Anarchy, Monopoly, and Predation*

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Abstract

The 'folk theorem' suggests that the shadow of the future coupled with the threat of lost business can create cooperation without government. Although institutions rooted in this theorem can support self-enforcing exchange in a wide variety of contexts, their potential to create cooperation is not limitless. In particular, the folk theorem may break down when some agents are physically stronger than others. Stringham's [2006] system of vertically integrated proprietary communities relies on the folk theorem to prevent proprietors from preying on their customers. I show that while innovative, this system does not work. A monopoly proprietor maximizes profits by optimally extorting his tenants in violation of voluntary contracts. The result is a predatory rather than voluntary system.

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1 Introduction

A common application of the 'folk theorem' highlights the market's ability to flourish without government. When play is infinitely repeated, or what is equivalent, terminates with some constant unknown probability, the shadow of the future coupled with the threat of lost business can create cooperation. If individuals are sufficiently patient, exchange agreements "enforce themselves." A growing literature documents this outcome in a wide variety of contexts (see, for instance, Clay [1997]; Greif [1989, 1993]; Landa [1994]; Milgrom et al. [1990]; Stringham [2003]; Zerbe and Anderson [2001]).

Despite this, the folk theorem's potential to create cooperation is not limitless. This paper points to its limits in the context of the private property anarchy system proposed by Stringham [2006]. Stringham argues that economists have overlooked vertically integrated proprietary communities as a viable alternative to both traditional government provision of law and its enforcement and competing private agencies of legal enforcement.

According to his argument, critics of market anarchy, such as Cowen [1992], Sutter [1995], and Nozick [1974], rightly note the difficulties of competing law agencies within the same geographic area. Specifically, competing law agencies in the same territory cannot effectively deal with the problem of third parties. Although an individual may contract with a law enforcement agency for his protection, inevitably enforcement will involve imposing laws agreed to by this individual and his agency on some other person who has not contracted with the agency and is not bound by its rules. In response to this problem, Cowen and Sutter [1999, 2005] argue that agencies are led to fight one another, creating a Hobbesian jungle scenario, or collude, forming a *de facto* government.

Stringham's innovative solution to this problem is a hybrid system that creates purely contractual law enforcement arrangements, retaining private property anarchy, but allows for territorial monopolies as the providers of legal enforcement. Each proprietor creates rules for his residents and provides them policing and other public goods. Individuals have the choice of whether they want to contract with the proprietor, which means submitting to his association's rules, or not. Under this system the critical issue becomes whether monopoly proprietors have incentives to act peaceably toward their customers, abiding by the terms of their contracts, or prey on their tenants in violation of these contracts.

I show that the mechanism Stringham's system relies on to prevent proprietor predation—the threat of lost business under repeated play per the folk theorem—does not work. Although this institution of self enforcement can create cooperation when there is no significant strength disparity between individuals, it breaks down when one party has a monopoly on force that makes him substantially stronger than others in his geographic area.

Since the contracts between proprietors and tenants endow proprietors with a monopoly on force in their territories, proprietors become the strongest agents in their communities. Tenants' threats of lost business are therefore no longer credible and cannot constrain proprietor behavior. Without this constraint proprietors find extorting their tenants more profitable than complying with the terms of their contracts. The result is a predatory system rather than a voluntary one.

The logic behind this breakdown is intuitive. Weaker agents can eternally boycott stronger agents who behave dishonestly, but boycott does not prevent stronger agents from simply taking what they want from weaker ones. If the strength disparity is large enough, stronger agents can plunder weaker agents with little or no resistance. When this is true,

weaker agents' attempts at resisting plunder from stronger ones impose little or no cost on stronger agents. Stronger agents profit by using force rather than trade to obtain what they desire.

This insight points to an important but overlooked limitation on the folk theorem's potential to create cooperation without government. The threat of lost business under repeated play can prevent what might be called "peaceful theft," in that recourse to physical violence is not used to take advantage of the wronged party. But it cannot prevent "violent theft" such as extortion, expropriation, or other kinds of plunder for which the predator's superlative strength allows him to physically overwhelm his victim.

In highlighting the limitations of the folk theorem in this context I am not suggesting that private property anarchy is not possible. On the contrary, as I have argued elsewhere, I believe that private institutions of governance are considerably more robust than most economists think (see, for instance, Leeson [2005a, 2006, 2007a, 2007b, 2007c]; Leeson, Coyne, and Boettke [2006]; Leeson and Stringham [2005]). However, the viability of private property anarchy does not imply that any set of private institutional arrangements can support this system. Not all private institutional arrangements can create cooperation in all circumstances. Although my discussion is couched specifically in the context of Stringham's system, my arguments apply generally to any proposal for market anarchy that seeks to apply folk theorem-type institutional arrangements between agents with substantial strength disparities.

The remainder of this paper is organized as follows. Section 2 develops a simple model to examine the incentives and strategies of a potential proprietor and tenant in the pre-contractual stage of their interaction, before the proprietor becomes a monopolist on force in

his territory. Section 3 considers the proprietor's and tenant's incentives and strategies in the post-contractual stage of their interaction, after the proprietor becomes a monopolist on force in his territory. Section 4 offers some empirical support for the predictions of the model in Section 3. It briefly considers the behavior of monopoly proprietors in practice by examining the tendencies of monopoly landlord/law enforcers in the vertically integrated communities of medieval Europe. I also consider the possibility of effective "meta-institutions" of constraint, especially bonding, as a means of preventing proprietor predation in a system of vertically-integrated communities. Section 5 concludes.

2 When Strengths are Equal: Pre-Contract Stage Interest Alignment

According to Stringham [2006], profit-motivated monopolist landlord/law enforcers (from here forward, "proprietors") will not expropriate their customers. The reason he gives for this is that in a vertically integrated proprietary community the landlord and law enforcer is one and the same. Consequently, the proprietor is the residual claimant on the value of his property, which depends upon how he treats his tenants. Any *ex post* contractual opportunism on his part, such as demanding tenants to pay a "tax" not specified in their original agreement, drives current tenants away and makes his community less attractive to future tenants. This loss is capitalized in the present value of the proprietor's community, the cost of which he incurs. To avoid such losses proprietors comply with the contracts they negotiate with their tenants.

This proposed constraint on proprietor predation is a simple application of the folk theorem to vertically integrated proprietary communities. Interaction between a proprietor and each of his tenants is assumed to be infinitely repeated and each tenant employs a "grim trigger strategy." Any opportunistic behavior by proprietors leads to exit by expropriated tenants, resulting in a loss of business to predatory proprietors. The prospect of this punishment is supposed to prevent a profit-maximizing proprietor from preying on his tenants.

Crucially, this mechanism assumes that proprietors cannot prevent tenants from exiting when they prey on them. For this to hold, proprietors cannot be substantially stronger than tenants. This assumption is reasonable in the pre-contract stage of proprietor-tenant interaction. At this stage, the parties have not yet completed a contract that gives one party the strength to coerce the other.

To see why the folk theorem's ability to prevent proprietor predation depends critically on equal[1] proprietor and tenant strengths, first consider what I call the "pre-contract stage game." This game considers proprietors' and tenants' strategies and payoffs if they were to agree to the contract they are currently considering *and* the parties retained their pre-contract strengths, i.e., they are equally strong. In practice this means that neither party can successfully use physical force to detain, compel, or otherwise coerce the other party against his will.

Modeling the pre-contract stage game is straightforward. Consider an infinitely repeated version of the game of complete and perfect information shown Figure 1. I model the interaction of the potential proprietor and a representative potential tenant. The game could

[1]The folk theorem's ability to create cooperation does not require that agents have literally equal strengths. More accurately, it requires that no player be sufficiently strong such that he can coerce others with little or no resistance. I use the terms "equal" and "roughly equal" strength in what follows to avoid the more cumbersome terminology.

be easily modified to include the interaction of the potential proprietor with many potential customers. Since doing so does not substantively affect the game's result, I consider bilateral interaction instead.

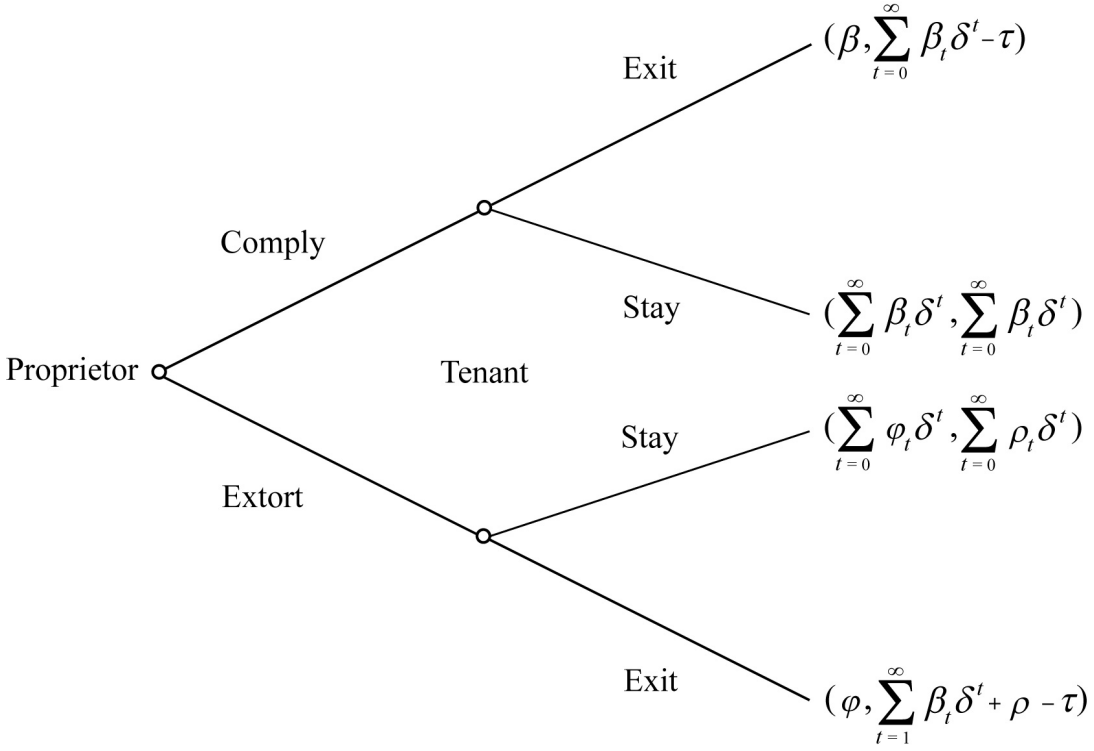

Figure 1. The Pre-Contract Stage Game

The proprietor moves first and decides whether to comply with the terms of the contractual arrangement he and his tenant are considering or to extort his tenant in violation of this agreement. The tenant moves second and decides whether to stay with this proprietor, or exit, leaving this community for another. Tenants use a "grim trigger strategy" whereby they punish even one period of proprietor extortion with permanent exit from his community.

When the proprietor and tenant "comply" and "stay" respectively they both earn β for the period. This makes each party's total payoff of the infinitely repeated game $\sum_{t=0}^{\infty} \beta_t \delta^t$, where δ is their common discount factor and $\delta \in (0, 1)$. If the proprietor complies but

his tenant exits, the former receives the one-period payoff of transacting with the tenant, β, and the latter receives $\sum_{t=0}^{\infty} \beta_t \delta^t - \tau$. Moving between communities is costly, τ. Thus, the tenant's payoff above reflects what he earns from patronizing his proprietor when his proprietor complies in $t = 0$, plus his discounted payoff of repeated patronage of a competing proprietor from $t = 1$ forward, less the cost of moving between proprietary communities. To simplify the analysis, I assume that if a tenant exits he is able to find an honest alternative proprietor under whom he earns the discounted payoff of repeated cooperative interaction. However, this assumption could be modified without affecting this game's result.

If the proprietor extorts his tenant he receives a higher one-period payoff than when he behaves honestly, φ, where $\varphi > \beta$. His tenant, however, receives a lower payoff, ρ, where $\rho < \beta$. Thus, if the proprietor extorts and his tenant stays, the proprietor earns $\sum_{t=0}^{\infty} \varphi_t \delta^t$ and the tenant earns $\sum_{t=0}^{\infty} \rho_t \delta^t$.

Finally, if the proprietor extorts but his tenant exits, the former receives only the one-period payoff from extorting, φ, and the tenant receives $\sum_{t=1}^{\infty} \beta_t \delta^t + \rho - \tau$. This is his one-period payoff of suffering extortion at the hands of his current proprietor in $t = 0$, plus his discounted future payoff of patronizing an alternative proprietary community from $t = 1$ forward, minus the cost moving between communities. To summarize, in this game, $\varphi > \beta > \rho > \tau > 0$; and $2\sum_{t=0}^{\infty} \beta_t \delta^t > \sum_{t=0}^{\infty} \varphi_t \delta^t + \sum_{t=0}^{\infty} \rho_t \delta^t$, which is to say that mutual cooperation is socially efficient.

This game's outcome depends on the proprietor's patience. He cooperates if and only if $\sum_{t=0}^{\infty} \beta_t \delta^t > \varphi$. Rewriting this expression gives, $\frac{\delta\beta}{1-\delta} > \varphi$; and solving for δ yields, $\delta > \frac{\varphi}{\beta+\varphi}$. When the proprietor's discount rate satisfies this inequality (i.e., he is sufficiently patient), the game's unique subgame perfect Nash equilibrium involves the proprietor complying with

terms of the contract and the tenant staying. This outcome is socially efficient; there is no predation in equilibrium.

3 Time Inconsistency: Post-Contract Stage Interest Divergence

The 'nice' equilibrium in the pre-contract stage game results from the tenant's ability to successfully exit the proprietor's community—punishing the proprietor with boycott—when the proprietor extorts him. Boycott in turn rests on the proprietor's inability to forcibly prevent the customer from exiting, which requires that the proprietor not be substantially stronger than the tenant. This is the mechanism Stringham [2006] has in mind when he implicitly invokes the folk theorem to argue that proprietors will not extort their tenants.

However, as noted above, its effectiveness depends crucially on roughly equal strengths between the proprietor and tenant. Unfortunately, in the post-contract stage, after the parties have concluded their contract, this condition no longer holds. In the post-contract stage game the proprietor becomes a monopolist on force in his community. His superlative strength causes the folk theorem to break down.

The proprietor in Stringham's [2006] system has a monopoly on force in his geographic area. This means he is the strongest agent in his territory. To be a successful landlord/law enforcer the proprietor must be stronger than anyone else in his community.

This is an essential feature of the vertically integrated proprietary system. If the proprietor is weaker than others in his territory, he cannot enforce the rules of his community.

Stronger agents in his territory can plunder the proprietor and weaker tenants. This undermines the proprietor's position as monopoly law enforcer and prevents him from attracting customers. The proprietor's monopoly on coercion in his geographic area allows him to overcome this problem. It creates a sufficient strength disparity in his favor over others such that he is able to enforce the rules that govern his community.

Proprietors establish the strength superiority they require for this purpose through contractual consent with their tenants. Tenants agree to surrender their power to independently create and enforce rules. They voluntarily pass monopoly law-making/coercive authority to their proprietor to enforce the rules they agreed to be governed by in their contracts. Once the contract is concluded, proprietors become monopolists on force with the power to do this.

This is problematic, however, because it also means the proprietor becomes strong enough to take what he wants from his tenants with little or no resistance. In particular, his strength superiority allows him to prevent his customers from exiting when he extorts them. This in turn prevents customers from credibly threatening to punish the proprietor with exit if he preys on them as they could in the pre-contract stage game (Figure 1) where they were equally strong.

Given his contractually-created strength superiority and the absence of effective punishment for extortion, the proprietor now maximizes profit by "taxing" his tenants. The proprietor's pre- and post-contractual interests are time inconsistent. To see this explicitly, consider Figure 2, which models the post-contract stage of proprietor-tenant interaction.

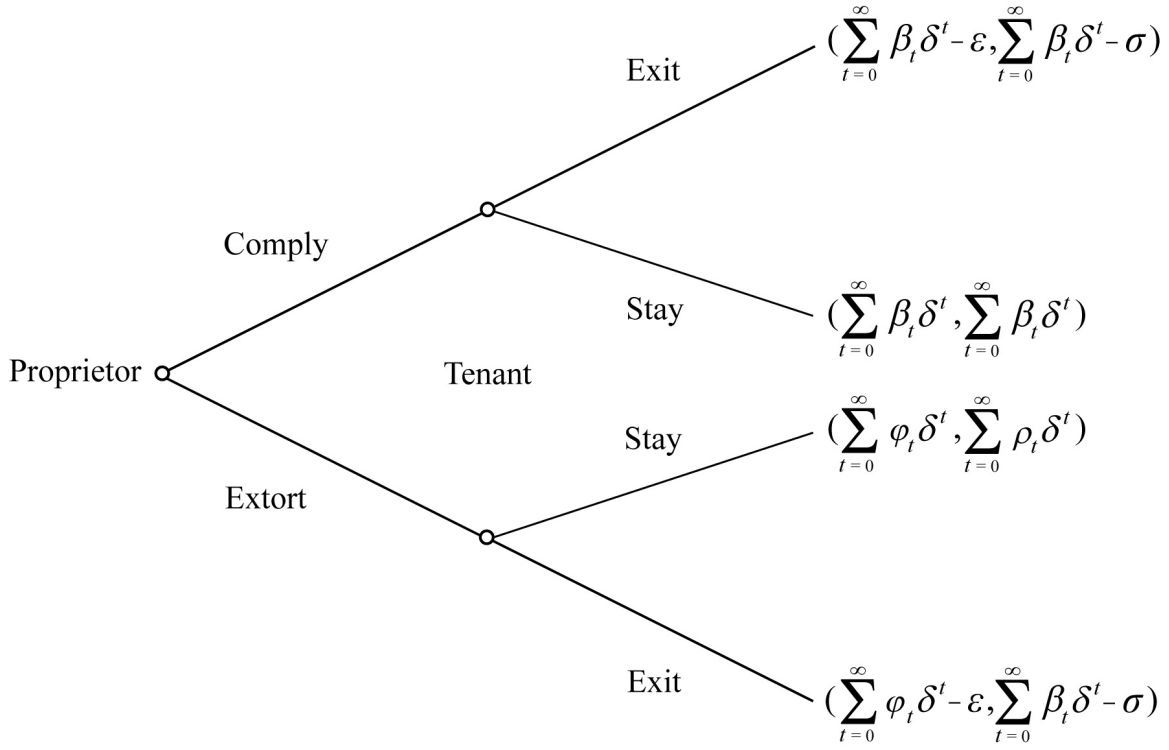

Figure 2. The Post-Contract Stage Game

In the post-contract stage game the payoffs for the proprietor and tenant when the former complies and the latter stays are the same as in Figure 1. In this case both parties receive the discounted payoff of repeated cooperative dealings, $\sum_{t=0}^{\infty}\beta_t\delta^t$.

Similarly, the proprietor's and tenant's payoffs when the former extorts and the later stays are also the same as before. In this case the proprietor earns $\sum_{t=0}^{\infty}\varphi_t\delta^t$ and the tenant earns $\sum_{t=0}^{\infty}\rho_t\delta^t$, where $\varphi > \beta > \rho > 0$. Like in the pre-contract stage game, $2\sum_{t=0}^{\infty}\beta_t\delta^t > \sum_{t=0}^{\infty}\varphi_t\delta^t + \sum_{t=0}^{\infty}\rho_t\delta^t$. The socially efficient outcome requires no predation in equilibrium.

However, in the post-contract stage game the payoffs for both parties change under the other strategies they may pursue. This results from the proprietor's newly-gained capacity to prevent the tenant from exiting. Recall that this capacity is achieved through the contract

he enters with his customer. The contract gives the proprietor a monopoly on force and superlative strength in his community. Because of this, in the post-contract game, the tenant's attempts to exit the proprietor's community are unsuccessful. I assume that in the event a tenant tries to exit the ensuing "fight" is costly to both parties, but more so to the customer who is weaker and always loses than to the proprietor who is stronger and always wins. The cost of conflict for the proprietor is therefore ε and for the tenant is σ, where $\beta > \sigma > \varepsilon > 0$.

The payoffs for the proprietor and tenant under the remaining possible strategies are thus as follows. When the proprietor complies and the tenant attempts to exit, the parties receive $\sum_{t=0}^{\infty} \beta_t \delta^t - \varepsilon$ and $\sum_{t=0}^{\infty} \beta_t \delta^t - \sigma$, respectively. If the proprietor extorts and the tenant attempts to exit, the proprietor earns $\sum_{t=0}^{\infty} \varphi_t \delta^t - \varepsilon$, his discounted payoff of repeated extortion, minus the cost he incurs of preventing the tenant from exiting. The tenant in this case earns $\sum_{t=0}^{\infty} \rho_t \delta^t - \sigma$, his discounted payoff of repeatedly being extorted, minus the cost he incurs from unsuccessfully trying to exit.

The unique subgame perfect Nash equilibrium of this game is easy to tabulate. Since the tenant always fails in his attempts to exit and attempting to exit is costly, his dominant strategy is to stay ($\sum_{t=0}^{\infty} \beta_t \delta^t > \sum_{t=0}^{\infty} \beta_t \delta^t - \sigma$ and $\sum_{t=0}^{\infty} \rho_t \delta^t > \sum_{t=0}^{\infty} \rho_t \delta^t - \sigma$. Since the tenant cannot successfully exit, the proprietor's dominant strategy is to extort ($\sum_{t=0}^{\infty} \varphi_t \delta^t > \sum_{t=0}^{\infty} \beta_t \delta^t$ and $\sum_{t=0}^{\infty} \varphi_t \delta^t - \varepsilon > \sum_{t=0}^{\infty} \beta_t \delta^t - \varepsilon$). The profit-maximizing proprietor therefore always preys on his tenant.[2] The resulting equilibrium is socially inefficient; it involves the proprietor

[2]This model assumes "full capacity" of the proprietor's community. If his community were not at full capacity, expropriating his existing tenants would cause him to lose the business of future tenants provided these individuals had information about his predatory behavior. Explicitly identifying the conditions under which the proprietor would extort his existing tenants when his community is at less than full capacity is

extorting his tenant and his tenant staying.[3] The attributes of the monopoly proprietor that characterize Stringham's vertically integrated proprietary system result in a predatory regime rather than a voluntary one.

The fact that the proprietor is a residual claimant on the value of the community does not alter this. Since the proprietor is sufficiently strong to prevent the tenant from exiting, extortion does not reduce his revenue. If tenants were free to exit the community, like patrons are free to stop buying from restaurants when they receive bad service, then residual claimancy would be an effective check on the proprietor's behavior, as in Figure 1. But force is not like a meal one receives at a restaurant. A restaurant owner has no monopoly on force and thus no power to prevent dissatisfied customers from refusing to patronize his restaurant.

Stringham's monopoly proprietor, however, does. His most notable characteristic is his monopoly on force that makes him the strongest agent in his territory. Unlike a restaurant owner, his monopoly strength superiority gives him the power to prevent dissatisfied tenants

straightforward. Let n be the number of tenants the proprietor has at full capacity and x be his current number of tenants, where $x < n$. Then the proprietor extorts his existing customers if and only if $x \sum_{t=0}^{\infty} \varphi_t \delta^t \geq n \sum_{t=0}^{\infty} \beta_t \delta^t$. Solving this for φ yields $\varphi \geq \frac{n\beta}{x}$, or in terms of his current capacity, $x \geq \frac{n\beta}{\varphi}$. It is easy to see here that as the number of current tenants rises relative to that number of tenants that constitute maximum capacity this inequality is easier to satisfy and predation is more likely. Likewise, how much larger the one-period payoff of extortion is relative to the one-period payoff of cooperation also influences the likelihood of predation. Other things equal, the larger the one-period of extortion compared to cooperation, the easier it is to satisfy the "extortion threshold" above.

[3] Allowing the proprietor to hold multiple non-contiguous communities does not alter this. In each of his communities the proprietor, or his managing agent in the properties he does not live in, is the strongest agent. Extortion by the proprietor in one of his communities therefore does not lead the tenants of his other communities to exit, imposing a cost on him this way. The proprietor's managing agents in his other communities simply need to prevent these tenants from exiting as the proprietor does in the community he lives in. Again, the monopoly on force endowed in the proprietor, and his managing agents in the communities he owns but does not live in, is sufficient to prevent tenants from exiting in any territories where his strength is superlative, which includes all of the communities he owns.

from exiting. Because the proprietor can extort his tenants without losing his tenant base, some positive level of extortion is profit maximizing. In this way his monopoly on force creates the time inconsistency between the pre-contract stage of proprietor-tenant interaction in Figure 1 and the post-contract stage of their interaction in Figure 2.

Of course, the proprietor will not extort his tenants without limit. A monopoly proprietor would not, for instance, find it in his financial interest to expropriate 100 percent of his tenants' produce. At this level of expropriation his tenants would have no incentive to produce anything, leaving nothing for the proprietor to take. But neither would the proprietor's optimal level of expropriation be zero. A monopoly landlord/law enforcer faces the standard revenue extraction tradeoff reflected by the Laffer curve. He is in the position of McGuire and Olson's [1996] "stationary bandit" who maximizes his income by taking some, but not all, of the product of those under him. The monopolist proprietor will extort his tenants up the point at which the marginal deadweight loss from extortion equals the marginal value of the resources he is able to extract (McGuire and Olson [1996, p. 76]).

4 Bonds, Barons, and Meta-Institutions of Constraint

4.1 Feudal Anarchy: Monopoly Proprietors in Practice

Importantly, the outcome predicted by Figure 2 is not only a theoretical possibility. Historically, it is what we observe. Stringham's system bears a striking resemblance in its institutional organization to the feudal society of medieval Europe. De Long and Shleifer [1993] aptly characterized this institutional arrangement "feudal anarchy."

Feudal lords were monopoly proprietors of vertically integrated communities. They owned their geographic territories and were residual claimants on this land. Feudal barons were both monopoly landlords and law enforcers in their territories. Also like Stringham's monopoly proprietors, feudal lords were monopolists on force over the areas they owned.

In stark contrast to the responsive and compliant proprietors described by Stringham, historical monopoly proprietors of vertically integrated communities were not especially known for the kindness or cooperativeness they showed toward their tenants. On the contrary, feudal lords routinely used their strength superiority to prevent tenants from exiting. This had the effect of turning tenants into serfs. In light of this, landlord/law enforcer proprietors were freed to extort their tenants for personal gain, which they regularly did.

Significantly, extortion occurred despite the fact that feudal lords were the proprietors of their territories and so capitalized the losses of activities that reduced their property's future income-creating capacity. This was the case because feudal lords could often prevent their tenants from exiting. Since tenants could not exit, the future income-creating capacity of the feudal lord's property was not reduced when he optimally extorted them. On the contrary, a feudal lord who sold his territory was often able to sell it with the serfs attached to it, raising the present value of his land through predation. Historical experience with "feudal anarchy"—an institutional organization that closely resembles Stringham's vertically integrated proprietary communities—supports the claim that this system tends towards proprietor predation rather than a voluntary arrangement in which proprietors are well-behaved.

This is intuitive when one considers the fact that the threat of losing "customers" is only a cost to business owners who can in fact lose customers by behaving dishonestly. But, as

pointed out above, for a business owner who has a monopoly on force this is not the case. Since he benefits from extorting his customers but incurs no cost in terms of lost customers by doing so, it is in the interest of a business owner with a monopoly on force to engage in optimal extortion.

It could be argued that an important difference between feudal anarchy and Stringham's vertically integrated proprietary communities is that under feudal anarchy proprietors did not need to attract tenants *ex ante*. In contrast, in Stringham's system, ostensibly at least, agents cannot be coerced to join communities, so proprietors must compete for them.

It is true that initially each would-be proprietor in Stringham's system must compete for tenants, and so requires their *ex ante* consent to be governed by the rules he proposes. In the pre-contract stage he does not have a monopoly on force and so cannot compel them to join his community against their will.

However, as demonstrated above, *after* the proprietor has contracted with his tenants he gains a monopoly on force and stands to gain from extorting his tenants. Thus, although they joined willingly, these tenants soon find themselves compelled to make payments they did not agree to and unable to exit the dishonest proprietor's community. Subsequent generations of individuals born to the initial tenants also find themselves subject to the predation of the proprietor (or perhaps his progeny if he passes his position to them when he dies). These future tenants have not consented to the proprietor even initially, as their forefathers had.

This situation in Stringham's system—*ex ante* consent of initial tenants followed by extortion of these tenants *ex post* and then extortion of subsequent generations—is not different from what often prevailed under feudal anarchy. Like in Stringham's system, it was not uncommon for feudal vassals to initially voluntarily agree to be "governed" by a

landlord/law enforcer. However, the feudal lord having become a monopolist on force over his tenants, vassals soon found themselves in a situation of predation they could not exit. Subsequent generations of individuals born to the initial tenants were bound to the landlord (his descents, or those he sold his territory to), and so on.

Importantly, even if it were true that the monopoly proprietor system required tenant's *ex ante* consent while feudal anarchy did not, this would not affect the fundamental problem I have described. Arguing that proprietors must initially attract tenants misses the point. It must be true that in the pre-contract stage when a proprietor is attempting to attract tenants, and cannot use force to compel them since he is no stronger than they are, he will offer an attractive package that includes a promise not to extort the customer. The problem is that once the contract is concluded and the proprietor becomes a monopolist on force, it is no longer in his interest to comply with this promise.

My argument is precisely that *after* a proprietor has attracted his tenants his incentive is to behave toward them in the same fashion that feudal lords behaved toward their serfs. Besides a question of historical interest, whether the latter had to go through the process of attracting tenants in the first place is irrelevant. After the contract is concluded, the incentives of Stringham's proprietor and the feudal lord—even one who never had to attract tenants in the first place—are the same.[4]

[4]One could argue that in the absence of proprietors' ability to come up with convincing commitment devices *ex ante*, potential tenants would not join proprietary communities. This is certainly possible and would then make the vertically integrated proprietary system different from feudal anarchy, if feudal lords coerced their initial tenants. However, as I discuss above, in many cases feudal lords did not coerce their initial tenants; tenants joined voluntarily. Second, if tenants refused to join proprietary communities for this reason, the proprietary community system would cease to exist. Tenants' refusal to join communities because of proprietors' inability to commit themselves to honest behavior is not a success of the proprietary system. On the contrary, it strengthens my point, which is that the proprietary system cannot withstand the problem of force.

4.2 Bonding as a Meta-Institution of Constraint

As if predicting the breakdown of the folk theorem in his vertically integrated proprietary community system, Stringham [2006] briefly raises the possibility of using bonds to guard against proprietor predation. As he puts it: "If tenants lacked trust in vertically integrated proprietary communities, they could require them to be bonded with third parties who would pay compensation if landlords broke contracts. The bonding company could be located on the other side of the world if people worried that a proprietary community might expropriate the bonding company" (Stringham [2006, p. 529]). Bonding would operate as a kind of "meta-institution" that would impose a cost on proprietors who used their monopoly on force dishonestly. Anticipating proprietors' time inconsistency problem, potential tenants would require proprietors to contractually commit to this meta-institutional device to constrain proprietor behavior *ex post*.

This meta-institution of constraint, however, collapses under the proprietor's monopoly on force in the same way that the threat-of-lost-business mechanism collapses in this system. There are two possibilities here. In the first case the bonding company is located in the jurisdiction of the proprietary community in question. In this event the proprietor's monopoly on force allows him to expropriate the bonding community as he pleases, or alternatively, prevent the bonding company from releasing the bonded funds to his customers as agreed to in their contracts. Even if the funds were released to the proprietor's tenants, the proprietor's strength superiority means that he can simply expropriate these funds back from them when the funds are returned. In any of these events, bonding does not constrain proprietor behavior.

The second possibility is that the bonding company is located in another proprietary community's jurisdiction. In this case the extorting proprietor may not be able to seize these funds since he would be up against another monopolist with substantial strength and possibly greater strength than himself. However, a different problem emerges here. Ironically, this is the very problem that Stringham's system was intended to solve in the first place. This is the potential for violent conflict when competing private law agencies interact, pointed to by Cowen [1992], Sutter [1995], Nozick [1974], and Stringham [2006].

There is nothing in the system of vertically integrated proprietary communities that prevents the proprietor of the community where the bonded funds are held from simply keeping these funds for himself. If he does this the other proprietor may object. But he has no formal recourse he may pursue to rectify things. Violent conflict with the competing proprietor is his only option. The vertically-integrated-monopolist-design of Stringham's system is intended to prevent such potential wars by limiting the number of law agencies in each territory to one. But if meta-institutions such as extra-community bonding are introduced, the potential for violent interaction reemerges.

Introducing a private supra-community organization to govern inter-community disputes is equally ineffective. Since Stringham's system is based on voluntaryism, proprietors only become members of this organization, and after joining are only governed by its decisions, to the extent that they choose to do so. If a proprietor does not like the decision of the organization that requires him to return the bonded funds he was entrusted with, he is free to ignore it. The organization may try to compel him to do otherwise. But if the proprietor is stubborn this will mean war between him and the organization.

This is not to say that a supra-community organization could never help to resolve dis-

putes. But when some proprietors, or all of them, find it profitable to engage in opportunistic behavior, as in the bond example above, this organization will be of little use unless it is willing try and violently coerce resistant proprietors. This, however, creates the situation of conflict that Cowen [1992], Sutter [1995], Nozick [1974], and Stringham [2006] rightly see as problematic.

Notably, appealing to the folk theorem again—this time at level of interaction between proprietors—will be ineffective for sustaining cooperation at the inter-community level under exactly the same conditions I have shown it is ineffective for sustaining cooperation at the intra-community level. Namely, if some proprietors are sufficiently stronger than others, the loss of reputation in the proprietor supra-community will not constrain their behavior. Admittedly, disparate proprietor strengths, while highly plausible, is not inevitable. Thus, it may be possible to avoid the problem of conflict between proprietors when they are required to interact, as they are under Stringham's bonding suggestion, if proprietors have roughly equal strengths. But even in this case, the supra-community organization is far from an iron-clad constraint on inter-community violence when extra-territorial bonding is used.

More importantly, locating the bonding agency outside the proprietor's territory does not overcome the problem of force described above. Even if there were not potential for the kind of inter-community conflict just discussed, and a bonding company outside the proprietor's community successfully released bonded funds to his tenants when he extorted them, the predatory proprietor's strength superiority in his area would allow him to simply steal these funds back after they entered his tenants' hands. We end again in a situation in which bonding cannot constrain proprietor predation.

In either scenario considered above the bonding "solution" to proprietor predation is

untenable. In the first case, it confronts the problem of force I have primarily been concerned with. In the second case, it may fail to overcome the obstacle to private property anarchy the vertically integrated proprietary community system was designed to deal with, and even when it does not, it collapses under the problem of force.

Appealing to the possibility of alternative meta-institutions that might serve to impose a cost on proprietors who turn their force against tenants for private gain is unhelpful unless one can identify a specific meta-institution that could solve the problem identified above. While an effective meta-institution of constraint is precisely what is required to prevent monopoly proprietors from extorting their tenants, simply pointing to this fact does not indicate what institution might actually achieve this.

The problem that would seem to plague *any* potential private meta-institution for this purpose is the same one that prevents the folk theorem from working when some agents are substantially stronger than others. Namely, a proprietor with a monopoly on force who is strong enough to create meta-constraints on his behavior is also strong enough to break these constraints in a way which avoids the cost that breaking them was designed to impose.

Consider, for instance, an alternative private meta-institution of constraint, such as requiring proprietors to make costly up-front, irreversible investments in specific assets. Such investments constrain behavior when dishonesty leads the value of the investment to depreciate. If, for instance, Coca-Cola cheats its customers, it may lose part of the value of its asset-specific investments, such as those it has made in its name brand. But if Coca-Cola has a monopoly on force and can compel its customers to purchase its products, these investments do not lose their value no matter how the company treats its customers.

This situation is analogous to the proprietors in Stringham's system with respect to their

tenants. If predation resulted in tenant exit, proprietors who invested in costly specific assets would incur a cost by behaving dishonestly. However, since proprietors have a monopoly on force and can prevent tenants from exiting, the value of their investments does not fall when proprietors extort their customers who they compel to continue to "pay" for their services.

The failure of costly up-front investments to constrain behavior when the investor has a monopoly on coercion is easy to see when one considers the fact that they operate through repeated play via the folk theorem in precisely the same fashion as the threat-of-lost-business mechanism. As Williamson [1996] and others have pointed out, reputation is simply another kind costly specific asset that is at stake if producers cheat their consumers and these consumers punish them by refusing future purchases. The bonding mechanism discussed above is another manifestation of this. But if consumers can be compelled to "make future purchases" through the producer's ability to prevent them from exiting, reputation, like other kinds of costly investments, cannot prevent dishonesty. Thus, the failure of the threat-of-lost-business mechanism, costly up-front investments, and bonding all stem from the same source—the inability of the folk theorem to constrain behavior when one party has a monopoly on force over others.

Folk theorem-based institutions' inability to prevent proprietor predation does not imply that no meta-institutions can overcome this problem. For instance, introducing a central government that regulated the behavior of proprietors at the meta-level, similar to the federalist-type organization discussed by Kerber [2001] and Kerber and Hartig [2000], could solve the problem of proprietor predation. But this sort of system involves a formal government and is qualitatively different from system the system of private property anarchy that Stringham is interested in. Furthermore, as Stringham [2006] points out, this kind of system

merely pushes the problem of effective constraints a level back—in this case to the central governmental authority.

As Gordon Tullock put it, "The view that government can be bound by specific [meta-institutions] is naïve. Something must enforce those provisions, and whatever it is that enforces them is itself unbound" [1987, p. 317]. His insight applies equally to any political economic organization that endows one individual or agency with a monopoly on force in an area, whether a centralized government or the proprietor of a vertically integrated community.[5]

5 Concluding Remarks

The project of pushing the bounds of the market is important and useful. If for no other reason than the fact that governments in a great part of the world are too weak or unwilling to act as effective legal enforcers, it is critical to understand how such enforcement might be achievable under anarchy.[6] Stringham's [2006] proposal of vertically integrated proprietary communities under private property anarchy is very valuable in this regard.

Nevertheless, like those before it, this proposal confronts a significant obstacle when it comes to dealing with the issue of force.[7] A monopoly agency of force—government or private

[5]It is interesting to note that most advocates of market anarchy support this system because it decentralizes force, eliminating monopolies on coercion. This is desirable is for precisely the reason pointed to by Tullock. A monopolist on force is ultimately unbound and can therefore use his position of strength to prey on others. Stringham's system is therefore both unique and puzzling in that it explicitly aims to create a monopoly on force in community proprietors. Doing this helps to mitigate the problem of inter-law agency conflict discussed above. But on the other hand it opens the door to an even more significant problem, the problem of force discussed here.

[6]For historical discussions of market mechanisms that solve the problem of force under anarchy outside the system of vertically integrated proprietary communities, see Leeson [2007a, 2007d].

[7]The vertically integrated proprietary community system suffers from additional problems, unrelated to force, which I have not considered here. In particular, it confronts the problem of social heterogeneity identified by Greif [2002] and others. Leeson's [2005a, 2005b, 2006, 2007b] work on social distance and

proprietary community—suffers from the fact that in the end the monopolist is in a position to take advantage of those who are weaker than him. Given his monopoly, this is everyone else in the monopolist's territory.

The problem of force highlights the folk theorem's limits in creating self-enforcing institutions of cooperation. Although these institutions have wide-ranging applicability, their effectiveness is not without bounds. I have argued that a substantial strength superiority of one party over another can lead the cooperation-creating capacity of folk theorem-based mechanisms to break down. Threats of boycott are ineffective if the boycotted party can physically overwhelm the boycotters and take what he wants from them by force. Stated differently, "business" can only be lost if potential buyers can exit. However, if one party is strong enough to prevent his customers from exiting, the threat of exit is not credible and does not impose a cost on opportunistic behavior.

In concluding, I hasten to reiterate my opening statement that this analysis should not be taken to mean that the problem of force is insurmountable for private property anarchy. On the contrary, there is good reason to think that the market can in fact solve this dilemma. But additional research is required to demonstrate this is so in the context of the vertically integrated proprietary community system. In particular, those interested in advocating the viability of market anarchy must look beyond the folk theorem and the possibilities of repeated play to find private institutions of order that are robust to the problem of force.

self-enforcing exchange points to private institutions that emerge to overcome this problem under anarchy. Stringham's [2006] treatment of vertically integrated proprietary communities, however, does not address this potential obstacle.

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