even in the modern context of strong, formal enforcement institutions, institutional entrepreneurs will devise informal enforcement mechanisms when the costs of formal enforcement are too high. He uses rural Shasta County, California, as an example. There, in the face

of frequently changing formal trespass laws, landowners ignore the formal law and instead enforce informal norms that resemble traditional English common law rules.

When cattle trespass and cause damage on the trespass victim's property, for example, the cattle owner is strictly liable for the damage. Victims notify animal owners when trespass occurs and assist the owner in retrieving stray stock. In addition, neighbors keep comprehensive mental accounts of who owes whom. Only if animal owners refuse to adhere to informal norms of compensation do the landowners take recourse to the formal legal system.

The mutual protection institutions that taxi drivers in Trujillo use to secure their property are based on similar informal enforcement mechanisms. These institutions are particularly interesting because, like the rules of cattle trespass in Shasta County, they are not sanctioned by the existing formal enforcement agencies in Peru, but by the members of the coalition or club.

Clubs are essentially associations of individuals with a unified mission, held together by strong social bonds built on reputation and trust. However, clubs also often have institutional arrangements that allow for the effective enforcement of these bonds. Successful religious groups, for example, must have a unified mission, strong social bonds, and the necessary enforcement mechanisms to cover their costs and protect their members. Without such enforcement mechanisms, the collective goods produced by religious groups would be subject to the free-rider problem that affects all public goods.

The classic example of a public good is national security. Because it is difficult to exclude nonpaying individuals from consuming the security once it is provided, there is an incentive to not pay for the security. As a result, security will be underprovided. Buchanan (1965) offers a response to this standard theory, showing how individuals may nevertheless organize privately to provide goods that are collectively owned and consumed (public goods). He highlights that most public goods, including national security, are "impure" public goods—goods that exert a level of publicness and can be excludable under the proper formal or informal institutional arrangements. Clubs can form and provide the means to exclude nonpayers from consuming a good that is otherwise easy to obtain without payment by free riding. The Trujillo taxi service displays similar characteristics of a club as it has membership conditions and a utilization condition, which explains the two-part pricing of club goods that are partially

excludable. With the Trujillo taxi service, the resource in question is property protection.<sup>1</sup>

### **III. Driver Solidarity and Property Protection**

Peru, especially outside of the capital, Lima, provides a great example of a country with weak formal property rights institutions. In the 2019 Economic Freedom of the World Index, Peru received a score of 4.4 out of 10 for protection of property rights compared to the United States' score of 7.9. To provide some additional context, Venezuela, a country with a recent history of wide-scale expropriation of private property through its government, had a score of 0.87, while most European countries scored a 10. Peru's score suggests that the country has weak formal enforcement institutions.

In the summer of 2010, we set out to interview small business owners in Trujillo, Peru, regarding their general perception of the security of their property and the measures they took privately to protect their business assets. We interviewed twenty small business owners, thirteen of whom were taxicab drivers. Although private vehicles are rare, the streets of Trujillo are busy with taxis and jitneys, which are small cars used as taxis.

Trujillo is the third-biggest city in Peru and, notwithstanding its weak formal institutions, is characterized by plenty of small business activity. The city's inhabitants shop mainly in small neighborhood bodegas instead of large grocery stores. Such bodegas rarely allow customers to enter the store and mostly sell through gates that span the entire storefront. The way business is conducted illustrates the low level of trust and weak formal institutions for the protection of property rights.

During these interviews, we found that police lack the means to redeem stolen items. Most small business owners we talked to informed us that they did not think the police provided adequate protection of their property. Instead, owners employ other mechanisms to protect their property. Many of the neighborhood businesses support each other in their efforts to protect themselves from thieves and vandals through neighborhood watch efforts. We

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<sup>1</sup> Alchian and Demsetz (1972, p. 777) incorporate these club-like characteristics into a theory of the firm. They provide an economic theory behind the manager's role at a firm. As resource owners can increase productivity through cooperative or team production, it is in the interest of these higher-tier entrepreneurs to innovate in finding ways to facilitate cooperation and limit shirking.

found that taxicab owners in Trujillo depend on a particularly elaborate mechanism to protect their property. This private property rights protection institution relies on taxi companies acting as protection specialists.

As described above, the formal enforcement of private property rights in Peru is ineffective. Eighty percent of the small business owners we interviewed answered “yes” when we asked whether they worry about the protection of their business property. Because the formal enforcement of property rights is ineffective, higher-tier entrepreneurs in Trujillo have devised varied mechanisms of informal property rights protection. Of the individuals interviewed, 65 percent indicated that they rely on communal protection associations to protect their property.

Among the different businesspeople we interviewed, taxicab drivers stood out as having the most developed informal enforcement mechanisms to protect their property. Taxi business owners usually own one or two taxis that they operate with help from hired drivers. To protect his cabs, a taxi owner will join a taxi company—essentially a club—which, in addition to providing scheduling services and a radio system for communication with the base and other drivers, also specializes in protecting property.

Taxi owners pay a fee for the services taxi company’s services. Four components are essential for the functioning of this informal protection institution, which the drivers call solidarity:

1. monitoring via two-way radios
2. punishment of drivers who defect
3. punishment of offenders
4. signaling

We discuss these four functions in turn.

#### *A. Two-Way-Radios*

Most drivers we interviewed had two-way radios installed in their taxis. These radios allow the taxi company to dispatch individual cabs to different locations to pick up customers, just as they do in most other countries. Trujillo taxi companies also use the radios to track driver locations and to organize taxi recovery in case a vehicle is stolen and assistance services in case drivers become victims of other types of crime or violence.

Each driver is required to check in with the central office every twenty-five minutes to report his location and status. As the staff in the central office track a driver’s movements, they maintain relatively

accurate information regarding the location of all the company's cabs. If a cab is stolen or involved in an accident, the central office can relay information about the incident to drivers in the immediate vicinity of the cab's last reported location. Any driver contacted in the effort to locate a stolen cab is required to immediately drop off any passengers and begin the search for the missing vehicle.

Each cab that is a member of a taxi company has access to the assistance of the other drivers in the company. The radios efficiently link drivers together and allow for quick action when member taxis are stolen, vandalized, or involved in an accident. As mentioned above, when contacted about an incident, drivers are obliged to drop off any passengers and come to the aid of the other taxicab drivers in need. These retrieval efforts can take a long time, but our interviewees said that they are usually effective. One driver said, "There was a robbery of my property approximately a year ago that was recovered. It was taken at eight in the morning and was quickly retrieved by six in the afternoon. I didn't have GPS. It was done by the base radio."

### *B. Fines for Shirking Drivers*

The collective, however, faces a free-rider problem. While the benefits to the affected driver of such a collective search effort are obvious, the costs to the other drivers involved in the search are high. They cannot recover the expenses of being involved in the search and lose their business for the duration of the retrieval effort. Individual drivers, therefore, have an incentive to shirk. Instead of helping their associates in need, they are inclined to continue earning money by picking up and dropping off passengers. A cab driver who shirks his responsibility to help recover a stolen vehicle receives the benefits of the two-way radio without bearing any costs of the search. As long as other drivers do not discover his shirking, he can free ride.

The benefit of the cab company's property protection decreases as more drivers ignore calls for support. At the same time, if fewer drivers free ride, the cost of cooperation for each driver is lower. A stolen car has a better chance of being located quickly if more taxicab drivers are involved in the search. Ubiquitous free-riding destroys the protection the company provides.

To discourage this free-riding problem, taxi companies fine any driver caught shirking. Fines come in one of two forms: a monetary fine or a suspension from the radio system. The monetary fines for not responding to an incident range from 15 to 20 Peruvian sol

(approximately \$7), or roughly half a day's income for the average Peruvian.<sup>2</sup> Assuming that the average time to retrieve a stolen vehicle is roughly two hours, the penalty is high enough to prevent defection.

An alternative penalty suspends drivers from the radio service for two to thirty days. In more severe cases of continued defection, the suspension can last for more than thirty days. At first glance, the nonmonetary penalties might seem more severe than the monetary fine. However, since a driver who is suspended from the radio service is still able to drive and do business, drivers often prefer suspensions to fines. A suspended driver loses the protection of radio access, but he can still rely on the company's reputation as well the collective protection service, which he can only access by phone.

### *C. Punishment, Deterrence, and Reputation*

Besides providing a penalty system that incentivizes taxi drivers to cooperate, the solidarity system also functions as a punishment mechanism for offenders who attempt to steal or vandalize the property of company members. As part of their solidarity system, taxi drivers have instituted an ex-post mechanism to punish anyone who violates their property rights.

After retrieving a stolen taxi, all involved taxi drivers will engage in collective extralegal punishment of the offender (physical violence) before calling the police. Some taxi drivers we spoke to indicated that by participating in this type of punishment, they bear the risk of being prosecuted for assault. Nevertheless, driver collectives still participate, mostly because prosecution of the offender through the official legal system is perceived to be either insufficient, slow, or cumbersome.

Inadequate protection from the legal system is a root cause of drivers relying on their own protective technologies. One interviewee professed his dissatisfaction with the police system when asked if police provide adequate protection by saying, "No, none whatsoever. One thing could be because they do not have the necessary equipment or because the police work with the delinquents. There are various aspects to think about. You cannot trust the police because there aren't enough and they don't pay attention to you, so a lot of time delinquency increases. . . . You can trust the cops only

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<sup>2</sup> 2009 GNI (2009 USD) per capita for Peru was \$4,150, which equals roughly \$11.37 per day (365 days). Source: World Bank National Accounts Data, World Development Indicators.

sometimes because sometimes they play you dirty and only take advantage of you.”

In addition to providing a mechanism to retrieve stolen property and punish offenders, the solidarity system includes a deterrence mechanism for potential criminals. Every company car displays a plainly visible and colorful company crest. In addition to clearly identifying a car as part of a specific company, the crests signal each company’s ability to retrieve stolen taxis. Each company has a reputation for being an effective enforcer or a less effective enforcer of its members’ property rights. Similarly, different companies are associated with more or less severe punishment of offenders. Potential offenders who wish to steal a car can assess the risk of being caught and punished by evaluating the company crest on a car.

If a company has a reputation for being good at retrieving stolen property, potential offenders are less likely to attempt theft. Similarly, a company with a reputation for rigorously punishing thieves and vandals will be a less likely target of future offenses.

Alternatively, thieves might be more inclined to attempt to steal a vehicle with no obvious company affiliation, as indicated by a crest, or with a reputation for being inefficient at retrieving stolen property. Taxis that are members of companies known to defer punishment and retrieval to the often-inefficient formal legal system are more likely to be subject to theft and vandalism.

Companies with a reputation for protecting their members’ property will also attract more drivers and charge drivers a higher fee for their membership in the company’s mutual protection association. Companies that do not provide adequate protection will have a harder time finding drivers willing to pay their membership fees. Company owners therefore have an incentive to implement a sufficiently rigorous penalty scheme that incentivizes drivers to cooperate in the mutual protection and retrieval of their property.

#### *D. From Weak Property Rights, a Club Emerges*

A distinct feature of clubs is that as membership increases, the good or service the club provides to its members decreases in cost while effectiveness improves (Sandler and Tschirhart 1997). The Trujillo taxicab companies’ success depends not only on membership, but on its members’ cooperation. Growing membership means more dues to maintain the taxis and the two-way radio station. Moreover, the more drivers affiliated with a company, the more effective that company’s protection of its drivers’ property.

As part of the taxicab company, drivers are engaging in a form of a multiperiod mutual aid game consisting of cooperators, defectors, shunners, and punishers. Cooperators are drivers who report their whereabouts on the two-way radio on time and immediately drop off their passengers when another taxicab driver reports a theft or other offense. The defectors are the drivers who shirk their obligations and do not drop off passengers to go on the search. Shunners are the members of the company who suspend and fine drivers who defect. Finally, punishers are the taxicab drivers who, once they retrieve the stolen property, engage in extralegal retribution and physically punish the offenders.

Panchanathan and Boyd (2004) suggest that the success of collectives depends most on the shunners. Indeed, the suspensions and fines used to punish members who defect offer the appropriate mechanism to encourage more cooperation. However, punishers also play an important role, as the company's reputation largely relies on their actions. Drivers who go on the search could simply retrieve the stolen property and end the interaction there. However, by engaging in the extralegal physical punishment of outside offenders, indirect reciprocity occurs in that future cooperation among the taxicab members is achieved and potential outside offenders are deterred from engaging in destructive actions.

Ostrom (2000) describes the importance of these different types of players when it comes to collective action situations. The punishment activity suggests the presence of both conditional cooperators and willing punishers. Conditional cooperators participate as long as their actions are reciprocated in the future. Taxi drivers will bear the risk of assault charges if they think their fellow drivers will take the same action if their property gets stolen.

Willing punishers are also conditional cooperators, but they might have a comparative advantage in rebuking those who do not participate in the activity. If a driver decides to sit out on the punishment portion of the chase, they risk bearing the scorn of fellow drivers and possible incrimination as a result of the actions of willing punishers. The presence of both types of players creates a robust mechanism that strengthens both the taxicab company's reputation against offenders and the organization's social bond.<sup>3</sup>

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<sup>3</sup> The sustained presence of willing punishers is only possible with an inefficient and underfunded legal enforcement system.

Religious groups can have similar social norms that are strengthened by the presence of different types of players. Iannaccone (1992) illustrates how “unproductive costs” help screen people whose commitment levels are low while increasing the participation levels of those who join. Jehovah’s Witnesses do not celebrate Christmas, Easter, or birthdays and refuse blood transfusions. Orthodox Jews do not conduct business on the sabbath, have fastidious dietary restrictions, and wear side curls. Monks are celibate and take vows of poverty and silence. Unlike engaging in ex-post punishment as the taxi drivers do, these religious restrictions are seemingly unproductive. However, mutual sacrifices are what bind the members of these organizations together.

Leeson (2014) highlights how medieval monks engaged in higher-tier entrepreneurship by casting frightful curses on their enemies to protect their private property during the Middle Ages. In the same vein, Iannaccone (1992) observes that members of religious organizations will use sacrifices and behaviors that stigmatize them in the eyes of outsiders in order to create group coherence and reduce free-riding on club goods produced by the congregation. Thomas and Thomas (forthcoming) show that the Latter-Day Saints church’s prohibitions against caffeine and tobacco are an example of such a sacrifice intended to increase solidarity within the group and exclusion of outsiders. As with all clubs, the successful taxicab companies employ the necessary mechanisms to adapt to the inefficiencies of their communities.

#### **IV. Conclusion**

Taxi companies in Trujillo, Peru, provide an example of the importance of institutional entrepreneurship in the absence of effective property rights enforcement through the formal legal system. Our example supports Leeson and Boettke’s (2009) theory of two-tiered entrepreneurship, which suggests that when formal institutions are ineffective or absent, institutional entrepreneurs will create informal mechanisms to protect their property.

Taxi drivers in Trujillo protect their property with the help of taxi companies established by institutional entrepreneurs. These companies are essentially clubs that specialize in providing institutions that facilitate mutual protection of drivers. The clubs incentivize drivers to cooperate in protecting each other’s property. In addition, they provide the communication infrastructure that allows drivers to communicate effectively with each other and with

the staff at the central office. Company crests function as signals of enforcement effectiveness and severity of punishment to potential offenders.

The institutional structure of a property rights protection club provided by the taxi companies, which drivers themselves often call solidarity, provides relative security of property in the absence of a strong formal legal system. It consequently improves the ability of individual drivers and taxi owners to invest in vehicle acquisition and repair. In addition, solidarity reduces the cost of protection to the individual by spreading the cost of enforcement among all drivers. Taxi companies in Trujillo are an example of what Leeson and Boettke call “protective-tier entrepreneurs” who make it possible for “productive-tier entrepreneurs” to become active.

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